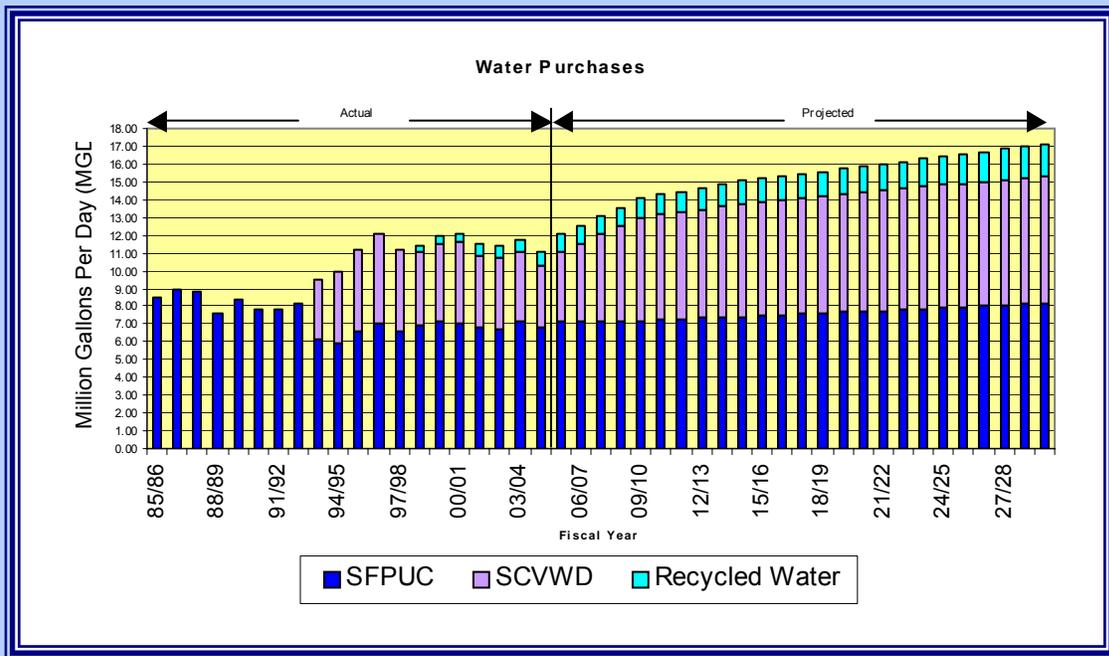


2005 Urban Water Management Plan

A review of current and future water resources



City of Milpitas

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Milpitas, CA 95035

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Adopted December 6, 2005

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ABBREVIATIONS

ABAG	Association of Bay Area Governments
ACWD	Alameda County Water District
AF	Acre-Feet
AWWA	American Water Works Association
BART	Bay Area Rapid Transit
BARWRP	Bay Area Regional Water Recycling Program
BAWUA	Bay Area Water Users Association
BAWSCA	Bay Area Water Supply and Conservation Agency
BDPL	Bay Division Pipe Line
BMP	Best Management Practice
CDP	Critical Dry Period
CEQA	California Environmental Quality Act
CII	Commercial/Industrial/Institutional
CIP	Capital Improvement Program
CUWCC	California Urban Water Conservation Council
CVP	Central Valley Project
DEOC	Public Works Department Emergency Operations Center
DWR	California Department of Water Resources
DU	Dwelling Unit
FY	Fiscal Year
gpd	Gallons per Day
gpcpd	Gallons per Capita per Day
hcf	Hundred Cubic Feet
ITAP	SCVWD's Irrigation Technical Assistance Program
IWRP	SCVWD's Integrated Water Resources Plan
IWSAP	SFPUC's Interim Water Shortage Allocation Plan
mgd	Million Gallons Per Day
MOU	State Memorandum of Understanding for Water Conservation
NA	Not Applicable
NPDES	National Pollution Discharge Elimination System
PG&E	Pacific Gas & Electric
RWQCB	Regional Water Quality Control Board
SBCWD	San Benito County Water District
SBWRP	South Bay Water Recycling Program
SCVWD	Santa Clara Valley Water District
SF	San Francisco
SFPUC	San Francisco Public Utilities Commission
SJWC	San Jose Water Company
Sunol	Sunol Valley Filtration Plant
ULFT	Ultra-Low Flush Toilet
UWMP	Urban Water Management Plan
WPCP	San Jose/Santa Clara Water Pollution Control Plant
WSIP	SFPUC's Water Supply Improvement Program

**CITY OF MILPITAS
2005 URBAN WATER MANAGEMENT PLAN**

WSMP SFPUC's Water Supply Master Plan
WTP Water Treatment Plant

EXECUTIVE SUMMARY

The California State Department of Water Resources predicts that our next generation will experience water shortfalls unless water use is properly managed. As part of the overall water management effort, the State requires each water agency prepare an Urban Water Management Plan, with updates every 5 years. **The Plan reviews current and future water resources, and establishes mechanisms for maintaining water conservation programs.** This document fulfills the State requirement.

The City of Milpitas receives potable water supply from the San Francisco Public Utilities Commission (SFPUC) and the Santa Clara Valley Water District (SCVWD), and receives recycled water from the San Jose/Santa Clara Water Pollution Control Plant (WPCP). In average precipitation years, the City of Milpitas has sufficient water supply to meet water demands through 2030. Although the City has planned for adequate supplies to meet demands through 2030, the City will be impacted by drought shortages. **During drought periods, water wholesalers may not have supplies to meet demands, and some form of water allocation may be anticipated.** Chapter 8 (Water Shortage Contingency Plan) on page 47 addresses drought rationing options.

In fiscal year 04/05, SFPUC, SCVWD, and the WPCP provided 61%, 32%, and 7% of the City's 11.02 million gallons per day (mgd) water supply respectively. This water supply ratio is expected to approach 48%, 42%, and 10% as the City reaches FY 2029/2030. Over the next 20 years, the City projects water needs to increase by 55% to about 17.10 mgd in FY 2029/2030.

The City of Milpitas remains committed to water conservation and water recycling. In the past 10 years, the City's conservation programs have saved an estimated 177 million gallons annually (FY 04/05) and, through its recycled water program, have saved an additional annual amount of 264 million gallons of potable water.

The City is not a signatory to the State Memorandum of Understanding (MOU) on water conservation, however, there is a strong possibility that the MOU's Best Management Practices (BMPs) may become a State requirement in the future. This document establishes a firm basis for the selection of BMPs to be implemented by Milpitas consistent with the State criteria. The recommended source of funding for the proposed water conservation programs is the Water Fund at an annual cost of about \$107,9000 (FY 2004/2005 dollars). This cost is expected to increase at a rate of about 5% per year due to inflationary and other factors.

Details on the recommended water conservation programs can be found in Table 9-3 on page 71.

1 PURPOSE

1.1 URBAN WATER MANAGEMENT PLANNING ACT

This 2005 Urban Water Management Plan (UWMP) has been prepared in response to the California Urban Water Management Planning Act (Act), Water Code Division 6, Part 2.6, Sections 10610 through 10657. The Act requires all publicly and privately owned urban water suppliers to prepare and adopt an UWMP every 5 years. Urban water suppliers are defined in the Act as those who provide water for municipal purposes either directly or indirectly to more than 3,000 customers, or those who supply more than 3,000 acre-feet of water annually.

The Act requires that UWMPs describe the suppliers' service area; water use by customer class; water supply and demand; water service reliability and shortage response options; water transfer and exchange opportunities; water recycling efforts; and conservation measures. See **Appendix A** for a copy of the Urban Water Management Planning Act.

This 2005 Urban Water Management Plan (UWMP) updates the City's 2000 UWMP.

► **Senate Bill 610 and Senate Bill 221**

Since the City's 2000 UWMP, two notable bills have added new requirements to the Act. The bills are commonly referred to as SB 610 (Costa) and SB 221 (Kuehl). These bills required procedures to advance water supply planning efforts in the State of California. They focus on comprehensive water policies and the coordination of local water supply and land use decisions to help provide California's cities, farms and rural communities with adequate water supplies. On October 9, 2001, Governor Davis signed these two bills into law, linking land use development to water supply. These two laws took effect on January 1, 2002.

SB 610 requires that a Water Supply Assessment be prepared to assess the reliability and the sustained quantity of water supply for the proposed new land use developments. When CEQA applies to development of land uses such as residential, commercial, office, hotel/motel, industrial/manufacturing, and mixed-use projects, there are certain conditions, parameters or thresholds to be met. The State Water Code (WC§10912) defines SB 610 compliance parameters such as the number of units, floor space, occupants/tenants, acres, increased number or percent of water service connections, and/or whether or not the service is from a public water system. Most of all, SB 610 requirements depend upon the proposed project as being subject to CEQA requirements and the parameters as defined in State Water Code 10912.

SB 610's requirement cites that preparation of any Water Supply Assessment starts when a lead agency determines that a project must comply with California Environmental Quality Act (CEQA). If CEQA is required as part of the Subdivision Map Act approval, then SB 610 relates to that project's water supply.

Comparatively, SB 221 relates to land use and applies when new development includes a residential subdivision invoking the need of a Subdivision Map Act approval and requires that sufficient water supply for a project be available as a condition of approval for any tentative map, parcel map or development agreement. The finding that sufficient water supply exists must be based on a Written Verification (Government

Code§66473) prepared by the local water supplier that will serve the development. Verification concludes whether or not the Water Supplier can provide sufficient water during normal, single-day and multiple-dry years within a 20-year projection, based on substantial evidence that water could be conveyed to the subdivision when necessary. SB 221 calls for the identification of terms and conditions relating to when new water is being sought, and calls for the timeliness to provide projected water service to the proposed subdivision.

Upon signing these bills, the Governor re-emphasized the need to aggressively pursue infrastructure projects throughout California. Emphasis also included immediate progress on storage due to water reliability concerns for imported water, namely due to the operations of the Sacramento-San Joaquin Delta. The Governor further stated there should be continued investments in local projects that conjunctively use surface and groundwater supplies. Since the City’s 2000 UWMP, eight amendments, including SB610 and SB221, have been added to the Urban Water Management Planning Act.

1.2 PLAN PREPARATION AND COORDINATION WITH APPROPRIATE AGENCIES

This UWMP was prepared by the City of Milpitas’ Utility Engineering staff in coordination with the City’s two water wholesalers, the San Francisco Public Utilities Commission (SFPUC) and the Santa Clara Valley Water District (SCVWD), from which the City of Milpitas purchases potable water, and with the South Bay Water Recycling Program (SBWRP) for recycled water purchases. To update this UWMP, City staff met with SCVWD and Bay Area Water Supply and Conservation Agency (BAWSCA) staff, and other retailers through the SCVWD Water Retailer Committee since early 2005 to develop consistent water planning goals.

The City of Milpitas notified surrounding cities, Santa Clara County, and the two wholesale water companies of its intention to modify the UWMP. A letter was sent to each of these entities (see **Appendix B-1**).

Table 1-1 Coordination with Appropriate Agencies

Agency	Notified of UWMP Update	Participated in UWMP Development	Contacted for Assistance	Received Copy of Draft	Commented on Draft¹
Santa Clara Valley Water District (SCVWD)	✓	✓	✓	✓	
San Francisco Public Utilities Commission (SFPUC)	✓			✓	
Bay Area Water Supply and Conservation Agency (BAWSCA)	✓	✓	✓	✓	✓
City of San Jose	✓	✓	✓		
Santa Clara County	✓				
San Jose/Santa Clara Water Pollution Control Plan (WPCP)	✓		✓		

¹ As of December 6, 2005.

In addition, the City participates in several planning groups such as BAWSCA, the SCVWD's Water Retailer Users Committee, the SCVWD's Retailers Water Supply Subcommittee, the SCVWD's Water Reclamation Subcommittee, and the SCVWD's Water Conservation Subcommittee.

1.3 ADOPTION AND IMPLEMENTATION OF UWMP

The City of Milpitas placed a display ad (see **Appendix B-2**) in *The Milpitas Post* on June 2, 2005, notifying residents and businesses of its intention to modify the UWMP.

The City of Milpitas placed public hearing notices (see **Appendix B-3**) in *The Milpitas Post* on November 17, 2005 and November 24, 2005, and provided a draft Plan available for public review at City Hall. A public hearing occurred on December 6, 2005 where the City Council adopted Resolution No. 7565 (see **Appendix C**) recommending that the amended Plan be adopted and filed with the Department of Water Resources. The adopted Plan was submitted to the Department of Water Resources (DWR) and made available for public review within 30 days of filing with DWR.

2 CITY OF MILPITAS

Chapter

2

2.1 HISTORY

Milpitas' present-day origins can be traced to the presence of Spaniards in the South Bay in the latter part of the 18th century. In the mid-19th century, the area was a stopover-point for travelers between Sutter Fort and San Jose. By the late 1850s, a stage line was operating between San Jose and Oakland with stops in Milpitas. As late as the early 1950s, orchards and farms dotted the Milpitas landscape. In 1953, the Ford Motor Company began constructing an assembly plant south of downtown. The town was incorporated in January 1954.

The City of Milpitas is located near the southern tip of San Francisco Bay, forty-five miles south of San Francisco. With a population over 65,000, Milpitas is a progressive community that is an integral part of the high tech Silicon Valley. Milpitas features quality schools, conveniently located neighborhood parks and shopping centers and a population rich in diversity. The City of Fremont borders Milpitas to the north and the City of San Jose borders Milpitas to the south.

Milpitas boasts a quality of life that includes housing, moderate climate, recreational opportunities and convenient shopping. The safe and friendly environment combined with a positive City government makes Milpitas one of the model cities in the Bay Area. Milpitas is often called the "Crossroads of Silicon Valley" with most of its 14.5 square miles of land situated between two major freeways (I-880 and I-680), State Route 237, and a county expressway. The light rail line opened for service in 2004 and an extension of BART, with a major multi-modal station, is in the planning stages.

Milpitas is a general law city operating under the City Council/City Manager form of government with over 550 employees. The City provides police, fire, utility, streets, parks, engineering, planning and recreation services.

2.2 LAND USE

Milpitas consists of a total 14.5 square miles, about 10.1 square miles of valley floor areas to the west and 3.5 square miles of hillside areas to the east. Industrial and commercial areas are located on the valley floor with residential areas on the valley floor and hillside. Parks and recreational open spaces are distributed throughout residential areas. There are about 1,790 acres designated for industrial uses, and 220 manufacturing plants, with products that include semiconductors, disk drives, magnetic components and voice processing systems. Other large sources of employment include school districts, City offices and the Great Mall of the Bay Area.

2.3 DEMOGRAPHIC FACTORS

The 2000 U.S. Census reported the median family household income in Milpitas was \$93,531. More than 70% of Milpitas households have an annual income that exceeds \$50,000. The homeownership rate is 73%

with a median home value of \$429,000.. Though home prices have increased over the past years, Milpitas' housing market remains affordable relative to the majority of Santa Clara County.

Milpitas is an ethnically diverse community. Asians constitute 52% of the population with Filipino the largest Asian group at 15%. Caucasians are 24%, Hispanic 17% and African-American 3%. Milpitas' average household size is 3.47 compared to the Bay Area household size of 2.69.

Milpitas has a large daytime population of over 62,000 workers. The two largest employers in Milpitas are Cisco Systems and Lifescan, Inc. with over 2,500 employees apiece.

2.4 PLANNING ASSUMPTIONS

For this UWMP, the City made the following assumptions:

- ◆ The 2002 Water Master Plan² planning information is valid plus additional population growth per ABAG projections component and through 2030. Refer to **Chapter 4** (Water Use).
- ◆ The Association of Bay Area Governments (ABAG) populations projections⁸ are representative of the future population component.
- ◆ The 2002 City of Milpitas Utility Depreciation Study³ for utility replacement.
- ◆ The 2002 Milpitas Utility Financial Master Plan⁴ projections for capital improvement, wholesale rate and infrastructure replacement funding.
- ◆ Hillside residential areas will experience limited development as a result of the City's hillside ordinances⁵ and the City's urban service area boundary redesignation⁶.
- ◆ Undeveloped commercial and industrial vacant parcels in the Valley Floor area will be developed by 2008, except for some vacant parcels within the Midtown Specific Plan area that will be developed according to the Midtown Specific Plan⁷.
- ◆ The City is considering a new Transit Area Specific Plan to provide smart growth mixed-use redevelopment near proposed Bay Area Rapid Transit (BART) and the Light Rail areas of the City. Projected growth due to this development is generally accounted for in the ABAG projections.

This UWMP provides the best information available on anticipated water demands. The City anticipates updating the Water Master Plan at least once every 7 years.

² City of Milpitas Water Master Plan. Raines, Melton & Carella Inc. December 2002.

³ City of Milpitas Utility Depreciation Study. Schaff & Wheeler. June 28, 2002.

⁴ City of Milpitas Utility Financial Master Plan, Bartle Wells Associates, April 2003.

⁵ City of Milpitas Ordinance No. 38.672, Hillside Combining District, September 15, 1992. Amended October 7, 1997.

⁶ City of Milpitas City Council Resolution 6835, Amend Urban Service Boundary, January 5, 1999.

⁷ City of Milpitas Midtown Specific Plan. April 19, 2002.

2.5 POPULATION PROJECTIONS

Table 2-1 shows total population for the City from 1975, with projections to 2030. These population numbers are based on current planning documents including the latest Association of Bay Area Governments (ABAG)⁸ population projections. Any change due to new plans adopted after this writing, will change the projections. **In the last 20 years the City has grown at an average annual rate of 2.2%.**

Table 2-1 Total Population

Year	Population	Source
1960	6,572	U.S. Census
1970	26,561	U.S. Census
1975	31,661	U.S. Census
1980	37,820	U.S. Census
1985	42,281	CA Dept. of Finance
1990	50,686	U.S. Census
1995	59,517	CA Dept. of Finance
2000	62,698	U.S. Census
2005	65,500	Assoc. of Bay Area Governments (ABAG) ⁸
2010	70,400	Assoc. of Bay Area Governments (ABAG) ⁸
2015	76,500	Assoc. of Bay Area Governments (ABAG) ⁸
2020	82,400	Assoc. of Bay Area Governments (ABAG) ⁸
2025	86,900	Assoc. of Bay Area Governments (ABAG) ⁸
2030	91,400	Assoc. of Bay Area Governments (ABAG) ⁸

2.6 CLIMATE

The City's climate is characterized by warm, dry summers and mild wet winters. Annual precipitation averages about 15 inches. Table 2-2 on page 10 provides Eto (Evapotranspiration) data, and average rainfall and temperature data for the last 30 years for the San Jose station.

2.7 FISCAL YEARS VERSUS CALENDAR YEARS

Most of the City's plans and documents use "fiscal years" instead of calendar years. A fiscal year (FY) runs from July 1 of the previous calendar year through June 30 of the following year. For example, fiscal year 04/05 runs from July 1, 2004 through June 30, 2005. In this document, even though it may not be directly stated, any two years shown as "xx/yy" refers to a fiscal year.

⁸ Projections 2005, Association of Bay Area Governments, December 2004.

Table 2-2 Climate Data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Standard Month Average ETo (Inches) ⁹	1.28	1.72	3.09	4.51	5.37	6.51	7.65	6.42	5.54	3.26	1.86	1.43	48.64
Average Rainfall (Inches) ¹⁰	2.99	3.03	2.38	1.11	.55	.10	.04	.04	.21	.73	1.64	2.37	15.04
Average Temperature (°F) ¹⁰	50.54	53.79	54.97	59.79	63.81	67.98	70.44	65.63	64.58	57.68	53.65	50.20	61

⁹ ETo data from the CIMIS website <http://www.cimis.water.ca.gov/cimis/welcome.jsp>.

¹⁰ Average rainfall and temperature data for the last 30 years from <http://www.wrcc.dri.edu/climatedata.html>.

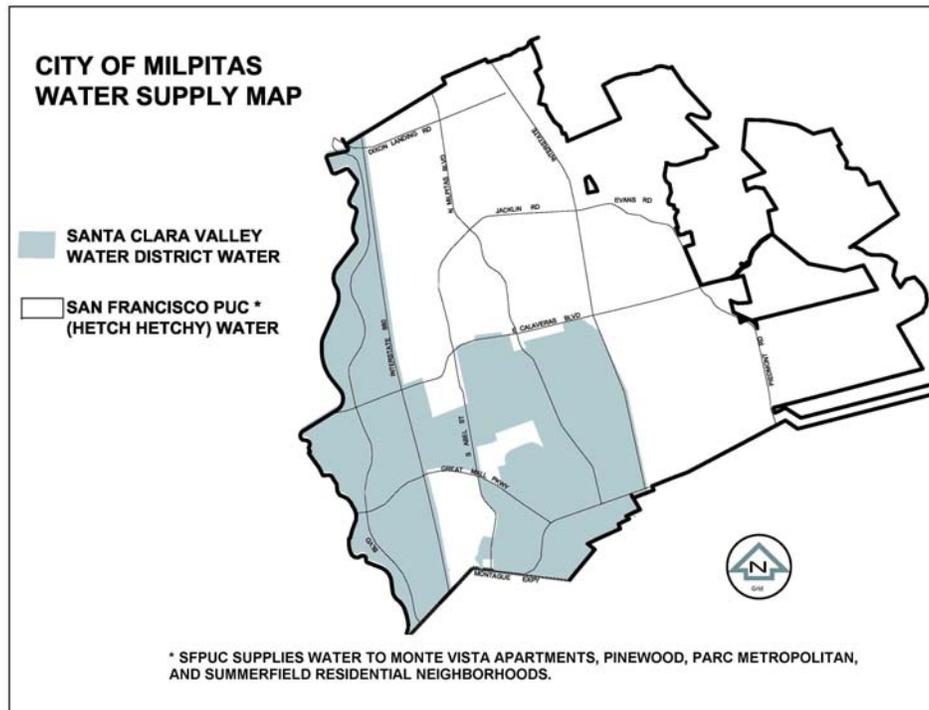
3 WATER SOURCES

The City purchases treated water from two wholesalers, the San Francisco Public Utilities Commission (SFPUC) and the Santa Clara Valley Water District (SCVWD), and uses recycled water for limited outdoor use. Roughly 65 percent of Milpitas' drinking water is from SFPUC and the remaining 35 percent from the SCVWD. These two sources are not blended under normal operating conditions, however, they are physically interconnected with isolation valves to provide emergency water supply if needed.

Since incorporation in 1954, the City distributed SFPUC water to all residents and businesses. In August 1993, the City began receiving SCVWD water and providing this water primarily to the commercial and industrial areas of the City (west of Highway 880, and also south of Calaveras Blvd. and west of Highway 680). The City provides SFPUC water to the remaining areas of the City (mostly residential including the hillside area). Figure 3-1 shows the service areas where the City distributes SFPUC and SCVWD water.

Milpitas' water distribution system consists of 5 turnouts, 5 reservoirs, 5 pump stations, 16 pressure regulator valves, and 1 well.

Figure 3-1 Water Source Map



3.1 PAST, CURRENT, AND PROJECTED WATER PURCHASES

The City anticipates relying on 3 water sources over the next 25 years – wholesale water purchased from SFPUC and SCVWD, and recycled water. Table 3-1 and Figure 3-2 (on page 13) shows past, current, and projected water supply sources available to the City of Milpitas. Most of the water use increases in the future will occur in the SCVWD service area.

The City has 1 emergency well - Pinewood Well. Pinewood well meets all drinking water standards and is permitted for unlimited use. The City policy is to use groundwater during emergencies only. The City has a second emergency well that is currently under design with anticipated construction in FY 06/07 – Curtis Well. Curtis Well will require iron and manganese treatment in order to be permitted for unlimited use. At this time, the City is planning to pursue “emergency well status” which limits use to 5 consecutive days and a maximum of 15 days annually. Water from these emergency wells is not included as a routine existing or planned source of water available to the City of Milpitas.

Table 3-1 Past, Current, and Projected Water Purchases

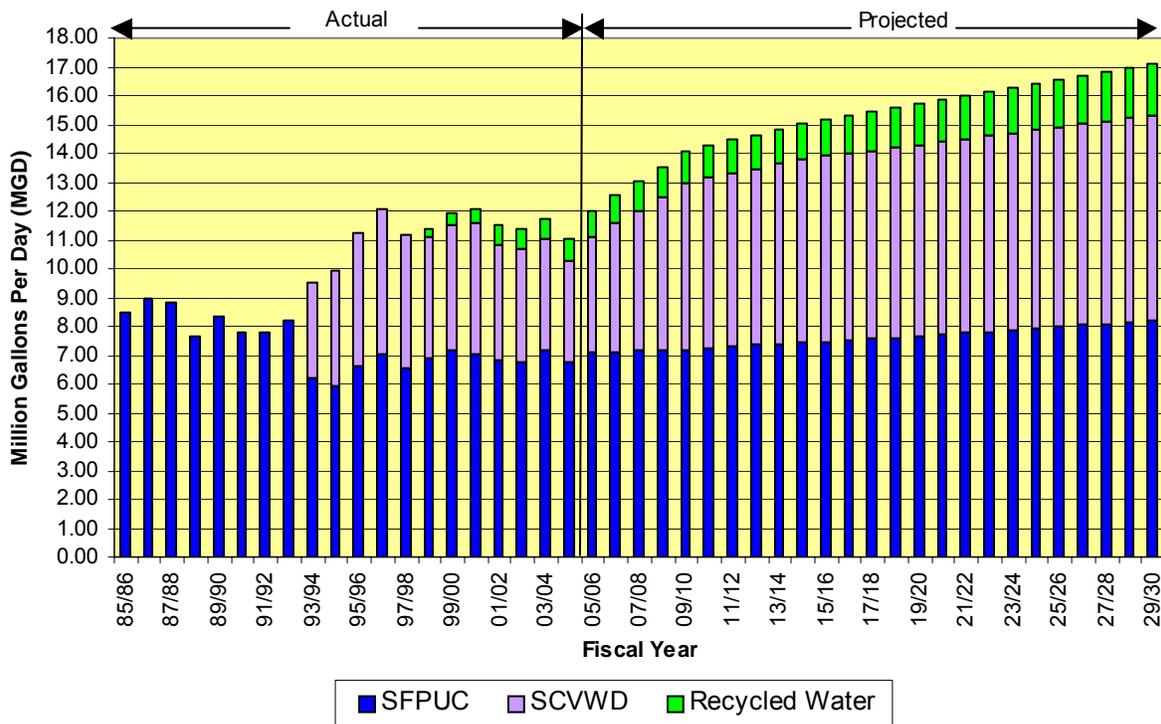
All values in mgd, million gallons per day. **Bold Shaded** values are projections.

Fiscal Year	Wholesale Water Supply Sources			Supplier Produced Groundwater	Transfers In or Out	Exchanges In or Out	Total
	SFPUC	SCVWD	Recycled Water				
85/86	8.49	0	0	NA	NA	NA	8.49
86/87	8.96	0	0	NA	NA	NA	8.96
87/88	8.85	0	0	NA	NA	NA	8.85
88/89	7.65	0	0	NA	NA	NA	7.65
89/90	8.33	0	0	NA	NA	NA	8.33
90/91	7.80	0	0	NA	NA	NA	7.80
91/92	7.81	0	0	♦	NA	NA	7.81
92/93	8.20	0	0	NA	NA	NA	8.20
93/94	6.18	3.31	0	NA	NA	NA	9.49
94/95	5.95	3.98	0	NA	NA	NA	9.93
95/96	6.62	4.59	0	NA	NA	NA	11.21
96/97	7.04	5.06	0	NA	NA	NA	12.10
97/98	6.55	4.59	0.02	NA	NA	NA	11.16
98/99	6.89	4.21	0.28	NA	NA	NA	11.38
99/00	7.18	4.33	0.44	NA	NA	NA	11.95
00/01	7.06	4.53	0.51	NA	NA	NA	12.10
01/02	6.83	4.03	0.66	NA	NA	NA	11.52
02/03	6.75	3.95	0.71	NA	NA	NA	11.41
03/04	7.14	3.91	0.70	NA	NA	NA	11.75
04/05	6.77	3.53	0.72	NA	NA	NA	11.02
05/06	7.10	3.98	0.94	NA	NA	NA	12.02
06/07	7.13	4.43	0.97	NA	NA	NA	12.53
07/08	7.15	4.88	1.01	NA	NA	NA	13.04
08/09	7.18	5.33	1.04	NA	NA	NA	13.55
09/10	7.20	5.78	1.08	NA	NA	NA	14.06
10/11	7.25	5.90	1.11	NA	NA	NA	14.26
11/12	7.30	6.01	1.15	NA	NA	NA	14.46
12/13	7.35	6.12	1.18	NA	NA	NA	14.65

Fiscal Year	Wholesale Water Supply Sources			Supplier Produced Groundwater	Transfers In or Out	Exchanges In or Out	Total
	SFPUC	SCVWD	Recycled Water				
13/14	7.39	6.24	1.22	NA	NA	NA	14.85
14/15	7.43	6.37	1.25	NA	NA	NA	15.05
15/16	7.48	6.42	1.29	NA	NA	NA	15.19
16/17	7.53	6.47	1.32	NA	NA	NA	15.32
17/18	7.57	6.53	1.35	NA	NA	NA	15.45
18/19	7.63	6.58	1.39	NA	NA	NA	15.59
19/20	7.68	6.63	1.42	NA	NA	NA	15.73
20/21	7.73	6.68	1.46	NA	NA	NA	15.87
21/22	7.78	6.73	1.49	NA	NA	NA	16.00
22/23	7.83	6.79	1.53	NA	NA	NA	16.14
23/24	7.88	6.84	1.56	NA	NA	NA	16.28
24/25	7.94	6.88	1.60	NA	NA	NA	16.42
25/26	7.99	6.93	1.63	NA	NA	NA	16.55
26/27	8.04	6.98	1.67	NA	NA	NA	16.69
27/28	8.10	7.03	1.70	NA	NA	NA	16.83
28/29	8.15	7.08	1.74	NA	NA	NA	16.97
29/30	8.20	7.13	1.77	NA	NA	NA	17.10

◆ During July 1991, the City operated Pinewood Well to determine mechanical, production, and quality capabilities.

Figure 3-2 Past, Current, and Projected Water Purchases 85/86 – 29/30



3.2 SAN FRANCISCO PUBLIC UTILITIES COMMISSION (SFPUC)

The City of Milpitas receives water from the City and County of San Francisco's regional system, operated by the SFPUC. This supply is predominantly snowmelt from the Sierra Nevada, delivered through the Hetch Hetchy aqueducts, but also includes treated water produced by the SFPUC from its local watersheds and facilities in Alameda and San Mateo Counties.

The amount of imported water available to the SFPUC's retail and wholesale customers is constrained by hydrology, physical facilities, and the institutional parameters that allocate the water supply of the Tuolumne River. Due to these constraints, the SFPUC is very dependent on reservoir storage to firm-up its water supplies.

The SFPUC serves its retail and wholesale water demands with an integrated operation of local Bay Area water production and imported water from Hetch Hetchy. In practice, the local watershed facilities are operated to capture local runoff.

The Bay Area Water Supply and Conservation Agency (BAWSCA) was created on May 27, 2003 to represent 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. BAWSCA is the only entity having authority to directly represent the needs of the cities, water districts and private utilities (wholesale customers) that depend on the regional water system. BAWSCA provides the ability for the customers of the regional system to work with San Francisco on an equal basis to ensure the water system is reliable, and to collectively and efficiently meet local responsibilities.

BAWSCA has the authority to coordinate water conservation, supply and recycling activities for its agencies; acquire water and make it available to other agencies on a wholesale basis; finance projects, including improvements to the regional water system; and build facilities jointly with other local public agencies or on its own to carry out the agency's purposes. BAWSCA's role in the development of the 2005 UWMP update is to work closely with its member agencies and the SFPUC to maintain consistency between the multiple documents being developed and to ensure overall consistency with the Water Supply Improvement Program (WSIP) and the associated environmental documents.

The business relationship between San Francisco and its wholesale customers is largely defined by the "Settlement Agreement and Master Water Sales Contract (Master Contract)" executed in 1984. The Master Contract primarily addresses the rate-making methodology used by the City in setting wholesale water rates for its wholesale customers in addition to addressing water supply and water shortages for the regional water system. The contract expires on June 30, 2009.

3.3 SANTA CLARA VALLEY WATER DISTRICT (SCVWD)

The City began receiving SCVWD water in August 1993. SCVWD's water supply system is comprised of both treatment and distribution facilities that include imported supply facilities, raw water conveyance facilities, treatment plants, local reservoirs, a treated water transmission line, and the groundwater basin.

SCVWD supplies water to local water retail agencies that, in turn, provide it to their customers in Santa Clara County. In order to maintain maximum efficiency and flexibility, the water supply comes from a variety of sources. Nearly half is from local groundwater aquifers, and more than half is imported from the Sierra Nevada through pumping stations in the Sacramento-San Joaquin River Delta. Both groundwater and

imported water are sold to retailers. Approximately 15% of the county supply is purchased directly from the SFPUC by several of the north county water retailers. SCVWD also manages the groundwater basin to the benefit of agricultural users and other independent users who pump groundwater.

Local runoff is captured in local SCVWD reservoirs for recharge into the groundwater basin or treatment at one of SCVWD's Water Treatment Plants (WTPs). The total storage capacity of these reservoirs is about 170,000 AF.

The SCVWD operates three water treatment plants (WTP) – Santa Teresa, Rinconada, and Penitencia. Water is provided to the City of Milpitas' SCVWD turnout from the Penitencia WTP or Santa Teresa WTP via the Milpitas Pipeline.

Water purchase from the SCVWD is governed by contract between the SCVWD and the City of Milpitas¹¹. The actual contract amount is adjusted periodically based on an annual delivery schedule the City submits every 3 years for the subsequent 3-year period. This schedule is binding for the subsequent 3-year period, and the City's annual purchase must be at least 95% of the maximum year contained in the schedule. The City's monthly "supply guarantee" is at least 15% of the total estimated yearly amount.

3.4 RECYCLED WATER

About 7% of the City supply is recycled water, which may be considered highly reliable since it is generated locally from the San Jose/Santa Clara Water Pollution Control Plant (WPCP) and, even during drought periods, it is expected to exceed the demand.

For a detailed description of the City's recycled water program, refer to Chapter 7 on page 43.

3.5 TRANSFER AND EXCHANGE OPPORTUNITIES

The City does not have any direct exchange opportunities that provide for reduced costs or improved water quality. Exchange opportunities do exist at the wholesaler level as described in Section 3.6, page 16, of this chapter.

The City has transfer agreements with 2 retail agencies to provide supplemental water supply when regular supplies are limited or not available. Each is described below in more detail.

► **City of Milpitas/San Jose Water Company (SJWC) Intertie**

The Milpitas/SJWC intertie agreement, dated March 7, 1973, is a one-way relief connection for the City of Milpitas. (SJWC reserves the right to provide for a two-way mutual relief connection if deemed necessary in the future.) The agreement remains in effect until either party terminates it by written notice 90 days prior to the termination date.

The purpose of the intertie is to supply supplemental water to the City of Milpitas for a limited period of time due to war, civil disaster, water supply failure due to power failure, mechanical failure, pipe break or temporary sanding of a well. Milpitas has the right to obtain water from SJWC within two hours of

¹¹ Water Supply Contract between the Santa Clara Valley Water District and the City of Milpitas, September 4, 1984.

notification to the extent that SJWC is able to supply water. Water charges will be based on the current SJWC tariff schedule. The maximum flow is estimated at 1800 gpm or 2.6 mgd and would provide supply to the City's SFPUC service area.

► **Milpitas/Alameda County Water District (AWCD) Intertie**

The Milpitas/ACWD intertie agreement, dated December 21, 1995, provides 2 two-way mutual relief connections. The agreement remains in effect until either party terminates it by written notice 90 days prior to the termination date.

The purpose of the intertie is to supply supplemental water for a limited period of time due to war, civil disaster, failure of water supply due to power failure, mechanical failure, pipe break or temporary sanding of a well. Milpitas has a right to obtain water from ACWD within two hours of notification to the extent that ACWD is able to supply such water. Water charges will be based on the current ACWD tariff schedule. The maximum capacity for both connections is estimated at 3,125 gpm, or 4.5 mgd, and would provide supply to the City's SFPUC service area.

3.6 PLANNED WATER SUPPLY PROJECTS AND PROGRAMS

► **San Francisco Public Utilities Commission (SFPUC)**

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 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.

The origins of the WSIP are rooted in the "Water Supply Master Plan" (April 2000). 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 water system improvements. Also in 2002, Governor Davis approved Assembly Bill No. 1823, the Wholesale Regional Water System Security and Reliability Act, which identifies several projects shown in the WSIP. The WSIP is expected to be completed in 2016. Refer to SFPUC's 2005 UWMP for locations of the various capital improvement projects which comprise the WSIP.

