7 WATER SUPPLY RELIABILITY

7.1 Constraints of Water Sources

Urban Water Management Planning Act Requirement:

CWC 10631(c)(2) For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practical

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

Currently, the only source of potable water that the Triunfo Sanitation District/ Oak Park Water Service (District) utilizes is wholesale distributed water through Calleguas Municipal Water District (CMWD). Additional water supplies are obtained by treating wastewater at the Tapia Water Reclamation Facility (TWRF) from service areas outside of the Oak Park Water Service area and using it as recycled water for irrigation purposes only.

Table 7.1.1: Factors Resulting in Inconsistency of Water Supply

Water Supply Sources	Legal	Environmental	Water Quality	Climatic	Additional Information
CMWD Wholesale Water			✓		NA
Recycled Water			✓		NA

CMWD Wholesale Water

CMWD identified in its 2015 Urban Water Management Plan update that its water supply to the District is considered reliable and sufficient to meet demands. In addition, CMWD works to ensure the distributed supply meets all State and Federal water quality standards. However, the reliability of the supply is dependent on the water quality delivered by the State Water Project (SWP) and Colorado River (included last year as a result of drought conditions) to the Municipal Water District of Southern California (MWD). In general, the SWP quality has allowed water suppliers to meet

or exceed water quality standards. Water supply reliability may be affected by constraints on water source, regulatory actions, local activity, and climate factors.

Recycled Water

Recycled Water is treated as described in Chapter 6. This water supply is subject to season variability, but routinely available. Similar to the District's purchased water supply, recycled water quality is a primary concern toward healthful and environmentally protective use.

The District must meet water quality standards under the California Code of Regulations, Title 22. The District is impacted by these regulatory standards through the received wastewater at the TWRF, under pretreatment program control, and new pollutants of concern. The Joint Powers Authority between the District and Las Virgenes Municipal Water District to deliver recycled water, within the CMWD service area, ensures the proper conditions of use are applied and distribution to general irrigation customer for non-potable use is reliable. The TWRF operates under a separate recycled water use permit which directs changes to wastewater discharger sources or process to ensure compliance with all water quality standards and that the delivered water is safe for supplemental irrigation use.

Water Quality

The District is a storage and distribution system only and therefore can focus on operational/distribution parameters, bacteriological, disinfection by products and corrosivity. CMWD and MWD are involved in treatment of drinking water which requires a longer listing of potential state/source water contaminants. It should be noted the MWD 2015 Annual Drinking Water Quality Report (covering the reporting period of January through December 2014) did not identify any contaminant above the Maximum Contaminant Level (MCL). MWD has considered the risks to the quality of water supplied through the Colorado River and the SWP. MWD reports that increased salinity and chemicals (e.g., total dissolved solids, chromium VI, etc.), as a theoretical water quality event, will cause at most a 15% reduction in supply. However, MWD also noted if concentrations of these contaminants exceed the drinking water standards, blending strategies such as utilizing only small amounts of the affected water and blending it with potable, processed water would reduce the concentration to treatable and/or below limit levels. MWD has stated that it "anticipates no significant reductions in water supply availability as a result of water quality."

The District realizes the importance of constantly assuring that the water it distributes meets potable water standards. The following subsections describe the contemporary issues of concern.

Salinity

Increased salinity in the water received from the Colorado River has required MWD to utilize a blend strategy as described above: reduction of a high salinity (CRA, Colorado River Aqueduct) water supply with the lower salinity (SWP) water supply. Although this has not caused water supply shortages, if source supply waters increase in salinity, additional treatment process may be required and could result in up to 15% reduction in water supply.

To prevent a reduction in supply, MWD has established a Salinity Management Policy, which sets the goal of delivering water with less than 500 milligrams per liter (mg/L) of total dissolved solids (TDS). Generally, this issue only impacts the Colorado River supply as the SWP has historically been observed to have significantly lower salinity levels (250 to 300 mg/L). In comparison, the TDS concentration in groundwater sources is generally greater than 1000 mg/L.

