DRAFT REPORT | JULY 2022

# SCS Dublin Development Project
# Water Supply Assessment
# and Water Supply Verification

**PREPARED FOR**

Dublin San Ramon Services District

Dublin San Ramon Services District
Water, wastewater, recycled water

**PREPARED BY**

WEST YOST
Water. Engineered.

# SCS Dublin Development Project
# Water Supply Assessment and Water Supply Verification

**Prepared for**

## Dublin San Ramon Services District

**Project No. 406-60-22-83**



| | |
|---|---|
| Project Manager: Rhodora Biagtan, PE | Date |
| QA/QC Review: Elizabeth Drayer, PE | Date |

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## LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AB | Assembly Bill |
| ACWD | Alameda County Water District |
| AF | Acre-Feet |
| AFY | Acre-Feet Per Year |
| Cawelo | Cawelo Water District |
| CCCSD | Central Contra Costa Sanitary District |
| cfs | Cubic Feet Per Secxond |
| CEQA | California Environmental Quality Act |
| DCP | Delta Conveyance Project |
| Delta | Sacramento-San Joaquin Delta |
| DERWA | DSRSD-East Bay Municipal Utilities District Recycled Water Authority |
| DLD | Dedicated Land Disposal |
| du | Dwelling Unit |
| DSRSD | Dublin San Ramon Services District |
| DWR | Department of Water Resources |
| EBMUD | East Bay Municipal Utility District |
| EIR | Environmental Impact Report |
| GMP | Groundwater Management Plan |
| gpd | Gallons Per Day |
| GPQ | Groundwater Pumping Quota |
| JPA | Joint Powers Authority |
| M&I | Municipal and industrial |
| MAWA | Maximum Applied Water Allowance |
| MFUV | Microfiltration Ultraviolet treatment facilities |
| MGDP | Mocho Groundwater Demineralization Plant |
| MGD | Million Gallons Per Day |
| MWELO | Model Water Efficient Landscape Ordinance |
| NMP | Nutrient Management Plan |
| RWQCB | Regional Water Quality Control Board |
| RWFT | Recycled Water Treatment Facilities |
| SB | Senate Bill |
| SB 221 | California State Senate Bill 221 |
| SB 610 | California State Senate Bill 610 of 2001 |
| SBA | South Bay Aqueduct |
| SCS | SCS Development Company |
| sf | Square Feet |

| | |
|---|---|
| SFUV | Sand Filtration Ultraviolet Treatment Facilities |
| SNMP | Salt and Nutrient Management Plan |
| SRVRWP | San Ramon Valley Recycled Water Program |
| SWP | State Water Project |
| TDS | Total Dissolved Solids |
| UWMP | Urban Water Management Plan |
| WSA | Water Supply Assessment |
| WSCP | Water Shortage Contingency Plan |
| WSMP | Water System Master Plan |
| WTP | Water Treatment Plant |
| WWTP | Wastewater Treatment Plant |
| Zone 7 | Zone 7 of the Alameda County Flood Control and Water Conservation District, also referred to as the Zone 7 Water Agency |

# EXECUTIVE SUMMARY

## Overview

This Water Supply Assessment (WSA) has been prepared for the Dublin San Ramon Services District (DSRSD) by West Yost in accordance with Water Code sections 10910 through 10915 in connection with the proposed SCS Dublin Development Project (Proposed Project). The Proposed Project is located in the City of Dublin, California, and consists of approximately 73.8 acres of new development. The Proposed Project is bounded by Tassajara Road to the west, Brannigan Street to the east, Interstate 580 (I-580) to the south, and Gleason Drive to the north (with a small portion of the Proposed Project extending just north of Gleason Drive). The Proposed Project area currently consists entirely of vacant, developable parcels. In July 2017, the property changed ownership to the SCS Development Company (SCS).

The Proposed Project is envisioned as a mixed-use destination in the center of Dublin with commercial, retail, and residential land uses. The Proposed Project consists of up to 650 residential units and up to 265,000 square feet of commercial land use. The Proposed Project will include a pedestrian-focused commercial/entertainment district, central town square, visible and functional grand paseo/green space and a diversity of housing types and densities, including a dedicated affordable housing site.

## Potable Water Demands

The projected potable water demands for buildout of the Proposed Project have been estimated for the Proposed Project's land uses. The projected demands for buildout of the Proposed Project are summarized as follows:

- Potable Water Demand = 201.0 acre-feet per year (AFY)
- Irrigation Water Demand = 23.9 AFY
- Total Water Demand = 224.9 AFY

DSRSD provides potable water and recycled water service within its service area. As described in this WSA, recycled water supplies are unavailable for use at the Proposed Project due to the DSRSD-East Bay Municipal Utilities District Recycled Water Authority (DERWA) moratorium on new recycled water connections (Appendix A); therefore, irrigation water demands for the Proposed Project will be assumed to be met with potable water. However, if sufficient recycled water supplies become available, then recycled water can be used to meet the Proposed Project's irrigation demands.

Summaries of the availability and reliability of potable water supplies to serve the projected water demands for the Proposed Project are discussed below.

## Potable Water Supply Availability and Reliability

The Zone 7 Water Agency (Zone 7) is DSRSD's sole potable water supplier and Zone 7 is aggressively planning for water supply programs and projects to meet the water demands of its customers through buildout of their adopted General Plans. According to Zone 7's 2020 Urban Water Management Plan (UWMP), Zone 7's supplies are adequate to meet projected demands during normal, single dry, and multiple dry water years through 2045. Zone 7 plans to implement a series of near-term and long-term water supply projects as discussed in Section 5.2.

In the near-term, before major water supply projects are implemented, there is a potential for operational constraints that could result in shortages in single dry or multiple dry years, especially during a Delta outage when there may be no or minimal water moving through the South Bay Aqueduct from the Delta. Untreated water customers would be most vulnerable because of their reliance on Delta water. As described in its Water Shortage Contingency Plan (WSCP), in these cases, Zone 7 could call for voluntary or mandatory conservation and also make operational adjustments to minimize such shortages.

DSRSD plans to continue to manage potable water demands within its water service area through conservation efforts and its recycled water program. However, if supply shortages should occur, DSRSD may need to invoke its WSCP, described in its 2020 UWMP.

Therefore, pursuant to Water Code section 10910(c)(4), and based on the technical analyses described in this WSA, the Zone 7 2020 UWMP and the DSRSD 2020 UWMP, DSRSD finds that the projected potable water demands for the Proposed Project can be met by DSRSD during normal, single dry, and multiple dry water years for a 20-year projection with no water supply shortage.

## Verification of Sufficient Water Supply

In accordance with the requirements of SB 221, Section 8.0 of this WSA provides a verification of sufficient water supply to meet the projected demands associated with the Proposed Project, in addition to DSRSD's existing and planned future uses. There are no existing nor planned agricultural uses in the DSRSD service area. This WSA verifies that DSRSD has sufficient water supply for the Proposed Project.

# 1.0 INTRODUCTION

## 1.1 Legal Requirement for Water Supply Assessment

California Senate Bill 610 (SB 610) and Senate Bill 221 (SB 221) amended state law, effective January 1, 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 and SB 221 were companion measures which sought to promote more collaborative planning between local water suppliers and cities and counties. Both statutes require detailed information regarding water availability to be provided to the city and county decision-makers prior to approval of specified large development projects. The purpose of this coordination is to ensure that prudent water supply planning has been conducted, and that planned water supplies are adequate to meet existing demands, anticipated demands from approved projects and tentative maps, and the demands of proposed projects.

SB 610 amended California Water Code Sections 10910 through 10915 (inclusive) to require land use lead agencies to:

- Identify any public water purveyor that may supply water for a proposed development project; and
- Request a Water Supply Assessment (WSA) from the identified water purveyor.

The purpose of the WSA is to demonstrate the sufficiency of the purveyor's water supplies to satisfy the water demands of the proposed project, while still meeting the water purveyor's existing and planned future uses. Water Code sections 10910 through 10915 delineate the specific information that must be included in the WSA.

SB 221 amended State law (California Government Code section 66473.7) to require that approval by a city or county of certain residential subdivisions[1] requires an affirmative written verification of sufficient water supply. SB 221 was intended as a fail-safe mechanism to ensure that collaboration on finding the needed water supplies to serve a new large residential subdivision occurs before construction begins.

## 1.2 Need for and Purpose of Water Supply Assessment

The City of Dublin has requested that the Dublin San Ramon Services District (DSRSD) prepare a WSA as required by Water Code sections 10910 through 10915 in connection with the proposed SCS Dublin Development Project (Proposed Project). It is not to reserve water, or to function as a "will serve" letter or any other form of commitment to supply water (see Water Code section 10914). The provision of water service will continue to be undertaken in a manner consistent with applicable policies and procedures, consistent with existing law.

This WSA for the Proposed Project has been prepared by West Yost, as requested by DSRSD, the responsible water purveyor for the Proposed Project.

[1] Per Government Code Section 66473.7(a)(1) subdivision means a proposed residential development of more than 500 dwelling units.

## 1.3 Water Supply Assessment Preparation, Format and Organization

The format of this WSA is intended to follow Water Code sections 10910 through 10915 to clearly delineate compliance with the specific requirements for a WSA. This WSA includes the following sections:

- Section 1: Introduction
- Section 2: Description of Proposed Project
- Section 3: Required SB 610 Determinations
- Section 4: DSRSD Water Demands
- Section 5: DSRSD Water Supplies
- Section 6: Water Supply Reliability
- Section 7: Determination of Water Supply Sufficiency Based on the Requirements of SB 610
- Section 8: Verification of Sufficient Water Supply Based on the Requirements of SB 221
- Section 9: Water Supply Assessment and Verification Approval Process
- Section 10: References

Relevant citations of Water Code sections 10910 through 10915 are included throughout this WSA in *italics* to demonstrate compliance with the specific requirements of SB 610.

# 2.0 DESCRIPTION OF PROPOSED PROJECT

## 2.1 Proposed Project Location

The Proposed Project is located in the City of Dublin in Alameda County, California, and consists of approximately 73.8 acres of new development located within the DSRSD water service area. As shown on Figure 2-1, the Proposed Project is bounded by Tassajara Road to the west, Brannigan Street to the east, I-580 to the south, and Gleason Drive to the north (with a small portion of the Proposed Project extending just north of Gleason Drive). The Proposed Project area currently consists entirely of vacant, developable parcels. In July 2017, the property changed ownership to the SCS Development Company (SCS).

## 2.2 Proposed Project Land Uses

The Proposed Project is envisioned as a mixed-use destination in the center of Dublin with commercial, retail, and residential land uses. The Proposed Project consists of up to 650 residential units and up to 265,000 square feet of commercial land use. The Proposed Project will include a pedestrian-focused commercial/entertainment district, central town square, visible and functional grand paseo/green space and a diversity of housing types and densities, including a dedicated affordable housing site.

Table 2-1 and Figure 2-2 present a summary of the land uses for the Proposed Project.

**Table 2-1. Land Use Summary for Proposed Project[(a)]**

| Land Use Designation | Gross Acres | Dwelling Units | DU/acre | Area (sq ft) |
|---|---|---|---|---|
| General Commercial | 29.4 | 40 | -- | 265,000 |
| Medium-Density Residential | 17.0 | 150 | 8.8 | -- |
| Medium-High Density Residential | 21.1 | 360 | 17.1 | -- |
| Public/Semi-Public | 3.8 | 100 | 23.6 | -- |
| Parks/Public Recreation | 2.5 | -- | -- | -- |
| **Total** | **73.8** | **650** | **--** | **265,000** |

*Source: SCS Dublin Notice of Preparation, March 2022.*


WEST YOST - N:\Clients\406 DSRSD\60-22-83 SCS Dublin WSA & WSV\GIS\MXD\Figure 2-1 Project Vicinity.mxd - thoang - 6/30/2022

Proposed Project Site

N

0 500 1,000

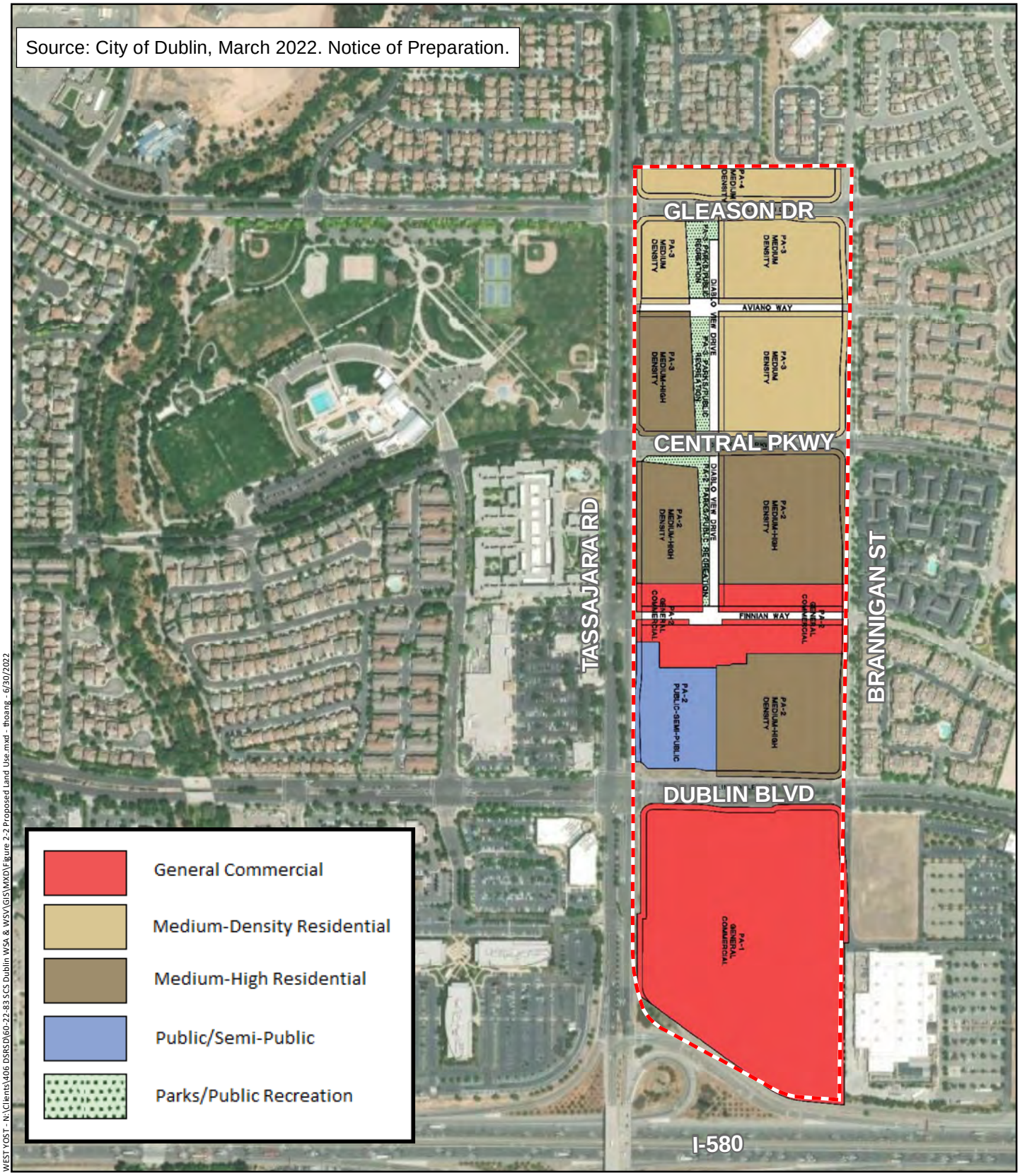
Scale in Feet

**Figure 2-1**

**Proposed Project Vicinity**

**Dublin San Ramon Services District**
SCS Dublin Development Project
Water Supply Assessment

WEST YOST




WEST YOST - N:\Clients\406 DSRSD\60-22-83 SCS Dublin WSA & WSV\GIS\MXD\Figure 2-2 Proposed Land Use.mxd - thoang - 6/30/2022

**Figure 2-2**

**Proposed Land Use**

**Dublin San Ramon Services District**
SCS Dublin Development Project
Water Supply Assessment

WEST YOST

## 2.3 Projected Water Demand

### *2.3.1 Overall Water Use Assumptions*

DSRSD provides both potable water and recycled water within its service area. However, on March 25, 2019, DERWA found that it cannot meet the combined peak demands and projected demands of its member agencies (DSRSD and EBMUD) and its retailer, Pleasanton. DERWA approved Resolution No. 19-3 (Appendix A) requesting that its member agencies take action to reduce recycled water demands and implement a connection moratorium due to limited recycled water supply during the peak months. Under this resolution, DSRSD implemented a connection moratorium for new recycled water connections starting March 25, 2019.