In May 2002, SFPUC adopted a \$2.9 billion capital improvement program (CIP) to rebuild and retrofit the regional water system to improve system reliability, especially to ensure seismic safety. This action was the result of intense advocacy by the wholesale customers of the regional water system. At the same time, the wholesale customers worked with state legislators who represent their service areas to secure state legislation to ensure the system is rebuilt. AB 1823, enacted in 2002, amended the state water code to require the SFPUC to adopt and implement the CIP, and to submit progress reports to the Joint Legislative Audit Committee, the California Seismic Safety Commission and the Department of Health Services, among other requirements. Improvement costs have recently been estimated at \$4 billion.

Many parts of the regional water system are 75-100 years old and/or do not meet today's seismic codes. Major pipelines cross active earthquake faults and according to the U.S. Geological Service, there is a 70 percent likelihood that an earthquake, the size of the devastating 1906 San Francisco earthquake, will occur within the next 30 years. As reported in one SFPUC study commissioned in 2000, a major earthquake could cripple the system to such an extent that service might not be restored for 20-30 days or longer. For this reason, AB 1823 purposefully singled out nine key projects among the 38 projects in the CIP for quick action.

These nine projects are intended to ensure that should a large seismic event occur, the system can remain relatively intact and continue to deliver water to the 2.4 million people and business that depend on it.

SFPUC has an intertie with SCVWD which can provide water to either agency under emergency conditions or during planned shutdowns with prior notice.

► **Santa Clara Valley Water District (SCVWD)**

The SCVWD uses an Integrated Water Resource Planning (IWRP) process to enable SCVWD to make sound investment decisions on long-term water supply management for Santa Clara County communities. The IWRP approaches water supply issues broadly and inclusively, incorporating community involvement and flexibility to respond to changing and uncertain future conditions. SCVWD's first IWRP report was finalized in 1997. That report relied heavily on stakeholder participation to identify several alternative water resource strategies and rank them against planning objectives that ultimately resulted in a final preferred strategy. That strategy identified three programs corresponding to a range of future water shortage levels, with components phased in over time, based on demand. The 1996 IWRP report called for periodic updates to monitor and react to changing conditions.

The basic work of IWRP 2003 was to develop a planning framework and supporting modeling tools that enable SCVWD to fairly compare investment options in an environment of continual change and emerging opportunities. That framework was designed to provide a consistent and thorough process to help SCVWD identify and select specific water resource investments. IWRP 2003 culminated with the production of a draft Study document. The IWRP 2003 study updated the water supply outlook for changes since the initial IWRP. The evaluation was based on a best estimate of the water demand and water supply outlook through 2040. Future water demand was estimated based on a combination of data from the Association of Bay Area Governments, Department of Finance and general plans from cities and the County. The demand projection did not distinguish between the demand being met by SCVWD water supply or SFPUC supply.

The key findings from IWRP 2003 are: 1) securing baseline supplies is top priority for ensuring reliability, 2) a mix of three types of new water supply investments makes the best water supply portfolios, and 3) local supplies decrease vulnerability to risk. SCVWD's baseline includes existing water supplies, infrastructure, and programs, including the groundwater basins, reservoirs, imported water supplies, water rights, water use efficiency programs, and water utility infrastructure. Additional investments will be necessary to meet future projected shortfalls between demands and supply - these investments should be a mix of all-weather supplies, storage, and dry-year response.

Based upon the findings above, the IWRP 2003 provides three recommendations to ensure reliability through 2040.

1. Secure the Baseline

SCVWD's baseline water supply serves as the foundation for future water resource investments. The IWRP 2003 study recommends that SCVWD take steps to secure this baseline. The key steps and SCVWD's progress are summarized below.

Improve infrastructure reliability

SCVWD is currently evaluating the condition of their water treatment plants and distribution system. Improving local infrastructure is vital to ensuring reliability of both the water treatment and conveyance systems during emergencies.

Expand groundwater management

Local groundwater basins supply nearly half of the water used annually in the County and also provides emergency reserve for droughts or outages. SCVWD is considering development of SCVWD owned groundwater extraction facilities to utilize this resource during emergencies -- particularly during outages to the treated water system -- and to maximize conjunctive use.

Sustain existing supplies

SCVWD is making effort to protect imported water supplies by resolving contract and policy issues, supporting Bay-Delta system improvements, resolving the San Luis Reservoir low-point problem, and supporting SFPUC efforts to implement a Capital Improvement Program and to secure the long-term reliability of SFPUC supplies in the County. Local water supplies can be sustained by maintaining local water rights and protecting the local groundwater basins.

Reaffirm commitments to water conservation and recycling

SCVWD has made a serious commitment to conservation and recycling.

Continue to provide clean, safe drinking water

SCVWD has an aggressive source water protection program in order to meet and exceed water quality standards by conducting ongoing improvements to treatment facilities and operations for blending.

2. Implement the “No Regrets” Portfolio for Near-Term Reliability (Phase I)

IWRP 2003 identified a “No Regrets” investment portfolio that helps ensure reliability through about 2020, depending on how risk factors continue to unfold. With these investments potential shortages through about year 2020 are reduced to levels that can be managed through contingency planning and response, including spot market transfers or demand management measures. This portfolio was nicknamed “No Regrets” because its implementation is unlikely to cause anyone to regret it later. The elements are cost-effective, environment-friendly, and flexible with no major capital construction. IWRP 2003 stakeholders endorsed the No Regrets portfolio, which calls for the following new near-term investments:

- ◆ 28,000 AF of additional annual savings from agricultural, and municipal & industrial conservation.
- ◆ 20,000 AF of additional groundwater recharge capacity.
- ◆ 60,000 AF of additional capacity in the Semitropic Water Bank.

3. Prepare for the Long Term - Flexible Options for Long Term Planning

SCVWD recognizes that it must prepare now to make the difficult decisions that will be needed to meet dry-year water demands beyond about year 2020. When planning for uncertainties more than a decade away, there is not a single, simple solution to managing risk and ensuring water supply reliability. IWRP 2003 recommends the following approach to keep water supply options open.

2011 to 2020 (Phase II)

IWRP 2003 outlined several possible response strategies to address several risk likely scenarios to meet future demand through the year 2010. The IWRP shows the six different scenarios analyzed in the IWRP 2003 process, and the response strategies that would be required to achieve a high level of reliability for each scenario to the year 2020. Based upon current projections it appears that some of these strategies may be deferred and the direction SCVWD finally pursues will reflect how risks over the next 5 years actually unfold.

2021 to 2040 (Phase III)

Because the impacts of risks 20 to 40 years out are uncertain, and because actions and decisions in the near term can significantly affect the future water supply outlook, IWRP 2003 did not present specific recommendations for investments beyond the year 2020. Rather, it presented general descriptions of the

types of investments that may be needed to manage these risks in the more distant future. (See IWRP 2003's Figure 8-2).

Other critical steps to ensure long-term water supply reliability include monitoring for risks, new opportunities, and technology improvements; further investigating desalination feasibility and recycled water acceptance and marketability; exploring potential water management and water quality improvement alternatives; and maximizing external funding.

► **City of Milpitas**

The City is able to meet future projected water needs from wholesale water purchases as identified in Table 3-1 on page 12. The City does not have other future projects or programs that it will be implementing for water supply augmentation. The City recently completed a seismic vulnerability study. As a result of the study, future designs of the backbone water distribution line includes restrained joints. The City has identified the beginning of an infrastructure replacement program in the 5-year Capital Improvement Program.

3.7 DESALINATED WATER OPPORTUNITIES

Desalination of sea water, bay waters or brackish groundwater has the potential to be an important element in the continued supply reliability of the region. Based on SCVWD's IWRP 2003 analysis, using desalination to augment existing supplies performs better than recycled water because the projects would be located in North County (where most shortages after 2010 occur) and such augmentation can enhance water quality through direct use or blending with groundwater or treated water.

Desalination involves the removal of salts from brackish groundwater or Bay/sea water to provide a high-quality potable water supply. Desalination is a previously underutilized source that could offset the need for traditional diversions from streams and the Bay-Delta. Desalination is seen as a promising way to expand supply diversity and increase water reliability, through a new source of high-quality potable water in the long term. Desalination could provide the following benefits:

1. Provide additional sources of water during emergencies such as earthquakes.
2. Provide a supplemental supply source during extended drought periods.
3. Allow other major facilities such as treatment plants, transmission mains, and pump stations to be taken out of service for an extended period of time for maintenance or repairs.
4. Provide a full-time supplemental water supply to increase the diversity of the agencies' water supply portfolios, which would increase reliability.

Improvements in technology have made desalination a more feasible water supply option. However, the cost and environmental impacts of brine disposal can be significant.

► **Bay Area Regional Desalination Project**

The Bay Area's four largest water agencies, East Bay Municipal Utility District, SFPUC, Contra Costa Water District and SCVWD, are jointly exploring developing regional desalination facilities that could benefit 5.4 million Bay Area residents and businesses served by these agencies. The Bay Area Regional Desalination

Project may consist of one or more desalination facilities, with an ultimate total capacity of up to 120 million gallons per day. The preliminary project schedule is as follows:

1. Phase 1 Pre-Feasibility Study, Completed (October 2003)
2. Phase 2 Pre-Feasibility Study (December 2004)
3. Detailed Feasibility and Environmental Study, 2 years (December 2006)
4. Final Design and Construction, 3 years (December 2009)
5. Public outreach will occur during this phase of the project.

The Phase 1 Pre- Feasibility Study completed in 2003, concluded that there are at least three locations in the Bay Area where a regional desalination facility could be located without any fatal flaws. The three sites that ranked the highest were: Mirant Pittsburg power plant site, Pittsburg; Near Bay Bridge site, Oakland; and Oceanside site, San Francisco. Siting a regional desalination plant presents many regulatory and technical challenges. Cooperation of the four partner agencies in this effort will enhance the project's chances of success.

A Phase 2 Pre-Feasibility Study will be conducted to further analyze the three sites identified in the Phase 1 Pre-Feasibility Study, and to better define the desalination project facilities. The planned uses of the product water by each of the agencies, the institutional arrangements between the agencies, geotechnical and hazardous waste reconnaissance, preliminary environmental screening, and the conceptual engineering design of the treatment facilities will be performed during the second phase. If a specific project is selected, necessary inter-agency agreements would be developed to finance, design, build, and operate the facilities.

► **Brackish Groundwater**

The SCVWD is working on brackish groundwater desalination research studies through research universities like Stanford University, using SCVWD funds and grant money from DWR in order to determine potential for brackish groundwater treatment in Santa Clara County. The Feasibility of Brackish Groundwater Reuse project will investigate the feasibility of implementing brackish groundwater reuse alternatives in Santa Clara County to supplement expected shortages in future supplies of potable water.

Pajaro Watershed Brackish Groundwater Desalination Feasibility Study

The SCVWD and San Benito County Water District (SBCWD) are the joint recipients of \$245,000 in Proposition 50 grants to conduct a \$490,000 Brackish water feasibility Study in the Pajaro basin. The Pajaro River watershed joins the northern portion of San Benito County and the southern portion of Santa Clara County. In addition to this common watershed, the agencies share an imported water supply via the Central Valley Project's (CVP) San Felipe System. Although the upper Pajaro River Watershed already offers each of the agencies a local groundwater supply to complement their CVP imported supply, several pockets of historically poor quality groundwater lay unusable within that watershed to agencies as an municipal and industrial (M&I) water supply. Both agencies are interested in conducting a feasibility study to investigate a brackish groundwater desalination facility in the region to complement their CVP supply with a reliable local source.

4 WATER USE

Based upon ABAG 2002 population projections, potable water demand is estimated to be 15.33¹² mgd in 29/30, an increase of 3.88 mgd compared to 11.45¹³ mgd in 00/01. The 3.8 mgd increase was determined to be adequate to meet the demands of anticipated future developments as identified in the 2002 Water Master Plan, 2002 Mid Town Specific Plan, 2005 Transit Area Specific Plan and other minor general plan amendments including the KB Homes Residential Development, the KB Commercial Development, and the California/Swenson Residential Development.

4.1 WATER USE BY CUSTOMER TYPE - PAST, CURRENT AND FUTURE

The City maintains water use information for residential, commercial, industrial, institutional/governmental, and irrigation (potable and recycled) water users. Table 4-1 and Figure 4-1 (page 24) illustrates past, current, and future water demands among these user categories. Over the past 10 years, residential water use averages about 45% of all water use. All customer accounts are metered.

Table 4-1 Past, Current, and Projected Water Use

Does not include Unaccounted-for Water. All values in mgd, million gallons per day. **Bold Shaded** values are projections.

Fiscal Year	Single Family ¹⁴	Multi-Family ¹⁵	Commercial	Industrial	Institutional	Potable Irrigation	Recycled Irrigation	TOTAL
85/86				7.75			0.00	7.75
86/87				8.21			0.00	8.21
87/88				8.51			0.00	8.51
88/89				7.15			0.00	7.15
89/90				7.85			0.00	7.85
90/91				7.19			0.00	7.19
91/92				7.25			0.00	7.25
92/93				7.89			0.00	7.89
93/94				8.35			0.00	8.35
94/95	3.26	0.94	0.65	2.58	0.44	1.48	0.00	9.35
95/96	3.67	1.02	0.70	2.98	0.45	1.76	0.00	10.58
96/97	3.80	1.05	0.81	3.16	0.44	1.86	0.00	11.12

¹² 15.33 mgd is calculated from the SFPUC Wholesale Customer Water Demand Projections Technical Report, November 2004, Table 5-1. It is Total Water Use of 17.10 mgd (which already includes 0.60 mgd for additional Conservation per SFPUC 2003 Purchase Estimates Technical Report, December 2004, Table 7 where water conservation program implementation, option B, would result in a 0.60 mgd savings by 2030) from Table 4-2 (page 22) minus Recycled Water Use of 1.77 mgd from Table 4-1. 17.10-1.77=15.33 mgd.

¹³ 11.45 mgd is calculated from the SFPUC Wholesale Customer Water Demand Projections Technical Report, November 2004, Table 5-1. It is Total City-wide Water Use of 11.96 mgd from Table 4-2 (page 22) minus Recycled Water Use of 0.51 mgd from Table 4-1. 11.96-0.51=11.45 mgd.

¹⁴ Single family Residential consists of the City's user categories Single family, Duplexes, Condos/Townhouses, and Mobile Homes.

¹⁵ Multi-family Residential consists of the City's user category Multi-family.

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Fiscal Year	Single Family ¹⁴	Multi-Family ¹⁵	Commercial	Industrial	Institutional	Potable Irrigation	Recycled Irrigation	TOTAL
97/98	3.60	1.11	0.88	3.00	0.39	1.64	0.02	10.64
98/99	3.66	1.10	0.98	2.37	0.47	1.52	0.28	10.38
99/00	3.90	1.18	1.09	2.50	0.47	2.09	0.44	11.67
00/01	3.84	1.38	1.19	2.56	0.65	1.61	0.51	11.74
01/02	3.83	1.14	1.15	2.08	0.43	1.67	0.66	10.96
02/03	3.83	1.21	1.19	1.74	0.52	1.72	0.71	10.92
03/04	3.88	1.25	1.16	1.58	0.53	1.66	0.70	10.76
04/05	3.60	1.18	1.12	1.53	0.45	1.49	0.72	10.09
05/06	3.77	1.19	1.06	2.35	0.50	1.53	0.94	11.34
06/07	3.93	1.24	1.10	2.45	0.53	1.61	0.97	11.83
07/08	4.09	1.29	1.14	2.55	0.55	1.68	1.01	12.31
08/09	4.24	1.33	1.19	2.65	0.57	1.77	1.04	12.79
09/10	4.40	1.39	1.23	2.75	0.59	1.82	1.08	13.26
10/11	4.48	1.41	1.25	2.78	0.60	1.83	1.11	13.46
11/12	4.53	1.43	1.28	2.82	0.61	1.83	1.15	13.65
12/13	4.60	1.45	1.29	2.86	0.62	1.83	1.18	13.83
13/14	4.64	1.47	1.31	2.90	0.64	1.84	1.22	14.02
14/15	4.72	1.49	1.33	2.94	0.64	1.84	1.25	14.21
15/16	4.74	1.51	1.34	2.97	0.66	1.83	1.29	14.34
16/17	4.80	1.52	1.36	2.99	0.66	1.82	1.32	14.47
17/18	4.83	1.54	1.37	3.02	0.68	1.80	1.35	14.59
18/19	4.87	1.55	1.39	3.05	0.69	1.79	1.39	14.73
19/20	4.91	1.57	1.40	3.08	0.70	1.78	1.42	14.86
20/21	4.95	1.58	1.42	3.10	0.70	1.78	1.46	14.99
21/22	4.98	1.60	1.43	3.12	0.72	1.77	1.49	15.11
22/23	5.02	1.62	1.44	3.15	0.72	1.77	1.53	15.25
23/24	5.06	1.63	1.46	3.18	0.73	1.76	1.56	15.38
24/25	5.10	1.65	1.47	3.20	0.74	1.76	1.60	15.52
25/26	5.14	1.66	1.48	3.23	0.74	1.76	1.63	15.64
26/27	5.17	1.67	1.50	3.25	0.76	1.75	1.67	15.77
27/28	5.22	1.69	1.51	3.28	0.76	1.75	1.70	15.91
28/29	5.25	1.71	1.52	3.30	0.78	1.74	1.74	16.04
29/30	5.29	1.72	1.53	3.33	0.78	1.74	1.77	16.16

Table 4-2 Total Water Use
Bold Shaded values are projections.

Fiscal Year	Unaccounted-for-Water ¹⁶ (mgd)	Water Sales ¹⁷ (mgd)	TOTAL Water Use (mgd)
85/86	0.74	7.75	8.49
86/87	0.75	8.21	8.96
87/88	0.34	8.51	8.85
88/89	0.50	7.15	7.65
89/90	0.48	7.85	8.33

¹⁶ Unaccounted-for-water values from Table 4-4 (Unaccounted-for-Water) on page 28.

¹⁷ Water Sales from Table 4-1 (Past, Current, and Projected Water Use) on page 21.

Fiscal Year	Unaccounted-for-Water ¹⁶ (mgd)	Water Sales ¹⁷ (mgd)	TOTAL Water Use (mgd)
90/91	0.61	7.19	7.80
91/92	0.56	7.25	7.81
92/93	0.31	7.89	8.20
93/94	1.14	8.35	9.49
94/95	0.58	9.35	9.93
95/96	0.63	10.58	11.21
96/97	0.98	11.12	12.10
97/98	0.52	10.64	11.16
98/99	1.00	10.38	11.38
99/00	0.28	11.67	11.95
00/01	0.36	11.74	12.10
01/02	0.56	10.96	11.52
02/03	0.49	10.92	11.41
03/04	0.99	10.76	11.75
04/05	0.93	10.09	11.02
05/06	0.68	11.34	12.02
06/07	0.70	11.83	12.53
07/08	0.73	12.31	13.04
08/09	0.76	12.79	13.55
09/10	0.79	13.26	14.05
10/11	0.80	13.46	14.26
11/12	0.81	13.65	14.46
12/13	0.82	13.83	14.65
13/14	0.83	14.02	14.85
14/15	0.84	14.21	15.05
15/16	0.85	14.34	15.19
16/17	0.85	14.47	15.32
17/18	0.86	14.59	15.45
18/19	0.86	14.73	15.59
19/20	0.87	14.86	15.73
20/21	0.88	14.99	15.87
21/22	0.89	15.11	16.00
22/23	0.89	15.25	16.14
23/24	0.90	15.38	16.28
24/25	0.90	15.52	16.42
25/26	0.91	15.64	16.55
26/27	0.92	15.77	16.69
27/28	0.92	15.91	16.83
28/29	0.93	16.04	16.97
29/30	0.94	16.16	17.10

Figure 4-1 Past, Current, and Projected Total Water Use 85/86 – 29/30

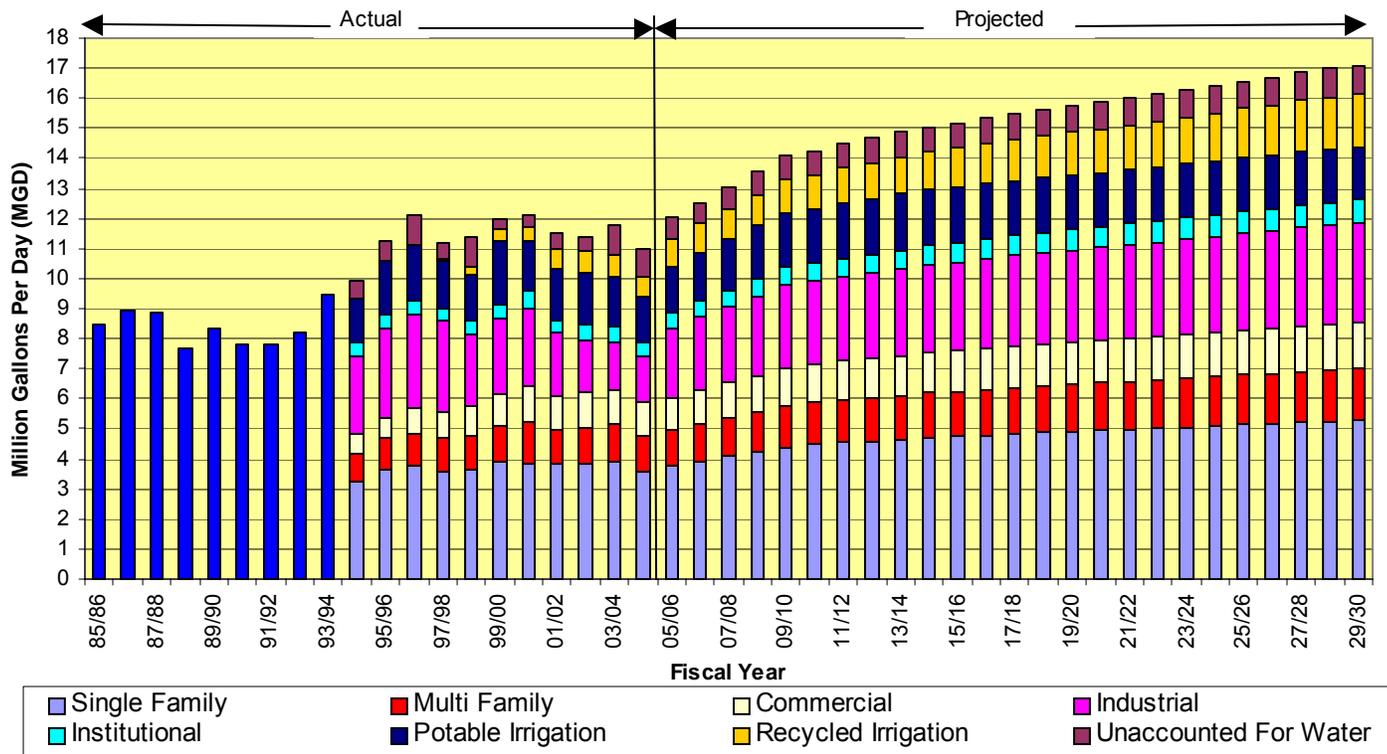


Figure 4-2 shows a pie chart of the breakdown of water use in 04/05 by user category. Residential use accounts for 48% (with single-family usage at 36%), non-residential 30%, and irrigation 22% (with 7% recycled water use).

Water rationing in the City occurred during the following periods:

- Mid-1977 through February 1978
- July 1988 through May 1989
- July 1990 through March 1993

High demand occurred in FY 86/87 prior to mandatory water rationing. Mandatory water rationing occurred during most of the period between June 1988 – March 1993. This resulted in a drop in water use from 9.1 mgd in 1987 to 8.2 mgd in 1992 (10.1% decrease) despite a growth of about 22% in population. The City adopted more rigorous rationing during FY 91/92, but rescinded it on April 23, 1991. The impact of the drought is evident by the reduction in use during the period rationing was in effect.

Figure 4-2 04/05 Water Use by User Category

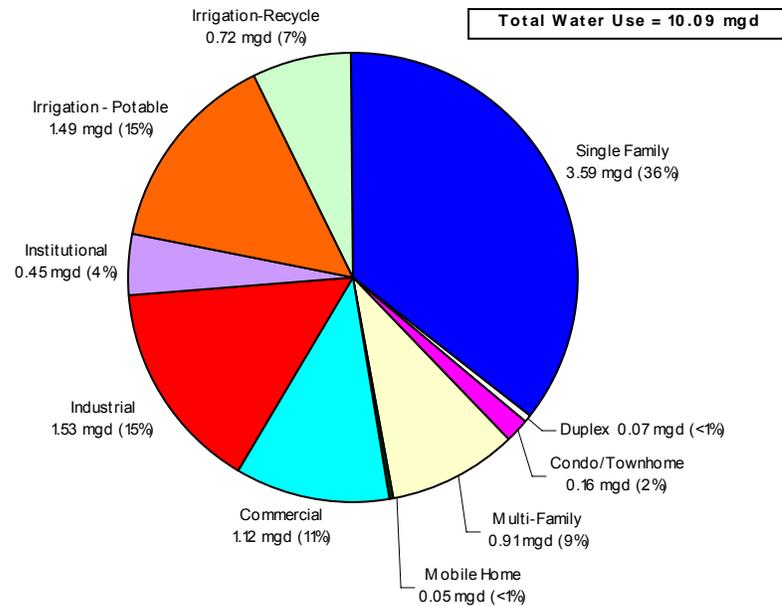
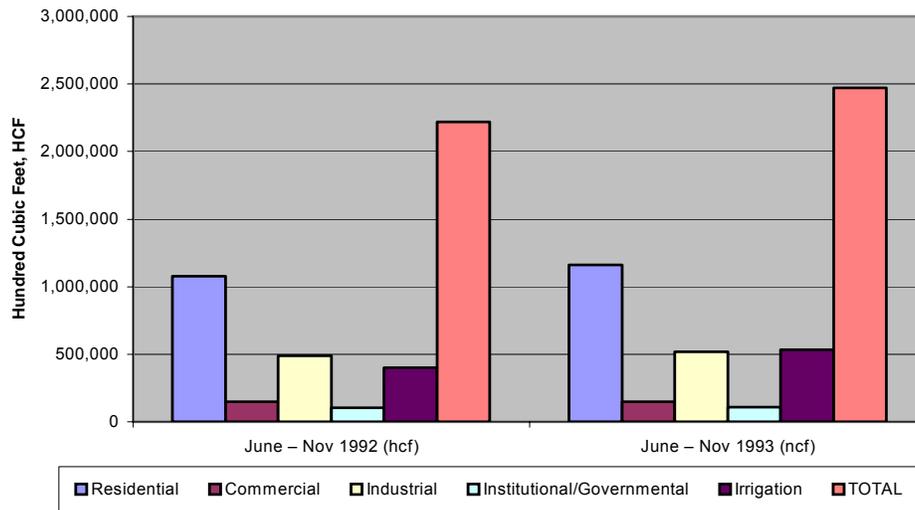


Table 4-3 and Figure 4-3 (on page 26) compare water usage by user category during and after the drought (for the periods June-November 1992 and June-November 1993). As expected, water use increased when drought rationing ended. The irrigation/landscaping usage increased at the fastest rate of 32.8% since this category saw the largest mandated cutbacks during the drought. Overall, water use increased 11.2%.

Table 4-3 Water Use Comparison, During vs. After Drought
June – November 1992 vs. June – November 1993

User Category	June – Nov 1992 (mgd)	June – Nov 1993 (mgd)	% Change
Residential	2.21	2.38	7.64%
Commercial	0.30	0.30	0.31%
Industrial	1.00	1.07	6.27%
Institutional/Governmental	0.21	0.22	3.86%
Irrigation	0.82	1.09	32.84%
TOTAL	4.55	5.06	11.24%

Figure 4-3 Water Use Comparison, During vs. After Drought
June – November 1992 vs. June – November 1993



► **Residential Sector**

The City’s approved Midtown Area will be a mixed-use community that includes high-density, transit-oriented housing and a central community “gathering place,” while maintaining needed industrial, service and commercial uses. The plan is long-range in nature, intended to guide development for the next 20 years. Some land in the Midtown Area is undeveloped and readily developable over the short-term, while other parcels may be developed over a longer time frame. Overall, the Midtown Specific Plan⁷ provides for up to 4,860 new dwelling units and supporting retail development; new office developments at key locations; bicycle and pedestrian trails linking the areas together and new parks to serve residential development.

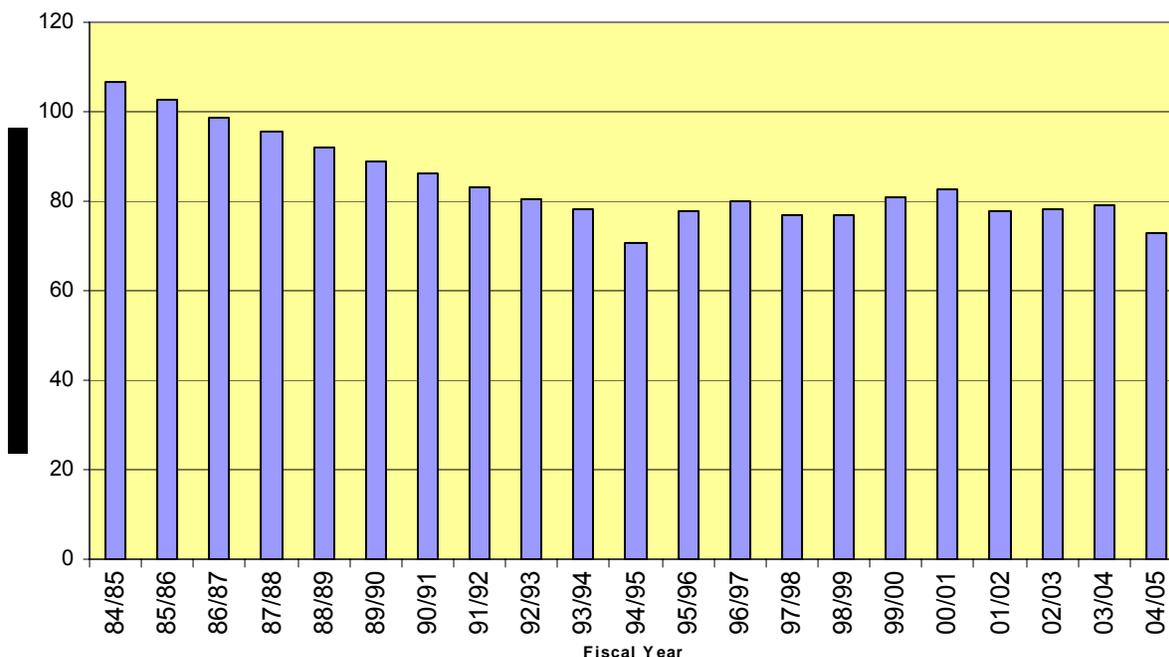
The Midtown Specific Plan would generate a total water demand of approximately 1.27 million gallons per day (mgd) of average daily flow or a yearly consumption of 1,420 acre-feet (AF) of water. The net new demand would raise the total demand on the supply from SCVWD by approximately 1,025 AF per year. The City’s contract with SCVWD allows for increases in purchased water to accommodate growth.

Under the Concept Plan¹⁸, the Transit Area is expected to add new residential and mixed use developments. New residential neighborhoods will consist of smaller mixed use areas requiring commercial use on the ground floor with residential units above it, high-density mixed use with commercial use on the ground floor with residential units above it, or high-density residential neighborhoods served by a park or parks.

Figure 4-4 shows actual residential water use per capita by fiscal year. Water use per capita has averaged 78 gpdpc in the last 10 years.

¹⁸ City of Milpitas Transit Area Concept Plan. Dyett & Bhatia. Adopted April 2005.

Figure 4-4 Actual Residential Water Use per Capita 84/85 – 04/05



► **Commercial Sector**

The City has a complex mix of commercial customers, ranging from beauty shops, supermarkets, and gas stations to multi-story office buildings, outlet and regional shopping centers, and high-volume restaurants and other facilities serving the visitor population. The approved Midtown Specific Plan⁷ provides for up to 4,860 new dwelling units and supporting retail development; new office developments at key locations; bicycle and pedestrian trails linking the areas together and new parks to serve residential development.

The Midtown Specific Plan would generate a total water demand of approximately 1.27 million gallons per day (mgd) of average daily flow or a yearly consumption of 1,420 acre-feet (AF) of water. The net new demand would raise the total demand on the supply from SCVWD by approximately 1,025 AF per year. The City’s contract with SCVWD allows for increases in purchased water to accommodate growth.

Under the Concept Plan¹⁸, the Transit Area is expected to add more concentrated non-residential development (mixed-use). Commercial use will consist of smaller mixed use areas requiring commercial use on the ground floor with residential units above it and high-density mixed use with commercial use on the ground floor with residential units above it.

► **Industrial Sector**

The City has a large industrial sector, primarily centered on heavy manufacturing and some food production (canning and bottling). This sector is projected to grow over the next 20 years, thus increasing future water use.

Under the Transit Area Concept Plan¹⁸, industrial areas will be transitioned to areas that support higher intensity mixed use.

► **Institutional/Governmental Sector**

The City has a stable institutional/governmental sector, primarily local government, schools, visitor serving public facilities, a correctional facility, and outpatient medical facilities. This sector is not projected to have major water use increases as the City approaches buildout.

► **Irrigation Sector**

Due to continued growth in the commercial and industrial sectors, irrigation demand is expected to increase. Landscape conversions (recycled water use) and increased efficiency (to more efficient irrigation systems) will help offset future potable water demand increases in this sector.

4.2 UNACCOUNTED-FOR-WATER

One measure of the integrity of a water system is “unaccounted-for-water” – the difference between the amount of water entering a system (supplied or purchased) and the amount of water sold, expressed as a percentage. Unaccounted-for water includes water used for fire fighting, losses due to water line breaks, and leaks from the distribution system. Table 4-4 summarizes the City’s unaccounted-for-water for the last 20 years and projects it out to 29/30. The amount of water purchased is measured near the beginning of each month. Water sales are billed on a rotating basis every two months. Thus, the time frames for measurement of the two variables do not coincide, however, the average over a period of years can be significant. **The average unaccounted-for-water over the last 10-year period is 6.1%.** This is considered a relatively small percentage for a retail water system.

Table 4-4 Unaccounted-for-Water

Bold Shaded values are projections.

Fiscal Year (July-June)	Water Purchases ¹⁹ (mgd)	Potable Water Sales ²⁰ (mgd)	Unaccounted-for-Water ²¹ (mgd)	Unaccounted-for-Water (%)	Unaccounted-for-Water (%) Running 10-Year Average (%)
85/86	8.49	7.75	0.74	8.7%	
86/87	8.96	8.21	0.75	8.4%	
87/88	8.85	8.51	0.34	3.8%	
88/89	7.65	7.15	0.50	6.5%	
89/90	8.33	7.85	0.48	5.8%	
90/91	7.80	7.19	0.61	7.8%	
91/92	7.81	7.25	0.56	7.2%	
92/93	8.20	7.89	0.31	3.8%	
93/94	9.49	8.35	1.14	12.0%	
94/95	9.93	9.35	0.58	5.8%	7.0%
95/96	11.21	10.58	0.63	5.7%	6.7%
96/97	12.10	11.12	0.98	8.1%	6.7%

¹⁹ Water Purchases from Table 3-1 (Past, Current, and Projected Water Purchases) on page 12 minus recycled water purchases.

²⁰ Potable Water Sales from Table 4-1 (Past, Current, and Projected Water Use) on page 21 minus recycled irrigation water use.

²¹ For FY 97/98 – FY 29/30, unaccounted-for-water does not apply to recycled water since Recycled Purchases = Recycled Sales. Therefore, recycled water purchases and sales are not included in Table 4-4. Projected unaccounted-for water assumed at 6.1% of potable water in future projections.

Fiscal Year (July-June)	Water Purchases ¹⁹ (mgd)	Potable Water Sales ²⁰ (mgd)	Unaccounted-for-Water ²¹ (mgd)	Unaccounted-for-Water (%)	Unaccounted-for-Water (%) Running 10-Year Average (%)
97/98	11.14	10.62	0.52	4.7%	6.7%
98/99	11.10	10.10	1.00	9.0%	7.0%
99/00	11.51	11.23	0.28	2.4%	6.6%
00/01	11.59	11.23	0.36	3.1%	6.1%
01/02	10.86	10.30	0.56	5.2%	5.9%
02/03	10.70	10.21	0.49	4.6%	6.0%
03/04	11.05	10.06	0.99	9.0%	5.8%
04/05	10.30	9.37	0.93	9.0%	6.1%
05/06	11.08	10.40	0.68	6.1%	
06/07	11.56	10.86	0.70	6.1%	
07/08	12.03	11.30	0.73	6.1%	
08/09	12.51	11.75	0.76	6.1%	
09/10	12.98	12.19	0.79	6.1%	
10/11	13.15	12.35	0.80	6.1%	
11/12	13.31	12.50	0.81	6.1%	
12/13	13.47	12.65	0.82	6.1%	
13/14	13.63	12.80	0.83	6.1%	
14/15	13.80	12.96	0.84	6.1%	
15/16	13.90	13.05	0.85	6.1%	
16/17	14.00	13.15	0.85	6.1%	
17/18	14.10	13.24	0.86	6.1%	
18/19	14.20	13.34	0.86	6.1%	
19/20	14.31	13.44	0.87	6.1%	
20/21	14.41	13.53	0.88	6.1%	
21/22	14.51	13.62	0.89	6.1%	
22/23	14.61	13.72	0.89	6.1%	
23/24	14.72	13.82	0.90	6.1%	
24/25	14.82	13.92	0.90	6.1%	
25/26	14.92	14.01	0.91	6.1%	
26/27	15.02	14.10	0.92	6.1%	
27/28	15.13	14.21	0.92	6.1%	
28/29	15.23	14.30	0.93	6.1%	
29/30	15.33	14.39	0.94	6.1%	

5 SUPPLY RELIABILITY FOR NORMAL, SINGLE-DRY, AND MULTIPLE-DRY WATER YEARS

Chapter

5

Supply reliability examines the water supply outlook under different hydrologic conditions in five year increments to 2030 under normal, dry year and multiple dry year conditions. Since wholesalers' water supplies are obtained from local and imported sources, each wholesaler's water supply is a function of the amount of precipitation that falls both locally and in the watersheds of the Sierra Nevada. The supply available is also a function of the facilities in place to develop the supply.

