

Museum Place Mixed-Use Project Water Supply Assessment

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- A City of San Jose Water Supply Assessment Request

San Jose Water Company (SJWC) is one of the largest privately owned water systems in the United States, providing high-quality, low-cost water and exceptional customer service to more than one million residents of Santa Clara County since established in 1866.

Background & Purpose

The Museum Place Mixed-Use Project (Project) consists of the demolition of Parkside Hall to construct a 24-story, mixed-use high rise with up to 306 residential units, 187 hotel rooms, 209,779 square feet of office use, 14,116 square feet of retail space, and 60,000 square feet of additional museum space, all on a 2.33 gross acre site. The Project is located at 180 Park Avenue in downtown San Jose.



Source: museumphacesanjose.com

This Water Supply Assessment (WSA) describes the relationship between existing and future water supplies and presents SJWC's strong ability to provide a diverse water supply to match build-out water demands under both normal and dry years. Based on Santa Clara Valley Water District's (SCVWD's) 2015 Urban Water Management Plan and conservation methods currently employed, SJWC is able to meet the needs of the service area through at least 2035 for average and single-dry years without a call for water use reductions. This assumes reserves are at healthy levels at the beginning of the year and that projects and programs identified in SCVWD's Water Supply Infrastructure Master Plan (WSIMP) are implemented. If reserves are low at the beginning of a single-dry year, SCVWD might call for water use reductions in combination with using reserves.

SCVWD has determined that water shortages would occur in the event of a multiple-dry year scenario and are evaluating supply projects and programs to minimize the need to call for water use reductions greater than 10 percent. Projects and programs may include additional long-term water conservation savings, water recycling, recharge capacity, storm water capture, reuse, banking, and storage. SCVWD's WSIMP implementation will be staged to minimize the risk of stranded investments or under investment should demands not increase as projected.

This WSA is written in response to California Senate Bill 610 (SB 610) and Senate Bill 221 (SB 221); legislation which 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. SB 610 includes the requirements for detailed water supply assessments, and SB 221 includes the requirement for written verification of sufficient water supply based on substantial evidence. SB 610 requires that a WSA be prepared by the local water retailer and submitted within 90 days to the requesting agency.

Service Area & Population

SJWC’s service area spans 139 square miles, including most of the cities of San Jose and Cupertino, the entire cities of Campbell, Monte Sereno, Saratoga, the Town of Los Gatos, and parts of unincorporated Santa Clara County.

The population of SJWC’s service area, including growth associated with this Plan Area, is shown in the following table. These projections are based on the Association of Bay Area Governments’ population projections and were included in SJWC’s 2015 Urban Water Management Plan.

Table 1: Current and Projected SJWC Service Area Population

2015	2020	2025	2030	2035	2040
982,750	1,034,396	1,087,273	1,142,484	1,201,289	1,262,356

Climate

The San Jose area experiences a low-humidity moderate climate with an annual average rainfall total of about 14 inches. Maximum monthly average temperatures range from the mid 60’s to the low 80’s (°F) in spring and summer and from the high 50’s to low 60’s (°F) in the winter.¹ Most precipitation in the area occurs between November and March with January and February typically being the wettest months as shown in Table 2. According to SCVWD’s 2015 UWMP, the annual average evapotranspiration rate for the San Jose area is about 50 inches per year. Evapotranspiration measures the loss of water to the atmosphere by evaporation from soil and plant surfaces and transpiration from plants. Evapotranspiration serves as an indicator of how much water plants need for healthy growth.

Table 2: Climate Data

	Jan	Feb	Mar	Apr	May	Jun
Average High Temperature (°F)	58	62	66	69	74	79
Average Low Temperature (°F)	42	45	47	49	52	56
Average Precipitation (in)	2.8	2.6	2.3	1.1	0.4	0.1
Evapotranspiration (in)	1.5	1.9	3.5	5.0	6.0	6.8

	Jul	Aug	Sept	Oct	Nov	Dec	Annual
Average High Temperature (°F)	82	82	80	74	64	58	70.7
Average Low Temperature (°F)	58	58	57	53	46	42	50.4
Average Precipitation (in)	0.0	0.0	0.2	0.7	1.5	2.5	14.3
Evapotranspiration (in)	7.0	6.3	4.8	3.5	1.9	1.4	49.6

¹ Monthly temperature totals from www.weather.com

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 industrial, institutional and governmental connections. SJWC’s customer database does not differentiate between single-family and multi-family residential accounts, but estimates 15 percent of all residential accounts are multi-family. The resale category represents the small mutual water companies, in which SJWC provides a master water service and where the mutual water company is responsible for distributing the water.

SJWC has developed demand projections from 2015 to 2040 based on population and per capita usage projections. The Association of Bay Area Governments (ABAG) census tract population projections were used to estimate population growth. It was assumed that population growth after 2010 would be within new, high water efficiency developments with a demand of 100 gpcd. It is expected that on average the per capita usage for the existing 2010 population will experience an annual decline of 0.2 percent until 2040.

