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# **Appendix I**

## Water Supply Assessment



**SB 610**  
**WATER SUPPLY ASSESSMENT**

**FOR THE**  
**CREEKSIDE VILLAGE**  
**SPECIFIC PLAN PROJECT**

# Creekside Village Specific Plan Project SB 610 Water Supply Assessment

Prepared for  
El Dorado Irrigation District

## Final

February 2021

Prepared by:



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This Water Supply Assessment was prepared under the direction  
of a California licensed civil engineer.



## SECTION 1 – PROJECT INTRODUCTION

As the lead agency under the California Environmental Quality Act (“CEQA”), El Dorado County (“County”) is assessing the potential environmental effects associated with the proposed Creekside Village Specific Plan Project (“Proposed Project”). To inform the CEQA analysis, this Water Supply Assessment (“WSA”) has been prepared for the Proposed Project. El Dorado Irrigation District (“EID”) has been identified as the public water system that will supply water for the Proposed Project, and therefore has been tasked with the preparation and approval of this WSA.

### 1.1 ANALYTICAL METHOD

This WSA estimates the Proposed Project’s water demand through build-out, presents and discusses the availability of water sources identified to meet that demand, and assesses whether expected water supplies will be sufficient to meet the projected water demand of the Proposed Project during normal, single dry, and multiple dry year conditions.

The above-referenced analytical method is derived from the Water Supply Assessment Law (“WSA Law”) codified at Water Code section 10910 *et seq.* The WSA Law, sometimes referred to as “SB 610,” outlines the information and analysis that must be included in a CEQA document prepared for certain projects of a specified size and composed of certain land-uses (e.g., subdivisions larger than 500 residential units).<sup>1</sup> For such covered projects, the WSA Law requires an assessment of whether projected water supplies identified to serve a proposed project will be sufficient to meet existing and planned water demands over a 20-year horizon. The WSA Law expressly anticipates events like the most recent drought by requiring assessment of water supply sufficiency in single dry years and multiple dry years – not just under normal, or average, hydrologic conditions.

The Proposed Project requires a WSA because it is a residential development of more than 500 dwelling units. The WSA will be incorporated into the CEQA document — an Environmental Impact Report (EIR) — being prepared for the Proposed Project (the Project EIR).<sup>2</sup>

### 1.2 DOCUMENT PREPARATION AND APPROVAL

The WSA law requires that the lead agency – in this case, El Dorado County – identify a “public water system”<sup>3</sup> and further requires the lead agency to request that each identified public water system prepare a WSA for the project. If the lead agency is not able to identify a public water system that may supply water for the project, the lead agency must prepare the WSA itself after

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<sup>1</sup> Water Code § 10912(a).

<sup>2</sup> Water Code § 10911(b).

<sup>3</sup> A “public water system” is a system that provides water for human consumption that has at least 3,000 service connections.

consulting with “any entity serving domestic water supplies whose service area includes the project site, the local agency formation commission, and any public water system adjacent to the project site.”<sup>4</sup>

In this case, the EID has prepared the WSA because the Proposed Project is within the EID potable service area. This WSA provides the necessary information for EID to make its determinations and to comply with the statutory assessment of water supply sufficiency.

### 1.3 DOCUMENT ORGANIZATION

The WSA is organized according to the following sections:

- ◆ **Section 1: Proposed Project Introduction.** This section provides an overview of the WSA’s purpose and organization, along with a detailed description of the Proposed Project, including the land use elements that will create water demand.
- ◆ **Section 2: Proposed Project Estimated Water Demands.** This section describes the methodology used to estimate water demands of the Proposed Project and details the estimated water demands from initiation through build-out.
- ◆ **Section 3: Representation in 2015 UWMP.** This section presents relevant water demand and supply information from the 2015 EID Urban Water Management Plan and relationship to the Proposed Project for purposes of Water Code Section 10910(c)(2).
- ◆ **Section 4: Sufficiency Conclusion.** This section provides the concluding statement of water supply availability for purposes of Water Code Section 10910.

