San Jose Water Company's
North First Street
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 more than 139 years. SJWC is 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 in Northern California.

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 in the table below.

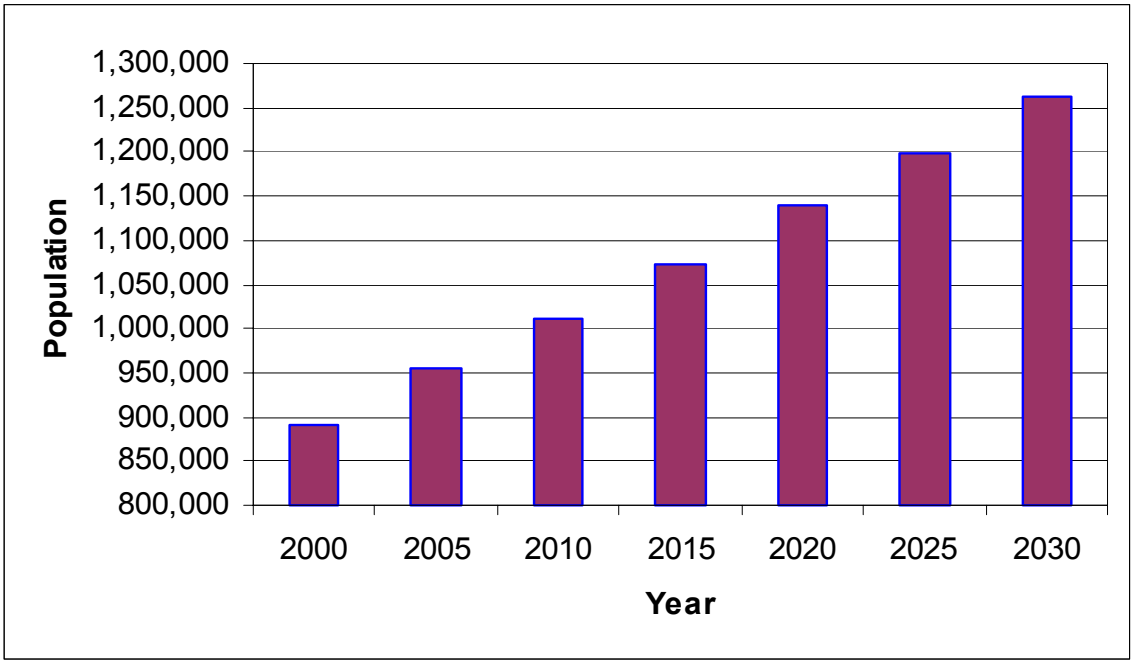
Climate Data

	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
Evapo-transpiration (in)	1.48	1.88	3.35	4.74	5.36	6.25

	Jul	Aug	Sep	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
Evapo-transpiration (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 chart below. These population projections are based on the Association of Bay Area Governments' (ABAG) population projections.

Projected SJWC Service Area Population



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 the estimated population projection from ABAG.

Number of Water Use Connections

Customer Type	2000	2005	2010	2015	2020	2025	2030
Residential	188,896	193,106	205,618	219,368	234,874	248,191	262,870
Business	19,696	19,626	20,898	22,296	23,871	25,225	26,717
Industrial	80	69	73	78	83	88	93
Public Authority	1,622	1,677	1,785	1,905	2,039	2,155	2,282
Resale	30	30	32	34	37	39	41
Other	251	266	284	303	324	342	363
Total	210,575	214,774	228,690	243,983	261,229	276,040	292,367

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 includes an additional 3267 AF/yr (based on City of San Jose estimates) for the North First Street Project added between years 2010 and 2025 in the sectors shown in the General Plan for the North First Street Project. These anticipated water demands were distributed by

adding 817 AF/yr in 2010, 817 AF/yr in 2015, 817 AF/yr in 2020, and 816 AF/yr in 2025.