Table 3: SJWC Water Use by Customer Type (AF/yr)

Customer Type	2015	2020	2025	2030	2035	2040
Single Family	47,789	63,443	65,536	67,752	70,155	72,677
Multi Family	8,433	11,195	11,567	11,956	12,380	12,825
Commercial	36,434	48,369	49,965	51,652	53,485	55,409
Industrial	700	930	961	991	1,028	1,065
Institutional / Governmental	4,984	6,617	6,834	7,065	7,316	7,580
Sales / Transfers / Exchanges	408	543	559	580	598	620
Other	150	199	206	212	221	230
Total	98,898	131,296	135,626	140,208	145,183	150,406

SJWC’s total demand is not limited to metered usage. Non-revenue water is the sum of (a) water losses, (b) unbilled metered consumption, and (c) unbilled unmetered consumption.

- (a) Water losses are separated into two categories: apparent losses and real losses. Apparent losses include all types of inaccuracies associated with customer metering, theft, as well as data handling errors. Real losses are physical water losses from the pressurized system and the utility’s storage tanks, up to the customer meter. For example, this might include lost water through leaks, breaks and overflows.
- (b) Unbilled metered consumption might include metered consumption by the utility.
- (c) Unbilled unmetered consumption is any kind of authorized consumption which is neither billed nor metered. This typically includes items such as firefighting, flushing mains, and draining water storage facilities.

Over the last five years (2011 – 2015) SJWC has averaged 6.5 percent non-revenue water based on the American Water Works Association’s (AWWA) Water Audit Software. This consistently low

level of non-revenue water indicates SJWC has an efficient, well-maintained water system. SJWC is committed to continuing to reduce its non-revenue water loss percentages through investments in acoustic leak correlation and logging equipment, advanced metering infrastructure, as well as a prudent water main replacement program that ranks pipelines for replacement primarily based upon their propensity to leak.

Table 4: SJWC Total System Demand (AF/yr)

	2015	2020	2025	2030	2035	2040
Customer Metered Demand	98,898	131,296	135,626	140,208	145,183	150,406
Non-Revenue Water	7,553	9,139	9,440	9,759	10,106	10,471
Total System Demand	106,451	140,435	145,066	149,967	155,289	160,877

Water Use Associated with the Museum Place Mixed-Use Project

Total water usage for this Project is estimated at 171,600 gallons per day (gpd), which is equivalent, to an annual usage of approximately 192.2 acre-feet of water. However, the site being developed as part of this Project has existing water usage, which will be eliminated. Water usage at the existing site is on average 14,200 gpd or 15.9 acre-feet per year. Therefore, the annual net demand increase in water usage associated with this Project is really about 176 acre-feet, which represents a 0.12% increase over the system wide 2013 water production of 146,776 acre-feet. The projected water demand for this Project is within normal growth projections for water demand in SJWC’s system.

Table 5: Total Water Demand Estimated for Project

Existing Demand (gpd) ¹	Residential Units ²	Office Space (SF) ³	Hotel Rooms ⁴	Retail Space (SF) ⁵	Net Project Demand (gpd)	Net Project Demand (AF/yr)
14,200	306	269,779	187	14,116	157,400	176

¹Existing daily demand based on 2013 average usage

²Residential units have a water demand factor of 400 gpd per unit

³Office space includes museum space and has a water demand factor of 0.1 gpd per SF

⁴Hotel rooms have a water demand factor of 100 gpd per room

⁵Retail space has a water demand factor of 0.25 gpd per SF

System Supplies

This section describes and quantifies the current and projected sources of water available to SJWC. A description and quantification of recycled water supplies is also included.

Imported Treated Surface Water – In 1981, SJWC entered into a 70-year master contract with SCVWD for the purchase of treated water. The contract provides for rolling three-year purchase schedules establishing fixed quantities of treated water to be purchased during each period. Water is treated at one of three SCVWD-operated treatment plants (Rinconada, Penitencia and Santa Teresa). SJWC and SCVWD currently have a three-year treated water contract for fiscal years 2014/2015 – 2016/2017, with contract supply ranging from 69,050 AF/yr in 2014/2015 to 70,584 AF/yr in 2016/2017.

Groundwater – SJWC draws water from the Santa Clara Subbasin (basin) in the north part of Santa Clara County. The basin is 22 miles long and 15 miles wide, with a surface area of 225 square miles and an operational storage capacity estimated to be 350,000 acre-feet.

The following chart shows groundwater elevation in the basin since the mid 1930’s using the well surface elevation as the datum. In 2012, the groundwater basin level was high and well prepared for the effects of a multi-year drought. The high groundwater levels were a result of less pumping, an increased use of imported water, and recharge of water into the aquifer by SCVWD. Due to the current drought, the amount of imported surface water available has decreased dramatically. Water from the Federal Water Project in 2014 was available at 50 percent of normal, but water from the State Water Project has had an allocation of only five percent. As a result, SJWC has been relying more heavily on groundwater which has caused the groundwater elevation to decline. Should the drought continue, total groundwater storage is projected to drop to 200,000-250,000 acre-feet. It is, however, unlikely that this historic drought will persist. Therefore, it is expected that the groundwater elevation will rebound and that the groundwater basin will be replenished.