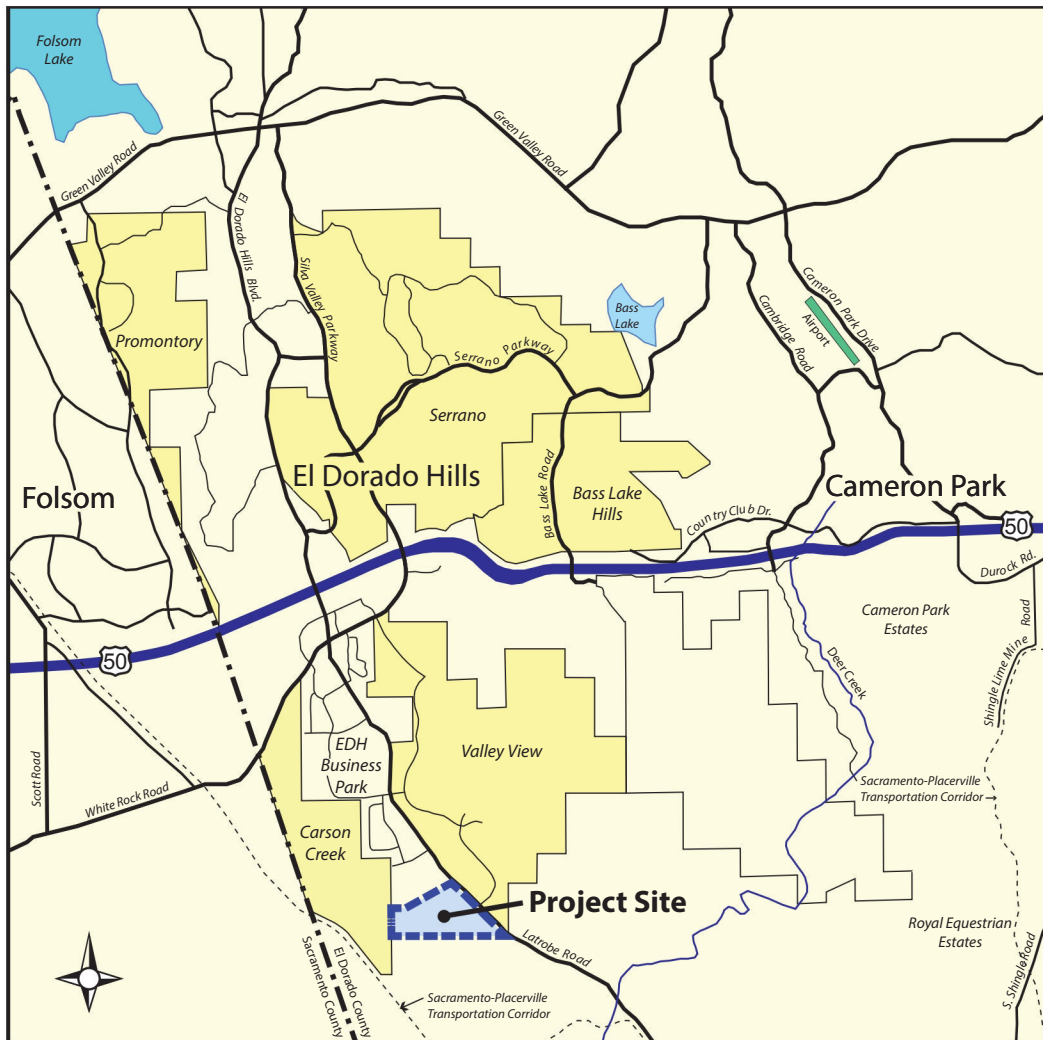
### 1.4 PROPOSED PROJECT DESCRIPTION

The Proposed Project is situated on approximately 208 acres located on the southern end of El Dorado Hills in El Dorado County (“Project Site”). The Project Site is located between Latrobe Road on the east and the county line on the west. (see **Figure 1-1**). The El Dorado Hills Business Park lies just to the north and undeveloped land lies to the south. The Proposed Project is located on Parcel 117-010-12 in the County of El Dorado Assessor’s Map Book 117.

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<sup>4</sup> Water Code § 10910(b).

**Figure 1-1 – Proposed Project Location Map**



The Proposed Project site includes residential and non-residential land-use classifications including single family low density, single family medium density, parks, open space, and appropriate detention/water quality basins and stormwater management features.

### **1.4.1 Project Summary**

As described in more detail in the Creekside Village Specific Plan<sup>5</sup>, the Proposed Project plans for 926 dwelling units, with 676 designated low density and 250 designated medium density. The Proposed Project anticipates 14.3 acres of parks, 46.3 acres of various open spaces, and 10.4 acres for roadways. Of the open space, 9.1 acres is set aside for wetland and drainage areas and the remaining 37.2 acres is designated as open space buffer which does allow for passive recreation including hiking and biking trails.

<sup>5</sup> Creekside Village Specific Plan 6/16/20

**Figure 1-2** provides the Proposed Project's land-use plan<sup>6</sup> while **Table 1-1** presents the detailed residential unit counts and non-residential acreage. This information becomes the foundational land use data used to derive the demand forecast presented in Section 2.

**Figure 1-2: Proposed Project Parcel Map**



**Table 1-1: Summary of Proposed Project Land Uses and Acreages**

| Land Use                   | Acreage | Density            | Dwelling Units |
|----------------------------|---------|--------------------|----------------|
| Low Density Residential    | 115.9   | 4-8 units/acre     | 676 Units      |
| Medium Density Residential | 21.0    | 8-12 units/acre    | 250 Units      |
| Park                       | 14.3    |                    |                |
| Open Space                 | 46.3    |                    |                |
| Right of Ways              | 10.4    |                    |                |
| Total                      | 207.9   | 926 Dwelling Units |                |

### 1.4.2 Proposed Project Phasing

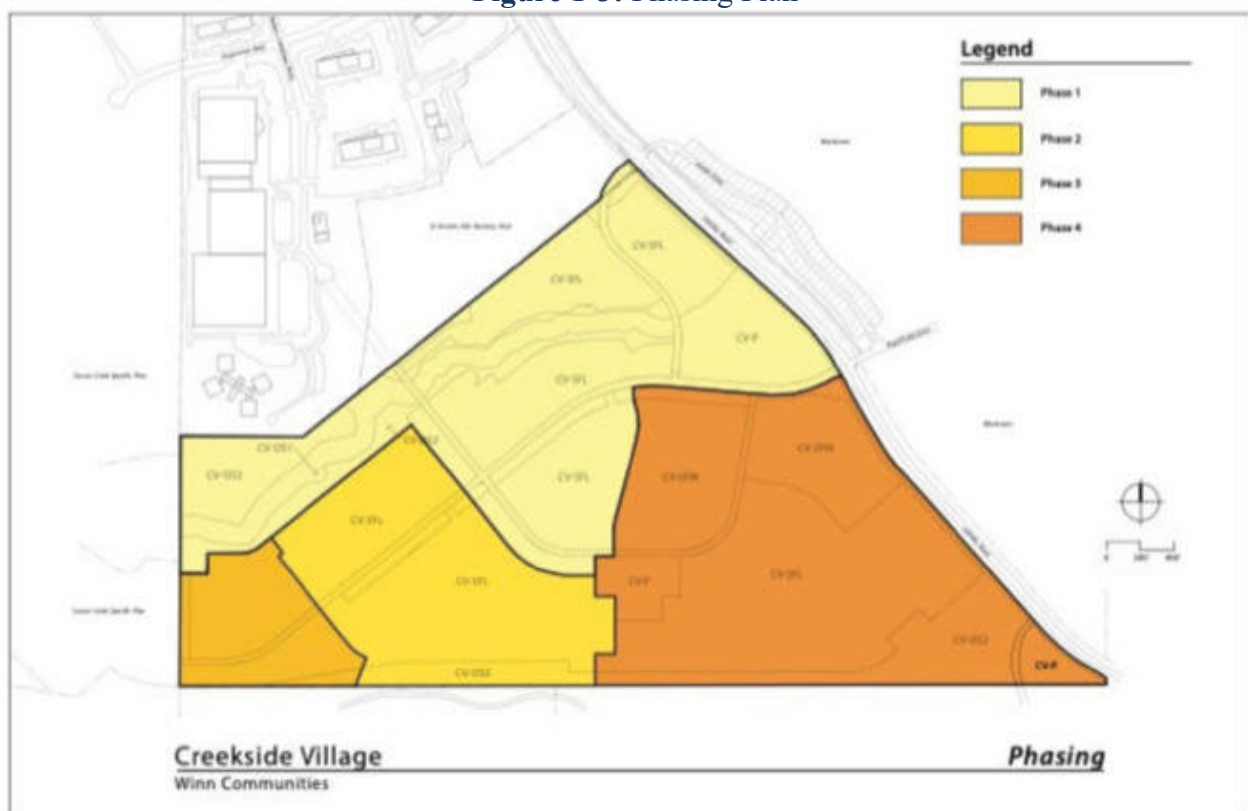
For purposes of this WSA, the Proposed Project anticipates all of the 926 residential units will be completed within the next 20-year period to allow the analysis to fully evaluate the complete project. Actual project phasing may take longer. **Figure 1-3** presents the phasing assumed for