Therefore, projected water demands for the Proposed Project have been estimated assuming all interior and exterior water demands will be met using potable water supplies from DSRSD.

### *2.3.2 Water Use Factors*

The projected interior potable water demands for the Proposed Project have been estimated based on the currently proposed land uses for the Proposed Project. DSRSD has adopted standard unit water use factors for use in projecting potable water demands based on the proposed land use, the number of dwelling units or square footage. The projected exterior potable water demands for the Proposed Project have been estimated based on the current Model Water Efficient Landscape Ordinance (MWELO) guidelines.

#### 2.3.2.1 Potable Water Use Factors

The unit potable water demand factors currently used by DSRSD are shown in Table 2-2. These standard water use factors were developed for use in the DSRSD 2016 Water System Master Plan (WSMP) and have been refined based on actual water use trends observed in DSRSD's water service area, and were used for water supply planning purposes in the DSRSD 2020 UWMP to project future potable water demands within DSRSD's water service area.

The exterior water use factors presented in the WSMP assume extensive irrigation with recycled water and minimal potable water use. Therefore, for the purposes of this WSA, exterior water use factor will be calculated based on the MWELO methodology described in Section 2.3.2.2. However, if sufficient recycled water supplies become available in the future, then recycled water can be used to meet the Proposed Project's irrigation demands and potable water demand would be reduced to the WSMP exterior water use factors.

**Table 2-2. Potable Water Demand Factors by Land Use Type**

| Land Use Designation | Unit for Interior Use | Unit Water Use Factor(a) | |
|---|---|---|---|
| | | Interior Use | Exterior Use, gpd/acre(b) |
| Residential | | | |
| Rural | gpd/du | 730 | -- |
| Low Density | gpd/du | 350 | -- |
| Low-Medium Density | gpd/du | 300 | -- |
| Medium Density | gpd/du | 255 | -- |
| Medium-High Density | gpd/du | 160 | -- |
| High Density | gpd/du | 135 | -- |
| Commercial | | | |
| Commercial Retail | gpd/ft$^2$ | 0.14 | 267.8 |
| Commercial Office | gpd/ft$^2$ | 0.10 | 267.8 |
| Industrial | | | |
| Business Park | gpd/ft$^2$ | 0.06 | 267.8 |
| Mixed Use | | | |
| Mixed Use | gpd/ft$^2$ | 0.27 | 267.8 |
| Public | | | |
| Public/Semi-Public | gpd/ft$^2$ | 0.05 | 267.8 |
| Elementary School | gpd/student | 10 | 267.8 |
| Middle School | gpd/student | 15 | 267.8 |
| High School | gpd/student | 20 | 267.8 |
| Open Space | | | |
| Neighborhood Park | gpd/acre | 125 | -- |
| Community Center | gpd/visitor | 8 | -- |
| Golf Course | gpd/golfer | 12 | -- |

(a) Source: Table 3-16, DSRSD Water System Master Plan, March 2016.

(b) The exterior water use factor calculated in the 2016 WSMP assumes extensive use of recycled water for exterior landscaping and minimal potable water use on non-residential land uses equal to 10 percent of the exterior landscaping water demand of 3.0 af/acre/yr (0.3 af/acre/yr = 267.8 gpd/acre). For the purposes of this WSA, exterior water use factor will be calculated based on the MWELO methodology described in Section 2.3.2.2.

### 2.3.2.2 Irrigation Water Use Factors

Due to the DERWA moratorium on new recycled water connections, it is assumed that potable water will be used for exterior landscape irrigation for all residential and non-residential land uses with City-maintained or HOA-maintained landscaping within the Proposed Project. Irrigation water demands are based on the MWELO Maximum Applied Water Allowance (MAWA) for landscaping. In residential areas, MAWA is calculated using the following equation:

*MAWA = (ETo) (0.62) [(ETAF x LA) + ((1-ETAF) x SLA)]*

*Where:*

*MAWA = Maximum Applied Water Allowance, gallons per year*
*ETo = reference evapotranspiration, inches per year (46.2 for the City of Pleasanton)*
*0.62 = factor that converts acre-inches per acre to gallons per square foot*
*ETAF = evapotranspiration adjustment factor (0.55 for residential and 0.45 for non-residential areas)*
*LA = landscape area, square feet*
*SLA = special landscape area, square feet*[2]

Therefore, the MAWA calculation results in a factor of 15.8 and 12.9 gallons per year per square foot for residential and non-residential uses, respectively.

**Table 2-3. Irrigable Area by Land Use Type**

| Land Use Designation | Percent of Area Irrigable |
|---|---|
| Commercial - Neighborhood Commercial | 15 |
| Commercial – Office | 15 |
| Commercial - Office/Hotel | 15 |
| Commercial – Retail | 15 |
| Open Space - City Park/Community Center (SP) | 80 |
| Open Space - City Park/Community Park | 80 |
| Open Space - Golf Course | 80 |
| Open Space - Neighborhood Park | 80 |
| Public - Public/Semi-Public | 25 |
| Residential - High | 8 |
| Residential - High (Hotel Expansion) | 8 |
| Residential - Low | 30 |
| Residential - Low Medium | 15 |
| Residential - Medium | 15 |
| Residential - Medium High | 10 |

[2] "Special Landscape Area" means an area of the landscape dedicated solely to edible plants, recreational areas, areas irrigated with recycled water, or water features using recycled water. For the purposes of this evaluation, because of the moratorium on new recycled water connections, all landscaped areas are assumed to be standard areas.

### *2.3.3 Potable Water Demand Projections*

The projected buildout potable water demands for the Proposed Project have been estimated using the unit water demand factors discussed above. As shown in Table 2-4, the estimated buildout demands for the Proposed Project are 224.9 AFY for potable water.

**Table 2-4. Proposed Project Water Demands**

| Land Use Designation | Area acres[(a)] | Dwelling Units | Commercial $ft^2$ | Interior Water Use Factor[(b)] | Units | Irrigable Area, percent | MWELO Exterior Water Use Factor, $gpy/ft^2$ | Interior Potable Water Demand, gpd[(c)] | Exterior Potable Water Demand, gpd[(c)] | Total Potable Water Demand, gpd[(c)] | Total Potable Water Demand, AFY[(c)] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| General Commercial[(d)] | 29.4 | -- | 265,000 | 0.14 | $gpd/ft^2$ | 15 | 12.9 | 39,469 | 7,217 | 46,685 | 52.29 |
| | -- | 40 | -- | 255 | gpd/du | -- | 15.8 | 10,851 | -- | 10,851 | 12.15 |
| Medium-Density Residential | 17 | 150 | -- | 255 | gpd/du | 15 | 15.8 | 40,691 | 5,100 | 45,792 | 51.29 |
| Medium-High Density Residential | 21.1 | 360 | -- | 160 | gpd/du | 10 | 15.8 | 61,277 | 4,220 | 65,497 | 73.37 |
| Public/Semi-Public | 3.8 | -- | -- | 0.05 | $gpd/ft^2$ | 25 | 12.9 | | 1,555 | 1,555 | 1.74 |
| | -- | 100 | -- | 255 | gpd/du | -- | 12.9 | 27,128 | | 27,128 | 30.39 |
| Parks/Public Recreation | 2.5 | 0 | -- | 125 | gpd/acre | 80 | 12.9 | | 3,273 | 3,273 | 3.67 |
| **Total** | **73.8** | **650** | **--** | **--** | | | **--** | **179,415** | **21,365** | **200,780** | **224.9** |

(a) Based on the SCS Dublin Notice of Preparation dated March 30, 2022.
(b) Potable water use based on the DSRSD unit water demand factors (2016 DSRSD Water System Master Plan) and Table 2-2 of this WSA.
(c) Potable water demand includes unaccounted for water, assuming 6 percent potable water loss (per the 2016 DSRSD Water System Master Plan).
(d) Conservatively assumes that the dwelling units associated with the general commercial and public/semi-public land use are medium density.

# 3.0 REQUIRED SB 610 DETERMINATIONS

## 3.1 Does SB 610 Apply to the Proposed Project?

*10910 (a) Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part.*

*10912 (a) "Project" means any of the following:*

*(1) A proposed residential development of more than 500 dwelling units.*

*(2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.*

*(3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.*

*(4) A proposed hotel or motel, or both, having more than 500 rooms.*

*(5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.*

*(6) A mixed-use project that includes one or more of the projects specified in this subdivision.*

*(7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling unit project.*

As shown in Table 3-1, the Proposed Project does meet the definition of a "Project" as specified in Water Code Section 10912(a)(1) and (3). The proposed project includes 650 dwelling units, more than the minimum 500 units required for a WSA under Section 10912(a)(1). Further, the Proposed Project includes 265,000 square feet of commercial space, more than the minimum 250,000 square feet of floor space required for a WSA under Section 10912(a)(3). The Proposed Project has not been the subject of a previously adopted WSA[3] and has not been included in an adopted WSA for a larger project. Therefore, according to Water Code section 10910(a), a WSA is required for the Proposed Project.

The City of Dublin has also determined that the Proposed Project is subject to the California Environmental Quality Act (CEQA) and that an Environmental Impact Report (EIR) is required.

[3] The Project site was previously the subject of a February 2018 WSA and update in January 2020 as the AT Dublin Development Project but these WSAs were never adopted.

**Table 3-1. Does the Proposed Project Meet the SB 610 Definition of a "Project"?**

| SB 610 Project Definition Components | Proposed Project Quantity | Meets the SB 610 Definition of a "Project"? |
|---|---|---|
| Residential > 500 dus | Up to 650 dus | YES |
| Retail > 1,000 employees or > 500,000 sf | N/A | NO |
| Commercial Office Building > 1,000 employees or > 250,000 sf | Up to 265,000 sf | YES |
| Hotel/Motel > 500 rooms | N/A | NO |
| Industrial Plant/Park > 1,000 employees or > 40 acres or > 650,000 sf | N/A | NO |
| Mixed Use Project that includes one or more of the above | -- | YES |
| A Project that would demand the amount of water required by a 500-dwelling unit project | -- | YES |
| SB 610 Required? | -- | YES |

## 3.2 Does SB 221 Apply to the Proposed Project?

In 2001, SB 221 amended State law to require that approval by a city or county of certain residential subdivisions requires an affirmative written verification of sufficient water supply. Per California Government Code section 66473.7(a)(1), a subdivision means a proposed residential development of more than 500 dwelling units. The Proposed Project, with up to 650 new residential dwelling units in DSRSD's water service area, is subject to the requirements of SB 221. Section 8.0 of this WSA provides the required written verification of sufficient water supply.

## 3.3 Who is the Identified Public Water System?

> *10910(b) The city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources Code, shall identify any water system that is, or may become as a result of supplying water to the project identified pursuant to this subdivision, a public water system, as defined by Section 10912, that may supply water for the project*
>
> *10912 (c) "Public water system" means a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections…*

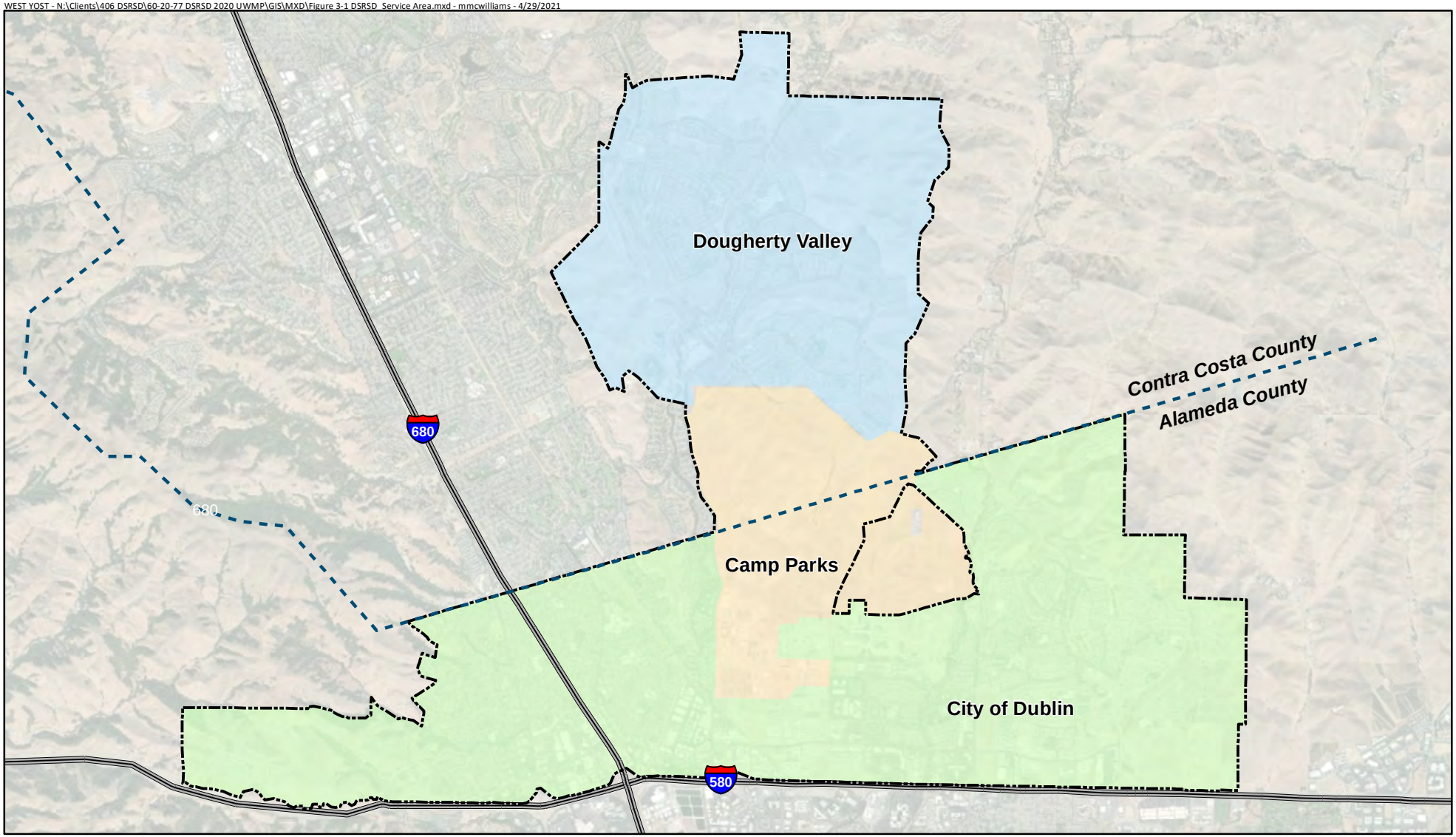
The Proposed Project is located within DSRSD's water service area. DSRSD provides water service to all areas within the City of Dublin (including Central Dublin, Eastern Dublin, and Western Dublin), Camp Parks, and the Dougherty Valley area in Contra Costa County (see Figure 3-1) and maintains the potable water facilities in the streets adjacent to the Proposed Project site, including Tassajara Road, Dublin Boulevard, Central Parkway, Gleason Drive, and Brannigan Street. Additionally, DSRSD also currently treats and distributes recycled water to water customers in its service area. Therefore, DSRSD is the identified public water system for the Proposed Project.

