

STAFF REPORT

**PROPOSED AMENDMENT TO THE WATER QUALITY CONTROL
PLAN TO INCORPORATE A SITE-SPECIFIC CHLORIDE OBJECTIVE
FOR REACH 6 OF THE LOS ANGELES RIVER**

**CALIFORNIA REGIONAL WATER QUALITY CONTROL
BOARD – LOS ANGELES REGION**

August 2023

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1. Introduction

This staff report reviews the scientific and regulatory basis for a proposed Basin Plan amendment to establish a site-specific water quality objective for chloride in the Los Angeles River and tributaries above the Sepulveda Flood Control Basin (Reach 6 of the Los Angeles River). This review relies on technical work provided by Las Virgenes Municipal Water District (LVMWD), overseen by the California Regional Water Quality Control Board, Los Angeles Region (Los Angeles Water Board), and Los Angeles Water Board analyses of relevant information.

The Los Angeles Water Board is the California state agency responsible for establishing and enforcing water quality standards for surface and ground waters in the Los Angeles Region (which includes most of Los Angeles and Ventura counties). The Water Quality Control Plan for the Los Angeles Region (Basin Plan) identifies beneficial uses, establishes water quality objectives to protect those uses, and contains implementation programs for the protection of beneficial uses in regional surface and ground waters. The Los Angeles Water Board must formally adopt Basin Plan amendments to incorporate new water quality objectives or revise existing objectives. Basin Plan amendments are subject to approval by the California State Water Resources Control Board (State Water Board), the California Office of Administrative Law (OAL), and the United States Environmental Protection Agency.

Reach 6 of the Los Angeles River has a chloride objective of 150 milligrams per liter (mg/L) as established by the Basin Plan. Los Angeles Water Board staff propose a Basin Plan amendment to establish a site-specific chloride objective of 190 mg/L in Reach 6 of the Los Angeles River to be consistent with the water quality objective for chloride in downstream reaches of the Los Angeles River.

2. Background

2.1 Regulatory History

In the late 1980s, California was in the middle of a long-running drought which impacted the region in many ways, including water supply. Chloride concentrations in both imported water and subsequent discharges increased with the drought, making it difficult for dischargers to comply with the Basin Plan's water quality objectives for chloride for surface waters.

In an effort to address concerns of dischargers, in 1990, the Los Angeles Water Board adopted Resolution 90-004, *Effects of Drought-Induced Water Supply Changes and Water Conservation Measures on Compliance with Waste Discharge Requirements within the Los Angeles Region* (Drought Policy). The Drought Policy was intended to

provide short-term relief to Publicly Owned Treatment Works (POTWs) who were unable to comply with limits for chloride due to the effects of drought on chloride levels in supply waters imported to the Region. The Drought Policy was renewed in 1993 and again in 1995. While the Drought Policy was intended to provide temporary relief for what was originally considered a short-term issue, as reflected by the fact it was renewed twice, there was a recognition that the issue had become a long-term concern.

To address the continued issue of increased chloride in imported waters, the Los Angeles Water Board sought a long-term regulatory solution. Based on an analysis of the historical data and regional circumstances, the Los Angeles Water Board adopted Resolution No. 97-02 *Amendment to the Water Quality Control Plan to Incorporate a Policy for Addressing Levels of Chloride in Discharges of Wastewaters* (Chloride Policy). The Chloride Policy addressed the chloride compliance issues by revising the chloride water quality objective from 150 mg/L to 190 mg/L for those specific reaches of the Los Angeles River, Rio Hondo, and San Gabriel River receiving discharges of effluent from POTWs. The Chloride Policy included the following segments of the Los Angeles River:

- a) Between the Sepulveda Flood Control Basin and Figueroa Street (including Burbank Western Channel only)
- b) Between Figueroa Street and estuary (including Rio Hondo below Santa Ana Freeway only).

The Los Angeles River and tributaries upstream of the Sepulveda Flood Control Basin (Reach 6) were not included in the Chloride Policy, as at the time there were no POTW discharges to Reach 6.

After the adoption of Resolution No. 97-02, the Los Angeles Water Board adopted Order No. 98-027 to amend the chloride final effluent limitation contained in the National Pollutant Discharge Elimination System (NPDES) permits for the POTWs that had applied for relief under the Drought Policy.

2.2 Tapia Water Reclamation Facility

Tapia WRF is a wastewater treatment plant located in Malibu Canyon. Tapia WRF is owned and operated by the Las Virgenes-Triunfo Joint Powers Authority (JPA), which consists of LVMWD and Triunfo Sanitation District. The plant was built in 1965 and was originally designed and built to take advantage of the landscape and siting, with a gravity feed to the plant before discharging into Malibu Creek. Water recycling was started at

Tapia WRF in 1972. The recycled water is used to irrigate public and commercial lands in the area.