Evaluating the availability of existing and projected local water supplies requires an understanding of the driest periods that can reasonably be expected to occur. This evaluation considers how often drought events have occurred and whether they are frequent enough to warrant designing the utility's system to withstand them; how much existing supply is available during a drought; and what duration of drought is most critical to the utility's system. Over the more than 120 years of recorded rainfall, seven major drought events have occurred.

Droughts of longer duration have greater rainfall averages than shorter droughts of the same severity. Hence, the supply severity of a 1-year drought would be the worst for a system with no storage because it has the lowest rainfall and generates the least amount of water supply. A system with a large storage capacity could store a great amount of carryover storage in comparison to water needs and could go through short-term droughts by borrowing from this storage. Wholesalers' water supply systems are more vulnerable to droughts of long duration, which can exhaust the groundwater basin's operational storage.

Normal Year is a year in the historical sequence that most closely represents median runoff levels and patterns.

Single-dry Year is generally considered to be the lowest annual runoff for a watershed since the water-year beginning in 1903.

Multiple-dry Year is generally considered to be the lowest average runoff for a consecutive multiple year period (three years or more) for a watershed since 1903. For example, 1928-1934 and 1987-1992 were the two multi-year periods of lowest average runoff during the 20th century in the Central Valley basin.

5.1 SAN FRANCISCO PUBLIC UTILITIES COMMISSION (SFPUC)

The City receives water from the City and County of San Francisco's regional system, operated by SFPUC. This supply is predominantly from the Sierra Nevada, delivered through the Hetch Hetchy aqueducts, but also includes treated water produced by the SFPUC from its local facilities in Alameda and San Mateo Counties.

In 1984 the City of Milpitas, along with 29 other Bay Area water suppliers signed a Settlement Agreement and Master Water Sales Contract (Master Contract) with San Francisco, supplemented by an individual Water Supply Contract. These contracts, which expire in June 2009, provide for a 184 million gallon a day (mgd, expressed on an annual average basis) Supply Assurance to the SFPUC's wholesale customers collectively. The City of Milpitas' individual Supply Assurance is 9.232 mgd²². Although the Master Contract and accompanying Water Supply Contract expire in 2009, the Supply Assurance (which quantified San Francisco's obligation to supply water to its individual wholesale customers) survives their expiration and continues indefinitely, as noted in **Chapter 3** on page 14.

The SFPUC can meet the demands of its retail and wholesale customers in years of average and above average precipitation. The Master Contract allows the SFPUC to reduce water deliveries during droughts, emergencies and for scheduled maintenance activities. The SFPUC and all wholesale customers adopted an Interim Water Shortage Allocation Plan in 2000 to address the allocation of water between San Francisco and wholesale customers in aggregate and among individual wholesale customers during water shortages of up to 20% of system-wide use.

Determining how water supplies would be allocated in a future drought requires a number of assumptions to be made. As of today, the Interim Water Shortage Allocation Plan (IWSAP) is the only method for allocated shortages (1) between SFPUC and BAWSCA agencies as a whole and (2) among BAWSCA agencies that has been approved by the governing bodies of all agencies. The IWSAP was adopted in 2000 after a multi-year process of development involving a steering committee representative of all wholesale agencies, under the auspices of BAWUA. While the IWSAP is scheduled to expire in 2009, along with the Master Contract, it represents the most reasonable basis for estimating the impacts of a 20% system-wide shortage.

5.2 SANTA CLARA VALLEY WATER DISTRICT (SCVWD)

To maintain water supply reliability and flexibility, SCVWD's water supply includes a variety of sources including local groundwater, imported water, local surface water, and recycled water. SCVWD has an active conjunctive water management program to optimize the use of groundwater and surface water, and to prevent groundwater overdraft and land subsidence.

Long-term planning and modeling analysis performed by SCVWD as part of the Integrated Water Resources Planning Study (IWRP) and UWMP 2005 indicates that if additional investments are made, future countywide demands can reliably be met. It is the intent of SCVWD to ensure that these additional investments be undertaken in accordance with the IWRP framework, which recommends a flexible resource mix be implemented in phases over the planning horizon. This flexibility allows the District to respond to changing and uncertain future conditions.

The water supply will be reliable to meet future countywide demands. The IWRP's strength is its inherent flexibility and integrated approach to water resources management. Although this UWMP presents projections of future water supply by source, ongoing coordination with the SCVWD will be necessary to ensure projections are consistent with SCVWD's long-term water management strategies. The City will continue to work with the SCVWD to refine future water supply projections and ensure long-term planning efforts are consistent.

²² Master Contract Suburban Purchasers Guarantee, Exhibit A.

5.3 SAN JOSE/SANTA CLARA WATER POLLUTION CONTROL PLANT (WPCP)

Since the WPCP can generate excess recycled water beyond that which is being used, the recycled water is considered to be drought proof and the supply reliability is considered to be stable even during drought periods.

5.4 CITY OF MILPITAS

The reliability of the City’s water supply is dependent on its vulnerability to seasonal or climatic water shortage. Single-dry and multiple-dry years are usually based on historic records of annual runoff from a particular watershed. A multiple-dry year period is generally three or more consecutive years with the lowest average annual runoff. Since the City has multiple sources of water supplies (SFPUC, SCVWD, and WPCP), it is important to show how each individual supply will be affected by single-dry and multi-dry periods.

Table 5-1 shows the City’s supply reliability for normal, single dry, and multiple dry water years.

Table 5-1 Current (05/06) Supply Reliability

Wholesaler	Normal Water Year (mgd)	Single-Dry Water Year (mgd)	Multiple-Dry Water Years (mgd)		
			Year 1	Year 2	Year 3
SFPUC ²³	7.10	6.84	6.84	5.94	5.94
SCVWD	3.98 ²⁴	3.98	3.98	4.43	4.88
Recycled Water	0.94 ²⁵	0.94	0.94	0.97	1.01
TOTAL	12.02	11.76	11.76	11.34	11.83

5.5 SUPPLY AND DEMAND COMPARISON

Figure 5-1 (page 34) shows the current and projected water demands. Note that 04/05 was an unusual year due to higher than normal rainfall (about 30% higher than normal) and a decrease in use in the commercial sector (attributable at least partially to a depressed economy). Projections assume return to more normal rainfall and some economic rebound within the commercial sector.

Although the City has planned for adequate supplies to meet demands through 2030, the City will be impacted by drought shortages. **During drought periods, water wholesalers may not have supplies to meet demands, and some form of water allocation may be anticipated.** Chapter 8 (Water Shortage Contingency Plan) on page 47 addresses drought rationing options.

²³ Single dry year and Multiple-dry year data from SFPUC, June 1, 2005 letter, Table 1.

²⁴ Based on 05/06 projected purchases and SCVWD’s ability to meet 100% demands during drought years (per SCVWD staff).

²⁵ Based on 05/06 projected purchases and that recycled water can meet 100% demands during drought years.

Figure 5-1 Past, Current, and Projected Demand 85/86 – 29/30

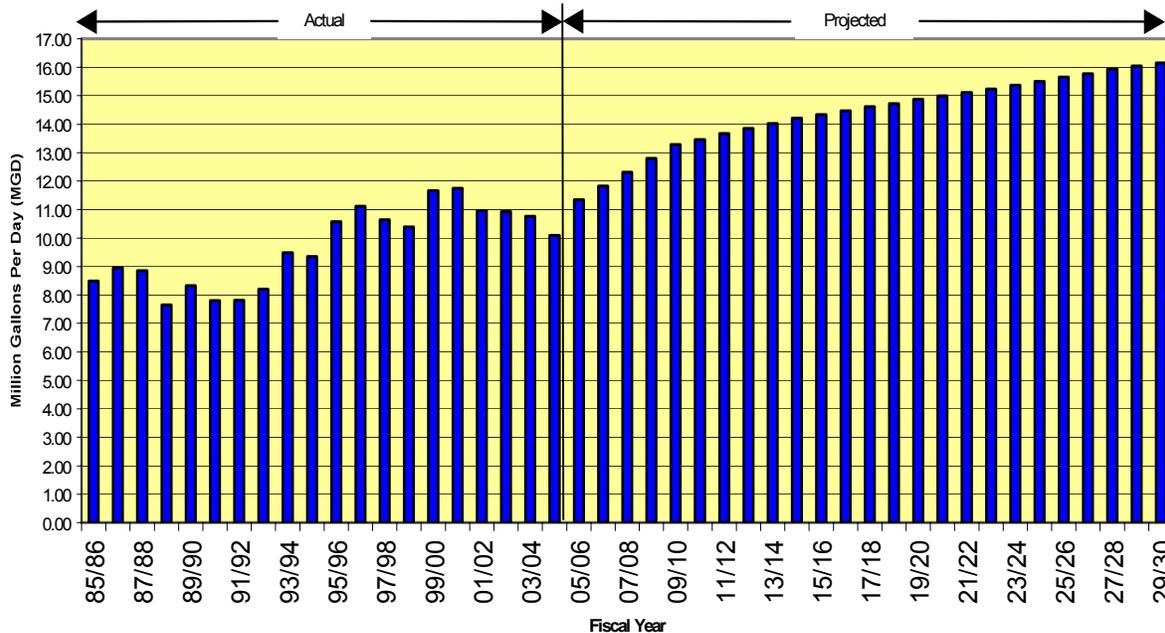


Table 5-2, Table 5-3, and Table 5-4 compares supply and demand for projected normal, single-dry, and multiple-dry water years up to FY 29/30. In each of these tables supply will be sufficient to meet demands on an overall basis. Because supply and demand will vary during the 20-year projection, the Planning Act requires agencies to project the impact of multiple-dry year periods for each 5-year period during the 20-year projects.

Table 5-5 and Table 5-6 (both on page 36) show the drought impact on the SFPUC service area for single and multiple-dry years respectively. As a result of the shortfall within the SFPUC service area during the dry periods, the City may anticipate that water supply shortfalls will occur in the SFPUC service area during droughts.

Options during droughts include imposing SFPUC service area or citywide allocations, operating supplemental water supplies (wells), adjusting the SFPUC and SCVWD service areas to supplement supplies with more SCVWD water, or a combination of these options. In any event, the City anticipates that some sort of rationing program may be imposed during extended drought periods.

Table 5-2 Projected Normal Water Year Citywide Supply and Demand Comparison

Fiscal Year	Supply (mgd)	% of Projected Normal Year ²⁶	Demand ²⁷ (mgd)	% of Year 04/05	Difference = Supply – Demand (mgd)	Difference as % of Supply	Difference as % of Demand
09/10	14.06	100.00%	14.06	116.97%	0	0.00%	0.00%
14/15	15.05	100.00%	15.05	125.21%	0	0.00%	0.00%
19/20	15.73	100.00%	15.73	130.87%	0	0.00%	0.00%
24/25	16.42	100.00%	16.42	136.61%	0	0.00%	0.00%
29/30	17.10	100.00%	17.10	142.26%	0	0.00%	0.00%

Table 5-3 Projected Single-Dry Water Year Citywide Supply and Demand Comparison ♦

Fiscal Year	Supply (mgd)	% of Projected Normal Year ²⁶	Demand ²⁷ (mgd)	% of Projected Normal Year ²⁶	Difference = Supply – Demand (mgd)	Difference as % of Supply	Difference as % of Demand
09/10	14.06	100%	14.06	100%	0	0.00%	0.00%
14/15	15.05	100%	15.05	100%	0	0.00%	0.00%
19/20	15.73	100%	15.73	100%	0	0.00%	0.00%
24/25	16.42	100%	16.42	100%	0	0.00%	0.00%
29/30	16.80	98.25%	17.10	100%	-0.30	-1.79%	-1.75%

♦ See Table 5-5 on page 36 for Single-Dry Water Year Supply and Demand Comparison for SFPUC.

Table 5-4 Projected Multiple-Dry Water Year Citywide Supply and Demand Comparison ♦

Fiscal Year	Supply ²⁸ (mgd)	% of Projected Normal Year ²⁶	Demand ²⁷ (mgd)	% of Projected Normal Year ²⁶	Difference = Supply – Demand (mgd)	Difference as % of Supply	Difference as % of Demand
05/06	11.76	97.84%	12.02	100%	-0.26	-2.21%	-2.16%
06/07	11.34	90.50%	12.53	100%	-1.19	-10.49%	-9.50%
07/08	11.83	90.72%	13.04	100%	-1.21	-10.23%	-9.28%
08/09	12.31	90.85%	13.55	100%	-1.24	-10.07%	-9.15%
09/10	12.80	91.04%	14.06	100%	-1.26	-9.84%	-8.96%
10/11	14.21	99.65%	14.26	100%	-0.05	-0.35%	-0.35%
11/12	14.28	98.76%	14.46	100%	-0.18	-1.26%	-1.24%
12/13	14.42	98.43%	14.65	100%	-0.23	-1.60%	-1.57%
13/14	14.58	98.18%	14.85	100%	-0.27	-1.85%	-1.82%
14/15	14.74	97.94%	15.05	100%	-0.31	-2.10%	-2.06%
15/16	15.14	99.74%	15.18	100%	-0.04	-0.26%	-0.26%
16/17	15.01	97.98%	15.32	100%	-0.31	-2.07%	-2.02%
17/18	15.10	97.67%	15.46	100%	-0.36	-2.38%	-2.33%
18/19	15.19	97.43%	15.59	100%	-0.40	-2.63%	-2.57%
19/20	15.27	97.08%	15.73	100%	-0.46	-3.01%	-2.92%
20/21	15.82	99.68%	15.87	100%	-0.05	-0.32%	-0.32%

²⁶ Projected Normal Year values are based on projected water supplies during a non-drought year. See Table 3-1 (Past, Current, and Projected Water Purchases) on page 12.

²⁷ Demand data from Table 4-2 (Total Water Use) on page 22.

²⁸ Supply data from Table 5-6 (Projected Multiple-Dry Water Year SFPUC Service Area Supply and Demand Comparison) on page 36 plus Projected SCVWD Purchases and Recycled Purchases from Table 3-1 on page 12.

Fiscal Year	Supply ²⁸ (mgd)	% of Projected Normal Year ²⁶	Demand ²⁷ (mgd)	% of Projected Normal Year ²⁶	Difference = Supply – Demand (mgd)	Difference as % of Supply	Difference as % of Demand
21/22	15.67	97.94%	16.00	100%	-0.33	-2.11%	-2.06%
22/23	15.77	97.71%	16.14	100%	-0.37	-2.35%	-2.29%
23/24	15.85	97.36%	16.28	100%	-0.43	-2.71%	-2.64%
24/25	15.93	97.02%	16.42	100%	-0.49	-3.08%	-2.98%
25/26	16.50	99.70%	16.55	100%	-0.05	-0.30%	-0.30%
26/27	16.33	97.84%	16.69	100%	-0.36	-2.20%	-2.16%
27/28	16.68	99.11%	16.83	100%	-0.15	-0.90%	-0.89%
28/29	16.50	97.29%	16.96	100%	-0.46	-2.79%	-2.71%
29/30	16.58	96.96%	17.10	100%	-0.52	-3.14%	-3.04%

◆ Although the overall supply may be sufficient, shortfalls will exist in the City's SFPUC service area (see Table 5-6).

Table 5-5 Projected Single-Dry Water Year SFPUC Service Area Supply and Demand Comparison

Fiscal Year	Supply ²⁹ (mgd)	% of Projected Normal Year ²⁶	Demand ²⁷ (mgd)	% of Projected Normal Year ²⁶	Difference = Supply – Demand (mgd)	Difference as % of Supply	Difference as % of Demand
09/10	7.20	100%	7.20	100%	0	0%	0%
14/15	7.43	100%	7.43	100%	0	0%	0%
19/20	7.68	100%	7.68	100%	0	0%	0%
24/25	7.94	100%	7.94	100%	0	0%	0%
29/30	7.90	96.3%	8.20	100%	-0.30	-3.80%	-3.66%

Table 5-6 Projected Multiple-Dry Water Year SFPUC Service Area Supply and Demand Comparison

Fiscal Year	Supply (mgd)	% of Projected Normal Year ²⁶	Demand ²⁷ (mgd)	% of Projected Normal Year ²⁶	Difference = Supply – Demand (mgd)	Difference as % of Supply	Difference as % of Demand
05/06	6.84	96.34%	7.10	100%	-0.26	-3.80%	-3.66%
06/07	5.94	83.31%	7.13	100%	-1.19	-20.03%	-16.69%
07/08	5.94	83.08%	7.15	100%	-1.21	-20.37%	-16.92%
08/09	5.94	82.73%	7.18	100%	-1.24	-20.88%	-17.27%
09/10	5.94	82.50%	7.20	100%	-1.26	-21.21%	-17.50%
10/11	7.20	99.31%	7.25	100%	-0.05	-0.69%	-0.69%
11/12	7.12	97.53%	7.30	100%	-0.18	-2.53%	-2.47%
12/13	7.12	96.87%	7.35	100%	-0.23	-3.23%	-3.13%
13/14	6.20	83.90%	7.39	100%	-1.19	-0.19%	-0.16%
14/15	6.20	83.40%	7.43	100%	-1.23	-0.20%	-0.17%
15/16	7.43	99.33%	7.48	100%	-0.05	-0.67%	-0.67%
16/17	7.22	95.88%	7.53	100%	-0.31	-4.29%	-4.12%
17/18	7.22	95.25%	7.58	100%	-0.36	-4.99%	-4.75%
18/19	7.22	94.63%	7.63	100%	-0.41	-5.68%	-5.37%
19/20	7.22	94.01%	7.68	100%	-0.46	-6.37%	-5.99%

²⁹ Single dry year and Multiple-dry year data from SFPUC, June 1, 2005 letter, Table 3.

**CHAPTER 5
SUPPLY RELIABILITY**

Fiscal Year	Supply (mgd)	% of Projected Normal Year²⁶	Demand²⁷ (mgd)	% of Projected Normal Year²⁶	Difference = Supply – Demand (mgd)	Difference as % of Supply	Difference as % of Demand
20/21	7.68	99.35%	7.73	100%	-0.05	-0.65%	-0.65%
21/22	7.45	95.76%	7.78	100%	-0.33	-4.43%	-4.24%
22/23	7.45	95.15%	7.83	100%	-0.38	-5.10%	-4.85%
23/24	6.49	82.40%	7.88	100%	-1.39	-0.21%	-0.18%
24/25	7.45	93.83%	7.94	100%	-0.49	-6.58%	-6.17%
25/26	7.94	99.37%	7.99	100%	-0.05	-0.63%	-0.63%
26/27	7.68	95.52%	8.04	100%	-0.36	-4.69%	-4.48%
27/28	7.68	94.81%	8.10	100%	-0.42	-5.47%	-5.19%
28/29	6.70	82.21%	8.15	100%	-1.45	-21.64%	-17.79%
29/30	6.70	81.71%	8.20	100%	-1.50	-22.39%	-18.29%

6 WASTEWATER

Chapter

6

6.1 SAN JOSE/SANTA CLARA WATER POLLUTION CONTROL PLANT

The San Jose/Santa Clara Water Pollution Control Plant (WPCP) is one of the largest advanced wastewater treatment facilities in California. It treats and cleans the wastewater of over 1.5 million people that live and work in the 300-square mile area encompassing San Jose, Santa Clara, Milpitas, Campbell, Cupertino, Los Gatos, Saratoga, and Monte Sereno. WPCP has the capacity to treat 167 million gallons of wastewater per day. It is located in San Jose, at the southernmost tip of the San Francisco Bay. Originally constructed in 1956, WPCP had the capacity to treat 36 million gallons of water per day and only provided primary treatment. In 1964, WPCP added a secondary treatment process to its system. In 1979, WPCP upgraded its wastewater treatment process to an advanced, tertiary system. Most of the final treated water is discharged as fresh water through Artesian Slough into South San Francisco Bay. About 10% is recycled through South Bay Water Recycling pipelines for landscaping, agricultural irrigation, and industrial needs around the South Bay.

WPCP's current wastewater treatment includes these key processes³⁰.

Pretreatment – This process consists of two steps. First, large objects are screened out. Second, the screened wastewater enters grit chambers where heavy inorganic material is removed.

Primary treatment – Pretreated wastewater is pumped into primary settling tanks. Solids that either settle or float are separated and removed from the waste stream.

Secondary treatment – Another two-step process. First, an “activated sludge” of living microorganisms is created as the primary effluent is injected with air in aeration basins. Next, in the secondary clarifiers, the microorganisms settle out and are returned to the aeration basins to sustain the biological process. A portion is removed and thickened prior to digestion.

Advanced treatment (nitrification) – Toxic ammonia is converted to non-toxic nitrates by nitrifier microorganisms in the nitrification-aeration basins.

Advanced treatment (filtration/chlorination) – Pumps move the effluent to the tertiary filters where solids are further removed in mixed media filters. After filtration the wastewater is chlorinated for disinfection. Because chlorine is toxic to aquatic organisms, the water is de-chlorinated (using sulfur dioxide) before discharge into the south San Francisco Bay.

Sludge handling (digestion) – A by-product of primary treatment, activated-sludge and advanced treatment processes is excess sludge. The bacteria digests the sludge under anaerobic conditions into simple compounds: carbon dioxide, water and methane, leaving only an inert residual material among others.

³⁰ San Jose/Santa Clara Water Pollution Control Plant, CH2M Hill, February 1987.

Sludge drying – Digested sludge is stored in lagoons and pumped to drying beds where 50 percent dryness is achieved.

6.2 CITY OF MILPITAS WASTEWATER

The City of Milpitas does not treat wastewater, but instead pumps its wastewater, consisting primarily of industrial and sanitary discharges, through a force main to the Plant for treatment. Wastewater treatment services are governed by an agreement between the Cities of San Jose and Santa Clara (as joint owners of the WPCP) and the City of Milpitas³¹. Under terms of the agreement, the City pays a capital share (in proportion to the City's capacity rights and the total Plant capacity). The City currently has a capacity allocation of 12.5 mgd out of WPCP's total 167 mgd capacity, and pays an operating cost share based on discharge volumes to the Plant. The City anticipates purchasing additional capacity to meet future needs.

Table 6-1 shows past, current, and projected wastewater quantities the City has pumped or anticipates pumping to the WPCP for treatment based on the City of Milpitas 2002 Sewer Master Plan. Flows include the Midtown development projections.

Table 6-1 Past, Current, and Projected Wastewater for the City of Milpitas

Bold Shaded values are projections.

Fiscal Year (July-June)	Wastewater Collected (mgd)
84/85	5.40
85/86	6.38
86/87	7.41
87/88	8.61
88/89	8.79
89/90	5.88
90/91	6.29
91/92	5.13
92/93	7.02
93/94	7.73
94/95	8.45
95/96	7.97
96/97	9.50
97/98	8.92
98/99	8.02
99/00	9.30
00/01	9.31
01/02	9.27
02/03	10.50
03/04	8.50
04/05	8.32
05/06	10.53
06/07	10.86
07/08	11.20
08/09	11.53

³¹ Master Agreement for Wastewater Treatment between City of San Jose, City of Santa Clara, and City of Milpitas, March 1, 1983 (and 2 subsequent amendments).

Fiscal Year (July-June)	Wastewater Collected (mgd)
09/10	11.87
09/10	11.90
10/11	12.02
11/12	12.14
12/13	12.26
13/14	12.38
14/15	12.50
15/16	12.62
16/17	12.74
17/18	12.86
18/19	12.98
19/20	13.10
20/21	13.22
21/22	13.34
22/23	13.46
23/24	13.58
24/25	13.60
25/26	13.60
26/27	13.60
27/28	13.60
28/29	13.60
29/30	13.60

7 RECYCLED WATER

7.1 COORDINATION OF RECYCLED WATER SUPPLY

Table 7-1 identifies the local water and regional agencies that participate in supplying recycled water in the City’s service area.

Table 7-1 Recycled Water Supply – Participating Agencies

Participating Agencies	Role in Recycled Water Supply
South Bay Water Recycling Program	Manages distribution and wholesale of recycled water.
San Jose/Santa Clara Water Pollution Control Plant (WPCP)	Produces recycled water.
City of San Jose	Co-Owner of WPCP.
City of Santa Clara	Co-Owner of WPCP.
City of Milpitas	Retails recycled water in the City of Milpitas through wholesale agreement with the City of San Jose.
Santa Clara Valley Water District (SCVWD)	Provides support for recycled water in recognizing that recycled water reduces the potable water demand.
Regional Water Quality Control Board (RWQCB)	Regulates recycled water use requirements.
State Department of Health Services	Establishes water reuse criteria which conform with RWQCB requirements.

7.2 SOUTH BAY WATER RECYCLING PROGRAM (SBWRP)

The WPCP’s NPDES Permit limits WPCP effluent to the South San Francisco Bay to 120 mgd average dry weather effluent flows. In the early 1990’s, WPCP recognized that the flow to WPCP would reach the maximum discharge limit by 1997. The City of San Jose developed an Action Plan in 1997³². The 1997 Action Plan identified developing a recycling program, in addition to water conservation and stream flow augmentation programs, as a way to redirect discharges into the Bay. As a result, the South Bay Water Recycling Program (SBWRP) was developed as a joint effort between the WPCP and the SCVWD to provide recycled water to the cities of Milpitas, Santa Clara, and San Jose.

The WPCP treats wastewater to tertiary levels, and discharges it to the South San Francisco Bay. A portion of this water is diverted prior to discharge, further treated to meet Title 22 unrestricted water quality standards (i.e. virtually any use except drinking water), and pumped through over 100 miles of distribution system to customers in the cities of Milpitas, Santa Clara, and San Jose.

SBWRP will continue to actively participate in the Bay Area Regional Water Recycling Program (BARWRP). This jointly sponsored program includes the federal government, California Department of Water Resources,

³² San Jose Action Plan, City of San Jose Environmental Services Department, June 1997.

and 15 Bay Area water and wastewater agencies, and has examined potential near-term and long-term uses of recycled water throughout the San Francisco Bay Area. Categories of potential SBWRP recycled water use were identified for further investigation:

- ◆ Full development of a non-potable recycled water system serving urban customers throughout the SBWRP service area (defined as the area of wastewater agencies tributary to the WPCP).
- ◆ Export recycled water to distant large non-potable markets.
- ◆ Possible indirect reuse (groundwater recharge and reservoir augmentation).
- ◆ Use of recycled water for environmental enhancement (wetlands, creation and streamflow augmentation).

As growth continues in the Bay Area, the SBWRP will investigate these long-term options in close cooperation with the Santa Clara Valley Water District.

7.3 CITY OF MILPITAS RECYCLED WATER

The regional recycled water supply system is managed by the South Bay Water Recycling Program. Between 13-18 million gallons of recycled water are produced and distributed to over 450 customers per day. Under the recycled permit issued by the RWQCB, the WPCP is responsible for meeting recycled water requirements.

The City of Milpitas purchases recycled water from the SBWRP through a contract between the City of San Jose and the City of Milpitas³³. As of October 2005, the City's recycled water system consists of 19 miles of pipeline serving 160 irrigation customers as shown in Figure 7-1.

Operation and maintenance of recycled water distribution facilities within City boundaries occurs through a contract between the City of San Jose and the City of Milpitas whereby Milpitas provides day-to-day operational services³⁴ and helps to comply with recycled water permit requirements within the City. The City developed Non-Potable Water Guidelines³⁵ to implement proper design and construction of on-site recycled water systems in addition to the SBWRP's Rules and Regulations³⁶.

The City provides recycled water through its recycled water transmission system to areas within Alameda County (Caltrans interchange at Highway 880 and Dixon Landing Road) and to the City of San Jose distribution system (North McCarthy Boulevard).

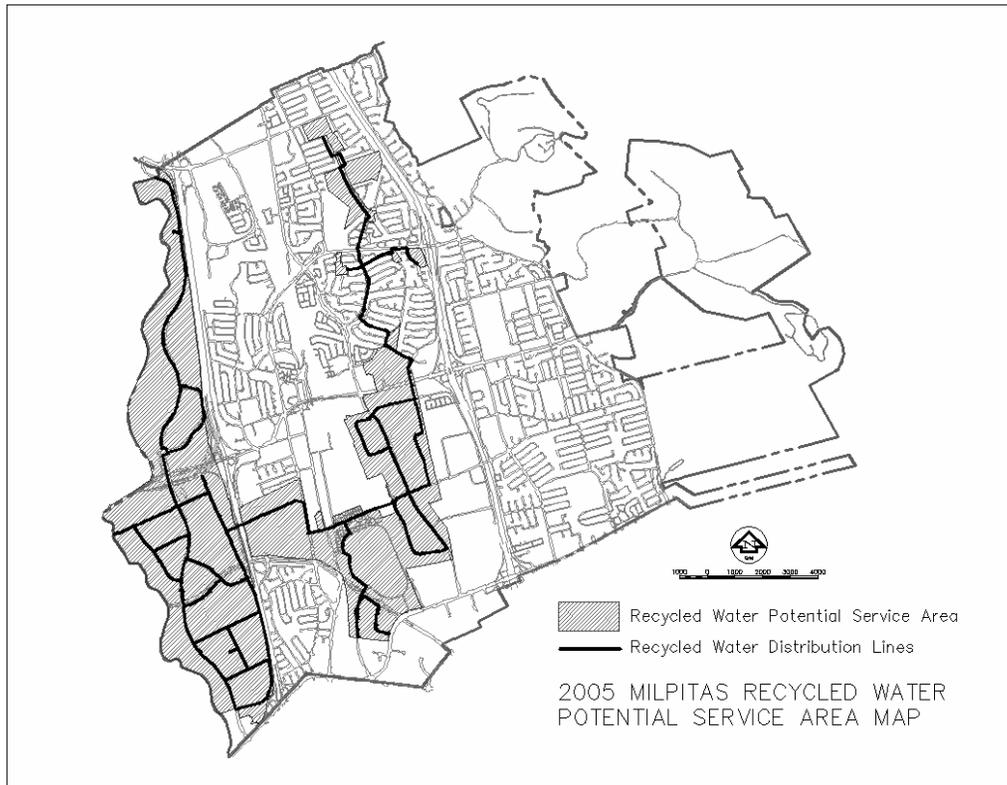
³³ South Bay Water Recycling Program Wholesaler-Retailer Agreement for Supply of Recycled Water between the City of San Jose and the City of Milpitas, April 28, 1995.

³⁴ Agreement for Operation and Maintenance of Recycled Water Distribution Facilities between City of San Jose and City of Milpitas, October 8, 1997.

³⁵ Milpitas Engineering Design Guidelines, Chapter IX (Recycled Water), Appendix B (Supplemental Guidelines).
Website: <http://www.ci.milpitas.ca.gov/citydept/engineering/engineeringdesignguidelines.htm>

³⁶ South Bay Water Recycling Rules and Regulations. Website: <http://www.sanjoseca.gov/sbwr/rulesandregulations.htm>

Figure 7-1 Milpitas Recycled Water System



7.4 POTENTIAL USES OF RECYCLED WATER

The City distributes recycled water to irrigation customers, which will continue through 2030. Some minor cooling tower use is anticipated in the future, but as it is expected to be minimal, it is not included in Table 7-2 below.

Table 7-2 Milpitas Recycled Water Use

All values in mgd, million gallons per day.

Use	Treatment Level	99/00	04/05	09/10	14/15	19/20	24/25	29/30
Landscape	Tertiary	0.44	0.72	1.08	1.25	1.42	1.60	1.77

7.5 ENCOURAGING RECYCLED WATER USE

Currently, the South Bay Water Recycling Program (cities of Milpitas, Santa Clara, and San Jose) promotes recycled water usage through a variety of mechanisms, including:

- ◆ Lower cost of recycled water than potable water.⁴

- ◆ SBWRP may contribute toward construction costs to retrofit an existing site to receive recycled water.
- ◆ SBWRP obtains regulatory approval for recycled water usage.
- ◆ The cities of Milpitas, Santa Clara, and San Jose ordinance language prohibits use of potable water for irrigation where recycled water is available^{37 38}.
- ◆ Public education through school curriculum, site supervisor training, marketing to potential customers and outreach at conventions, events, etc.
- ◆ SBWRP participates in the Bay Area Regional Water Recycling Program (BARWRP), which is a regional recycled water planning effort.
- ◆ Expansion of system to areas where recycled water is unavailable and adding reliability to the system.
- ◆ Pioneering new uses of recycled water, (i.e. printed circuit boards, paper manufacturing, cooling towers)

Table 7-3 summarizes the actions used to encourage recycled water use.

Table 7-3 SBWRP Actions to Encourage Recycled Water Use

Methods	Check if Used
Subsidized Costs	✓
Grants	✓
Dual Plumbing Standards	✓ (City of San Jose)
Regional Planning	✓
Incentive Program	✓
Long-Term Contracts (Price/Reliability)	
Rate Discounts	✓
Prohibit Specific Potable Water Uses	✓
Public Education/Information	✓
Require Recycled Water Use	✓
Cooling Tower Standards	✓

7.6 CURRENT AND FUTURE MILPITAS RECYCLED WATER USE

Table 4-1 (page 21) and Figure 4-1 (page 24) shows past, current, and projected recycled water use for the City.

³⁷ City of Milpitas Water Efficient Landscape Ordinance No. 238.2, adopted August 2005.

³⁸ City of Milpitas Water Conservation Ordinance No. 240.1, adopted August 2005.

8 WATER SHORTAGE CONTINGENCY PLAN

Water Shortage Contingency Plan analysis consists of 6 steps:

1. States of Action
2. Estimate of Minimum Supply for Next 3 Years
3. Catastrophic Supply Interruption Plan
4. Prohibitions, Penalties and Consumption Reduction Methods
5. Analysis of Revenue Impacts of Reduce Sales During Shortages
6. Draft Ordinance and Use Monitoring Procedure

► SFPUC Shortage Allocation Plan

The SFPUC can meet the demands of its retail and its wholesale customers in years of average and above-average precipitation. The Master Contract allows the SFPUC to reduce water deliveries to wholesale customers during periods of water shortage. Under the Master Contract, reductions to wholesale customers are to be based on each agency’s proportional purchases of water from the SFPUC during the year immediately preceding the onset of shortage, unless this formula is supplanted by a water conservation plan agreed to by all parties.

The Master Contract’s default formula discouraged SFPUC’s wholesale customers from reducing purchases from SFPUC during periods of normal water supply through demand management programs or development of alternative supplies. To overcome this problem, SFPUC and its wholesale customers adopted an Interim Water Shortage Allocation Plan (IWSAP) in calendar 2000. This IWSAP applies to water shortages up to 20% on a system-wide basis and will remain in effect through June 2009.

The IWSAP has two components. The Tier One component of the IWSAP allocates water between San Francisco and the wholesale customer agencies collectively. The IWSAP distributes water between two customer classes based on the level of shortage:

Table 8-1 SFPUC Shortage Allocation Plan

Level of System Wide Reduction in Water Use Required	Share of Available Water	
	SFPUC Share	Suburban Purchasers Share
5% or less	35.5%	64.5%
6% through 10%	36.0%	64.0%
11% through 15%	37.0%	63.0%
16% through 20%	37.5%	62.5%

The Tier Two component of the IWSAP allocates the collective wholesale customer share among each of the 28 wholesale customers. This allocation is based on a formula that takes three factors into account, the first two of which are fixed: (1) each agency’s Supply Assurance from SFPUC, with certain exceptions, and (2) each agency’s purchases from SFPUC during the three years preceding adoption of the Plan. The third factor

is the agency's rolling average of purchases of water from SFPUC during the three years immediately preceding the onset of shortage.

The IWSAP allows for voluntary transfers of shortage allocations between SFPUC and any wholesale customer and between wholesale customer agencies. Also, water "banked" by a wholesale customer, through reductions in usage greater than required, may also be transferred.

The IWSAP will expire in June 2009 unless extended by San Francisco and the wholesale customers. The projected amount of water which the City of Milpitas expects to receive from SFPUC during dry years after 2010 (as shown in Table 8-1 on page 47) has been calculated by SFPUC on the assumption that the Plan will in fact be extended.