<sup>6</sup> Creekside Village Specific Plan 6/16/20 Figure 3.2

the purposes of the WSA.<sup>7</sup> Development will begin with a first phase on the north edge of the development area adjacent to the business park. The specifics and timing of the later phases will be determined by several external factors including market conditions. However, for purposes of this WSA, the Proposed Project is anticipated to reach build-out by 2035.<sup>8</sup>

Before constructing any homes, site grading and project-wide infrastructure development will begin and continue throughout all phases of the Proposed Project, as necessary. These activities include installing facilities for potable water, sewer, other utilities, stormwater basins, and roadways. During these activities, a small water demand will exist – referred to in this WSA as “construction water.” This demand is included in the forecast annual water demands presented in Section 2 but becomes non-existent at project completion.

**Figure 1-3: Phasing Plan**



<sup>7</sup> Specific timing will be determined by market conditions but for the purposes of this WSA, all units are assumed to be completed within the planning horizon of 20 years.

<sup>8</sup> Creekside Village Specific Plan, June 2020, p. 8-3 states: “[t]he Plan Area will develop in multiple phases with full build-out expected in 2030 or later.”

## SECTION 2 – PROPOSED PROJECT ESTIMATED WATER DEMANDS

This section describes the methodology, provides the supporting evidence, and presents the estimated annual water demands for the Proposed Project at build-out.

### 2.1 DETERMINING UNIT WATER DEMAND FACTORS

As detailed in Section 1, the Proposed Project consists of 926 residential units and accompanying infrastructure and improvements such as streetscapes, along with parks and open space. To understand the water needs of the Proposed Project, unique water demand factors are used that correspond with the anticipated residential dwelling unit types and other Proposed Project attributes. This subsection presents the methodology for determining the unit water demand factors that become the basis of the Proposed Project water demand estimate.

Two distinct groups of demand factors are presented: (1) residential, and (2) non-residential. For this WSA, the non-residential uses consist of typical uses, such as parks and common space irrigation. Values developed for each distinct land use are based on several sources of information, details of which are provided in the following subsections.

#### 2.1.1 Current and Future Mandates Affecting Water Use

There are several factors that affect the development of unit water demand factors, ranging from State and County landscape regulations and other water-use mandates to changes in the types of housing products being offered. These factors are incorporated into this unit water demand factor determination and discussed in this section. Characteristics of the factors relevant to this WSA are described below.

##### *Water Conservation Objectives*

In 2009, Governor Arnold Schwarzenegger signed Senate Bill No. 7 (SBX7-7), which established a statewide goal of achieving a 20 percent reduction in urban per capita water use by 2020 for urban retail water suppliers.<sup>9</sup> Since the Proposed Project is yet to be built, this legislation only indirectly applies.

However, the efforts undertaken throughout the County and the State by urban retail suppliers to comply with this statute, though not directly, would affect the Proposed Project's use of appliances, fixtures, landscapes and other water using features, through changes or additions to County ordinances and/or through a continuing "conservation ethic" developed in communities in and around the Proposed Project location as a result of the most recent statewide drought conditions.

In response to the recent multi-year drought conditions, Governor Brown issued Executive Order B-37-16 in May 2016 entitled "*Making Water Conservation a California Way of Life.*" In May

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<sup>9</sup> California Water Code § 10608.20.

2018, Governor Brown signed into law SB 606 and AB 1668, which imposed additional statutory requirements above and beyond the 20 percent by 2020 target reflected in the 2009 legislation. This is expected to result in continued efforts to increase water use efficiency and ultimately to reduce water demands of existing water users and continue to influence the expected demands of future water users, such as expected with the Proposed Project.

### ***Requirements in California Code***

Beginning in January 2010, the California Building Standards Commission adopted the statewide mandatory Green Building Standards Code (hereafter the “CAL Green Code”) requiring the installation of water-efficient indoor and outdoor infrastructure for all new projects after January 1, 2011. The CAL Green Code was incorporated as Part 11 into Title 24 of the California Code of Regulations, and was revised in 2013 and in 2016 to address changes to the State’s Model Water Efficient Landscape Ordinance (“MWELO”) adopted during the drought.<sup>10</sup> Revisions to the CAL Green Code in 2019 modified sections to direct users to MWELO regulations contained in other regulatory sections.<sup>11</sup>

The CAL Green Code applies to the planning, design, operation, construction, use and occupancy of every newly constructed or remodeled building or structure. All new residential and non-residential customers added by the Proposed Project must meet the CAL Green Code as well as the outdoor requirements described by MWELO. The CAL Green Code’s requirements generally manifest through: (1) installation of plumbing fixtures and fittings that meet the 20 percent reduced flow rate specified in the CAL Green Code, or (2) by demonstrating a 20 percent reduction in water use from the building “water use baseline.”<sup>12</sup> The Proposed Project will satisfy one of these two requirements through the use of appliances and fixtures such as high-efficiency toilets, faucet aerators, on-demand water heaters, or other fixtures as well as Energy Star and California Energy Commission-approved appliances.

### ***California Model Water Efficient Landscape Ordinance and County Ordinance***

The Water Conservation in Landscaping Act was enacted in 2006, and has since been revised and expanded multiple times by the Department of Water Resources (DWR) resulting in today’s MWELO.<sup>13</sup> In response to Governor Brown’s executive order dated April 1, 2015, (EO B-29-

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<sup>10</sup> The 2016 Triennial Code Adoption Cycle consisted primarily of the MWELO updates adopted in response to the drought. Indoor infrastructure changes were limited to some minor non-residential fixture changes and changes to the voluntary Tier 1 and Tier 2 requirements. Additionally, the Code was updated to match the new Title 20 Appliance Efficiency Regulations.

<sup>11</sup> The 2019 updated sections to direct CAL Green code users to Title 23 of the California Code of Regulations to allow Title 23 to be the sole location of MWELO requirements.