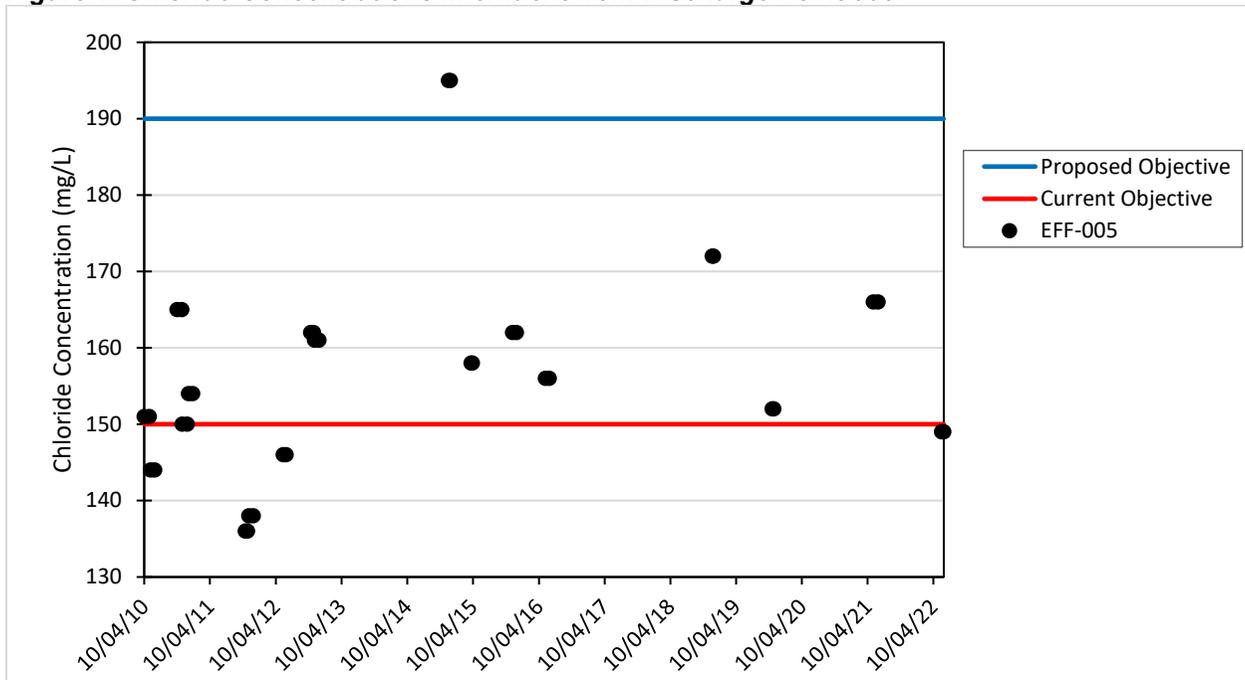
In the late 1990s, concerns over the contribution of Tapia WRF's discharge to excess freshwater flow into Malibu Lagoon led to a prohibition on Tapia WRF discharges into Malibu Creek from April 15 to November 15 each calendar year, with few exceptions. Therefore, on July 8, 1999, the Los Angeles Water Board adopted NPDES Order No. 99-066, permitting Tapia WRF to discharge effluent through a newly constructed discharge point (Discharge Point 005) into Dry Canyon Creek, a tributary to Arroyo Calabazas, which is a tributary to the Los Angeles River. In NPDES Order No. 99-066, the Los Angeles Water Board prescribed a chloride effluent limit of 190 mg/L, which was consistent with other POTWs in the Los Angeles River as defined by Resolution 98-027. On April 13, 2000, the Los Angeles Water Board adopted Order No. 00-046, amending Order No. 99-066 to relocate Discharge Point 005 to a fully lined portion of Arroyo Calabazas to minimize the potential impacts of the discharge on soft-bottomed portions of Dry Creek Canyon. The effluent limitation for chloride was unchanged. Tapia WRF has continued to discharge tertiary-treated wastewater to Malibu Creek and the Los Angeles River.

In 2017, a review of the Basin Plan led to the clarification that Resolution 98-027 was not applicable to Discharge Point 005, because the Resolution predated the construction of Discharge Point 005. Therefore, when the Los Angeles Water Board adopted Order No. R4-2017-0124, the Waste Discharge Requirements (WDRs) and NPDES Permit for Tapia TRF, Discharge Point 005 was prescribed a chloride effluent limitation of 150 mg/L based on the water quality objectives for Reach 6 of the Los Angeles River, as designated in the Basin Plan.

Tapia WRF was not able to immediately comply with the chloride effluent limitation of 150 mg/L, therefore at the request LVMWD, the Los Angeles Water Board issued Time Schedule Order (TSO), Order No. R4-2017-0125 on June 1, 2017. The TSO contained interim effluent limitations for chloride equal to 190 mg/L and scheduled milestones for LVMWD to conduct studies and analyses to support the development of a discharge-specific variance or a site-specific objective for chloride in Reach 6 of the Los Angeles River.

For the period of time between January 2017 and December 2022, Tapia WRF has discharged effluent at Discharge Point 005 less than once per year (Figure 1). Since 2015, chloride concentrations have been below 175 mg/L.

Figure 1. Chloride Concentrations in effluent from Discharge Point 005.



In adopting the TSO, the Los Angeles Water Board intended for staff to schedule for its consideration a discharge-specific variance or a site-specific objective (SSO) for chloride following completion of the scheduled milestones. The main scheduled milestones included:

A. Chloride Source Investigation Report, including:

1. Identification of chloride concentrations in the influent, effluent, and receiving water from 1999 to 2017;
2. Description of impacts of drought, water conservation, and statewide water efficiency standards on the effluent concentrations;
3. Identification of potential chloride contributions from natural geologic sources, water softeners, and sodium hypochlorite; and
4. Identification of possible source reduction activities.

B. Evaluation of Options Report, including:

1. Evaluation of data from the Chloride Source Investigation Report and impacts of chloride levels in the effluent; evaluation of impacts that effluent from Discharge Point 005 may have on receiving water and beneficial uses; and
 2. Evaluation of potential source reduction activities and the effect of drought on chloride levels in the source and influent water.
- C. Identification of Options Report, including possible source reduction activities and potential solutions.
- D. Recommendation Report, including recommendation and supporting data.

LVMWD complied with all the milestones and timelines set forth in the TSO. Based on its analyses, LVMWD proposed an amendment to the Basin Plan to establish a SSO for chloride in Reach 6 of the Los Angeles River.

Due to resource limitations and other factors, Los Angeles Water Board staff were unable to develop an SSO proposal for the Board's consideration prior to the TSO deadline of July 31, 2022, after which the 150 mg/L chloride limit would apply. Therefore, the Board adopted a second TSO (No. R4-2017-0125-A01) on July 14, 2022, extending the interim chloride limitation of 190 mg/L. This Order also required LVMWD to submit an updated Technical Report, including an analysis of Water Code section 13241 factors, and an updated Antidegradation Analysis to support the consideration and/or development of a proposed SSO, as well as a work plan identifying strategies to reduce chloride in effluent to achieve the limitation of 150 mg/L if an SSO was not supported. This TSO is due to expire on July 31, 2027. However, if the site-specific objective is not adopted by December 31, 2023, Tapia WRF must start implementing strategies to meet the water quality objective of 150 mg/L.

2.3 Environmental Setting

The Los Angeles River Watershed is one of the largest in the Los Angeles Region, draining an area of about 834 square miles (Figure 2). The main stem of the Los Angeles River begins at the confluence of Arroyo Calabasas and Bell Creek in Canoga Park and flows 51 miles from the western end of the San Fernando Valley to the Pacific Ocean in Long Beach. Reach 6 (Figure 3) is a 6-mile segment of the Los Angeles River that begins at the headwaters of the Los Angeles River and ends above the Sepulveda Flood Control Basin at Balboa Boulevard. Reach 6 also includes the following major tributaries:

Caballero Creek, Aliso Canyon Wash, Browns Canyon Wash, Arroyo Calabasas, and Bell Creek and encompasses an area of about 152 square miles.