Water Use Sectors (Includes North First Street project) (AF/yr)

Customer Type	2000	2005	2010	2015	2020	2025	2030
Residential	86,509	86,772	93,051	99,887	107,512	114,153	120,749
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	187,282	198,166

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 (Includes North First Street project) (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	154,955	152,943	163,669	175,377	188,474	199,837	211,464

Water Rights, Contracts and Entitlements

SJWC has “pre-1914 surface water rights” to raw water in Los Gatos Creek and local watersheds in the Santa Cruz Mountains. Prior to 1872, appropriative water rights could be acquired by simply taking and beneficially using water. In 1914, the Water Code was adopted and it grandfathered in all existing water entitlements to licensee holders. SJWC filed for a license in 1947 and was granted license number 10933 in 1976 by the State Water Resources Board to draw 6240 AF/yr from Los Gatos Creek. A copy of this license is attached in Appendix A. SJWC has upgraded the collection and treatment system that draws water from this watershed which has increased the capacity of this entitlement to approximately 11,200 AF/yr for an average rain year.

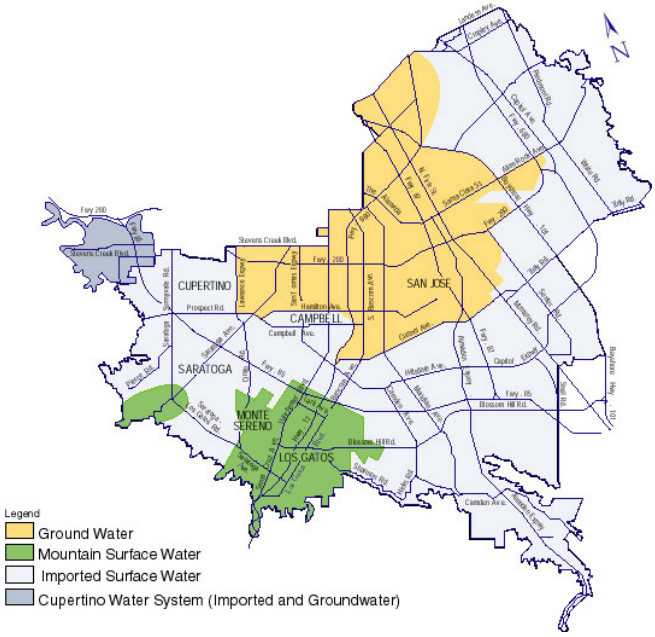
In 1981, SJWC entered into a 70-year master contract with the Santa Clara Valley Water District (District) for the purchase of treated water. The contract provides for rolling three-year purchase schedules establishing fixed quantities of water to be purchased during each period. The maximum peak day 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 the 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 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 at a reduced rate if excess supply is available at their Rinconada Treatment Plant. The non-contract water available to SJWC varies annually.

SJWC has rights to pump water from the aquifers in the service area because SJWC owns various parcels in the service area and property owners have the right to withdraw groundwater from aquifers below said property when in compliance with the District's permitting requirements. 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 economically 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 raw surface water. A map of these sources is shown to the right.