<sup>12</sup> See CAL Green Code. For Residential construction, Section 4.303.1 provides the residential water conservation standard and Table 4.303.2 identifies the infrastructure requirements to meet this standard. Table 4.303.1 and Worksheets WS-1 and WS-2 are to be used in calculating the baseline and the reduced water use if Option 2 is selected. For non-residential construction, Section 5.303.2.3 provides the water conservation standard as well as the baseline and reduced flow rate infrastructure standards. Note that Worksheets WS-1 and WS-2 incorporate both residential and non-residential fixtures, yet the water use is still to be analyzed by “building or structure” as specified in Chapter 1, Section 101.3.

<sup>13</sup> Gov. Code §§ 65591-65599

15), DWR updated the MWELo and the California Water Commission approved the adoption and incorporation of the updated State standards for MWELo on July 15, 2015. MWELo requires a retail water supplier or a county to adopt the provisions of the MWELo or to enact its own provisions equal to or more restrictive than the MWELo provisions.<sup>14</sup> The changes included a reduction to 55 percent of reference evapotranspiration rates for the maximum amount of water that may be applied to residential landscapes, and non-residential projects to 45 percent, which effectively reduces the landscape area that can be planted with high water use plants, such as a turf. For residential projects, the allowable maximum coverage of high-water use plants is reduced to 25% of the landscaped area (down from 33%). The newly updated MWELo also now applies to new construction with a landscape area greater than 500 square feet (the prior MWELo only applied to landscapes greater than 2,500 square feet).<sup>15</sup> The El Dorado County Planning and Building Department reviews all new development for conformance with these standards.

### ***Metering, Volumetric Pricing, and Water Budgets***

California Water Code section 525 requires water purveyors to install meters on all new service connections after January 1, 1992. California Water Code section 527 requires water purveyors to charge for water based upon the actual volume of water delivered if a meter has been installed. Though EID would be billing customers on a volumetric basis, this action alone is not expected to substantially reduce water use. However, it is anticipated that the retail billing system would encourage and help maintain reasonable use (e.g. through implementation of a tiered rate structure and/or water budgets), so that the Proposed Project's water demands at build-out are not reasonably expected to grow as the Proposed Project ages.

## **2.2 RESIDENTIAL WATER USE DEMAND FACTORS**

The Proposed Project anticipates two general lot-size designations: low density and medium density. The size of the lot generally has the greatest impact on the annual per-lot demand for water as the irrigation needs for landscaping generally increase with larger landscaped areas. In contrast, indoor water demands remain relatively consistent regardless of lot size but do vary slightly based on the number of people per dwelling unit.<sup>16</sup> Distinct demand factors are provided for the following residential uses:

- ◆ Indoor Residential Use – this category identifies the generally anticipated water use for the conventional single-family homes in both low and medium densities.
- ◆ Outdoor Residential Use – this category addresses the landscape water demands for the various planned lot sizes.

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<sup>14</sup> El Dorado County defers to the State's MWELo requirements.

<sup>15</sup> CCR Title 23, Div. 2, Ch. 27, Sec. 490.1.

<sup>16</sup> Generally, the average occupancy corresponds to the average use of fixtures in a household regardless of the number of such fixtures (e.g. multiple bathrooms do not result in more use of the toilet for the same number of people).

For purposes of this WSA, residential unit water demand factors are described as “the acre-feet of water use annually per dwelling unit” – or acre-feet/dwelling unit (“af/du”).

This WSA will provide an analysis specific to the Proposed Project as well as the default values used in the adopted 2015 EID Urban Water Management Plan (UWMP) which is the basis of the sufficiency analysis.

### **2.2.1 Indoor Residential Water Use Factors**

The Proposed Project’s residential elements would be built in accordance with all applicable building codes including the Cal Green Code discussed previously, as it may be further modified prior to Proposed Project implementation.

The Proposed Project’s indoor water demands are estimated using an assumed value of 55 gallons-per person per day, multiplied by the assumed occupancy rates for residential density classifications in El Dorado Hills.<sup>17</sup> The assumed per-person rate of 55 gallons per day is derived from California Water Code Section 10609.4(a)(3), which states a value of 55 gallons per capita (i.e., per person) per day (“gpcd”) be used for estimating indoor residential use targets. Water Code Section 10609.4(a) also establishes the indoor residential water use ‘standard’ to be 52.5 gpcd beginning in 2025 and as low as 50 gpcd by 2030, though the Water Code also provides provisions for the water use target to revert above 50 gpcd. For purposes of this WSA, the higher value of 55 gpcd is assumed. If lower standards are required when the Proposed Project is under construction, the demand would be expected to be lower than estimated in this WSA.

Based on this per-capita assumption, the following indoor per-dwelling unit values are derived:

- ◆ Single-family residential indoor use: 0.18 acre-feet per year based upon an assumed occupancy of 2.95 people per unit.<sup>18</sup>

This number is consistent with indoor only use seen in EID’s own dual plumbed homes in the same neighborhood.<sup>19</sup> As these proposed homes will be newer and have more strict plumbing codes, it is likely that actual use will be lower than the 0.18 acre-feet per dwelling unit value.

### **2.2.2 Outdoor Residential Water Use Factors**

Outdoor residential water use is primarily a factor of lot size and the type and extent of landscaped area. The Proposed Project includes up to 926 residential dwelling units with two

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<sup>17</sup> <https://www.census.gov/quickfacts/eldoradohillscdpcalifornia> accessed 1/6/20. 2015 to 2019 average occupancy of 2.95 persons per household

<sup>18</sup> Equation: 2.95 people \* 55 gallons/person/day \* 365 days / 325,851 gallons/acre-foot

<sup>19</sup> 2015 EID UWMP Table 4-4. Dual plumbed homes have separate meters for indoor (potable water) and outdoor (recycled water) uses.

different average lot sizes: 7,426 square-feet (sf) for Low Density Residential, and 3,659 sf for Medium Density Residential.<sup>20</sup>

Outdoor demands for new residential dwelling units are calculated based on regulations defined under the MWEL. The MWEL provides for determining the Maximum Applied Water Allowance (MAWA) where the maximum is calculated as 55 percent of the reference evapotranspiration for the area for every square foot of landscaped area, resulting in the following equation:

*MAWA = (ET<sub>o</sub>)(0.62)(0.55 x LA), where ET<sub>o</sub> is the reference evapotranspiration in inches per year, and LA is the landscape area in square-feet. 0.62 is a conversion factor to gallons. The resulting value is in “gallons per year.”*

A primary factor in this calculation is evapotranspiration (“ET”). The methodology directs the use of ET from a reference crop, such as maintained grass – a value referred to as ET<sub>o</sub>. For the Proposed Project, the ET<sub>o</sub> is 52.2 inches per year (4.3 feet per year).<sup>21</sup>

The other primary factor driving outdoor water use on a per-lot basis is the square footage of landscape area. This value is based upon reasonable assumptions regarding the Proposed Project’s building footprint, driveway area and other hardscape areas such as patios and sidewalks. Using the MAWA equation, demand factors for each residential lot category are calculated:

- **Low Density** – The proposed 676 low-density, single-family dwellings will be constructed on lots averaging 7,426 sf, with an average landscape area of 4,576 sf.<sup>22</sup> The resulting outdoor demand factor is forecast to be 0.25 acre-feet per dwelling unit per year.
- **Medium Density** – The proposed 250 medium density single-family dwelling units in this classification will be constructed on lots averaging 3,659 sf, with an average landscape area of 1,509 sf.<sup>23</sup> The resulting outdoor demand factor is forecast to be 0.08 acre-feet per dwelling unit per year.

