APPENDIX H

SAN JOSE WATER SUPPLY ASSESSMENT

San Jose
Water
Company

San Jose Baseball Stadium
Water Supply Assessment

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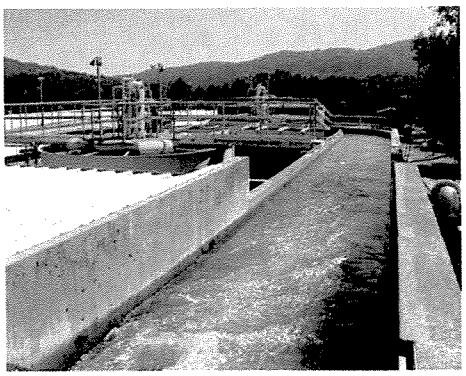
San Jose Water Company (SJWC) has provided reliable and high quality water service to the citizens of San Jose for 139 years. SJWC is one of the largest privately owned urban water system in the United States, providing high quality water and exceptional customer service to nearly one million residents of Santa Clara County.



Introduction

This Water Supply Assessment (WSA) is written in response to California Senate Bill 610 (SB 610). This legislation was authored by Senator Jim Costa and requires water retailers to demonstrate whether their water supplies are sufficient for certain proposed subdivisions and large development projects subject to the California Environmental Quality Act (CEQA). SB 610 requires that a Water Supply Assessment be prepared by the water local water retailer and submitted within 90 days to the requesting agency.

The City of San Jose (City) requested a WSA from SJWC for the proposed San Jose Baseball Stadium in the Diridon/Arena area. The proposed baseball stadium site is bordered by Diridon Station to the North, Los Gatos Creek to the South, the Caltrain railroad tracks to the West and Autumn Street to the East. According to the City, the proposed baseball stadium would have a maximum capacity of approximately 45,000 patrons. Also included in the City proposal is a future development site, located at the southwest corner of Park Avenue and South Autumn Street which may include commercial development, a relocation site for a PG&E substation and a proposed parking garage with approximately 1,200 parking spaces. This proposed ballpark would be used for approximately 80 major league home baseball game per year and possibly 10-15 music, entertainment and civic events annually.

The City has estimated that the additional demand this proposed ballpark, retail and commercial facilities would place on SJWC is 3,000 gallons per minute (gpm) during ballgames and events. This demand was based on the Environmental Impact Report for the San Diego Ballpark. The expected impact of this ballpark and associated facilities on SJWC's water supply is 54 million gallons per year (165 acre-feet/year), assuming 100 three-hour games and events per year. For reference, the maximum demand of the 20,000 seat HP Pavilion was 13.7 million gallons in 2004. This amount of water is well within SJWC's future water demand projections as included in the 2005 Urban Water Management Plan (UWMP). (A copy of this plan in included in Appendix C). A worst case scenario of 3,000 gpm demand at the proposed ballpark site during maximum day (peak summer) system-wide usage was considered in this WSA.

Service Area & Climate Description

SJWC's service area encompasses 138 square miles, including most of San Jose, most of Cupertino, the entire cities of Campbell, Monte Sereno, Saratoga, the Town of Los Gatos and parts of unincorporated Santa Clara County.

The San Jose area experiences a low-humidity climate with an average of 14 inches of rain annually. Temperatures range from the mid 60's to the high 80's (°F) in spring and summer and range from the mid 40's to mid 50's (°F) in the winter. Most of the precipitation in the area occurs between November and March with December and January typically being the wettest months. Further climate data is listed below.

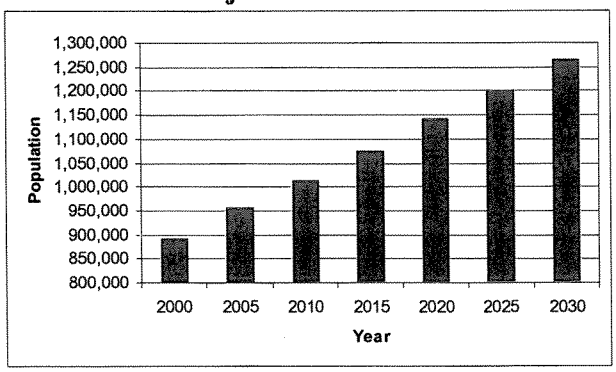
Climate Data

	Jan	Feb	Mar	Apr	May	Jun
Average Precip (in)	2.9	2.5	2.1	1.1	0.4	0.1
Average Temp (°F)	49.6	53.1	55.5	58.7	62.7	66.9
Evapotranspiration (in)	1.48	1.88	3.35	4.74	5.36	6.25

	Jul	Aug	Sept	Oct	Nov	Dec	Annual
Average Precip (in)	0	0.1	0.2	0.7	1.6	2.5	14.2
Average Temp (°F)	69.4	69.3	68.3	63.2	55.5	49.7	60.2
Evapotranspiration (in)	6.74	5.99	4.52	3.34	1.82	1.48	47.04

The population of SJWC's service area is shown in the table and chart below. These population projections are based on the Association of Bay Area Governments' (ABAG) 2003 population projections. ABAG's Projections 2003 is based on "smart growth" which a key component is producing housing near existing urban areas and jobs, as in the proposed Evergreen Visioning Project. ABAG describes smart growth as, "development that revitalizes central cities and older suburbs, supports and enhances public transit, promotes walking and bicycling opportunities, and preserves open spaces and agricultural lands. Smart growth is not 'no-growth'; rather, it seeks to revitalize the already-built environment and, to the extent necessary, foster efficient development at the edges of the region, in the process creating more livable communities." Population growth is projected to be a modest 1.2 – 1.4% per year.

