

APPENDIX 4.9

Water Supply Evaluation

Water Supply Evaluation El Dorado Hill Apartments

Prepared for
El Dorado County

June 2017

WEST YOST

ASSOCIATES
Consulting Engineers

694-12-16-01

 *This report printed on 50% post-consumer paper*

WEST YOST ASSOCIATES
consulting engineers

W A T E R W A S T E W A T E R S T O R M W A T E R

17-0846 Z 2 of 49

(THIS PAGE LEFT BLANK INTENTIONALLY)

Water Supply Evaluation El Dorado Hills Apartments

Prepared for

El Dorado County

Project No. 694-12-16-01



Project Manager: James P. Connell, PE

6-23-17

Date

A handwritten signature in blue ink, which appears to read "Gerry S. Nakano".

QA/QC Review: Gerry S. Nakano, PE

6-23-17

Date

Carlsbad

2173 Salk Avenue, Suite 250
Carlsbad, CA 92008
(760) 795-0365

Davis

2020 Research Park Drive, Suite 100
Davis, CA 95618
(530) 756-5905

Eugene

1650 W 11th Ave. Suite 1-A
Eugene, OR 97402
(541) 431-1280

Irvine

6 Venture, Suite 290
Irvine, CA 92618
(949) 517-9060

Pleasanton

**6800 Koll Center Parkway, Suite 150
Pleasanton, CA 94566
(925) 426-2580**

Portland

4949 Meadows Road, Suite 125
Lake Oswego, OR 97035
(503) 451-4500

Sacramento

2725 Riverside Boulevard, Suite 5
Sacramento, CA 95818
(916) 504-4915

Santa Rosa

2235 Mercury Way, Suite 105
Santa Rosa, CA 95407
(707) 543-8506

Sunnyvale

1250 Oakmead Parkway, Suite 210
Sunnyvale, CA 94085
(408) 451-8453

Walnut Creek

1777 Botelho Drive, Suite 240
Walnut Creek, CA 94596
(925) 949-5800



Table of Contents

Executive Summary	1
1.0 Introduction	2
1.1 Legal Requirements for the Water Supply Assessment.....	2
1.2 Need for and Purpose of Water Supply Assessment.....	3
1.3 Water Supply Assessment Preparation, Format and Organization.....	3
2.0 Description of Project	4
2.1 Project Location	4
2.2 Proposed Land Uses	6
2.3 Project Projected Water Demand	8
2.4 Projected Water Supply for Project	10
3.0 Required Determinations	11
3.1 Does SB 610 apply to the Project?	11
3.2 Does SB 221 apply to the Project?	11
3.3 Who is the identified public water system?	11
3.4 Does EID have an adopted Urban Water Management Plan (UWMP) and does the UWMP include the projected water demand for the Project?	12
4.0 EID Service Area.....	13
4.1 General Description	13
4.2 EID Growth Rates.....	13
5.0 EID Water Demands	15
5.1 EID Existing and Projected Water Demand	15
5.2 Dry Year Water Demand	17
5.2.1 Single Dry Year Demand Conditions	18
5.2.2 Multi-Dry Year Demand Condition	18
6.0 EID Water Supplies.....	20
6.1 Regulatory Background	20
6.2 EID Existing and Projected Potable Water Supplies	21
6.2.1 Surface Water from Sly Park Dam and Jenkinson Lake.....	22
6.2.2 Surface Water from El Dorado Forebay	22
6.2.3 Surface Water from Folsom Reservoir.....	22
6.2.3.1 USBR Water Service Contract	22
6.2.3.2 Warren Act Contract	23
6.2.3.3 Summary of Folsom Reservoir Supply.....	23
6.2.4 Surface Water via Permit 21112	23
6.2.5 Surface Water Supply Reliability.....	24
6.2.6 Additional Planned Future Potable Water Supplies	25
6.2.6.1 Public Law 101-514 Supply	25
6.2.6.2 El Dorado-SMUD Agreement	25
6.2.7 Future Potable Water Supply Reliability	26
6.2.8 Surface Water Supply Summary.....	27



Table of Contents

6.3 EID Existing and Projected Recycled Water Supplies	29
6.3.1 Recycled Water Supply Reliability	29
7.0 Determination of Water Supply Sufficiency Based on the Requirements of SB 610.....	30
8.0 Water Supply Assessment Approval Process.....	34
9.0 References.....	35

List of Tables

Table 2-1. Proposed Land Uses for Project	6
Table 2-2. Estimated Land Uses for Exterior Space	8
Table 2-3. Unit Water Demand Factors.....	9
Table 2-4. Projected Water Demand for Project	10
Table 2-5. Projected Potable and Recycled Water Demand for Project	10
Table 4-1. Projected Growth Rates by Region, percent.....	14
Table 5-1. Projected Future Water Demand for EID's El Dorado Hills Water Service Zone 2, AFY ..	15
Table 5-2. Projected EID Water Demand in 5-year Increments, AFY	16
Table 5-3. Projected EID's Future Water Demand at 2040, AFY.....	17
Table 5-4. Water Shortage Contingency Plan Projected Demand Reduction	17
Table 6-1. EID Surface Water Supply Reliability, AFY.....	24
Table 6-2. EID Future Water Supply Projects, AFY	27
Table 6-3. EID Projected Surface Water Contract Supplies	27
Table 6-4. EID Projected Supply Reliability During Hydrologic Normal, Single Dry, and Multiple Dry Years	28
Table 6-5. EID Recycled Water Supply Reliability, AFY	29
Table 7-1. Summary of Potable Water Demand Versus Supply During Hydrologic Normal, Single Dry, and Multiple Dry Years for EID, AFY.....	31
Table 7-2. Summary of Recycled Water Demand Versus Supply During Hydrologic Normal, Single Dry, and Multiple Dry Years for EID, AFY.....	32

List of Figures

Figure 2-1. Project Vicinity.....	5
Figure 2-2. Illustrative Site Plan of Project	7



Table of Contents

List of Acronyms and Abbreviations

AFY	Acre-Feet Per Year
BOS	Board of Supervisors
County	El Dorado County
CVP	Central Valley Project
DU	Dwelling Units
EDCWA	El Dorado County Water Agency
EDWPA	El Dorado Water and Power Authority
EDHSP	El Dorado Hills Specific Plan
EID	El Dorado Irrigation District
EIR	Environmental Impact Report
FERC	Federal Energy Regulatory Commission
GDPUD	Georgetown Divide Public Utility District
IWRMP	Integrated Water Resources Master Plan
MWELO	Model Water Efficient Landscape Ordinance
ROW	Right of Way
SMUD	Sacramento Municipal Utility District
SWRCB	State Water Resources Control Board
TCE	Town Center East
UARP	Upper American River Project
UWMP	Urban Water Management Plan
WSA	Water Supply Assessment

(THIS PAGE LEFT BLANK INTENTIONALLY)



Water Supply Evaluation El Dorado Hills Apartments

EXECUTIVE SUMMARY

The proposed Project (Project), if approved, consists of a 214-unit apartment complex that would be constructed within the Town Center East (TCE) Commercial Center in El Dorado County (County). An Environmental Impact Report (EIR) is being prepared for the Project. This Water Supply Evaluation was prepared to parallel the requirements of a Water Supply Assessment (WSA) and is referred to as such in this document. The purpose of this WSA is to support the EIR for the Project and to perform the evaluation required by Water Code sections 10910 through 10915 in connection with the availability of water supply for the Project.¹ This WSA is not intended 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 El Dorado Irrigation District (EID) policies and procedures, consistent with existing law.

This WSA includes a discussion of the projected potable and recycled water demands of the Project (Section 2), determinations required under applicable regulations (Section 3), EID’s water service area (Section 4), EID’s projected potable and recycled demands through the year 2040 (Section 5), and EID’s projected water supply sources and reliability through the year 2040 (Section 6). This WSA also documents the plan to ensure that sufficient water supplies will be available to serve the Project and the other planned development in EID’s water service area through the planning period (Section 7).

The projected potable and recycled water demand and supplies documented in this WSA are based on EID’s 2013 Integrated Water Resources Master Plan (IWRMP), EID’s 2015 Urban Water Management Plan (UWMP), WSA for the Central El Dorado Hills Specific Plan (2013), EID Water Resources and Service Reliability Report (2016), Water Demand Estimate memorandum provided by the developer (2014), and additional documents provided by the County. Water Code section 10910(c)(4) states that:

“...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.”

Based on the technical analyses described in this WSA, the total projected water supplies documented to be available for the Project during Normal, Single Dry and Multiple Dry water years, during a 20-year projection, are more than sufficient to meet the projected water demands associated with the Project, in addition to existing and planned future uses. Documentation of the availability of this water to be allocated to this Project is provided in this WSA. The County has determined that EID’s total projected water supplies will meet the above requirement of Water Code section 10910(c)(4), as documented in this WSA.