### 2.2.3 Summary of Residential Water Use Demand Factors

**Table 2-1** provides a summary of the unit water demand factor used to estimate the Proposed Project’s residential water use.

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<sup>20</sup> Average lot size by class per Creekside Village Specific Plan Table 3-2.

<sup>21</sup> ET<sub>o</sub> is consistent with 2015 EID UWMP ET<sub>o</sub> for El Dorado Hills Area, Table 2-1.

<sup>22</sup> Landscape area derived from average lot footprint less 2,200 sf for building site, 400 sf for driveway space, and another 250 sf for patios and other hardscapes.

<sup>23</sup> Landscape area derived from average lot footprint less 1,500 sf for building site, 400 sf for driveway space, and another 250 sf for patios and other hardscapes.

**Table 2-1: Summary of Annual Residential Per-Unit Demand Factors**

| Water Demand Category      | Average Density (du/ac) | Indoor Factor (af/du) | Outdoor Factor (af/du) | Total Demand Factor (af/du) |
|----------------------------|-------------------------|-----------------------|------------------------|-----------------------------|
| Low Density Residential    | 4-8 units/acre          | 0.18                  | 0.25                   | 0.43                        |
| Medium Density Residential | 8-12 units/acre         | 0.18                  | 0.08                   | 0.26                        |

### 2.2.4 Accommodating Accessory Dwelling Units

As presented in section 2.2.1, the El Dorado Hills residential occupancy averages 2.95 people per home. However, the Proposed Project includes the options for Accessory Dwelling Units (ADU) or Junior ADUs (JADU).<sup>24</sup> These ADUs can result in an increase in the average occupancy rate for the Proposed Project, while also reducing landscape area from the additional dwelling itself.

The Proposed Project does not define how many parcels may include ADUs, but a sensitivity analysis can evaluate the effect of the increased occupancy and decreased landscape area on the total unit demand factors shown in Table 2-1. First, El Dorado County's ordinance regarding secondary units indicates the size cannot exceed 600 sf for a lot up to 10,000 sf.<sup>25</sup> The Specific Plan does not include a size for ADUs but notes JADUs would not exceed 500 sf. For purposes of sensitivity, occupancy would increase to 3.5 for a low-density unit and landscape area would decrease by 800 sf (accommodating the dwelling unit footprint plus additional patio and walkways). Using 3.5 people per house instead of 2.95 will increase the indoor unit demand from 0.18 acre-feet per year to 0.22 acre-feet per year. The change in landscape area would decrease the outdoor demand factor from 0.25 acre-feet per year to 0.21 acre-feet per year. Combined the parcel would have a unit demand factor of 0.43 acre-feet per year, which is the same as estimated without the ADU. Therefore, for purposes of this WSA, the unit demand factors presented in Table 2-1 are used for forecasting the Proposed Project's water demand.

## 2.3 NON-RESIDENTIAL WATER USE DEMAND FACTORS

The Proposed Project has a few non-residential features tied to the landscape and community use areas. For purposes of this WSA, the demand for non-residential classifications is described as "the acre-feet of water use annually per acre of land," acre-feet/acre (af/ac), and represents the combined indoor and outdoor use on the acre of the particular land use. Water demand factors have been developed for each of the following classifications and are summarized in Table 2-2:

- ◆ Parks and Landscape Corridors
- ◆ Roadway Landscaping
- ◆ Other miscellaneous uses, including temporary irrigation to establish open space landscaping and temporary construction water.

<sup>24</sup> Creekside Village Specific Plan 6/16/20, p. A-3

<sup>25</sup> El Dorado County Municipal Code Sec. 130.40.300 - Secondary Dwellings.

**Table 2-2: Summary of Annual Non-Residential Unit Demand Factors**

| Land Use            | Demand Factor | Unit  |
|---------------------|---------------|-------|
| Parks               | 3.70          | af/ac |
| Roadway Landscaping | 0.45          | af/ac |
| Construction Water  | 5.00          | af/yr |

The method and basis for determining the unit water demand factor for each of these classifications is as follows:

Parks: As presented in **Table 1-1** and **Figure 1-2**, the Proposed Project anticipates 14.3 acres across two neighborhood parks at 2.2 and 3.3 acres, as well as a larger Village Park at 8.8 acres. The Village Park is expected to include large turf areas for recreation, restrooms and other facilities, and ornamental landscaping. The smaller parks represent public green spaces in neighborhoods which may include features such as turf recreation areas, play equipment, and large areas of low water use ornamental landscaping.

For purposes of this WSA, a unit demand factor of 85% of the reference ETo is used, which represents a practical blend of the MWELo Special Landscape Allowance equivalent to the ETo for recreational turf, combined with the lower ETo factor of 45% of ETo for non-turf areas and no water demand for play structures, pathways and other hardscape areas. With an ETo of 52.2 inches, this results in a per-acre demand factor of 3.7 acre-feet per year.

Roadway Landscaping: Roads and other rights-of-way will also include ornamental landscaping consisting of median strips and entry planters along major roadways. **Table 1-1** indicates 10.4 acres of “roadways or right-of-way.” For the purposes of this WSA, this ornamental landscaping is estimated at the MWELo limit of 45% of ETo, which equates 1.96 acre-feet per acre per year. **Figure 2-1** shows the approximate lengths of the various roadway types. The Entry Collector streets are detailed to have 15-foot planting widths and 16 foot medians, with a total width of 79 feet.<sup>26</sup> The minor collectors are detailed to have 15-foot planting widths in a 62 foot total corridor width.<sup>27</sup> The Local C1 streets are detailed to have 8-foot planting widths in a 53 foot total corridor width.<sup>28</sup> The Local F1 streets are detailed to have 8-foot planting widths in a 45 foot total corridor width.<sup>29</sup> All other roadways are detailed to have no landscaping. A coarse analysis of the approximate lengths from **Figure 2-1** and the portions of the rights of way dedicated to landscaping as described above, results in an estimated average of 23% of each corridor acre that is

<sup>26</sup> This assumes 40% of the Collector right of way is landscaped.