► **SCVWD Water Shortage Contingency Plan**

SCVWD's Water Shortage Contingency Plan is based on the April 2000 Drought Management Plan (Draft). This plan focuses on drought risk, based on the different hydrologic conditions observed in the past.

Risks from water supply shortages include overdrafting the County's groundwater basin and experiencing land surface subsidence. Land surface subsidence can damage infrastructure and lower the land elevation along the County's many rivers and streams, resulting in greater backwater influences from San Francisco Bay and greater flooding risks among densely developed urban areas.

Although SCVWD manages the groundwater basin, the groundwater supplied in the County is pumped by others: major retailers and independent users. SCVWD can influence groundwater pumping through groundwater pumping charges and other management practices, but it does not directly control the amount of groundwater pumped. In addition, the groundwater basin is a very complex and non-homogeneous system and there is some technical uncertainty associated with the ability to predict the natural groundwater yield, groundwater operational storage, and land subsidence threshold, making precise management of the groundwater basin difficult. Consequently, there is some risk that supply shortages to the county can result in overdrafting of the groundwater basin.

SCVWD has performed operational analyses to determine what parameters may serve as warnings of potential shortage. Based on these analyses, groundwater end-of-year carryover storage was the most successful in anticipating water shortages and is an effective way to evaluate the overall water supply picture. When the operational storage in all the groundwater subbasins combined drops below 350,000 AF, compared to a full capacity of 530,000 AF, then the following year is considered to be at risk of water shortage. The indicator is quite conservative: it considers about 1 in 5 years to be a potential first year of water shortage, compared to 1 in 20 years that actually can be expected to result in shortages.

Table 8-2 summarizes the recommended shortage response guidelines for different expected end-of-year groundwater carryover storage. The indicated response is flexible and will be tailored to opportunities available at the time. Potential responses include; voluntary water demand reduction/public outreach (including media campaign and increased water conservation literature and conservation kit distribution), demand reduction measure or increased supplies. The shortage response action guidelines do not specify the form of the drought response. Annual decisions, including whether to participate in the water market or call for demand cutbacks, are made through annual operations planning.

By following these action levels, the groundwater carryover storage at the end of the 2-year planning horizon will remain above the 50,000 AF minimum considered prudent to protect against subsidence.

Table 8-2 SCVWD Shortage Response Action Guidelines

Level	Expected End-of-Year Groundwater Basin Carryover Storage (AF)	Recommended Shortage Response: Total Over the 2-Year Planning Horizon	Demand % assuming 400,000 AF Demand
--	350,000 to 530,000	No Action	-
1	320,000 to 350,000	Continue to monitor. Appropriate response (if any) to be determined	-
2	270,000 to 320,000	Implement 50,000 AF response	12.5%
3	220,000 to 270,000	Implement 100,000 AF response	25%
4	170,000 to 220,000	Implement 150,000 AF response	37.5%
5	120,000 to 170,000	Implement 200,000 AF response	50%
6	50,000 to 120,000	Implement 270,000 AF response	62.5%

8.1 STAGES OF ACTION

Since the City purchases SFPUC and SCVWD water and distributes the water to two separate areas isolated from each other, it does not anticipate that one source would be used to supplement the other during drought periods. Mixing water sources may result in water quality impacts since each source uses a different corrosion control protection system. It is possible that SFPUC and SCVWD will apply different rationing levels to its retailers in future drought situations. Another possibility is that only one wholesaler will experience a shortage and implement rationing. To apply more than one rationing level to the community would be difficult due to perceptions of inequity, application of uniform policies by the City, potential consumer confusion, and compliance.

The City anticipates only one stage of action would be applied Citywide at any one time. Recommendations on specific actions would depend on either the SFPUC and/or the SCVWD's positions and the City's ability to achieve the wholesale rationing levels. Recommendations to the City Council would ultimately be based on overall ability to meet goals.

Table 8-3 shows the City's 4-stage rationing plan that could be invoked during declared water shortages. The rationing plan includes voluntary and mandatory rationing, depending on the causes, severity, and anticipated duration of the water supply shortage.

Table 8-3 Milpitas' Water Rationing Stages and Reduction Goals

Stage	Water Reduction Goal	Type of Rationing Program	Description
O	0%	None	Non-drought conditions. Ongoing water conservation programs.
I	5-20%	Voluntary	Increased public education. Water customers would receive informational packets on the drought and requests to conserve. Newspaper notices.
II	20-35%	Mandatory	Ordinance to achieve necessary reductions. Distribute additional conservation notices. (This type of rationing occurred in the City between 1988-93.)
III	35-50%	Mandatory	In addition to Stage II programs, well water would be used as an alternate source to supplement supplies.

8.2 ESTIMATED MINIMUM SUPPLY FOR NEXT 3 YEARS

Table 8-4 shows an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for Milpitas (see Table 5-1 on page 33).

Table 8-4 Three-Year Estimated Minimum Water Supply

Wholesaler	Year 1, 05/06 (mgd)	Year 2, 06/07 (mgd)	Year 3, 07/08 (mgd)
SFPUC	6.84	5.94	5.94
SCVWD	3.98	4.43	4.88
Recycled Water	0.94	0.97	1.01
TOTAL	11.76	11.34	11.83

8.3 CATASTROPHIC SUPPLY INTERVENTION PLAN

Catastrophic events include non-drought related events. The City's 2004 Water Emergency Management Plan addresses two possible events that could be triggered by any of the following threats: earthquakes, floods, waterborne diseases, backflow conditions, chemical spills, construction accidents, contamination of water storage tank, fires, mechanical equipment disabled, power outages, sewage spills, terrorism, theft of materials, and vandalism.

- ◆ **Water Shortage Event** – An event (non-drought) where there is not enough water supplied to meet the normal demands of the City. Figure 8-2 on page 58 shows procedures the City may follow during a water shortage event.
- ◆ **Water Contamination Event** – An event where the water quality may not meet Safe Drinking Water Standards and water use is curtailed. Figure 8-3 on page 59 shows procedures the City may follow during a water contamination event.

8.4 PROHIBITIONS, PENALTIES, AND CONSUMPTION REDUCTION

The City is currently at Stage O rationing (non-drought condition). The City anticipates a rationing program during water shortage stages. Depending on which Stage the City is at for a water shortage emergency, the prohibitions shown in Table 8-5 would be imposed upon residents and businesses as mechanisms to reduce water use. Table 8-6 lists consumption reduction methods for the different rationing stages.

Table 8-5 Prohibitions

Stage	Water Reduction Goal	Type of Rationing Program	Prohibitions
O	0%	None	Broken or defective plumbing Flooding into gutter and streets

Stage	Water Reduction Goal	Type of Rationing Program	Prohibitions
			Using a hose without a shut-off nozzle for washing vehicles, hard surfaces, and landscaping Restaurants serving water except on request by a customer Using car wash equipment not equipped to recycle water Using cooling system equipment not equipped to recycled at least 50% of the water Using water for irrigation if recycled water is available Using decorative fountains not equipped with a recycled water system
I	5-20%	Voluntary	All prohibitions listed in Stage O plus the following: Cleaning sidewalks, hard surfaces, etc. Construction purposes such as dust control and compaction. Initial filling of any swimming pool or pond (refilling due to evaporation or repairs is acceptable). Hydrant flushing, except for health and safety. Street or parking lot cleaning.
II	20-35%	Mandatory	All prohibitions listed in Stage O plus the following: Cleaning sidewalks, hard surfaces, etc. Construction purposes such as dust control and compaction. New swimming pool or pond construction or initial filling of any swimming pool or pond (refilling due to evaporation or repairs is acceptable). Hydrant flushing, except for health and safety. Street or parking lot cleaning. Cleaning, filling, or maintaining levels in decorative fountains. Potable irrigation of golf courses except greens and tees.
III	35-50%	Mandatory	All prohibitions listed in Stage O plus the following: Cleaning sidewalks, hard surfaces, etc. Construction purposes such as dust control and compaction. New swimming pool or pond construction or initial filling of any swimming pool or pond (refilling due to evaporation or repairs is acceptable). Hydrant flushing, except for health and safety. Street or parking lot cleaning. Cleaning, filling, or maintaining levels in decorative fountains. Potable irrigation of golf courses except greens and tees. Washing vehicles outside of a commercial washing facility. Irrigation of median landscape strips. Failure to repair leaks.

Table 8-6 Consumption Reduction Methods

Stage	Water Reduction Goal	Type of Rationing Program	Penalties
O	0%	None	None
I	5-20%	Voluntary	None
II	20-35%	Mandatory	Per Milpitas Municipal Code I-1-4.09-1, every violation determined to be an infraction is punishable by (1) a fine not exceeding \$100 for a first violation; (2) a fine not exceeding \$200 for a second violation of the same act within one year; (3) a fine not exceeding \$500 for each additional violation of the same act within one year. Each day such a violation continues shall be regarded as a new and separate

Stage	Water Reduction Goal	Type of Rationing Program	Penalties
			infraction.
III	35-50%	Mandatory	Per Milpitas Municipal Code I-1-4.09-1, every violation determined to be an infraction is punishable by (1) a fine not exceeding \$100 for a first violation; (2) a fine not exceeding \$200 for a second violation of the same act within one year; (3) a fine not exceeding \$500 for each additional violation of the same act within one year. Each day such a violation continues shall be regarded as a new and separate infraction.

► **Rationing Program Options**

In order for the City to achieve water demand reduction goals at Stages II or III, a rationing system must be in effect. In the 1988-1993 drought, both SFPUC and the SCVWD implemented the Percent of Use method for their retailers. The City elected to apply the same Percent of Use method to its customers as explained below. However, there was no guarantee that following the same rationing formula as SFPUC and the SCVWD would insure that the City would meet its rationing goals.

The City’s goal for its customers was a 25% cutback using a program called “10-60 percent” of 1987 usage. Domestic customers were granted allotments based on 1987 usage that incorporated a 10% decrease in winter months’ usage and a 60% decrease in the additional non-winter months’ usage. The philosophy used was that of “critical need” since inside use was deemed more critical and was therefore granted a higher amount. For those accounts which began after 1987, an allotment was assigned based upon requested amounts for commercial and industrial accounts, and calculated need for residential and irrigation accounts. This resulted in different allotments for each individual customer, which made it difficult for customers to understand. Also, irrigation allotments were based on 1987 usage that incorporated a straight 60% decrease for each billing period.

In order to apply the Percent of Use method, the City’s utility billing system determined water use allotments for over 15,000 water accounts and calculated bills. The City also had an Exception Request Policy and exception committee which allowed water users to request allotment revisions. Customers with significant change in needs from 1987 and new construction were manually evaluated, resulting in a labor –intensive program. Managing exception requests will require excessive staff resources if the Percent of Use method is used for a future drought. By the end of the drought approximately 50% of the City’s accounts were granted exceptions. The remaining rationing methods – Per Household, Per Household and Irrigation, and Inverted Block Rate – would eliminate allotments and the exception request process.

Based on the City’s experience with the Percent of Use method, an inverted block rate option is proposed in the future when drastic reductions in water usage are needed. The water use tiers over which the rate will change and the amount of the rate change between blocks will be established in direct response to the severity of the reduction needed.

SFPUC considered several rationing methods during the 1988-1993 drought. Unfortunately, no system is completely equitable to everyone. **Appendix F** contains descriptions of various rationing programs and lists their corresponding pros and cons. Table 8-7 shows allotment programs that were being implemented by other agencies in September 1992. In a future drought emergency, the City should consider alternate rationing methods, especially if available resources (staffing, funding, computer data, etc.) cannot adequately support wholesalers’ rationing methods.

Table 8-7 Allotment Methods Used by Other Agencies (Sept 1992)

Jurisdiction	Allocation Method Used
Receiving 100% SFPUC Water:	
Belmont	Winter-per capita (Summer-per capita plus percent of use)
Brisbane	Percent of use
Burlingame	Per capita
California Water Co. – San Mateo	Percent of use
Foster City	Per household
Menlo Park	Percent of use
Milpitas	Percent of use
Palo Alto	Percent of use
Redwood City	Percent of use
San Francisco	Percent of use
Receiving SFPUC Water & Other Wholesaler Water:	
Alameda County Water District	Per household
Mountain View	Inverted block rates
San Jose	Percent of use
Santa Clara	No method – one rate
Sunnyvale	Inverted block rates

8.5 ANALYSIS OF REVENUE IMPACTS OF REDUCED SALES DURING SHORTAGES

This section presents projections of rationing on City revenues and expenses, prior drought experiences, water demanding hardening and rationing options. It discusses the use of inverted block rates as a means to reduce water consumption.

► **Drought Impact on Revenues and Expenses**

One consequence of water rationing is a decrease in revenues due to the decrease in the quantity of water sold. Expenses also tend to increase due to costs associated with managing a drought program³⁹. Without retail rate adjustments, the potential shortfall of a 20% cutback could be as much as \$2.7 million or about 20% of the City's 05/06 estimated water fund budget. **Appendix G, Table 1** provides a revenue summary for 4 different scenarios.

Rationing will also affect Sewer Fund revenues since sewage charges for industrial, commercial, and institutional customers are based on water consumption. The estimated shortfall due to a 20% rationing is estimated to be about \$750,000 or about 6.5% of the City's 05/06 estimated sewer fund budget.

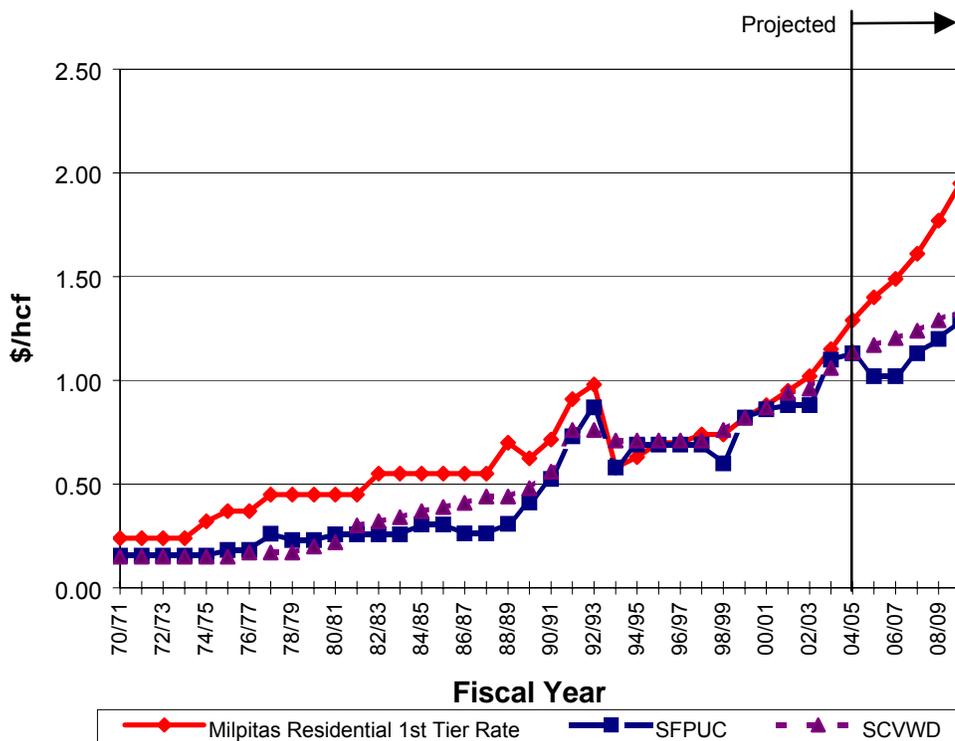
Figure 8-1 on page 54 shows SFPUC and SCVWD wholesale rates compared to Milpitas' retail rates since 1970. As seen, both wholesale and retail cost increased in response to the 1988-1993 drought. Rate projections are based on the City of Milpitas Utility Financial Master Plan⁴ valuation which accounts for revenues needed to pay for wholesale rate projections, capital improvements, and system infrastructure maintenance and replacement.

³⁹ These costs include distribution of outreach information, increased tracking activities, additional enforcement efforts and cost increases by the wholesaler.

► **Prior Drought Experience (Individual Water Allotment Base System Method)**

Milpitas implemented a 25% reduction water rationing program from 1988-1993. During the drought emergency, the City's sole supplier, SFPUC, determined allotments for the City and charged financial penalties for excess use. Early in the program, Milpitas applied for and received several increases in the overall City's allotment due to growth. SFPUC eventually terminated reviews of growth requests. The City determined individual allotments for every customer and also granted increases for situations that changed from the base year. The Milpitas City Council established excess use charges for Milpitas customers that exceeded their individual allotments. Table 8-8 shows how excess use charges were calculated.

Figure 8-1 Wholesale and Retail Water Rates



The City began purchasing SCVWD water in August '93.

Table 8-8 Schedule of Excess Use Charges
(in effect from May 19, 1992 - March 25, 1993)

Applied by	% over Allotment	Excess Use Charge
SFPUC	0-10%	2 x Quantity Charge
	+10% - 20%	8 x Quantity Charge
	> 20%	10 x Quantity Charge
Milpitas Non-Irrigation Accounts	0-10%	0.75 x Quantity Charge
	+10% - 20%	1.5 x Quantity Charge
	> 20%	2 x Quantity Charge
Milpitas Irrigation Accounts	0-10%	1.5 x Quantity Charge
	+10% - 20%	3 x Quantity Charge
	> 20%	4 x Quantity Charge

During this drought period, some Milpitas customers continually exceeded their allotment, resulting in the City collecting excess use charges. Other customers heeded their allotments, resulting in a "bank" that could be applied to future excesses. Milpitas allowed allotments to be adjusted due to changes in family size and other factors. By the end of the drought, it is estimated that about 50% of all residential customers had applied for and was granted allotment revisions. Table 8-9 shows revenue collected from excess use charges.

Table 8-9 Revenue from Excess Use Charges

Fiscal Year	Collected Excess Use Charges
1988-89	\$869,490
1989-90	\$74
1990-91	\$692,365
1991-92	\$995,893
1992-93	\$980,617
1993-94	\$0

Because SFPUC's banking policy was applied on an annual basis, excess penalties Milpitas paid early in the year were credited at year-end. SFPUC allowed "banking" such that unused allotments from one month were applied to excess use in another month. For the entire drought (1988-1993), the City paid no penalties to SFPUC. The SCVWD also required mandatory rationing from its retailers during this drought. It should be noted that SCVWD did not institute penalties to retailers that exceeded usage goals.

Excess use charges can supplement water revenue losses, however, excess use charges cannot fully replace the lost revenue. Drought periods cause increasing expenses. Conservation program costs such as rationing implementation, tracking and billing, educational information dissemination, and program management all result in expense increases. Staff time for program start-up and utility billing modifications were not tracked. The on-going program management was estimated requiring 24 hours per week of billing department staff time and 100 hours per week of engineering staff time. Activities included reviewing protests and allocation adjustment requests. By the end of the drought, roughly 50% of the City's 15,000 accounts received allocation adjustments. Excluding staff time, Milpitas spent approximately \$871,000 managing rationing during the 1988-1993 drought period.

► **Demand Hardening**

During fiscal year 1986-87, prior to the 1988-1993 drought, the residential consumption was about 93 gallons per capita per day (gpcpd). At the end of the 1988-1993 drought, the residential consumption dropped to an estimated 68 gpcpd (a 28% decrease). The average residential water usage in 2004 was about 73 gpcpd.

Residential customers with large families and/or large outside water demands (i.e. landscaping) may not be able to maintain all usage in the first tier. For residential customers, tier usage would be applied per dwelling unit. The current Milpitas residential water usage is 73 gpcpd, which is considered very low. This use is only about 7% higher than the use at the end of the last drought rationing. The community has embraced the low-flow showerheads and ultra-low flow toilet programs sponsored by the SCVWD over the past several years. The ability of residential customers to achieve substantial savings during a drought becomes more difficult. A 20% reduction of the 2004 usage would result in a 58 gpcpd usage, significantly below the previous drought usage, and would be challenging to achieve.

For non-residential customers, tier usage is applied on a water meter basis. Establishing tiers for commercial customers is more difficult as the water needs vary by type of business. In addition, some businesses have

individual water meters, but many share meters. Over the past several years, many of the large industrial water users have become more water efficient or relocated out of the area. For example, the largest remaining industrial customer implemented significant water savings programs and has reduced water usage by 22% over the last 5 years. The ability of these types of customers to achieve substantial reductions in consumption become more difficult since permanent conservation practices are already implemented.

Irrigation water usage has not increased significantly in the past several years. This is partly due to water conservation programs such as ITAP (Irrigation Technical Assistance Program) that offers free landscape evaluations to businesses to save water and money. The use of recycled water has also contributed to the reduction of potable water irrigation. Currently the City provides recycled water to 160 customers. About 20 more large customers will be switching to recycled water in the next few years. From 00/01 through 04/05, recycled water usage has increased by 41%. Compared to recycled water, potable water irrigation usage decreased by 7%. About 15% of all water usage is due to potable water irrigation for 04/05. The opportunity for substantial potable water savings become more difficult as the amount of potable irrigation decreases. The City does not anticipate any substantial increase in potable irrigation water sales in the next ten years. It is expected, however, that potable irrigation customers can achieve some additional reduction in consumption.

► **Rationing**

The City anticipates using a different water conservation program in the future as the previous Percent of Use Method used during the last drought and described above was very labor intensive and costly to implement and manage. Several alternatives have been evaluated and are described in **Appendix F**. The Inverted Block Rate Method which was used by the City of Sunnyvale during the previous drought and which is less labor intensive than the Percent of Use Method is discussed below in further detail.

► **Inverted Block Rate Option**

The Inverted Block Rate is a method where escalating unit rates are applied when greater water amounts are used. As an example, using rates shown in Table 8-10, a customer using 10 hcf (hundred cubic feet) would be charged \$1.40 per hcf, for a total value of \$14.00. However, another customer using 50 hcf would be charged \$1.40 per hcf for the first 10 hcf (Tier 1), \$1.70 per hcf for the next 20 hcf (Tier 2), and \$2.00 for the next 20 hcf (Tier 3), for a total of \$88.00 (which averages to \$1.76 per hcf).

With inverted block rates, customers may directly control the amount of their water bill by eliminating or reducing water consumption to avoid higher unit rates. Calculations for the example inverted rates shown in Table 8-10 are located in **Appendix G**, which estimates revenues before rationing based on some assumptions, and includes possible wholesale rate increases of 10%. Under this scenario, the first tier may be kept at the rate prior to the drought to allow customers to meet base needs.

Table 8-10 Inverted Block Rate Example

Tier	Tier Range	Unit Rate per hcf
1	0-10 hcf	\$1.40
2	11-30 hcf	\$1.70
3	31-50 hcf	\$2.00
4	50+ hcf	\$2.30

8.6 DRAFT ORDINANCE AND USE MONITORING PROCEDURE

Adoption of mandatory prohibitions (Stages II and III) would require the following actions:

Trigger: Either or both water suppliers must declare a water shortage emergency of more than 20%. This would trigger development of a draft ordinance establishing rules, regulations and restrictions for water use.

Public Input: The City may be required to solicit public comment on a draft ordinance through a City Council public hearing. Adjustments would be incorporated as directed by Council. **Appendix H** contains a sample public hearing notice for a Water Shortage Emergency.

Adoption: City Council would consider adopting ordinances.

Appendix I contains a Water Shortage Emergency Rate Ordinance, and **Appendix J** contains a sample Water Shortage Emergency Restrictions Ordinance.

To implement new rates for a water shortage emergency, the City will need to meet Proposition 218 requirements, which consists of a 45-day notification period (i.e. individual mailings to property owners), that would result in a public hearing, at which time an urgency ordinance can be adopted.

► ***Mechanism for Determining Actual Reductions***

The City's utility billing system tracks water usage by user categories (i.e. single-family, commercial, irrigation). Data is easily accessible and customized reports can be printed or downloaded to Excel for manipulation. Meters are read every two months.

To determine actual reductions during a water shortage emergency, staff can review readings from wholesale turnout meters and compare to historical readings, review monthly water use reports by user categories and compare to historical use, or extract data from the utility billing system and manipulate accordingly to obtain the data needed.

Figure 8-2 Water Shortage Event Flowchart

****NOTE:** The 24 hour period is an estimate only. The actual time period shall be the length of time that the City can supply reservoir water.

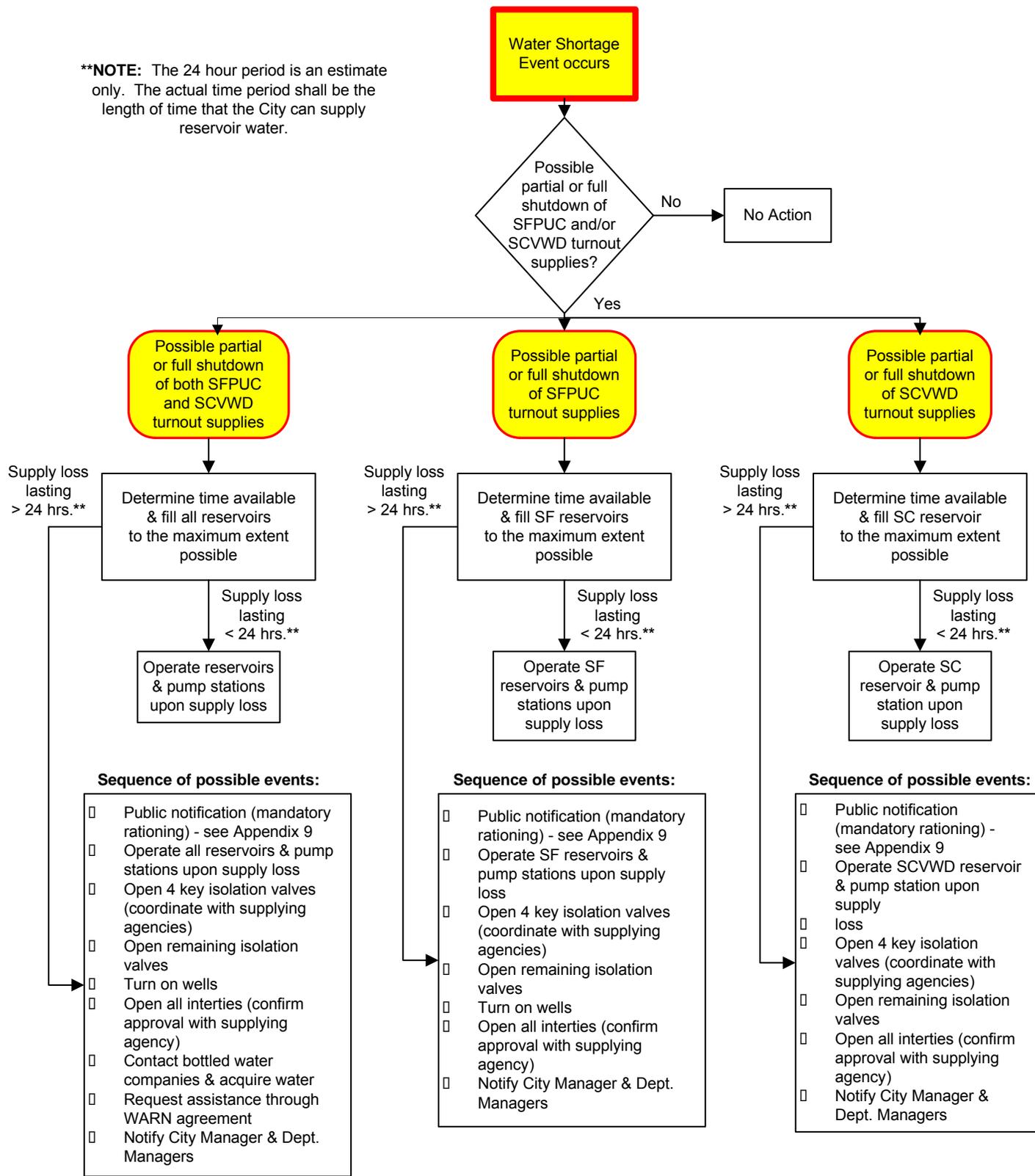


Figure 8-3 Water Contamination Event Flowchart

****NOTE:** The 24 hour period is an estimate only.
The actual time period shall be the length of time
that the City can supply reservoir water.

Continued on page 61

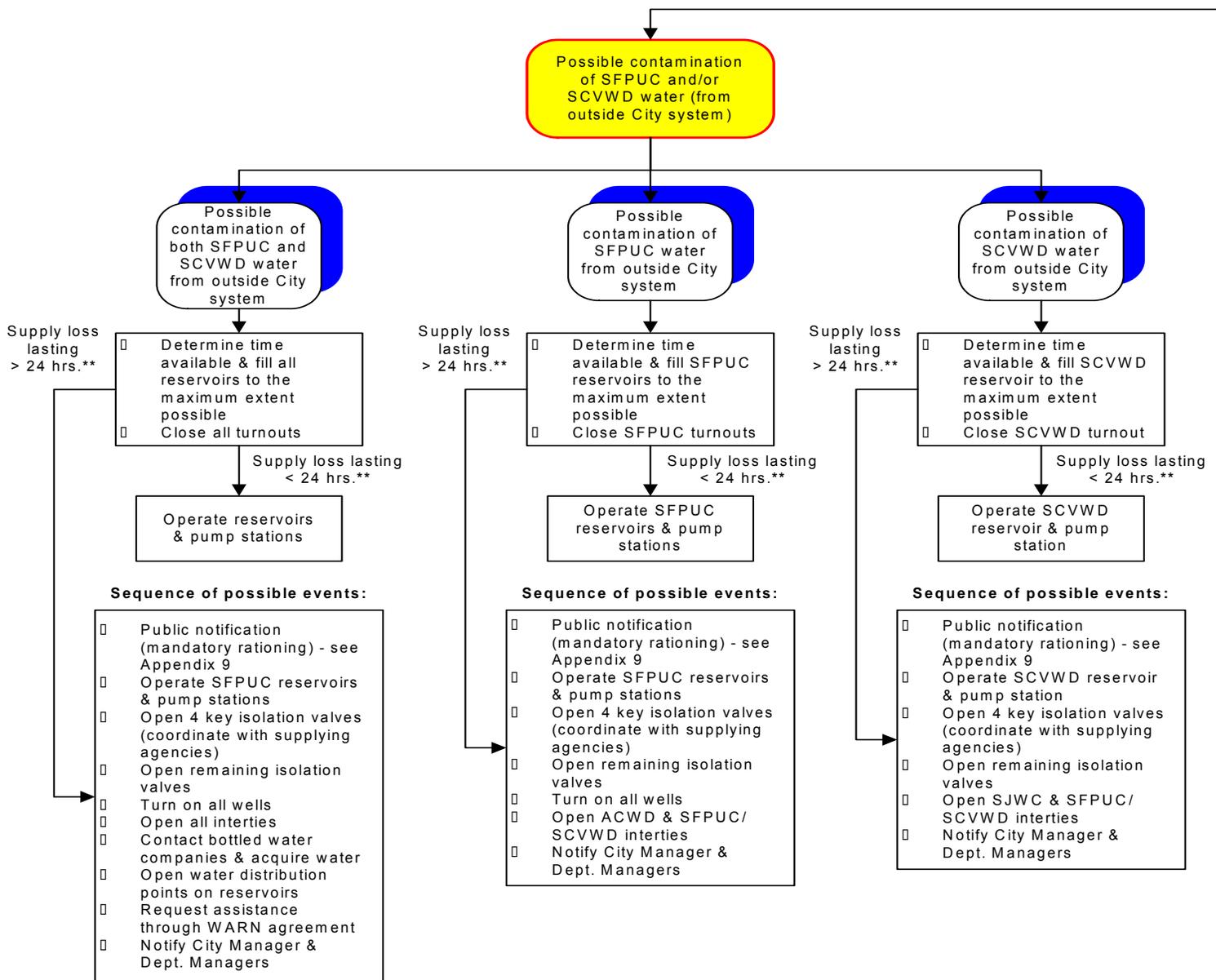
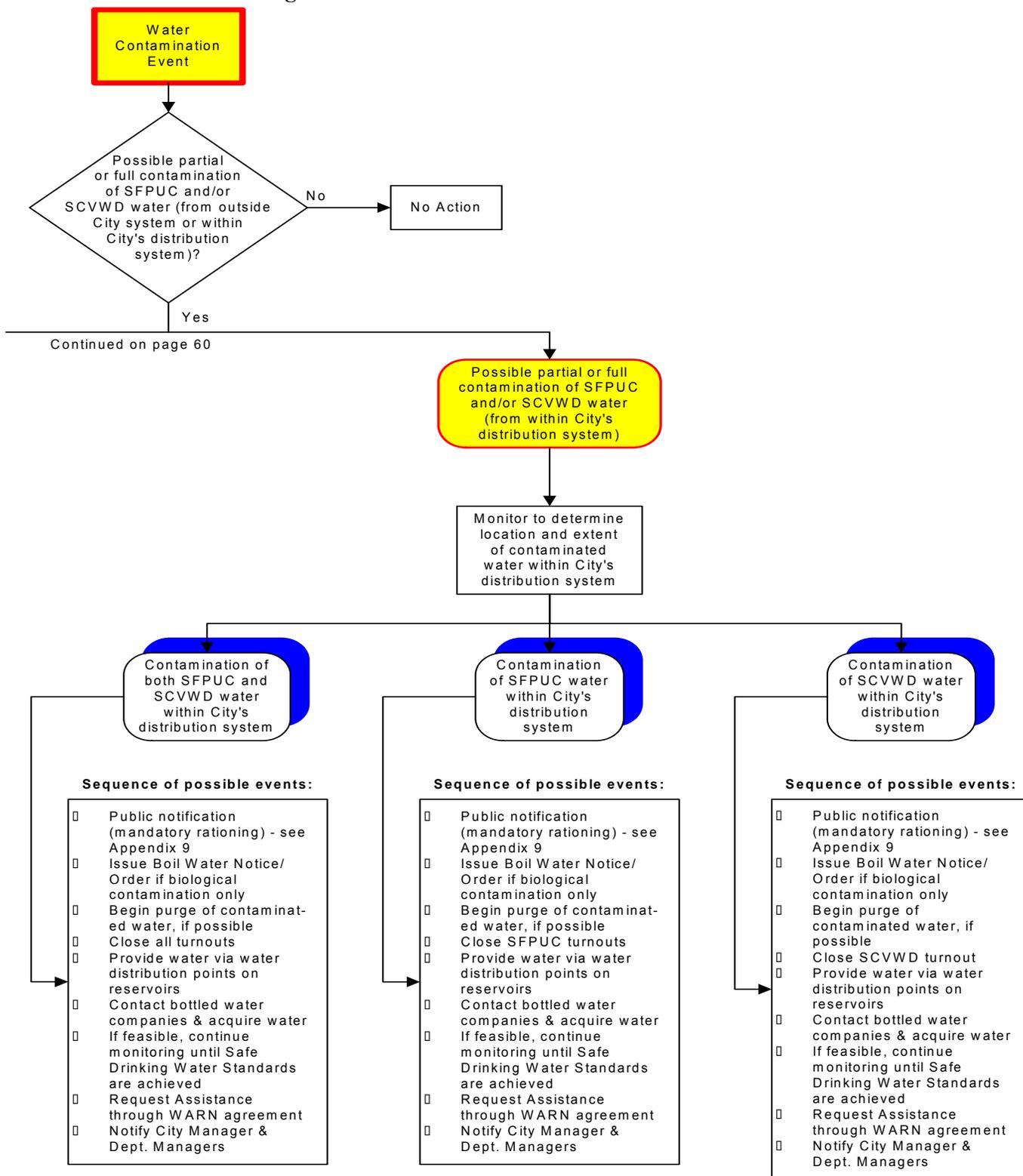


Figure 8-3 Water Contamination Event Flowchart



9 DEMAND MANAGEMENT MEASURES

The City of Milpitas remains committed to water conservation and water recycling. Since 1992, the City's conservation programs have saved an estimated 177 million gallons annually (FY 04/05) and, through its recycled water program, an additional 264 million gallons of potable water annually.

The City of Milpitas is the water retailer for the City. However, Milpitas coordinates with many of the conservation programs (called Best Management Practices, BMPs) that associated agencies implement and fund through which the City directly benefits. Programs implemented through partnerships with other agencies (such as the Santa Clara Valley Water District, SCVWD) include the Free Showerheads and Faucet Aerators Program, the Irrigation Technical Assistance Program (ITAP), the Water Efficient Landscape Program, Washing Machine Rebate Program, and the High Efficiency Toilet Rebate Program. The City contributes to fund these programs indirectly through wholesale water costs and wastewater treatment purchases.

The City is not a signatory to the California Urban Water Conservation Council (CUWCC) Memorandum of Understanding (MOU)⁴⁰ on water conservation since current analysis indicates that to fully implement the BMPs would cost about \$178,000 in initial startup costs and \$202,000 subsequent annual costs. Historically, the City selected BMPs that were cost-effective and reasonable in total cost.

This chapter provides the following:

- ◆ Describes conservation programs in more detail, including cost estimates.
- ◆ Summarizes recommended conservation programs based on cost analysis

The City of Milpitas currently uses approximately 72.9 gpcd (gallons per capita per day) for residential sector usage and 142.6 gpcd based on total water usage.