Four POTWs discharge to the Los Angeles River Watershed (Figure 4): Donald C. Tillman Water Reclamation Plant (WRP), Burbank WRP, Glendale WRP and Tapia WRF. Tapia is the only WRP to discharge to Reach 6.

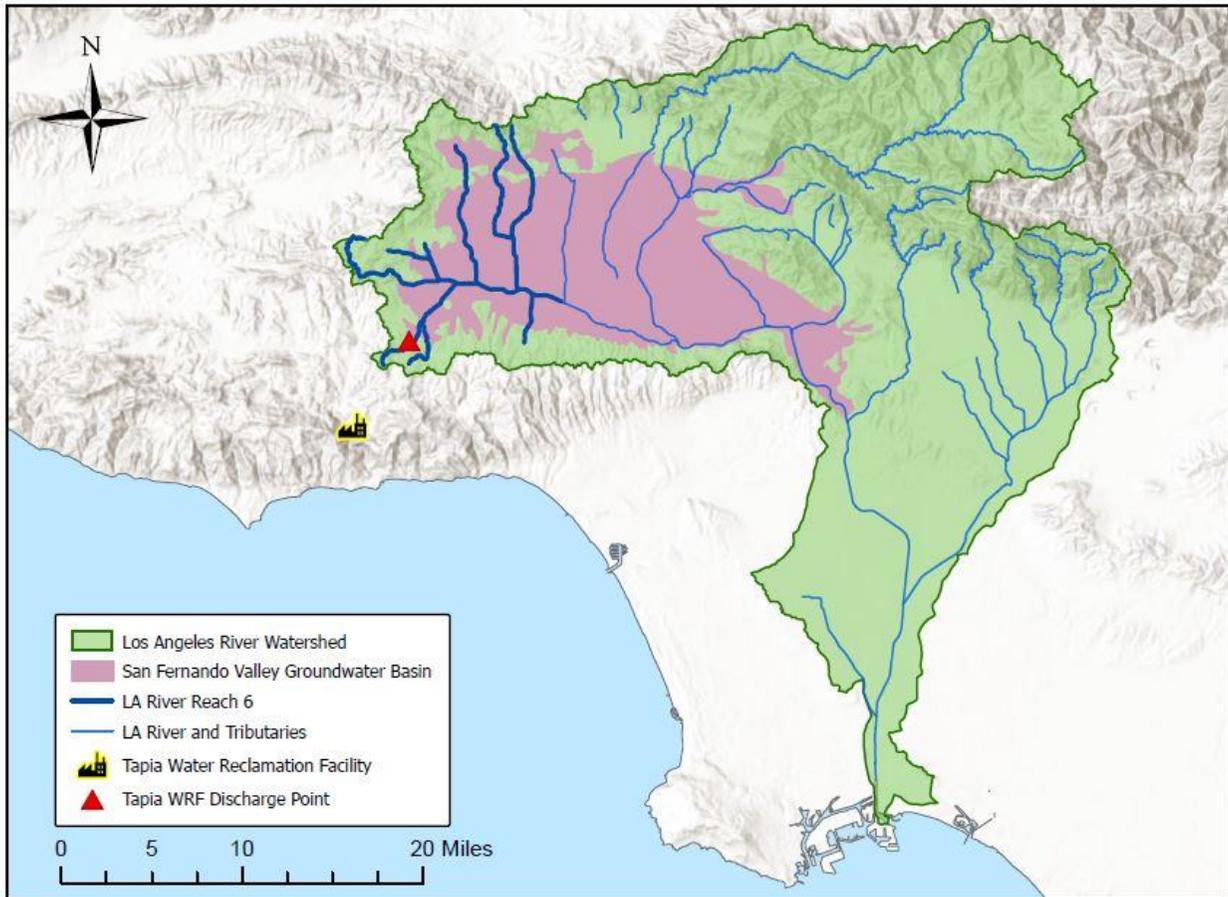


Figure 2. Los Angeles River Watershed

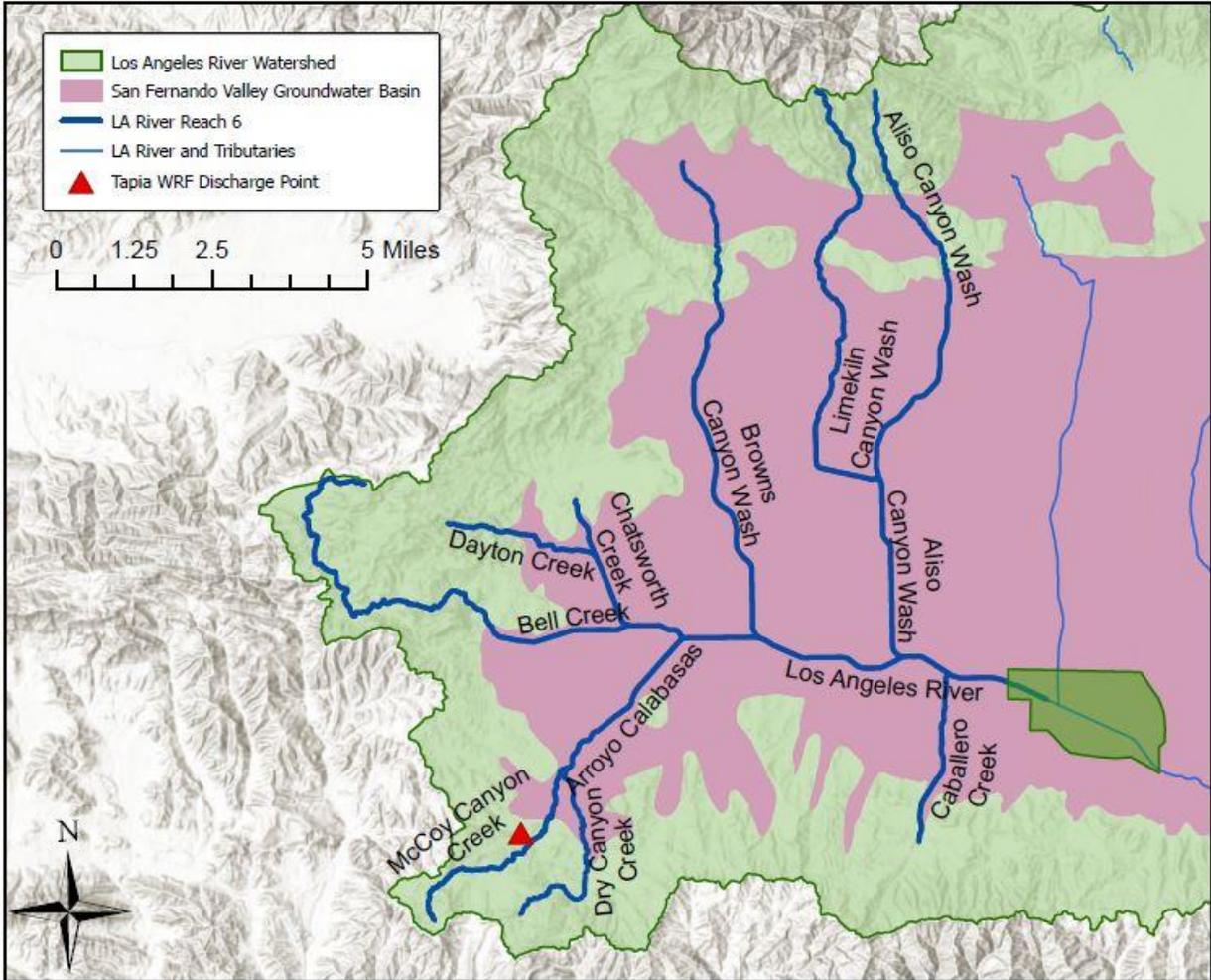


Figure 3. Los Angeles River Watershed Reach 6

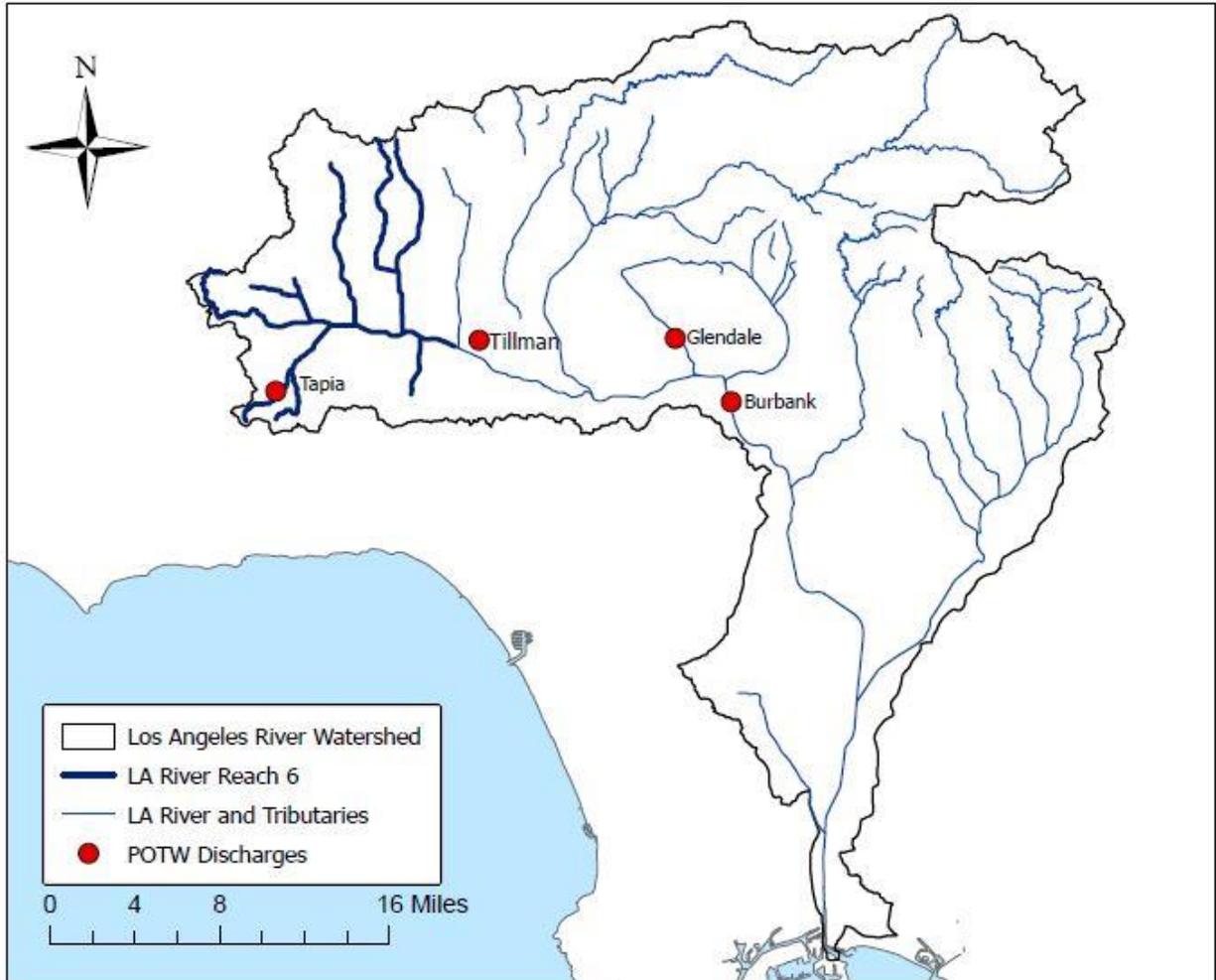


Figure 4. Wastewater Reclamation Plants discharging to Los Angeles River

Land use in Reach 6 is highly urbanized and mostly residential, combined with commercial and open space. The area has a mix of concrete engineered channels and natural bottom channels. Approximately 3000 feet before the end of the reach, the concrete channel gives way to a soft-bottom stretch. Reach 6 flows into Reach 5 at the Sepulveda Basin area, a 2,150-acre open space upstream of the Sepulveda Dam, that collects flood waters during major storms. The area is periodically inundated; therefore, it remains in a semi-natural condition and supports habitat and a variety of low intensity uses.