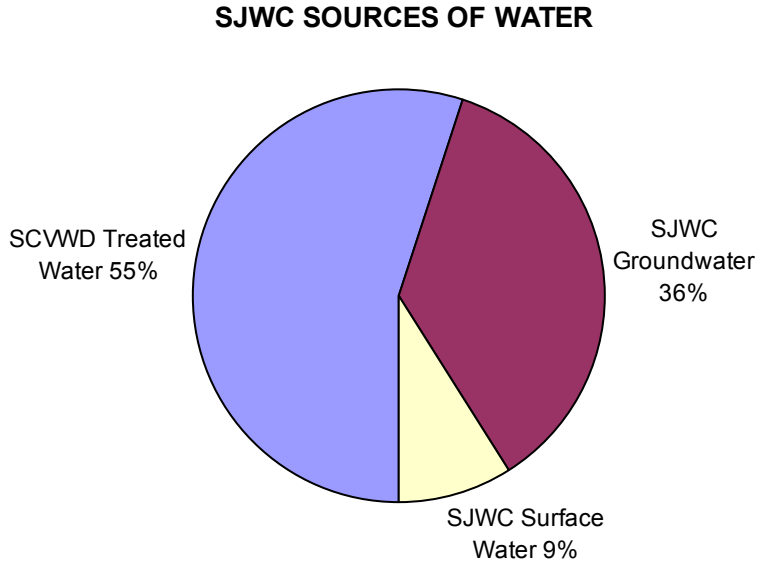


Groundwater comprises just over one third of SJWC's water supply. Approximately 110 wells pump water from the major water-bearing aquifers of the Santa Clara Valley Groundwater Subbasin. These aquifers are recharged naturally by rainfall and artificially by a system of local reservoirs, percolation ponds, and injection wells operated by the District.

SJWC is under contract with the District in the purchase of just over fifty percent of the 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. It 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 ten percent of the water supply in normal rainfall years; however it can be much lower in drought years. 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 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.



The table below show the actual amount of water supplied to SJWC's distribution system from each source in 2004 as well as projections until 2030. The amount of surface water for 2005 and forward is based on a long term average (LTA) 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, such as North First Street, by installing new production wells as needed within our distribution system and by purchasing more imported 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

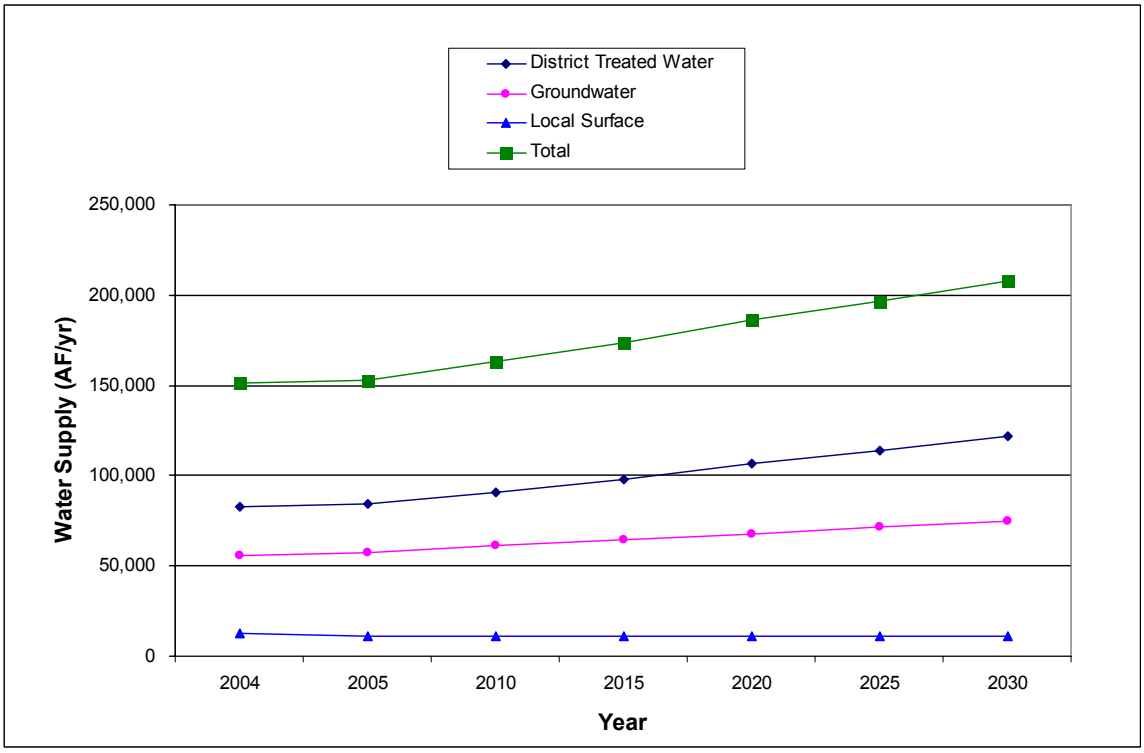
emergencies. The District seeks to maximize the use of treated local and import water when available.