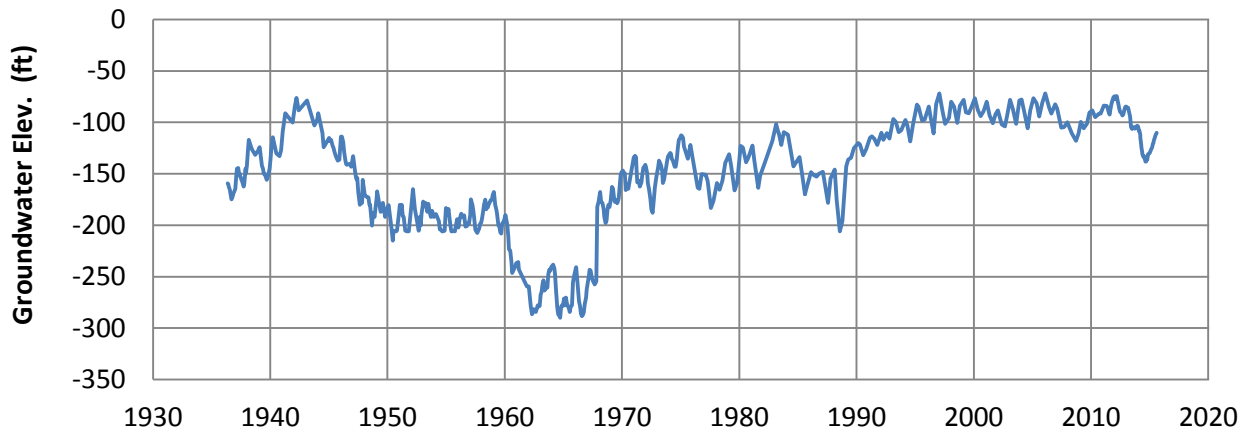


Figure 1: Groundwater Elevation in Santa Clara Subbasin (Well ID: 07S01W25L001)

Groundwater from the basin is a substantial source of water for SJWC and in 2014 groundwater accounted for about 57% of SJWC’s total potable supply. The following table shows the groundwater SJWC pumped from the basin from 2011 to 2015.

Table 6: Amount of Groundwater Pumped by SJWC (AF/yr)

Basin Name	Metered or Unmetered	2011	2012	2013	2014	2015
Santa Clara Valley Subbasin	Volumetric meter data	38,500	39,696	57,707	74,552	37,888
Groundwater as a percent of total potable water supply		28.3%	28.2%	39.3%	56.8%	35.8%

Surface Water – 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 license holders. SJWC filed for a license in 1947 and was granted license number 10933 in 1976 by the State Water Resources Control Board to draw 6,240 AF/yr from Los Gatos Creek. 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.

Montevina Surface Water Treatment Plant (Plant) is the primary supply source for Town of Los Gatos, and the surrounding communities. The Plant was commissioned in 1970 and can treat up to 30 million gallons per day through direct filtration and chlorination. State and federal water quality requirements have become more stringent since 1970, and limitations in the existing treatment process often result in the loss of water supply. Microfiltration membrane technology was chosen to replace the current technology after evaluating water quality data, assessing regulatory drivers, and pilot testing available technologies. The \$62 million project is underway and the upgraded Plant is scheduled to be brought online in early 2017.

Recycled Water – South Bay Water Recycling (SBWR) has been serving Silicon Valley communities since 1993 with a sustainable, high-quality water supply. SBWR was created to reduce the environmental impact of freshwater effluent discharge into the salt marshes located at the south end of the San Francisco Bay, and to help protect the California clapper rail and the salt marsh harvest mouse.

In 1997, SJWC entered into a Wholesaler-Retailer Agreement with the City of San Jose to provide recycled water to SJWC's existing and new customers nearby SBWR recycled water distribution facilities; whereas, the City of San Jose is the wholesaler and SJWC is the retailer. At the time, the involvement of SJWC was largely to assist the City in meeting its wastewater regulatory obligations. In accordance with the terms of this agreement, SJWC allowed SBWR to construct recycled water pipelines in its service area, SJWC would only own the recycled water meters, while SBWR would own, operate, and maintain the recycled water distribution system.

In 2010, this Wholesaler-Retailer Agreement was amended to allow SJWC to construct recycled water infrastructure that would be owned, operated, and maintained by SJWC. Then in 2012, this Wholesaler-Retailer Agreement was again amended to allow SJWC to construct additional recycled water infrastructure.

Summary of Existing and Planned Sources of Water – SJWC and SCVWD have worked to develop a variety of local and imported water supplies to meet demands. As demands increase with the region's growth, and imported water supplies potentially become more restricted, these planned supplies will increase in importance. In particular, groundwater, which has historically been a vital source of supply for SJWC, has recently become all the more critical for SJWC due to ongoing drought conditions. When weather conditions return to average historical conditions, groundwater and imported supplies are assumed to return to historical averages.

The following table shows the actual amount of water supplied to SJWC's distribution system from each source in 2015 as well as the projected amounts until 2040.

Table 7: Current and Projected Water Supplies¹ (AF/yr)

	2015	2020	2025	2030	2035	2040
SCVWD Treated Water	63,796	76,670	79,383	82,255	85,376	88,651
SJWC Groundwater	37,888	54,160	56,078	58,106	60,307	62,621
SJWC Surface Water	4,766	9,606	9,606	9,606	9,606	9,606
Recycled Water	1,964	4,072	6,853	8,350	8,369	8,369
Total System Demand	108,415	144,508	151,919	158,318	163,658	169,246

¹Projected potable water supply volumes based on a 10-year average (2006-2015) of usage by type and holding surface water constant @ 10-year average.

Water Supply Vulnerability

SJWC has identified multiple sources of water for the Project which would provide a high quality, diverse and redundant source of supply. For added backup, SJWC incorporates diesel fueled generators into its facilities system which will operate wells and pumps in the event of power outages. Since SCVWD influences over 90% of SJWC’s annual water supply, SJWC will continue to work with SCVWD to ensure water supply for this Project is reliable, while the impact to the existing Santa Clara Valley subbasin is minimal.