## 3.4 Does DSRSD have an adopted Urban Water Management Plan (UWMP) and does the UWMP Include the projected water demand for the Proposed Project?

*10910(c)(1) The city or county, at the time it makes the determination required under Section 21080.1 of the Public Resources Code, shall request each public water system identified pursuant to subdivision (b) to determine whether the projected water demand associated with a proposed project was included as part of the most recently adopted urban water management plan adopted pursuant to Part 2.6 (commencing with Section 10610).*

DSRSD's 2020 UWMP was adopted by the DSRSD Board of Directors in June 2021. The DSRSD 2020 UWMP includes existing and projected water demands for existing and projected future land uses within DSRSD's service area. As part of its 2020 UWMP preparation, projected demands for the property associated with the Proposed Project were included.

WEST YOST - N:\Clients\406 DSRSD\60-20-77 DSRSD 2020 UWMP\GIS\MXD\Figure 3-1 DSRSD_Service Area.mxd - mmcwilliams - 4/29/2021





- Water Service Area
- Camp Parks
- Dougherty Valley
- City of Dublin

N

0 3,000 6,000

Scale in Feet

**Figure 3-1**

**DSRSD Current Water Service Area**

**Dublin San Ramon Services District**
2020 Urban Water Management Plan

WEST YOST

# 4.0 DSRSD WATER DEMANDS

*10910(c)(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f) and (g).*

The descriptions provided below for the DSRSD water demands have been taken, for the most part, from DSRSD's 2016 Water System Master Plan (dated March 2016) and DSRSD's 2020 UWMP (adopted in June 2021).

## 4.1 Historical and Existing Water Demands

As discussed in DSRSD's 2016 Water System Master Plan, the DSRSD water service area has experienced significant population growth. From 2010 through 2015, DSRSD's water service area population increased by 20.2 percent; however, the total volume of potable water sold decreased by 19.4 percent. This decrease in total potable water consumption, despite growth in population served, was due to water use limitations imposed under DSRSD's 2014 Community Drought Declaration. From 2015 through 2020, DSRSD's water service area population increased by 12.8 percent, and the total volume of potable water sold rebounded by 38.6 percent. Table 4-1 summarizes DSRSD's historical potable water demand (based on water production) and recycled water demand for 2010 through 2020.

**Table 4-1. Historical Potable and Recycled Water Demands**

| | 2010 | 2015 | 2020 |
|---|---|---|---|
| Total Potable Water Demand[a,c], AFY | 9,264 | 7,439 | 10,330 |
| Total Recycled Water Demand[b,d], AFY | 1,729 | 2,579 | 3,044 |

(a) Source: DSRSD 2020 UWMP, Table 4-1 and Table 4-2.

(b) Includes the historical annual water purchased from Zone 7.

(c) Includes only recycled water deliveries within DSRSD's service area. Does not include recycled water use in City of Pleasanton or in EBMUD's service area. DSRSD data only includes demand in the recycled water distribution system and does not include water from recycled water fill stations at the treatment plant.

## 4.2 Future Water Demands

Table 4-2 presents DSRSD's projected normal year potable and recycled water demands through 2045. These projections are based on projected land uses within DSRSD's potable and recycled water service areas. As presented in the table below, the projected potable water demand includes an estimate for unaccounted-for water of 6 percent of the total deliveries from Zone 7 to DSRSD. DSRSD has included projected water demands for the Proposed Project site consistent with the City of Dublin's General Plan. The projected water demands were included in DSRSD's 2020 UWMP.

| Table 4-2. Projected Potable and Recycled Water Demands -- Normal Years | | | | | |
|---|---|---|---|---|---|
| | 2025 | 2030 | 2035 | 2040 | 2045 |
| Potable Water Demand[(a)], AFY | 11,993 | 13,363 | 13,807 | 13,820 | 14,034 |
| Recycled Water Demand[(a)], AFY | 3,044 | 3,044 | 3,044 | 3,044 | 3,044 |
| **Total Water Use, AFY** | **15,037** | **16,407** | **16,851** | **16,864** | **17,078** |
| (a) Source: DSRSD 2020 UWMP (June 2021), Table 4-4. | | | | | |

As described in the DSRSD 2020 UWMP, the potable water and recycled water demand projections have been established based on DSRSD's continued strong commitment to the implementation of water use efficiency measures and the use of recycled water to offset potable water demands. DSRSD plans to maintain the current level of water use efficiency as the foundation of a comprehensive water conservation program and investigate and implement, as appropriate, permanent demand reduction programs that are shown to be effective and affordable.

## 4.3 Dry Year Water Demands

DSRSD's WSCP defines six water shortage levels (also known as stages) with associated demand reduction and supply augmentation actions and operational changes. Table 4-3 summarizes the water supply conditions for each water shortage level (stage).

| Table 4-3. DSRSD Water Shortage Stages | |
|---|---|
| Stage | Percent Supply Reduction |
| 1 | Up to 10 percent |
| 2 | Up to 20 percent |
| 3 | Up to 30 percent |
| 4 | Up to 40 percent |
| 5 | Up to 50 percent |
| 6 | More than 50 percent |
| *Source: DSRSD 2020 UWMP, Appendix M, Table 3* | |

In both the DSRSD 2020 UWMP and this WSA, dry year water demands are assumed to be unconstrained when compared to projected supplies. In other words, when evaluating future water supplies, neither the DSRSD 2020 UWMP nor this WSA assume that DSRSD's WSCP would be implemented (which would reduce demands) during dry years. This conservative assumption means that demands in single dry years and the first years of multiple dry year periods are equal to the normal year demands presented in Table 4-2. Consistent with Table 7-6 of the DSRSD 2020 UWMP, demands in multiple dry years 2 through 5 are linearly interpolated.

Tables 4-4 and 4-5 present the projected dry year potable water demand and recycled water demand through 2045 as presented in the DSRSD 2020 UWMP.

| Table 4-4. Projected Potable and Recycled Water Demands – Single Dry Year | | | | | |
|---|---|---|---|---|---|
| | 2025 | 2030 | 2035 | 2040 | 2045 |
| Potable Water Demand[(a)], AFY | 11,993 | 13,363 | 13,807 | 13,820 | 14,034 |
| Recycled Water Demand[(a)], AFY | 3,044 | 3,044 | 3,044 | 3,044 | 3,044 |
| **Total Water Use, AFY** | **15,037** | **16,407** | **16,851** | **16,864** | **17,078** |

(a) Source: DSRSD 2020 UWMP (June 2021), Table 7-5.

| Table 4-5. Projected Potable and Recycled Water Demands -- Multiple Dry Years | | | | | |
|---|---|---|---|---|---|
| | 2025 | 2030 | 2035 | 2040 | 2045 |
| First Year, AFY | 15,037 | 16,407 | 16,851 | 16,864 | 17,078 |
| Second Year, AFY | 15,331 | 16,496 | 16,854 | 16,907 | 17,078 |
| Third Year, AFY | 15,585 | 16,585 | 16,856 | 16,950 | 17,078 |
| Fourth Year, AFY | 15,859 | 16,673 | 16,859 | 16,992 | 17,078 |
| Fifth Year, AFY | 16,133 | 16,762 | 16,862 | 17,035 | 17,078 |

*Source: DSRSD 2020 UWMP (June 2021), Table 7-6.*

# 5.0 DSRSD WATER SUPPLIES

*10910(c)(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f) and (g).*

*10910(d)(1) The assessment required by this section 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…under the existing water supply entitlements, water rights, or water service contracts.*

*10910(e) If no water has been received in prior years by the public water system…under the existing water supply entitlements, water rights, or water service contracts, the public water system…shall also include in its water supply assessment…an identification of the other public water systems or water service contract holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system.*

*10910(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment.*

*(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.*

*(2) A description of any groundwater basin or basins from which the proposed project will be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most recent bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.*

*(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historical use records.*

*(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historical use records.*

*(5) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project. A water assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.*

The descriptions provided below for DSRSD's water supplies have been taken, for the most part, from DSRSD's 2020 UWMP (adopted in June 2021) and Zone 7's 2020 UWMP (adopted in May 2021).

## 5.1 Water Supply Overview

DSRSD currently receives its potable water supply from Zone 7 Water Agency. Zone 7 is a multi-purpose agency that oversees water-related issues in the Livermore-Amador Valley. Zone 7 is a State Water Project (SWP) contractor that wholesales treated water to four retail water agencies including DSRSD, City of Pleasanton, City of Livermore, and Cal Water Livermore District. In addition, Zone 7 retails non-potable water supplies for irrigated agricultural use, retails treated water to several direct customers, provides and maintains flood control facilities, and manages groundwater and surface water supplies in its service area. Zone 7's water supplies are discussed in detail in Section 5.2 (DSRSD Potable Water Supplies from Zone 7). DSRSD also has a groundwater pumping quota (GPQ) of 645 AFY in the Livermore Valley Main Groundwater Basin (Main Basin), which Zone 7 pumps on DSRSD's behalf as part of its water contract.

DSRSD's water supply is augmented with recycled water from its Recycled Water Treatment Facilities (RWTF). DSRSD owns and operates a wastewater treatment plant that treats wastewater from Dublin, the southern portion of San Ramon, and Pleasanton. The wastewater treatment plant includes conventional secondary treatment facilities, as well as tertiary and advanced recycled water treatment facilities. DERWA operates the San Ramon Valley Recycled Water Program (SRVRWP), a multi-phased project which distributes recycled water from the RWTF to portions of DSRSD's and East Bay Municipal Utility District's (EBMUD) service areas. DSRSD's recycled water production and distribution is discussed in Section 5.4.

## 5.2 Potable Water Supplies from Zone 7

Zone 7's water supply has two major components: (1) incoming water through contracts and water rights each year, and (2) accumulated water stored from previous years. Incoming water supplies typically consist of annually allocated imported surface water supply and local surface water runoff. Accumulated or "banked" water supplies are available in local and non-local storage locations. Zone 7's water supplies include:

- Imported surface water from the SWP
- Local surface water runoff captured in Del Valle Reservoir
- Local groundwater extracted from the Main Basin
- Local storage in the Chain of Lakes
- Non-local groundwater storage in Kern County (Semitropic Water Storage District and Cawelo Water District)

The following sections describe each supply.

### *5.2.1 State Water Project*

Imported water from the SWP, which is owned and operated by the Department of Water Resources (DWR), is by far Zone 7's largest water source, providing over 80 percent of the treated water supplied to its customers on an annual average basis.

SWP water originates within the Feather River watershed and flows through the Sacramento-San Joaquin Delta (Delta) before it is conveyed by the South Bay Aqueduct (SBA) to Zone 7 and others. Much of the

SWP water continues to southern California via the California Aqueduct. Lake Del Valle is part of the SWP's SBA system and is used for storage of SWP water, as well as local runoff.

For Zone 7, SWP water serves treated water demands from municipal and industrial (M&I) customers—primarily wholesale to water retailers and some direct retail customers—and untreated water demands from agricultural customers. It is also used to recharge the Main Basin and fill non-local groundwater storage in Kern County.

This section describes Zone 7's contract with DWR for SWP water and the types of water Zone 7 receives under this contract. Also, this section discusses a separate agreement between DWR and Zone 7 for additional SWP water under the Lower Yuba River Accord (Yuba Accord).

#### 5.2.1.1 Contract with DWR

DWR provides water supply from the SWP to 29 SWP contractors, including Zone 7, in exchange for contractor payment of all costs associated with providing that supply. Zone 7's original contract was executed in 1961 and was set to expire in 2036. Over the last few years, there have been a number of key amendments to the SWP contracts, as described below:

- **Contract Extension** – capital costs associated with the development and maintenance of the SWP are typically financed using revenue bonds. These bonds have historically been sold with 30-year terms. Recently, it has become more challenging to finance capital expenditures for the SWP because bonds used to finance these expenditures are limited to terms that only extend to the year 2035 (the last year of the original contract and only 13 years from 2022). To ensure continued affordability of debt service to SWP contractors and allow DWR to continue to sell bonds with 30-year terms, it was necessary to extend the termination date of the contracts. On January 18, 2019, DWR and Zone 7 agreed to extend the SWP water supply contract to at least December 31, 2085 (Extension Amendment). As of March 2021, DWR and 22 SWP contractors have executed the Extension Amendment.
- **Improved Water Management Tools** – seeking greater flexibility to manage the system to address changes in hydrology and constraints placed on DWR's SWP operations, DWR and SWP contractors conducted public negotiations in 2017 to improve water management tools under a new amendment to the SWP contracts (WMT Amendment). The goal of the negotiations was to improve water management amongst the SWP contractors by developing concepts to supplement and clarify the existing SWP contracts' water transfer and exchange provisions. The WMT Amendment became effective on February 28, 2021 for the SWP contractors that approved the amendment, including Zone 7. The EIR for the WMT Amendment is being challenged in court, but the enhanced ability to transfer and exchange SWP water will be available during litigation.
- **Delta Conveyance Project** – The Delta Conveyance Project (DCP) is the current DWR project designed to address the need for alternative conveyance in the Delta to reliably deliver SWP supplies. This SWP contract amendment would allocate DCP costs and benefits among the SWP contractors. DWR and the SWP contractors have reached an agreement in principle regarding a contract amendment regarding the DCP, but participating SWP contractors will wait for environmental review of the DCP to be completed before making a final decision.

### 5.2.1.2 Table A Allocation

Each SWP contractor is limited to a maximum annual contract amount as specified in Article 6(c) and Table A of the SWP Contract; this amount is therefore commonly referred to as "Table A." Zone 7's Table A amount has increased along with its demands and following a series of permanent transfers. Currently, Zone 7's Table A allocation is 80,619 AFY.

The Table A allocation is typically less than 100 percent of the Table A amount. In practice, the actual amount of SWP water available to Zone 7 under the Table A allocation process varies from year to year due to hydrologic conditions, water demands of other contractors, existing SWP stored water, SWP facility capacity, and environmental/regulatory requirements.