In addition to affecting the potable water supply, high levels of salinity also reduce the quality of treated wastewater, which could potentially affect the recycled water supply. As recycled water is used for irrigation purposes within the District's service area, high salinity levels can contribute to accumulation and may impact landscapes. If salinity levels were to rise, it would result in prohibitions on use, add permit requirements (salt & nutrient management plans) and/or necessitate expensive desalination treatment.

Chromium VI (Hexavalent Chromium)

Chromium VI contributes to the measurement of Total Chromium, and total chromium levels are maintained at or below the California Department of Public Health (CDPH) standard MCL (50 micrograms per liter [µg/L]). In a draft released by the Office of Environmental Health Hazard Assessment (OEHHA) on December 31, 2010, a public health goal (PHG) for Chromium VI was proposed at 0.02 µg/L. A PHG is not an enforceable regulatory standard. However, state law requires the CDPH to use the PHG as guidance in developing an MCL. Meanwhile, many local water agencies are collaborating on research to determine effective treatment options for Chromium VI in the State's drinking water sources. MWD tests chromium levels for its compliance with the current standard utilizing a test method below the proposed maximum contaminant level.

MWD records of Chromium VI analyses reveal that, if more stringent goals are implemented, additional treatment of SWP water may be required as levels have been noted to exceed the proposed PHG. The draft released by OEHHA states that the PHG of 20 nanograms per liter (ng/L, or parts per trillion) is intended to be a "stringent health-protective goal" as opposed to a "maximum 'safe' level of chromium 6 in drinking water." In contrast to SWP water, water from the Colorado River has historically been recorded as generally having undetectable levels of Chromium VI.

Table 7.1.2 indicates the potential impacts of water quality on the District's water supply, as identified by CMWD and MWD.

Table 7.1.2: Water Quality - Current and Projected Water Supply Impacts

Water Source	Description of Condition	2020	2025	2030	2035
CMWD Potable Water	No water quality issues expected	0	0	0	0
Recycled Water	No water quality issues expected	0	0	0	0

7.2 Reliability by Type of Year

Urban Water Management Planning Act Requirement:

CWC 10631(c)(1) Describe the reliability of the water supply and vunlerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:

(A) An average water year,

(B) A single dry water year,

(C) Multiple dry water years.

All potable water supplies are provided by CMWD as a wholesaler to the District as a purveyor. The reliability of the supply, by CMWD, is directly related to supply by the MWD and deliveries via the SWP. Since the supply is not directly obtained by the District, the determination of reliability will largely be determined by CMWD and MWD analyses to provide a consistent water supply to the District during times of normal, single dry, and multiple dry years. Although the District does not obtain its water directly from a natural source (e.g. groundwater or surface water), the District is committed to reducing water demand during times of drought in order to conserve water and improve reliability for future water supplies.

For the purpose of this Plan, the Department of Water Resources defines average, single-dry, and multiple dry years as follows.

Average Year: A year, or an averaged range of years, that most closely represents the median water supply available to the agency.

Single-Dry Year: The year that represents the lowest water supply available to the agency.

Multiple Dry Years: The period that represents the lowest average water supply availability to the agency for a consecutive multiple year period (three years or more).

Table 7.2.1 identifies the normal, single dry, and multiple dry water years chosen to represent the water supply for supply from CMWD:

Table 7.2.1: Bases of Water Year Data

Year Type	Base Year	Available supplies if year type repeats	
		Volume Available	% of Avg Supply
Average Year	2002	2,535	100%
Single-Dry Year	1977	2,560	101%
Multiple-Dry Years 1st Year	1990	2,510	99%
Multiple-Dry Years 2nd Year	1991	2,510	99%
Multiple-Dry Years 3rd Year	1992	2,510	99%

Notes: Untis are in acre-feet per year (AFY)

In the single dry water year, demand increased and therefore more water was supplied to meet the demand due to increased temperatures, evapotranspiration rates, and a longer dry season. Although this results in using more water than is naturally replenished during these years, water reserves are available to provide a reliable source of water in the event of another single dry year with similar hydrology.