Current and Projected SJWC Service Area Population



Current and Projected SJWC Service Area Population

	2000	2005	2010	2015	2020	2025	2030
Population	890,872	935,300	995,900	1,062,500	1,137,600	1,202,100	1,273,200

Past, Current and Future Water Use

The majority of connections to SJWC's distribution system are either residential or commercial. SJWC also provides water to industry, municipal, private fire services and fire hydrant connections. The table below lists a complete breakdown of the number of connections based on customer type. The number of future connections was calculated based on historical trends for the past forty years of approximately 0.5% service connection growth annually. The resale category represents the many small mutual water companies which SJWC provides a master water service and the mutual water company is responsible for distributing the water.

Number of Water Use Connections

Customer Type	2000	2005	2010	2015	2020	2025	2030
Residential	188896	193,106	194,072	195,042	196,017	196,997	197,982
Business	19696	19,626	19,725	19,823	19,922	20,022	20,122
Industrial	80	69	69	69	70	70	70
Public Authority	1622	1,677	1,685	1,694	1,702	1,711	1,719
Resale	30	30	30	31	31	31	31
Other	251	266	268	269	270	272	273
Total	210,575	214,774	215,848	216,927	218,012	219,102	220,198

A complete breakdown of the actual and estimated future usage based on water use sectors is shown in the table below. The future usage was calculated based on the estimated population projections from ABAG. The estimated future usage based on ABAG's "smart growth" already includes water supply capacity for the proposed San Jose Baseball Stadium.

Water Use Sectors (AF/yr)

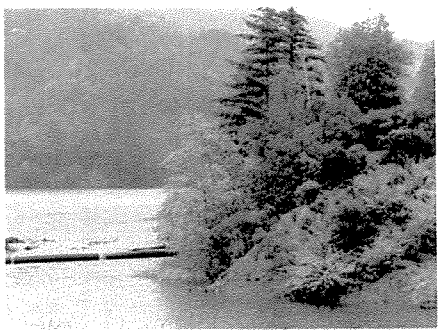
Customer Type	2000	2005	2010	2015	2020	2025	2030
Residential	86,509	86,772	93,051	99,887	107,512	114,155	120,751
Business	47,974	46,377	49,446	52,814	56,601	59,861	63,386
Industrial	1,135	645	783	924	1,073	1,213	1,262
Public Authority	8,381	8,387	8,931	9,528	10,201	10,780	11,417
Resale	739	774	824	880	942	995	1,054
Other	249	218	233	248	266	281	297
Total	144,987	143,175	153,269	164,281	176,594	187,284	198,168

SJWC total demand is not limited to the above metered customer use. Between six and seven percent of the water produced (pumped, treated, or purchased) never gets billed and is classified as unaccounted for water. Unaccounted for water includes authorized unmetered uses including fire fighting, main flushing and public use. The remaining unmetered water is likely due to inaccurate meter reading, reservoir cleaning, malfunctioning valves, leakage and theft. The table below shows the actual amount of total system demand in 2000 and projects the amount until 2030.

Total System Demand (without Conservation) (AF/yr)

	2000	2005	2010	2015	2020	2025	2030
Customer Metered Demand	144,987	143,175	153,269	164,281	176,594	187,284	198,168
Unaccounted for Water	9,967	9,767	10,400	11,096	11,880	12,553	13,296
Total System Demand	154,954	152,942	163,669	175,377	188,474	199,837	211,464

Water Rights, Contracts and Entitlements



SJWC has surface water rights to raw water in Los Gatos Creek and local watersheds in the Santa Cruz Mountains (as shown in the photo to the right). SJWC filed for a permit in 1947 and was granted license number 10933 in 1976 by the State Water Control Resources Board for 6240 AF/yr from Los Gatos Creek. This license is supplemental to SJWC's pre-1914 water rights. A copy of the license is attached in Appendix A. SJWC's combined yield of raw water from Los Gatos Creek from both pre-1914 rights and the SWRCB license totals approximately 11,200 acre-feet per year (AF/yr) for an average water year.