SWP reliability is defined based on the long-term average Table A allocation. DWR prepares a biennial report to assist SWP contractors and local planners in assessing the availability of supplies from the SWP. DWR issued its most recent update, the Final 2019 State Water Project Delivery Capability Report (2019 DCR),[4] in August 2020. In this update, DWR provides SWP supply estimates for SWP contractors to use in planning efforts, including the 2020 UWMP. The 2019 DCR includes DWR's estimates of SWP water supply availability under both existing (2020) and future (2040) conditions.

For Zone 7's Table A supply, the 2019 DCR's existing condition was assumed to represent 2020 (59 percent Table A reliability, or 47,600 AFY), and the future condition (54 percent Table A reliability, or 43,500 AFY) was applied to 2040; the years in between were interpolated between these two bookends. Note that the effect of the proposed DCP on SWP water supply yield is still being analyzed and has not been included.

As a SWP contractor, Zone 7 has the option to store unused Table A water in the SWP's San Luis Reservoir when there is storage capacity available. This "carryover" water is also called Article 12e or 56c water, in reference to the relevant contract terms. Article 12e water must be taken by March 31 of the following year, but Article 56c water may remain as carryover as long as San Luis Reservoir storage is available. In its 2020 UWMP, Zone 7 assumes it will carry over 10,000 AF of water each year on average.

### 5.2.1.3 Article 21 Water (Interruptible or Surplus Water)

Under Article 21 of Zone 7's SWP contract, Zone 7 has access to excess water supply from the SWP that is available only if: (1) it does not interfere with SWP operations or Table A allocations, (2) excess water is available in the Delta, and (3) it will not be stored in the SWP system.

As described in the 2019 DCR, Article 21 water deliveries are highly variable. This water becomes available during short time windows in the wet season when there is excess water in the system (due to storms) that DWR cannot store in San Luis Reservoir. When Article 21 water becomes available, SWP contractors can request delivery, and the available water is distributed generally in proportion to the Table A contract amounts of those contractors requesting delivery.

Delivery of Article 21 water requires accessible storage during very wet conditions and/or the ability to use the water directly without impacting Table A deliveries to Zone 7. Historically, these conditions have been difficult to meet for Zone 7 and have resulted in infrequent and low yields. Therefore, Zone 7 has assumed no water supply yield from Article 21. As Zone 7 develops the Chain of Lakes project, which will

[4] Department of Water Resources, August 2020. State Water Project Delivery Capability Report 2019.

increase Zone 7's local storage and ability to capture Article 21 water, Zone 7 will re-evaluate the potential increase in Article 21 yield.

#### 5.2.1.4 Article 56d Water (Turnback Pool Water)

Article 56d is a contract provision that allows SWP contractors with unused Table A water to sell that water to other SWP contractors via a "turnback pool" administered by DWR on an annual basis. Historically, only a few SWP contractors have been able to make turnback pool water available for purchase, particularly in normal or dry years.

With the enhanced ability to directly transfer or exchange SWP water from one SWP contractor to another under the Water Management Tools contract amendment described in Section 5.2.1.1 of this WSA, it is expected that there will not be much water available under Article 56d in the future. Zone 7 has therefore assumed no supplies are available from this source under normal conditions.

#### 5.2.1.5 Yuba Accord

In 2008, Zone 7 entered into a contract with DWR to purchase additional water under the Yuba Accord. The original contract expires in 2025, and several amendments have been made to the original agreement over the years, including a new pricing agreement executed in 2020.

There are four different types ("Components") of Yuba Accord water made available as a water purchase or transfer; Zone 7 has the option to purchase Components 1, 2, and 3 water during drought conditions, and Component 4 water when the Yuba County Water Agency has determined that it has water supply available to sell.

Water is primarily available during dry years under the Yuba Accord, and the amount is highly variable: 400 acre-feet (AF) in 2014, approximately 300 AF in 2015, and 3,000 AF in 2020. For planning purposes, Zone 7 currently does not assume any water supply yield from the Yuba Accord.

### *5.2.2 Local Surface Water Runoff*

Zone 7, along with the Alameda County Water District (ACWD), has a water right (Permit 11319 [Application 17002]) to divert flows from Arroyo Valle. Runoff from the Arroyo Valle watershed is stored in Lake Del Valle, which is managed by DWR as part of the SWP. Lake Del Valle also stores imported surface water deliveries from the SWP and serves both recreational and flood control functions. In late fall, DWR typically lowers lake levels in anticipation of runoff from winter storms. Water supply in Lake Del Valle is made available to Zone 7 via the SBA through operating agreements with DWR. Inflows to Lake Del Valle, after accounting for permit conditions, are equally divided between ACWD and Zone 7 under their respective permits.

Using historical hydrology adjusted for climate change impacts, Zone 7's latest modeling forecasts future average yields from Arroyo Valle to Zone 7 at approximately 5,500 AFY. Previous planning documents, including Zone 7's 2015 UWMP, assumed an average yield of 7,300 AFY, and the 2011-2020 average was 3,500 AFY. Construction of the Chain of Lakes Arroyo Valle diversion structure and pipeline will allow Zone 7 to capture more of the storm releases from Lake Del Valle and will likely increase the local surface water yield in the future. The conservative average yield estimate of 5,500 AFY will be re-evaluated as climate change impacts become clearer and as the Chain of Lakes projects progress.

### *5.2.3 Local Storage*

Zone 7 has two existing local storage options: Lake Del Valle and the Main Basin. Lake Del Valle stores both runoff from the Arroyo Valle watershed and imported surface water deliveries from the SWP. Zone 7 can store up to about 7,500 AF of its share of Arroyo Valle runoff in the lake, with runoff collected in any given year required to be delivered to Zone 7 by the end of the following year. The Main Basin is used conjunctively and is artificially recharged with SWP water. Zone 7 relies on the operational storage capacity of 126,000 AF in the Main Basin. Section 5.3 of this WSA further describes the Main Basin and Zone 7's groundwater supply.

### *5.2.4 Non-Local Storage*

In addition to local storage, Zone 7 also participates in the two non-local (also called "out-of-basin") groundwater banking programs located in Kern County. While these banking programs provide a water source during drought years, they represent water previously stored from Zone 7's surface water supplies during wet years. Therefore, they do not have a net contribution to Zone 7's water supply over the long-term and in fact result in some operational losses as described below. While the out-of-basin groundwater banks significantly enhance system reliability, this banked water supply requires Banks Pumping Plant in the Delta and the SBA to be operational; low SWP Table A allocations (and generally low levels of water movement in the SWP system) can limit the delivery of these banked supplies via exchange.

Point of Delivery Agreements with DWR and Kern County Water Agency, a SWP contractor, allow Zone 7 to store SWP water in and recover water from Semitropic Water Storage District (Semitropic) and Cawelo Water District (Cawelo). Semitropic and Cawelo are member units of Kern County Water Agency, which manages water deliveries to these agencies. Zone 7 has been storing water in the water banks operated by Semitropic since 1998 and by Cawelo since 2006. In November 2020, the Zone 7 Board of Directors (Zone 7 Board) authorized the execution of amendments to existing Point of Delivery Agreements that would extend water delivery terms for storage in Semitropic and Cawelo through 2030 and recovery of banked water through 2035.

#### 5.2.4.1 Semitropic Water Storage District

In 1998, Zone 7 acquired a storage capacity of 65,000 AF in the Semitropic groundwater banking program. Subsequently, Zone 7 agreed to participate in Semitropic's Stored Water Recovery Unit, which increased pumpback capacity and allowed Zone 7 to contractually store an additional 13,000 AF. As a result, Zone 7 currently has a total groundwater banking storage capacity of 78,000 AF available to augment water supplies during drought and emergency conditions and as needed. Zone 7 can store up to 5,883 AFY in the Semitropic groundwater bank. Note that a 10 percent loss is associated with water stored in Semitropic.

Under the contract terms, Zone 7 can request up to 9,100 AF of pumpback and up to 8,645 AF of exchange water. Pumpback is water that is pumped out of the Semitropic aquifer and into the SWP system. Exchange water is water that is transferred between Zone 7 and Semitropic by adjusting the amounts of Table A water delivered to Zone 7 and Semitropic; the availability of this type of water depends on the SWP allocation.

#### 5.2.4.2 Cawelo Water District

Per a 2006 agreement, Zone 7 has 120,000 AF of groundwater banking storage capacity available with Cawelo. Zone 7 can store up to 5,000 AFY in the bank and can request up to 10,000 AFY of pumpback (or

SWP exchange water) from Cawelo. Zone 7 only accumulates 50 percent of the water sent to storage in Cawelo; the other 50 percent goes towards water loss and compensation to Cawelo.

### *5.2.5 Future Zone 7 Water Supply Projects*

Zone 7 anticipates future supply deficits as SWP reliability continues to decline and Zone 7's service area population grows. As a result, Zone 7 is pursuing several water supply reliability projects to obtain additional water storage and water supplies, address the need for alternative conveyance in the Delta, and improve access to groundwater and local emergency supplies. Zone 7 plans to implement a series of near-term and long-term water supply projects as summarized in Table 5-1.[5]



[5] Zone 7 2020 UWMP, Table 6-9.

## Table 5-1. Zone 7 Expected Future Water Supply Projects or Program

| | |
|---|---|
| ☑ | Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format. |
| 6-21 through 6-30 | Provide page location of narrative in the UWMP |

| Name of Future Projects or Programs | Joint Project with other suppliers? | | Description *(if needed)* | Planned Implementation Year | Planned for Use in Year Type *Drop Down list* | Expected Increase in Water Supply to Supplier* |
|---|---|---|---|---|---|---|
| | *Drop Down Menu* | *If Yes, Supplier Name* | | | | |
| Bay Area Regional Desalination Project | *Yes* | Contra Costa Water District, SFPUC, Santa Clara Valley Water District | Brackish water desalination in eastern Contra Costa County | 2030 | All Year Types | 5,600 |
| Delta Conveyance Project | *Yes* | Department of Water Resources and other SWP contractors | Construction of new intakes and tunnel as part of the State Water Project | 2040 | All Year Types | TBD |
| Los Vaqueros Reservoir Expansion | *Yes* | Contra Costa Water District, and a number of Bay Area M&I water agencies plus Grassland Water District and San Luis & Delta-Mendota Water Authority. | Expansion of Los Vaqueros Reservoir and construction of the Transfer-Bethany Pipeline, which would connect the reservoir to the South Bay Aqueduct and California Aqueduct | 2025 (Pipeline) and 2030 (Reservoir Expansion) | Dry Years | TBD |
| Potable Reuse | *Yes* | Livermore, DSRSD, Pleasanton, Cal Water | Use of purified water derived from wastewater effluent to supplement potable water supplies | 2030 | All Year Types | 4,000-7,000 |
| Sites Reservoir | *Yes* | Sites Project Authority and Sites Reservoir Project Committee members | Construction of a new 1.5 million AF off-stream reservoir in Colusa County | 2030 | All Year Types | 10,000 |
| SWP Transfers | *Yes* | Other SWP contractor/s | Temporary water transfer agreement/s until major projects are implemented | 2021 | All Year Types | varies |

***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES: Volumes are in AF. These projects are in the conceptual or planning stages. Zone 7 is participating in the planning efforts of these potential future water supply and/or storage projects to evaluate their benefits, including water supply yield. Implementation of these projects has not been approved by the Zone 7 Board but it is expected that a subset of these projects will be needed to meet future water demands and increase the reliability of Zone 7's system. The partners listed above are potential partners; final participation will be determined when the project has been approved by the respective agencies' governing boards. The 'expected increase in water supply...' are estimates at this time and may need to be adjusted when a final project has been approved. The 'planned implementation year' may also vary depending on project progress.

## 5.3 DSRSD Groundwater Supply

Water Code Section 10910 states:

> *10910(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment.*
>
> *10910(f)(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.*
>
> *10910(f)(2) A description of any groundwater basin or basins from which the proposed project will be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as over drafted or has projected that the basin will become over drafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long term overdraft condition.*
>
> *10910(f)(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historical use records.*
>
> *A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historical use records.*
>
> *10910(f)(4) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project.*
>
> *A water assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.*

This section describes the Livermore Valley Groundwater Basin and Zone 7's Groundwater Management Plan[5] that is used to manage the basin. Each year, Zone 7 prepares an Annual Report for the Groundwater Management Program.

DSRSD does not itself extract groundwater as a water supply. By contract, Zone 7 conducts this groundwater pumping operation as part of providing water supply services to DSRSD. This groundwater supply is then blended with water from Zone 7's other water supply sources and delivered to DSRSD. In accordance with their water supply agreement, Zone 7 pumps DSRSD's groundwater supply from the Livermore Valley Main Groundwater Basin, as described in Section 5.2.3.

DSRSD's groundwater resource is described below.

### 5.3.1 DSRSD Groundwater Pumping Quota

DSRSD, the City of Pleasanton, the City of Livermore, and Cal Water Livermore District, through agreements with Zone 7, have mutually agreed to limit their extraction from the Main Basin to a combined quantity of approximately 7,200 AFY, about 54 percent of the long-term sustainable yield of the Main Basin. This agreement, along with Zone 7's other groundwater management activities, keeps the groundwater budget essentially in balance under average hydrologic conditions. Each of these retailers has a groundwater pumping quota (known as their GPQ). DSRSD's GPQ is 645 AFY. In accordance with its agreement with Zone 7, DSRSD may obtain groundwater in excess of its GPQ if it pays a recharge fee to Zone 7.

Currently, the DSRSD groundwater supply (GPQ) is pumped by Zone 7 for DSRSD from a Zone 7 installed well in the Mocho well field, Mocho No. 4. This well was constructed on DSRSD property (previously Parks Reserve Forces Training Area property) under a 2002 agreement between DSRSD and Zone 7 whereby DSRSD provided Zone 7 with access, Zone 7 paid all of the costs for the well, pump and building, and DSRSD has the annual option of requesting that Zone 7 pump and provide DSRSD's GPQ at a cost of only power, chemical and some other incidental charges. Groundwater from Mocho No. 4 is blended with water from other Zone 7 water supplies and is delivered to DSRSD to meet its total water demand.

In addition to groundwater from the Main Basin, DSRSD may extract water in addition to the 645 AFY Main Basin groundwater pumping quota (GPQ) from areas outside the Main Basin (the fringe subbasin). Water can be pumped from the Fringe Basin as long as this groundwater extraction does not have adverse effects on the Main Basin. In the past, DSRSD pumped water from the fringe subbasin when it owned wells along Dublin Boulevard. However, pumping from the fringe subbasin was abandoned in 1980 due to water quality issues and pumping costs.

### 5.3.2 Historical and Projected Future Pumpage of DSRSD GPQ

As described above, DSRSD has a GPQ of 645 AFY in the Livermore Valley Main Groundwater Basin (Main Basin), which Zone 7 pumps on DSRSD's behalf as part of its water contract. Therefore, DSRSD itself does not pump any groundwater. DSRSD's GPQ is included in the purchased Zone 7 supply.