SCVWD recommends in their 2003 IWRP that water supply sources be maintained at 95% reliability during significant water shortages that occur during multiyear droughts. To accomplish this, SJWC can use less groundwater in certain areas or zones to achieve the overall balance which best meets SCVWD’s and SJWC’s operational goals.

Transfer and Exchange Opportunities

SJWC’s distribution system has interties with the following retailers in the San Jose area: City of Santa Clara, City of San Jose Municipal Water, City of Milpitas, and Great Oaks Water. SJWC currently has no plans to use these interties for normal system operation as they are exclusively used for potential emergency sources.

Water Supply Reliability

To assess water supply reliability it is critical to first identify constraints on water sources and compare total projected water use with expected water supply.

Constraints on Water Sources – SJWC has three sources of potable water supply: groundwater, imported treated surface water and local surface water. These three sources of supply are constrained in one or more ways, driven by legal, environmental, water quality, climatic, and mechanical conditions. Additionally, there is a potential for interruption of supply caused by catastrophic events.

Table 8: Factors Resulting in Supply Inconsistency

Supply	Legal	Environmental	Water Quality	Climatic	Mechanical
Local Surface		X	X	X	X
Ground Water		X	X	X	X
SCVWD Treated Water	X	X	X	X	X

Legal - SCVWD 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 SCVWD to coordinate the purchase of treated imported water 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 SCVWD’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 SCVWD’s control. SCVWD has contracts for water deliveries with both the State Water Project (SWP) and the Federal Central Valley Project (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 SCVWD can expect additional reductions in water deliveries. Long-range planning success depends on the SCVWD’s ability to obtain adequate imported water supplies and on proper management of the local groundwater basin.

Environmental & Climatic - SCVWD contracts with the State of California to receive raw water from the California Central Valley through the State Water Project (SWP). Water supplied through this aqueduct (which originates from the Sacramento-San Joaquin Delta) may be limited because of subsidence problems which are beginning to occur in that area and due to pumping restrictions associated with the protection of endangered species. SCVWD has also 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; the loss of any or all of these sources due to pipe failure, levee failure, earthquake, or human intervention can have an extreme effect on SJWC’s water supply. Given the above factors which 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. SJWC believes it has this capacity in an emergency if mandatory conservation is enacted.



Water Quality - The quality of groundwater in the basins, surface water from the Santa Cruz Mountains, or the raw water supply to SCVWD’s treatment plants could decrease or be contaminated such that existing treatment facilities are not adequate to meet current drinking water standards. Contamination could cause a source of supply to become unusable until further treatment techniques are utilized, or the contamination is no longer a threat to the source of supply.

Mechanical Failures - All sources of water require mechanical equipment to bring water to the public. Mechanical failures may cause water service shutdowns until repairs are made. To reduce the occurrence of failures, SJWC routinely inspects above-grade facilities at all stations. In addition, SJWC has created and implemented infrastructure replacement programs for all wells, pumps, and pipelines. To reduce the impact of mechanical failures, SJWC's maintenance department is staffed 24-hours, seven-days a week to respond to and repair any water related emergency.

Groundwater Supply Reliability – Groundwater supplies are often a reliable supply during normal and short-term drought conditions because they are local and their large storage retains available supply when surface flows become limited. However, groundwater supply availability does become threatened when overdraft occurs and when recharge and inflow decrease.

Some threats to groundwater supply reliability include:

- *Overdraft* – Under extended supply pressures, groundwater basins can enter overdraft conditions, which can have a series of consequences including subsidence.
- *Climate Change* – Climate change could increase the potential for overdraft by increasing demand, reducing other sources of supply, and reducing natural recharge and inflows from surface water and precipitation. Climate change is having a profound impact on California water resources, as evidenced by changes in snowpack, sea level, and river flows. These changes are expected to continue in the future and more precipitation will likely fall as rain instead of snow. This potential change in weather patterns will exacerbate flood risks and add additional challenges for water supply reliability.
- *Regional Growth* – Population growth could increase demands on groundwater supplies, potentially creating risk of overdraft. Regional growth could also increase the amount of contaminants entering groundwater basins as a result of increased urban runoff or industrial or other activities. Growth can also impact recharge areas by expanding impervious surfaces into areas that would otherwise represent entry points for surface water recharging local aquifers.

The Santa Clara Subbasin is able to store the largest amount of local reserves and SCVWD, as the groundwater management agency for Santa Clara County, is tasked with maintaining adequate storage in this basin to optimize reliability during extended dry periods. As groundwater is pumped by SJWC and other retailers and municipalities in Santa Clara County, SCVWD influences groundwater pumping reductions and thus reliability through financial and management practices to protect groundwater storage and minimize the risk of land subsidence.

Imported Treated Surface Water Supply Reliability – SCVWD was founded in 1929 and is the primary wholesale water supplier for Santa Clara County. Some of their core responsibilities are to provide safe, clean water for a healthy life, environment and economy. SCVWD's 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 three SCVWD water treatment plants.

SCVWD's current water supply reserves are insufficient to meet SJWC needs throughout an extended drought. In addition, there are increasing concerns about the reliability of imported treated surface water during average years, driven by risks associated with climate change, reductions in imported water supplies, revenue requirements, and threats to infrastructure.