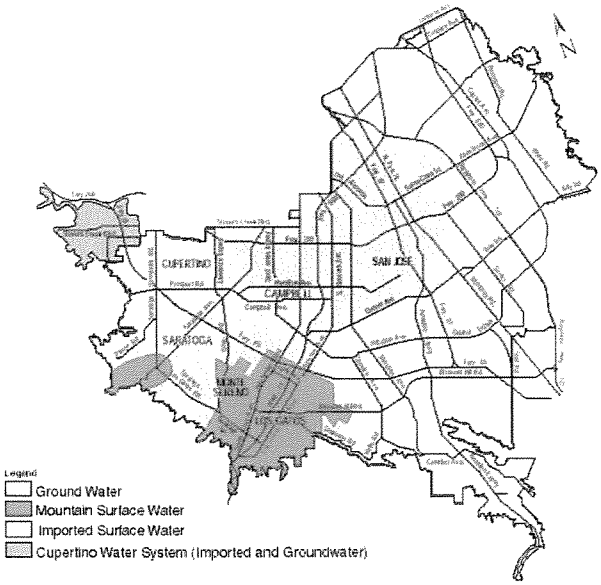
In 1981, SJWC entered into a 70-year master contract with the Santa Clara Valley Water District (District) for the purchase of treated water. The contract provides for rolling three-year purchase schedules establishing fixed quantities of water to be purchased during each period. The maximum peak day rate for delivery of water from the District under the 2004 - 2005 schedule is 108 MGD. The District's sources of supply include local surface water from ten reservoirs, water imported from the South Bay Aqueduct of the State Water Project, and water imported from the Federal Central Valley Project, San Felipe Division. The District, along with other public agencies, contracts for water from these projects. The water is treated at one of three District-operated treatment plants (Rinconada, Penitencia and Santa Teresa). SJWC and the District currently have a three year treated water contract that covers 2005 – 2008, with minimum contract supply ranging from 67,504 AF/yr in 2005 to 69,039 AF/yr in 2008. A copy of this contract is attached in Appendix B. SJWC may also purchase "non-contract" water from the District if excess supply is available at their Rinconada Treatment Plant.

According to the California Department of Water Resources, the State of California is not authorized by the California Water Code to manage groundwater. Since the early 1930's, the District has managed the groundwater basin in Santa Clara County. Although the groundwater basin is not adjudicated (meaning a Court Order would establish the maximum groundwater that can be withdrawn and how it is divided), the District was established as the groundwater management agency in Santa Clara County by the Santa Clara Valley Water District Act (California Water Code Appendix, Chapter 60). Unlike surface water rights, which are typically either appropriative rights (first come, first served) or riparian rights (joint water use based on land ownership), groundwater rights in California (outside of adjudicated basins) are based on a correlative doctrine under which landowners enjoy equal rights to the underlying aquifer.

SJWC has the water rights for most properties in SJWC's service area in the form of quitclaim deeds of the water rights. These revocable rights are usually obtained by SJWC prior to providing water service to a customer. Thus SJWC has rights to pump water from the aquifers in the service area because SJWC has the deeded water rights from property owners in the service area when in compliance with the District's permitting requirements. In times of drought, all landowners are required to reduce extractions proportionately to their historical usage. In Santa Clara County, this right is subject to a groundwater pumping fee levied by the District based on the amount of groundwater pumped into SJWC's distribution system. SJWC generally uses the most economical source of water, which is largely determined by the District's pump tax rates and contracted water rates.

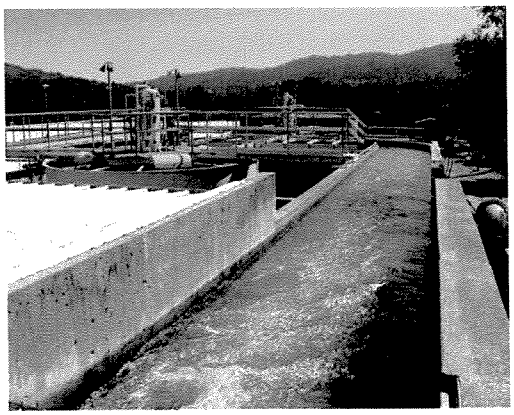
Sources of Water

SJWC has three sources of supply: groundwater, imported treated surface water and local surface water. A map of these sources is shown to the right.



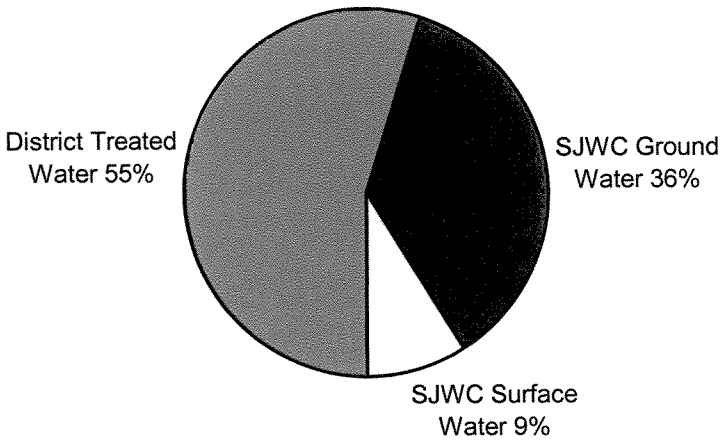
Groundwater comprises just over one third of SJWC's water supply. Ninety-four active and ten stand-by wells pump water from the major water-bearing aquifers of the Santa Clara Valley Subbasin. These aquifers are recharged naturally by rainfall and artificially by a system of local reservoirs, percolation ponds, and injection wells operated by the District.