Reach 6 of the Los Angeles River lies above the San Fernando Valley Groundwater Basin. A large portion of the Reach is concrete lined, however because the Los Angeles River is unlined upstream of the Sepulveda Basin, water in Reach 6 has the potential to recharge the underlying San Fernando Valley Groundwater Basin, which is mainly unconfined.

3. Beneficial Uses and WQOs

The beneficial uses for Reach 6 of the Los Angeles River are described in the Basin Plan (Table 1). Existing beneficial uses in Reach 6 include water contact recreation (REC-1), non-contact water recreation (REC-2), groundwater recharge (GWR), warm freshwater habitat (WARM), wildlife habitat (WILD), and wetland habitat (WET). Potential beneficial uses in Reach 6 include municipal and domestic supply (MUN) and industrial service supply (IND). No segment of Reach 6 has been designated with the Rare, Threatened or Endangered Species (RARE) beneficial use.

Table 1. Beneficial Uses of the Los Angeles River above Balboa Blvd (from the Basin Plan).

Waterbody	MUN	IND	PROC	GWR	WARM	WILD	WET	REC1	REC2
LA River Reach 6 (above Balboa Blvd.)	P*	P		E	E	E	E	E	E
Caballero Creek	P*			I	I	E		Im	I
Aliso Canyon Wash (LA River Reach 6 - State Hwy 118)	P*			I	I	E		Im	I
Aliso Canyon Creek (Above State Hwy 118)	P*			I	I	E		Im	I
Limekiln Canyon Wash	P*			I	I	E		Im	I
Browns Canyon Wash (LA River Reach 6 - St Hwy 118)	P*			I	I	E		Im	I
Browns Canyon Creek (above State Hwy 118)	P*			I	I	E		Im	I
Arroyo Calabasas	P*				P	P		Im	I
Dry Canyon Creek	P*			I	I	E		Pm	I
McCoy Canyon Creek	P*			I	I	E		I	I
Bell Creek	P*			I	I	E		Im	I
Chatsworth Reservoir	E	E	E		E	E		P	E
Dayton Canyon Creek	P*			I	I	E		I	I

E = Existing beneficial use, P = Potential beneficial use, I = Intermittent beneficial use, m = Access prohibited by Los Angeles County Department in the concrete-channelized areas.

While RARE is not a designated beneficial use for Reach 6, there are four rare and threatened species that potentially exist in that segment of the Los Angeles River

Watershed: great egret (*Ardea alba*), snowy egret (*Egretta thula*), coastal whiptail (*Aspidoscelis tigris stenjegeri*), and two-striped garter snake (*Thamnophis hammondi*). None of these species have special federal or state status. California Department of Fish and Wildlife lists the coastal whiptail and two-striped garter snake as “Species of Special Concern”. None of these four species are aquatic life that would likely be impacted by chloride concentrations in the Los Angeles River. Downstream of Reach 6, all fish species that occur in the Sepulveda Basin area that could potentially be in Reach 6 are introduced species, including: western mosquitofish, Mozambique tilapia, and goldfish. None of these fish species are listed as rare or threatened in the Los Angeles River Watershed (LWA, 2022c).

The current water quality objective (WQO) for chloride in Reach 6 of the Los Angeles River is 150 mg/L. However, as noted in Section 2, the chloride WQO for other reaches of the Los Angeles River with POTWs was previously amended to 190 mg/L. The groundwater quality objective for the San Fernando Valley Basin is 100 mg/L.

4. Results of TSO Special Studies (summary of key findings)

Chloride Source Investigation Report

LVMWD was required to complete a Chloride Source Investigation as one of the TSO milestones. The results of this study are detailed in the *Chloride Source Investigation Report* (LWA, 2018b). In summary, chloride in the source water was the major contributor to the total effluent load and accounted for more than 50% of the total load. General residential uses and residential water softeners were the two next highest contributors (Table 2).

Table 2. Estimated Chloride Load to Tapia WRF (LWA, 2018b)

Source		Percent Contribution to Effluent Load
<i>Influent Sources</i>		
	Water Supply	46
	Industrial Sources	1
	Residential Water Softeners	22
	Residential Uses	16
	Commercial Uses	2

	Unidentified Influent Sources	2
	Total influent	89
<i>In-Plant Sources</i>		
	Sodium hypochlorite	11
	Total In-Plant	11

Chloride Evaluation of Options Report

The second milestone of the TSO required LVMWD to submit a Chloride Evaluation of Options Report (LWA, 2018a) to evaluate the impacts of chloride sources on chloride levels in the final effluent, the impacts of discharges on receiving waters and associated beneficial uses, potential source reduction activities, and the effect of drought on chloride levels in source and influent water, and to compare the situation with Tapia’s discharge to the findings in Resolution 97-002. Details can be found in the 2018 report (LWA, 2018a) but a summary is presented here.

The Report concluded beneficial uses in Reach 6 would not be negatively affected by a site-specific objective of 190 mg/L. Reach 6 has the same beneficial uses as the downstream portions assigned a water quality objective of 190 mg/L based on the Los Angeles Water Board’s determination that 190 mg/L was protective of beneficial uses.

The increases in chloride concentrations in regional supply water that were first observed in the early 1980s and prompted the revisions to water quality objectives in some of the other reaches of the Los Angeles River remain. Average chloride concentrations have risen from 62mg/L to 95 mg/L in the period 2005-2016. Supply water chloride loads remain the biggest contributors to Tapia WRF’s effluent chloride concentrations and there are limited options for reducing that portion of the load. The report also looked at the other cause of chloride loading and evaluated approaches to reducing the chloride concentrations. LVMWD might be able to influence decreases in concentrations from residential water softeners through rebate/restrictions and from in-plant sources through the conversion of treatment processes, but both would not result in a complete cessation of chloride loading.

Identification of Options Report

The 2018 Identification of Options Report (LWA, 2018c) identifies potential implementation and regulatory options for meeting or adjusting the chloride effluent

limitations. In summary, the report found that the contribution of chloride in the effluent load from the water supply source was not controllable by LVMWD. The report also looked at four different regulatory solutions for addressing the issue:

- Develop site-specific objective=190 mg/L,
- Adopt US EPA criteria=230 mg/L,
- Adopt a variance, or
- Adopt a Basin Plan amendment with implementation provisions (similar to the Drought Policy).

All four potential solutions would result in modifications to effluent limits that are achievable, fairly low cost, protective of beneficial uses and estimated to be accomplished in a relatively short time frame (12 -18 months). Ultimately, a site-specific objective was recommended.