9.1 PREVIOUSLY RECOMMENDED WATER CONSERVATION PROGRAMS

In the 2000 Urban Water Management Plan the City recommended full or partial implementation of 13 conservation programs at an estimated annual cost of \$89,000 (in 2000 dollars). These 13 programs, implemented cooperatively with SCVWD and the San Jose/Santa Clara Water Pollution Control Plant (WPCP), include Residential Water Surveys, Residential Plumbing Retrofits, Large Landscapes Audits, High Efficiency Washing Machine Rebate, Public Information distribution and education, School Education Programs, Commercial/Industrial/Institutional (CII) Conservation, Conservation Coordinator, Water Waste Prohibitions, and Residential ULFT Replacements. The City expects that some form of these programs will continue in the future with new programs added. It is also expected that the City will participate in all BMPs

⁴⁰ Memorandum of Understanding, California Urban Water Conservation Council Regarding Urban Water Conservation in California, September 16, 1999.

recommended by the CUWCC to some degree either through City supported local programs or as part of regional programs.

9.2 BEST MANAGEMENT PRACTICES, BMPS

Table 9-1 shows those 14 BMPs identified in the proposed MOU, and the anticipated local agency responsible for managing the program. Programs currently being implemented are shaded.

Table 9-1 Best Management Practices (BMPs)

BMP	Program	Status	Responsibility
1	Water Survey Programs for Single Family and Multiple-Family Residential Customers	◆	SCVWD
2	Residential Plumbing Retrofit	◆	SCVWD
3	System Water Surveys, Leak Detection and Repair	♣	City of Milpitas
4	Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections	◆	City of Milpitas
5	Large Landscape Conservation Programs and Incentives	◆	SCVWD
6	High-Efficiency Washing Machine Rebate Programs	◆	SCVWD
7	Public Information Programs	◆	SCVWD
8	School Education Programs	◆	SCVWD
9	Conservation Programs for Commercial, Industrial, and Institutional (CII) Accounts	◆	SCVWD
10	Wholesale Agency Assistance Program	◆	SCVWD
11	Conservation Pricing	◆	City of Milpitas
12	Conservation Coordinator	◆	City of Milpitas
13	Water Waste Prohibition	◆	City of Milpitas
14	Residential ULFT Replacement Programs	◆	SCVWD

◆ Recommended program in the City's 2005 Urban Water Management Plan.

♣ Not recommended in the City's 2005 Urban Water Management Plan, but currently implemented (at least partially).

► **BMP 1 - Water Survey Programs for Single Family and Multiple-Family Residential Customers**

In July 1998 the SCVWD developed a pilot program to market home water-use surveys to the top 20% of single-family and multi-family customers of five participating water retailers (including the City of Milpitas). Water Savings per survey ranged from 73 to 78 gallons per household per day based on a representative sample of survey participants.

The water surveys consist of educating the customer on how to read their water meter; checking flow rates of showerheads and faucet aerators; checking for leaks; installing low-flow showerheads, faucet aerators, and/or toilet flappers if necessary; checking irrigation system efficiency; measuring landscape area; developing an efficient irrigation schedule for the different seasons; and providing customers with evaluation results, water savings recommendations, and other education materials. In 2004, SCVWD began programming the homeowners' irrigation controller as well.

Coverage Requirement:

By July 1, 2008, must complete residential surveys for 15 percent of all single-family and multi-family customers (approximately 80,000 surveys).

Status:

As of July 2005, SCVWD has completed 18,000 surveys (1,260 within Milpitas). This program will continue to be marketed to the top 20% of residential water consumers through direct mailing efforts. In addition, the program is advertised to all Milpitas residents through newsletter distribution, local advertisements, and City Media.

► ***BMP 2 - Residential Plumbing Retrofit***

Since 1992, the SCVWD has provided free low-flow showerheads and faucet aerators to Santa Clara County residents via its water retailers, residential water surveys, and public events. City staff offers these free water-saving devices to Milpitas residents via distribution at city-sponsored events, City media⁴¹, and residential newsletters. In addition to the showerheads and aerators directly distributed by the SCVWD, the City distributed 560 low-flow showerheads and 310 aerators in 04/05, for a total of 4,700 low-flow showerheads and 7003 aerators since inception in 1992. It is difficult to determine whether all of the low-flow showerheads and aerators that were distributed were installed within the Milpitas service area.

Coverage Requirement:

The BMP requires the distribution of low-flow showerheads to at least 10 percent of single-family connections and multi-family units every two years until they obtain a 75% saturation of pre-1992 residences.

Status:

Based upon a study recently completed by the SCVWD, Santa Clara County Residential Water Use Baseline (August 2004), the county is nearing the 75% saturation threshold. The study found saturation rates of 59% for pre-1992 constructed single-family homes and 51% for pre-1992 constructed multi-family units. A CUWCC report, Guide to Data and Methods for Cost-Effective Analysis of Urban Water Conservation Best Management Practices, estimates the average lifespan of a showerhead to be 3-7 years, and the average lifespan of an aerator to be 1-3 years. Given that 13 years have passed since the efficiency standards were enacted, the SCVWD study suggests the effects of natural replacement will move the county to the 75% threshold in the near future (2006 for single-family and 2010 for multi-family).

► ***BMP 3 - System Water Surveys, Leak Detection and Repair***

All connections within the City are metered, except for some City maintenance activities such as street sweeping, fireflow testing, and sewer hydro/vac truck filling. These unmetered activities are included in the City's low unaccounted-for water average of 6.1% over the last 10 years. To minimize leaks from residential, business, and irrigation connections, City maintenance crews replace all leaking meters

⁴¹ City media consists of the City's web site at www.Milpitas.ca.gov, the City's cable television station (channel 15), the City's radio station at 1610AM, and utility bill inserts.

within ½ hour of notification, repair water service and main leaks within 24 hours, and calibrate compound, or multi-head, meters annually.

Coverage Requirement:

Annually complete a prescreening audit to determine the need for a full-scale system audit. If unaccounted-for-water exceeds 10 percent, a full-scale system audit is required.

Status:

The City calculates unaccounted water annually. In the past 10 years, annual unaccounted-for-water has averaged 6.1%. This shows that there is relatively little lost water, and is in fact much lower than the 10% audit trigger point. For more discussion on unaccounted-for-water, see Table 4-4 on page 28. The City will continue to conduct its meter calibration and replacement program.

► ***BMP 4 - Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections***

Coverage Requirement:

This BMP requires water meters for all new connections and billing by volume of use, as well as establishing a program for retrofitting any existing unmetered connections.

Status:

All connections within the City are metered, and separate irrigation meters are required for non-residential customers and new large-scale multi-family developments. Commercial, industrial, and institutional customers are required to have fire sprinkler systems with separate meters. The City has also installed separate meters for recycled water services.

The City will continue to install and read meters on all new services.

► ***BMP 5 - Large Landscape Conservation Programs and Incentives***

Since 1995 the SCVWD Irrigation Technical Assistance Program (ITAP) has provided large landscape water audits to sites in the county with one acre or more of landscaping. Participants are provided with water-use analyses, scheduling information, in-depth irrigation evaluations, and recommendations for affordable irrigation upgrades.

The SCVWD advertises ITAP through advertisements in the Tri-county Apartment Association's monthly Apartment Management magazine, flyers at the biannual Home & Garden Show, NCTLC Turf & Landscape Expo, and the San Jose Mercury News. In addition, City staff offers the program to Milpitas customers via publication in city newsletters. To date, SCVWD has completed over 666 large landscape water audits (115 in the City of Milpitas).

Coverage Requirement:

This BMP requires agencies to commence assigning reference evapo-transpiration-base (Eto) water use budgets to accounts with dedicated irrigation meters and providing water-use surveys to accounts with mixed-use meters by July 1, 1999.

Status:

The SCVWD is currently working on a comprehensive program to develop Eto-based water-use budgets for all large landscape sites by using aerial images and GIS techniques. The project will acquire multi-spectral images of over 900 square miles of Santa Clara County, perform image analysis (classification) to identify the areas of turf, other landscaping, water features, bare ground and hardscape for each parcel (site) and prepare a database of these areas to support Landscape Water Budgets as well as support ITAP. By offering monthly water budgets to all large landscape sites in the county, the SCVWD will be in compliance with this BMP. This tool will be available in early 2006.

In January 1993, the City adopted a Water Efficient Landscape Ordinance No. 238, and amended it in August 2005 (see **Appendix E**), which establishes an ETo-based Maximum Applied Water Allowance. This ordinance was developed from the Model Ordinance developed by the Department of Water Resources. It applies to new and rehabilitated landscapes 2,500 square feet or larger for single family and multi-family development common areas, public agency projects, and private commercial and industrial projects. It also covers existing landscaped areas one acre or larger to which the City provides potable water. For new and rehabilitated landscapes 2,500 square feet or larger, the Ordinance requires submittal of water calculations, plans, a certificate verifying that landscapes have been installed as approved, and that an irrigation audit be performed at least once every five years. For existing landscaped areas one acre or larger (prior to January 1993), the Ordinance requires an irrigation audit be performed at least once every five years.

Since January 1993, the City has received landscape submittals totaling 219 acres (9.83 million square feet) of new and rehabilitated landscaping 2,500 square feet or larger that have been required to meet the Ordinance requirements.

► ***BMP 6 - High-Efficiency Washing Machine Rebate Programs***

The SCVWD has offered high-efficiency washing machine rebates in conjunction with PG&E since July 1995. Funding partners for this program include SCVWD, City of San Jose, City of Palo and DWR grant funding. Over the years, the rebate amount has varied depending on funding availability. The current rebate amount ranges from \$100 to \$150 depending on the efficiency rating of the clothes washer model.

Coverage Requirement:

If cost effective, the water agency shall offer a financial incentive for the purchase of high-efficiency clothes washing machines (HEWS) meeting a water factor value of 9.5 or less.

Status:

By offering a high-efficiency washing machine rebate, the SCVWD is in compliance with this BMP. To date, the SCVWD has distributed a total of 44,000 High-Efficiency Washing Machine rebates (1,696 within Milpitas).

► ***BMP 7 - Public Information Programs***

The SCVWD operates an extensive public information program and associated schools program, which provide materials, speakers, and outreach activities to the general public. The SCVWD employs a professional staff of 10 to provide outreach related to water conservation, urban runoff pollution, water

recycling, watershed and flood protection, and water quality. In addition, the SCVWD's Water Conservation Unit staff conducts targeted outreach tailored to individual conservation programs.

SCVWD outreach activities include publications and Web site development, public meetings, participation at community events, multi-media campaigns, inter-agency partnerships, corporate environmental fairs, professional trade shows, water conservation workshops and seminars, and a speakers bureau. Their Residential Landscape Program currently consists of a Nursery Program, Water Efficient Landscape Workshop Series, Spanish-Language Irrigation Workshop Series, Landscape Water Management Seminar, and Water-Efficient Landscape Awards Program (upcoming).

In addition to the SCVWD's public information program, City staff also disseminates information to the public through City media⁴¹, the City's Annual Water Quality Report, and attendance at City sponsored events.

Coverage Requirement:

The BMP requires agencies to implement and maintain public information programs to promote water conservation and educate customers about water use.

Status:

The SCVWD and the City of Milpitas are in compliance with the BMP through implementation of water conservation programs as described above. Public education is an essential component of a successful water conservation program and will be continued in the future.

► *BMP 8 - School Education Programs*

In 1994, the SCVWD hired a full-time educator to coordinate the school education programs. The SCVWD has been continuously active by providing free classroom presentations, puppet plays, and tours of district facilities to schools within the county. The objective is to teach students about water conservation, water supply, watershed stewardship and flood protection. The SCVWD also provides school curricula to area educators, including workbooks and videos, as well as hands-on training for teachers. The goal this year is to reach 15,000 students, ranging from pre-kindergarten through college.

In FY 03/04 and 04/05, the City supplement the SCVWD school education programs by sponsoring the "*Learning to Be WaterWise*" program created by the National Energy Foundation⁴². The "*Learning to Be WaterWise*" program combines classroom activities with hands-on retrofit projects that students perform in their homes with their families. The program is comprehensive providing all materials, supplies, teaching tools and support needed by teachers and students. To date, the program has reached 768 fifth grade students.

Between 1996 and 2004, the City participated in the Bay Area Water Users Association (BAWUA) Water Awareness Poster Contest. SFPUC water agencies promote the water awareness poster contest to their schools. Students grades 4-6 create posters using the theme "Use Water Wisely...It's a Way of Life". Four prizes are awarded in each grade, and each winner receives a cash prize and their poster gets placed on the following year's Water Awareness Poster Calendar. The calendar is distributed throughout the Bay Area. Approximately 700 Milpitas students participated annually. Due to funding constraints, BAWUA discontinued this program in FY 04/05.

⁴² The National Energy Foundation is a 501(C) 3 nonprofit education organization which has been developing and distributing energy and environmental curricula and school instructional materials for more than 20 years.

Coverage Requirement:

The BMP requires water suppliers to maintain an active school education program to educate students in the agency's service area about water conservation and efficient water use.

Status:

The SCVWD and the City of Milpitas are in compliance with this BMP through implementation of school education programs as described above. These programs will be continued or expanded in the future.

► ***BMP 9 - Conservation Programs for Commercial, Industrial, and Institutional (CII) Accounts***

During FY 96/97, the SCVWD implemented a regional pilot program that provided 24 water-use surveys (5 surveys in Milpitas) for large water-using businesses and industries in the county. The audits provided thorough water-use analysis and recommendations for efficient process upgrades. According to the SCVWD's consultant, ERI, the acceptance rate for CII audits was above 80 percent.

◆ **Water Efficient Technologies**

To encourage all commercial and industrial businesses to implement permanent water reduction measures, the City of San Jose and Santa Clara Valley Water District offer financial awards to businesses (including those in Milpitas) through their Water Efficient Technologies Program (WET), at \$4 for every hundred cubic foot conserved. The maximum rebate amount is \$50,000 or 50% of total project costs.

◆ **Commercial Toilet Program**

The SCVWD offered an Ultra Low Flush Toilet (ULFT) Rebate Program from 1992 to 1999. After that, SCVWD switched to a direct ULFT installation program. Over 5,000 ULFT toilets were installed through district efforts. Additionally, the City of San Jose provided over 4,000 ULFT toilets to customers within the WPCP Tributary area. To date, Approximately 796 commercial ULFTs have been installed in Milpitas.

In fiscal year 2004-05, the SCVWD began the High Efficiency Toilet (HET) replacement program. These toilets flush at 1.0 gallon per flush and feature a pressure-assisted flushing mechanism. Funding for this program comes from the California DWR, SCVWD, the City of San Jose and the City of Palo Alto. To date SCVWD has replaced over 700 toilets (54 within Milpitas).

◆ **Commercial Washer Program**

In July 1999, SCVWD, with funding partners Silicon Valley Power (supplies to customers within the City of Santa Clara) and the City of San Jose (administers Santa Clara/San Jose Water Pollution Control Plant) began offering a rebate for the replacement of high-efficiency clothes washers in Laundromats. Over 2,100 washers have been replaced to date (18 within the City of Milpitas).

Beginning in July 2000, the commercial washer program was expanded throughout the county. Cost-sharing partners include PG&E, Silicon Valley Power, Palo Alto, and San Jose. The program also now includes commercial machines installed in multi-family complexes.

Coverage Requirement

The BMP requires CII ULFT program water savings equal to 3% of Total Water Savings Potential by July 1, 2004 and reduce water use by CII customers by at least 10 percent from the base year 1997.

Status:

SCVWD is unable to calculate the effectiveness of CII programs, as each of the retailers in the County use different customer classification breakdowns, making data compilation and analysis difficult. SCVWD is looking into other ways to obtain Standard Industrial Classification (SIC) codes and has obtained lists of hotels, restaurants, gas stations and other commercial sites by contacting county agencies that regulate these facilities.

► *BMP 10 - Wholesale Agency Assistance Program*

Coverage Requirement:

The Wholesaler shall complete cost-effective assessments for each BMP the agency is potentially obligated to support. In addition the wholesaler will evaluate agency avoided cost per acre-foot of new water supplies, total monetary amount provided to retail members to assist or otherwise support the implementation of BMPs, and the total amount of verified water savings achieved by each wholesaler assisted BMP.

Status:

The SCVWD continues to provide a high level of support with the water retailers in the regional implementation of the BMPs. The SCVWD and water retailer staff has begun discussions on the wholesaler and retailer relationship, especially in light of a possible certification and enforcement process coming from CALFED.

► *BMP 11 - Conservation Pricing*

Coverage Requirement:

Agency shall maintain a rate structure consistent with definition of conservation pricing

Status:

The City meters and bills by volume of use for water service. The City has an increasing two-tier residential water rate structure and a single rate structure for all other customer sectors. The City also provides sewer service, which bills a flat rate to residential customers and volume of use rates to all others. The City will continue to analyze water and sewer service charges on an annual basis. The City also markets recycled irrigation water at a rate 20% less than potable irrigation water to encourage use of recycled water and thereby conserve potable water.

► **BMP 12 - Conservation Coordinator**

Coverage Requirement:

Agency shall staff and maintain the position of conservation coordinator and provide support staff as necessary:

Status:

The City has a staff person (devoting 30% to water conservation) to oversee all water conservation activities.

Name: Jo Anne Johnson
Title: Utility Engineering Aide
Telephone: (408) 586-3077

► **BMP 13 - Water Waste Prohibition**

Coverage Requirement:

This BMP requires agencies to adopt a policy prohibiting water waste such as gutter flooding, single pass cooling systems in new construction, and non-recirculating systems in all new conveyor car wash systems.

Status:

In May 1994, the City adopted a Water Conservation Ordinance No. 240, and amended it in August 2005 (see **Appendix D**), which describes water use prohibitions in accordance with BMP requirements.

► **BMP 14 - Residential Ultra-Low Flush Toilet (ULFT) Replacement Programs**

From 1992 through 1999, the SCVWD offered rebates to residential customers who replaced their old toilets with ULFTs. The original rebate level was \$75. However, due to declining program participation, the SCVWD ran three-month special offers in 1998 and 1999 during which time the rebate was increased to \$100. These special offers were accompanied by major marketing campaigns in which the program was promoted through television, radio, newspaper, bill inserts, busboards, direct mailings, and public events.

The SCVWD ended its rebate program in 1999 and shifted the focus of its Residential ULFT Program towards program elements that are more targeted than a mass-rebate program. In 2001, the SCVWD again switched their focus, this time from ULFT distribution program for single-family residents to a full installation program for elderly, disabled and low-income single-family residents (the multi-family program remained unchanged). Finally, in 2004 SCVWD shifted to a rebate program for high-efficiency toilets (HETs), which use less water than conventional ULFTs.

Coverage Requirement:

The BMP requires agencies to achieve water savings through ULFT replacement programs to equal or exceed water savings achievable through an ordinance requiring the replacement of high-water-using toilets with ultra-low-flush toilets upon resale.

Status:

Since 1992, SCVWD has provided incentives to retrofit approximately 244,000 residential toilets (5,236 within Milpitas). Because of this, SCVWD believes it has met the BMPs cumulative water savings requirements.

9.3 CONSERVATION PROGRAM COST ESTIMATES

Table 9-2 shows estimated initial startup costs and annual costs for the City to FULLY implement all 14 BMPs. The costs assume that the SCVWD will continue overseeing and managing 9 of the 14 BMPs. Refer to **Appendix K** for a brief summary of each BMP requirement and its cost impact to the City should they become mandatory. For detailed BMP requirements, refer to Exhibit I of the MOU (which is not included in this document).

Table 9-2 Conservation Program Cost Estimates - 14 BMPs Full Implementation (City of Milpitas Costs)

BMP	Program	Initial Startup Costs, \$	Annual Costs, \$
1	Water Survey Programs for Single Family and Multi-Family Residential Customers ♦	\$0	\$3,300
2	Residential Plumbing Retrofit ♦	\$440	\$2,200
3	System Water Surveys, Leak Detection and Repair	\$20,000	\$89,610
4	Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections	\$30,500	\$0 ●
5	Large Landscape Conservation Programs and Incentives ♦	\$107,535	\$21,175
6	High-Efficiency Washing Machine Rebate Programs ♦	\$0	\$2,200
7	Public Information Programs ♦	\$0	\$2,200
8	School Education Programs ♦	\$6,000	\$12,200
9	Conservation Programs for Commercial, Industrial, and Institutional (CII) Accounts ♦	\$220	\$5,500
10	Wholesale Agency Assistance Program ♦	\$0	\$1,100
11	Conservation Pricing	\$11,000	\$0 ●
12	Conservation Coordinator	\$0	\$55,000
13	Water Waste Prohibition	\$2,200	\$2,200
14	Residential ULFT Replacement Programs ♦	\$0	\$5,500
	TOTAL	\$177,895	\$202,185

- ♦ Assumes some implementation by the SCVWD with coordination and implementation assistance from City staff.
- Ongoing program managed under existing funding.

9.4 RECOMMENDED WATER CONSERVATION PROGRAMS

Table 9-3 on page 71 shows recommended water conservation programs and estimated initial startup costs and annual costs. Costs are based on the fact that the BMPs are not yet mandatory for water retailers, and assume that the SCVWD will continue overseeing the balance of the BMPs. It also assumes that those BMPs

implemented by the City will be done in a cooperative global fashion with SCVWD's lead to maximize economy of scale and regional effectiveness.

It is not recommended that System Water Surveys, Leak detection and Repair be implemented because the City already has a very low unaccounted-for-water amount (leaks are minimal) and the cost for implementing the program is very high (we would get a very small return on investment). It is recommended that Milpitas participate in all other BMPs to some degree and in coordination with the SCVWD. In summary, recommendations are to:

- ◆ Continue participating in programs managed by the SCVWD:
 - Home Water Use Survey Program (BMP 1)
 - Free Showerheads and Faucet Aerators (BMP 2)
 - Irrigation Technical Assistance Program (BMP 5)
 - Washing Machine Rebate Program (BMP 6)
 - Public Information Program (BMP 7)
 - Classroom Presentations (BMP 8)
 - Wholesale Agency Assistance Program (BMP 10)
- ◆ Continue implementing the City's Water Efficient Landscape Ordinance No. 238 (BMP 5) and the City's Water Conservation Ordinance No. 240 (BMP 13).
- ◆ Participate in future SCVWD programs for the Toilet Replacement Programs (BMP 14) and CII Conservation Programs (BMP 9).
- ◆ Continue water metering (BMP 4) and conservation pricing for residential users (BMP 11).
- ◆ Maintain a water conservation coordinator (BMP 12).
- ◆ Finance program costs from the Water Fund (current 05/06 budget level is 30% FTE, full-time equivalent, and \$30,000 for outreach activities).

**Table 9-3 Recommended Water Conservation Programs
(City of Milpitas Costs)**

BMP	Program	Initial Startup Costs, \$	Annual Costs, \$
1	Water Survey Programs for Single Family and Multi-Family Residential Customers ◆	\$0	\$3,300
2	Residential Plumbing Retrofit ◆	\$0	\$2,200
4	Metering with Commodity Rates for All New Connections and Retrofit of Existing Customers	\$0	\$0
5	Large Landscape Conservation Programs and Incentives ◆	\$0	\$16,500
6	High-Efficiency Washing Machine Rebate Programs ◆	\$0	\$2,200
7	Public Information Programs ◆	\$0	\$2,200
8	School Education Programs ◆	\$0	\$12,200
9	Conservation Programs for Commercial, Industrial, and Institutional (CII) Accounts ◆	\$0	\$5,500
10	Wholesale Agency Assistance Program ◆	\$0	\$1,100

BMP	Program	Initial Startup Costs, \$	Annual Costs, \$
11	Conservation Pricing	\$0	\$0
12	Conservation Coordinator	\$0	\$55,000
13	Water Waste Prohibition	\$0	\$2,200
14	Residential ULFT Replacement Programs ♦	\$0	\$5,500
	TOTAL	\$0	\$107,900

♦ Assumes implementation by the SCVWD with assistance from City staff.

The total recommended annual cost of the programs is \$107,900 which is a 20% increase from the recommended \$89,000 annual cost (from the 2000 Urban Water Management Plan).

Finally, should the BMPs become mandatory in the future, the City will perform a more detailed review to determine which BMPs are cost-effective to implement, up to a maximum initial startup cost of \$178,000 and subsequent annual costs of \$202,000 to fully implement the 14 BMPs presented in Table 9-2 on page 70.

Appendix A

Urban Water Management Planning Act California Water Code, Division 6, Part 2.6

DIVISION 6. CONSERVATION, DEVELOPMENT, AND UTILIZATION OF STATE WATER RESOURCES

PART 2.6. URBAN WATER MANAGEMENT PLANNING

CHAPTER 1. GENERAL DECLARATION AND POLICY	10610-10610.4
CHAPTER 2. DEFINITIONS	10611-10617
CHAPTER 3. URBAN WATER MANAGEMENT PLANS	
Article 1. General Provisions	10620-10621
Article 2. Contents of Plans	10630-10634
Article 2.5. Water Service Reliability	10635
Article 3. Adoption and Implementation of Plans	10640-10645
CHAPTER 4. MISCELLANEOUS PROVISIONS	10650-10657

CHAPTER 1. GENERAL DECLARATION AND POLICY

10610. This part shall be known and may be cited as the "Urban Water Management Planning Act."

10610.2 (a) The Legislature finds and declares all of the following:

- (1) The waters of the state are a limited and renewable resource subject to ever-increasing demands.
- (2) The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.
- (3) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate.
- (4) As part of its long-range planning activities, every urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry water years.
- (5) Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies.
- (6) Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may require specific water quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.

- (7) Water quality regulations are becoming an increasingly important factor in water agencies' selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.
 - (8) Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.
 - (9) The quality of source supplies can have a significant impact on water management strategies and supply reliability.
- (b) This part is intended to provide assistance to water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies to meet existing and future demands for water.

10610.4. The Legislature finds and declares that it is the policy of the state as follows:

- (a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.
- (b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.
- (c) Urban water suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies.

CHAPTER 2. DEFINITIONS

10611. Unless the context otherwise requires, the definitions of this chapter govern the construction of this part.
- 10611.5. "Demand management" means those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies.
10612. "Customer" means a purchaser of water from a water supplier who uses the water for municipal purposes, including residential, commercial, governmental, and industrial uses.
10613. "Efficient use" means those management measures that result in the most effective use of water so as to prevent its waste or unreasonable use or unreasonable method of use.
10614. "Person" means any individual, firm, association, organization, partnership, business, trust, corporation, company, public agency, or any agency of such an entity.
10615. "Plan" means an urban water management plan prepared pursuant to this part. A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities. The components of the plan may vary according to an individual community or area's characteristics and its capabilities to efficiently use and conserve water. The plan shall address measures for residential, commercial, governmental, and industrial water demand management as set forth in Article 2 (commencing with Section 10630) of Chapter 3. In addition, a strategy and time schedule for implementation shall be included in the plan.

10616. "Public agency" means any board, commission, county, city and county, city, regional agency, district, or other public entity.
- 10616.5. "Recycled water" means the reclamation and reuse of wastewater for beneficial use.
10617. "Urban water supplier" means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems subject to Chapter 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code.

CHAPTER 3. URBAN WATER MANAGEMENT PLANS

Article 1. General Provisions

10620. (a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640).
- (b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.
- (c) An urban water supplier indirectly providing water shall not include planning elements in its water management plan as provided in Article 2 (commencing with Section 10630) that would be applicable to urban water suppliers or public agencies directly providing water, or to their customers, without the consent of those suppliers or public agencies.
- (d) (1) An urban water supplier may satisfy the requirements of this part by participation in areawide, regional, watershed, or basinwide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use.
- (2) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.
- (e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.
- (f) An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.
10621. (a) Each urban water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero.
- (b) Every urban water supplier required to prepare a plan pursuant to this part shall notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.

- (c) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).

Article 2. Contents of Plans

- 10630. It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.
- 10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:
 - (a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.
 - (b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a). If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:
 - (1) A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.
 - (2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.
 - (3) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.
 - (4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.
 - (c) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:
 - (1) An average water year.

- (2) A single dry water year.
- (3) Multiple dry water years.

For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.

- (d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.
- (e) (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors including, but not necessarily limited to, all of the following uses:
 - (A) Single-family residential.
 - (B) Multifamily.
 - (C) Commercial.
 - (D) Industrial.
 - (E) Institutional and governmental.
 - (F) Landscape.
 - (G) Sales to other agencies.
 - (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.
 - (I) Agricultural.
- (2) The water use projections shall be in the same five-year increments described in subdivision (a).
- (f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:
 - (1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:
 - (A) Water survey programs for single-family residential and multifamily residential customers.
 - (B) Residential plumbing retrofit.
 - (C) System water audits, leak detection, and repair.

- (D) Metering with commodity rates for all new connections and retrofit of existing connections.
 - (E) Large landscape conservation programs and incentives.
 - (F) High-efficiency washing machine rebate programs.
 - (G) Public information programs.
 - (H) School education programs.
 - (I) Conservation programs for commercial, industrial, and institutional accounts.
 - (J) Wholesale agency programs.
 - (K) Conservation pricing.
 - (L) Water conservation coordinator.
 - (M) Water waste prohibition.
 - (N) Residential ultra-low-flush toilet replacement programs.
- (2) A schedule of implementation for all water demand management measures proposed or described in the plan.
 - (3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.
 - (4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.
- (g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:
 - (1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors.
 - (2) Include a cost-benefit analysis, identifying total benefits and total costs.
 - (3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.
 - (4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.

- (h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.
- (i) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.
- (j) Urban water suppliers that are members of the California Urban Water Conservation Council and submit annual reports to that council in accordance with the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated September 1991, may submit the annual reports identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of subdivisions (f) and (g).
- (k) Urban water suppliers that rely upon a wholesale agency for a source of water, shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c).

10631.5. The department shall take into consideration whether the urban water supplier is implementing or scheduled for implementation, the water demand management activities that the urban water supplier identified in its urban water management plan, pursuant to Section 10631, in evaluating applications for grants and loans made available pursuant to Section 79163. The urban water supplier may submit to the department copies of its annual reports and other relevant documents to assist the department in determining whether the urban water supplier is implementing or scheduling the implementation of water demand management activities.

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

- (a) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.
- (b) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.

- (c) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.
 - (d) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.
 - (e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.
 - (f) Penalties or charges for excessive use, where applicable.
 - (g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.
 - (h) A draft water shortage contingency resolution or ordinance.
 - (i) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.
10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area, and shall include all of the following:
- (a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.
 - (b) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.
 - (c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.
 - (d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.
 - (e) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.
 - (f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.

- (g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

10634. The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.

Article 2.5. Water Service Reliability

- 10635. (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.
- (b) The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.
- (c) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service.
- (d) Nothing in this article is intended to change existing law concerning an urban water supplier's obligation to provide water service to its existing customers or to any potential future customers.

Article 3. Adoption and Implementation of Plans

- 10640. Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630). The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.
- 10641. An urban water supplier required to prepare a plan may consult with, and obtain comments from, any public agency or state agency or any person who has special expertise with respect to water demand management methods and techniques.
- 10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water

supplies. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

10643. An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.
10644. (a) An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.
- (b) The department shall prepare and submit to the Legislature, on or before December 31, in the years ending in six and one, a report summarizing the status of the plans adopted pursuant to this part. The report prepared by the department shall identify the outstanding elements of the individual plans. The department shall provide a copy of the report to each urban water supplier that has submitted its plan to the department. The department shall also prepare reports and provide data for any legislative hearings designed to consider the effectiveness of plans submitted pursuant to this part.
10645. Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

CHAPTER 4. MISCELLANEOUS PROVISIONS

10650. Any actions or proceedings to attack, review, set aside, void, or annul the acts or decisions of an urban water supplier on the grounds of noncompliance with this part shall be commenced as follows:
- (a) An action or proceeding alleging failure to adopt a plan shall be commenced within 18 months after that adoption is required by this part.
- (b) Any action or proceeding alleging that a plan, or action taken pursuant to the plan, does not comply with this part shall be commenced within 90 days after filing of the plan or amendment thereto pursuant to Section 10644 or the taking of that action.
10651. In any action or proceeding to attack, review, set aside, void, or annul a plan, or an action taken pursuant to the plan by an urban water supplier on the grounds of noncompliance with this part, the inquiry shall extend only to whether there was a prejudicial abuse of discretion. Abuse of discretion is established if the supplier has not proceeded in a manner required by law or if the action by the water supplier is not supported by substantial evidence.
10652. The California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) does not apply to the preparation and adoption of plans pursuant to this part or to the implementation of actions taken pursuant to Section
10632. Nothing in this part shall be interpreted as exempting from the California Environmental Quality Act any project that would significantly affect water supplies for fish and wildlife, or any project for implementation of the plan, other than projects implementing Section 10632, or any project for expanded or additional water supplies.

10653. The adoption of a plan shall satisfy any requirements of state law, regulation, or order, including those of the State Water Resources Control Board and the Public Utilities Commission, for the preparation of water management plans or conservation plans; provided, that if the State Water Resources Control Board or the Public Utilities Commission requires additional information concerning water conservation to implement its existing authority, nothing in this part shall be deemed to limit the board or the commission in obtaining that information. The requirements of this part shall be satisfied by any urban water demand management plan prepared to meet federal laws or regulations after the effective date of this part, and which substantially meets the requirements of this part, or by any existing urban water management plan which includes the contents of a plan required under this part.
10654. An urban water supplier may recover in its rates the costs incurred in preparing its plan and implementing the reasonable water conservation measures included in the plan. Any best water management practice that is included in the plan that is identified in the "Memorandum of Understanding Regarding Urban Water Conservation in California" is deemed to be reasonable for the purposes of this section.
10655. If any provision of this part or the application thereof to any person or circumstances is held invalid, that invalidity shall not affect other provisions or applications of this part which can be given effect without the invalid provision or application thereof, and to this end the provisions of this part are severable.
10656. An urban water supplier that does not prepare, adopt, and submit its urban water management plan to the department in accordance with this part, is ineligible to receive funding pursuant to Division 24 (commencing with Section 78500) or Division 26 (commencing with Section 79000), or receive drought assistance from the state until the urban water management plan is submitted pursuant to this article.
10657. (a) The department shall take into consideration whether the urban water supplier has submitted an updated urban water management plan that is consistent with Section 10631, as amended by the act that adds this section, in determining whether the urban water supplier is eligible for funds made available pursuant to any program administered by the department.
- (b) This section shall remain in effect only until January 1, 2006, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2006, deletes or extends that date.

Appendix B-1

Public Notification

Sample Letter Notifying Of Intent To Modify Uwmp

June 2, 2005

Santa Clara Valley Water District
Attn: James O'Brien
5750 Almaden Expressway
San Jose, CA 95118

Subject: Urban Water Management Plan - Notice of Preparation

Dear Mr. O'Brien:

The Urban Water Management Plan Act (Water Code Section 10610 – 10657) requires the City of Milpitas to update its Urban Water Management Plan in 2005. The City of Milpitas purchases wholesale water from the Santa Clara Valley Water District. The Plan includes water demand projections, identifies a water supply contingency action plan, and recommends a water conservation program. We are reviewing our current Plan, which was last updated in 2000, and will be considering revisions to it.

We will make any proposed revisions to our Plan available for public review and will hold a public hearing later this year. In the meantime, if you have any questions about our Plan, or the process for updating it, please contact:

Darryl Wong at (408) 586-3345, or
Pam Lowe at (408) 586-3304
City of Milpitas, Utility Engineering
455 East Calaveras Blvd.
Milpitas, CA 95035
dwong@ci.Milpitas.ca.gov or plowe@ci.Milpitas.ca.gov

Sincerely,

Darryl Wong
Utility Engineer

Appendix B-2

Public Notification Display Ad Notifying Of Intent To Modify Uwmp (published in the *Milpitas Post* June 2, 2005)

Urban Water Management Plan - Notice of Preparation

The Urban Water Management Plan Act (Water Code Section 10610 – 10657) requires the City of Milpitas to update its Urban Water Management Plan in 2005. The Plan includes water demand projections, identifies a water supply contingency action plan, and recommends a water conservation program. We are reviewing our current Plan, which was last updated in 2000, and will be considering revisions to it.

We will make any proposed revisions to our Plan available for public review and will hold a public hearing later this year. In the meantime, if you have any questions about our Plan, or the process for updating it, please contact:

Darryl Wong at (408) 586-3345, or
Pam Lowe at (408) 586-3304
City of Milpitas, Utility Engineering
455 East Calaveras Blvd.
Milpitas, CA 95035
dwong@ci.Milpitas.ca.gov or plowe@ci.Milpitas.ca.gov

Appendix B-3

Public Hearing Notice to Adopt the 2005 Urban Water Management Plan

(Published in the *Milpitas Post* November 17 & 24, 2005)

NOTICE IS HEREBY GIVEN that the Milpitas City Council has set the hour of 7:00 PM on Tuesday, December 6, 2005, in the City Hall, Council Chambers, 455 E. Calaveras Blvd, to consider adopting the 2005 Urban Water Management Plan. The purpose of the plan is to review current and future water resources, and to establish and maintain water conservation programs. The proposed update to the Plan is available for public review during normal business hours at City Hall in the City Clerk's Office, or an electronic copy of the Plan can be downloaded from the City's website at www.ci.milpitas.ca.gov.