¹ The project site is part of the larger Town Center East development and is designated for commercial land uses. If the site were developed with commercial land uses per the land use designation, it would also generate a demand for water.



Water Supply Evaluation El Dorado Hills Apartments

1.0 INTRODUCTION

The Project is an apartment complex that would be constructed on one of the remaining vacant properties in the Town Center East Commercial Center in El Dorado County (County). The purpose of this WSA is to support the EIR for the Project. Key topics covered in this introduction include:

- Legal Requirements for the Water Supply Assessment
- Need for and Purpose of Water Supply Assessment
- Water Supply Assessment Preparation, Format and Organization

1.1 Legal Requirements for the 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 that sought to promote more collaborative planning between local water suppliers and cities and counties. Both statutes require that detailed information regarding water availability be provided to city and county decision-makers prior to the approval of large development projects. The purpose of providing such information 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 the demands of proposed projects.

SB 610 amended California Water Code sections 10910 through 10915 to require agencies responsible for land use decisions:

1. To identify the public water purveyor(s) that may supply water for a proposed development project; and
2. To request a WSA from the identified water purveyor(s).

The El Dorado Irrigation District (EID) is the identified water purveyor for the Project. The purpose of the WSA is to demonstrate the sufficiency of the purveyor's water supplies to satisfy the water demands of the Project, while still meeting the water purveyor's obligations with regard to 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 subdivisions² 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.

² Per Government Code Section 66473.7(a)(1) subdivision means a proposed residential development of more than 500 dwelling units.



Water Supply Evaluation El Dorado Hills Apartments

1.2 Need for and Purpose of Water Supply Assessment

The purpose of this WSA is to perform the evaluation required by Water Code Sections 10910 through 10915 in connection with the County's Project. This WSA is not intended 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 County policies and procedures, consistent with existing law.

1.3 Water Supply Assessment Preparation, Format and Organization

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

- Section 1: Introduction
- Section 2: Description of Project
- Section 3: Required SB 610 Determinations
- Section 4: El Dorado Irrigation District Water Service Area
- Section 5: El Dorado Irrigation District Water Demands
- Section 6: El Dorado Irrigation District Water Supplies
- Section 7: Determination of Water Supply Sufficiency Based on the Requirements of SB 610
- Section 8: Water Supply Assessment Approval Process
- Section 9: References

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



Water Supply Evaluation El Dorado Hills Apartments

2.0 DESCRIPTION OF PROJECT

A general description of the Project location, proposed land uses, projected water demand, and proposed water supply is provided below.

2.1 Project Location

The location of the proposed Project, in relation to the current County Limits and EID's water service area is shown on Figure 2-1. The Project is located on the northwest corner of Town Center Boulevard and Vine Street within the TCE Commercial Center in El Dorado Hills. El Dorado Hills is an unincorporated census-designated area in El Dorado County. The Project site is approximately 560 feet south of U.S. Highway 50.

The site is located in an area of El Dorado Hills where public services currently exist, including schools (Buckeye Union School District (K-8) and El Dorado Union High School District), fire (El Dorado Hills Fire Department), police (County Sheriff), parks and recreation (El Dorado Hills Community Services District), and public water and sewer (EID). Roads, drainage, and other amenities within the TCE are privately maintained by the Town Center East Association.

The Project site is located within the Village T area of a larger master planned community identified as the El Dorado Hills Specific Plan (EDHSP). The EDHSP was approved in July 1988 by the El Dorado County Board of Supervisors (BOS), which also certified an environmental impact report (EIR) for the EDHSP. Village T comprises the El Dorado Hills TCE Commercial Development Plan area, a 925,000-square-foot commercial center. In August 1995, the BOS approved development of the TCE project. In conjunction with approval of the TCE project, the BOS adopted a Negative Declaration.

Since approval of the TCE project, development of the Village T area has occurred in phases. All roads (both public and private), site access, and amenities (such as Town Center Lake, trails) within the TCE have been constructed, and the majority of the planned buildings have been built. The Project site is one of the remaining vacant properties in the TCE area.

Currently, the Project site is vacant, sparsely vegetated, and has been mass-graded as a result of development in TCE Commercial Center. The site is surrounded by existing commercial development on Mercedes Lane (to the north), Vine Street (to the east), and Town Center Boulevard (to the south). The surrounding commercial development includes a Mercedes Benz dealership, Nugget Markets grocery store, Regal Cinemas & IMAX theater, etc. Town Center Lake is located to the west of the Project site and serves as a drainage corridor. The existing topography drains from east to west.

The Project is an apartment complex with an on-site parking structure, landscaping, and a pool. Because the Project site is contained within the existing County limits, the project will require an approval by the El Dorado County Board of Supervisors.



Last Saved: 5/22/2016 10:52:37 AM O:\Clients\84_Impact Sciences\12-16-01 WS-A-El Dorado Apt\GIS\Figures\Figure 2-1_Project Vicinity.mxd : nrtoman

Symbology

- Project Location
- EID El Dorado Hills Water Service Zone 2
- El Dorado County

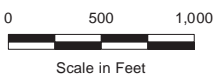


Figure 2-1

Proposed Project Vicinity

El Dorado County
Water Supply Evaluation
for El Dorado Hills Apartments

(THIS PAGE LEFT BLANK INTENTIONALLY)



Water Supply Evaluation El Dorado Hills Apartments

2.2 Proposed Land Uses

The Project property is approximately 4.6 acres (198,862 square feet). The Project consists of multi-family residential units and a moderate amount of exterior space. The proposed land uses of the Project are shown in Figure 2-2 and summarized in Table 2-1. The goal of the Project is to create a residential neighborhood close to work, shopping, dining, and entertainment.

Proposed Land Use	Total Gross Area		Dwelling Units
	square feet	acres	
Multi-family Residential	70,367	1.6	214
Parking Garage (Open Space)	28,366	0.7	-
Other Hardscape (Open Space)	10,507	0.2	-
Exterior Space	89,622	2.1	-
Total Project		4.6	214
^(a) Based on land use data reported in the El Dorado Hills Apartments Preliminary Open Space & Building Coverage Exhibit (April 2016)			

The Project is a 214-unit apartment complex housed within two, 4-story on-grade buildings. An integrated 5-story, 60-foot-tall parking structure would be constructed on site to serve the complex. The parking structure would include 388 stalls, and would be located in the middle of the complex.

The 214 dwelling units contained in the residential development include 26 studio units, 88 one-bedroom units, and 100 two-bedroom units. The units range in size from 576 square feet to 1,195 square feet and are classified as multi-family residential units.

The apartment complex's exterior amenities and common areas cover approximately 2.06 acres (89,622 square feet), which is approximately 44 percent of the Project site. The Project's exterior space includes ornamental landscaping and a court yard, swimming pool, picnic area, and barbecue area. The proposed landscaping in the center of the Project site consists of perennials, ornamental and native grasses, flowering plants, or variegated leaf plants. The proposed landscaping along the perimeter of the Project site consists of low to medium water use trees. The design of the landscape and irrigation system is intended to meet the State of California's Model Water Efficient Landscape Ordinance (MWELo), which include the following best practices:

- High water use lawn grass will be limited to not more than 50 percent of the landscape, and shall be irrigated by a low volume pop-up rotary system.
- Plant materials will be selected based on their proposed location and micro-climate expectations.
- Hydro-zone irrigation techniques will be incorporated.

(THIS PAGE LEFT BLANK INTENTIONALLY)

Last Saved: 5/10/2017 1:29:05 PM O:\Clients\694_Impact Sciences\12-16-01 WSA-El Dorado Apt\GIS\Figures\Figure 2-2_Land Use.mxd : rthoman



Source: El Dorado Hills Apartments, Site Illustrative KEFHART, April 2016

Symbology

 Project Location

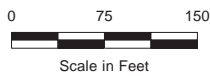


Figure 2-2

Illustrative Site Plan of Proposed Project

El Dorado County
Water Supply Evaluation
for El Dorado Hills Apartments

(THIS PAGE LEFT BLANK INTENTIONALLY)



Water Supply Evaluation El Dorado Hills Apartments

- The plant palette will utilize at least 60 percent native California or low water use plant materials appropriate to the climate zone region.
- Common area and perimeter area landscape irrigation will consist of a combination of water conserving low volume rotary sprays, traditional drip irrigation, and/or an in-line drip irrigation system.
- All electronic irrigation valves shall be connected to an automatic “SMART” irrigation control system.
- The irrigation system shall be designed to meet the most current State and local agency water conservation policies/standards.