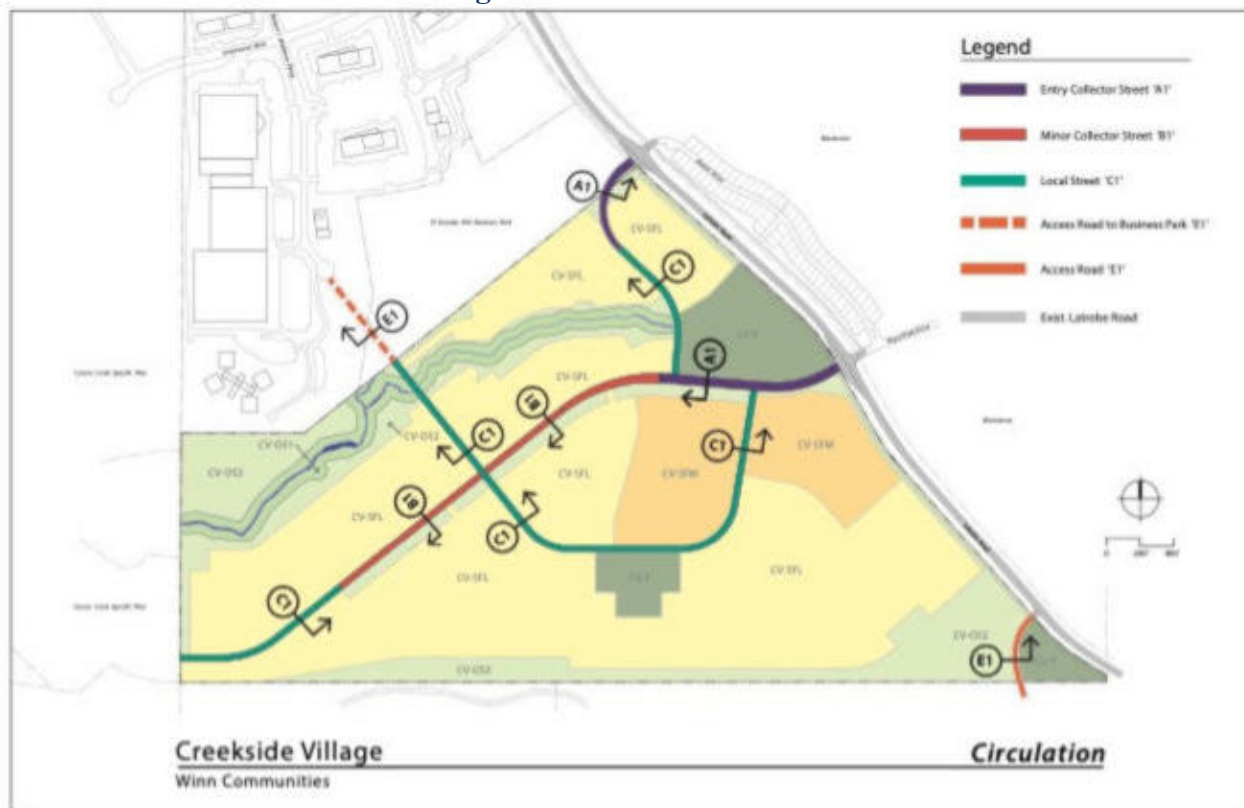
<sup>27</sup> This assumes 24% of the Minor Collector right of way is landscaped.

<sup>28</sup> This assumes 15% of the Local C1 right of way is landscaped.

<sup>29</sup> This assumes 18% of the Local F1 right of way is landscaped.

landscaped. This equates to a unit water demand factor of 0.45 acre-feet per gross acre in this land use category.<sup>30</sup>

### Figure 2-1: Circulation Plan



Miscellaneous Minor Uses: Other minor uses tied to typical project development include water needed to establish open spaces and construction water used during project development. As of the preparation of this WSA, the Proposed Project includes about 37.2 acres of open space buffer. While including trails and natural planted areas, a portion of this land will also be dedicated to providing storm drainage and biofiltration and storage of storm water aligned along streets and drainage courses. Plantings typically emphasize drought-tolerant, hardy materials and compatibility with existing surrounding native and adaptive plants. Given the form and function of the landscaping of this project element, a water supply would only be needed to establish plantings for the first few years. After plant establishment, these landscape features will be served naturally by annual precipitation. No estimated water is included in this WSA for plant establishment.

Early phases of the Proposed Project will include site grading and infrastructure installation. These and other construction elements will require dust suppression and other incidental water uses. These are estimated to be nominal, and do not continue beyond the construction phases of the Proposed Project. For purposes of identifying incremental water

<sup>30</sup> 23% of the MWELO limit of 1.96 acre-feet per acre for ornamental landscaping (which is capped at 45% of ETo).

demands, construction water is assumed within this WSA to be 5 acre-feet per year (this is about 1,600,000 gallons – or approximately 400 fill-ups of a 4,000-gallon water truck).

## 2.4 PROPOSED PROJECT WATER DEMAND PROJECTION

Combining the Proposed Project’s land use details with each unique set of demand factors presented in Section 2.3, the water demands for the Proposed Project at build-out can be estimated. **Table 2-3** presents the forecast water demands for potable water sources for build-out conditions as well as anticipated Proposed Project phasing. The Proposed Project phasing spreads construction over four phases, as discussed in Section 1.4.2 and represented in Figure 1-3.<sup>31</sup> The phasing helps present the Proposed Project’s demand in context of EID’s 2015 UWMP water system reliability, which is discussed in Section 3.

At build-out, the Proposed Project’s potable water demands are conservatively estimated at 413 acre-feet annually, excluding considerations of non-revenue water (see below), and up to approximately 475 acre-feet of water annually when considering non-revenue water.