Recommendation Report

The 2019 Recommendation Report (LWA, 2019) details the recommendation and supporting data for appropriate remedial actions, including possible source reduction activities, and regulatory actions, as required by the TSO. In summary, the report concluded significant funding would be necessary to address the chloride source loading that Tapia WRF has control over.

Reducing system loading sources (from treatment and storage) would have significant costs and would not address the major chloride source (increases in imported water) and would come with additional environmental and socio-economic costs.

The Recommendations Report also concludes that aligning the WQO in Reach 6 with WQOs included in the Basin Plan for those other reaches with POTW discharges would remain protective of beneficial uses and be consistent with the historical actions of the Los Angeles Water Board. Adopting the site-specific objective of 190 mg/L would also allow LVMWD to focus funds on other regional projects currently in development that will increase local water supply and resilience.

In addition to these milestone reports, and in accordance with the second TSO (No.R4-2017-0125-A01), LVMWD submitted an Updated Technical Report in October 2022 (LWA, 2022c), that reviewed and updated some of the technical information included in the previous submittals. Also submitted in December 2022 were an Antidegradation Study (LWA, 2022a) and a Chloride Reduction Workplan (LWA, 2022b).

5. Technical and Stakeholder Input

As discussed throughout this staff report, Larry Walker Associates provided a variety of technical studies and documents for LVMWD to meet the milestones included in the TSO Order R4-2017-0125-A01.

Los Angeles Water Board staff has conducted outreach regarding the proposed Basin Plan amendment to a variety of stakeholders. Tribal Outreach was conducted by mail on June 29, 2023 notifying tribal chairpersons of the project and inviting feedback. No requests for further information were received. A stakeholder kickoff was held in conjunction with a CEQA Scoping meeting on July 26, 2023. California Public Resources Code section 21083.9 states that a CEQA Scoping Meeting must be designed such to identify the “scope and content” of the environmental documents, including the range of actions, alternatives, mitigation measures, and significant effects to be analyzed (Cal. Code Regs, tit.14, § 15083). Notice of a CEQA scoping meeting for the project was sent to interested persons and agencies. Comments received at this meeting were considered and addressed in the substitute documents for this proposed action.

6. Comparison between the current and proposed chloride objective

The current water quality objective in Reach 6 of the Los Angeles River is 150 mg/L. Los Angeles Water Board staff propose a Basin Plan amendment to establish a site-specific chloride objective for this reach of 190 mg/L.

The 190 mg/L value is based on a baseline chloride concentration of 105 mg/L, which is adequate to accommodate fluctuations in supply conditions, and a loading factor of 85 mg/L, which also considers water conservation effects on chloride concentrations. This was the same approach utilized in 1997 with the adoption of the Chloride Policy.

7. Compliance with Proposed Chloride Site-Specific Objective

If approved, the proposed chloride objective would be reflected in revised effluent and receiving water limitations in NPDES permits.

8. Antidegradation analysis

Both U.S. EPA (40 CFR 131.12) and the State of California (State Water Board Resolution No. 68-16) have adopted antidegradation policies. The Los Angeles Water Board must

ensure that its actions are consistent with the federal and State antidegradation policies. This section of the Staff Report documents that the proposed site-specific objective is consistent with federal and State antidegradation policies.

8.1 Federal Antidegradation Policy

The federal antidegradation policy provides, in part (40 CFR §131.12(a)):

1. Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.
2. Where the quality of waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. Further, the State shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control. The analysis of alternatives shall evaluate a range of practicable alternatives that would prevent or lessen the degradation associated with the proposed activity. When the analysis of alternatives identifies one or more practicable alternatives, the State shall only find that a lowering is necessary if one such alternative is selected for implementation.
3. Where high quality waters constitute an outstanding National resource, such as waters of National and States parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

8.2 State Antidegradation Policy

Antidegradation provisions of State Water Board Resolution No. 68-16 ("Statement of Policy with Respect to Maintaining High Quality of Waters in California") state, in part:

1. Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent with maximum benefit to the people of the State, will not

unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies.

2. Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.

Los Angeles River Reach 6 is not a high-quality water as defined in State and federal antidegradation policies. Previous research conducted for the Upper Los Angeles River Watershed Management Group analyzed chloride concentration data between 2002 and 2013 throughout the river and found that the average chloride concentration in Reach 6 was 145 mg/L; however, samples occasionally exceeded 190 mg/L with the highest concentration recorded at 219 mg/L.

As discussed in section 2.3, water in Reach 6 has the potential to recharge the underlying San Fernando Valley Groundwater Basin, which is a high-quality water. It has a chloride objective of 100 mg/L. Groundwater wells in the sub area of the basin most affected by the Tapia WRP discharge have an average chloride concentration of 95 mg/L, which leaves an assimilative capacity of 5 mg/L for the sub area. The discharge from Discharge Point 005 represents an estimated 0.4% of that assimilative capacity assuming the application either the existing groundwater quality objective of 150 mg/L or the proposed objective of 190 mg/L. Thus, the San Fernando Groundwater Basin has the assimilative capacity to accept the Tapia WRF discharges (LWA, 2022a).

The change in water quality that may occur as a result of the amendment is consistent with the maximum benefit to the people of the State and would accommodate important economic development. Adopting the site-specific objective of 190 mg/L would allow LVMWD to focus funds on other regional projects currently in development that will increase local water supply and resilience. Reducing system loading sources (from treatment and storage) would have significant costs and would not address the major chloride source (increases in imported water) and would come with additional environmental and socio-economic costs.

The change in water quality that may occur will not unreasonably affect present and anticipated beneficial uses of Los Angeles River Reach 6 or the San Fernando Valley Groundwater Basin nor result in water quality less than prescribed in the Boards' policies. The beneficial uses that could be impacted by chloride include WARM and MUN. With

respect to the WARM beneficial use, USEPA has recommended aquatic life criteria of 230 mg/L as a four-day average and 860 mg/L as a one-hour average. The highest chloride concentration recorded in Reach 6 of the Los Angeles River from February 2002 to June 2010 has been 219 mg/L, which is protective of aquatic life based on the USEPA aquatic life chloride criteria. During this period, Waste Discharge Requirements for the Tapia WRF included final effluent limitations for chloride of 190 mg/L for discharges to the Los Angeles River. The chloride level considered protective of the MUN beneficial use is 250 mg/L, based on the California Code of Regulations, title 22, maximum contaminant levels, which is also higher than the proposed Basin Plan objective of 190 mg/L. In addition, as discussed in section 2.2, the Tapia WRF currently discharges infrequently and the discharges are of a low volume.