The approximate land use areas of the apartment complex’s exterior space are shown in Table 2-2. The “open space” category includes the non-irrigated pathways and impermeable surfaces. The landscaping in the center of the Project site is classified as the public and neighborhood parks land use. The landscaping along the perimeter is classified as Right of Way (ROW), or median landscaping. The areas of the exterior land uses were estimated by assigning polygons over the Project’s preliminary landscape plan and calculating the respective areas using ArcGIS.

Proposed Land Use	Percentage of Exterior Space	Total Gross Area	
		square feet	acres
Open Space	34 %	30,100	0.7
Parks	41 %	37,100	0.9
ROW Landscaping	25 %	22,400	0.5
Total Project			2.1
^(a) Estimated from land use data reported in the El Dorado Hills Apartments Preliminary Landscape (April 2016).			

2.3 Project Projected Water Demand

Residential water use factors are based on the 2015 El Dorado Irrigation District Water Resources and Service Reliability Report (Reliability Report). The residential unit demands presented in the 2015 Report represent the 10-year average unit demand for the El Dorado Hills service area from 2004 through 2013. As a conservative estimate, this EID Report did not use demands from 2014 because they were influenced by drought conservation. More recent water use factors were also provided in the 2015 UWMP and the 2016 Reliability Report, and the water use factors in both of these reports are lower than the factors presented in the 2015 Reliability Report. However, to be conservative, this WSA uses the higher unit water demands from the 2015 Reliability Report. The non-residential water use factors for parks, ROW landscaping, and open space were based on the 2013 WSA prepared for the Central El Dorado Hills Specific Plan³. The Central El Dorado Hills

³ Water Supply Assessment prepared for the Central El Dorado Hills Specific Plan, approved by EID Board of Directors on August 26, 2013 (Tully and Young 2013).



Water Supply Evaluation El Dorado Hills Apartments

Specific Plan was adopted by the County in 2015. These non-residential demand factors are based on available historic meter data for similar facilities served by EID and modified to reflect CALGreen, MWEL0, or other likely landscape designs that limit outdoor water use. The residential land use based water use factors shown in Table 2-3 were applied to the proposed land uses shown in Table 2-1 and Table 2-2 to project total water demands for the Project.

Currently, the zoning of the El Dorado Hills Apartments parcel is classified as general commercial. Using the commercial water use factor shown in Table 2-3 and a gross area of 4.6 acres, the projected total water demand of a commercial development on the Project site would be approximately 8.9 acre-feet per year (AFY). This is the amount of water already included in EID's 2015 UWMP for this site. Conservatively, this demand of 8.9 AFY was not deducted from the Project demands.

Residential Land Use Categories ^(a)	Unit Demand Factor, AFY/DU
Multi-Family Residential Units	0.20
Non Residential Land Use Categories	Unit Demand Factor, AFY/acre ^(c)
Commercial General ^(b)	1.94
Parks ^(b)	2.77
ROW Landscaping ^(b)	3.30
Open Space ^(b)	0.00
^(a) Unit demands were calculated as the 10-year average unit demand for the El Dorado Hills service area using years 2004 through 2013 (Source: EID 2015 Water Resources and Service Reliability Report).	
^(b) Unit demands as reported in Table 2-2 of the Central El Dorado Hills Specific Plan – Water Supply Assessment, approved by EID Board of Directors August 26, 2013.	
^(c) Units are in AFY/acre for all non-residential categories.	

The Project total water demand projection is shown in Table 2-4. As shown in that table, the total gross water demand is 53.9 AFY. The water demand projection includes a 13 percent factor for unaccounted-for water to match the system water loss reported in EID's 2013 Integrated Water Master Plan. However, because the Project will be served by existing water service connections, water system line losses should not significantly increase with the Project's development. Therefore, the applied water loss of 13 percent produces a highly conservative demand projection for the Project.



Water Supply Evaluation El Dorado Hills Apartments

Table 2-4. Projected Water Demand

Component	Quantity	Water Factor	Units	Annual Water Demand, AFY
Multi-Family Residential Units	214 DU	0.20	AFY/DU	42.8
Parks	0.9 acres	2.77	AFY/acre	2.4
ROW Landscaping	0.5 acres	3.30	AFY/acre	1.7
Open Space ^(a)	1.6 acres	0	AFY/acre	0
Unaccounted-for-Water ^(b)	-	-	-	7.0
Total Water Demand				53.9

^(a) Includes parking garage, other hardscape, and exterior open space.
^(b) Based on 13 percent of total water production (El Dorado Irrigation District Integrated Water Resources Master Plan, March 2013).

The total water demand was modified to account for recycled water use for all non-potable water use, as shown in Table 2-5. The result is a projected gross potable water demand of 49.2 AFY and a projected recycled water demand is 4.7 AFY.

Table 2-5. Projected Potable and Recycled Water Demand for Project

Component	Quantity	Water Factor	Units	Annual Water Demand, AFY
Potable Water Component				
Multi-Family Residential Units	214 DU	0.2	AFY/DU	42.8
Unaccounted-for-Water ^(a)	-	-	-	6.4
Total Potable Water Demand				49.2
Recycled Water Component				
Parks	0.9 acres	2.77	AFY/acre	2.4
ROW Landscaping	0.5 acres	3.30	AFY/acre	1.7
Unaccounted-for-Water ^(a)	-	-	-	0.6
Total Recycled Water Demand				4.7

^(a) Based on 13 percent of total water production (El Dorado Irrigation District Integrated Water Resources Master Plan, March 2013).

2.4 Projected Water Supply for Project

The water demands for the Project will be served using EID's existing and future portfolio of potable and recycled water supplies.



Water Supply Evaluation El Dorado Hills Apartments

3.0 REQUIRED DETERMINATIONS

The following determinations must be made, pursuant to SB 610.

3.1 Does SB 610 apply to the Project?

Water Code sections 10910 and 10912 state:

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.*

Based on the following, SB 610 does not apply to the Project. However, as a precautionary measure, the County has decided to use the WSA requirements as a guideline to demonstrate that available water supplies are sufficient and reliable to meet the demands of the Project under normal, single-dry, and multiple-dry year conditions.

3.2 Does SB 221 apply to the 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 (DU). The Project, with its proposed 214 residential dwelling units, is not subject to the requirements of SB 221.

3.3 Who is the identified public water system?

Water Code sections 10910 and 10912 state:

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...



Water Supply Evaluation El Dorado Hills Apartments

As shown on Figure 2-1, the Project is currently located within EID's water service area. Therefore, EID is the identified public water system for the Project.

3.4 Does EID have an adopted Urban Water Management Plan (UWMP) and does the UWMP include the projected water demand for the Project?

Water Code section 10910 states:

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).

EID's most recently adopted UWMP is EID's 2015 UWMP, adopted on June 27, 2016. EID's 2015 UWMP includes existing and projected water demands for existing and projected future land uses to be developed in EID's water service area through the year 2040. The proposed Project area is included within EID's 2015 UWMP.

EID's ability to meet the projected water demands for the Project is described in Section 7.0 of this WSA.



Water Supply Evaluation El Dorado Hills Apartments

4.0 EID SERVICE AREA

A general description of the EID service area and projected growth rates are provided below.

4.1 General Description

EID encompasses approximately 220 square miles on the western slope of the Sierra Nevada Mountains and serves a population of approximately 110,000 people in El Dorado County. The service area is bounded by Sacramento County to the west and the Pollock Pines/Sly Park area to the east, and ranges from 500 to more than 4,000 feet in elevation.

EID is primarily located in two major watersheds, the South Fork American River in the north and the North Fork of the Cosumnes River in the south, and is hydrologically split by the Placerville Ridge and Highway 50, which is generally located between these two drainage watersheds. Although the rivers drain east to west, the minor streams trend northwest toward the American River and southwest toward the Cosumnes River. The ridges generally trend in a west to east direction.

For planning purposes, EID has divided its contiguous water service area into three regions based on supplies and service areas:

- **El Dorado Hills/ Cameron Park Region:** El Dorado Hills, Bass Lake, and Cameron Park
- **Western Region:** Shingle Springs, Logtown, and Diamond Springs
- **Eastern Region:** Pleasant Valley, Sly Park, Pollock Pines, Camino, Placerville, and Lotus/Coloma

EID's service area is divided into 14 contiguous service zones and two satellite water systems in Strawberry and Outingdale. The boundary between zones is typically defined by the pressure zones served by a specific storage tank or reservoir.

El Dorado Hills is a part of EID's contiguous water system. The El Dorado Hills/Cameron Park Region is divided into Zones 1, 2, and 4. The Project is located in Service Zone 2 (El Dorado Hills).