- *Climate Change* – In Santa Clara County, climate change is anticipated to decrease the frequency of precipitation events, but the intensity of precipitation events may increase. Climate change is expected to decrease imported water supplies as a result of reduced snow pack. Potential effects of climate change on Delta-conveyed imported water supply availability have been incorporated into SCVWD's water supply projections. However, potential climate change effects on local supplies and demands were not incorporated into their current 2012 Water Supply and Infrastructure Master Plan (WSIMP) but were included in their 2015 UWMP.
- *Reductions in Imported Water Supplies* – Over the last 15 years, major changes to state and federal water project operations have resulted from regulations to protect Delta water quality and help the recovery of endangered and threatened fish species. These regulations result in a reduction of Delta exports at certain times of the year. There is a possibility that Delta exports will be further impacted by future regulations.
- *Revenue Requirements* – Increased funding will be required for SCVWD to implement a program of activities to ensure water supplies are diversified and reliable to meet current and future demands and that treated water quality standards are met.
- *Threats to Infrastructure* – SCVWD's imported supply infrastructure must travel large distances to reach turnouts. As California is a seismically active state, infrastructure could be damaged and the result would be a disruption to water supply availability. California's water supply infrastructure is also potentially a target for acts of terrorism.

SCVWD's WSIMP is scheduled for an update in 2017 and SJWC will actively work with SCVWD to ensure the following principles are considered:

- Promote additional sources of local water supply, such as indirect potable reuse, direct potable reuse, desalination, additional conservation, and an expanded recycled water distribution system
- Coordinate operations with all retailers and municipalities to make as much surplus water as possible available for use in dry years
- Continue to pursue innovative transfer and banking programs to secure more imported water for use in dry years
- Increase public awareness about water supply issues

SCVWD's previous call for a 30 percent reduction and current call for a 20 percent reduction in water usage during this drought highlights that more investments in local water sources are necessary to ensure a reliable source of supply during multiple-dry water years.

Supply Reliability by Type of Water Year – SCVWD’s Urban Water Management Plan identified average, single-dry, and multiple-dry years for water supply reliability planning. According to SCVWD, these years correspond to:

- Average Year (1922 – 2015): average supply over the hydrologic sequence of 1922 through 2015.
- Single-Dry Year (1977): Within the historic record, this was the year with the estimated lowest amount of total supply
- Multiple-Dry Years (2013 – 2015): this is a multiple dry year period that puts the most strain on the county’s water supplies

Water supplies presented below are based on SCVWD’s water evaluation and planning system model. According to SCVWD, this model simulates their water supply system comprised of facilities to recharge the county’s groundwater basins, local water systems including the operation of reservoirs and creeks, treatment and distribution facilities, and raw water conveyance systems. The model also accounts for non-SCVWD sources and distribution of water in Santa Clara County such as imported water from San Francisco Public Utilities Commission, recycled water, and local water developed by other agencies.

Table 9: Basis of Water Year Data

Year Type	Base Year	% of Average Supply
Average Year	1922-2015	100%
Single-Dry Year	1977	100%
Multiple-Dry Years 1 st Year	2013	95%
Multiple-Dry Years 2 nd Year	2014	85%
Multiple-Dry Years 3 rd Year	2015	66%

Average Water Year – According to SCVWD, the average water year represents average supply over the hydrologic sequence of 1922 through 2015. SJWC anticipates adequate supplies for years 2020 to 2040 to meet system demand under average year conditions

Table 10: Supply and Demand Comparison – Average Water Year (AF/yr)¹

	2020	2025	2030	2035	2040
Supply	140,435	145,066	149,967	155,289	160,877
Demand	140,435	145,066	149,967	155,289	160,877
Difference	0	0	0	0	0

¹Does not include recycled water or raw water

Single-Dry Water Year – The single-dry year was the year with the estimated lowest amount of total supply. Table 11 shows that supplies, with the use of reserves are sufficient to meet demands during a single-dry year through 2035. This assumes reserves are at healthy levels at the beginning of the year and that projects and programs identified in SCVWD’s 2012 WSIMP are implemented.

If reserves are low at the beginning of a single-dry year, SCVWD might call for water use reductions in combination with using reserves.

Table 11: Supply and Demand Comparison – Single-Dry Water Year (AF/yr) ¹

	2020	2025	2030	2035	2040
Supply	140,435	145,066	149,967	155,289	151,308
Demand	140,435	145,066	149,967	155,289	160,877
Difference	0	0	0	0	(9,569)

¹Does not include recycled water or raw water

Multiple-Dry Water Years – The multiple-dry year period used in this analysis assumes a repetition of the hydrology that occurred in 2013 through 2015, which is the multiple-dry year period that puts the most strain on the county’s water supplies. During multiple-dry year droughts, voluntary and mandatory conservation will be needed. SCVWD will continue to work on reducing multiple-dry year deficits by securing more reliable or diverse water supplies.