### 5.3.3 Groundwater Basin Description

Zone 7 overlies the Livermore Valley Groundwater Basin (Basin); the Main Basin is the portion of the Basin that contains high-yielding aquifers and generally the best-quality groundwater. As defined in DWR Bulletin 118 Update 2003 (California's Groundwater), the Basin (DWR Basin 2-10) extends from the Pleasanton Ridge east to the Altamont Hills and from the Livermore Uplands north to the Tassajara Uplands. The Basin is not adjudicated, in overdraft, or expected to be in overdraft, and DWR has identified it as medium priority.

Surface drainage features include Arroyo Valle, Arroyo Mocho, and Arroyo Las Positas as principal streams, with Alamo Creek, South San Ramon Creek and Tassajara Creek as minor streams. All streams converge on the west side of the basin to form Arroyo de la Laguna, which flows south and joins Alameda Creek in Sunol Valley and ultimately drains to the San Francisco Bay. Some geologic structures restrict the lateral movement of groundwater, but the general groundwater gradient is from east to west, towards Arroyo de la Laguna, and from north to south along South San Ramon Creek and Arroyo de la Laguna.

The entire floor of the Livermore Valley and portions of the upland areas on all sides of the valley overlie groundwater-bearing materials. The materials are mostly continental deposits from alluvial fans, outwash

plains, and lakes. They include valley-fill materials, the Livermore Formation, and the Tassajara Formation. Under most conditions, the valley-fill and Livermore Formation yield adequate to large quantities of groundwater to all types of wells, with the larger supply wells being in the Main Basin. The Main Basin is composed of the Castle, Bernal, Amador, and Mocho II sub-basins, with an estimated total storage capacity of 254,000 AF.

### *5.3.4 Groundwater Quantity*

For Zone 7's operations, the Main Basin is considered a storage facility and not a long-term water supply, because Zone 7 does not have access to naturally recharged water. Zone 7 only pumps groundwater that has been artificially recharged with surface water supplies. As part of this conjunctive use program, Zone 7's policy is to maintain groundwater levels above historic lows in the Main Basin to minimize the risk of inducing land subsidence. Currently, this is accomplished by releasing SWP water to the arroyos for percolation and replenishment of the aquifers and by managing pumping activities.

Zone 7 established historic lows based on the lowest measured groundwater elevations in various wells in the Main Basin. The difference between water surface elevations when the Main Basin is full and water surface elevations when the Main Basin is at historic lows defines Zone 7's operational storage. Of the estimated total storage capacity of 254,000 AF, operational storage is about 126,000 AF based on Zone 7's experience operating the Main Basin, with the remaining 128,000 AF considered emergency reserve storage.

#### 5.3.4.1 Historical and Projected Future Pumpage

Tables 5-2 and 5-3 present Zone 7's historical and projected future groundwater pumpage, respectively. Zone 7's artificial recharge program uses surface water supplies to recharge the Main Basin. Since Zone 7 only pumps what it artificially recharges, future groundwater pumpage is expected to have zero net impact on groundwater storage. Zone 7 plans to recharge about 9,200 AFY in the future, meaning Zone 7 can pump an equivalent 9,200 AFY from the Main Basin on average.

**Table 5-2. Historical Groundwater Pumped by Zone 7**

| Basin Name | Volume, AF | | | | |
|---|---|---|---|---|---|
| | 2016 | 2017 | 2018 | 2019 | 2020 |
| Livermore Valley Groundwater Basin | 1,871 | 4,859 | 5,691 | 10,433 | 12,400 |

*Source: Zone 7 2020 UWMP, Table 6-2*

**Table 5-3. Actual and Projected Artificial Recharge and Groundwater Extraction during Normal Water Years[a]**

| Volume, AF | Actual | Projected (Normal Years) | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 |
| Artificial Recharge | 1,400 | 9,200 | 9,200 | 9,200 | 9,200 | 9,200 |
| Groundwater Extraction | 12,400[b] | 9,200 | 9,200 | 9,200 | 9,200 | 9,200 |
| **Net Change** | **-11,000** | **0** | **0** | **0** | **0** | **0** |

*Source: Zone 7 2020 UWMP, Table 6-3*

(a) Zone 7 does not use the Main Basin's natural sustainable yield, so it only pumps what it artificially recharges.

(b) Includes 600 AF of demineralization losses.

#### 5.3.4.2 Artificial Recharge

Before the construction of the SWP in the early 1960s, groundwater was the sole water source for the Livermore-Amador Valley. Groundwater has gone through several periods of extended withdrawal and subsequent recovery. The Main Basin was overdrafted in the 1960s, when approximately 110,000 AF of groundwater was extracted, but was allowed to recover from 1962 to 1983. It was during this recovery era that Zone 7 first conducted a program of groundwater replenishment by recharging imported surface water via its streams or arroyos ("in-stream recharge" or "artificial recharge") for storage in the Main Basin, supplying treated surface water to customers to augment groundwater supplies, and regulating municipal pumping by other users.

Zone 7's operational policy is to balance natural and artificial recharge with withdrawal or pumping to maintain groundwater levels above the emergency reserve storage. Zone 7 is continuing to study the groundwater basin and developing new tools (such as an improved groundwater model) to better understand the levels of groundwater extraction possible under various conditions and contributing factors such as groundwater connectivity and spatial distribution in the Main Basin.

Between 1974 and 2020, Zone 7 artificially recharged over 67,000 AF more water than it pumped, helping to offset demands and keep the Main Basin's groundwater levels above the historical lows. More recently, Zone 7 has artificially recharged less than it has pumped, primarily due to construction work on the SBA, recent drought conditions, and lower-than-average SWP allocations. Overall groundwater storage remains significantly above historic lows, and Zone 7 plans to augment its current groundwater in-stream recharge capacity with off-stream recharge using the future Chain of Lakes project.

#### 5.3.4.3 Current Sustainable Yield

Long-term natural sustainable yield is contractually defined as the average amount of groundwater annually replenished by natural recharge in the Main Basin—through percolation of rainfall, natural stream flow, irrigation waters, and inflow of subsurface waters—that can therefore be pumped without lowering the long-term average groundwater volume in storage. In contrast, artificial recharge is the aquifer replenishment that occurs from artificially induced or enhanced stream flow. With artificial recharge, more groundwater can be sustainably extracted from the Main Basin each year. Zone 7 only uses groundwater that it has artificially recharged.

The natural sustainable yield of the Main Basin has been determined to be about 13,400 AFY, which is about 11 percent of the operational storage. This long-term natural sustainable yield is based on over a century of hydrologic records and projections of future recharge conditions and is allocated to Zone 7's retailers as a GPQ. If a retailer uses less than their GPQ in one year, they are allowed to carry over up to 20 percent of their GPQ to the next year. Retailers exceeding their GPQ must pay a recharge fee.

### *5.3.5 Groundwater Quality*

In general, the Main Basin contains good-quality groundwater that meets all state and federal drinking water standards; groundwater is chloraminated to match the disinfectant residual in the transmission system. Zone 7 has several groundwater wells with naturally-occurring hexavalent chromium (Cr(VI)) concentrations near the Maximum Contaminant Level (MCL) and polyfluoroalkyl substances (PFAS) above the notification limit. In response, Zone 7 is actively managing flows from the affected wells. For example, Cr(VI) levels at the Stoneridge well are being managed through system blending and/or blending with other wells. Also, the PFAS levels in the Mocho 2 well currently require blending with the other wells in

that wellfield and/or being sent through the Mocho Groundwater Demineralization Plant (MGDP). These conditions are being monitored and may change in the future.

Over the last few decades, there has been a slow degradation of groundwater quality, as evidenced by rising total dissolved solids (TDS) and hardness levels. To address this problem, Zone 7 developed a Salt Management Plan,[6] which was approved by the Regional Water Quality Control Board (RWQCB) in 2004, satisfying a condition of the Master Water Recycling Permit. The Salt Management Plan was incorporated into Zone 7's Groundwater Management Plan (GMP) in 2005. Salinity levels are being addressed primarily through groundwater pumping and demineralization. Zone 7 completed construction of the MGDP, which has a capacity of 6.1 million gallons per day (MGD) in 2009. The facility simultaneously allows for the removal and export of concentrated minerals or salts from the Main Basin and the delivery of treated water with reduced TDS and hardness levels to Zone 7's customers. Table 5-4 lists the average TDS and hardness for each year from 2016 through 2020.

**Table 5-4. Groundwater Quality: TDS and Hardness (2016-2020)**

| Year | Total Dissolved Solids (TDS), mg/L | Hardness, mg/L |
|---|---|---|
| 2016 | 685 | 416 |
| 2017 | 673 | 395 |
| 2018 | 673 | 409 |
| 2019 | 687 | 417 |
| 2020 | 683 | 433 |

*Source: Zone 7 2020 UWMP, Table 6-4*

Zone 7 implements a wastewater and recycled water monitoring program as part of the GMP. In the 2020 water year, about 14 percent (1,036 AF) of the recycled water produced in the Tri-Valley area was applied to landscapes over the Main Basin; the remainder was applied on areas outside of the Main Basin, primarily on areas overlying the Dublin and Camp fringe basins and the Tassajara uplands. There is also a small amount of untreated wastewater (681 AF in the 2020 water year) that is discharged to the Main Basin as leachate from wastewater treatment ponds located in southern Livermore, onsite domestic wastewater systems (septic systems), and leaking wastewater and recycled water pipelines that run throughout the Basin.

Nitrates and salinity have historically been the primary water quality constituents of concern in wastewater and recycled water, but nitrates have become less of a concern since 1995, when the Livermore Water Reclamation Plant—which, along with DSRSD's Regional Wastewater Treatment Facility, is one of the two wastewater treatment facilities in the area feeding into recycled water facilities—reduced nitrates in its effluent. Salinity is addressed by the Salt Management Plan, as discussed above. In 2015, Zone 7 completed a Nutrient Management Plan (NMP),[7] which assesses the existing and future groundwater nutrient concentrations relative to the current and planned expansion of recycled water projects and future development in the Livermore Valley. The NMP also presents planned actions for addressing positive nutrient loads and high groundwater nitrate concentrations in localized Areas of

[6] Zone 7 Water Agency, May 2004. Salt Management Plan.

[7] Zone 7 Water Agency, July 2015. Nutrient Management Plan – Livermore Valley Groundwater Basin.

Concern where the use of septic systems is the predominant method for sewage disposal. The NMP was prepared as a supplement to the Salt Management Plan; together, they are a Salt and Nutrient Management Plan (SNMP), which has been incorporated into the GMP and Alternative Groundwater Sustainability Plan.

Under the Toxic Sites Surveillance Program, Zone 7 documents and tracks polluted sites across the Main Basin that pose a potential threat to drinking water and interfaces with lead agencies to ensure that the Main Basin is protected. Information is gathered from state, county, and local agencies, as well as from Zone 7's well permitting program and the State Water Resources Control Board's GeoTracker website and compiled in a geographic information systems database. In general, there are two types of spills potentially threatening the Livermore Valley Groundwater Basin: petroleum-based fuel products and industrial chemical contaminants. In the 2020 water year, Zone 7 tracked the progress of 56 active sites where contamination has been detected in groundwater or is threatening groundwater. More details on the affected sites and their remediation can be found in the annual report.[8]

## 5.4 Recycled Water

DSRSD is responsible for treating and discharging treated wastewater for Dublin, South San Ramon, and Pleasanton. In addition, DSRSD owns and operates a RWTF at its regional Wastewater Treatment Plant (WWTP) and participates with EBMUD in a Joint Powers Authority (DERWA) which operates the SRVRWP. The SRVRWP provides recycled water that meets Title 22 disinfected tertiary recycled water requirements to landscape irrigation customers of DSRSD and EBMUD, including the San Ramon, Dublin, and Dougherty Valley areas of Alameda and Contra Costa Counties. In 2014, Pleasanton also began using recycled water from DERWA facilities under contract with DERWA.

Wastewater produced from the Dougherty Valley area of San Ramon is conveyed north to Central Contra Costa Sanitary District's (CCCSD) wastewater treatment plant. Wastewater flows are transported via the San Ramon Interceptor located within the Iron Horse Trail corridor.

### *5.4.1 Recycled Water Program Partnerships*

In 1995, DSRSD and EBMUD executed an agreement to form DERWA, a Joint Powers Authority (JPA), for the purpose of implementing the SRVRWP. The SRVRWP further treats secondary effluent from the DSRSD Regional Wastewater Treatment Plant to produce disinfected tertiary recycled water suitable for irrigation and other approved uses. Deliveries of recycled water began in 2006.

The DERWA main transmission pipeline connects to DSRSD and EBMUD pipelines that serve recycled water to golf courses, parks, greenbelts, streetscapes, schools, office complexes, and homeowner associations. DSRSD currently supplies recycled water to parts of Dublin and Dougherty Valley, while EBMUD serves recycled water to portions of San Ramon. In future phases, EBMUD also plans to supply recycled water to areas within Blackhawk and Danville.

In 2014, the City of Pleasanton signed agreements for DERWA to produce recycled water for the City. These agreements paved the way for a recycled water program in Pleasanton and expansion of the DERWA water recycling plant. Recycled water deliveries to the City of Pleasanton began in 2015. The City

[8] Zone 7 Water Agency, March 2021. Annual Report for the Sustainable Groundwater Management Program 2020 Water Year.

of Pleasanton is not a DERWA member agency and receives recycled water on a wholesale basis from DERWA.

DSRSD is responsible for the operation and maintenance of the DERWA recycled water facilities under a 2005 Operations Agreement with DERWA. DSRSD monitors recycled water uses and files reports with the State Water Resources Control Board Division of Drinking Water and the San Francisco Bay RWQCB, in conformance with DSRSD's General Water Reuse Order No. WQ 2016-0068-DDW (General Order 2016).

In DSRSD's RWTF (also known as the Jeffrey G. Hansen Water Recycling Plant), a portion of the secondary effluent from the WWTP is treated further to produce Title 22 disinfected tertiary recycled water. Recycled water is produced using sand filtration and ultraviolet disinfection facilities (SFUV) during the dry season when demands are high. The sand filtration tertiary treatment facility capacity is approved by RWQCB for 16.2 MGD, and the ultraviolet disinfection system has been approved to be operated at up to 17.6 MGD.

DSRSD's RWTF also includes microfiltration and ultraviolet disinfection facilities (MFUV) with a treatment capacity of 3.0 MGD. These facilities currently act as backup facilities for the SFUV facilities and are used during times of low and high demands. The SFUV facilities have less flexible startup and shutdown requirements, whereas the MFUV facilities have a wide turndown range; therefore, they are used during low flow periods. During high-demand periods, the MFUV and SFUV facilities may be operated in parallel to meet demand. The MFUV facilities also provide redundancy, increasing reliability when units in the SFUV facilities are undergoing maintenance, repair, or replacement.

### *5.4.2 Recycled Water System Description*

DSRSD owns and operates the RWTF at its WWTP, which produces recycled water that DERWA delivers to DSRSD, EBMUD, and Pleasanton. EBMUD, through its partnership with DERWA, has capacity rights in the DSRSD RWTF. DSRSD's recycled water distribution system extends from the DERWA distribution system and includes 55.3 miles of pipeline; three pump stations, R300A, R300B, and R20; and two reservoirs, R20 and R300.