4.2 EID Growth Rates

Over the years, EID has transitioned from serving mainly agricultural customers, to one that serves primarily residential, commercial, and industrial sectors, although agriculture remains a significant water user. The majority of growth in El Dorado County has occurred in the El Dorado Hills and Cameron Park areas, mirroring the steady increase in population growth of the Sacramento metropolitan area.

Several studies have estimated population growth rates in the EID service area. The growth rates used to project future development in EID's 2013 IWRMP are shown in Table 4-1. The El Dorado County General Plan 2008 Housing Element had an average annual growth rate of approximately 2 percent through 2025. While this is lower than the rates presented in Table 4-1, it is expected that the average growth rate within the EID's service area will be higher, particularly in the



Water Supply Evaluation El Dorado Hills Apartments

El Dorado Hills and Cameron Park areas, due to their proximity to Sacramento, as well as the population density and availability of water when compared to other, more remote areas in the County. EID's 2013 IWRMP states that the District-wide average annual growth rate beyond 2020 is approximately 2.5 percent.

Table 4-1. Projected Growth Rates by Region, percent				
	Eastern ^(a)	Western ^(a,b)	El Dorado Hills / Cameron Park ^(a,c)	District-wide ^(d)
2009-2015	0.15	0.82	1.19	-
2016-2020	0.30	1.65	2.38	-
Beyond 2020	0.61	3.29	4.75	2.5
^(a) Based on EID's 2013 IWRMP, Table 9-2 ^(b) Includes Zones 1, 4, 5, 6, and 7 ^(c) Includes Zone 2 ^(d) Based on EID's 2013 IWRMP, Table 8-4				

The EID 2015 UWMP used a growth rate of 1.03 percent through 2040 to match El Dorado County's estimate of growth due to implementation of the County General Plan, based on a 2013 memorandum from BAE Urban Economics (Appendix C-1 of EID 2015 UWMP). The UWMP does not break down the growth rate by region of EID's service area.



Water Supply Evaluation El Dorado Hills Apartments

5.0 EID WATER DEMANDS

Water Code section 10910 states:

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 EID’s water demands have been taken primarily from EID’s 2015 UWMP, which was adopted in June 2016. The Project is located in EID’s El Dorado Hills Water Service Zone 2.

The following topics are covered in this section:

- EID’s Existing and Projected Water Demand
- Dry Year Water Demand

5.1 EID Existing and Projected Water Demand

The existing and projected total water demand for EID’s El Dorado Hills Water Service Zone 2 in 5-year increments through 2035 and buildout, based on the EID’s 2013 IWRMP, is shown in Table 5-1. The high growth scenario is based on the growth rates presented in Table 4-1. The low growth scenario was developed by EID staff and considers the recent economic downturn and the impact on development in EID’s service area. This lower growth scenario starts with the 2012 maximum day demand and was developed with the expectation that growth throughout the service area will be slow for two to three more years while the economy continues to recover.

According to EID’s 2016 Water Resources and Service Reliability Report, the calculated potential water demand for the El Dorado Hills service area in 2016 is 9,483 AF, which is less than even the low growth projections, likely due to water conservation efforts as a result of the recent drought.

Table 5-1. Projected Future Water Demand for EID’s El Dorado Hills Water Service Zone 2, AFY ^(a)						
Total Water Demand	2015	2020	2025	2030	2035	Buildout
High Growth Scenario	13,468	15,045	18,741	23,373	26,578	26,578
Low Growth Scenario	10,461	11,764	14,837	17,469	19,645	26,578

^(a) Based on EID’s 2013 Integrated Water Resources Master Plan, Table 9-1.

EID’s water supplies for the El Dorado Hills Water Service Zone 2 are not exclusive. Therefore, to evaluate the total supplies available to the El Dorado Hills service zone, EID’s total contiguous water service area demands need to be evaluated. EID’s projected potable and recycled water demand in 5-year increments through 2040, as stated in the 2015 UWMP, is shown in Table 5-2. The assumptions used to project water demand in the UWMP are discussed below.



Water Supply Evaluation El Dorado Hills Apartments

Table 5-2. Projected EID Water Demand in 5-year Increments, AFY ^(a)					
	2020 ^(b)	2025 ^(b)	2030 ^(b)	2035 ^(b)	2040
Potable					
Potable Water Demand without Project	40,318	43,709	47,441	49,773	52,609
Project	49.2	49.2	49.2	49.2	49.2
Total Potable Water Demand	40,367	43,758	47,490	49,822	52,658
Recycled Water					
Recycled Water Demand without Project	3,160	3,125	3,256	3,354	3,459
Project ^(c)	4.7	4.7	4.7	4.7	4.7
Total Recycled Water Demand	3,165	3,130	3,261	3,359	3,464
Total Water Demand with Project	43,532	46,888	50,751	53,181	56,122
^(a) Water demand projections include a 13% unaccounted-for system loss and include potable and non-potable demands. ^(b) Demands for 2020 – 2040 as reported in Table 4-7 of the EID 2015 UWMP, approved by EID Board of Directors June 27, 2016. ^(c) Recycled water is assumed to be used for irrigation of the Project's park (0.9 acres) and ROW landscaping (0.5 acres). See Table 2-5.					

The projected demand used in the EID 2015 UWMP uses 2013 as a baseline, which is different from the baseline used in EID's 2013 IWRMP. The IWRMP, adopted by the EID Board in March 2013, began several years before its adoption, and at the time, used 2008 as a baseline. Given on-going conservation efforts, adoption of new rate structures, and other drivers, EID has seen an overall decrease in the annual customer use since the IWRMP selected its baseline⁴. Therefore, EID considers the 2013 baseline used in the UWMP to be more representative of the baseline use expected into the future from EID's existing customers and uses.

EID's projected water demand at 2040 based on existing water demand, on-going development projects with approved water supply, the projected water demand of the Project, and undefined future developments is also summarized in Table 5-3.

⁴ Since 2008, EID's annual diversion have dropped from a high in 2008 of about 45,000 AFY to 35,678 AFY, 33,453 AFY, and 36,580 AFY in 2010, 2011, and 2012, respectively.



Water Supply Evaluation El Dorado Hills Apartments

Table 5-3. Projected EID's Future Water Demand at 2040, AFY

	Total ^(a)
Total "Existing" Potable Water Demand ^(b)	27,846
Total "Existing" Recycled Water Demand ^(b,c)	2,598
Future Developments with Approved Water Supply ^(d)	5,164
Subtotal (without Project)	35,608
Project ^(e)	53.9
Subtotal (with Project)	35,662
Undefined Future Developments ^(f)	20,460
Total Water Demand^(g)	56,122

^(a) Water demand projections include a 13% unaccounted-for system loss and include potable and non-potable demands.
^(b) 2015 Actual Demands as reported in the EID 2015 UWMP, approved by EID Board of Directors on June 27, 2016, Appendix A Table 4-3.
^(c) Includes 2,349 AFY delivered to landscape and commercial uses as well as 249 AFY as system losses.
^(d) Projected demand from new customers as reported in Table 4-6 of EID's 2015 UWMP.
^(e) Based on Project's total demand from Table 2-4.
^(f) Balance between Subtotal (with Project) and Total Water Demand.
^(g) See 2040 projected total water demand in Table 5-2.

5.2 Dry Year Water Demand

EID currently has a Drought Action Plan that was adopted by EID Board of Directors on February 2014. Subsequent revisions to the Plan were approved in 2014 and 2015. EID's Drought Action Plan describes four stages of short-term water demand reduction measures that would be required during years when potable water supply is reduced. The water shortage stages, and their respective anticipated reduction in potable water demand, are shown in Table 5-4.

Table 5-4. Water Shortage Contingency Plan Projected Demand Reduction

Water Shortage Stage Description	Projected Demand Reduction, percent
Baseline Water Conservation	0
Stage 1 Drought	15
Stage 2 Drought	30
Stage 3 Drought	50
Stage 4 Drought	Greater than 50

Source: EID 2015 UWMP

In February 2014, the EID Board of Directors declared a Stage 2 Drought, which was precipitated by a State-wide mandate for water conservation. Specifically, a 24 percent demand reduction target relative to 2013 water usage was imposed on EID by the State.



Water Supply Evaluation El Dorado Hills Apartments

The projected future water demand shown above in Table 5-2 is based on future normal hydrologic years.