Table 12: Supply and Demand Comparison – Multiple-Dry Water Years (AF/yr) ¹

		2020	2025	2030	2035	2040
First Year	Supply	140,435	145,066	149,967	155,289	160,877
	Demand	140,435	145,066	149,967	155,289	160,877
	Difference	0	0	0	0	0
Second Year	Supply	125,373	144,471	138,815	132,742	131,428
	Demand	140,435	145,066	149,967	155,289	160,877
	Difference	(15,062)	(595)	(11,152)	(22,547)	(29,449)
Third Year	Supply	97,550	122,945	112,926	100,779	95,089
	Demand	140,435	145,066	149,967	155,289	160,877
	Difference	(42,885)	(22,121)	(37,041)	(54,510)	(65,788)

¹Does not include recycled water or raw water

Regional Supply Reliability – SCVWD’s Ensure Sustainability water supply strategy has three key elements:

1. Secure existing supplies and facilities
2. Optimize the use of existing supplies and facilities
3. Expand water use efficiency efforts

As part of this strategy, SCVWD’s 2012 WSIMP estimates water conservation and recycling, combined, will increase from about 15 percent of the county’s water supply mix to about 26 percent by 2035. Developing these local sources and managing demands reduces reliance on imported water supplies. In addition, SCVWD is also working with multiple water agencies to investigate regional opportunities for collaboration to enhance water supply reliability, leverage existing infrastructure investments, facilitate water transfers during critical shortages, and improve climate change resiliency. Projects to be considered will include interagency interties and pipelines; treatment plant

improvements and expansion; groundwater management and recharge; potable reuse; desalination; and water transfers. This program may result in the addition of future supplies for SCVWD.

Water Demand Management Measures

SJWC is a signatory of the California Urban Water Conservation Council (CUWCC) and signed the CUWCC Memorandum of Understanding (MOU) in February 2006. The CUWCC is a partnership of water suppliers, environmental groups, and others interested in California water supply who have come together to agree on a set of Best Management Practices (BMPs) for water conservation in the state. Additionally, SJWC has its own water-waste provisions that come into effect when there is a water shortage. The California Public Utilities Commission (CPUC) has set forth the rules regarding water waste and water shortages governing investor owned utilities such as SJWC. The CPUC rule relating to this is Rule 14.1. This rule states that when there is a low level water shortage that prompts a call for voluntary conservation by customers, a list of water-waste provisions goes into effect. Rule 14.1 also has provisions for high level water shortages when mandatory conservation measures are deemed necessary.

SJWC provides a full range of water conservation services to both residential and commercial customers. The cornerstone of SJWC's conservation programs is the water audit program. The audit program is an excellent method for customers to learn about ways to reduce their consumption, as well as identify and fix any leaks they may have. The audits are performed at a customer request, typically in response to a high water bill concern and/or in response to marketing efforts. Audits are performed for both residential and commercial customers.

SCVWD offers conservation programs, such as rebates for high efficiency toilets and washing machines. SJWC takes advantage of all regional rebate programs and all of SCVWD's rebate programs are offered to SJWC customers. Typically customers are recommended to specific rebate programs during the course of a water audit based on a customer's need. Customers can also access rebates directly from retail outlets when purchasing equipment such as high efficiency washing machines. SJWC collaborates with SCVWD on public outreach and education including such items as customer bill inserts and conservation campaign advertising.

SJWC has also increased the outreach and educational programs on outdoor water use. SJWC constructed a water-smart demonstration garden that is open to the public (see photo to the right). Customers can visit the garden in person or take a virtual tour on SJWC's website. SJWC also developed a dedicated water wise landscaping website where customers can access a plant information database that includes hundreds of low water use plants as well as a photographic database of water wise gardens in the San Jose-Santa Clara County area. The landscaping website and the demonstration garden tour can be accessed from the SJWC home web page.