SJWC is under contract with the District in the purchase of just over fifty percent of the needed water supply. This water originates from several sources including local reservoirs, the State Water Project and the federally funded Central Valley Project San Felipe Division. Water is piped into SJWC's system at various turnouts after it is treated at one of the three District water treatment plants (Rinconada to the west side pipeline and Penitencia and Santa Teresa to the east side pipeline).



SJWC's final source of supply is from surface water in the local watersheds of the Santa Cruz Mountains. It provides approximately five to ten percent of the water supply depending on the amount of annual rainfall. A series of dams and automated intakes collect the water released from SJWC's Lakes. The water is then sent to SJWC's Montevina Filter Plant (shown in the photo to the left) for treatment prior to entering the distribution system. SJWC's Saratoga Treatment Plant draws water from a local stream which collects water from the nearby Santa Cruz Mountains. The pie chart below shows SJWC's current supply source breakdown.

SJWC Sources of Water for 2004



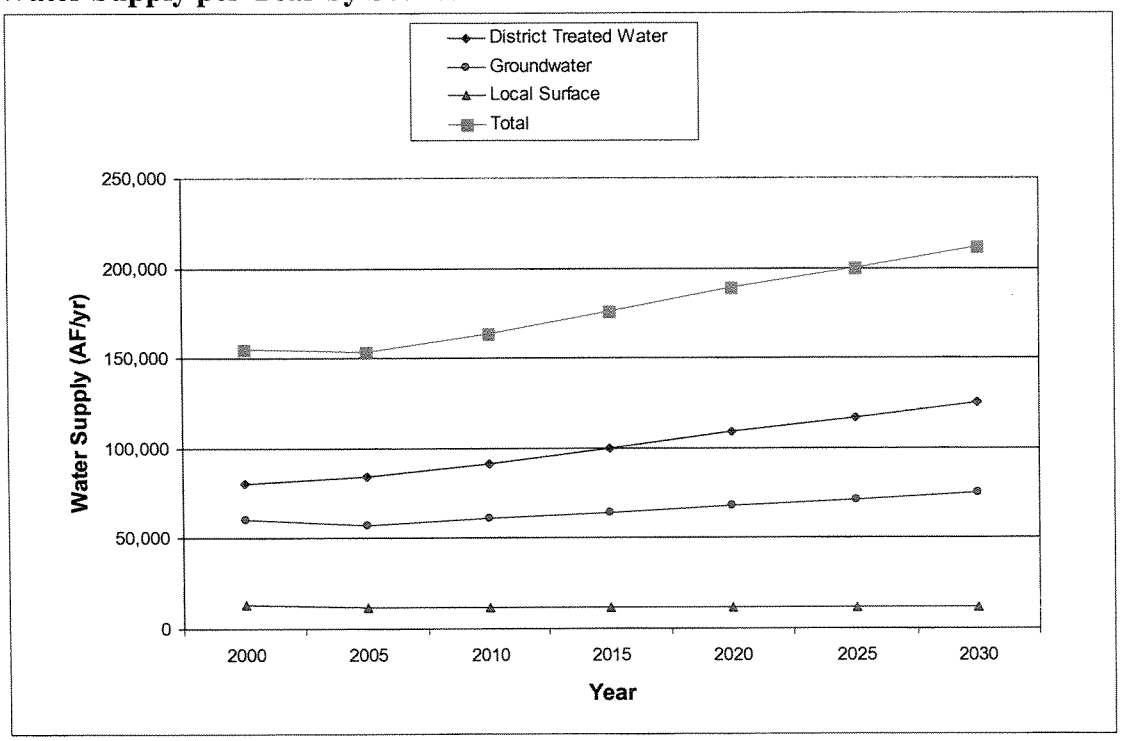
The chart and table below show the actual amount of water supplied to SJWC's distribution system from each source in 2000 as well as projections until 2030. The amount of surface water for 2005 and forward is based on a long term average for the past 23 years (1984-2004). The groundwater and the District treated water projections include SJWC's plan to acquire the additional needed water for development projects by installing new production wells as needed within the distribution system and by purchasing more treated water from the District. The District's overall long-term strategy for groundwater as discussed in the District's 2003 Integrated Water Resource Plan

(IWRP) Draft (a copy is attached in Appendix F) is to maximize the amount of water available in the groundwater basins to protect against drought and emergencies. The District seeks to maximize the use of treated local and import water when available.