5.2.1 Single Dry Year Demand Conditions

As indicated in the Central El Dorado Hills WSA and 2015 UWMP, EID anticipates a reduction in available water supplies, and an increase in water demand during single-dry year hydrologic conditions. The increase in water demand is based on the following:

- Landscape irrigation demands will increase to reflect the generalized earlier start of the landscape irrigation season due to limited rainfall in the single driest year. Since this increase only applies to the outdoor portion of a customer's demand, an adjustment factor of 5 percent is applied to the total normal-year water demand values.
- Historically, during single dry year circumstances, EID has not implemented its shortage contingency plan, since the extent of the dry conditions into future years is unknown.

As a result of these factors, EID expects the Project water demand and those of the other existing and planned uses to increase in a single dry year by 5 percent above the demand expected under normal hydrologic circumstances.

5.2.2 Multi-Dry Year Demand Condition

As indicated in the 2015 UWMP, during a multi-dry year, EID anticipates a reduction in available water supplies and an increase in projected demands. However, when entering the second and third year of a sequence of dry-years, EID would implement necessary policies to manage limited water supplies. Demands over a series of three dry years are adjusted as follows:

- Year 1 – The first year mimics a “single-dry year” condition, where demands increase approximately 5 percent of normal year demands, and EID shortage policies are not yet invoked.
- Year 2 – The demands again mimic a “single-dry year” and would be expected to increase by 5 percent above normal year conditions. However, when recognizing a second dry-year, EID would invoke the first stage of the Drought Action Plan which sets a reduction goal of 15 percent. As part of this stage, EID implements drought water rates among other specified activities to encourage conservation. To be conservative, however, EID assumes that the demand reduction achieved under Stage 1 would only be 5 percent of the already higher single dry-year demand (approximately equal to normal year demand).
- Year 3 – Upon entering the third dry year, EID would invoke the second stage of the Drought Action Plan which sets a reduction goal of 30 percent. Under this Stage, EID increases efforts to reduce demand. EID assumes that the savings achieved under Stage 2 is estimated to be 10 percent of the already higher single dry-year demand (approximately 95 percent of normal year demand).



Water Supply Evaluation El Dorado Hills Apartments

As a result of these factors, the water demand in EID’s service area is expected to increase in the first year of a multi dry-year condition above that projected during normal hydrologic circumstances. In subsequent years, the demand will be reduced as elements of EID’s Drought Action Plan are implemented.



Water Supply Evaluation El Dorado Hills Apartments

6.0 EID WATER SUPPLIES

Key topics addressed in this section include:

- Regulatory Background
- EID Existing and Projected Potable Water Supplies
- EID Existing and Projected Recycled Water Supplies

6.1 Regulatory Background

Water Code section 10910 states:

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, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts

10910(d)(2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:

- (A) Written contracts or other proof of entitlement to an identified water supply.*
- (B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.*
- (C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.*
- (D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.*

10910(e) If no water has been received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts, the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall also include in its water supply assessment pursuant to subdivision (c), 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, or the city or county if either is required to comply with this part pursuant to subdivision (b), has identified as a source of water supply within its water supply assessments.

It is anticipated that water supply for the Project would be treated surface water, partially offset with recycled water provided by EID.

Proponents of the Project will provide their proportionate share of required funding to EID for the acquisition and delivery of treated potable, and possibly recycled water supplies to the Project area through connection fees and other means. This arrangement will be outlined within the Development



Water Supply Evaluation El Dorado Hills Apartments

Agreement between the Project landowners and the County. The Development Agreement will be completed and approved as part of the County's formal land use actions.

The summary descriptions of EID's water supplies, provided below, have been taken for the most part, from EID's 2015 UWMP.

6.2 EID Existing and Projected Potable Water Supplies

EID's potable water system is comprised of a main contiguous system which serves over 95 percent of its customers, and two satellite systems. Three principle diversion points that deliver water into the main system are:

1. EID owned and operated Sly Park Dam and Jenkinson Lake;
2. EID owned and operated El Dorado Hydroelectric Federal Energy Regulatory Commission (FERC) Project 184 (Project 184) at Forebay Reservoir; and
3. Folsom Reservoir via two USBR water service contracts and State Water Right Permit 21112.

The two satellite diversions include potable water deliveries to:

- Outingdale from the Middle Fork of the Cosumnes River, and
- Strawberry from the South Fork American River.

EID also diverts water into the Crawford Ditch from the North Fork of the Cosumnes River as a raw water source. Aside from the USBR Contract, EID does not currently purchase water from any wholesale supplier. In the future, the EID expects to purchase water wholesale from the El Dorado County Water Agency (EDCWA), which is pursuing a USBR Contract under Public Law 101-514.

EID's existing sources of water supply include both surface water and recycled water. Key topics of interest described herein include:

- Surface Water from Sly Park Dam and Jenkinson Lake;
- Surface Water from El Dorado Forebay (Project 184);
- Surface Water from Folsom Reservoir;
- Surface Water via State water right permit 21112;
- Surface Water Reliability; and
- Additional Planned Future Potable Water Supplies.



Water Supply Evaluation El Dorado Hills Apartments

6.2.1 Surface Water from Sly Park Dam and Jenkinson Lake

Jenkinson Lake is EID's main storage reservoir and has a maximum capacity of 41,033 AF. Since 2003, EID not only operates and maintains the Jenkinson Lake and Sly Park Dam facilities, including recreational aspects, but also holds the water rights. The average annual use from this facility is approximately 23,000 AF, however, EID's annual water right is for 33,400 AF of total beneficial use. This water supply is used entirely within the EID's contiguous service area. Under average flow conditions, Jenkinson Lake is operated to maintain 14,000 to 18,000 AF of carryover storage each year.

6.2.2 Surface Water from El Dorado Forebay

Project 184 includes reservoirs and associated dams, 22 miles of canals, a 21-Megawatt powerhouse, and other ancillary facilities. The sources of this water supply include natural flows in the South Fork American River and its tributaries, and stored water in Silver, Aloha, Echo, and Caples Lakes. Except for a small diversion to serve the Strawberry satellite service area, the supply is diverted from the South Fork American River and is conveyed via the El Dorado Canal to the El Dorado Forebay. Some additional water is obtained by diversions into the El Dorado Canal from streams tributary to the South Fork American River.

Some of this particular water right can be diverted to Jenkinson Lake through the Hazel Creek Tunnel (HCT). In 2008, 2,754 AF was diverted via the HCT to Jenkinson Lake, equating to a total diversion of about 15,080 AF, the maximum water right.

El Dorado Forebay is filled by the surface water supply from the Project 184 facilities upstream in the South Fork American River basin and at Echo Lake. EID has a consumptive water entitlement of 15,080 AFY delivery at the Forebay. Since the full entitlement can be provided in all years, including the most severe historic single dry year of 1977, this source of water is considered assured, and not subject to shortage from hydrologic droughts.

6.2.3 Surface Water from Folsom Reservoir

Surface water from Folsom Reservoir is provided to the El Dorado Hills area. As previously described, EID has a number of water supply sources that are diverted at Folsom Reservoir, including 7,550 AF USBR CVP contract water and 4,560 AF by means of a USBR Warren Act contract. Each is described below.

6.2.3.1 USBR Water Service Contract

By contract with the USBR for Folsom water, EID is entitled to 7,550 AFY. The contract includes provisions for use in a particular area that generally encompasses the El Dorado Hills and Cameron Park areas. The Folsom Project is operated by the USBR as part of the Central Valley Project (CVP), a multipurpose project that provides flood control, hydroelectricity, drinking water, and water for irrigation.



Water Supply Evaluation El Dorado Hills Apartments

While the USBR Contract can supply a maximum of 7,550 AFY during normal and wetter years, the USBR utilizes a municipal and industrial (M&I) Shortage Policy to allocate supplies when full deliveries cannot be made. The USBR can impose shortages as a result of drought, unavoidable causes, or restricted operations resulting from legal obligations.

The M&I Shortage Policy indicates that during periods of water shortage, allocations for municipal and industrial water supply can be reduced based on inflow and storage criteria with various adjustments made for population growth, use of non-CVP supplies, or extraordinary conservation measures. EID calculates its dry-year reduction based on three years of full use of its contract allocation as well as meeting its Health and Safety baseline needs which equates to a reduction of the USBR Contract supply from 7,550 to approximately 3,775 AFY or less (~50% reduction) depending on historic use. As documented in the 2015 UWMP, for conservative planning purposes given the allocation in 2015, this supply is further constrained in the third year of the three-year multiple dry year scenario, equating to 1,888 acre-feet. This extra reduction is anticipated because EID anticipates that in future dry years these supplies will be cut to Health and Safety levels under the CVP M&I Shortage Policy.