NOTICE IS FURTHER GIVEN pursuant to Government Code Sec. 65009 that any challenge of this ordinance in court may be limited to raising only those issues raised by you or on your behalf at the public hearing described in this notice, or in written correspondence delivered to the City Council at, or prior to, this hearing.

Interested persons may appear and be heard at the public hearing or may submit written communication to the Council prior to the hearing. Comments may be mailed to City Clerk, City of Milpitas, 455 E. Calaveras Blvd., Milpitas, CA 95035 or delivered to the Information Desk at City Hall or send via email to: mlavelle@ci.milpitas.ca.gov.

Appendix C

City of Milpitas Council Resolution Adopting the 2005 UWMP

1. RESOLUTION NO. 7565

(Original Signed on File in the City Clerk's Office)

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MILPITAS

2. TO ADOPT THE 2005 URBAN WATER MANAGEMENT PLAN

The City Council of the City of Milpitas hereby resolves as follows:

WHEREAS the California Legislature enacted Assembly Bill 797 (Water Code Section 10610 et. Seq., known as the Urban Water Management Plan Act) during the 1983-84 Regular Session, and as amended subsequently, which mandates that every supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare an Urban Water Management Plan, the primary objective of which is to plan for the conservation and efficient use of water; and

WHEREAS the City is an urban supplier of water serving an estimated population of over 65,000; and

WHEREAS the Plan shall be periodically reviewed at least once every five years, and that the City shall make any amendments or changes to its plan which are indicated by the review; and

WHEREAS the Plan must be adopted by December 31, 2005 after public review and hearing, and filed with the California Department of Water Resources within thirty days of adoption;

WHEREAS the City has therefore, prepared and circulated for public review a draft Urban Water Management Plan, and a properly noticed public hearing regarding said Plan was held by the City Council on December 6, 2005; and

WHEREAS the draft Plan revises the 2000 Urban Water Management Plan adopted by Council on January 16, 2001.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Milpitas as follows:

1. The 2005 Urban Water Management Plan, which replaces the 2000 Urban Water Management Plan, is hereby adopted and ordered filed with the City Clerk;
2. The City Manager, or his designee, is hereby authorized and directed to file the Plan with the California Department of Water Resources within 30 days after this date;
3. The City Manager, or his designee, is hereby authorized and directed to implement the Water Conservation Programs set forth in the 2005 Urban Water Management Plan, which includes water shortage contingency analysis and recommendations to the City Council regarding necessary procedures, rules, and regulations to carry out effective and equitable water conservation and water recycling programs; and
4. The City Manager, or his designee, is hereby authorized and directed to implement the Water Shortage Contingency Plan during water shortages when declared by City Council.

PASSED AND ADOPTED this 6th day of December, 2005, by the following vote:

AYES: (5) Mayor Esteves, Vice Mayor Gomez, Councilmembers Livengood, Polanki and Giordano

NOES: (0) None

ABSENT: (0) None

ABSTAIN: (0) None

ATTEST:

APPROVED:

Mary Lavelle, City Clerk

Jose Esteves, Mayor

APPROVED AS TO FORM:

Steven T. Mattas, City Attorney

Appendix D

Water Conservation Ordinance No. 240.1

(Original Signed on File in the City Clerk's Office)

REGULAR

NUMBER: 240.1

TITLE: ORDINANCE AMENDING AN EXISTING SUBSECTION TO SECTION 3.00 OF TITLE VIII, CHAPTER 6 ENTITLED "WATER CONSERVATION"

HISTORY: This ordinance was introduced (first reading) at a meeting of the City Council of the City of Milpitas on August 2, 2005, upon motion by Councilmember Livengood, and was finally adopted (second reading) at a meeting of said Council on August 16, 2005, upon motion by Vice Mayor Gomez. Said ordinance was duly passed and ordered published in accordance with the law by the following vote:

AYES: (4) Mayor Esteves, Vice Mayor Gomez, Councilmembers Giordano and Livengood,

NOES: (0) None

ABSENT: (1) Councilmember Polanski

ABSTAIN: (0) None

ATTEST:

APPROVED:

Mary Lavelle, City Clerk

Jose Esteves, Mayor

APPROVED AS TO FORM:

Steven T. Mattas, City Attorney

ORDAINING CLAUSE:

THE CITY COUNCIL OF THE CITY OF MILPITAS DOES HEREBY ORDAIN AS FOLLOWS:

74271_O

Title VIII, Chapter 6, Sections VIII-6-1 through VIII-6-4, are hereby added to the Milpitas Municipal Code to read as follows:

CHAPTER 6

3. WATER CONSERVATION

SECTIONS:

VIII-6-1	PURPOSE
VIII-6-2	DEFINITIONS
VIII-6-3	RESTRICTIONS
VIII-6-4	WATER METER LOAN PROGRAM
VIII-6-1.00	PURPOSE

The City Council of the City of Milpitas has found that the limited supply of City waters are subject to ever increasing demands; that the City's economic prosperity depends on adequate supplies of water; and that the City policy promotes conservation and efficient use of potable water.

Consistent with the above findings, the purpose of this ordinance is to promote the values and benefits of conservation and efficient use of potable water; and establish provisions for water management practices and prevention of potable water waste.

VIII-6-2.00 DEFINITIONS

The words used in this ordinance have the meaning set forth below:

- 2.01** "Reclaimed Water" means treated or recycled wastewater of a quality suitable for non-potable uses and not intended for human consumption.
- 2.02** "Runoff" means water that is not absorbed by the surface to which it is applied and flows from the area.
- 2.03** "Potable Water" means water sold by the City of Milpitas intended for human consumption.

VIII-6-3.00 RESTRICTIONS

The following uses of potable water are prohibited:

- 3.01** Use that results in flooding or runoff in gutters, waterways, patios, sidewalks, driveways, or streets except as permitted in Section 3.02 A and B.
- 3.02** Use without a shutoff nozzle on the outlet end of the hose for:
 - A. washing cars, buses, boats, aircraft, trailers or other vehicles;
 - B. Washing buildings, structures, sidewalks, walkways, driveways, patios, parking lots, tennis courts, or other hard-surfaced areas; and
 - C. watering outside plants, lawn, landscape and turf areas.
- 3.03** Service of water by any restaurant except upon the request of a customer.

- 3.04 Use through broken or defective plumbing, sprinkler, watering, or irrigation systems.
- 3.05 Use in new, added, or altered commercial car wash equipment unless a recycled water system is incorporated.
- 3.06 Use in new, added, or altered cooling system equipment unless at least fifty percent of the water is recycled. A waiver to allow less than fifty percent recycling may be granted by the Chief Building Official due to water quality concerns only. Cost is not an acceptable reason to request or receive a waiver.
- 3.07 Appropriate use for irrigation if reclaimed water is available, except in the following situations as deemed necessary by City Engineer:
 - A. Implementation of the streetscape along Abel and Main Streets;
 - B. Irrigation of City Cultural Resources;
 - C. An establishment period for native plantings, when irrigation will be eliminated at a later period;
 - D. Where recycled water use is prohibited under Title 22 of the State Water Code;
 - E. Other situations where reclaimed water use is deemed inappropriate by City Engineer.
- 3.08 Use in new, added, or altered decorative fountains unless a recycled water system is incorporated.

VIII-6-4.00 WATER METER LOAN PROGRAM

Water meters shall be made available by the City to loan to industrial and commercial customers for use in water audits. The industrial and commercial customers shall use the meters to conduct audits in various segments of their plant or process for identifying and implementing water conservation measures.

Appendix E

Water Efficient Landscape Ordinance No. 238.2 (Original Signed on File in the City Clerk's Office)

REGULAR

NUMBER: 238.2

TITLE: ORDINANCE AMENDING AN EXISTING SUBSECTION TO SECTION 3.03 OF TITLE VIII, CHAPTER 5 ENTITLED "WATER EFFICIENT LANDSCAPES"

HISTORY: This ordinance was introduced (first reading) at a meeting of the City Council of the City of Milpitas on August 2, 2005, upon motion by Councilmember Livengood, and was finally adopted (second reading) at a meeting of said Council on August 16, 2005, upon motion by Vice Mayor Gomez. Said ordinance was duly passed and ordered published in accordance with the law by the following vote:

AYES: (4) Mayor Esteves, Vice Mayor Gomez, Councilmembers Giordano, and Livengood,

NOES: (0) None

ABSENT: (1) Councilmember Polanski

ABSTAIN: (0) None

ATTEST:

APPROVED:

Mary Lavelle, Deputy City Clerk

Jose Esteves, Mayor

APPROVED AS TO FORM:

Steven T. Mattas, City Attorney

ORDAINING CLAUSE:

THE CITY COUNCIL OF THE CITY OF MILPITAS DOES HEREBY ORDAIN AS FOLLOWS:

74270_O

In Title VIII of the Milpitas Municipal Code, add Chapter 5, Sections VIII-5-1 through VIII-5-7, inclusive to read as follows:

CHAPTER 5, WATER EFFICIENT LANDSCAPE ORDINANCE

4. SECTION 1 PURPOSE

- VIII-5-1.01 The City Council has found:
- A. that the limited supply of City waters are subject to ever increasing demands;
 - B. that the City's economic prosperity depends on adequate supplies of water;
 - C. that City policy promotes conservation and efficient use of water;
 - D. that landscapes provide recreation areas; clean the air and water, prevent erosion, offer fire protection, and replace ecosystems displaced by development; and
 - E. that landscape design, installation, and maintenance can and should be water efficient.
- VIII-5-1.02 Consistent with the findings, the purpose of this ordinance is to:
- A. promote the values and benefits of landscapes while recognizing the need to invest water and other resources as efficiently as possible;
 - B. establish a structure for designing, installing, and maintaining water efficient landscapes in new projects; and
 - C. establish provisions for water management practices and water waste prevention for established landscapes.

Section 2 DEFINITIONS

The words used in this ordinance have the meaning set forth below:

- VIII-5-2.01 **Antidrain valve** or **check valve:** a valve located under a sprinkler head to hold water in the system so it minimizes drainage from the lower elevation sprinkler heads.
- VIII-5-2.02 **Application rate:** the depth of water applied to a given area, usually measured in inches per hour.
- VIII-5-2.03 **Applied water:** the portion of water supplied by the irrigation system to the landscape.
- VIII-5-2.04 **Automatic controller:** a mechanical or solid state timer, capable of operating valve stations to set the days and length of time of a water application.
- VIII-5-2.05 **Backflow prevention device:** a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system.

- VIII-5-2.06 **Conversion factor (0.62):** a number that converts the maximum applied water allowance from inches per acre per year to gallons per square foot per year (1 inch/acre/yr = 0.62 gallons/sf/yr). The conversion factor is calculated as follows:
- 325,829 gallons/43,560 square feet/12 inches = 0.62
- 325,829 gallons = 1 acre-foot
- 43,560 square feet = 1 acre
- 12 inches = 1 foot
- To convert gallons per year to 100 cubic feet per year, another common billing unit for water, divide gallons per year by 748 (748 gallons = 100 cubic feet).
- VIII-5-2.07 **Ecological restoration project:** a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.
- VIII-5-2.08 **Effective precipitation or usable rainfall:** the portion of total precipitation that is used by the plants. Precipitation is not a reliable source of water but can contribute to some degree toward the water needs of the landscape. For the purpose of this document, “effective precipitation” is 25 percent of local annual mean precipitation.
- VIII-5-2.09 **Emitter:** drip irrigation fittings that deliver water slowly from the system to the soil.
- VIII-5-2.10 **Established landscape:** the point at which plants in the landscape have developed roots into the soil adjacent to the root ball.
- VIII-5-2.11 **Establishment period:** the first year after installing the plant in the landscape.
- VIII-5-2.12 **Estimated Applied Water Use:** the portion of the Estimated Total Water use that is derived from applied water. The Estimated Applied Water Use shall not exceed the Maximum Applied Water Allowance. The Estimated Applied Water Use may be the sum of the water recommended through the irrigation schedule as referenced in VIII-5-3.03(C).
- VIII-5-2.13 **Estimated Total Water Use:** the annual total amount of water estimated to be needed to keep the plants in the landscaped area healthy. It is based upon such factors as the local evapotranspiration (ET) rate, the size of the landscaped area, the types of plants, and the efficiency of the irrigation system, as described in VIII-5-3.03(D).
- VIII-5-2.14 **ET adjustment factor:** a factor of 0.8, that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape.
- A combined plant mix with a site-wide average of 0.5 is the basis of the plant factor portion of this calculation. The irrigation efficiency for the purpose of the ET Adjustment Factor is 0.625.
- Therefore, the ET adjustment factor $(0.8) = (0.5/0.625)$.
- VIII-5-2.15 **Evapotranspiration:** the quantity of water evaporated from adjacent soil surfaces and transpired by plants during a specific time.

- VIII-5-2.16 **Flow rate:** the rate at which water flows through pipes and valves (gallons per minute or cubic feet per second).
- VIII-5-2.17 **Hydrozone:** a portion of the landscaped area having plants with similar water needs that are served by a valve or set of valves with the same schedule. A hydrozone may be irrigated or non-irrigated. For example, a naturalized area planted with native vegetation that will not need supplemental irrigation once established is a non-irrigated hydrozone.
- VIII-5-2.18 **Infiltration rate:** The rate of water entry into the soil expressed as a depth of water per unit of time (inches per hour).
- VIII-5-2.19 **Irrigation efficiency:** the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum irrigation efficiency for purposes of this ordinance is 0.625. Greater irrigation efficiency can be expected from well designed and maintained systems.
- VIII-5-2.20 **Landscape irrigation audit:** a process to perform site inspection, evaluate irrigation systems, and develop efficient irrigation schedules.
- VIII-5-2.21 **Landscaped area:** the entire parcel less the building footprint, driveways, non-irrigated portions of the parking lots, hardscape such as decks and patios, and other nonporous areas. Water features are included in the calculation of the landscaped area. Areas dedicated to edible plants such as orchards or vegetable gardens are not included.
- VIII-5-2.22 **Lateral line:** the water delivery pipeline that supplies water to the emitters or sprinklers from the valve.
- VIII-5-2.23 **Local annual mean precipitation:** the Department of Water Resources 20-year historical rainfall data.
- VIII-5-2.24 **Main line:** the pressurized pipeline that delivers water from the water source to the valve or outlet.
- VIII-5-2.25 **Maximum Applied Water Allowance:** for design purposes, the upper limit of annual applied water for the established landscaped area as specified in VIII-5-3.03(B). It is based upon the area's reference evapotranspiration, the ET Adjustment Factor, and the size of the landscaped area. The Estimated Applied Water Use shall not exceed the maximum Applied Water Allowance.
- VIII-5-2.26 **Mulch:** any material such as leaves, bark, straw, or other materials left loose and applied to the soil surface to reduce evaporation.
- VIII-5-2.27 **Operating pressure:** the pressure at which a system of sprinklers is designed to operate, usually indicated at the base of a sprinkler.
- VIII-5-2.28 **Overspray:** the water which is delivered beyond the landscaped area, wetting pavements, walks, structures, or other non-landscaped areas.
- VIII-5-2.29 **Plant factor:** a factor that when multiplied by reference evapotranspiration, estimates the amount of water used by plants. For purposes of this ordinance, the average plant factor of

low water-using plants range from 0 to 0.3, for average water-using plants the range is 0.4 to 0.6, and for high water-using plants the range is 0.7 to 1.0.

- VIII-5-2.30 **Rain sensing device:** a system which automatically shuts off the irrigation system when it rains.
- VIII-5-2.31 **Record drawing or as-builts:** a set of reproducible drawings which show significant changes in the work made during construction and which are usually based on drawings marked up in the field and other data furnished by the contractor.
- VIII-5-2.32 **Recreational area:** areas of active play or recreation such as sports fields, school yards, picnic grounds, or other areas with intense foot traffic.
- VIII-5-2.33 **Recycled water, reclaimed water, or treated sewage effluent water:** treated or recycled wastewater of a quality suitable for non-potable uses such as landscape irrigation; not intended for human consumption.
- VIII-5-2.34 **Reference evapotranspiration or ETo:** a standard measurement of environment parameter which affect the water use of plants. ETo is given in inches per day, month, or year as represented in VIII-5-6 and is an estimate of the evapotranspiration of a large field of 4- to 7-inch tall, cool-season grass that is well watered. Reference evapotranspiration is used as the basis in determining the Maximum Applied Water Allowance so that regional differences in climate can be accommodated.
- VIII-5-2.35 **Rehabilitated landscape:** any relandscaping project that requires a permit.
- VIII-5-2.36 **Runoff:** water which is not absorbed by the soil or landscape to which it is applied and flows from the area. For example, runoff may result from water that is applied at too great a rate (application rate exceeds infiltration rate) or when there is a severe slope.
- VIII-5-2.37 **Soil moisture sensing device:** a device that measures the amount of water in the soil.
- VIII-5-2.38 **Soil texture:** the classification of soil based on the percentage of sand, silt, and clay in the soil.
- VIII-5-2.39 **Sprinkler head:** a device which sprays water through a nozzle.
- VIII-5-2.40 **Static water pressure:** the pipeline or municipal water supply pressure when water is not flowing.
- VIII-5-2.41 **Station:** an area served by one valve or by a set of valves that operate simultaneously.
- VIII-5-2.42 **Turf:** a surface layer of earth containing mowed grass with its root. Annual bluegrass, Kentucky bluegrass, perennial ryegrass, red fescue, and tall fescue are cool-season grasses. Bermuda grass, Kikuyugrass, Seashore paspalum, St. Augustine grass, Zoysia grass, and Buffalo grass are warm-season grasses.
- VIII-5-2.43 **Valve:** a device used control the flow of water in the irrigation system.
- VIII-5-2.44 **Water conservation concept statement:** a one-page checklist and a narrative summary of the project as shown in VIII-5-3.03(A).

Section 3 PROVISIONS FOR NEW OR REHABILITATED LANDSCAPES

VIII-5-3.01 APPLICABILITY

- A. Except as provided in VIII-5-3.01(C), below, this section shall apply to:
 - 1. all new and rehabilitated landscaping for public agency projects, and private commercial and industrial projects; and
 - 2. common area landscaping in single-family and multi-family subdivisions or planned unit developments.
- B. Projects subject to this section shall conform to the provisions in of this chapter.
- C. This section shall not apply to:
 - 1. residential landscaping other than those described in VIII-5-3.01(A-2);
 - 2. cemeteries;
 - 3. registered historical sites;
 - 4. ecological restoration projects that do not require a permanent irrigation system;
 - 5. any project with a landscaped area less than 2,500 square feet; or
 - 6. designated cultural resources.

VIII-5-3.02 LANDSCAPE DOCUMENTATION PACKAGE

- A. A copy of the landscape documentation package conforming to this chapter shall be submitted to the City Engineer. No permit shall be issued until the City reviews and approves the landscape documentation package.
- B. A copy of the approved landscape documentation package shall be provided to the property owner or site manager along with the record drawings and any other information normally forwarded to the property owner or site manager.
- C. Each landscape documentation package shall include the following elements, which are described in VIII-5-3.03:
 - 1. Water Conservation Concept Statement
 - 2. Calculation of the Maximum Applied Water Allowance
 - 3. Calculation of the Estimated Applied Water Use
 - 4. Calculation of the Estimated Total Water Use
 - 5. Landscape Design Plan
 - 6. Irrigation Design Plan
 - 7. Irrigation Schedules
 - 8. Maintenance Schedules
 - 9. Landscape Irrigation Audit Schedules
 - 10. Grading Design Plan
 - 11. Soil Analysis
 - 12. Certificate of Substantial Completion (to be submitted after installation of the project)

- D. If effective precipitation is included in the calculation of the Estimated Total Water Use, then an Effective Precipitation Disclosure Statement from the landscape professional and the property owner shall be submitted with the Landscape Documentation Package.

VIII-5-3.03 ELEMENTS OF LANDSCAPE DOCUMENTATION PACKAGE

A. Water Conservation Concept Statement

Each landscape documentation package shall include a cover sheet referred to as the Water Conservation Concept Statement similar to the attached example. It serves as a checklist to verify that the elements of the landscape documentation package have been completed and has a narrative summary of the project.

B. The Maximum Applied Water Allowance

1. A project's Maximum Applied Water Allowance shall be calculated using the following formula:

$$\begin{aligned}
 \text{MAWA} &= (\text{ET}_o) (0.8) (\text{LA}) (0.62) \text{ where:} \\
 \text{MAWA} &= \text{Maximum Applied Water Allowance (gallons per year)} \\
 \text{ET}_o &= \text{Reference Evapotranspiration (inches per year)} \\
 0.8 &= \text{ET Adjustment Factor} \\
 \text{LA} &= \text{Landscaped Area (square feet)} \\
 0.62 &= \text{Conversion Factor}
 \end{aligned}$$

2. Two example calculations of the Maximum Applied Water Allowance are:

a. Project Site One

Landscaped area of 50,000 feet² in Milpitas.

$$\begin{aligned}
 \text{MAWA} &= (\text{ET}_o) (0.8) (\text{LA}) (0.62) \\
 &= (45 \text{ inches}) (0.8) (50,000 \text{ feet}^2) (0.62) \\
 &\quad \text{year} \\
 &= 1,116,000 \text{ gallons/year or } 1,492 \text{ 100-foot}^3 \text{ per year} \\
 &\quad (1,116,000/748 = 1,492)
 \end{aligned}$$

b. Project Site Two

Landscaped area of 50,000 feet² in San Francisco.

$$\begin{aligned}
 \text{MAWA} &= (\text{ET}_o) (0.8) (\text{LA}) (0.62) \\
 &= (35 \text{ inches}) (0.8) (50,000 \text{ feet}^2) (0.62) \\
 &\quad \text{year} \\
 &= 868,000 \text{ gallons/year or } 1,160 \text{ 100 feet}^2 \text{ per year} \\
 &\quad (868,000/748 = 1,160)
 \end{aligned}$$

CITY OF MILPITAS
WATER CONSERVATION CONCEPT STATEMENT

Project Name:	Water Account Number (Existing landscape meters only):
Project Address/Location:	Water Meter Serial Number (Existing landscape meters only):

Landscape Architect/Irrigation Designer - Separate Water Conservation Concept Statements shall be submitted for each irrigation meter.

Included in this project submittal package are (Check (4) to indicate completion):

<input type="checkbox"/>	New/Rehabilitated Landscapes	_____	Gallons/year
	•• Existing Landscapes, if applicable	_____	Gallons/year
	TOTAL MAWA	_____	Gallons/year
<input type="checkbox"/>	2. Estimated Applied Water Use (EAWU):		
	New/Rehabilitated Landscapes	_____	Gallons/year
	•• Existing Landscapes, if applicable	_____	Gallons/year
	TOTAL EAWU	_____	Gallons/year
<input type="checkbox"/>	2a. Estimated Amount of Water Expected from Effective Precipitation •:	_____	Gallons/year
<input type="checkbox"/>	3. Estimated Total Water Use (ETWU):		
	New/Rehabilitated Landscapes	_____	Gallons/year
	•• Existing Landscapes, if applicable	_____	Gallons/year
	TOTAL ETWU	_____	Gallons/year

NOTES: • If the design assumes that a part of the Estimated Total Water Use will be provided by precipitation, the Effective Precipitation Disclosure Statement in VIII-5-5.00 shall be completed and submitted. The Estimated Amount of Water Expected from Effective Precipitation shall not exceed 25 percent of the local annual mean precipitation (average rainfall).

•• To determine gallons/year for existing landscaping, contact the Public Works Department, Utility Engineering Section. This value shall be the same in items 1, 2, and 3 above.

- 4. Landscape Design Plan
- 5. Irrigation Design Plan
- 6. Irrigation Schedule
- 7. Maintenance Schedule
- 8. Landscape Irrigation Audit Schedule
- 9. Grading Design Plan
- 10. Soil Specification

Description of Project: Briefly describe the planning and design actions that are intended to achieve conservation and efficiency in water use.

Prepared by: _____	Date: _____
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3. Portions of landscaped areas in public and private projects such as parks, playgrounds, sports fields, golf course, or school yards where turf provides a playing surface or serves other recreational purposes may require water in addition to the Maximum Applied Water Allowance. A statement shall be included with the landscape design plan, designating areas to be used for such purposes and specifying any needed amount of additional water above the Maximum Applied Water Allowance.

C. Estimated Applied Water Use

1. The Estimated Applied Water Use shall not exceed the Maximum Applied Water Allowance.
2. A calculation of Estimated Applied Water Use shall be submitted with the Landscape Documentation Package. It may be calculated by summing the 12 monthly amounts of applied water recommended in the irrigation schedule on an annual basis.

D. Estimated Total Water Use

1. A calculation of the Estimated Total Water Use shall be submitted with the Landscape Documentation Package. The Estimated Total Water Use may be calculated by summing the amount of water recommended in the irrigation schedule and adding any amount of water expected from effective precipitation (not to exceed 25 percent of the local annual mean precipitation) or may be calculated from a formula such as the following:

The Estimated Total Water Use for the entire landscaped area equals the sum of the Estimated Water Use of all hydrozones in that landscaped area.

$$EWU \text{ (hydrozone)} = \frac{(ET_o) (PF) (HA) (0.62)}{(IE)}$$

- EWU = Estimated Water Use (gallons per year)
- ET_o = Reference Evapotranspiration (inches per year)
- PF = Plant factor
- HA = Hydrozone area (square feet)
- 0.62 = Conversion factor
- IE = Irrigation efficiency

If the Estimated Total Water Use is greater than the Estimated Applied Water Used due to precipitation being included as a source of water, an Effective Precipitation Disclosure Statement such as the one in VIII-5-5 shall be included in the Landscape Documentation Package.

E. Landscape Design Plan

A landscape design plan meeting the following requirements shall be submitted as part of the landscape documentation package.

1. Plant Selection and Grouping

- a. Any plants may be used in the landscape, providing the Estimated Applied Water Use recommended does not exceed the Maximum Applied Water Allowance and that the plants meet the specifications set forth (Section VIII-5-3.03 B, C, and D).
- b. Plants having similar water use shall be grouped together in distinct hydrozones.
- c. Groundcover other than turf will be used on all slopes exceeding 10%.
- d. Plants shall be selected appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the site. Protection and preservation of native species and natural areas is encouraged. The planting of trees is encouraged wherever it is consistent with the other provisions of this ordinance.
- e. Fire prevention needs shall be addressed in areas that are fire prone. Information about fire prone areas and appropriate landscaping for fire safety is available from the California Department of Forestry.

2. Water Features

- a. Recirculating water shall be used for decorative water features.
- b. Pool and spa covers are encouraged.

3. Landscape Design Plan Specifications

The landscape design plan shall be drawn on project base sheets at a scale that accurately and clearly identifies:

- a. Designation of hydrozones.
- b. Landscape materials, trees, shrubs, ground cover, turf, and other vegetation. Planting Symbols shall be clearly drawn and plants labeled by botanical name, common name, container size, spacing, and quantities of each group of plants indicated.
- c. Property lines and street names.
- d. Streets, driveways, walkways, and other paved areas.
- e. Pools, ponds, water features, fences, and retaining walls.
- f. Existing and proposed buildings and structures including elevation if applicable.
- g. Natural features including, but not limited to, rock outcroppings, existing trees, shrubs that will remain.

- h. Tree staking, plant installation, soil preparation details, and any other applicable planting and installation details.
- i. A calculation of the total landscaped area.
- j. Designation of recreational areas.

F. Irrigation Design Plan

An irrigation design plan meeting the following conditions shall be submitted as part of the Landscape Documentation Package.

1. Irrigation Design Criteria

- a. **Runoff and Overspray.** Soil types and infiltration rate shall be considered when designing irrigation systems. All irrigation systems shall be designed to minimize runoff, low head drainage, overspray, or other similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways, or structures. Proper irrigation equipment and schedules, including features such as repeat cycles, shall be used to closely match application rates to infiltration rates; therefore, minimizing runoff.

Special attention shall be given to minimize runoff on slopes and to avoid overspray in planting areas with a width less than 10 feet and in median strips less than 8 feet wide.

- b. **Irrigation Efficiency.** For the purpose of determining the Maximum Applied Water Allowance, irrigation efficiency is assumed to be 0.625. Irrigation systems shall be designed, maintained, and managed to meet or exceed 0.625 efficiency.

- c. **Equipment.**

Water meters. Separate landscape water meters shall be required for all projects except for single-family and duplex homes or any project with a landscaped area of less than 2,500 square feet.

Controllers. Automatic control systems shall be required for all irrigation systems and must be able to accommodate all aspects of the design.

Valves. Plants which require different amounts of water shall be irrigated by separate valves. If one valve is used for a given area, only plants with similar water use shall be used in that area. Antidrain (check) valves shall be installed in strategic points to minimize or prevent low-head drainage.

Sprinkler heads. Heads and emitters shall have consistent application rates within each control valve circuit. Sprinkler heads shall be selected for proper area coverage, application rate, operating pressure, adjustment capability, and ease of maintenance.

Rain Sensing Override Devices. Rain sensing override devices are recommended on all irrigation systems.

Soil Moisture Sensing Devices. It is recommended that soil moisture sensing devices be considered where appropriate.

Backflow Prevention Assemblies. Backflow protection shall be in accordance with Chapter 3, Title VIII of the Milpitas Municipal Code which establishes backflow prevention and cross-connection control.

2. Recycled Water

- a. The installation of recycled water irrigation systems (dual distribution systems) shall be required to allow for the current and future use of recycled water, unless a written exemption has been granted as described in the following section (b) or as specified in Section VIII-6-3.07.
- b. Irrigation systems shall make use of recycled water unless a written exemption has been granted by the City of Milpitas, stating that recycled water meeting all health standards is not available and will not be available in the foreseeable future.
- c. The recycled water irrigation systems shall be designed and operated in accordance with all local and state codes.

3. Irrigation Design Plan Specifications

Irrigation system shall be designed to be consistent with hydrozones.

The irrigation design plan shall be drawn on project base sheets. It should be separate from, but use the same format as, the landscape design plan. The scale shall be the same as that used for the landscape design plan described in VIII-5-3.03(E-3).

The irrigation plan shall accurately and clearly identify:

- a. Location and size of separate water meters for the landscape.
- b. Location, type, and size of all components of the irrigation system, including automatic controllers, main and lateral lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers, and backflow prevention devices.
- c. Static water pressure at the point of connection to the public water supply.
- d. Flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (psi) for each station.

- e. Recycled water irrigation systems as specified in the VIII-5-3.03(F-2).

G. Irrigation Schedules

Irrigation schedules satisfying the following conditions shall be submitted as part of the Landscape Documentation Package.

1. An annual irrigation program with monthly irrigation schedules shall be required for the plant establishment period, for the established landscape, and for any temporarily irrigated areas.
2. The irrigation schedule shall:
 - a. include run time (in minutes per cycle), suggested number of cycles per day, and frequency of irrigation for each station; and
 - b. provide the amount of applied water (in hundred cubic feet, gallons, or in whatever billing units the local water supplier uses) recommended on a monthly and annual basis.
3. The total amount of water for the project shall include water designated in the Estimated Total Water Use calculation plus water needed for any water features which shall be considered as a high water using hydrozone.
4. Recreational areas designated in the landscape design plan shall be highlighted and the irrigation schedule shall indicate if any additional water is needed above the Maximum Applied Water Allowance because of high plant factors (but not due to irrigation inefficiency).
5. Whenever possible, irrigation scheduling shall incorporate the use of evapotranspiration data such as those from the California Irrigation Management Information System (CIMIS) weather stations to apply the appropriate levels of water for different climates.
6. Whenever possible, landscape irrigation shall be scheduled during non-daylight hours to avoid irrigating during times of high wind or high temperature.

H. Maintenance Schedules

A regular maintenance schedule satisfying the following conditions shall be submitted as part of the Landscape Documentation Package:

1. Landscape shall be maintained to ensure water efficiency. A regular maintenance schedule shall include, but not be limited to, checking, adjusting, and repairing irrigation equipment; resetting the automatic controller; aerating and dethatching turf areas; replenishing mulch; fertilizing; pruning, and weeding in all landscaped areas.
2. Whenever possible, repair of irrigation equipment shall be done with the originally specified materials or their equivalents.

I. Landscape Irrigation Audit Schedules

A schedule of landscape irrigation audits, for all but single-family residences, satisfying the following conditions shall be submitted to the City as part of the Landscape Documentation Package.

1. At a minimum, audits shall be in accordance with the State of California Landscape Water Management Program as described in the most current version of the Landscape Irrigation Auditor Handbook, the entire document, which is hereby incorporated by reference.
2. The schedule shall provide for landscape irrigation audits to be conducted by certified landscape irrigation auditors at the owner's cost at least once every 5 years.

J. Grading Design Plan

Grading design plans satisfying the following conditions shall be submitted as part of the Landscape Documentation Package:

1. A grading design plan shall be drawn on project base sheets. It should be separate from but use the same format as the landscape design plan.
2. The grading design plan shall indicate finished configurations and elevations of the landscaped area, including the height of graded slopes, drainage patterns, pad elevations, and finish grade.

K. Soil Analysis

1. A soil analysis satisfying the following conditions shall be submitted as part of the Landscape Documentation Package:
 - a. Determination of soil texture, indicating the percentage of organic matter.
 - b. An approximate soil infiltration rate (either measured or derived from soil texture/infiltration rate tables). A range of infiltration rates should be noted where appropriate.
 - c. Measure of pH and total soluble salts.
2. A mulch of at least 3 inches shall be applied to all planting areas except turf.
3. Decomposed organic matter or polymer products shall be incorporated into the soil to improve infiltration, water retention and soil structure.

L. Certification

1. Upon completing the installation of landscaping and irrigation systems, an irrigation audit shall be conducted by a Certified Landscape Irrigation Auditor (CLIA) prior to the final field observation. The CLIA shall be

certified by the Irrigation Association. (See Landscape Irrigation Auditor Handbook as referenced in VIII - 5 - 3.03 [I-1].)

2. A licensed irrigation designer, landscape architect or other licensed or Certified Professional in Horticulture or in a field related to Horticulture shall conduct a final field observation to confirm that the irrigation system was installed as designed, that plants were installed as specified, and that an irrigation audit has been performed.
3. A licensed Landscape Architect, Irrigation Designer or Licensed or Certified Professional in Horticulture or in a field related to Horticulture shall provide a certificate of substantial completion to the City and to the owner of record. This certificate shall specifically indicate that plants were installed as specified, that the irrigation system was installed as designed on the plan, and that an irrigation audit has been performed. Any deficiencies shall also be identified on the certificate of substantial completion.
4. A Certificate of Substantial Completion shall be submitted to the City and to the owner of record. A sample of such a form, which shall be provided by the City is attached.

VIII-5-3.04 PUBLIC EDUCATION

A. Publications

The City will maintain public information materials on water efficient landscaping at the public information counter at City Hall.

B. Model Homes

At least one model home that is landscaped in each project consisting of eight or more homes shall demonstrate via signs and information the principles of water efficient landscape described in this ordinance.

1. Signs shall be used to identify the model as an example of water efficient landscape and featuring elements such as hydrozones, irrigation equipment, and others which contribute to the overall water efficient theme.
2. Information shall be provided about designing, installing, and maintaining water efficient landscapes.

CITY OF MILPITAS

Certificate Of Substantial Completion

Project Name:	Water Account Number (Existing landscape meters only):	
Project Address/Location:	Water Meter Serial Number (Existing landscape meters only):	Bldg. Permit # (if applicable):

Preliminary Project Documentation Submitted: (Check (4) to indicate submittal):

- 1. Total Maximum Applied Water Allowance (MAWA): _____ Gallons/year
- 2. Total Estimated Applied Water Use (EAWU): _____ Gallons/year
- 2a. Estimated Amount of Water Expected from Effective Precipitation •: _____ Gallons/year
- 3. Total Estimated Total Water Use (ETWU): _____ Gallons/year

NOTE: • If the design assumes that a part of the Estimated Total Water Use will be provided by precipitation, the Effective Precipitation Disclosure Statement in VIII-5-5 shall be completed and submitted. The Estimated Amount of Water Expected from Effective Precipitation shall not exceed 25 percent of the local annual mean precipitation (average rainfall).

- 4. Landscape Design Plan
- 5. Irrigation Design Plan
- 6. Irrigation Schedule
- 7. Maintenance Schedule
- 8. Landscape Irrigation Audit Schedule
- 9. Grading Design Plan
- 10. Soil Specifications

Landscaping Post-Installation Inspection: (Check (4) to indicate substantial completion)

- A. Soil and plants installed as specified (soil analysis performed)
- B. Irrigation system installed as designed
 - Recycled water for irrigation system
 - Minimal runoff or overspray
- C. Conduct a final field observation to confirm that the irrigation system was installed and is operating as designed and that plants were installed as specified.

Project submittal package and a copy of this certification has been provided to property owner/manager and the City of Milpitas.

