

FOREWORD

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The *Palmdale Water Reclamation Plant 2025 Facilities Plan and Environmental Impact Report* presents a wastewater management plan for the present and future residents and businesses of Sanitation District No. 20 of Los Angeles County in the Antelope Valley. This document recommends a project that will provide vital public infrastructure for the wastewater treatment and water reuse needs of this rapidly growing community. In this era of increasing demands on finite natural resources such as fresh water and energy and stringent environmental requirements, treatment facilities located in arid regions that have no river or outlet to the ocean require a highly flexible framework to accommodate both emerging water reuse opportunities and evolving regulations. The proposed project for District No. 20 provides for this kind of flexibility. With beneficial reuse of recycled water as a primary objective, it proposes a state-of-the-art wastewater management system that will provide for the needs of the District No. 20 portion of the Antelope Valley through the year 2025.

The Palmdale Water Reclamation Plant began operations in 1953, and the treated wastewater (effluent or recycled water) it produced was managed by District No. 20 through the end of 1980. Starting in 1981, the City of Los Angeles's Department of Airports, now known as Los Angeles World Airports (LAWA), assumed management of the effluent through a series of contracts with District No. 20 with the goal of recycling the effluent by irrigating crops on portions of the 17,000 acres it acquired for future airport development. However, the extent of LAWA's recycling efforts was less than intended, and much of the effluent percolated directly into the ground, contributing to elevated levels of nitrate in the groundwater. An extensive groundwater investigation found that elevated nitrate levels are limited to the upper 50 feet of groundwater below the effluent management site. The nitrate levels in three monitoring wells were slightly above the standard for drinking water. There are no drinking water supply wells in this area.

In 2002, District No. 20 and LAWA signed a new agreement making District No. 20 responsible for management of recycled water on 2,680 acres of land leased from LAWA. District No. 20 has aggressively pursued increasing agricultural reuse of the effluent on the entire lease area, and currently all effluent is applied on crops. During the winter months, when crop demand for water is low, the amount of effluent applied exceeds crop needs. Even so, data from the monitoring wells at the effluent management site show that nitrate levels are now significantly lower than those in 2002. Currently, only one well has a nitrate level that slightly exceeds the drinking water standard by 1 part per million.

The California Regional Water Quality Control Board, Lahontan Region, has issued two orders in response to the elevated nitrate levels in the groundwater. A Cleanup and Abatement Order was issued to both District No. 20 and LAWA to restore the groundwater quality at the effluent management site. The Regional Board also issued a Cease and Desist Order to District No. 20 that specifies a compliance schedule for improving control of nitrogen in the recycled water produced at the Palmdale WRP. In effect, these orders require that 100 percent of the recycled water from the Palmdale WRP is properly managed at all times in a manner that protects beneficial uses of waters of the State.

District No. 20 is well along the way to restoring the groundwater quality at the effluent management site and has so far taken the lead in financing all the remediation efforts. Although District and LAWA staff have met on a number of occasions to discuss the cleanup effort, LAWA has not acknowledged any responsibility to date. District No. 20 continues to pursue all avenues of recourse to obtain equitable contributions from LAWA to fund remediation of the groundwater.

Recently there has been much debate over ensuring an adequate supply of water for the Antelope Valley and the best method to incorporate reuse of treated wastewater into an integrated water management system. In order to understand the opportunities and challenges for the reuse of recycled

water in the Antelope Valley, some background discussion is necessary. District No. 20 is one of 24 districts that form the County Sanitation Districts of Los Angeles County. The Sanitation Districts have long been advocates and practitioners of water reuse. The Sanitation Districts' Joint Outfall System serves approximately 4.6 million people in the coastal plain south of the San Gabriel Mountains. This system includes seven wastewater treatment plants that currently process some 470 million gallons per day, of which approximately two-thirds receives secondary treatment and one-third receives tertiary treatment. The secondary effluent, which is high in salt content, is discharged directly to the Pacific Ocean, while a portion of the tertiary effluent is sold at a nominal price and reused at 495 sites managed by various cities, water agencies, and other government entities. The demand for recycled water varies over the year, with much higher reuse in the summer and lower reuse in the winter. Any tertiary effluent that cannot be reused is discharged to natural watercourses that flow to the ocean. The effluent reuse system has been developed project-by-project over a period of more than 40 years and is one of the largest in the United States. After four decades of aggressive effort, including construction of extensive recycled water distribution systems, approximately 34 percent of the tertiary effluent is actually reused. The remaining 66 percent of the tertiary effluent ultimately flows into the ocean (an option that is unavailable to the Antelope Valley).