6.2.3.2 Warren Act Contract

Diversions from Weber Dam, Weber Creek, Slab Creek, and Hangtown Creek are available to be diverted at Folsom Reservoir, with approximately 4,560 AFY of supply available from these sources. In 2011, EID entered into a 40-year Warren Act Contract with the USBR for a maximum contract amount of 4,560 AFY from these sources, which reflects the best estimate associated with these various water rights in a normal water year. The contract total also assumes a 15 percent conveyance loss between the former points of diversion and Folsom Reservoir, which can be adjusted at a later date by mutual agreement without amending the contract. The annual water diversion season is limited to April through November 15, and the water must be used for municipal and industrial purposes in the El Dorado Hills/Cameron Park area. Unlike CVP contracts, this contract has no USBR-controlled shortage provisions. However, the actual yield is expected to vary from year to year based on hydrologic conditions, with the amount taken in any given year being based on the amount of water introduced into Folsom Reservoir by Weber Dam, Weber Creek, Slab Creek, and Hangtown Creek. The estimated dry-year yield associated with this contract is 3,000 AFY.

6.2.3.3 Summary of Folsom Reservoir Supply

Altogether the EID's two Folsom Reservoir supplies contribute approximately 12,110 AFY to the EID's supply during a normal year.

6.2.4 Surface Water via Permit 21112

EDCWA and EID applied to the State Water Resources Control Board (SWRCB) to obtain water rights for consumptive use of waters previously stored and released for power generation from Caples Lake, Silver Lake, and Lake Aloha, as well as certain direct diversions from the South Fork American River, all of which have been used by Project 184 for hydroelectric power generation or instream flows. EDCWA later assigned all of its water under this application to EID. The SWRCB granted the right to appropriate 17,000 AFY of water. Permit 21112 allows EID to make direct



Water Supply Evaluation El Dorado Hills Apartments

diversions from the South Fork American River at Folsom Reservoir; to store in Caples, Silver, and Aloha Lakes; and to redivert the water released from storage. The sole approved point of diversion is at Folsom Reservoir.

The water right authorized under Permit 21112 is for diversion and consumptive use anywhere within the EID's contiguous service area. There are no cutback provisions on this supply.

6.2.5 Surface Water Supply Reliability

The anticipated reliability of potable water supplies in Normal, Single Dry, and Multi-Dry hydrologic conditions is shown in Table 6-1. Surface water supplies from Folsom Reservoir via the USBR and Warren Act Contracts are only provided to the El Dorado Hills service area. Surface water supplies from Jenkinson Lake, the El Dorado Forebay, and Folsom Reservoir via Permit 21112 provide water supplies for EID's contiguous water system, which includes the El Dorado Hills service area.

Table 6-1. EID Surface Water Supply Reliability, AFY						
Contracted Water Supply	Maximum Contracted Volume	Normal Year	Single Dry Year	Multiple Dry Years		
				Year 1	Year 2	Year 3
Jenkinson Lake ^(a)	33,400	23,000	20,920	20,920	17,000	15,500
El Dorado Forebay ^(b)	15,080	15,080	15,080	15,080	15,080	15,080
Folsom Reservoir – USBR Contract ^(c)	7,550	7,550	3,775	3,775	3,775	1,888
Folsom Reservoir- Warren Act Contract ^(d)	4,560	4,560	3,000	3,000	3,000	3,000
Folsom Reservoir- Permit 21112	17,000	17,000	17,000	17,000	17,000	17,000
Total Water Supply Available	77,590	67,190	59,775	59,775	55,855	54,355
Percent of Normal Year		100%	89%	89%	83%	81%

Source: EID 2015 UWMP, approved by EID Board of Directors June 27, 2016, Table 3-3

(a) License 11835 and 11836. The 20,920 AFY allocation is the modeled safe-yield of this water right during a single dry-year. For planning purposes, EID assumes the second and third dry years of a three-year period to be 17,000 AFY, and 15,500 AFY (EID 2015 UWMP, 2016).

(b) Project 184.

(c) CVP Contract 14-06-220-1375A-LTR1.

(d) License 2184 and Pre-1914 Water Rights.

According to EID's 2016 Water Resources and Service Reliability Report, the total available water supply for the El Dorado Hills service area is 23,775 AF. The total El Dorado Hills supply includes 3,775 AF from the USBR contract, 17,000 AF from the recently secured Permit 21112, and 3,000AF from the Ditch/Weber Reservoir water rights Warren Act contract.



Water Supply Evaluation El Dorado Hills Apartments

6.2.6 Additional Planned Future Potable Water Supplies

EID has evaluated a number of projects for providing the additional water supplies and required infrastructure needed to provide reliable supplies in drought periods and to meet the projected growth in water demand. EID's planned future water supply projects include the Public Law 101-514 supply and the Sacramento Municipal Utility District (SMUD)-El Dorado Agreement. These water supply projects are described in further detail below.

6.2.6.1 *Public Law 101-514 Supply*

Public Law 101-514 transferred unallocated Central Valley Project (CVP) supply to local water purveyors, allocating 15,000 AFY to El Dorado County. Under this new contract, up to 15,000 AFY of water could be made available from Folsom Reservoir. EDCWA could make this new CVP water available to EID and the Georgetown Divide Public Utility District (GDPUD) for use within their respective service areas. Public Law 101-514 does not specify how much of the 15,000 AFY could be allocated to each District; however, it has been tentatively assumed by EID that the new CVP allocation could be split equally between EID and GDPUD. For EID, water could be diverted at the Folsom Reservoir intake and delivered to the El Dorado Hills and Cameron Park service areas. According to the Central El Dorado Hills Specific Plan WSA (2013), this 7,500 AFY allocation would be subject to the USBR Shortage Policy for Municipal and Industrial Contractors of maximum dry year reductions of 25 percent, equating to 1,875 acre-feet.

The Public Law 101-514 water supply would be utilized once the following have been completed:

- The environmental documentation has been certified by the EDCWA and the USBR has issued a Finding of No Significant Impact.
- The USBR has received regulatory approvals under the federal Endangered Species Act.
- The USBR and EDCWA have executed a Water Service Contract.
- EDCWA and EID have executed a subcontract for sale of the water from the EDCWA to EID.

According to EID's 2015 UWMP, EID plans to have the Public Law 101-514 supplies available beginning in 2020.

6.2.6.2 *El Dorado-SMUD Agreement*

In the El Dorado - SMUD Cooperation Agreement, EDWPA secured diversion and storage rights in the SMUD Upper American River Project (UARP) facilities on behalf of EID, El Dorado County, EDCWA, and GDPUD. The Agreement enables the El Dorado Parties to avoid the costs of permitting issues associated with the construction of new water diversion and storage facilities by securing use of existing facilities.



Water Supply Evaluation El Dorado Hills Apartments

As long as the El Dorado Parties secure the legal right to divert water, the Agreement requires SMUD to make deliveries to the El Dorado Parties from the UARP, including deliveries to and from carryover storage, of up to 30,000 AFY, and 40,000 AFY after year 2025. This includes the right to carry-over as much as 15,000 AFY for drought and other emergencies.

EID could take its diversion either at the turnout of the White Rock Penstock, near its current intake facility on Folsom Reservoir, or at another appropriate location.

Water available for withdrawal under the Project will be consistent with the operational conditions set forth in the UARP FERC license conditions. Because the UARP is operating as a hydroelectric project, the availability of any portion of the 40,000 AFY depends on any combination of the following sources of water:

- Water not originating from storage, but used for meeting UARP FERC license required minimum flows below Slab Creek Reservoir.
- Water not originating from storage, but directly diverted for power production at UARP facilities and to meet EDWPA delivery requirements.
- Water released from storage in Loon Lake, Union Valley, and Ice House Reservoirs for power production or meeting in-stream flows or to meet EDWPA delivery requirements.

This agreement allows for 30,000 AF of water storage in SMUD reservoirs under normal year conditions through 2025 and 40,000 AF thereafter; with an additional 15,000 AF available for carryover purposes. For conservative Normal Year planning purposes, EID projects using 30,000 AF of available supply. Although the available supply is 15,000 AF in a single dry year, in preparing for multiple dry years, EID anticipates using only 5,000 AFY for a three-year period. This conservative approach is taken because EID is only entitled to 15,000 AF if the net daily carryover storage is greater than 125,000 AF. If the net daily carryover storage is between 100,000 and 125,000 AF, then EID can receive up to 7,500 AF. If the carryover storage is less than 100,000 AF then, the maximum delivery is 5,000 AF. Without knowing the net daily storage that will exist in single dry years, EID is conservatively planning to only receive 5,000 AF in all dry year types. Five thousand AFY is shown to be available in single dry years and multiple dry years in EID's 2015 UWMP. According to the 2015 UWMP, the CEQA process is anticipated to be completed by 2020 with award of water rights shortly thereafter. This project's expected completion date is in 2025.