Current and Planned Water Supply (without Conservation) (AF/yr)

Water Supply Source	2000	2005	2010	2015	2020	2025	2030
District Treated Water	80,803	84,260	91,465	99,650	109,225	117,066	125,171
Groundwater	60,707	57,389	60,911	64,433	67,956	71,478	75,000
Local Surface	13,444	11,293	11,293	11,293	11,293	11,293	11,293
Total	**154,954**	**152,942**	**163,669**	**175,376**	**188,474**	**199,837**	**211,464**

Water Supply per Year by Source

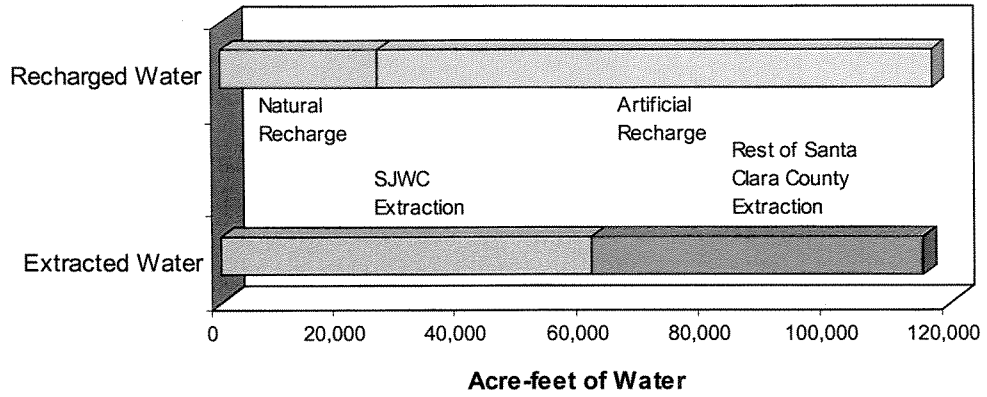


Groundwater Analysis

There are three major groundwater subbasins in Santa Clara Valley: the Santa Clara Valley Subbasin, Coyote Valley Subbasin, and Llagas Valley Subbasin. These basins underlie about 30% of the total Santa Clara County Area. SJWC draws water from the Santa Clara Valley Subbasin (Basin) in the north part of the County. The Basin extends from Coyote Narrows at Metcalf Road to the County's northern boundary. It is bounded on the west by the Santa Cruz Mountains and on the east by the Diablo Range; these two ranges converge at the Coyote Narrows to form the southern limit of the Basin. The Basin is 22 miles long and 15 miles wide, with a surface area of 225 square miles. According to the District, in 2001 115,358 acre-feet of groundwater were extracted from the Basin. The District estimates that 26,000 acre feet were naturally recharged to the Basin and

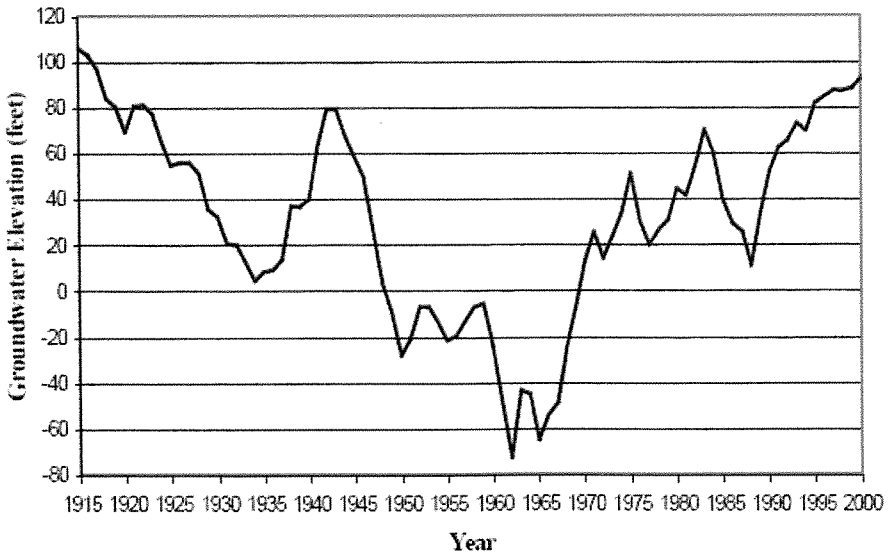
90,700 acre feet were artificially recharged to the Basin, mainly through their 71 recharge ponds and injection wells. The chart below shows the water balance of the Basin in 2001.

Santa Clara Valley Groundwater Basin Water Balance



The groundwater elevation in the Basin has been steadily on the rise for the past 40 years under the management of the District. The chart below shows the groundwater elevation since 1915 using mean sea level as the datum. The District has set up a successful artificial recharge system employing local reservoirs, percolation ponds, and injection wells to supplement the natural recharge of the Basin such that overdraft of the Basin is not projected. In fact, the water table in the northern portion of the Basin is so close to the surface, some buildings with basements or parking garages are being flooded. Reasons for this are less pumping of aquifers due to increased use of imported water, increased recharge of water into the deep aquifer by the District, and land subsidence bringing the land lower. The shallow groundwater level varies seasonally with the peak occuring around May, a few months after the peak monthly rainfall in January.