9. Human Right to Water

Water Code section 106.3 declares that “every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes” (id., subd. (a)) and promotes the adoption of policies, regulations, and grant criteria pertinent to those uses of water (id., subd. (c)). Although the proposed Basin Plan amendment does not directly pertain to drinking water, it will allow Tapia WRF to move forward with the ongoing efforts to produce more recycled water which will in turn benefit regional water supplies and resilience.

10. Water Code Section 13241 considerations/analysis

In setting site-specific objectives, Water Code section 13241 requires consideration of six factors. These factors are (1) past, present, and probable future beneficial uses of water; (2) environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto; (3) water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area; (4) economic considerations; (5) the need for developing housing within the region; and (6) the need to develop and use recycled water.

LVMWD’s Updated Technical Report (LWA, 2022a) provided an evaluation of the factors set forth in Water Code Section 13241 and are summarized in this section. The Los Angeles Water Board staff has independently reviewed the available information in evaluating compliance Water Code Section 13241.

10.1 Past, present, and probable future beneficial uses of water

Existing and potential beneficial uses designated in Reach 6 of the Los Angeles River are described in Section 3 of this Staff Report and include REC-1, REC-2, GWR, WARM, WILD, WET, MUN, and IND. Each beneficial use is fully defined in the Basin Plan.

Probable future beneficial uses of surface waters in Reach 6 of the Los Angeles River are likely to remain consistent with past and present uses. In March 2022, the Water Board adopted three new beneficial uses: Tribal Tradition and Culture (CUL), Tribal Subsistence Fishing (T-SUB), and Subsistence Fishing (SUB). The designation process is currently ongoing. Currently, the only objectives specifically associated with CUL, T-SUB, and SUB are for mercury. When waterbody designations for CUL, T-SUB, and SUB are made, chloride objectives are not expected to be negatively affect the new beneficial uses.

The proposed site-specific objective for chloride of 190 mg/L will be protective of the existing and potential beneficial uses in Reach 6 of the Los Angeles River Watershed. Chloride standards have been established for three of the beneficial uses: WARM, MUN, and GWR. With respect to the WARM beneficial use, USEPA has recommended aquatic life criteria of 230 mg/L as a four-day average and 860 mg/L as a one-hour average. The chloride level considered protective of the MUN beneficial use is 250 mg/L, based on California Code of Regulations Title 22 maximum contaminant levels, which is higher than the aquatic life criteria. The GWR chloride objective is based on San Fernando Valley Groundwater Basin's subarea, which has a chloride objective of 100 mg/L. As explained in Section 8 of this Staff Report, the San Fernando Valley Groundwater Basin has enough assimilative capacity to remain protective of the GWR beneficial use (LWA, 2022a).

10.2 Environmental characteristics

The environmental setting of the proposed Basin Plan amendment is presented in Section 2.3, and further environmental characteristics are described in Chapters 1-3 of the Basin Plan.

10.3 Water quality conditions that could reasonably be achieved

Water quality conditions that reasonably could be achieved through the coordinated control of all factors which affect water quality in the area have been considered. Water quality is primarily affected by environmental conditions (e.g., climate, soil, topography) and human activities (e.g., agriculture, industry, tourism). The environmental conditions affecting water quality and beneficial uses of the Los Angeles Region are discussed in Chapter 1 of the Basin Plan. Development and implementation of NPDES and other permits will ensure protection of beneficial uses of waterbodies listed in Chapter 2 of the Basin Plan. The proposed Basin Plan amendment will supersede the current objective listed in Chapter 3 of the Basin Plan as the baseline or benchmark of water quality conditions that can reasonably be achieved.

10.4 Economic considerations

Adoption of the proposed Basin Plan amendment would not require additional capital investment for Tapia WRF to meet the water quality objective. However, if the site-specific

objective is not adopted, significant investments may be required for Tapia WRF to reduce the chloride inputs from in plant sources. This would require a shift in disinfection processes (which only account for a limited amount of the chloride loading as discussed in Section 4).

A 2011 Study by the Las Virgenes-Triunfo JPA (LWA, 2022c) investigated different disinfection alternatives and estimated probable construction costs. Five alternatives were evaluated: UV disinfection, ozone, mixed oxidants, modified chlorination, and a hybrid UV and modified chlorination alternative. The results from the study are provided in Table 3.

Table 3. Estimated Construction Costs for Lower Chlorine Alternative Disinfection Processes at Tapia WRF, 2021 dollars (Costs were calculated using the 2011 and 2021 annual average Construction Cost Indices (CCI)).

Cost	Alternative				
	UV	Ozone	Mixed Oxidants	Modified Chlorination	Hybrid
Capital Cost	\$7.9 M	\$13.2 M	\$6.1 M	\$1.0 M	\$5.6 M
O&M Cost/year	\$0.4 M	\$0.56 M	\$0.49 M	\$0.62 M	\$0.5 M

The yearly cost for operations and maintenance (O&M) were found to be similar across all alternatives, but the estimated capital costs between the alternatives differ greatly ranging from \$1M to \$13.2M.

Additionally, it would cost more than \$18M in capital investment and \$2M annually to make structural changes to the Las Virgenes Reservoir that might decrease some of the unknown chloride contributions (such as groundwater loads, and chloride concentration increases from evaporation).

Resources and expenses that would be used on treatment methods to reduce chloride concentrations to 150 mg/L may impact the viability of the Pure Water Project, discussed below in the section on the use of recycled water, which is expected to have community and water quality benefits.

10.5 The need to develop housing

The proposed water quality objective would not restrict the development of housing near Reach 6 of the Los Angeles River because it would not result in discharge requirements that affect housing or any economic costs related to housing development. As population increases in Los Angeles County, there is a greater need for resources such as water supply. The proposed SSO will support water recycling in Reach 6 of the Los Angeles River and development of the Pure Water Project, which will increase local water resiliency.