### 2.4.1 Non-Revenue Water Demands

The demand factors presented earlier in this section represent the demand for water at the customer meter for each category. To fully represent the Proposed Project’s demand on water resources, non-revenue water also needs to be included. Non-revenue water represents all of the water necessary to deliver to the customer meter and reflects distribution system leaks, water demands from potentially un-metered uses such as fire protection, hydrant flushing, and unauthorized connections, and meter inaccuracies.<sup>32</sup> In most instances, the predominant source of non-revenue water is from system leaks – the loss from fittings and connections from water sources through treatment plants, tanks, pumping plants, major delivery system back-bone pipelines, and community distribution systems. The 2015 UWMP provided detailed estimates of EID’s projected system losses, estimating them to be 13%.<sup>33</sup> Therefore, the Proposed Project’s potable water delivery system is expected to require about an additional 62 acre-feet<sup>34</sup> per year at

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<sup>31</sup> Proposed Project phasing is an estimate. Actual construction will reflect other factors, including market conditions.

<sup>32</sup> The American Water Works Association and the California Urban Water Conservation Council recognize the inherent non-revenue water that is either lost or not accounted for in urban treated water distribution systems, and suggest purveyors strive for conveyance losses between 5 and 10% of all water delivered to customers. Obtaining this value is dependent on numerous factors including the age and extent of distribution system infrastructure, meter rehabilitation programs, and how a purveyor accounts for actions such as fire flows and hydrant flushing. For the purposes of this WSA, a value 13% is used to be consistent with the 2015 UWMP.

<sup>33</sup> 2015 EID UWMP, page 4-16.

<sup>34</sup> The anticipated demand for each connection is the resulting value after subtracting the non-revenue quantity from the total needed to be derived from EID’s water supply sources. Therefore, calculating the non-revenue value from the “use at the site” side instead of the “source of supply” side requires a higher percentage to be multiplied by the estimated Proposed Project demand to have the correct resulting percentage. In this instance, 413 acre-feet multiplied by 14.9% results in 62 acre-feet of non-revenue water – summing to a total demand at the supply source of 475 acre-feet. Multiplying 13% by 475 acre-feet results in the Proposed Project’s forecast use at the site.

build-out to serve the Proposed Project's potable needs. These values are presented as “non-revenue” water in **Table 2-3**.

**Table 2-3: Proposed Project's Potable Water Demand Forecast**

| Category                   | Dwelling Units or Acres |      |      |      |      | Demand Factor<br>(af/du or af/ac) |           | Acre-feet per Year |      |      |      |      |
|----------------------------|-------------------------|------|------|------|------|-----------------------------------|-----------|--------------------|------|------|------|------|
|                            | 2025                    | 2030 | 2035 | 2040 | 2045 |                                   |           | 2025               | 2030 | 2035 | 2040 | 2045 |
| Residential                |                         |      |      |      |      |                                   |           |                    |      |      |      |      |
| Low Density Residential    | 85                      | 169  | 676  | 676  | 676  | 0.18                              | (indoor)  | 15                 | 30   | 122  | 122  | 122  |
|                            |                         |      |      |      |      | 0.25                              | (outdoor) | 21                 | 42   | 169  | 169  | 169  |
| Medium Density Residential | 0                       | 0    | 250  | 250  | 250  | 0.18                              | (indoor)  | 0                  | 0    | 45   | 45   | 45   |
|                            |                         |      |      |      |      | 0.08                              | (outdoor) | 0                  | 0    | 20   | 20   | 20   |
| DU Total                   | 85                      | 169  | 926  | 926  | 926  |                                   |           |                    |      |      |      |      |
|                            |                         |      |      |      |      | Indoor Subtotal                   |           | 15                 | 30   | 167  | 167  | 167  |
|                            |                         |      |      |      |      | Outdoor Subtotal                  |           | 21                 | 42   | 189  | 189  | 189  |
| Non-Residential            |                         |      |      |      |      |                                   |           |                    |      |      |      |      |
| Park                       | 4                       | 7    | 14   | 14   | 14   | 3.70                              |           | 13                 | 26   | 53   | 53   | 53   |
| Roadway Landscaping        | 5                       | 10   | 10   | 10   | 10   | 0.45                              |           | 2                  | 5    | 5    | 5    | 5    |
|                            |                         |      |      |      |      | Outdoor Subtotal                  |           | 16                 | 31   | 58   | 58   | 58   |
| Other Miscellaneous Uses   |                         |      |      |      |      |                                   |           |                    |      |      |      |      |
| Construction Water         | 1                       | 1    | 0    | 0    | 0    | 5                                 |           | 5                  | 5    | 0    | 0    | 0    |
|                            |                         |      |      |      |      | Outdoor Subtotal                  |           | 5                  | 5    | 0    | 0    | 0    |
|                            |                         |      |      |      |      | Indoor Total                      |           | 15                 | 30   | 167  | 167  | 167  |
|                            |                         |      |      |      |      | Outdoor Total                     |           | 42                 | 78   | 247  | 247  | 247  |
|                            |                         |      |      |      |      | Total                             |           | 57                 | 109  | 413  | 413  | 413  |
|                            |                         |      |      |      |      | Outdoor Non-revenue water         |           | 9                  | 16   | 62   | 62   | 62   |
|                            |                         |      |      |      |      | Total Proposed Project Demand     |           | 65                 | 125  | 475  | 475  | 475  |

## SECTION 3 – REPRESENTATION IN 2015 UWMP

This section evaluates whether the Proposed Project was likely represented in the 2015 UWMP as part of EID's forecast growth, and thus whether this WSA can use the water system reliability assessment included in the 2015 UWMP to determine sufficiency under Water Code Section 10910 et seq. Specifically, Water Code section 10910 provides that a previously adopted UWMP can be used to support key elements of a WSA:

*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...[§10910(c)(2)]*

### 3.1 COMPARISON TO PREDICTED GROWTH IN THE 2015 UWMP

The first step is to evaluate if growth assumed in the 2015 UWMP included the Proposed Project, directly or indirectly.

As detailed in Chapter 2 of the 2015 UWMP, EID identified several categories of growth that would result in increased demand on their water supplies: (1) known development projects, (2) Facility Improvement Letters, and (3) additional General Plan growth after accounting for the first two categories. Based upon information included in the 2015 UWMP, the Proposed Project was not included in either of the first two categories.

The third category, additional General Plan growth, was forecast in the 2015 UWMP to include over 14,000 new single-family residential units by 2045 (see **Table 3-1**). The Proposed Project includes 926 new single-family units, or about 6% of the new homes EID expects to serve by 2045.