Groundwater Elevations in San Jose Index Well



The District has advised SJWC against significantly increasing groundwater use in the future. SJWC has discussed the projected increases in supply from groundwater and District treated water with the District. The District's 2005 UWMP (a copy is attached in Appendix E) states that the operational storage capacity of the Basin is estimated to be 350,000 AF/yr and the groundwater pumping in the basin should not exceed a maximum of 200,000 AF/yr in any given year to avoid land subsidence. The District's 2003 IWRP states "although supplies are adequate to meet needs in wet and average years, the expected dry-year shortages will grow over time from approximately 50,000 AF/yr in 2010 to 75,000 AF/yr in 2040." The District's IWRP also states that additional recharge capacity is needed to maintain groundwater as a reliable source now and into the future. Based on this, the District has suggested that the amount of groundwater pumped by SJWC should not exceed 75,000 AF/yr in year 2030. SJWC has sufficient capacity with the existing well infrastructure to pump this additional well water by pumping during peak PG&E charge ratings, using well fields that currently operate as a back-up, and reconditioning existing wells.

Groundwater from the Basin is a substantial source of water for SJWC's entire distribution system. In the past five years, groundwater has been the source for approximately one third of SJWC's total supply. The table below shows the amount of groundwater SJWC pumped from the Basin for the past five years.

Amount of Groundwater Pumped (AF/yr)

Basin Name	2000	2001	2002	2003	2004
Santa Clara Valley Subbasin	60,707	65,545	56,475	49,594	55,519
% of Total Water Supply	39.2%	42.4%	36.3%	33.6%	36.6%

Based on SJWC's projections, groundwater will continue to be a vital source of water, comprising just over thirty-five percent of the supply by year 2030. The table below shows the groundwater pumping projections and groundwater as a percentage of total projected supply until 2030.

Amount of Groundwater Project to be Pumped (AF/yr)

Basin Name	2005	2010	2015	2020	2025	2030
Santa Clara Valley Subbasin	57,389	60,911	64,433	67,956	71,478	75,000
% of Total Water Supply	37.52%	37.40%	37.09%	36.53%	36.36%	36.02%

Water Supply Vulnerability

The District's 2003 IWRP predicts shortages now, and the frequency and magnitude of these shortages will be increased by this development. The District apparently plans to address these shortages by undertaking a variety of investments over time.

Since the majority (approximately ninety percent) of SJWC's water supply originates through the District, SJWC will work with the District to ensure that water supply for the

San Jose Baseball Stadium project and appropriate investments are made to ensure reliability in dry and multiple dry years.

The District encourages water retailers to provide at least two different sources of supply to make certain emergency water supplies are available in the event treated water supplies are interrupted by disaster. SJWC's current three sources of water supply and connections to other retail water agencies contribute to SJWC's ability and flexibility to respond in the event of emergency situations. In addition, SJWC has recently expended millions of dollars installing diesel fueled generators that will operate wells and pumps in the event of power outages.

Transfer and Exchange Opportunities

SJWC's distribution system has interties with other water retailers in the San Jose area to allow for SJWC to provide additional water to other retailers or serve as another potential supply source. SJWC is connected to the following retailers: City of Santa Clara, City of San Jose Municipal Water, Great Oaks Water, the District East Pipeline and the District West Pipeline in Cupertino. The connection to the District West Pipeline allows SJWC to provide water to Cupertino. SJWC currently has no plans to use these interties for normal system operation as they solely serve as potential emergency sources.

Supply Reliability

SJWC used the base years the District will be using for the average water year, single dry water year and multiple dry water years in the 2005 UWMP. The water years used by SJWC are listed in table below.

Basis of Water Year Data

Water Year Type	Base Year(s)
Average Water Year	1985
Single-Dry Water Year	1977
Multiple-Dry Water Years	1987-1991

Documented in the table below is the quantity of water SJWC received from each source of water during the average water year, single dry water year and multiple dry water years. It is important to note that SJWC's service area population has increased by nearly 62% from 1977 to 2000 and that the District added the 100 MGD Santa Teresa Water Treatment Plant in 1989 to increase capacity and redundancy.

Supply Reliability (AF/yr)

			Multiple Dry Water Years				
Water Source	**Average Water Year (1985)**	**Single Dry Water Year (1977)**	**Year 1 (1987)**	**Year 2 (1988)**	**Year 3 (1989)**	**Year 4 (1990)**	**Year 5 (1991)**
District Treated	47,061	36,220	57,879	65,935	81,405	64,143	63,093
Local Surface	5,410	1,364	4,576	3,548	6,500	3,719	6,435
Groundwater	94,853	72,962	92,257	81,964	37,020	55,363	42,513
Totals	147,325	110,545	154,712	151,447	124,925	123,225	112,042

The table below takes the supply received in each of the drought years and divides it by the supply received in the average water year to generate a percentage of normal supply SJWC may expect to see during a future drought period.

Supply Reliability as a Percentage of Normal Water Year (1985)

		Multiple Dry Water Years				
Water Source % of Normal	**Single Dry Water Year (1977)**	**Year 1 (1987)**	**Year 2 (1988)**	**Year 3 (1989)**	**Year 4 (1990)**	**Year 5 (1991)**
District Treated Water	77.0%	123.0%	140.1%	173.0%	136.3%	134.1%
Local Surface Water	25.2%	84.6%	65.6%	120.1%	68.7%	118.9%
Groundwater	76.9%	97.3%	86.4%	39.0%	58.4%	44.8%
Totals	75.0%	105.0%	102.8%	84.8%	83.6%	76.1%

Besides the climatic factors resulting from a drought, other factors which are summarized in the table below could cause SJWC's three supply sources to become inconsistent.