The proposed project described in the 2025 Plan and EIR must comply with the orders issued by the Regional Board. This document recommends upgrading the Palmdale WRP with activated sludge secondary treatment with nitrogen removal, full tertiary treatment, and additional disinfection and solids processing capacity. Secondary treatment with nitrogen removal is a biological process, whereas tertiary treatment is a higher level of treatment using a filtration process. Tertiary treatment is not specifically required by the Regional Board, but it received strong support from the Regional Board and the public during the planning process. These treatment methods will produce recycled water that meets the high quality standards specified in Title 22 of the California Code of Regulations for crop irrigation, spray irrigation for municipal reuse, industrial reuse, and groundwater recharge in a planned and managed program. Municipal reuse possibilities include irrigation of parks, playgrounds, golf courses, cemeteries, and school grounds.

Various effluent management strategies were evaluated for their ability to provide beneficial reuse capability while accommodating higher flow rates and protecting groundwater quality. These strategies included evaporation ponds, land application, groundwater recharge, discharge to water bodies in the Antelope Valley, discharge to wetlands, pumping recycled water out of the Antelope Valley, municipal reuse, and agricultural reuse. Municipal reuse, while a desirable and feasible option, would require time to be implemented and the involvement of local water purveyors. In accordance with state law, sanitation districts in California are generally not allowed to duplicate or parallel existing distribution systems without direct coordination with water purveyors. A group of stakeholders from various water interests of the region, including water purveyors, wholesalers, municipalities, recycled water generators, and government decision-makers meet regularly to coordinate development of plans for a regional municipal reuse system. This group of stakeholders has become known as the Antelope Valley Water Reuse Group. District No. 20 has been actively involved with the group since its inception and remains committed to working with these agencies and any others in development of a regional municipal reuse system.

Planned and managed groundwater recharge utilizing tertiary effluent is another potential reuse option. However, the State Department of Health Services has set very stringent standards for this method of reuse, including blending with large amounts of fresh water. While this option was evaluated, the sources and high cost of blending fresh water, the infrastructure needed to deliver and recharge the water, questions regarding water rights in the Antelope Valley's unadjudicated groundwater basin, and the need for assuring public acceptance make groundwater recharge an alternative for which feasible

implementation is very uncertain at this time. Nevertheless, District No. 20 will continue to actively explore and pursue this reuse option in a timely fashion.

A combined program of agricultural reuse with winter storage, and municipal reuse when available, is the only effluent management option that provides an immediately effective effluent management program to comply with Regional Board requirements while providing the flexibility to scale back agricultural operations and redirect recycled water to other reuse opportunities as they emerge. As part of the proposed project, the existing land lease agreement with LAWA would continue to be fully utilized until it expires. By that time, District No. 20 must own or control additional land for agricultural reuse to ensure compliance with regulatory requirements. The proposed project identifies these additional land needs and advocates the use of other LAWA-owned property, located east of Little Rock Wash, as the superior project location. However, to date, attempts to negotiate with LAWA to acquire this property have failed, and District No. 20 will need to acquire and develop other land. The proposed alternative site identifies approximately 6,000 acres located outside the northern LAWA boundary, of which 5,840 acres may be needed for the project. The proposed facilities will be located such that the operation of USAF Plant 42 and future development of a regional airport are not impaired. Acquisition of this privately-held property could potentially impact five residences and approximately 1,400 separate parcels of land.

District No. 20 is a financially distinct entity that has its own budget, assets, liabilities, and rate-setting authority independent of other sanitation districts. District No. 20 is solely responsible for constructing, operating, and maintaining its trunk sewers, treatment facilities, and effluent management facilities. The primary source of income is the annual service charge paid by all residential, commercial, and industrial users connected to the sewer system. In order to accommodate population growth, the revenue source for expansions consists of connection fees paid by new users who join the system. These sources are supplemented by a small percentage of property taxes, proceeds from sale of bonds, and low interest loans from the state. The costs for constructing and maintaining the local sewers, which feed into District No. 20's regional sewers, are the responsibility of other agencies.

A draft of this document was prepared in April 2005 to provide information to the public and to decision-makers. The Sanitation Districts encouraged all interested parties to study the information in the draft document and provide comments during the 45-day public review period. Responses to all comments received are published in this final version of the document.

Overall, the project proposed in the final *Palmdale Water Reclamation Plant 2025 Facilities Plan and Environmental Impact Report* advocates a long-range strategy of recycled water reuse to satisfy the area's wastewater treatment and effluent management needs at the lowest cost to those served by District No. 20. It provides an environmentally sound solution that responds to public comments and satisfies regulatory requirements while providing the greatest degree of flexibility in anticipation of new regulations and emerging recycled water reuse opportunities. The proposed project will also provide vital public infrastructure that is necessary for continued economic prosperity and to support a rapidly growing community. District No. 20's Board of Directors will consider approval of the proposed project as presented herein.