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, and final projections will be coordinated with the District in the development of the 2005 Urban Water Management Plan (UWMP). The maximum amount of groundwater SJWC is allowed to pump annually has not been specifically set by the District, but the District has suggested that the amount of groundwater pumped 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. SJWC also plans to use additional treated water from the District.

Current and Planned Water Supply without North First Street Project (in AF/yr)

Water Supply Source	2004	2005	2010	2015	2020	2025	2030
District Treated Water	83,013	84,260	90,648	98,016	106,774	113,799	121,904
Groundwater	55,519	57,389	60,911	64,433	67,956	71,478	75,000
Local Surface	13,067	11,293	11,293	11,293	11,293	11,293	11,293
Total	**151,599**	**152,943**	**162,852**	**173,743**	**186,023**	**196,570**	**208,197**

Water Supply per Year by Source



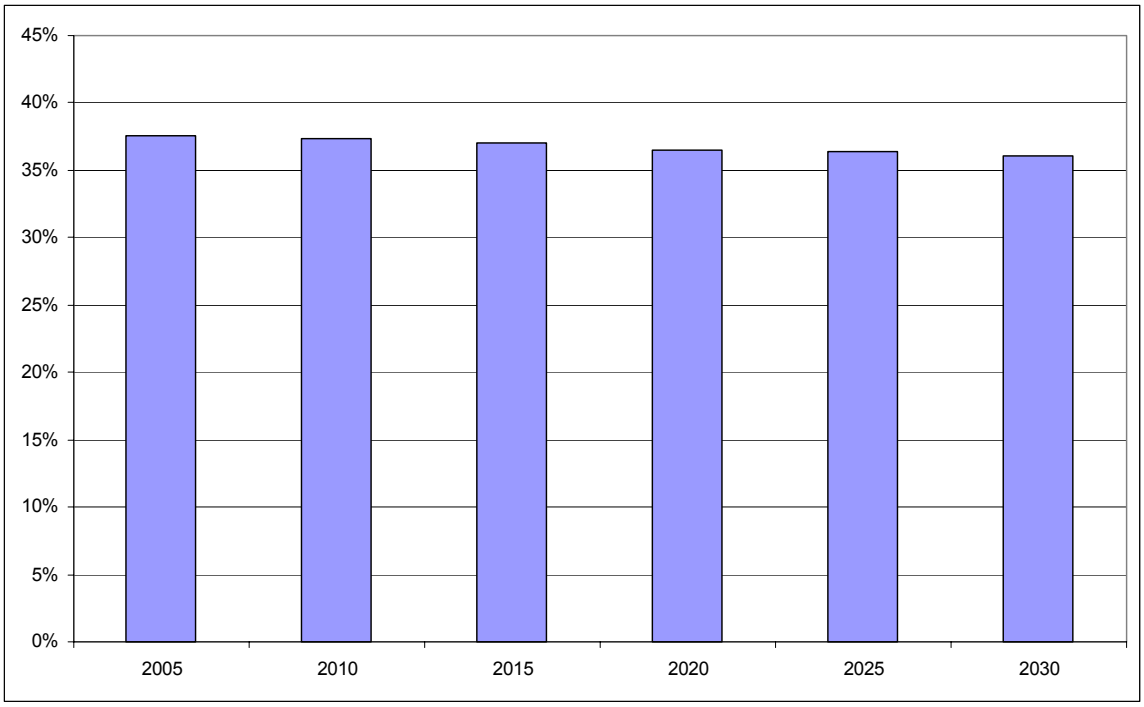
Groundwater Analysis

Groundwater from the Santa Clara Valley Groundwater Subbasin is a substantial source of water for SJWC's entire distribution system. Groundwater will be the primary source of water for the North First Street project due to its location relative to the District's treated water turnouts. In the past five years, groundwater has been the source for approximately one third of SJWC's total supply. 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 District does not control groundwater withdrawal directly, but manages the groundwater subbasins through conjunctive use and pricing. 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.