The DERWA facilities include 16.6 miles of transmission main, Pump Stations R1 (at the WWTP), R200B, and R200A, as well as Reservoirs R100 and R200. EBMUD owns and operates the recycled water distribution pipeline system contained within its service area and will have two pump stations and a reservoir (future facilities). Pleasanton began using recycled water from the recycled water treatment facilities in 2014 and will continue to expand its use in the future. Pleasanton ties into the DERWA system near the corner of DSRSD's Dedicated Land Disposal (DLD) site adjacent to Stoneridge Drive near the WWTP. Under a 2014 agreement, the City of Pleasanton has capacity rights in the DSRSD RWTF.

### *5.4.3 Potential, Current, and Projected Recycled Water Uses*

Prior to 1999, recycled water was used in DSRSD's water service area only for compaction, dust control, and sewer cleaning. In 1999, DSRSD began delivering recycled water to the Dublin Sports Grounds for landscape irrigation. Through subsequent connection to the SRVRWP backbone, DSRSD's recycled water distribution system expanded to serve newly developed areas in Dougherty Valley and the eastern portion of Dublin. Recycled water service was extended to large landscape irrigation water users in the established areas of central Dublin between 2013 and 2015 to reduce potable water demand. Where recycled water distribution mains are adjacent to construction sites, DSRSD allows temporary connection to the distribution main so that construction contractors may obtain recycled water for construction use. Further, DSRSD maintains a commercial recycled water fill station at its RWTF and purple hydrants within

its water service area to provide recycled water to contractors for grading and compaction, dust control, landscape irrigation, and sewer flushing.

DSRSD has been extremely successful in the implementation of its recycled water program within its service area, serving 348 sites within its service area. In 2020, over 40 percent of the annual flow to the Regional Wastewater Treatment Plant was recycled for irrigation uses. The demand for recycled water now occasionally exceeds the available supply on peak summer days, resulting in zero discharge of treated secondary effluent from the DSRSD WWTP to San Francisco Bay during these peak periods.

On March 25, 2019, DERWA found that it cannot meet the combined peak demands and projected demands of its member agencies and Pleasanton. DERWA approved Resolution 19-3 (Appendix A) requesting that its member agencies take action to reduce recycled water demands and implement a connection moratorium to the DERWA recycled water system. On July 7, 2020, the DSRSD Board adopted a revised Recycled Water Policy that reflects the reduced availability of wastewater and decreasing reliability of potable water supplies. Under the Recycled Water Policy, DSRSD may not connect new irrigation customers to the recycled water system until such time as there is sufficient wastewater supply to meet DSRSD recycled water demands for a minimum 10-year time horizon.

DSRSD, in partnership with DERWA and EBMUD, has pursued options to secure a permanent supplemental supply source for the DERWA program, including pursuing wastewater effluent from neighboring agencies, supplementing with groundwater, and looking at seasonal storage options. Although some progress has been made, to date, DERWA has not been able to secure a permanent recycled water supply source that would support lifting the moratorium on new recycled water customers. Therefore, DSRSD recycled water demands are expected to remain constant to 2045.

## 5.5 Summary of Current and Projected Future Water Supplies

DSRSD's water supply sources consist of water purchased water from Zone 7 and recycled water produced from its RWTF. Table 5-5 provides a summary of DSRSD's current and projected future water supplies.

**Table 5-5. DSRSD Current and Projected Future Water Supplies**

| Water Source | 2020, Actual[(a)] | 2025[(b)] | 2030[(b)] | 2035[(b)] | 2040[(b)] | 2045[(b)] |
|---|---|---|---|---|---|---|
| Water Purchased from Zone 7, AFY | 10,966 | 11,993 | 13,363 | 13,807 | 13,820 | 14,034 |
| Recycled Water, AFY | 2,888 | 3,044 | 3,044 | 3,044 | 3,044 | 3,044 |
| **Total, AFY** | **13,854** | **15,037** | **16,407** | **16,851** | **16,864** | **17,078** |

(a) Actual 2020 supplies are from Table 6-11 of the DSRSD 2020 UWMP (June 2021). Includes the DSRSD GPQ of 645 AFY.
(b) Projected supplies are from Table 6-12 of the DSRSD 2020 UWMP (June 2021). Includes the DSRSD GPQ of 645 AFY.

# 6.0 WATER SUPPLY RELIABILITY

> *10910 (c)(4) address "total projected water supplies available…during normal, single dry, and multiple dry water years during a 20-year projection…"*

This section descries the reliability of Zone 7's potable water supply and the DSRSD's recycled water supply under various hydrologic conditions, as presented in their respective 2020 UWMPs.

## 6.1 Potable Water Supply Reliability

The reliability of the DSRSD's potable water supply depends on Zone 7's water supply reliability policy and the reliability of Zone 7's supplies.

The future reliability of Zone 7's imported water is a concern. Drought, sea level rise, and natural disasters threaten the Delta, a critical component of the delivery system bringing water to Zone 7. As a result, Zone 7 is participating in and evaluating various projects that would provide alternate water supplies and/or storage, or protect, the existing delivery system against threats. These projects, summarized in Section 5.2.5, include installing a new diversion or conveyance system for Delta supplies, desalinating brackish water (water with high salt content), reusing highly treated wastewater for potable reuse, participating in the construction of a new reservoir to capture surplus water from the Sacramento River, expanding an existing reservoir near Zone 7 for additional storage, and adding a new connection to the South Bay Aqueduct. Based on Zone 7's efforts and DSRSD's continued use of recycled water, DSRSD's future water supplies are expected to keep pace with its water demands.

This section details each of these factors.

### *6.1.1 Zone 7 Reliability Policy for Municipal & Industrial Water Supplies*

On October 17, 2012, the Zone 7 Board approved a revised Water Supply Reliability Policy (Resolution No. 13-4230), which adopts the following level-of-service goals to guide the management of Zone 7's treated water supplies and its capital improvement program:

- Goal 1: Zone 7 will meet its treated water customers' water supply needs, in accordance with Zone 7's most current Contracts for M&I Water Supply, including existing and projected demands as specified in Zone 7's most recent UWMP, during normal, average, and drought conditions, as follows:
  - At least 85 percent of M&I water demands 99 percent of the time
  - 100 percent of M&I water demands 90 percent of the time
- Goal 2: Provide sufficient treated water production capacity and infrastructure to meet at least 80 percent of the maximum month M&I contractual demands should any one of Zone 7's major supply, production, or transmission facilities experience an extended unplanned outage of at least one week.

Zone 7's water supply reliability analysis is based on future water supply options developed to meet this policy over the long term.

### *6.1.2 Zone 7 Water Supply Reliability*

The quantity of water available from Zone 7's supply sources varies annually depending on hydrologic conditions. Consequently, Zone 7 reviewed historical data and developed a projected yield for each water supply source under three conditions: (1) normal water year, (2) single-dry year, and (3) five-consecutive year drought. Each condition is defined as follows:

- **Normal Water Year**: The year in the historical sequence most closely representing average runoff or allocation levels and patterns.
- **Single-Dry Year**: The year in the historical sequence with the lowest annual runoff or allocation.
- **Five-Consecutive-Year Drought**: Zone 7 considers a six-year "design drought" as part of its water supply analyses. Selection of the design drought corresponds with the driest six-year sequence on record, 1987-1992. This same sequence was utilized in the UWMP to maintain consistency with Zone 7's water supply planning efforts and is more conservative than the minimum required five-year drought scenario.

For each supply source, Table 6-1 lists the years representing the normal, single driest, and five consecutive dry years. Table 6-2 presents the estimated available water supply from each source based on these reference years.

Table 6-3 shows DSRSD's projected supplies from Zone 7 during dry years based on the assumptions in DSRSD's 2020 UWMP.

**Table 6-1. Basis of Water Year Data for Zone 7's Water Supply Sources**

| Water Source | Normal Year | Single-Dry Year | Multiple Dry Years | | | | |
|---|---|---|---|---|---|---|---|
| | | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
| SWP – Table A | 1965 | 2014 | 1987 | 1988 | 1989 | 1990 | 1991 |
| SWP – Carryover | 1965 | 2014 | 1987 | 1988 | 1989 | 1990 | 1991 |
| Water Transfers | 1965 | 2014 | 1987 | 1988 | 1989 | 1990 | 1991 |
| Arroyo Valle | 1919 | 1977 | 1987 | 1988 | 1989 | 1990 | 1991 |
| Sites Reservoir | 1965 | 2014 | 1987 | 1988 | 1989 | 1990 | 1991 |
| BARDP[(a)] and/or Potable Reuse | 1965 | 2014 | 1987 | 1988 | 1989 | 1990 | 1991 |
| From Storage | | | | | | | |
| Main Basin | 1965 | 2014 | 1987 | 1988 | 1989 | 1990 | 1991 |
| Semitropic | 1965 | 2014 | 1987 | 1988 | 1989 | 1990 | 1991 |
| Cawelo | 1965 | 2014 | 1987 | 1988 | 1989 | 1990 | 1991 |
| Chain of Lakes | 1965 | 2014 | 1987 | 1988 | 1989 | 1990 | 1991 |

*Source: Zone 7 2020 UWMP, Tables 7-1 through 7-10*

(a) BARDP = Bay Area Regional Desalination Project

**Table 6-2. Summary of Estimated Available Water Supply from Zone 7's Sources**

| Water Source | Yield, AFY | | |
|---|---|---|---|
| | Normal Year | Single-Dry Year | Five Consecutive Dry Years |
| SWP – Table A[(a)] | 43,500 | 4,000 | 8,100-54,000 |
| SWP – Carryover[(b)] | 10,000 | 15,500 | 1,800-15,500 |
| Water Transfers[(c)] | 5,000 | 5,000 | 5,000 |
| Arroyo Valle | 5,500 | 0 | 1,500-1,700 |
| Sites Reservoir[(d)] | 10,000 | 15,300 | 15,800-17,700 |
| BARDP and/or Potable Reuse[(e)] | 5,000 | 5,000 | 5,000 |
| From Storage | | | |
| Main Basin[(f)] | 29,200 | 27,600 | 9,700-27,600 |
| Semitropic[(g)] | 13,000 | 6,500 | 10,000-10,100 |
| Cawelo[(g)] | 9,700 | 7,100 | 9,700 |
| Chain of Lakes[(h)] | 10,100 | 8,300 | 5,200-8,800 |

*Source: Zone 7 2020 UWMP, Table 7-11*

(a) Based on 2040 future SWP reliability Table A allocations.
(b) Zone 7's operational target is typically 10,000 AF for normal years.
(c) Zone 7 is pursuing water transfer agreements for the period through 2030. Annual amounts may vary, but variability has not been quantified.
(d) Supplies from Sites Reservoir are assumed to be available by 2030.
(e) Supplies from these sources are assumed to be available by 2030.
(f) These are estimated available supplies, not necessarily what would be pumped. Zone 7's typical operational target is around 9,200 AF for normal years.
(g) Semitropic and Cawelo supplies are typically not used during normal years.
(h) The Chain of Lakes Pipeline, which provides access to water stored in the Chain of Lakes, is assumed to be completed around 2025. Water stored in the Chain of Lakes is assumed to be available by 2030 and would not be used during normal years.

**Table 6-3. Projected DSRSD Supplies from Zone 7 During Dry Years**

| Hydrologic Condition | 2025 | 2030 | 2035 | 2040 | 2045 |
|---|---|---|---|---|---|
| Single-Dry Year, AFY[(a)] | 15,037 | 16,407 | 16,851 | 16,864 | 17,078 |
| Multiple-Dry Year 1[(b)] | 15,037 | 16,407 | 16,851 | 16,864 | 17,078 |
| Multiple-Dry Year 2[(b)] | 15,311 | 16,496 | 16,854 | 16,907 | 17,078 |
| Multiple-Dry Year 3[(b)] | 15,585 | 16,585 | 16,856 | 16,950 | 17,078 |
| Multiple-Dry Year 4[(b)] | 15,859 | 16,673 | 16,859 | 16,992 | 17,078 |
| Multiple-Dry Year 5[(b)] | 16,133 | 16,762 | 16,862 | 17,035 | 17,078 |

(a) Based on DSRSD's 2020 UWMP (June 2021), Table 7-5.
(b) Based on DSRSD's 2020 UWMP (June 2016), Tables 7-6

The following sections discuss the reliability of Zone 7's water supply sources and its strategies for managing the risks associated with each supply, as presented in Zone 7's 2020 UWMP. This analysis is based on historical conditions, adjustments to account for climate change impacts and other projected

trends, DWR's 2019 DCR (using modeling estimates that separated Table A allocations from carryover deliveries), and Zone 7's Water Supply Risk Model results.

#### 6.1.2.1 Imported Water: State Water Project

Major constraints on SWP supplies include Delta conveyance, water quality, and SBA conveyance. This section describes each constraint.

##### *6.1.2.1.1 Delta Conveyance*

Zone 7's long-term contract with DWR for SWP water provides Zone 7 access to Table A water (and Article 56c water or carryover), Article 21 water, Article 56d water, and Yuba Accord water. As a SWP contractor, Zone 7 is also able to use SWP facilities for conveying water transfers or exchanges of SWP water (from another contractor) or from another water agency outside of the SWP system. SWP water moves through the Delta before it is conveyed by the California Aqueduct and the SBA to Zone 7's water facilities.

The instability of the aging levees in the Delta (including their vulnerability to seismic events and climate change), regulatory uncertainty, water quality issues including saltwater intrusion, and the declining health of the Delta ecosystem all challenge the long-term reliability of the SWP and, more generally, the water conveyance capability of the Delta. These issues directly challenge the Tri-Valley's long-term water supply reliability since a majority of Zone 7's water supply is and will continue to be tied to the Delta and SWP system.

DWR has prioritized, funded, and implemented Delta levee improvements and developed a plan for responding to levee failures. These efforts, along with pre-positioned emergency flood fighting materials, help ensure reasonable seismic performance of levees and timely pathway restoration after a severe earthquake.

Zone 7 is also participating in alternative conveyance projects, specifically the DCP and the Los Vaqueros Expansion Project. The Transfer-Bethany Pipeline is part of the Los Vaqueros Expansion Project and would provide an alternate means of conveying water to Zone 7 when the Delta is inaccessible.

##### *6.1.2.1.2 Water Quality*

Until the DCP is constructed and operational, there continue to be water quality concerns associated with transport through the Delta. In 1982, DWR formed the Interagency Delta Health Aspects Monitoring Program to monitor water quality in the Delta and protect human health. The program was renamed the Municipal Water Quality Investigations Program in 1990. From a municipal water supply perspective, water quality issues in the Delta are associated with salinity from seawater intrusion, wastewater effluent discharges, agricultural drainages from the islands, and recreational activities. Water quality issues of specific concern to Zone 7 are:

- **Algal byproducts:** Parameters of concern include compounds that cause taste-and-odor (T&O) and algal toxins. T&O is primarily a problem in the warmer months when algal blooms may be present. It can affect supplies from the Delta and from Lake Del Valle (which stores SWP water). Algae produce geosmin and 2-methylisoborneol, which are key T&O-causing compounds in surface water supply. Algal toxins derived from blue-green algae can also be a concern. Zone 7's new ozonation facilities (recently installed at the Del Valle Water Treatment Plant and scheduled for completion at the Patterson Pass Water Treatment Plant in 2022) effectively treat algal byproducts. Without ozonation, high levels of algal byproducts in both Delta and Lake Del Valle supplies may necessitate temporarily switching

to groundwater supplies; blending of sources is also an option depending on the source of algal byproducts and severity.