Factors Resulting in Supply Inconsistency

Supply	Legal	Environmental	Water Quality	Climatic	Mechanical
Local Surface			x	x	x
Ground Water		x	x	x	x
District Treated Water	x	x	x	x	x

All of the supply sources require mechanical equipment to get the water from the source to the customer's meters and mechanical failures would cause a supply inconsistency until repairs were made. The quality of the groundwater in the Basin, the Santa Cruz Mountains, or the raw water supply to the District's treatment plants could decrease or be contaminated such that existing treatment facilities are not adequate to meet current drinking water standards. This would cause that supply source to become unusable until the raw water supply source was treated or the contamination cleaned up. The District contracts with the State of California to receive raw water from the California Central Valley through the State Water Project (SWP). Ultimately, water supplied through this aqueduct (which originates from the Sacramento-San Joaquin Delta) may be limited because of subsidence problems that are beginning to occur in that area. Subsequently, the District has contracted with the Federal Central Valley Project (CVP) to supply raw

water from the San Joaquin Valley via the Santa Clara Conduit. The reliance of water from inland sources through the SWP or the CVP is very critical, and it is apparent that the loss of any or all of these sources due to pipe failure, earthquake, or human intervention can have an extreme effect on SJWC's water supply. Given all of the above factors that could result in an inconsistent water supply, it is crucial that SJWC have sufficient backup wells and pumping capacity to supply customers for as long as several months solely from groundwater sources.

The District is responsible for managing water resources in Santa Clara County, including the long-range planning for additional supplies and/or conservation needed to meet future water demands. SJWC and other retailers work closely with the District to coordinate the purchase of treated imported water from District facilities and the extraction of groundwater from retailer-owned wells. This activity is important to the operation of the countywide water supply and distribution system and the retailers are dependent on the District's long-range resource planning.

In determining the long-range availability of water, considerations must also be given to decisions at the state or federal level that are out of the District's control. The District has contracts for water deliveries with both the SWP and the federal CVP. Due to flow restrictions for the protection of water quality and the habitat of fish and wildlife in the Delta, water deliveries may be reduced from previous levels. During critical dry periods the District can expect additional reductions in water deliveries. Long-range planning success depends on the District's ability to obtain adequate imported water supplies and on proper management of the local groundwater basin.

Water Demand Management Measures

SJWC provides a full range of water conservation services to both residential and commercial customers, the cornerstone of which is our water audit program. In 2004 alone, SJWC's three Water Conservation Inspectors performed over 2,000 water audits. These water audits comprise of a SJWC water conservation inspector doing a thorough investigation of the customer's home or business. The inspector carefully inspects the property for leaks and measures the flow rates of all showers, faucets and toilets. The program targets the top 10% of users in each sector (residential, commercial, industry, municipal and landscape accounts). SJWC first contacts the customers by letter and follows up with a phone call. The goals of this program are to identify the source of the customer's water consumption and recommend more efficient water use methods.

SJWC participates in the District's residential clothes washer rebate program in which any washer labeled "Energy Star" qualifies the customer to a $150 rebate. SJWC informs the customers of this program through the water audits and at retail outlets where washing machines are sold. SJWC also augments its water audit program by providing customers with free low-flow showerheads and faucet aerators which are purchased by the District. These are distributed during water audits, during customer's visits to SJWC's main office, and during customer participation in public events.

SJWC is the wholesale retailer for the South Bay Water Recycling Program which takes treated wastewater that would normally be discharged into the San Francisco Bay and pipes it back into the basin to be used for landscape irrigation.

SJWC constantly performs a system-wide audit by maintaining extensive records on each customer's water use. Water production and usage are compared to determine the percentage of unaccounted for water, which is currently about 7% of water produced. The unaccounted for water includes authorized unmetered uses such as fire fighting and main flushing. The remaining unmetered water is usually due to inaccurate meter readings, stuck meters, malfunctioning valve, leakage and theft.

SJWC has a regular schedule of meter calibration and replacement for all meter types in the distribution system. Larger meters are routinely replaced, repaired and tested based on consumption. Smaller meters (1" and smaller) are replaced according to the manufacturer's recommended service life. If a customer believes the water meter is faulty, the meter is removed and tested. The customer is invited to witness the test in accordance with the California Public Utility Commission's (CPUC) rules.

SJWC provides and participates in numerous consumer education programs. SJWC has encouraged water conservation to its customers in many ways, including: providing water-efficient plumbing fixtures brochures (in conjunction with the City of San Jose), providing a landscape irrigation brochure encouraging efficient outdoor water use, and providing annual water quality reports as a bill insert.

SJWC also attempts to reach the community in ways that go beyond the development and distribution of written materials. These methods include speaking to service groups, civil clubs, school groups and participating in annual Water Awareness Month activities. SJWC also participates in a few school education programs including San Jose Unified School District's "Adopt a School" program. SJWC has coordinated development of an outdoor classroom project of a water-saving garden and pond filter system, multiple classroom presentations, and provides funding for annual science-related field trips.