The chart below shows groundwater as a percentage of total projected supply until 2030.

Projected Groundwater Percentage of Total Supply



According to SJWC's current system design capacity, if all production wells were run 24 hours a day, approximately 190 MGD or 650,000 AF/yr could be produced during a normal year. These numbers are only theoretical as the District's 2001 Urban Water Management Plan states that the operational storage capacity of the Santa Clara Valley Subbasin 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 is currently in the process of updating its 2001 Groundwater Management Plan and refining their groundwater model to more accurately quantify the amount of water that will be available for SJWC and other water retailers to pump annually to ensure supply reliability.

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 City of San Jose's CEQA consultant is in the process of revising the Draft Environmental Impact Report (DEIR) to include this information. The District apparently plans to address these shortages by undertaking a variety of investments over time. Growth greater than expected was modeled as a risk scenario as part of the IWRP and the District has identified additional investments than can address this increased demand.

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 North First Street project and appropriate investments are made to ensure reliability in dry and multiple dry years. The District has concerns regarding the use of groundwater as the sole source of supply for the North First Street project and has recommended that additional recharge capacity be added to keep this water supply source at the 95% reliability shown in their 2003 IWRP during significant water shortages that occur during multi year droughts. In addition, SJWC can use less groundwater in other areas to achieve the overall balance that best meets the District's and SJWC's operational goals.

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 and the District West Pipeline in Cupertino. The connection to the District West Pipeline allows SJWC to provide water to the Cupertino leased system that SJWC operates. SJWC currently has no plans to use these interties for normal system operation as they solely serve as potential emergency sources.

Supply Reliability

SJWC and other retailers are coordinating efforts on the 2005 UWMP. SJWC will use the base years the District will be using for the normal water year, single dry water year and multiple dry water years in their 2005 UWMP as listed in the table below.

Basis of Water Year Data

Water Year Type	Base Years
Average Water Year	2000
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 in AF/yr

			Multiple Dry Water Years				
Water Source	**Average Water Year (2000)**	**Single Dry Water Year (1977)**	**Year 1 (1987)**	**Year 2 (1988)**	**Year 3 (1989)**	**Year 4 (1990)**	**Year 5 (1991)**
District Treated water	80,803	36,220	57,879	65,935	81,405	64,143	63,093
Local Surface	13,445	1,364	4,576	3,548	6,500	3,719	6,435
Groundwater	60,707	72,962	92,257	81,964	37,020	55,363	42,513
Totals	154,955	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 listed above 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 (2000)

		Multiple Dry Water Years				
Water Source	**Single Dry Water Year (1977)**	**Year 1 (1987)**	**Year 2 (1988)**	**Year 3 (1989)**	**Year 4 (1990)**	**Year 5 (1991)**
% of Normal District Treated water	44.8%	71.6%	81.6%	100.7%	79.4%	78.1%
% of Normal Local Surface	10.1%	34.0%	26.4%	48.3%	27.7%	47.9%
% of Normal Groundwater	120.2%	152.0%	135.0%	61.0%	91.2%	70.0%
Totals	71.34%	99.84%	97.74%	80.62%	79.52%	72.31%

The District will be making investments to increase reliability to ninety-five percent of demand in any given year which may include alternate sources of water as stated in their

2003 IWRP. However, SJWC does not currently envision any additional sources of water to supplement supply in event of dry water years. The possibility of transfers (other than through emergency interties) or desalination are not available given SJWC's service area location. Recycling of water in San Jose is primarily done through South Bay Water Recycling, which SJWC is an active participant and wholesaler. In the event of a dry water year, SJWC will employ water-use efficiency or demand management measures which are outlined in the following section of this report and enact the existing Water Shortage Contingency Plan (a copy of this plan is included in Appendix D) written in January 1992. In the event of a drought, this plan spells out a mandatory water rationing plan approved by the District. The plan defines prohibited uses of water, possible penalties and an enforcement mechanism. This plan includes both voluntary and mandatory components and addresses shortages up to 50%. The greatest percent shortage shown in the table above is 28.66% which would be covered in Stage 3 of SJWC's existing four stage Water Shortage Contingency Plan.