- **Total and dissolved organic carbon (TOC/DOC):** Zone 7 treats organic carbon with coagulant and disinfectant chemicals, and therefore higher levels of organic carbon increase costs. In addition, TOC/DOC help form disinfectant byproducts (DBPs), which are regulated compounds in drinking water. Historically, Zone 7's water treatment plants (WTPs) have managed high TOC/DOC by increasing coagulant dosages. However, this operational change results in greater sludge production and limits WTP production. The use of ozone reduces coagulant and chlorine demands, thus reducing typical chlorination DBPs; however, formation of ozonation DBPs such as bromate will need to be controlled.
- **Turbidity:** like TOC/DOC, turbidity affects the amount of chemicals used in treatment and Zone 7's ability to meet drinking water standards. It also can reduce the production capacities of Zone 7's WTPs, requiring increased groundwater production under high demands. Coagulant dosages can be adjusted to address high turbidity (which can happen after big storms), but if filters require more frequent backwashing, then production may be decreased.
- **Salinity or TDS:** salinity has significant impacts on SWP operations and the availability of water. To meet the salinity objectives in the Delta, water exports from the Delta may be restricted, reducing the amount of water supply available during certain times of the year. Salinity intrusion can be a problem during dry years, when there is insufficient freshwater to repel salinity. Climate change-induced sea level rise is also expected to increase salinity in Delta. Finally, levee breaks—due to earthquakes and other factors—would result in significant saltwater intrusion as water floods affected islands in the Delta that are below sea level.
- **Algal blooms:** in addition to T&O and the threat of algal toxins, algal blooms can significantly degrade filter performance through clogging. Filter clogging reduces WTP production capacities and could require supplemental groundwater use.

As noted above, Zone 7 has state-of-the-art ozonation facilities at the Del Valle WTP, and ozonation facilities will be operational at the Patterson Pass WTP in 2022. Ozonation improves treatment of T&O, TOC/DOC, turbidity, and algal blooms and significantly increasing the surface water system's reliability.

In 2008, the SBA contractors (ACWD, Valley Water, and Zone 7) developed the SBA Watershed Protection Program to protect water quality once the water from the Delta reaches the SBA. The primary objectives of the SBA Watershed Protection Program include developing a Watershed Management Program for the SBA system, including Lake Del Valle and Bethany Reservoir, and protecting local drinking water and water resources from identified contaminant sources (e.g., septic tanks) for urban, agricultural, recreational, and environmental uses.

#### *6.1.2.1.3 SBA Conveyance*

One of the main limitations of Zone 7's water system is the lack of interties. All of Zone 7's imported water supplies are conveyed through the Delta and the SBA; Arroyo Valle water is also conveyed through the SBA. Zone 7 has been working closely with DWR, Valley Water, and ACWD to improve the reliability of the SBA. Between 2003 and 2012, DWR made improvements to the SBA within Zone 7's service area to increase capacity and improve reliability. The work included a new pump station (180 cubic feet per second (cfs)) and inline reservoir (500 AF) and increased the canal carrying capacity to 380 cfs. As part of this project, Zone 7 installed an emergency slide gate to maintain service in the event of a pipeline rupture

downstream. Zone 7 will continue coordinating with DWR and other stakeholders to improve the reliability of the entire SBA system.

In addition, Zone 7 is pursuing the following projects to diversify its conveyance options:

- **Reliability Intertie**: Zone 7 is planning for the construction of a reliability intertie with another major water agency that would provide an alternative means of conveying water to Zone 7's service area when the Delta and/or the SBA undergo an outage. For example, an intertie with the East Bay Municipal Utility District could convey treated water supply to the western portion of Zone 7's service area.
- **Chain of Lakes Pipeline**: This pipeline would allow for access to water stored in the Chain of Lakes as an alternative local water supply; water would be accessible to the Del Valle WTP via one of the SBA turnouts.

#### 6.1.2.2 Local Storage

ACWD and Zone 7 both have water rights to divert water from the Arroyo Valle. This water is captured and stored in Lake Del Valle, which is owned and operated by DWR. Because Lake Del Valle is used for water supply storage, flood control, and recreation, withdrawing water from the lake needs to be coordinated with the lake's other uses. Typically, DWR lowers the lake elevation after Labor Day for flood control purposes, allowing Zone 7 and ACWD to put runoff from the Arroyo Valle to beneficial use. In the summer months, lake elevations are raised for recreational purposes. Historically, access to Zone 7's stored water in Lake Del Valle has not been problematic, unless there is an outage on the Del Valle Branch pipeline. Zone 7 closely coordinates use of Arroyo Valle water with both ACWD and DWR.

Water collected from the local watershed is protected under the SBA Watershed Protection Program Plan. In general, the water quality of Arroyo Valle runoff is good and does not affect the reliability of this water supply; however, as noted above, T&O can also affect supplies from Lake Del Valle. Zone 7 treats T&O using ozonation, although a switch to groundwater supplies is sometimes necessary under excessive levels of T&O compounds. Algal blooms in the lake can also reduce production capacities, though new ozonation facilities at the Del Valle WTP have significantly reduced the impact.

The future Chain of Lakes will provide significant local storage, but uncertainty surrounds its complete transfer to Zone 7. Favorable economic conditions could extend gravel mining operations, and even after mining ceases, reclamation must occur. These steps could delay a full Chain of Lakes transition to about 2060. Zone 7 continues to work closely with the mining companies and quarry operators so planning efforts can be coordinated. With the Chain of Lakes Pipeline, Zone 7 can enhance its use of the available lakes in the interim period.

#### 6.1.2.3 Non-Local Storage

Access to banked water in Semitropic and Cawelo—both located downstream of Zone 7—requires exchange(s) with other SWP contractors located south of Kern County (e.g., Metropolitan Water District). To facilitate these exchanges, there must be sufficient water flowing through the Delta and California Aqueduct system, which could be challenging during a drought. Furthermore, the banked water must be conveyed through the Delta, rendering this supply susceptible to the Delta disruptions described in Section 6.1.2.1 of this WSA.

During the 2012-2016 drought, access to banked water became uncertain because of the historically low Table A allocation (leading to minimal amounts of water moving through the SWP) and the potential cessation of pumping in the Delta to control salinity intrusion. DWR was able to manage salinity so that Delta pumping could continue, and, with coordination among stakeholders including Zone 7, DWR prioritized the delivery of banked water to Zone 7 and other SBA contractors. Ultimately, even during the serious drought conditions in 2014 and the minimal 5 percent SWP allocation, Zone 7 was able to successfully recover almost 15,000 AF, or approximately 78 percent of the maximum recovery requested by Zone 7. In 2015, Zone 7 recovered approximately 18,000 AF from non-local storage.

Some of Semitropic's wells are affected by arsenic. This is currently being managed through treatment before the affected groundwater water is pumped into the California Aqueduct. Arsenic criteria have been established for this "pump-in" by the DWR Facilitation Group to mitigate any impacts to the downstream SWP contractors. Semitropic and the banking partners have developed a coordination process for discussing arsenic treatment. While the presence of arsenic in the Semitropic groundwater bank is likely to increase the cost of this water storage option, it is not likely to affect its overall reliability.

Zone 7 will continue to coordinate closely with DWR, other SWP contractors, Semitropic, and Cawelo to ensure the future reliability of the banked water supplies.

### *6.1.3 Groundwater Supply Reliability*

Zone 7 is actively implementing its SNMP. Salinity levels are being addressed primarily through groundwater pumping and demineralization using the MGDP, which simultaneously allows for the export of concentrated minerals or salts from the Main Basin while improving the water quality of treated water.

Zone 7 has several groundwater wells with naturally-occurring Cr(VI) concentrations near the MCL and PFAS above the notification limit. In response, Zone 7 is actively managing flows from the affected wells. Conditions are regularly monitored, and management actions may change in the future. A PFAS treatment facility is under consideration for construction based on pending regulations.

Zone 7 continues to study the groundwater basin and develop new tools (e.g., an improved groundwater model) to better understand the groundwater extraction possible under various conditions while maintaining levels above historical lows. Zone 7 also plans to augment its ability to recharge the Main Basin (e.g., through the Chain of Lakes) to increase local storage and allow for more pumping when necessary. Recharging the Main Basin will improve both water supply reliability and salt management. Zone 7 plans to build an additional demineralization facility to continue to decrease the salt content of the Main Basin.

Finally, Zone 7 plans to build additional wells to improve management of groundwater levels and to increase groundwater production capacity during droughts and surface water-related outages. A new booster pump station will improve Zone 7's ability to convey groundwater throughout Zone 7's service area and increase production capacity.

## 6.2 Recycled Water Supply Reliability

Reliability and vulnerability of DSRSD's recycled water supply are related to seasonal fluctuations in production of wastewater in DSRSD's service area, and are not generally subject to climatic fluctuations[9]. Wastewater collection volume is subject to seasonal variations; for example, during the dry season, wastewater discharge is low but recycled water demands are high. The availability of source water supply currently limits DSRSD's production of recycled water, but these challenges are not insurmountable. As discussed in Section 5.4 of this WSA, DSRSD is pursuing various alternatives to resolve these limitations.



[9] During a drought, wastewater flows may drop slightly due to reduced potable water use. DSRSD estimates that a 10 to 15 percent reduction in potable water use results in about a 1 to 1.5 percent reduction in wastewater flows. In the future, DSRSD may manage recycled water supplies by implementing recycled water demand management measures during single-dry and multiple dry years.

# 7.0 DETERMINATION OF WATER SUPPLY SUFFICIENCY BASED ON THE REQUIREMENTS OF SB 610

*10910(c)(4) If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.*

*10911 (a) If, as a result of its assessment, the public water system concludes that its water supplies are, or will be, insufficient, the public water system shall provide to the city or county its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies.*

## 7.1 Potable Water Supply Sufficiency

Pursuant to Water Code section 10910(c)(4), and based on the technical analyses described in this WSA, DSRSD finds that the total projected water supplies determined to be available for the Proposed Project during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the Proposed Project, in addition to existing and planned future uses. As described above, the projected potable water demands for the Proposed Project are accounted for in DSRSD's 2020 UWMP.

Zone 7's 2020 UWMP indicates that it will have a supply surplus in all hydrologic conditions through 2045. According to Zone 7's 2020 UWMP, Zone 7 does not anticipate any water supply shortage during normal, single-dry, and multiple dry water years through 2045. Zone 7 plans to implement a series of near-term and long-term water supply projects as discussed in Section 5.2.5. In the near-term, before major water supply projects are implemented, there is a potential for operational constraints that could result in shortages in single dry or multiple dry years, especially during a Delta outage when there may be no or minimal water moving through the South Bay Aqueduct from the Delta. Untreated water customers would be most vulnerable because of their reliance on Delta water. As described in its WSCP, in these cases, Zone 7 could call for voluntary or mandatory conservation and also make operational adjustments to minimize such shortages.

Therefore, this WSA assumes that Zone 7 supplies can meet the DSRSD's projected potable and raw water demands (including potable water demands for the Proposed Project) in all hydrologic conditions through 2045.

Table 7-1 summarizes the projected availability of DSRSD's existing and planned future potable water supplies and DSRSD's projected water demands in normal, single-dry and multiple dry years through 2045. As shown in Table 7-1, water demand within DSRSD's water service area is not expected to exceed the DSRSD's water supplies during normal, single-dry, and multiple dry water years between 2025 and 2045.

DSRSD plans to continue managing potable water demands within its water service area through water use efficiency and its recycled water program. If water shortages should occur, DSRSD may need to implement its WSCP, described in its 2020 UWMP.

**Table 7-1. DSRSD Summary of Potable Water Demand Versus Supply during Hydrologic Normal, Single Dry, and Multiple Dry Years**

| Hydrologic Condition | | Supply and Demand Comparison, AFY | | | | |
|---|---|---|---|---|---|---|
| | | 2025 | 2030 | 2035 | 2040 | 2045 |
| Normal Year | | | | | | |
| Available Potable Water Supply[(a)] | | 15,037 | 16,407 | 16,851 | 16,864 | 17,078 |
| Total Potable Water Demand[(b)] | | 15,037 | 16,407 | 16,851 | 16,864 | 17,078 |
| Potential Surplus (Deficit) | | 0 | 0 | 0 | 0 | 0 |
| Percent Shortfall of Demand | | - | - | - | - | - |
| Single-Dry Year | | | | | | |
| Available Potable Water Supply[(c)] | | 15,037 | 16,407 | 16,851 | 16,864 | 17,078 |
| Total Potable Water Demand[(d)] | | 15,037 | 16,407 | 16,851 | 16,864 | 17,078 |
| Potential Surplus (Deficit) | | 0 | 0 | 0 | 0 | 0 |
| Percent Shortfall of Demand | | - | - | - | - | - |
| Multiple Dry Years | | | | | | |
| Multiple-Dry Year 1 | Available Potable Water Supply[(c)] | 15,037 | 16,407 | 16,851 | 16,864 | 17,078 |
| | Total Potable Water Demand[(e)] | 15,037 | 16,407 | 16,851 | 16,864 | 17,078 |
| | Potential Surplus (Deficit) | 0 | 0 | 0 | 0 | 0 |
| | Percent Shortfall of Demand | - | - | - | - | - |
| Multiple-Dry Year 2 | Available Potable Water Supply[(c)] | 15,311 | 16,496 | 16,854 | 16,907 | 17,078 |
| | Total Potable Water Demand[(e)] | 15,331 | 16,496 | 16,854 | 16,907 | 17,078 |
| | Potential Surplus (Deficit) | -20 | 0 | 0 | 0 | 0 |
| | Percent Shortfall of Demand | - | - | - | - | - |
| Multiple-Dry Year 3 | Available Potable Water Supply[(c)] | 15,585 | 16,585 | 16,856 | 16,950 | 17,078 |
| | Total Potable Water Demand[(e)] | 15,585 | 16,585 | 16,856 | 16,950 | 17,078 |
| | Potential Surplus (Deficit) | 0 | 0 | 0 | 0 | 0 |
| | Percent Shortfall of Demand | - | - | - | - | - |
| Multiple-Dry Year 4 | Available Potable Water Supply[(c)] | 15,859 | 16,673 | 16,859 | 16,992 | 17,078 |
| | Total Potable Water Demand[(e)] | 15,859 | 16,673 | 16,859 | 16,992 | 17,078 |
| | Potential Surplus (Deficit) | 0 | 0 | 0 | 0 | 0 |
| | Percent Shortfall of Demand | - | - | - | - | - |
| Multiple-Dry Year 5 | Available Potable Water Supply[(c)] | 16,133 | 16,762 | 16,862 | 17,035 | 17,078 |
| | Total Potable Water Demand[(e)] | 16,133 | 16,762 | 16,862 | 17,035 | 17,078 |
| | Potential Surplus (Deficit) | 0 | 0 | 0 | 0 | 0 |
| | Percent Shortfall of Demand | - | - | - | - | - |

(a) From Table 5-5 of this WSA.
(b) From Table 4-2 of this WSA.
(c) From Table 6-3 of this WSA.
(d) From Table 4-4 of this WSA.
(e) From Table 4-5 of this WSA.