Supply and Demand Comparison

SJWC's projected supply and demand for normal water years is listed in the table below. The table shows that SJWC's projected supply is sufficient to supply the projected demand which includes proposed San Jose Baseball Stadium project.

Supply and Demand Comparison for Normal Water Year (Previous Projection)

	2005	2010	2015	2020	2025	2030
Supply	152,942	163,669	175,377	188,474	199,837	211,464
Demand (including proposed project)	152,942	163,669	175,377	188,474	199,837	211,464
Difference (including proposed project)	(0)	(0)	(0)	(0)	(0)	(0)

Listed in the tables below are comparisons between 2005 and 2025 projected supply and demand during normal, single dry and multiple year droughts. These numbers were generated by multiplying the current and 2025 demands by the percentages of normal water supply SJWC experienced during the 1977 single year and the 1987-1992 multi-year droughts. During these drought times, SJWC may experience significant shortages of supply and will enact the current Water Shortage Contingency Plan (a copy is attached in Appendix D).

Current supply and demand for normal, single dry and multiple dry years

			Multiple Dry Years				
2005 Supply & Demand	**Normal**	**Single dry**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Supply Total	152,943	109,110	152,703	106,639	123,110	84,803	89,016
Demand Total	152,943	152,943	152,943	152,943	152,943	152,943	152,943
Difference	(0)	(43,833)	(240)	(46,303)	(29,833)	(68,139)	(63,926)

20-year projected supply and demand for normal, single dry and multiple dry years

			Multiple Dry Water Years				
2025 Supply & Demand	**Normal**	**Single dry**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Supply Total	199,837	142,565	142,341	139,118	112,158	89,191	64,491
Demand Total (including proposed project)	199,837	199,837	199,837	199,837	199,837	199,837	199,837
Difference (including proposed project)	0	(57,272)	(57,496)	(60,719)	(87,679)	(110,646)	(135,346)

Summary

SJWC has sufficient quantity of supply to serve the proposed San Jose Baseball Stadium. However, the impact of a stadium is different than the impact of a housing development. Although the impact to water supply quantities is relatively minimal, there is a noticeable impact to the distribution system in that area due to the instantaneous demand inherent with a stadium. This proposed stadium is located in one of SJWC's largest pressure zones and experiences lower than average water pressure. A hydraulic analysis of SJWC's existing distribution system was performed with and without the San Jose Baseball Stadium Project maximum demand of 3,000 gallons per minute. This demand was based on the City's estimate and would only be experienced during a baseball game or major event held at the proposed baseball stadium with maximum patron attendance.

These model results showed that the additional San Jose Baseball Stadium Project demand had a definite impact on the existing distribution system. Current downtown pressures border on the lower end of the acceptable levels during maximum day conditions and have been noted to drop into the 45-55 psi range during such high usage periods. When a stadium demand of 3,000 gpm was applied, the pressures in the adjacent distribution grid were further reduced by 4 psi. This could cause a reduction in downtown pressures that would be noticeable to existing downtown customers who are currently being served at the lower end of the pressure range.

In order to prevent low pressures in the area of the ballpark, a new water supply source would likely be required in the area near the proposed stadium. The preferred solution would be a new well facility located near the stadium to boost local water pressures. An optional solution would involve installing regulators at two existing SJWC facility stations to supply water from an adjacent, higher pressure zone. This is less desirable from an operational stand point because it reduces the distribution system flexibility and the ability of the higher pressure zone to absorb large future developments.

The District is stressing that the use of water recycling and conservation be maximized in all future developments, including the San Jose Baseball Stadium project, to minimize the effects on water supply in a drought situation. An additional source of supply in close proximity to the project site would be required to serve the proposed project area with adequate pressure. For the most part, the San Jose Baseball Stadium project area is surrounded by large transmission mains and it is not likely that any extensive pipe upsizing in the area would be required or that any additional new main improvements would have a significant impact on local water pressure. Also, no additional storage is believed to be required to serve the project.

Plan to Acquire Additional Supply

Given the proposed project site's proximity to the Los Gatos Creek, SJWC proposes installing one well in an easement on the southerly portion of the parking structure lot which is adjacent to Los Gatos Creek. The site would need to meet all setback requirements of the California Department of Health Services and the District. This well would pump water from the same basin as all of SJWC's existing wells, the Santa Clara Valley Groundwater Subbasin. This proposed new well and well site would be funded by the developer or City and serve the additional demand of the San Jose Baseball Stadium project and SJWC's existing customers in the proposed project's vicinity with adequate pressure. The time frame to select a well site, design, permit and construct a new well could range from nine months to two years.

Water to supply this project could be provided by installing inter-zone regulators at two of SJWC's existing facility locations. This option would not require any additional land, but would require additional piping, telemetry, and site modifications which would be funded by the developer or City. The time frame to design, permit and construct these regulators could range from six months to one year. This option is not preferred by SJWC as it reduces operational flexibility and SJWC recommends that one additional well near the proposed San Jose Baseball Stadium be installed to provide continuous adequate water pressure.