The District is in the process of developing their 2005 UWMP, which will better determine groundwater and the District treated water availability during dry water years. These results which are expected at the end of August 2005 and will be included in SJWC's 2005 UWMP and future Water Supply Assessments.

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 dedicated 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 methods for more efficient water use.

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 two full time staff member working to provide leak detection of the water distribution system. The highly skilled maintenance personnel use a leak detector to detect underground leaks. Once a leak is detected, crews are scheduled as quickly as possible to make the repair. SJWC also works with customers to resolve water loss and will assist customers in locating leaks on their facilities.

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 field trips to science-related locations.

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 will now need to include the North First Street project demand of 3267 AF/yr.

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

	2005	2010	2015	2020	2025	2030
Supply	152,943	162,852	173,743	186,023	196,570	208,197
Demand	152,943	162,852	173,743	186,023	196,570	208,197
Demand Total (including proposed project)	152,943	163,669	175,377	188,474	199,837	211,464
Difference	(0)	(0)	(0)	(0)	(0)	(0)
Difference (including proposed project)	(0)	(817)	(1,634)	(2,451)	(3,267)	(3,267)

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.

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	196,570	140,234	140,014	136,844	110,324	87,733	63,437
Demand Total	196,570	196,570	196,570	196,570	196,570	196,570	196,570
Demand Total (including proposed project)	199,837	199,837	199,837	199,837	199,837	199,837	199,837
Difference	(0)	(56,336)	(56,556)	(59,726)	(86,246)	(108,837)	(133,133)
Difference (including proposed project)	(3,267)	(59,603)	(59,823)	(62,993)	(89,513)	(112,104)	(136,400)

Summary

SJWC continues to address the amount of supply available in the future while SJWC and the District complete the analyses for the 2005 UWMP. The City of San Jose is in the process of revising their General Plan to include the North First Street project and this demand will be incorporated into both SJWC's and the District's 2005 UWMP. The District is stressing that the use of water recycling and conservation be maximized in all future developments, including North First Street, to minimize the effects on water supply in a drought situation. However, in the case of the North First Street project, quantity of supply is not the only concern. This proposed development is located in one

of our largest pressure zones and experiences lower than average pressure area. The demand increase (3267 AF/yr) would have a large impact on current system operations. Additional sources of supply within the zone would be required to serve the proposed project area with adequate pressure. For the most part, the North First Street project area is currently designed for a fire flow of approximately 4500 gpm and it is not likely that any extensive pipe upsizing in the area would be required. Also, no additional storage is believed to be required to serve the area. There maybe some projects which would require isolated areas of infrastructure improvement and those would be paid for by the developers on a project specific basis.

Another possible source of supply for this project is the District treated water. The use of water from this source would be more expensive since its source would be further away from the project area and it would have to be run through a booster pump station to provide adequate operating pressure for the North First Street project. The District is considering expanding their treated water delivery infrastructure such that SJWC could receive treated water closer to the North First Street project area to lower SJWC's cost for this supply option.

Plan to Acquire Additional Supply

SJWC is planning to acquire additional water supplies for the North First Street project by adding up to three additional wells in the North First Street Project area. These wells would pump water for the same basin as all of SJWC's existing wells, the Santa Clara Valley Groundwater Subbasin. SJWC will invest in new wells required to serve the additional demand of the North First Street project with adequate pressure. The time frame to select a well site, design, permit and construct a new well could range from 9 months to two years per well. Water to supply this project can be provided to SJWC's system using District treated water, but ultimately it is foreseen that one to three additional wells will be required in the area to provide adequate water pressure at a reasonable cost.