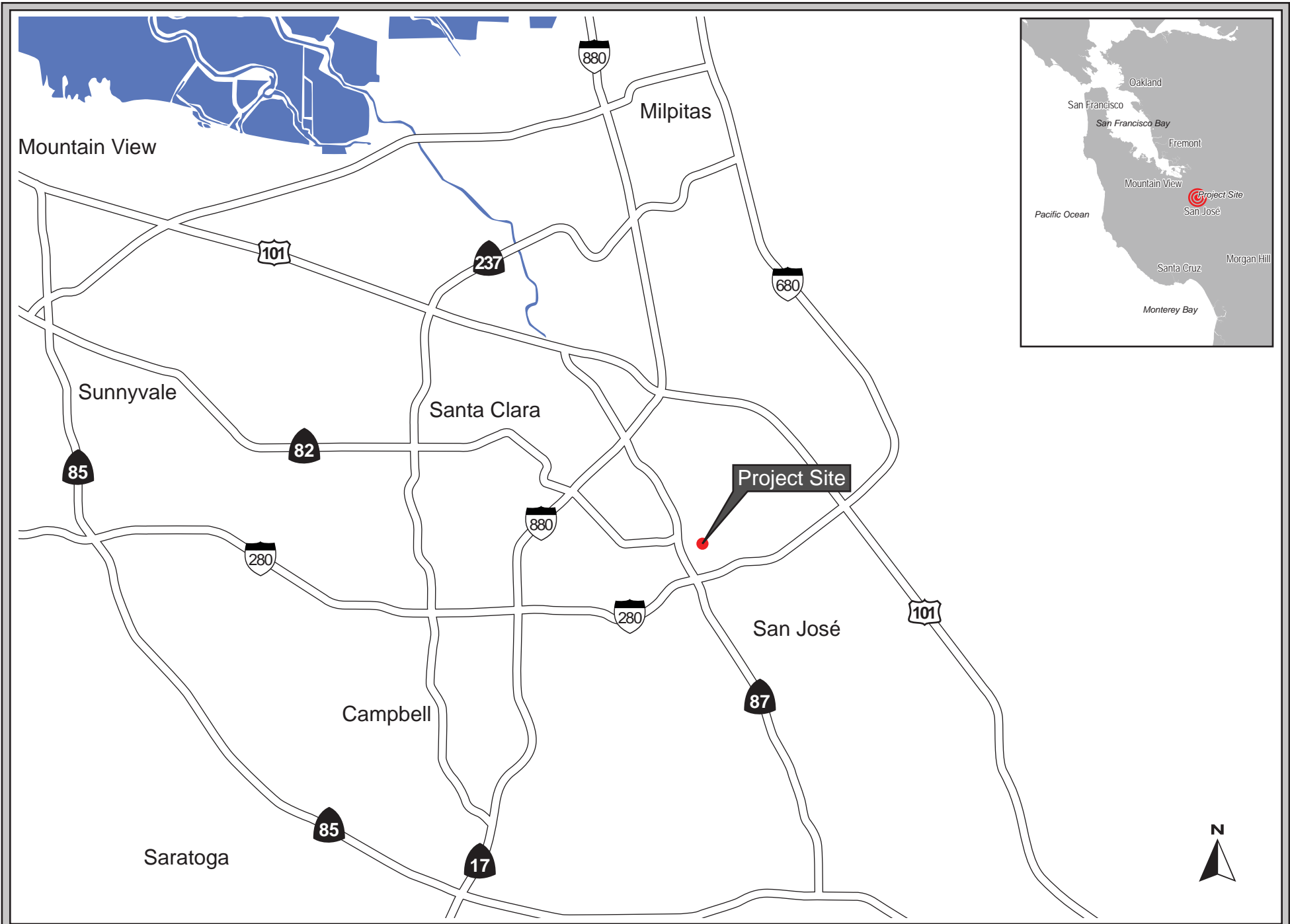
In addition to these programs, SJWC engages in other activities that contribute to the overall goal of reducing water waste, but are not specifically designated as conservation or water management programs. These include SJWC's meter calibration and replacement program, corrosion control program, valve exercising program and metering all service connections.

Summary

This Water Supply Assessment represents a comprehensive water supply plan for the Museum Place Mixed-Use Project. In summary:

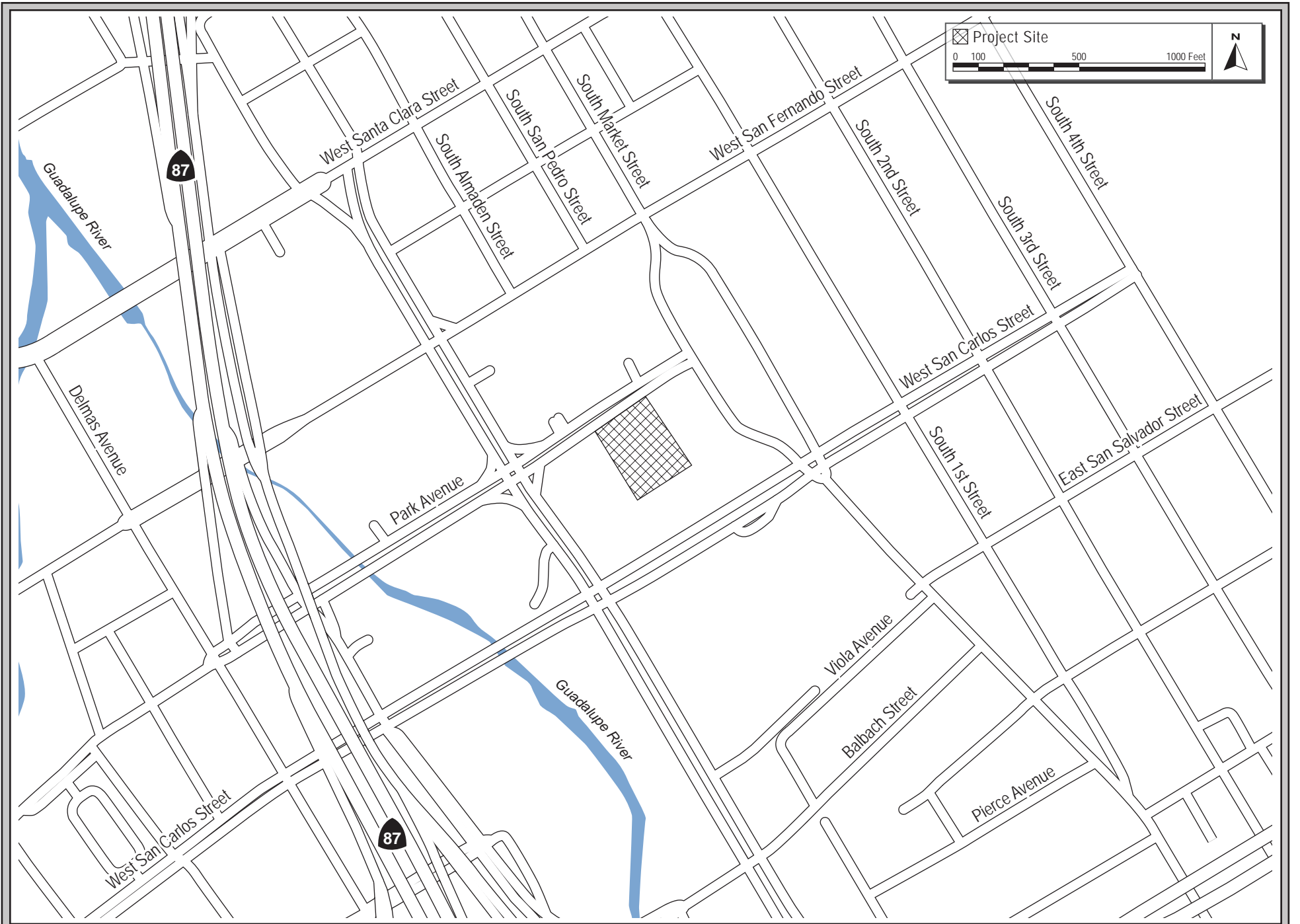
- (1) Total water usage for this Project is estimated at 192.2 acre-feet per year. However, the existing development, which is being replaced, uses an average of 15.9 acre-feet per year. Therefore, the estimated net system increase in water demand for the Project is about 176 acre-feet per year or a 0.12% increase when compared to SJWC's 2013 potable water production.
- (2) SJWC currently has contracts or owns rights to receive water from the following sources:
 1. Groundwater – from the Santa Clara Valley Subbasin
 2. Imported surface water – from the Santa Clara Valley Water District
 3. Local surface water – from Los Gatos Creek and Local Watersheds
 4. Recycled water – from South Bay Water Recycling
- (3) Based on San Jose Water Company's and Santa Clara Valley Water District's Urban Water Management Plans and conservation methods currently employed, there is sufficient water available to supply the Project. Also, the projected water demand for this development is within normal growth projections for water demand in SJWC's system.