Comments:

I/we certify that work has been installed in accordance with the contract documents.

Contractor		
Signature	Date	State License Number

I/we certify that based upon periodic site observations, the work has been substantially completed in accordance with the Water Efficient Landscape Ordinance and that the landscape planting and irrigation conform with the approved plans and specifications.

Landscape Architect, Irrigation Designer or Licensed or Certified Professional in Horticulture or in a field related to Horticulture.

Signature	Date	State License Number
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I/we certify that I/we have received all of the contract documents and that it is our responsibility to see that the project is maintained in accordance with the contract documents.

Owner	
Signature	Date

Must sign in order for City to accept certificate.

Section 4 PROVISIONS FOR EXISTING LANDSCAPES

VIII-5-4.01 WATER MANAGEMENT

All existing landscaped areas to which the City provides potable water that are 1 acre or more, including golf courses, green belts, common areas, schools, businesses, parks, and publicly owned landscapes shall have a landscape irrigation audit at least every 5 years. At a minimum, the audit shall be in accordance with the California Landscape Water Management Program as described in the most current version of the Landscape Irrigation Auditor Handbook, the entire document which is hereby incorporated by reference.

- A. If the project's water bills indicate that they are using less than or equal to the Maximum Applied Water Allowance for that project site, an audit shall not be required.
- B. Projects that stay within the Maximum Applied Water Allowance is encouraged.

VIII-5-4.02 WATER WASTE PREVENTION

Water waste resulting from inefficient landscape irrigation such as runoff, low head drainage, overspray, or other similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways, or structures is prohibited.

Section 5 EFFECTIVE PRECIPITATION

VIII-5-5.00 If effective precipitation is included in the calculation of the Estimated Total Water Use, an Effective Precipitation Disclosure Statement (similar to the following Effective Precipitation Disclosure Statement sample) shall be completed, signed, and submitted with the Landscape Documentation Package. No more than 25 percent of the local annual mean precipitation shall be considered effective precipitation in the calculation of the Estimated Total Water Use.

Section 6 REFERENCE EVAPOTRANSPIRATION

In Inches (Historical Data, Extrapolated from 12-Month Normal Year
ETo Maps and U.C. Publication 21426)

County	City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
Alameda	Livermore	1.2	1.5	2.9	4.4	5.9	6.6	7.4	6.4	5.3	3.2	1.5	0.9	47.2
	Oakland	1.5	1.5	2.8	3.9	5.1	5.3	6.0	5.5	4.8	3.1	1.4	0.9	41.8
Contra Costa	Benicia	1.3	1.4	2.7	3.8	4.9	5.0	6.4	5.5	4.4	2.9	1.2	0.7	40.3
	Brentwood	1.0	1.5	2.9	4.5	6.1	7.1	7.9	6.7	5.2	3.2	1.4	0.7	48.3
	Courtland	1.9	1.5	2.9	4.4	6.1	6.9	7.9	6.7	5.3	3.2	1.4	0.7	48.0
	Concord	1.1	1.4	2.4	4.0	5.5	5.9	7.0	6.0	4.8	3.2	1.3	0.7	43.4
	Martinez	1.2	1.4	2.4	3.9	5.3	5.6	6.7	5.6	4.7	3.1	1.2	0.7	41.8
	Pittsburg	1.0	1.5	2.8	4.1	5.6	6.4	7.4	6.4	5.0	3.2	1.3	0.7	54.4
Marin	Novato	1.3	1.5	2.4	3.5	4.4	6.0	5.9	5.4	4.4	2.8	1.4	0.7	39.8
	San Rafael	1.2	1.3	2.4	3.3	4.0	4.8	4.8	4.9	4.3	2.7	1.3	0.7	35.8
San Benito	Hollister	1.5	1.8	3.1	4.3	5.5	5.7	6.4	5.9	5.0	3.5	1.7	1.1	45.1
San Francisco	San Francisco	1.5	1.3	2.4	3.0	3.7	4.6	4.9	4.8	4.1	2.8	1.3	0.7	35.1
San Mateo	Half Moon Bay	1.5	1.7	2.4	3.0	3.9	4.3	4.3	4.2	3.5	2.8	1.3	1.0	33.7
	Redwood City	1.5	1.8	2.9	3.8	5.2	5.3	6.2	5.6	4.8	3.1	1.7	1.0	42.8
Santa Clara	Gilroy	1.3	1.8	3.1	4.1	5.3	5.6	6.1	5.5	4.7	3.4	1.7	1.1	43.6
	Los Gatos	1.5	1.8	2.8	3.9	5.0	5.6	6.2	5.5	4.7	3.2	1.7	1.1	42.9
	Milpitas	1.5	1.8	3.1	4.1	5.5	5.8	6.5	5.9	5.2	3.3	1.8	1.0	45.3
	Palo Alto	1.5	1.8	2.8	3.8	5.2	5.3	6.2	5.6	5.0	3.2	1.7	1.0	43.0
	San Jose	1.5	1.8	3.1	4.1	5.5	5.8	6.5	5.9	5.2	3.3	1.8	1.0	45.3
Santa Cruz	Santa Cruz	1.5	1.8	2.6	3.5	4.3	4.4	4.8	4.4	3.8	2.8	1.7	1.2	36.6
	Watsonville	1.5	1.8	2.7	3.7	4.6	4.5	4.9	4.2	4.0	2.9	1.8	1.2	37.7

Section 7 PENALTIES

VIII-5-7.00 Any person or persons, company, corporation or association, who shall violate any of the provisions of this Chapter or fail to comply therewith, or who shall violate or fail to comply with any order made thereunder, shall severally for each and every violation and non-compliance respectively, be guilty of an infraction, punishable in accordance with the provisions of I-1-4.09-1 of the Milpitas Municipal Code. The imposition of one fine for any violation shall not excuse the violation or permit it to continue; and all such persons shall be required to correct or remedy such violations or defects within a reasonable time; and when not otherwise specified, each day that prohibited conditions are maintained shall constitute a separate offense.

Appendix F

Rationing Program Options

Percent of Use with Exceptions Allowed

The allotment is based on a specified percentage of a previous year’s usage. Allotments can be increased for documented changes such as absence during the base year, increased household size (both temporary and permanent), new landscaping, new appliances, pools, and growth in the non-residential sectors.

Table 4 Percent of Use, Pros vs. Cons

Pros	Cons
The majority of the allotments can be computer generated from the existing water usage database, allowing for a quick implementation.	Neighbors with identical lot size and family size can have greatly differing allotments, resulting in perceived unfairness.
Customers that require or use larger amounts of water receive larger allotments than those who use less water.	Customer who wasted water in the base year will receive larger allotments than those who did not waste water.
A population census is not required.	Does not provide allotments for customers who established accounts after the base year.
This method was implemented during the City’s mandatory rationing of 1988-89 and 1990-93. City staff and water customers are familiar with the process.	Does not always provide adequate allotments for those customers who moved during the base year.
A “floor” (minimum allotment) can be established to serve as a lifeline.	This method was used during the 1988-89 and 1990-93 mandatory rationing periods. The exception process for requesting allotment increases was very labor intensive.
Can consider differences in lot sizes, number in households, and landscape sizes.	Allotment is not automatically reduced when household size is reduced.

Per Capita

This system allows for a set volume of water for each person in the residential sector. Allotments can be increased for additional temporary or permanent visitors.

Table 5 Per Capita, Pros vs. Cons

Pros	Cons
Customers may perceive this to be a fair system.	Allotment does not take into account variations in outside water needs.
Allotments are based on needs, not past water usage habits.	Does not provide allotments for commercial, industrial, institutional/governmental, and irrigation customers.
Some allotments will increase (compared to Percent of Use method).	A census will be required to determine household size. Customer honesty cannot be verified. This would require significant lead time to implement.
Allotments are based on current household sizes.	Some allotments will decrease (compared to

Pros	Cons
Results in a minimum number of residential exceptions.	Percent of Use method).
	Allotments are not automatically reduced when household size decreases.
	Does not consider individual needs.
	Single family homes with excessive outside consumption would be penalized.

Hybrid of Per Capita and Irrigation

This system provides a specific allotment for each person in the residential sector and includes an additional amount for outside water use. As in the per capita method, allotments can be increased for additional temporary or permanent visitors.

Table 6 Hybrid of Per Capita and Irrigation, Pros vs. Cons

Pros	Cons
Customers may perceive this to be a fair system.	Variations in lot sizes are not taken into account.
Allotment includes some landscaping water.	Does not provide allotments for commercial, industrial, institutional/governmental, and irrigation customers.
Allotments are based on needs, not past water usage habits.	A census will be required to determine household size. Customer honesty cannot be verified. This would require significant lead time to implement.

Per Household

This system assigns identical allotments to each customer in a specific user group. For example, all single family customers would receive the same allotment, regardless of household size and outside water needs.

Table 7 Per Household, Pros vs. Cons

Pros	Cons
A census would not be required.	Variations in household size are not taken into account.
Can be implemented quickly.	Outside water needs are not taken into account.
	Commercial, industrial, institutional/governmental and irrigation customers have unique needs.

Per Household and Irrigation

This system assigns identical allotments to each customer in a specific user group and includes an additional amount for outside water use.

Table 8 Per Household and Irrigation, Pros vs. Cons

Pros	Cons
A census would not be required.	Variations in household size are not taken into account.
Can be implemented quickly.	A fixed amount is given for outside needs. However, variations in these needs are not taken into account.
	Commercial, industrial, institutional/governmental and irrigation customers are not taken into account.

Inverted Block Rate Structure

This system does not assign allotments for each customer. Instead, the water rate structure includes several tiers with increasing costs as usage increases. The lowest tier would cost the least. As customers consume larger quantities of water, they would pay more for each unit of water used in succeeding tiers.

Table 9 Inverted Block Rate, Pros vs. Cons

Pros	Cons
The customer can control costs by controlling water usage.	Some customers will not conserve as they are willing to pay the higher prices.
Allotments are not required. This also eliminates receiving, reviewing, and revising customer allotments.	May penalize high water users such as industries and institutions.
Can be implemented quickly.	Difficult to accurately predict revenues initially.
	May penalize large families who require higher water needs.
	Difficult to establish appropriate tiers for varying commercial such as bookstore versus restaurant.

Appendix G

Example Inverted Block Rate Option

A 22% cutback in water consumption could result in an estimated 24% decrease in revenue. In order to maintain equivalent revenue, an escalating tier system is proposed. Preliminary calculations that follow show that the following rate structure could provide equivalent revenue.

Residential – 4 tiers:

0-20 hcf @ 1*current Tier 1 rate
21-40 @ 1*current Tier 2 rate
41-100 @ 1.5* current Tier 2 rate
101+ @ 2 current Tier 2 rate

Industrial/Commercial/Institutional/Irrigation – 5 tiers:

0-20 hcf @ 1*current rate
21-100 @ 1.2*current rate
101-500 @ 1.4*current rate
501-2500 @ 1.7* current rate
2500+ @ 2*current rate

The implementation of this tiered rate structure will have minimal effect on staff hours, computer program modifications, and billing changes. Most of the effort will be on public outreach. A sample calculation shows that a 6% retail rate increase is necessary to generate sufficient revenues to meet a 10% increase in wholesale water rates. This increase would apply to the current rate shown in the inverted block tiers above.

Table 1 Revenue Summary

Scenarios	Revenues	Comments
A Normal budget	\$11,297,511	Based on 04-05 actual water sales and 05-06 rates. See Table 3 for water rates and Table 4 for revenue calculations.
B Drought condition without rate adjustments	\$8,569,183	Assumes 22% total cutback in water sales which results in a decrease in revenue by 24%. Please see Table 2 for water cutback assumptions, Table 3 for water rates, and Table 5 for revenue calculations.
C Drought with tiers - revenues to match normal budget scenario A	\$11,393,942	<p>Assumes residential – 4 tiers: 0-20 hcf @ 1*current tier1 rate 21-40 @ 1*current tier 2 rate 41-100 @ 1.5* current tier 2 rate 101+ @ 2 current tier 2 rate</p> <p>Ind/Com/Inst/Irrig – 5 tiers: 0-20 hcf @ 1*current rate 21-100 @ 1.2*current rate 101-500 @ 1.4*current rate 501-2500 @ 1.7* current rate 2500+ @ 2*current rate</p> <p>See Table 2 for water cutback assumptions, Table 3 for water rates, and Table 6 for revenue calculations.</p>
D Drought with tiers and rate increase to match normal scenario A and with adjustment to cover cost increase assumed at 10%.	\$12,077,578	Assumes tier rates as in Scenario C plus an increase of 6% in each tier. See Table 2 for water cutback assumptions, Table 3 for water rates, and Table 7 for revenue calculations.

TABLE 2 WATER SALES

Category	Actual Water Sales in 04/05				Reduced Usage			
	Tier	SC	SF	Total	SC	SF	Reduction	Total
	(HCF)	(HCF)	(HCF)	(HCF)	(HCF)	(HCF)	(%)	(HCF)
Single-Family	0-20	9,370	1,175,024	1,184,394	8,246	1,034,021	12%	1,042,267
	21-40	1,460	393,254	394,714	1,168	314,603	20%	315,771
	41-100	49	137,406	137,455	27	75,573	45%	75,600
	101+	0	36,275	36,275	0	14,510	60%	14,510
	Total	10,879	1,741,959	1,752,838	9,441	1,438,708	17%	1,448,148
Duplexes	0-20	392	26,020	26,412	345	22,898	12%	23,243
	21-40	35	4,792	4,827	28	3,834	20%	3,862
	41-100	0	579	579	0	318	45%	318
	101+	0	0	0	0	0	60%	0
	Total	427	31,391	31,818	373	27,050	14%	27,423
Condos and Townhouses	0-20	711	69,750	70,461	626	61,380	12%	62,006
	21-40	104	4,305	4,409	83	3,444	20%	3,527
	41-100	158	833	991	87	458	45%	545
	101+	42	316	358	17	126	60%	143
	Total	1,015	75,204	76,219	813	65,409	13%	66,221
Multi-Family	0-20	26,932	344,364	371,296	23,700	303,040	12%	326,740
	21-40	213	54,627	54,840	170	43,702	20%	43,872
	41-100	0	17,219	17,219	0	9,470	45%	9,470
	101+	0	3,052	3,052	0	1,221	60%	1,221
	Total	27,145	419,262	446,407	23,871	357,433	15%	381,303
Mobile Homes	0-20	835	22,890	23,725	735	20,143	12%	20,878
	21-40	0	0	0	0	0	20%	0
	41-100	0	0	0	0	0	45%	0
	101+	0	0	0	0	0	60%	0
	Total	835	22,890	23,725	735	20,143	12%	20,878
All Residential	0-20	38,240	1,638,048	1,676,288	33,651	1,441,482	12%	1,475,134
	21-40	1,812	456,978	458,790	1,450	365,582	20%	367,032
	41-100	207	156,037	156,244	114	85,820	45%	85,933
	101+	42	39,643	39,685	17	15,857	60%	15,874
	TOTAL	40,301	2,290,706	2,331,007	35,231	1,908,742	17%	1,943,973
Commercial	0-20	20,951	40,875	61,826	18,856	36,788	10%	55,643
	21-100	49,123	68,826	117,949	43,228	60,567	12%	103,795
	101-500	101,139	88,046	189,185	75,854	66,035	25%	141,889
	501-2500	105,528	31,386	136,914	79,146	23,540	25%	102,686
	2501+	40,524	1,618	42,142	28,367	1,133	30%	29,499
	Total	317,265	230,751	548,016	245,451	188,061	20.9%	433,512
Industrial	0-20	37,291	3,814	41,105	33,562	3,433	10%	36,995
	21-100	69,507	8,955	78,462	61,166	7,880	12%	69,047
	101-500	122,851	12,563	135,414	95,824	9,799	22%	105,623
	501-2500	219,981	7,936	227,917	167,186	6,031	24%	173,217
	2501+	264,458	0	264,458	198,344	0	25%	198,344
	Total	714,088	33,268	747,356	556,081	27,144	22.0%	583,226
Institutional	0-20	480	1,987	2,467	432	1,788	10%	2,220
	21-100	1,661	5,912	7,573	1,462	5,203	12%	6,664
	101-500	7638	5,009	12,647	5,958	3,907	22%	9,865
	501-2500	34,993	6,918	41,911	26,595	5,258	24%	31,852
	2501+	13,783	0	13,783	103,405	0	25%	103,405
	Total	182,645	19,826	202,471	137,851	16,156	23.9%	154,006
TOTAL Com/Ind/Inst		1,213,998	283,845	1,497,843	939,383	231,360	21.8%	1,170,744
Irrigation (Ed Levin Park)	0-20	0	160	160	0	160	0%	160
	21-100	0	640	640	0	640	0%	640
	101-500	0	2,712	2,712	0	2,712	0%	2,712
	501-2500	0	3,162	3,162	0	474	85%	474
	2501+	0	0	0	0	0	0%	0
	Total	0	6,674	6,674	0	3,986	40.3%	3,986
City Domestic	0-20	696	1,764	2,460	696	1,764	0%	2,460
	21-100	658	2,642	3,300	658	2,642	0%	3,300
	101-500	65	4,986	5,051	42	3,241	35%	3,283
	501-2500	0	1,507	1,507	0	603	60%	603
	2501+	0	0	0	0	0	0%	0
	Total	1,419	10,899	12,318	1,396	8,250	21.7%	9,646
City Irrigation	0-20	1,019	6,682	7,701	1,019	6,682	0%	7,701
	21-100	1,706	17,161	18,867	1,706	17,161	0%	18,867
	101-500	1,896	41,351	43,247	948	20,676	50%	21,624
	501-2500	671	55,924	56,595	268	22,370	60%	22,638
	2501+	0	7,339	7,339	0	2,202	70%	2,202
	Total	5,292	128,457	133,749	3,941	69,090	45.4%	73,032
Irrigation	0-20	20,068	14,090	34,158	20,068	14,090	0%	34,158

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Category	Actual Water Sales in 04/05				Reduced Usage			
	Tier	SC	SF	Total	SC	SF	Reduction	Total
	(HCF)	(HCF)	(HCF)	(HCF)	(HCF)	(HCF)	(%)	(HCF)
Irrigation (Non-Residential)	21-100	58,467	40,851	99,318	58,467	40,851	0%	99,318
	101-500	104,007	90,988	194,995	52,004	45,494	50%	97,498
	501-2500	39,036	56,280	95,316	15,614	22,512	60%	38,126
	2501+	7,523	2,526	10,049	2,257	758	70%	3,015
	Total	229,101	204,735	433,836	148,410	123,705	37.3%	272,115
Irrigation (Residential)	0-20	467	8,880	9,347	467	8,880	0%	9,347
	21-100	1,605	26,924	28,529	1,605	26,924	0%	28,529
	101-500	3,788	59,594	63,382	1,894	29,797	50%	31,691
	501-2500	2,843	33,784	36,627	1,137	13,514	60%	14,651
	2501+	0	0	0	0	0	70%	0
Total	8,703	129,182	137,885	5,103	79,115	38.9%	84,218	
TOTAL Irrigation		244,515	479,947	724,462	158,851	284,145	38.9%	442,997
TOTAL ALL		1,498,814	3,054,498	4,553,312	1,133,465	2,424,247	21.9%	3,557,714
CHECK		1,498,814	3,054,498	4,553,312	1,133,465	2,424,247	21.9%	3,557,714

Add 9% Unaccounted for Water

4,963,110 - This is purchased water from Wholsaler

Goals:

Residential at 15% cutback

Industrial at 20% cutback

Irrigation at 40% cutback

Results of above reductions by wholesalers

SF Reduction = 24%

SC Reduction = 21%

Table 3 Water Rates

Category	Current 05/06 Rates		Tiered Rates Under Drought Conditions		Tiered Rates plus 10% Increase in Wholesale Costs
	Tier (HCF)	Rate (\$/HCF)	Tiers (HCF)	Rate (\$/HCF)	Rate - Assumes a 6% increase (\$/HCF)
Single-Family	0-20	\$1.40	0-20	\$1.40	\$1.48
	21+	\$2.93	21-40	\$2.93	\$3.11
			41-100	\$4.40	\$4.66
			101+	\$5.86	\$6.21
Duplexes	0-20	\$1.40	0-20	\$1.40	\$1.48
	21+	\$2.93	21-40	\$2.93	\$3.11
			41-100	\$4.40	\$4.66
			101+	\$5.86	\$6.21
Condos and Townhouses	0-20	\$1.40	0-20	\$1.40	\$1.48
	21+	\$2.93	21-40	\$2.93	\$3.11
			41-100	\$4.40	\$4.66
			101+	\$5.86	\$6.21
Multiple-Family	0-20	\$1.40	0-20	\$1.40	\$1.48
	21+	\$2.93	21-40	\$2.93	\$3.11
			41-100	\$4.40	\$4.66
			101+	\$5.86	\$6.21
Mobile Homes	0-20	\$1.40	0-20	\$1.40	\$1.48
	21+	\$2.93	21-40	\$2.93	\$3.11
			41-100	\$4.40	\$4.66
			101+	\$5.86	\$6.21
All Residential (per DU)	0-20	\$1.40	0-20	\$1.40	\$1.48
	21+	\$2.93	21-40	\$2.93	\$3.11
			41-100	\$4.40	\$4.66
			101+	\$5.86	\$6.21
Commercial		\$3.19	0-20	\$3.19	\$3.38
			21-100	\$3.83	\$4.06
			101-500	\$4.47	\$4.73
			501-2500	\$5.42	\$5.75
Industrial		\$3.19	2501+	\$6.38	\$6.76
			0-20	\$3.19	\$3.38
			21-100	\$3.83	\$4.06
			101-500	\$4.47	\$4.73
Institutional			501-2500	\$5.42	\$5.75
			2501+	\$6.38	\$6.76
		\$3.19	0-20	\$3.19	\$3.38
			21-100	\$3.83	\$4.06
Irrigation (Ed Levin Park)			101-500	\$4.47	\$4.73
			501-2500	\$5.42	\$5.75
		\$1.02	2501+	\$6.38	\$6.76
			0-20	\$1.02	\$1.08
City Domestic			21-100	\$1.22	\$1.30
			101-500	\$1.43	\$1.51
			501-2500	\$1.73	\$1.84
			2501+	\$2.04	\$2.16
City Irrigation		\$1.10	0-20	\$1.10	\$1.17
			21-100	\$1.32	\$1.40
			101-500	\$1.54	\$1.63
			501-2500	\$1.87	\$1.98
Irrigation (Non-Residential)			2501+	\$2.20	\$2.33
		\$1.10	0-20	\$1.10	\$1.17
			21-100	\$1.32	\$1.40
			101-500	\$1.54	\$1.63
Irrigation (Residential)			501-2500	\$1.87	\$1.98
			2501+	\$2.20	\$2.33
		\$3.65	0-20	\$3.65	\$3.87
			21-100	\$4.38	\$4.64
Irrigation (Residential)			101-500	\$5.11	\$5.42
			501-2500	\$6.21	\$6.58
		\$3.65	2501+	\$7.30	\$7.74
			0-20	\$3.65	\$3.87
Irrigation (Residential)			21-100	\$4.38	\$4.64
			101-500	\$5.11	\$5.42
			501-2500	\$6.21	\$6.58
			2501+	\$7.30	\$7.74

** The 05/06 Rate Analysis projects a total wholesale cost of \$6 million. The actual cost for 04/05 was \$5.7 million. Assuming a wholesale cost of \$6 million and a 10% increase, the total cost will be \$6.6 million. In order to compensate for the expenses due to a 10% increase in wholesale water cost, the revenue needs to be increased \$600,000 from \$11.3 million to \$11.9 million, or roughly \$12 million.

**Table 4 Revenue Without Drought
(Normal Rates, Normal Consumptions)**

Category	Current 05-06 Rates				
	Tier (HCF)	Rate (\$/HCF)	Revenue SC	Revenue SF	Revenue
Single-Family	0-20	\$1.40	\$13,118	\$1,645,034	\$1,658,152
	21+	\$2.93	\$4,421	\$1,661,120	\$1,665,541
TOTAL					\$3,323,693
Duplexes	0-20	\$1.40	\$549	\$36,428	\$36,977
	21+	\$2.93	\$103	\$15,737	\$15,840
TOTAL					\$52,816
Condos and Townhouses	0-20	\$1.40	\$995	\$97,650	\$98,645
	21+	\$2.93	\$891	\$15,980	\$16,871
TOTAL					\$115,516
Multi-Family	0-20	\$1.40	\$37,705	\$482,110	\$519,814
	21+	\$2.93	\$624	\$219,451	\$220,075
TOTAL					\$739,890
Mobile Homes	0-20	\$1.40	\$1,169	\$32,046	\$33,215
	21+	\$2.93	\$0	\$0	\$0
TOTAL					\$33,215
All Res (per DU)	0-20	\$1.40	\$53,536	\$2,293,267	\$2,346,803
	21+	\$2.93	\$6,039	\$1,912,288	\$1,918,327
TOTAL RES			\$59,574	\$4,205,555	\$4,265,129
Commercial		\$3.19	\$1,012,075	\$736,096	\$1,748,171
Industrial		\$3.19	\$2,277,941	\$106,125	\$2,384,066
Institutional		\$3.19	\$582,638	\$63,245	\$645,882
TOTAL Com/ Ind/Inst			\$3,872,654	\$905,466	\$4,778,119
Irrigation (Ed Levin Park)		\$1.02	\$0	\$6,807	\$6,807
City Domestic		\$1.10	\$1,561	\$11,989	\$13,550
City Irrigation		\$1.10	\$5,821	\$141,303	\$147,124
Irrigation (Non-Residential)		\$3.65	\$836,219	\$747,283	\$1,583,501
Irrigation (Residential)		\$3.65	\$31,766	\$471,514	\$503,280
TOTAL Irrig			\$875,367	\$1,378,896	\$2,254,263
TOTAL ALL			\$4,807,595	\$6,489,917	\$11,297,511

**Table 5 Revenue with Drought and Regular Rate Schedule
(Normal Rates, Reduced Consumption)**

Category	Current 05/06 Rates		Tiered Rates Under Drought Conditions				
	Tier (HCF)	Rate (\$/HCF)	Tiers (HCF)	Rate (\$/HCF)	Revenue SC	Revenue SF	Revenue TOTAL
Single-Family	0-20	\$1.40	0-20	\$1.40	\$11,544	\$1,447,630	\$1,459,173
	21+	\$2.93	21-40	\$2.93	\$3,422	\$921,787	\$925,210
			41-100		\$79	\$221,430	\$221,509
			101+		\$0	\$42,514	\$42,514
TOTAL					\$15,045	\$2,633,361	\$2,648,406
Duplexes	0-20	\$1.40	0-20	\$1.40	\$483	\$32,057	\$32,540
	21+	\$2.93	21-40	\$2.93	\$82	\$11,232	\$11,314
			41-100		\$0	\$933	\$933
			101+		\$0	\$0	\$0
TOTAL					\$565	\$44,222	\$44,787
Condos and Townhouses	0-20	\$1.40	0-20	\$1.40	\$876	\$85,932	\$86,808
	21+	\$2.93	21-40	\$2.93	\$244	\$10,091	\$10,335
			41-100		\$255	\$1,342	\$1,597
			101+		\$49	\$370	\$420
TOTAL					\$1,424	\$97,736	\$99,159
Multi-Family	0-20	\$1.40	0-20	\$1.40	\$33,180	\$424,256	\$457,437
	21+	\$2.93	21-40	\$2.93	\$499	\$128,046	\$128,545
			41-100		\$0	\$27,748	\$27,748
			101+		\$0	\$3,577	\$3,577
TOTAL					\$33,679	\$583,627	\$617,307
Mobile Home	0-20	\$1.40	0-20	\$1.40	\$1,029	\$28,200	\$29,229
	21+	\$2.93	21-40	\$2.93	\$0	\$0	\$0
			41-100		\$0	\$0	\$0
			101+		\$0	\$0	\$0
TOTAL					\$1,029	\$28,200	\$29,229
All Residential (per DU)	0-20	\$1.40	0-20	\$1.40	\$47,112	\$2,018,075	\$2,065,187
	21+	\$2.93	21-40	\$2.93	\$4,247	\$1,071,156	\$1,075,404
			41-100		\$334	\$251,454	
			101+		\$49	\$46,462	
TOTAL Residential					\$51,742	\$3,387,147	\$3,438,889
Commercial		\$3.19	0-20	\$3.19	\$60,150	\$117,352	\$177,502
			21-100	\$3.83	\$137,898	\$193,208	\$331,106
			101-500		\$241,975	\$210,650	\$452,625
			501-2500		\$252,476	\$75,091	\$327,567
			2501+		\$90,490	\$3,613	\$94,103
TOTAL					\$782,989	\$599,915	\$1,382,904
Industrial		\$3.19	0-20	\$3.19	\$107,062	\$10,950	\$118,012
			21-100	\$3.83	\$195,120	\$25,138	\$220,259
			101-500		\$305,678	\$31,259	\$336,937
			501-2500		\$533,322	\$19,240	\$552,562
			2501+		\$632,716	\$0	\$632,716
TOTAL					\$1,773,898	\$86,588	\$1,860,486

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Category	Current 05/06 Rates		Tiered Rates Under Drought Conditions				
	Tier (HCF)	Rate (\$/HCF)	Tiers (HCF)	Rate (\$/HCF)	Revenue SC	Revenue SF	Revenue TOTAL
Institutional		\$3.19	0-20	\$3.19	\$1,378	\$5,705	\$7,083
			21-100	\$3.83	\$4,663	\$16,596	\$21,259
			101-500		\$19,005	\$12,463	\$31,468
			501-2500		\$84,837	\$16,772	\$101,609
			2501+		\$329,861	\$0	\$329,861
Total Com/Ind/Inst					\$439,744	\$51,536	\$491,280
TOTAL Com/Ind/Inst							\$3,734,670
Irrigation (Ed Levin Park)		\$1.02	0-20	\$1.02	\$0	\$163	\$163
			21-100		\$0	\$653	\$653
			101-500		\$0	\$2,766	\$2,766
			501-2500		\$0	\$484	\$484
			2501+		\$0	\$0	\$0
TOTAL					\$0	\$4,066	\$4,066
City Domestic		\$1.10	0-20	\$1.10	\$766	\$1,940	\$2,706
			21-100		\$724	\$2,906	\$3,630
			101-500		\$46	\$3,565	\$3,611
			501-2500		\$0	\$663	\$663
			2501+		\$0	\$0	\$0
TOTAL					\$1,536	\$9,075	\$10,611
City Irrigation		\$1.10	0-20	\$1.10	\$1,121	\$7,350	\$8,471
			21-100		\$1,877	\$18,877	\$20,754
			101-500		\$1,043	\$22,743	\$23,786
			501-2500		\$295	\$24,607	\$24,902
			2501+		\$0	\$2,422	\$2,422
TOTAL					\$4,336	\$75,999	\$80,334
Irrigation (Non-Residential)		\$3.65	0-20	\$3.65	\$73,248	\$51,429	\$124,677
			21-100		\$213,405	\$149,106	\$362,511
			101-500		\$189,813	\$166,053	\$355,866
			501-2500		\$56,993	\$82,169	\$139,161
			2501+		\$8,238	\$2,766	\$11,004
TOTAL					\$541,696	\$451,523	\$993,218
Irrigation (Residential)		\$3.65	0-20	\$3.65	\$1,705	\$32,412	\$34,117
			21-100		\$5,858	\$98,273	\$104,131
			101-500		\$6,913	\$108,759	\$115,672
			501-2500		\$4,151	\$49,325	\$53,475
			2501+		\$0	\$0	\$0
TOTAL					\$18,627	\$288,768	\$307,395
TOTAL Irrigation					\$566,194	\$829,430	\$1,395,624

TOTAL ALL

\$8,569,183

**Table 6 Revenue with Drought and Inverted Block Rates
(Inverted Rates, Reduced Consumption)**

Category	Current 05/06 Rates		Tiered Rates Under Drought Conditions				
	Tier (HCF)	Rate (\$/HCF)	Tiers (HCF)	Rate (\$/HCF)	Revenue SC	Revenue SF	Revenue TOTAL
Single-Family	0-20	\$1.40	0-20	\$1.40	\$11,544	\$1,447,630	\$1,459,173
	21+	\$2.93	21-40	\$2.93	\$3,422	\$921,787	\$925,210
			41-100	\$4.40	\$118	\$332,145	\$332,263
			101+	\$5.86	\$0	\$85,029	\$85,029
TOTAL				\$15,085	\$2,786,590	\$2,801,675	
Duplexes	0-20	\$1.40	0-20	\$1.40	\$483	\$32,057	\$32,540
	21+	\$2.93	21-40	\$2.93	\$82	\$11,232	\$11,314
			41-100	\$4.40	\$0	\$1,400	\$1,400
			101+	\$5.86	\$0	\$0	\$0
TOTAL				\$565	\$44,689	\$45,254	
Condos and Townhouses	0-20	\$1.40	0-20	\$1.40	\$876	\$85,932	\$86,808
	21+	\$2.93	21-40	\$2.93	\$244	\$10,091	\$10,335
			41-100	\$4.40	\$382	\$2,014	\$2,395
			101+	\$5.86	\$98	\$741	\$839
TOTAL				\$1,600	\$98,777	\$100,377	
Multi-Family	0-20	\$1.40	0-20	\$1.40	\$33,180	\$424,256	\$457,437
	21+	\$2.93	21-40	\$2.93	\$499	\$128,046	\$128,545
			41-100	\$4.40	\$0	\$41,623	\$41,623
			101+	\$5.86	\$0	\$7,154	\$7,154
TOTAL				\$33,679	\$601,079	\$634,758	
Mobile Home	0-20	\$1.40	0-20	\$1.40	\$1,029	\$28,200	\$29,229
	21+	\$2.93	21-40	\$2.93	\$0	\$0	\$0
			41-100	\$4.40	\$0	\$0	\$0
			101+	\$5.86	\$0	\$0	\$0
TOTAL				\$1,029	\$28,200	\$29,229	
All Residential (per DU)	0-20	\$1.40	0-20	\$1.40	\$47,112	\$2,018,075	\$2,065,187
	21+	\$2.93	21-40	\$2.93	\$4,247	\$1,071,156	\$1,075,404
			41-100	\$4.40	\$500	\$377,180	\$377,681
			101+	\$5.86	\$98	\$92,923	\$93,022
TOTAL Residential				\$51,958	\$3,559,335	\$3,611,293	
Commercial		\$3.19	0-20	\$3.19	\$60,150	\$117,352	\$177,502
			21-100	\$3.83	\$165,478	\$231,850	\$397,328
			101-500	\$4.47	\$338,765	\$294,910	\$633,675
			501-2500	\$5.42	\$429,209	\$127,655	\$556,863
			2501+	\$6.38	\$180,980	\$7,226	\$188,206
TOTAL				\$1,174,582	\$778,993	\$1,953,575	
Industrial		\$3.19	0-20	\$3.19	\$107,062	\$10,950	\$118,012
			21-100	\$3.83	\$234,144	\$30,166	\$264,310
			101-500	\$4.47	\$427,949	\$43,763	\$471,712

CITY OF MILPITAS
2005 URBAN WATER MANAGEMENT PLAN

Category	Current 05/06 Rates		Tiered Rates Under Drought Conditions				
	Tier (HCF)	Rate (\$/HCF)	Tiers (HCF)	Rate (\$/HCF)	Revenue SC	Revenue SF	Revenue TOTAL
			501-2500	\$5.42	\$906,647	\$32,708	\$939,355
			2501+	\$6.38	\$1,265,432	\$0	\$1,265,432
TOTAL					\$2,941,234	\$117,587	\$3,058,822
Institutional		\$3.19	0-20	\$3.19	\$1,378	\$5,705	\$7,083
			21-100	\$3.83	\$5,595	\$19,915	\$25,511
			101-500	\$4.47	\$26,607	\$17,449	\$44,056
			501-2500	\$5.42	\$144,223	\$28,512	\$172,735
			2501+	\$6.38	\$659,722	\$0	\$659,722
TOTAL					\$837,525	\$71,581	\$909,107
TOTAL Com/Ind/Inst							\$5,921,503
Irrigation (Ed Levin Park)		\$1.02	0-20	\$1.02	\$0	\$163	\$163
			21-100	\$1.22	\$0	\$783	\$783
			101-500	\$1.43	\$0	\$3,873	\$3,873
			501-2500	\$1.73	\$0	\$822	\$822
			2501+	\$2.04	\$0	\$0	\$0
TOTAL					\$0	\$5,642	\$5,642
City Domestic		\$1.10	0-20	\$1.10	\$766	\$1,940	\$2,706
			21-100	\$1.32	\$869	\$3,487	\$4,356
			101-500	\$1.54	\$65	\$4,991	\$5,056
			501-2500	\$1.87	\$0	\$1,127	\$1,127
			2501+	\$2.20	\$0	\$0	\$0
TOTAL					\$1,699	\$11,546	\$13,245
City Irrigation		\$1.10	0-20	\$1.10	\$1,121	\$7,350	\$8,471
			21-100	\$1.32	\$2,252	\$22,653	\$24,904
			101-500	\$1.54	\$1,460	\$31,840	\$33,300
			501-2500	\$1.87	\$502	\$41,831	\$42,333
			2501+	\$2.20	\$0	\$4,844	\$4,844
TOTAL					\$5,335	\$108,518	\$113,853
Irrigation (Non-Residential)		\$3.65	0-20	\$3.65	\$73,248	\$51,429	\$124,677
			21-100	\$4.38	\$256,085	\$178,927	\$435,013
			101-500	\$5.11	\$265,738	\$232,474	\$498,212
			501-2500	\$6.21	\$96,887	\$139,687	\$236,574
			2501+	\$7.30	\$16,475	\$5,532	\$22,007
TOTAL					\$708,434	\$608,049	\$1,316,483
Irrigation (Residential)		\$3.65	0-20	\$3.65	\$1,705	\$32,412	\$34,117
			21-100	\$4.38	\$7,030	\$117,927	\$124,957
			101-500	\$5.11	\$9,678	\$152,263	\$161,941
			501-2500	\$6.21	\$7,056	\$83,852	\$90,908
			2501+	\$7.30	\$0	\$0	\$0
TOTAL					\$25,469	\$386,454	\$411,923
TOTAL Irrigation					\$740,937	\$1,120,208	\$1,861,146