6.2.7 Future Potable Water Supply Reliability

A summary of EID's expected future potable water supplies during hydrologic Normal, Single Dry, and Multiple Dry Years, including the full contracted volumes is shown in Table 6-2. According to EID's 2015 UWMP, the expected completion dates for the Public Law 101-514 supply and SMUD-El Dorado Agreement projects are anticipated to be 2020 and 2025, respectively.



Water Supply Evaluation El Dorado Hills Apartments

Table 6-2. EID Future Water Supply Projects, AFY

Project Name	Maximum Contracted Volume	Normal Year	Single Dry Year	Multiple Dry Years		
				Year 1	Year 2	Year 3
PL 101-514 ^(a)	7,500	7,500	3,750	3,750	3,750	1,875
UARP/SMUD ^(b,c)	40,000	30,000	5,000	5,000	5,000	5,000
Total Water Supply Available	47,500	37,500	8,750	8,750	8,750	6,875

Source: EID 2015 UWMP, approved by EID Board of Directors June 27, 2016, Table 3-1 and 3-3

(a) The 7,500 AFY allocation is subject to the USBR Shortage Policy (maximum dry year reductions of 25%).

(b) The maximum contracted supply is shown as 40,000 AFY based on the El Dorado - SMUD Cooperation Agreement. However, only 30,000 AFY is allowed to be stored in SMUD reservoirs under normal year conditions through 2025. The availability of water in dry years is independent of the normal year supply being 30,000 or 40,000 AF as provided in EID's 2015 UWMP.

(c) Available supply is 15,000 AF in a single dry year, but in preparing for multiple dry years EID anticipates using only 5,000 AFY for a three-year period. This conservative approach is taken because EID is only entitled to 15,000 AF if the net daily carryover storage is greater than 125,000 AF. If the net daily carryover storage is between 100,000 and 125,000 AF, then EID can receive up to 7,500 AF. If the carryover storage is less than 100,000 AF, then the maximum delivery is 5,000 AF. Without knowing the net daily storage that will exist in single dry years, EID is conservatively planning to only receive 5,000 AF in all dry year types. Five thousand AFY is shown to be available in single dry years and multiple dry years in EID's 2015 UWMP.

6.2.8 Surface Water Supply Summary

The full contracted volumes of EID's existing and planned future potable water supplies are summarized in Table 6-3. A summary of EID's existing and additional planned future potable water supplies during hydrologic Normal, Single Dry, and Multiple Dry Years is shown in Table 6-4.

Table 6-3. EID Projected Surface Water Contract Supplies

Wholesale Sources	Projected Volume, AFY				
	2020	2025	2030	2035	2040
Existing and Planned Sources of Water – Maximum Contracted Volume, AFY					
Jenkinson Lake	33,400	33,400	33,400	33,400	33,400
El Dorado Forebay	15,080	15,080	15,080	15,080	15,080
Folsom Reservoir- USBR Contract	7,550	7,550	7,550	7,550	7,550
Folsom Reservoir- Warren Act Contract	4,560	4,560	4,560	4,560	4,560
Folsom Reservoir- Permit 21112	17,000	17,000	17,000	17,000	17,000
CVP supply (Public Law 101-514)	7,500	7,500	7,500	7,500	7,500
UARP supply (El Dorado-SMUD Agreement)	-	40,000	40,000	40,000	40,000
Total	85,090	125,090	125,090	125,090	125,090

Source: EID 2015 UWMP, approved by EID Board of Directors June 27, 2016, Table 3-1 and Appendix A Table 6-9

Table 6-4. EID Projected Supply Reliability During Hydrologic Normal, Single Dry, and Multiple Dry Years

Wholesale Sources	Projected Volume, AFY			
	2020	2025	2030	2035
Normal Year Water Supplies, AFY				
Jenkinson Lake	23,000	23,000	23,000	23,000
EI Dorado Forebay	15,080	15,080	15,080	15,080
Folsom Reservoir- USBR Contract	7,550	7,550	7,550	7,550
Folsom Reservoir- Warren Act Contract	4,560	4,560	4,560	4,560
Folsom Reservoir- Permit 21112	17,000	17,000	17,000	17,000
CVP supply (Public Law 101-514)	7,500	7,500	7,500	7,500
UARP supply (EI Dorado-SMUD Agreement)	-	30,000	30,000	30,000
Total	74,690	104,690	104,690	104,690
Single Dry Year Water Supplies, AFY				
Jenkinson Lake	20,920	20,920	20,920	20,920
EI Dorado Forebay	15,080	15,080	15,080	15,080
Folsom Reservoir- USBR Contract	3,775	3,775	3,775	3,775
Folsom Reservoir- Warren Act Contract	3,000	3,000	3,000	3,000
Folsom Reservoir- Permit 21112	17,000	17,000	17,000	17,000
CVP supply (Public Law 101-514)	3,750	3,750	3,750	3,750
UARP supply (EI Dorado-SMUD Agreement)	-	5,000	5,000	5,000
Total	63,525	68,525	68,525	68,525
Multi-Dry Year Water Supplies, First Year, AFY				
Jenkinson Lake	20,920	20,920	20,920	20,920
EI Dorado Forebay	15,080	15,080	15,080	15,080
Folsom Reservoir- USBR Contract	3,775	3,775	3,775	3,775
Folsom Reservoir- Warren Act Contract	3,000	3,000	3,000	3,000
Folsom Reservoir- Permit 21112	17,000	17,000	17,000	17,000
CVP supply (Public Law 101-514)	3,750	3,750	3,750	3,750
UARP supply (EI Dorado-SMUD Agreement)	-	5,000	5,000	5,000
Total	63,525	68,525	68,525	68,525
Multi-Dry Year Water Supplies, Second Year, AFY				
Jenkinson Lake	17,000	17,000	17,000	17,000
EI Dorado Forebay	15,080	15,080	15,080	15,080
Folsom Reservoir- USBR Contract	3,775	3,775	3,775	3,775
Folsom Reservoir- Warren Act Contract	3,000	3,000	3,000	3,000
Folsom Reservoir- Permit 21112	17,000	17,000	17,000	17,000
CVP supply (Public Law 101-514)	3,750	3,750	3,750	3,750
UARP supply (EI Dorado-SMUD Agreement)	-	5,000	5,000	5,000
Total	64,605	64,605	64,605	64,605
Multi-Dry Year Water Supplies, Third Year, AFY				
Jenkinson Lake	15,500	15,500	15,500	15,500
EI Dorado Forebay	15,080	15,080	15,080	15,080
Folsom Reservoir- USBR Contract	1,888	1,888	1,888	1,888
Folsom Reservoir- Warren Act Contract	3,000	3,000	3,000	3,000
Folsom Reservoir- Permit 21112	17,000	17,000	17,000	17,000
CVP supply (Public Law 101-514)	1,875	1,875	1,875	1,875
UARP supply (EI Dorado-SMUD Agreement)	-	5,000	5,000	5,000
Total	54,343	59,343	59,343	59,343

Source: EID 2015 UMMIP, approved by EID Board of Directors June 27, 2016, Table 3-1 and 3-3.

(THIS PAGE LEFT BLANK INTENTIONALLY)



Water Supply Evaluation El Dorado Hills Apartments

6.3 EID Existing and Projected Recycled Water Supplies

EID produces recycled water at both the El Dorado Hills and Deer Creek wastewater treatment plants which is then used by EID customers for irrigation of residential landscape, commercial landscape, recreation turf and in a few areas for fire suppression and dust control. The availability of recycled water is currently limited to the El Dorado Hills and Cameron Park areas.

EID uses recycled water to meet some current non-potable demands within its service area. EID may expand its development and use of recycled water in the future to meet a portion of the non-potable demands associated with the Project and other anticipated new demands. EID's 2015 recycled water use was 2,349 acre-feet per year⁵. This use is assumed to expand incrementally over time. According to EID's 2015 UWMP, EID anticipates a supply of 3,500 AF of recycled water per year within its service area by 2040.

Recycled water availability is an outcome of increased municipal and domestic demand and wastewater production as a byproduct of this demand. In other words, annual recycled water production capabilities are based on the total wastewater flows to the treatment plants. With the population and industrial demands growing in this region, the availability of recycled water will increase. EID is taking a conservative view of the growth in recycled water supply based upon its current production levels, estimated regional population growth, facility expansion identified in its 2013 IWRMP and WWFMP, treated water discharge requirements, and its ability to capture and store recycled water supplies in the future.