7.3 Supply and Demand Assessment

Urban Water Management Planning Act Requirement:

CWC 10635 Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five year increments, for a normal water year, a single dry year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

The following tables, 7.3.1 through 7.3.3, compare the total supply and demand as identified in Chapters 5 and 6 for normal, single-dry, and multiple-dry years. It can be seen that the supply available to the District, through CMWD, is above the total demand for average and single-dry years, but is shown as a shortage by 30 AFY to meet demands for multiple-dry years. The District has demonstrated it can beat these estimated demand projections in 2015. The District is committed to water conservation and will work with residents and CMWD to ensure a reliable water supply for its customers

CMWD identified that supply was sufficient in a single-dry year to meet this increased demand. During a multiple-dry year, it was identified that the demand will remain constant, consistent with a normal water year, due to conservation measures that will be enacted in this situation. This will offset the predicted increase in demand over a multiple-dry year period. CMWD did not identify any reliability issues, based on MWD expectation, with delivering water during a single- or multiple-dry year period, and identified that supply would be sufficient to meet demand.

Table 7.3.1: Supply and Demand Comparison — Normal Year

	2020	2025	2030	2035	2040
Supply Totals	4,360	4,360	4,360	4,360	4,360
Demand Totals	3,655	3,675	3,675	3,675	3,675
Difference	705	685	685	685	685

Notes: Units are in acre-feet per year

During a normal year, it can be seen that the District will obtain sufficient supplies from CMWD.

Table 7.3.2: Supply and Demand Comparison — Single-Dry Year

	2020	2025	2030	2035	2040
Supply Totals	3,030	3,030	3,030	3,030	3,030
Demand Totals	3,000	3,000	3,000	3,000	3,000
Difference	30	30	30	30	30

Notes: Units are in acre-feet per year

The demand in a single-dry year was estimated to decrease by approximately 18% as the result of water conservation efforts. During a single-dry year, CMWD anticipates being able to exceed this demand, with an available supply of 3,030 AFY. However, as mentioned previously, the District is committed to water conservation efforts to preserve water supplies during dry years. In the event of a water shortage, measures outlined in the Water Shortage Contingency Plan will be implemented.

Table 7.3.3: Supply and Demand Comparison — Multiple-Dry-Year Events

		2015	2020	2025	2030
Multiple-dry year first year supply	**Supply Totals**	3,030	3,030	3,030	3,030
	Demand Totals	3,000	3,000	3,000	3,000
	Difference	30	30	30	30
Multiple-dry year second year supply	**Supply Totals**	2,970	2,970	2,970	2,970
	Demand Totals	3,000	3,000	3,000	3,000
	Difference	-30	-30	-30	-30
Multiple-dry year third year supply	**Supply Totals**	2,970	2,970	2,970	2,970
	Demand Totals	3,000	3,000	3,000	3,000
	Difference	-30	-30	-30	-30

Notes: Units are in acre-feet per year

As demonstrated in Table 7.3.3, it is anticipated that demand that could potentially exceed water supply in a multiple-dry year period. In severe stages of water shortages, the District may ration supplies as necessary, and implement water conservation measures resulting in up to a 50% water use reduction. This will be done, in situations when water supply is projected to reach dangerously low levels, and an emergency situation is imminent.

7.4 Regional Supply Reliability

Urban Water Management Planning Act Requirement:

CWC 10620(f) An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

Water supply reliability includes both the availability of the water purchased through CMWD and the distribution and storage facilities that make up the District's water system. The water supplied through CMWD is considered a reliable source. There are currently no opportunities being pursued by the District to discontinue wholesale water service through CMWD.

As a result of the District water supply being provided by CMWD, which in turn is provided through MWD and the SWP, the reliability analysis for this Chapter is heavily dependent on the reliability analyses of these agencies that are subject to State and Federal regulations. Although the District is dependent on these sources to provide a reliable water supply, the District provides empirical water use projections and reasonable estimates related to user or system changes. Instead of attempting to replace water supplies that are deemed unreliable by seeking alternate water sources, the District will continue to coordinate with CMWD to ensure that the necessary improvements are made to ensure a high quality and reliable source of water.