# 8.0 Verification of Sufficient Water Supply Based on the Requirements of SB 221

The Proposed Project, with up to 650 residential dwelling units, is also subject to the requirements of SB 221 (Government Code Section 66473.7). SB 221 applies to residential development projects of more than 500 dwelling units (such as the Proposed Project) and requires that the water supplier (DSRSD) provide a written verification that the water supply for the Proposed Project is sufficient.

Verification must demonstrate supply sufficiency by showing that water supplies available during normal, single-dry and multiple dry years within a 20-year projection will meet the projected demand associated with the Proposed Project, in addition to existing and planned future uses, including, but not limited to, agriculture and industrial uses. Per the requirements of SB 221, the following must be considered:

- Historical water deliveries for the previous 20 years;
- Urban water shortage contingency analysis prepared for the UWMP;
- Supply reduction for specific water use sectors; and
- Amount of water expected from specified supply projects.

The DSRSD 2020 UWMP and this WSA for the Proposed Project provide the documentation required to comply with SB 221 and demonstrate that DSRSD's supplies are sufficient to meet the projected demand associated with the Proposed Project, in addition to existing and planned future uses, including, but not limited to, agriculture and industrial uses. The specific considerations to be evaluated for the SB 221 verification are described below and reference applicable sections of the DSRSD 2020 UWMP and this WSA.

## 8.1 Historical Water Deliveries

DSRSD's water supplies are described in Section 5.0 of this WSA and Chapter 6 of the DSRSD 2020 UWMP. Table 8-1 presents DSRSD's historical use of these supplies over the past 20 years. The use of these supplies will continue into the future, as described in Section 5.0 of this WSA, and as shown in Table 5-5 of this WSA.

**Table 8-1. DSRSD Historical Water Supplies**

| Water Source | 2000 | 2005 | 2010 | 2015 | 2020 |
|---|---|---|---|---|---|
| Water Purchased from Zone 7 Water Agency, AFY[(a)] | 6,724 | 9,489 | 8,619 | 6,800 | 10,321 |
| Groundwater Pumped by Zone 7 on DSRSD's Behalf, AFY[(a)] | 645 | 645 | 645 | 645 | 645 |
| DSRSD Recycled Water, AFY[(a,b)] | 34 | 888 | 1,729 | 2,579 | 2,888 |
| **Total, AFY** | **7,403** | **11,022** | **10,993** | **10,024** | **13,854** |

(a) Table 6-1, DSRSD 2005 UWMP and Table 4-1, Table 6-11, DSRSD 2015 UWMP.
(b) DSRSD recycled water does not include recycled water sales to other water agencies.

The availability and historical and projected use of groundwater supplies is described in Section 5.3 of this WSA. As described, DSRSD does not itself extract groundwater as a water supply. In accordance with the DSRSD water supply agreement with Zone 7, Zone 7 pumps DSRSD's groundwater supply (based on

DSRSD's GPQ) from local storage, and this groundwater supply is then blended with water from Zone 7's other water supply sources and delivered to DSRSD.

Water supply availability and reliability during normal, single-dry and multiple dry years is described in Section 6.0 of this WSA.

## 8.2 Projected Water Demand by Customer Sector

Projected potable and recycled water demands in the DSRSD service area are described in Section 4.2 of this WSA based on information provided in Chapter 4 of DSRSD's 2020 UWMP. Projected water demand by customer sector within DSRSD's service area is documented in the DSRSD's 2020 UWMP (Chapter 4, Table 4-3) and is summarized in Table 8-2.

**Table 8-2. Projected Water Demands**

| Water Source | 2025[a] | 2030[a] | 2035[a] | 2040[a]) | 2045[a] |
|---|---|---|---|---|---|
| Potable Water, AFY | | | | | |
| Single Family | 6,236 | 6,983 | 7,226 | 7,342 | 7,458 |
| Multi-Family | 2,043 | 2,287 | 2,367 | 2,405 | 2,443 |
| Commercial | 649 | 727 | 752 | 764 | 776 |
| Institutional/Governmental | 522 | 584 | 604 | 614 | 624 |
| Landscape | 1,329 | 1,489 | 1,540 | 1,565 | 1,590 |
| Other – Construction | 376 | 376 | 376 | 188 | 188 |
| Other – Fireline Meters | 1 | 1 | 1 | 2 | 2 |
| Other – Ranch Owner | 2 | 3 | 3 | 3 | 4 |
| Other – Unmetered Sales | 136 | 136 | 136 | 136 | 136 |
| Other – Supplemental water for recycled water demand | 21 | 21 | 21 | 21 | 21 |
| Losses | 678 | 755 | 780 | 781 | 793 |
| Potable Water Subtotal, AFY[a] | 11,993 | 13,362 | 13,806 | 13,821 | 14,035 |
| Recycled Water, AFY[b] | 3,044 | 3,044 | 3,044 | 3,044 | 3,044 |
| **Total, AFY** | **15,037** | **16,407** | **16,851** | **16,864** | **17,078** |

(a) From Table 4-3, DSRSD 2020 UWMP, June 2021.
(b) From Table 4-4, DSRSD 2020 UWMP, June 2021.

As described in Section 3.4, the potable water demands for the Proposed Project are included in DSRSD's 2020 UWMP.

## 8.3 Water Shortage Contingency Analysis

Appendix M of the DSRSD 2020 UWMP provides its WSCP to address foreseeable and unforeseeable water shortage conditions. DSRSD's WSCP was adopted by the DSRSD Board of Directors in June 2021.

Water shortages occur whenever the available water supply cannot meet the normally expected customer water use. Water shortages can be due to several reasons, such as climate change, drought, and catastrophic events. Drought, regulatory action constraints, and natural and manmade disasters may occur at any time. In 2018, the California State Legislature (Legislature) enacted two policy bills, (Senate Bill (SB) 606 (Hertzberg) and Assembly Bill (AB) 1668 (Friedman)) (2018 Water Conservation Legislation), to establish a new foundation drought planning to adapt to climate change and the resulting longer and more intense droughts in California. The 2018 Water Conservation Legislation set new requirements for water shortage contingency planning.

The WSCP describes the DSRSD's strategic plan to prepare and respond to water shortage conditions resulting from a drought, regulatory action, emergency, or other types of events. It also includes defined actions to reduce demand over six shortage condition levels, from 10 percent to more than 50 percent demand reductions. The WSCP provides a guide for DSRSD to prevent catastrophic service disruptions and has been updated to be consistent with the 2018 Water Conservation Legislation requirements.

As part of its WSCP, DSRSD's legal authorities, communication protocols, compliance and enforcement, and monitoring and reporting are described. DSRSD District Code Chapter 4.10 supports its WSCP. District Code Section 4.10.030(C)(2) authorizes the General Manager to declare a water emergency under imminent water shortage. As soon as practical, the General Manager will notify the Board. In a duly noticed meeting, DSRSD Board will determine whether a water shortage emergency condition exists and, if so, the degree of the emergency and what regulations and restrictions should be enforced in response to the shortage.

If an emergency were to occur, or if drought conditions occurred, requiring DSRSD to implement its WSCP, all of DSRSD customers, including those within the Proposed Project, would be subject to the same shortage response actions.

## 8.4 Verification of Sufficient Water Supply

As described in Section 7.0 of this WSA, DSRSD's water supplies are sufficient to meet the projected demands associated with the Proposed Project, in addition to DSRSD's existing and planned future uses, including, but not limited to, industrial uses. There are no existing nor planned agricultural uses in the DSRSD service area.

# 9.0 WATER SUPPLY ASSESSMENT AND VERIFICATION APPROVAL PROCESS

> *10910 (g)(1) Subject to paragraph (2), the governing body of each public water system shall submit the assessment to the city or county not later than 90 days from the date on which the request was received. The governing body of each public water system, or the city or county if either is required to comply with this act pursuant to subdivision (b), shall approve the assessment prepared pursuant to this section at a regular or special meeting.*

The DSRSD Board of Directors must approve this WSA at a regular or special meeting and provide it to the City of Dublin. Furthermore, this WSA must be included in the Draft EIR being prepared for the Proposed Project.

## 10.0 REFERENCES

City of Dublin, March 2022. Notice of Preparation.

Dublin San Ramon Services District, March 2016. Water System Master Plan.

Dublin San Ramon Services District, June 2021. 2020 Urban Water Management Plan.

Zone 7 Water Agency, May 2021. 2020 Urban Water Management Plan.

# Appendix A

## DERWA Recycled Water Connection Moratorium

DERWA
RESOLUTION NO. 19-3

RESOLUTION OF THE BOARD OF DIRECTORS OF THE DSRSD•EBMUD RECYCLED WATER AUTHORITY (DERWA) REQUESTING THAT ITS MEMBER AGENCIES TAKE ACTION TO REDUCE RECYCLED WATER DEMANDS AND DIRECTING THAT THE AUTHORITY MANAGER IMPLEMENT DEMAND MANAGEMENT AND ALLOCATION ADJUSTMENTS PURSUANT TO ARTICLE IV OF THE AGREEMENT FOR THE SALE OF RECYCLED WATER BY THE DSRSD-EBMUD RECYCLED WATER AUTHORITY TO THE DUBLIN SAN RAMON SERVICES DISTRICT AND THE EAST BAY MUNICIPAL UTILITY DISTRICT

WHEREAS, the DSRSD•EBMUD Recycled Water Authority (DERWA), is a joint Powers Authority in Alameda and Contra Costa Counties, formed in 1995 by agreement of the Dublin San Ramon Services District and the East Bay Municipal Utility District for the implementation and construction of the San Ramon Valley Recycled Water Program for the purpose of maximizing the use of recycled water in ways that offset potable irrigation water demand for DERWA's Member Agencies, while recovering costs; and

WHEREAS, the DERWA members and the City of Pleasanton have caused to be constructed Phase 2 modifications to the Recycled Water Treatment Facilities (RWTF) to ultimately provide 16.2 mgd of treatment capacity; and

WHEREAS, the DERWA Board of Directors has received presentations from the Authority Manager on July 23, 2018, November 26, 2018, and February 4, 2019 providing details on peak summer demand recycled water production shortages projected for the 2019 recycled water irrigation season and subsequent years in the absence of the development of supplemental supplies; and

WHEREAS, reduced wastewater flows due to improved water use efficiency and conservation by customers have decreased recycled water supply available for the DERWA program; and

WHEREAS, the City of Pleasanton's increased use of wastewater for its Recycled Water Program has reduced the amount of wastewater available for DERWA's use; and

WHEREAS, the DERWA Board of Directors approved a supplemental supply agreement with the Central Contra Costa Sanitary District (Central San) at its February 4, 2019 Board Meeting to provide additional short-term recycled water supplies; and

WHEREAS, even with the supplemental supply agreement with Central San, based on current projected recycled water demands for the 2019 irrigation season, recycled water demands are expected to exceed the available recycled water supply on peak irrigation days in the summer; and

WHEREAS, based on projected recycled water demands for years beyond the 2019 irrigation season, recycled water demands are expected to exceed the planned available recycled water supply on peak irrigation days in the summer months during subsequent years; and

WHEREAS, EBMUD has made significant investment and has expended grant funding for the Phase 2 Expansion of its recycled water distribution system which will convert existing potable water use to recycled water use; and

WHEREAS, Article IV of the Agreement for the Sale of Recycled Water by the DSRSD-EBMUD Recycled Water Authority to the Dublin San Ramon Services District and the East Bay Municipal Utility District (Sales Agreement) provides that the Member Agencies shall implement demand management for their respective connected customers and the Authority Manager shall take actions to curtail delivery of recycled water to the Member Agencies; and

WHEREAS, Article IV of the Sales Agreement further provides for the allocation of available future recycled water supplies among the Member Agencies when recycled water demands are projected to exceed the recycled water supplies during periods beyond the current contract year; and

WHEREAS, the DERWA Board of Directors desires that the Authority Manager take appropriate steps as outlined in Article IV of the Sales Agreement to assist Member Agencies in the curtailment of their use of recycled water supply for the 2019 irrigation season and to take further actions to allocate amongst the Member Agencies, and the City of Pleasanton as applicable, the recycled water supply projected to be available in subsequent contract years; and

WHEREAS, given the projected current and future shortfall in recycled water supply and the complexity of implementing demand management on a real-time peak day basis, the most prudent and practical method of demand management is for the Member Agencies to implement a connection moratorium on new connections and implement other additional demand management practices to curtail the use of recycled water; and

WHEREAS, the DERWA Board of Directors desires that DERWA continue to research and appropriately develop the supplemental supplies necessary to increase the availability of recycled water for the current and future irrigation seasons.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the DSRSD•EBMUD Recycled Water Authority, a Joint Powers Authority, does hereby find, request, and direct as follows:

1. The DERWA Board of Directors finds that currently available DERWA recycled water supplies are insufficient to meet the projected recycled water demand of the Member Agencies and the City of Pleasanton on peak irrigations days in the summer during the current year; and
2. The DERWA Board of Directors further finds that recycled water supplies are anticipated to be insufficient to meet the projected demands for recycled water on peak irrigation days in future years; and

3. The DERWA Board of Directors requests that the Member Agencies implement a connection moratorium on new connections except for those EBMUD Phase 2 connections that are already in progress as listed in Exhibit A, and further requests that Member Agencies also implement other demand management practices to curtail use of recycled water; and

4. The DERWA Board of Directors directs the DERWA Authority Manager, consistent with the authority found in Article IV of the Sales Agreement, to take all appropriate steps to assist Member Agencies to curtail their use of recycled water supply for the 2019 irrigation season; and

5. The DERWA Board of Directors directs the DERWA Authority Manager, consistent with the authority found in Article IV of the Sales Agreement, to take further actions to apportion amongst the Member Agencies, and the City of Pleasanton as applicable, the recycled water supply projected to be available in subsequent years should recycled water supplies remain insufficient to meet projected demands.

ADOPTED by the Board of Directors of the DSRSD•EBMUD Recycled Water Authority, a Public Agency located in the Counties of Alameda and Contra Costa, California, at its Regular Meeting held on the 25th day of March 2019 and passed by the following vote:

AYES: 4 - Directors Frank Mellon, Ed Duarte, Georgean Vonheeder-Leopold John A. Coleman
NOES: 0
ABSENT 0

John A. Coleman, DERWA Chair

ATTEST:

Nicole M. Genzale, Authority Secretary

## EXHIBIT A

## EBMUD SAN RAMON VALLEY RECYCLED WATER PROJECT
## PHASE 2 CUSTOMER SITE RETROFITS/CONNECTIONS IN PROGRESS

| CUSTOMER SITES | SERVICE ADDRESS |
|---|---|
| San Ramon Valley Conference Center | 3301 Crow Canyon Road |
| Bishop Ranch BR 6 | 2420 Camino Ramon |
| Sunset Development Co. Service Center | 2453 Camino Ramon |
| Town of Danville Streetscape | 2151 El Capitan Drive |
| City of San Ramon Streetscapes | 3500/3585 Crow Canyon Road |
| Bishop Ranch Veterinary Center | 2000 Bishop Drive |
| Caltrans Hwy 680 Landscapes | 2100/2110 Bishop Drive |
| Canyon Lakes Golf Course | 7300 Bollinger Canyon Road |
| Crow Canyon Country Club Golf Course | 881 Silver Lake Drive |