6.3.1 Recycled Water Supply Reliability

Recycled water supply is not subject to climatic limitations as much as surface water supplies and, therefore, is expected to be available in all hydrologic year types. Recycled water supplies during dry years are assumed to be the same as Normal Year supplies. Table 6-5 shows the incremental recycled water assets that would be available over time for EID's non-potable water uses. The projected recycled water supplies are the same values reported in EID's 2015 UWMP.

Year	Normal Year	Single Dry Year	Multiple Dry Years		
			Year 1	Year 2	Year 3
2016 ^(b)	2,500	2,500	2,500	2,500	2,500
2020	2,800	2,800	2,800	2,800	2,800
2025	3,000	3,000	3,000	3,000	3,000
2030	3,100	3,100	3,100	3,100	3,100
2035	3,300	3,300	3,300	3,300	3,300
2040 ^(c)	3,500	3,500	3,500	3,500	3,500

(a) Source: EID 2015 UWMP.
 (b) EID's 2015 recycled water supply was 2,349 AFY (Source: EID 2016 Water Resources and Service Reliability Report) and its use is assumed to expand incrementally over time
 (c) By 2040, EID anticipates a supply of 3,500 AFY (Source: EID 2015 UWMP)

⁵ EID Water Resources and Service Reliability Report, September 2016, Table 12



Water Supply Evaluation El Dorado Hills Apartments

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

Water Code section 10910 states:

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.

According to EID's 2016 Water Resources and Service Reliability Report, the total available water supply that is limited to the El Dorado Hills service area (23,775 AF), satisfies the projected normal year potential water demand for 2016 (9,483 AF). Therefore, under current conditions, the El Dorado Hills service area has approximately 14,292 AF of unallocated water supply. The current unallocated water supply significantly exceeds the 53.9 AFY total water demand of the Project.

The comparison of projected potable water demand and supplies for the 20-year planning period is shown in Table 7-1. A similar comparison of projected recycled water demand and supplies for the 20-year planning period is shown in Table 7-2.



Water Supply Evaluation El Dorado Hills Apartments

Table 7-1. Summary of Potable Water Demand Versus Supply During Hydrologic Normal, Single Dry, and Multiple Dry Years for EID, AFY^(a)

Hydrologic Condition		Supply and Demand Comparison				
		2020	2025	2030	2035	2040
Normal Year						
Available Surface Water Supply		74,690	104,690	104,690	104,690	104,690
Total Water Demand (with Project) ^(b)		40,367	43,758	47,490	49,822	52,658
Potential Surplus (Deficit)		34,323	60,932	57,200	54,868	52,032
Single Dry Year						
Available Surface Water Supply		63,525	68,525	68,525	68,525	68,525
Total Water Demand (with Project)		42,385	45,946	49,865	52,313	55,291
Potential Surplus (Deficit)		21,140	22,579	18,660	16,212	13,234
Multiple Dry Years						
Multiple-Dry Year First Year Supply	Available Surface Water Supply	63,525	68,525	68,525	68,525	68,525
	Total Water Demand (with Project)	42,385	45,946	49,865	52,313	55,291
	Potential Surplus (Deficit)	21,140	22,579	18,660	16,212	13,234
Multiple-Dry Year Second Year Supply	Available Surface Water Supply	59,605	64,605	64,605	64,605	64,605
	Total Water Demand (with Project)	40,266	43,649	47,371	49,697	52,526
	Potential Surplus (Deficit)	19,339	20,956	17,234	14,908	12,079
Multiple-Dry Year Third Year Supply	Available Surface Water Supply	54,343	59,343	59,343	59,343	59,343
	Total Water Demand (with Project)	38,147	41,351	44,878	47,082	49,762
	Potential Surplus (Deficit)	16,196	17,992	14,465	12,261	9,581

^(a) Normal year demands are from Table 5-2 and dry year demands are based off the demand assumptions stated in Section 5.2. Surface water supplies are from Table 6-3.

^(b) From Table 5-2.



Water Supply Evaluation El Dorado Hills Apartments

Table 7-2. Summary of Recycled Water Demand Versus Supply During Hydrologic Normal, Single Dry, and Multiple Dry Years for EID, AFY^(a)

Hydrologic Condition		Supply and Demand Comparison				
		2020	2025	2030	2035	2040
Normal Year						
Available Recycled Water Supply		2,800	3,000	3,100	3,300	3,500
Total Water Demand (with Project) ^(b)		3,165	3,130	3,261	3,359	3,464
Potential Surplus (Deficit)		-365	-130	-161	-59	36
Single Dry Year						
Available Recycled Water Supply		2,800	3,000	3,100	3,300	3,500
Total Water Demand (with Project)		3,323	3,287	3,424	3,527	3,637
Potential Surplus (Deficit)		-523	-287	-324	-227	-137
Multiple Dry Years						
Multiple-Dry Year First Year Supply	Available Recycled Water Supply	2,800	3,000	3,100	3,300	3,500
	Total Water Demand (with Project)	3,323	3,287	3,424	3,527	3,637
	Potential Surplus (Deficit)	-523	-287	-324	-227	-137
Multiple-Dry Year Second Year Supply	Available Recycled Water Supply	2,800	3,000	3,100	3,300	3,500
	Total Water Demand (with Project)	3,157	3,122	3,253	3,351	3,455
	Potential Surplus (Deficit)	-357	-122	-153	-51	45
Multiple-Dry Year Third Year Supply	Available Recycled Water Supply	2,800	3,000	3,100	3,300	3,500
	Total Water Demand (with Project)	2,991	2,958	3,082	3,174	3,273
	Potential Surplus (Deficit)	-191	42	18	126	227

^(a) Normal year demands are from Table 5-2 and dry year demands are based off the demand assumptions stated in Section 5.2. Recycled water supplies are from Table 6-4.
^(b) From Table 5-2.

Using the Dry Year demand assumptions stated in Section 5.2, no potential deficits in potable water supply occur. In other words, EID’s available supplies and demand reduction plans are sufficient to meet projected demands through 2040.

Despite the sufficiency of potable water supplies, there are several cases with minor potential deficits in recycled water supply. The greatest potential deficit in recycled water occurs in the single dry year and first year of a multiple dry year event and amounts to about 523 AFY. According to its 2015 UWMP, EID is unable to increase its recycled water supplies further until additional population growth occurs and treatment and storage facilities are expanded. Although



Water Supply Evaluation El Dorado Hills Apartments

EID's wastewater treatment plants treat about twice the amount of water that is recycled, EID is required to discharge a portion of its treated wastewater, thereby preventing EID from distributing a greater volume of recycled water at this time. To mitigate these potential recycled water deficits, EID can supply potable water to the recycled water users because EID has several thousand AFY in surplus potable water supply in every scenario. EID could also implement minimal short term demand reductions (water conservation) to help reduce the demand for recycled water.

In February 2014, EID declared a Stage 2 Water Shortage which sets a 30 percent water conservation target. EID's 2014 reduction target significantly exceeds the demand reductions needed to alleviate 2040 water supply deficiencies. Therefore, EID's total projected water supplies can easily satisfy the Project demands during Normal, Single Dry, and Multiple Dry water years over a 20-year projection.

Pursuant to Water Code section 10910(c)(4), and based on the technical analyses described in this Water Supply Assessment, the total projected water supplies documented to be available for the Project during Normal, Single Dry, and Multiple Dry water years during a 20-year projection are more than sufficient to meet the projected water demand associated with the Project, in addition to existing and planned future uses.



Water Supply Evaluation El Dorado Hills Apartments

8.0 WATER SUPPLY ASSESSMENT APPROVAL PROCESS

Water Code sections 10910 and 10911 state:

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.

10911 (b) The city or county shall include the water supply assessment provided pursuant to Section 10910, and any information provided pursuant to subdivision (a), in any environmental document prepared for the project pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.

Although SB 610 and SB 221 do not apply to the Project, the County has decided to prepare a WSA to document that available water supplies are sufficient to meet the demands of the Project under normal, single-dry, and multiple-dry year conditions. No formal approvals are required under SB 610 and SB 221.

Water Supply Evaluation El Dorado Hills Apartments



9.0 REFERENCES

- Central El Dorado Hills Specific Plan- Water Supply Assessment, Approved by EID Board of Directors on August 26, 2013.
- El Dorado Irrigation District Water Resources and Service Reliability Report, August 2015.
- El Dorado Irrigation District Water Resources and Service Reliability Report, September 2016.
- El Dorado Irrigation District Integrated Water Resources Master Plan, March 2013.
- El Dorado Irrigation District 2015 UWMP, adopted by EID Board of Directors on June 27, 2016.
- El Dorado Irrigation District Drought Action Plan, 2015 Update.

(THIS PAGE LEFT BLANK INTENTIONALLY)