SJWC works closely with SCVWD to manage its demands and imported water needs. After evaluating demands estimated for the Project and information summarized in this Water Supply Assessment, San Jose Water Company concludes that sufficient water supply exists to serve the Museum Place Mixed-Use Project.



REGIONAL MAP

FIGURE 1



VICINITY MAP

FIGURE 2

November 18, 2016

Bill Tuttle, P.E.
Director of Engineering
San Jose Water Company
1265 S. Bascom Ave.
San Jose, CA 95128

RE: WATER SUPPLY ASSESSMENT FOR DRAFT SUBSEQUENT ENVIRONMENTAL IMPACT REPORT FOR THE “MUSEUM PLACE MIXED USE PROJECT” IN SAN JOSÉ (FILE NOS. H16-024 AND T16-024)

Dear Mr. Tuttle,

As the Lead Agency, the City of San José is preparing a Subsequent Environmental Impact Report to the Downtown Strategy 2000 Final Impact Report for the *Museum Place Mixed Use Project*, located in San Jose. The proposed project is a Site Development Permit to allow the demolition of Parkside Hall to construct a 24-story, mixed-use high rise with 306 residential units, 187 hotel rooms, 209,779 square feet of office use, 14,116 square feet of retail space, and 60,000 square feet of additional museum space; and a Tentative Map Permit to reconfigure 25 parcels into three lots for a mixed use building, all on a 2.33 gross acre site.

The project is located at 180 Park Avenue (APN 259-42-023).

A description of the proposed project and location maps are included in the Notice of Preparation, attached. In accordance with the requirements of State law (SB 610) and the California Environmental Quality Act (CEQA) Guidelines, the City of San José requests that you provide an analysis of whether the San Jose Water Company has adequate water supply to serve this project.

Please advise the City whether this proposed development was included under the latest Urban Water Management Plan (UWMP). If the proposed development was not accounted for in the UWMP, please provide the City with a water supply assessment (WSA) identifying if the projected water supply for the next 20 years, based on normal, single year, and multiple dry years, and including existing and planned future water users, is adequate to meet the demand projected for the proposed development. In conformance with California’s Water Code Section 10910(d)(1), the WSA shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system. In addition, the following information shall be provided in the WSA:

- a) Written contracts or other proof of entitlement to an identified water supply;
- b) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system;

San Jose Water Company

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Re: Museum Place Mixed Use Project – Water Supply Assessment Request

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- c) Federal, State, and local permits for construction of necessary infrastructure associated with delivering the water supply; and
- d) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.

If the water supply for this project will also include groundwater, please also provide the following additional information in your WSA analysis:

- e) A review of any information contained in the UWMP relevant to the identified water supply for the proposed project;
- f) A description of any groundwater basin or basins from which the proposed project will be supplied;
- g) A detailed description and analysis of the amount and location of groundwater pumped by the public water system; and
- h) An analysis of the sufficiency of the groundwater from the basin or basins from which the project will be supplied to meet the projected water demand associated with the proposed project.

According to California Water Code Section 10910(g)(1), the deadline for your response is 90 days after receipt of this request; however, we would appreciate an earlier response, if possible. Please identify a contact person, and send your response to:

Attn: David Keyon
City of San José
Department of Planning, Building, and Code Enforcement
200 East Santa Clara Street, 3rd Floor Tower
San José, CA 95113-1905

Thank you for your assistance in this matter. Please do not hesitate to contact David Keyon, environmental project manager, at 408-535-7898 or via email at david.keyon@sanjoseca.gov if you have any questions regarding this request or the proposed project.

Harry Freitas, Director
Department of Planning, Building, and Code Enforcement



11/18/16

Date

Attachment: Notice of Preparation for the Museum Place Mixed Use Project (File Nos. H16-024 and T16-024)