10.6 The need to develop and use recycled water

The proposed WQO supports the expansion of recycled water. Las Virgenes–Triunfo JPA is implementing the Pure Water Project. This project will use a potable reuse water supply strategy to enhance local water supply reliability and drought resilience while eliminating discharges to Malibu Creek. The Pure Water Project is a multi-agency and multi-county collaborative project, which is planned to be fully operational by 2030. The design incorporates the construction of an advanced water purification plant that will further treat discharges through an ultrafiltration/reverse osmosis process. If the proposed Basin Plan amendment is adopted, Tapia WRF can be brought into compliance with NPDES effluent limits without employing the substantial capital investment that would be required to install new systems that would reduce some of the chloride loading (although not affecting the increased load from imported waters). Furthermore, among other benefits, the Pure Water Project will accomplish substantial chloride removal “through advanced treatment, including reverse osmosis” and removing an estimated 97% of chloride in 2.2-4.4 MGD of effluent that will no longer be discharged to the Malibu and Los Angeles River Watersheds (LWA, 2022c).

10.7 Water Code Section 189.7 and 14149.2 Considerations

The Los Angeles Water Board has satisfied the outreach requirements set forth in Water Code section 189.7 by conducting outreach in potentially affected disadvantaged and tribal communities. When adopting or modifying water quality objectives, section 13149.2 of the California Water Code requires the Los Angeles Water Board to make a concise, programmatic finding on potential environmental justice, tribal impact, and racial equity considerations related to the adoption. The Los Angeles Water Board expects no impacts from the proposed adoption of the site-specific objective to tribal and disadvantaged communities as the proposed amendment is not expected to result in any impact to the beneficial uses of the waters of the Los Angeles River, including Reach 6. This is supported by several reasons. First, the site-specific objective matches the water quality objective that was previously adopted for other reaches of the Los Angeles River. Second, Tapia WRF previous NPDES permits included effluent limitations equal to the proposed site-specific objective and no deleterious effects have been observed. Third, the proposed amendment will support the development of recycled water which in turn will support the resilient water supply needed for the region. The proposed objective is lower than the water quality criteria and objectives necessary to protect the beneficial uses of the surface waters and the proposed amendment also takes a conservative approach to protect beneficial uses by only applying the proposed water quality objective to Reach 6.

11. Staff Recommendation

Staff recommends adopting the proposed SSO of 190 mg/L of chloride for Reach 6 of the Los Angeles River (above Sepulveda Basin) as discussed in the staff report. This chloride objective matches the effluent limitation that had been permitted in Reach 6 from 1999-2017. It is also consistent with the water quality objective that applies to further downstream reaches of the Los Angeles River that also receive discharges from several POTWs. This chloride objective is protective of all beneficial uses included for the reach in the Basin Plan.

References

California Regional Water Quality Control Board - Los Angeles Region. 1990. Effects of Drought-Induced Water Supply Changes and Water Conservation Measures on Compliance with Waste Discharge Requirements within the Los Angeles Region. Resolution No 90-004.

California Regional Water Quality Control Board Los Angeles Region. 1997. Amendment to the Water Quality Control Plan (Basin Plan) to incorporate a “Policy for Addressing Levels of Chloride in Discharges of Wastewaters”. Resolution No 97-02.

California Regional Water Quality Control Board Los Angeles Region. 1998. Amendment to the Water Quality Control Plan (Basin Plan) to incorporate a Amending chloride requirement for County Sanitation Districts of Los Angeles County et al. Order No 98-027.

California Regional Water Quality Control Board - Los Angeles Region. 2017a. NPDES No. CA 0056014 Waste Discharge Requirements for the Las Virgenes Municipal Water District Tapia Water Reclamation Facility. Order R4-2017-0124.

California Regional Water Quality Control Board - Los Angeles Region. 2017b. Time Schedule Order (TSO) No. R4-2017-0125 - Requiring Las Virgenes Municipal Water District (Tapia Water Reclamation Facility) to Comply with Requirements Prescribed in Order No. R4-2017-0124.

California Regional Water Quality Control Board Los Angeles Region. Los Angeles Regional Water Quality Control Board. 2020 Water Quality Control Plan, Los Angeles Region, Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties.

California Regional Water Quality Control Board - Los Angeles Region. 2022. Amendment to the Water Quality Control Plan for the Los Angeles Region to Add Three New Beneficial Use Definitions – Tribal Tradition and Culture (CUL), Tribal Subsistence Fishing (T-SUB), and Subsistence Fishing (SUB) – and to Administratively Update Chapter 2 “Beneficial Uses”. Resolution No 2022-001.

California Regional Water Quality Control Board – Los Angeles. 2022. Requiring Las Virgenes Municipal Water District (Tapia Water Reclamation Facility) to Comply with Requirements Prescribed in Order No. R4-2017-0124 (NPDES Permit No. CA0056014) Time Schedule Order (TSO) No. R4-2017-0125-A01

CH2M, Paradigm Environmental, and Black & Veatch. 2016. Enhanced Watershed Management Program (EWMP) for the Upper Los Angeles River Watershed, Prepared for the Upper Los Angeles River Watershed Management Group, January 2016.

Larry Walker Associates (LWA). 2018a. Chloride Evaluation of Options Report, prepared for Las Virgenes Municipal Water District.

Larry Walker Associates (LWA). 2018b. Chloride Source Investigation Report, prepared for Las Virgenes Municipal Water District.

Larry Walker Associates (LWA). 2018c. Identification of Options Report, prepared for Las Virgenes Municipal Water District.

Larry Walker Associates (LWA). 2019. Recommendation Report, prepared for Las Virgenes Municipal Water District.

Larry Walker Associates (LWA). 2022a. Antidegradation Study, prepared for Las Virgenes Municipal Water District.

Larry Walker Associates (LWA). 2022b. Chloride Reduction Work Plan, prepared for Las Virgenes Municipal Water District.

Larry Walker Associates (LWA). 2022c. Updated Technical Report, prepared for Las Virgenes Municipal Water District.

State Water Resources Control Board. 1968. Statement of Policy with Respect to Maintaining High Quality of Waters in California (Antidegradation Policy). Resolution 68-16.

United States Geological Society (USGS). 2023. Water Data for [Los Angeles R a Sepulveda Dam CA - USGS Water Data for the Nation](https://waterdata.usgs.gov/monitoring-location/11092450/#parameterCode=00060&period=P7D). Retrieved August 16, 2023. <https://waterdata.usgs.gov/monitoring-location/11092450/#parameterCode=00060&period=P7D>