TOTAL ALL

\$11,393,942

**Table 7 Increased Revenues with Drought, Inverted Block Rates,
and 10% Wholesale Rate Increase (Inverted Rates, Reduced Consumption)**

Category	Current 05/06 Rates		Tiered Rates Under Drought Conditions				
	Tier (HCF)	Rate (\$/HCF)	Tiers (HCF)	Rate (\$/HCF)	Revenue SC	Revenue SF	Revenue TOTAL
Single-Family	0-20	\$1.40	0-20	\$1.48	\$12,236	\$1,534,487	\$1,546,724
	21+	\$2.93	21-40	\$3.11	\$3,628	\$977,095	\$980,722
			41-100	\$4.66	\$126	\$352,073	\$352,199
			101+	\$6.21	\$0	\$90,130	\$90,130
TOTAL				\$15,990	\$2,953,786	\$2,969,775	
Duplexes	0-20	\$1.40	0-20	\$1.48	\$512	\$33,980	\$34,492
	21+	\$2.93	21-40	\$3.11	\$87	\$11,906	\$11,993
			41-100	\$4.66	\$0	\$1,484	\$1,484
			101+	\$6.21	\$0	\$0	\$0
TOTAL				\$599	\$47,370	\$47,969	
Condos and Townhouses	0-20	\$1.40	0-20	\$1.48	\$929	\$91,088	\$92,016
	21+	\$2.93	21-40	\$3.11	\$258	\$10,696	\$10,955
			41-100	\$4.66	\$405	\$2,134	\$2,539
			101+	\$6.21	\$104	\$785	\$890
TOTAL				\$1,696	\$104,704	\$106,400	
Multi-Family	0-20	\$1.40	0-20	\$1.48	\$35,171	\$449,712	\$484,883
	21+	\$2.93	21-40	\$3.11	\$529	\$135,728	\$136,258
			41-100	\$4.66	\$0	\$44,120	\$44,120
			101+	\$6.21	\$0	\$7,583	\$7,583
TOTAL				\$35,700	\$637,143	\$672,844	
Mobile Home	0-20	\$1.40	0-20	\$1.48	\$1,090	\$29,893	\$30,983
	21+	\$2.93	21-40	\$3.11	\$0	\$0	\$0
			41-100	\$4.66	\$0	\$0	\$0
			101+	\$6.21	\$0	\$0	\$0
TOTAL				\$1,090	\$29,893	\$30,983	
All Residential (per DU)	0-20	\$1.40	0-20	\$1.48	\$49,938	\$2,139,160	\$2,189,098
	21+	\$2.93	21-40	\$3.11	\$4,502	\$1,135,426	\$1,139,928
			41-100	\$4.66	\$530	\$399,811	\$400,342
			101+	\$6.21	\$104	\$98,499	\$98,603
TOTAL Residential				\$55,075	\$3,772,895	\$3,827,971	
Commercial		\$3.19	0-20	\$3.38	\$63,759	\$124,393	\$188,153
			21-100	\$4.06	\$175,406	\$245,761	\$421,167
			101-500	\$4.73	\$359,091	\$312,605	\$671,696
			501-2500	\$5.75	\$454,961	\$135,314	\$590,275
			2501+	\$6.76	\$191,839	\$7,660	\$199,499
TOTAL				\$1,245,057	\$825,732	\$2,070,789	
Industrial		\$3.19	0-20	\$3.38	\$113,486	\$11,607	\$125,093
			21-100	\$4.06	\$248,193	\$31,976	\$280,169
			101-500	\$4.73	\$453,626	\$46,389	\$500,015
			501-2500	\$5.75	\$961,046	\$34,671	\$995,717

Category	Current 05/06 Rates		Tiered Rates Under Drought Conditions				
	Tier (HCF)	Rate (\$/HCF)	Tiers (HCF)	Rate (\$/HCF)	Revenue SC	Revenue SF	Revenue TOTAL
			2501+	\$6.76	\$1,341,357	\$0	\$1,341,357
TOTAL					\$3,117,708	\$124,642	\$3,242,351
Institutional		\$3.19	0-20	\$3.38	\$1,461	\$6,047	\$7,508
			21-100	\$4.06	\$5,931	\$21,110	\$27,041
			101-500	\$4.73	\$28,203	\$18,496	\$46,699
			501-2500	\$5.75	\$152,876	\$30,223	\$183,099
			2501+	\$6.76	\$699,306	\$0	\$699,306
TOTAL					\$887,777	\$75,876	\$963,653
TOTAL Com/Ind/Inst							\$6,276,793
Irrigation (Ed Levin Park)		\$1.02	0-20	\$1.08	\$0	\$173	\$173
			21-100	\$1.30	\$0	\$830	\$830
			101-500	\$1.51	\$0	\$4,105	\$4,105
			501-2500	\$1.84	\$0	\$872	\$872
			2501+	\$2.16	\$0	\$0	\$0
TOTAL					\$0	\$5,980	\$5,980
City Domestic		\$1.10	0-20	\$1.17	\$812	\$2,057	\$2,868
			21-100	\$1.40	\$921	\$3,697	\$4,617
			101-500	\$1.63	\$69	\$5,290	\$5,359
			501-2500	\$1.98	\$0	\$1,195	\$1,195
			2501+	\$2.33	\$0	\$0	\$0
TOTAL					\$1,801	\$12,239	\$14,040
City Irrigation		\$1.10	0-20	\$1.17	\$1,188	\$7,791	\$8,979
			21-100	\$1.40	\$2,387	\$24,012	\$26,399
			101-500	\$1.63	\$1,548	\$33,751	\$35,298
			501-2500	\$1.98	\$532	\$44,341	\$44,873
			2501+	\$2.33	\$0	\$5,134	\$5,134
TOTAL					\$5,655	\$115,029	\$120,684
Irrigation (Non-Residential)		\$3.65	0-20	\$3.87	\$77,643	\$54,514	\$132,157
			21-100	\$4.64	\$271,451	\$189,663	\$461,114
			101-500	\$5.42	\$281,682	\$246,423	\$528,105
			501-2500	\$6.58	\$102,701	\$148,068	\$250,769
			2501+	\$7.74	\$17,464	\$5,864	\$23,328
TOTAL					\$750,940	\$644,532	\$1,395,472
Irrigation (Residential)		\$3.65	0-20	\$3.87	\$1,807	\$34,357	\$36,164
			21-100	\$4.64	\$7,452	\$125,003	\$132,454
			101-500	\$5.42	\$10,259	\$161,398	\$171,657
			501-2500	\$6.58	\$7,480	\$88,883	\$96,363
			2501+	\$7.74	\$0	\$0	\$0
TOTAL					\$26,997	\$409,641	\$436,638
TOTAL Irrigation					\$785,393	\$1,187,421	\$1,972,814
TOTAL ALL							\$12,077,578

Appendix H

Public Hearing Notice (Sample) for a Water Shortage Emergency City of Milpitas

NOTICE IS HEREBY GIVEN that the Milpitas City Council has set the hour of 7:00 p.m. on (date) in the City Hall Council Chambers, 455 East Calaveras Boulevard, to consider a mandatory water rationing program to be imposed upon residents and businesses within the City. The program will establish water rates and use guidelines in response to water reductions imposed upon City of Milpitas due to the drought.

NOTICE IS FURTHER GIVEN, pursuant to Government Code Section 65009, that any challenge of this matter in court may be limited to raising only those issues raised by you or on your behalf at the public hearing described in this notice, or in written correspondence delivered to the Council at or prior to this hearing.

Individuals who wish to comment on these recommendations are encouraged to attend or may submit written communications to the Council prior to the hearing. Said comments should be mailed to: City of Milpitas, 455 E. Calaveras Blvd., Milpitas, CA 95035.

Appendix I

Sample Water Shortage Emergency Rate Ordinance

URGENCY

NUMBER: 120.XX

TITLE: AN URGENCY ORDINANCE OF THE CITY OF MILPITAS AMENDING SECTIONS 6.13 AND 6.16, CHAPTER 1, TITLE VIII OF THE MILPITAS MUNICIPAL CODE, RELATING TO QUANTITY CHARGES AND EFFECTIVE DATE OF WATER RATES.

HISTORY: This Ordinance was introduced as an emergency measure at a meeting of the City Council of the City of Milpitas on _____, 20____, by motion of Councilmember _____, and passed, adopted, and ordered published in accordance with law by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

ATTEST:

APPROVED:

City Clerk

Mayor

APPROVED AS TO FORM:

City Attorney

ORDAINING CLAUSE:

THE CITY COUNCIL OF THE CITY OF MILPITAS DOES ORDAIN AS FOLLOWS:

Amendment to Section VIII-1-6.13. Title VIII, Chapter 1, Section 6.13 of the Milpitas Municipal Code is hereby amended to read as follows:

This ordinance is declared to be an urgency ordinance to take effect immediately. The following is a statement of facts constituting the emergency:

The (City's water wholesaler) _____, declared a Water Shortage Emergency and adopted a Water Conservation Program.

A Water Shortage Emergency condition prevails within the area served by city of Milpitas.

The (City's water wholesaler), at the direction of the (Commission or Board), requires that all resale customers, including the City of Milpitas, institute a water conservation program designed to reduce the amount of water purchased. The (City's wholesaler) has determined monthly allotments of water for the City.

The (City's water wholesaler), on _____, passed a resolution increasing water rates for the City of Milpitas.

The City has met Proposition 218 notification and public hearing requirements.

VIII-1-6.13 Quantity Charges:

The quantity charges per hundred cubic feet for metered water service shall be as follows:

Categories	Tiers	Unit Rate
Residential customers (per dwelling unit)	1-7 hcf	prevailing rate
	8-15 hcf	1.5 times the prevailing rate
	16-23 hcf	2.0 times the prevailing rate
	24+ hcf	2.5 times the prevailing rate
Commercial, Industrial, Institutional, and Construction Meter	1-100 hcf	prevailing rate
	101-200 hcf	1.5 times the prevailing rate
	201-300 hcf	2.0 times the prevailing rate
	301-400 hcf	2.5 times the prevailing rate
Recycled Industrial Process Use		prevailing rate
Recycled Sanitary Use (Inside Dual Plumbing)		prevailing rate
Potable Irrigation	1-100 hcf	prevailing rate
	101-200 hcf	1.5 times the prevailing rate
	201-300 hcf	2.0 times the prevailing rate
	301-400 hcf	2.5 times the prevailing rate
Recycled (Formerly Served by Wells)		prevailing rate
Recycled (Agricultural Service)		prevailing rate
For City Accounts (Recycled)		prevailing rate
Recycled (All other)		prevailing rate
Santa Clara County (Ed Levin Park)	1-100 hcf	prevailing rate
	101-200 hcf	1.5 times the prevailing rate
	201-300 hcf	2.0 times the prevailing rate
	301-400 hcf	2.5 times the prevailing rate

Categories	Tiers	Unit Rate
City of Milpitas accounts (potable)		

No adjustments shall be granted to any water account holder due to variation in the days of service for any bimonthly billing period. Acceptable days of service range from 50 to 69 days per bimonthly billing period.

Amendment to Section VIII-1.6.16. Title VIII, Chapter 1, Section 6.16 of the Milpitas Municipal Code is hereby amended to read as follows:

VIII-1-6.16 Effective Date of Water Rates:

The 05/06 water quantity charges in Section 6.13 as established by Ordinance No. 120.xx shall become effective for utility bills issued on or after _____ for meters read on or after _____
_____. All bills mailed thereafter shall be based upon these charges.

Appendix J

Sample Water Shortage Emergency Restrictions Ordinance

URGENCY

NUMBER: _____

TITLE: AN URGENCY ORDINANCE OF THE CITY OF MILPITAS ADDING SECTIONS 5, 6, AND 7, CHAPTER 6, TITLE VIII OF THE MILPITAS MUNICIPAL CODE, RELATING TO SUPPLEMENTAL WATER USE RESTRICTIONS, EFFECTIVE DATE, AND PENALTIES.

HISTORY: This Ordinance was introduced as an emergency measure at a meeting of the City Council of the City of Milpitas on _____, 20____, by motion of Councilmember _____ and passed, adopted, and ordered published in accordance with law by the following vote:

- AYES:
- NOES:
- ABSENT:
- ABSTAIN:

ATTEST:

APPROVED:

City Clerk

Mayor

APPROVED AS TO FORM:

City Attorney

ORDAINING CLAUSE:

THE CITY COUNCIL OF THE CITY OF MILPITAS DOES ORDAIN AS FOLLOWS:

Addition of Section VIII-6-5. Title VIII, Chapter 6, Section 5 of the Milpitas Municipal Code is hereby added to read as follows:

This ordinance is declared to be an urgency ordinance to take effect immediately. The following is a statement of facts constituting the emergency:

The (City's water wholesaler) on _____, declared a Water Shortage Emergency and adopted a Water Conservation Program.

A Water Shortage Emergency condition prevails within the area served by city of Milpitas.

The (City's water wholesaler), at the direction of the (Commission or Board), requires that all resale customers, including the City of Milpitas, institute a water conservation program designed to reduce the amount of water purchased. The (City's wholesaler) has determined monthly allotments of water for the City.

The (City's water wholesaler), on _____, passed a resolution increasing water rates for the City of Milpitas.

VIII-6-5.00 Supplemental Water Use Restrictions (Select this Section 5 for Stage I Water Conservation Program)

The following additional uses of potable water are prohibited:

- Cleaning sidewalks, hard surfaces, etc.
- Construction purposes such as dust control and compaction.
- Initial filling of any swimming pool or pond (refilling due to evaporation or repairs is acceptable).
- Hydrant flushing, except for health and safety.
- Street or parking lot cleaning.

VIII-6-5.00 Supplemental Water Use Restrictions (Select this Section 5 for Stage II Water Conservation Program)

The following additional uses of potable water are prohibited:

- Cleaning sidewalks, hard surfaces, etc.
- Construction purposes such as dust control and compaction.
- New swimming pool or pond construction or initial filling of any swimming pool or pond (refilling due to evaporation or repairs is acceptable).
- Hydrant flushing, except for health and safety.
- Street or parking lot cleaning.
- Cleaning, filling, or maintaining levels in decorative fountains.
- Potable irrigation of golf courses except greens and tees.

VIII-6-5.00 Supplemental Water Use Restrictions (Select this Section 5 for Stage III Water Conservation Program)

The following additional uses of potable water are prohibited:

- Cleaning sidewalks, hard surfaces, etc.
- Construction purposes such as dust control and compaction.
- New swimming pool or pond construction or initial filling of any swimming pool or pond (refilling due to evaporation or repairs is acceptable).
- Hydrant flushing, except for health and safety.
- Street or parking lot cleaning.
- Cleaning, filling, or maintaining levels in decorative fountains.
- Potable irrigation of golf courses except greens and tees.
- Washing vehicles outside of a commercial washing facility
- Irrigation of median landscape strips
- Failure to repair leaks

Addition of Section VIII-6-6. Title VIII, Chapter 6, Section 6 of the Milpitas Municipal Code is hereby added to read as follows:

VIII-6-6.00 Effective Date of Supplemental Water Restrictions

The supplemental water restrictions shall become effective on _____.

Addition of Section VIII-6-7. Title VIII, Chapter 6, Section 7 of the Milpitas Municipal Code is hereby added to read as follows:

VIII-6-7.00 Penalties

Any person or persons, company, corporation or association, who shall violate any of the provisions of this Chapter or fail to comply therewith, or who shall violate or fail to comply with any order made thereunder, shall severally for each and every violation and non-compliance respectively, be guilty of an infraction, punishable in accordance with the provisions of I-1-4.09-1 of the Milpitas Municipal Code. The imposition of one fine for any violation shall not excuse the violation or permit it to continue; and all such persons shall be required to correct or remedy such violations or defects within a reasonable time; and when not otherwise specified, each day that prohibited conditions are maintained shall constitute a separate offense.

Appendix K

Demand Management Measures

BMP	Title	Status	Activities	Implementation Schedule	Estimated Costs, \$ (\$55/hr Includes overhead)	
					Initial	Annual
1	<p>Water Survey Programs for SF and MF Residential Customers Requirement: Each reporting period (2 yrs.), directly contact (letter or telephone) at least 20% of SF customers and 20% of MF customers.</p> <p>Implementation: No later than July 1 of the first year following the year the agency becomes subject to the MOU.</p> <p>Coverage: In 10 years, at least 15% of SF and 15% of MF accounts to receive water use surveys.</p> <p>To Determine Status: Agencies considered on-track if % of SF and % of MF water use surveys equals at least:</p> <p>1.5% - end 1st reporting period (2 yrs.) 3.6% - end 2nd reporting period (4 yrs.) 6.3% - end 3rd reporting period (6 yrs.) 9.6% - end 4th reporting period (8 yrs.) 13.5% - end 5th reporting period (10 yrs.) (about 2,240 homes)</p> <p>Water Savings Assumption: Pre-1980 Construction: Low-flow showerhead retrofit 7.2 gcd Toilet retrofit (5-yr. Life) 1.3 gcd Leak repair 0.5 gcd Landscape survey (outdoor use reduction) 10% Post-1980 Construction: Low-flow showerhead retrofit 2.9 gcd Toilet retrofit (5-yr. Life) 0.0 gcd Leak repair 0.5 gcd Landscape survey (outdoor use reduction) 10%</p>	<p>In June 1999, the SCVWD began their residential home water survey program for all single family and multi-family residents in Santa Clara County.</p> <p>As of July 2005, the district completed over 18,000 surveys.</p> <p>The Program will continue to be marketed to the top 20% water users annually.</p>	<p>1. Provide water use data to SCVWD as requested so they can evaluate effectiveness of surveys by looking at water use prior to and after surveys.</p> <p>2. Market the program to all single family and multi-family residents.</p>	1. Ongoing	NA	\$1100 (20 hrs)
				2. Ongoing	NA	\$2200 (40 hrs)
	TOTAL COSTS				\$0	\$3300 (60 hrs)

2	<p>Residential Plumbing Retrofit</p> <p><u>Requirements:</u></p> <ul style="list-style-type: none"> ■ Identify SF and MF residences constructed prior to 1992. ■ Each reporting period (2 yrs.) distribute devices to at least 10% of SF/MF units each reporting period (2 yrs.). OR through enforceable ordinance. <p><u>Implementation:</u> No later than July 1 of the first year following the year the agency becomes subject to the MOU.</p> <p><u>Coverage:</u> Can elect to discontinue distribution when we can demonstrate that at least 75% of SF and 75% of MF units constructed prior to 1992 are fitted with low-flow showerheads (with 95% statistical confidence and a ±10% error).</p> <p><u>Water Savings Assumption:</u> Same as BMP 1 (see above)</p>	<p>The SCVWD provides showerheads & aerators to its water retailers.</p> <p>The City fulfills this BMP through the SCVWD's regional program.</p>	<ol style="list-style-type: none"> 1. Market the program to all residents. 2. Ordinance required to meet tier 3 mandatory retrofit of bathroom fixtures. 	<ol style="list-style-type: none"> 1. Ongoing 2. Develop ordinance if CSJ's Action Plan's Tier 3 goes into effect. 	<p>NA</p> <p>\$440 (8 hrs)</p>	<p>\$2200 (40 hrs)</p> <p>NA</p>
	TOTAL COSTS				\$440 (8 hrs)	\$2,200 (40 hrs)
3	<p>System Water Surveys, Leak Detection and Repair</p> <p><u>Requirement:</u> Annually complete a prescreening system audit to determine need for a full-scale system audit. Full-scale audit requirement if unaccounted-for-water is 10% or more.</p> <p><u>Implementation:</u> No later than July 1 of the first year following the year the agency becomes subject to the MOU.</p> <p><u>Water Savings Assumption:</u> Unaccounted water losses no more than 10% of total water into the water supplier's system.</p>	<p>Over the last 10 years, the City's unaccounted-for water averaged 6.2%. In any given year, the City exceeded the 10% unaccounted-for-water one time in fiscal year 93/94 (12%).</p>	<ol style="list-style-type: none"> 1. Determine unaccounted for water. 2. Setup and establish leak detection program. 3. If unaccounted-for-water exceeds 10%, perform a full system water audit and make repairs. 	<ol style="list-style-type: none"> 1. Annually 2. Initially. 3. No later than July 1 of the year following the year the City becomes subject to the MOU, and if unaccounted-for-water exceeds 10%. Assumes 136 miles of water pipe 8" and larger, 20 minutes to walk each mile @ \$100/hour, 1 leak found every 50 miles, \$20,000/leak to repair, and \$30,000 to prepare report. 	<p>NA</p> <p>\$20,000 (consultant)</p> <p>NA</p>	<p>\$110 (2 hrs)</p> <p>NA</p> <p>\$89,500 (consultant)</p>
	TOTAL COSTS				\$20,000 (consultant)	\$89,610 (2 hrs + consultant)

4	<p>Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections</p> <p><u>Requirement:</u> By the end of the 1st reporting period (2 yrs.), identify barriers to retrofitting mixed used commercial accounts with dedicated landscape meters AND conduct a feasibility study to examine incentive programs to switch mixed use accounts to dedicated landscape meters.</p> <p><u>Implementation:</u> No later than July 1 of the second year following the year the agency becomes subject to the MOU.</p> <p><u>Water Savings Assumption:</u> Meter retrofits will result in a 20% reduction in demand by retrofitted accounts.</p>	<p>All City of Milpitas connections are metered, however some meters are mixed-use.</p>	<p>1. Determine the # of mixed-use accounts.</p> <p>2. Conduct a feasibility study to examine incentive programs to switch mixed-use accounts to dedicated landscape meters.</p>	<p>1. No later than July 1 of the second year following the year the City becomes subject to the MOU. Assumes field testing 100 sites, 1 hour/site, and \$55/hour.</p> <p>2. No later than July 1 of the first reporting period following the date implementation was to commence.</p>	<p>\$5,500 (100 hrs)</p>	<p>NA</p>
	<p>TOTAL COSTS</p>				<p></p>	<p></p>
					<p>\$30,500 (100 hrs + consultant)</p>	<p>\$0</p>

5	<p>Large Landscape Conservation Programs and Incentives Requirements:</p> <ul style="list-style-type: none"> ■ By the end of the 2nd reporting period (4 yrs.), identify accounts with dedicated irrigation meters and assign ETo-based water use budgets (no more than 100% reference evapotranspiration per s.f.) for 90% of CII accounts. ■ Each billing cycle, provide notices to accounts with water use budgets (budget vs. actual consumption) that exceed their budget. ■ Each reporting period (2 yrs.) directly contact (letter or telephone) at least 20% of CII accounts w/mixed-used meters and offer water use surveys. ■ By the end of the 1st reporting period (2 yrs.), develop and implement a plan to target and market landscape water use surveys to CII accounts with mixed-use meters. ■ By the end of the 1st reporting period (2 yrs.), develop and implement a customer incentive program. <p>Implementation: No later than July 1 of the second year following the year the agency becomes subject to the MOU.</p> <p>Coverage: Within 10 years, complete irrigation water use surveys for at least 15% of CII accounts with mixed-use meters.</p> <p>To Determine Status: Agencies considered on-track if % of CII accounts with mixed-use meters receiving water use surveys equals at least: 1.5% - end 1st reporting period (2 yrs.) 3.6% - end 2nd reporting period (4 yrs.) 6.3% - end 3rd reporting period (6 yrs.) 9.6% - end 4th reporting period (8 yrs.) 13.5% - end 5th reporting period (10 yrs.)</p> <p>Water Savings Assumption: Landscape surveys will result in a 15% reduction in demand for landscape uses by surveyed accounts.</p>	<p>The SCVWD offers free landscape surveys through their Irrigation Technical Assistance Program (ITAP). To date, SCVWD has completed over 666 large landscape water audits.</p> <p>The City's Water Efficient Landscape Ordinance No. 238 also requires new and rehabilitated landscapes (over 2,500 square feet) be audited at least once every 5 years. In addition, any landscape that existed prior to January 1993 (of any size) must be audited unless the water use is below the Maximum Applied Water Allowance for that landscape size.</p> <p>SCVWD is currently developing a comprehensive program to develop Eto based water-use budgets for all large landscape sites by using aerial images and GIS techniques. This tool is expected to be available by early 2006.</p>	<ol style="list-style-type: none"> 1. Per Ord. 238, manage audit program 2. Market the surveys to all irrigation account holders. 3. Identify accounts with dedicated irrigation meters. 4. Assign ETo-based water use budgets for 90% of CII accounts. 5. For each accounts that exceeds their water use budget, provide a notice each billing cycle. 6. Market the program to CII accounts with mixed-use meters. 7. Develop and implement a customer incentive program. 	<ol style="list-style-type: none"> 1. Ongoing 2. Ongoing 3. No later than July 1 of the fourth year following the year the agency becomes subject to the MOU. 4. No later than July 1 of the fourth year following the year the agency becomes subject to the MOU. Assumes 500 sites and \$200/site. 5. No later than July 1 of the second year following the year the agency becomes subject to the MOU. Assumes the billing software needs to be revised. 6. No later than July 1 of the second year following the year the agency becomes subject to the MOU. 7. No later than July 1 of the second year following the year the agency becomes subject to the MOU. 	<p>NA</p> <p>NA</p> <p>\$110 (2 hrs)</p> <p>\$100,000 (consultant)</p> <p>\$4,400 (80 hrs.)</p> <p>\$275 (5 hrs)</p> <p>\$2,750 (50 hrs)</p>	<p>\$5500 (100 hrs)</p> <p>\$11,000 (200 hrs)</p> <p>NA</p> <p>\$2,200 (40 hrs)</p> <p>NA</p> <p>\$275 (5 hrs)</p> <p>\$2,200 (40 hrs)</p>
	TOTAL COSTS				<p>\$7,535 (137 hrs) + \$100,000 (consultant)</p>	<p>\$21,175 (385 hrs)</p>

6	<p>High-Efficiency Washing Machine Rebate Programs</p> <p><u>Requirement:</u> Water agencies shall offer a financial incentive, if cost effective, for the purchase of high-efficiency clothes washing machines (HEWS) meeting a water factor value of 9.5 or less.</p> <p><u>Implementation:</u> No later than July 1 of the second year following the year the agency becomes subject to the MOU.</p> <p><u>Water Savings Assumption:</u> See Exhibit 1 of the MOU.</p>	The SCVWD has offered high-efficiency washing machine rebates in conjunction with PG&E since July 1995. To date a total of 44,000 rebates have been distributed county wide.	1. Market the program to all residents.	1. Ongoing.	NA	\$2200 (40 hrs)
	TOTAL COSTS				\$0	\$2,200 (40 hrs)
7	<p>Public Information Programs</p> <p><u>Requirement:</u> Implement a public information program to include providing speakers, use bill inserts, coordinate with other groups, and provide public information.</p> <p><u>Implementation:</u> No later than July 1 of the first year following the year the agency becomes subject to the MOU.</p> <p><u>Water Savings Assumption:</u> Not quantified.</p>	The SCVWD provides public information to all residents in the South Bay (including Milpitas).	1. Market water conservation programs to all residents, businesses, and City employees.	1. Ongoing	NA	\$2200 (40 hrs)
	TOTAL COSTS				\$0	\$2,200 (40 hrs)
8	<p>School Education Programs</p> <p><u>Requirement:</u> Implement a school education program which includes providing instructional assistance, educational materials, and classroom presentations.</p> <p><u>Implementation:</u> No later than July 1 of the first year following the year the agency becomes subject to the MOU.</p> <p><u>Water Savings Assumption:</u> Not quantified.</p>	<p>SCVWD provides curriculum packets to school districts and presents workshops for teachers. (Contact is Kathy Machado.)</p> <p>The City also sponsors the "Learning to Be Water-Wise Program" in select fifth grade class rooms each year.</p>	<p>1. Provide MUSD teachers with SCVWD contact name and #.</p> <p>2. Implement "Learning to Be Water Wise" pilot program within Milpitas Unified School District.</p>	<p>1. Ongoing</p> <p>2. Initially for pilot program.</p>	<p>NA</p> <p>\$6,000 (materials + staff time)</p>	<p>\$2200 (40 hrs)</p> <p>\$10,000 (materials only)</p>
	TOTAL COSTS				\$6,000	\$12,200

9	<p>Conservation Programs for Commercial, Industrial, and Institutional (CII) Accounts</p> <p><u>Requirements:</u></p> <ul style="list-style-type: none"> ■ Identify and rank CII customers according to water use. ■ Directly contact (letter or telephone) and offer water use surveys and customer incentives to at least 10% of CII accounts on a repeating basis. <p><u>Implementation:</u> No later than July 1 of the second year following the year the agency becomes subject to the MOU.</p> <p><u>Coverage:</u></p> <ul style="list-style-type: none"> ■ Within 10 years, at least 10% of CII customers accept a water use survey. <p>OR</p> <ul style="list-style-type: none"> ■ Within 10 years, reduce water use by CII customers by at least 10% of baseline use. <p><u>To Determine Status:</u> Agencies considered on-track if estimated savings as a % of baseline water use equals at least: 0.5% - end 1st reporting period (2 yrs.) 2.4% - end 2nd reporting period (4 yrs.) 4.2% - end 3rd reporting period (6 yrs.) 6.4% - end 4th reporting period (8 yrs.) 9.0% - end 5th reporting period (10 yrs.)</p> <p><u>Water Savings Assumption:</u> Commercial: 12% estimated reduction in gpd per employee in year 2000 use occurring over the period 1980-2000. Industrial: 15% estimated reduction in gpd per employee in year 2000 use occurring over the period 1980-2000.</p>	<p>Water Efficient Technologies (WET) Program, sponsored by the SCVWD and City of San Jose, offers rebates up to \$50,000 per water efficiency project to businesses that discharge to the WPCP. To date 77 projects saving approximately 625,000 CCFs per year.</p> <p>In July 1999, the SCVWD began offering a commercial high-efficiency washing machine rebate. To date, 2,189 rebates have been distributed.</p> <p>In FY 96/97 the SCVWD implemented a regional pilot program that provided water-use surveys to large water-using commercial customers. The program was reinstated in FY 03/04. To date, 48 commercial water-use surveys have been completed.</p> <p>In FY 02/03 the SCVWD implemented the "Rinse & Save" program which provides for free installation of pre-rinse sprayers at food service facilities. To date, over 1,400 spray valves have been retrofitted.</p>	<ol style="list-style-type: none"> 1. Identify and rank CII customers according to water use. 2. Market the program to CII accounts. 	<ol style="list-style-type: none"> 1. No later than July 1 of the second year following the year the agency becomes subject to the MOU. 2. Ongoing once SCVWD implements their new CII program. 	<p>\$220 (4 hrs)</p> <p>NA</p>	<p>NA</p> <p>\$5500 (100 hrs)</p>
	TOTAL COSTS				<p>\$220 (4 hrs)</p>	<p>\$5,500 (100 hrs)</p>

10	<p>Wholesale Agency Assistance Programs</p> <p><u>Requirement:</u> Wholesalers will provide financial incentives, or equivalent resources, to advance water conservation efforts and effectiveness.</p> <p><u>Implementation:</u> No later than July 1 of the second year following the year the agency becomes subject to the MOU.</p> <p><u>Water Savings Assumption:</u> Not quantified.</p>	<p>SCVWD is currently providing retailer support to advance water conservation efforts. SFPUC, however, currently does not have a program in place.</p>	<p>1. Attend the SCVWD Water Conservation Subcommittee meetings.</p>	<p>1. Every two months, or as scheduled.</p>	<p>NA</p>	<p>\$1100 (20 hrs)</p>
	<p>TOTAL COSTS</p>				<p>\$0</p>	<p>\$1,100 (20 hrs)</p>
11	<p>Conservation Pricing</p> <p><u>Requirement:</u> Eliminate non-conservation pricing and adopt conservation pricing. Bill water and sewer service based on metered water use.</p> <p><u>Implementation:</u> No later than July 1 of the first year following the year the agency becomes subject to the MOU.</p> <p><u>Water Savings Assumption:</u> Not quantified.</p>	<p>The City has conservation pricing for water rates but not for sewer rates (residential customers are charged a fixed amount regardless of metered water use).</p>	<p>1. Begin conservation pricing for sewer rates. (In December 1992, the Milpitas City Council reviewed volume based sewer rates and they elected not to pursue it since large families would feel the large cost impact.)</p>	<p>1. No later than July 1 of the first year following the year the agency becomes subject to the MOU.</p>	<p>\$11,000 (200 hrs)</p>	<p>NA</p>
	<p>TOTAL COSTS</p>				<p>\$11,000 (200 hrs)</p>	<p>\$0</p>
12	<p>Conservation Coordinator</p> <p><u>Requirement:</u> Designate a water conservation coordinator and support staff (if necessary) to coordinate and oversee programs, BMP implementation, etc.</p> <p><u>Implementation:</u> No later than July 1 of the first year following the year the agency becomes subject to the MOU.</p> <p><u>Water Savings Assumption:</u> Not quantified.</p>		<p>1. Plan, manage, and oversee all water conservation programs.</p>	<p>1. Ongoing</p>	<p>NA</p>	<p>\$55,000 (1000 hrs)</p>
	<p>TOTAL COSTS</p>				<p>\$0</p>	<p>\$55,000 (1000 hrs)</p>

13	<p>Water Waste Prohibition</p> <p><u>Requirement:</u></p> <ul style="list-style-type: none"> ■ Enact and enforce measures prohibiting gutter flooding, single pass cooling systems in new connections, nonrecirculating systems in all new conveyor car wash and commercial laundry systems, and nonrecycling decorative water fountains. ■ (Signatories) shall support efforts to develop state law regarding exchange-type water softeners. ■ (Signatories) shall include water softener checks in home water audit programs and include information in their educational effort to encourage replacement of less efficient timer models. <p><u>Implementation:</u> No later than July 1 of the first year following the year the agency becomes subject to the MOU.</p> <p><u>Water Savings Assumption:</u> Not quantified.</p>	<p>The City's Water Conservation Ordinance No. 240 prohibits gutter flooding, cooling systems with less than 50% recycling, nonrecirculating systems in car washes, and nonrecycling decorative water fountains.</p>	<ol style="list-style-type: none"> 1. Revise ordinance to prohibit non-recirculating systems in commercial laundry systems. 2. Market the City's prohibitions to its customers. 	<ol style="list-style-type: none"> 1. No later than July 1 of the first year following the year the agency becomes subject to the MOU. 2. Ongoing 	\$2,200 (40 hrs.)	NA
	<p>TOTAL COSTS</p>					
14	<p>Residential ULFT Replacement Programs</p> <p><u>Requirement:</u></p> <p>Implement programs for replacing existing high-water-using toilets with ultra-low-flush toilets in SF and MF residences.</p> <p><u>Implementation:</u> No later than July 1 of the first year following the year the agency becomes subject to the MOU.</p> <p><u>Coverage:</u> See Exhibit 6 of the MOU.</p> <p><u>To Determine Status:</u> See to Exhibit 6 of the MOU.</p> <p><u>Water Savings Assumption:</u> See to Exhibit 6 of the MOU.</p>	<p>Between 1992 and June 2003 the SCVWD and City of San Jose provided 244,000 Ultra Low Flow Toilets (ULFTs) through various programs such as the ULFT rebate program, direct installation program and direct distribution events.</p> <p>Currently, the SCVWD is offering a rebate for High Efficiency Toilets (HET) which use even less water than ULFTs.</p>	<ol style="list-style-type: none"> 1. Market the program to all customers. 	<ol style="list-style-type: none"> 1. Ongoing 	NA	\$5500 (100 hrs)
	<p>TOTAL COSTS</p>					

	OVERALL TOTAL COSTS	\$26,895	\$102,685
		(489	(1,867
		hrs) +	hrs) +
		\$145,00	\$89,500
		0	(consulta
		(consult	nt) +
		ant)+	\$10,000
		\$6,000	(materia
		(materi	als)
		als)	