**Table 3-1: Anticipated Growth in EID Service Area**  
(source: 2015 UWMP Table 2-5)

| Growth Category<br>(cumulative units beyond current) |                         | 2020  | 2025  | 2030   | 2035   | 2040   | 2045   |
|------------------------------------------------------|-------------------------|-------|-------|--------|--------|--------|--------|
| From<br>Table 2-4                                    | Single Family           | 2,661 | 6,852 | 10,727 | 14,731 | 18,402 | 21,608 |
|                                                      | Multi-Family            | 248   | 1,022 | 1,869  | 2,880  | 3,224  | 3,578  |
|                                                      | Total Residential Units | 2,909 | 7,874 | 12,596 | 17,611 | 21,626 | 25,186 |
| Adjustment (91% SF/9% MF)                            |                         | 500   | 1,300 | 2,500  | 4,000  | 5,800  | 7,600  |
| For Demand<br>Forecasts                              | Single Family           | 2,206 | 5,669 | 8,452  | 11,091 | 13,124 | 14,692 |
|                                                      | Multi-Family            | 203   | 905   | 1,644  | 2,520  | 2,702  | 2,894  |
|                                                      | Total Residential Units | 2,409 | 6,574 | 10,096 | 13,611 | 15,826 | 17,586 |

## 3.2 COMPARISON TO PREDICTED DEMAND IN THE 2015 UWMP

Second, to allow the 2015 UWMP's water system reliability analysis to support this WSA, the demand for future single-family homes and non-residential uses evaluated in the 2015 UWMP would need to be consistent with the detailed demand analysis presented in Section 2.

As presented in the 2015 UWMP, a value of 0.43 acre-feet per unit was used for all future single-family residential units.<sup>35</sup> If the 2015 UWMP demand factor was used, the Proposed Project's 926 single-family units would be estimated to demand 398 acre-feet per year. As detailed in Section 2, however, the refined analysis reflecting additional statutory provisions regarding indoor and outdoor water use estimated the 926 single-family homes to need 356 acre-feet per year (prior to including non-revenue water needs).

Further, the 2015 UWMP projected non-residential growth, characterized as a combination of commercial, institutional, office, and recreational uses, as 10% of ten percent of the residential growth (e.g. for every ten housing units there would be the equivalent of one non-residential connection).<sup>36</sup> Using demand factors that reflected EID's existing residential/non-residential demand relationships, the 2015 UWMP estimated this broad land use category would have a water demand by 2045 in excess of 2,000 acre-feet per year. The Proposed Project's added demand for parks and roadway landscaping is forecast to need 58 acre-feet annually, which would be accommodated within the 2015 UWMP's forecast non-residential demand.

Thus, the Proposed Project's forecast water demands would not increase the total demand used in the 2015 UWMP to assess reliability, and, consistent with Water Code §10910(c)(2), the "*projected water demand associated with the proposed project was accounted for*" in EID's 2015 UWMP and the conclusions of water system reliability from the 2015 UWMP can be used to represent water supply sufficiency for purposes of this WSA.

The 2015 UWMP estimated total water service area demand to exceed 58,000 acre-feet annually by 2045, as shown in **Table 3-2**.

## 3.3 EID WATER SUPPLIES AND AVAILABILITY

The 2015 UWMP completed a very detailed analysis of EID's treated water supplies, which are derived from a number of water rights and entitlements. **Table 3-3** is the result of that analysis and the basis for the 2015 UWMP's assessment of water system reliability.

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<sup>35</sup> 2015 EID UWMP Table 4-5

<sup>36</sup> 2015 EID UWMP Section 2.1.3

**Table 3-2: Forecast Water Demand in EID Service Area**  
(source: 2015 UWMP Table 4-7)

| Land-class            |                             | Forecast Demand (af/yr) |        |        |        |        |        |
|-----------------------|-----------------------------|-------------------------|--------|--------|--------|--------|--------|
|                       |                             | 2020                    | 2025   | 2030   | 2035   | 2040   | 2045   |
| Existing Potable Use: | Single Family               | 15,737                  | 14,950 | 14,950 | 14,202 | 14,202 | 14,202 |
|                       | Single Fam. (dual potable)  | 713                     | 713    | 713    | 706    | 706    | 706    |
|                       | Multi-family                | 1,551                   | 1,474  | 1,474  | 1,444  | 1,444  | 1,444  |
|                       | Commercial                  | 3,144                   | 2,989  | 2,989  | 2,929  | 2,929  | 2,929  |
|                       | Recreational Turf           | 1,296                   | 1,166  | 1,166  | 1,143  | 1,143  | 1,143  |
|                       | City of Placerville         | 1,331                   | 1,264  | 1,264  | 1,201  | 1,201  | 1,201  |
|                       | Subtotal                    | 23,772                  | 22,556 | 22,556 | 21,626 | 21,626 | 21,626 |
| New Customers         | Single Family (GP)          | 779                     | 1,455  | 1,951  | 2,386  | 2,809  | 3,423  |
|                       | Single Fam. (dual potable)  | 35                      | 87     | 173    | 260    | 329    | 346    |
|                       | Multi-family (GP)           | 32                      | 62     | 89     | 115    | 140    | 167    |
|                       | Non-residential             | 273                     | 752    | 1,158  | 1,563  | 1,817  | 2,016  |
|                       | Known Projects              | 383                     | 2,011  | 2,868  | 3,576  | 3,922  | 3,922  |
|                       | FIL Growth                  | 65                      | 130    | 194    | 194    | 259    | 324    |
|                       | City of Placerville         | 120                     | 240    | 360    | 480    | 600    | 600    |
|                       | Subtotal                    | 1,687                   | 4,736  | 6,793  | 8,575  | 9,877  | 10,800 |
| Total Municipal       |                             | 25,459                  | 27,293 | 29,349 | 30,202 | 31,503 | 32,426 |
| Other                 | Other Authorized Uses       | 2,618                   | 2,749  | 2,857  | 2,952  | 3,035  | 3,128  |
|                       | Agriculture (potable)       | 6,981                   | 7,966  | 9,047  | 10,128 | 11,208 | 12,559 |
|                       | Distribution System Loss    | 5,259                   | 5,701  | 6,188  | 6,492  | 6,862  | 7,217  |
| Total Potable Demand  |                             | 40,318                  | 43,709 | 47,441 | 49,773 | 52,609 | 55,330 |
| Recycled              | Single Fam. (dual recycled) | 1,541                   | 1,464  | 1,464  | 1,435  | 1,435  | 1,435  |
|                       | Commercial                  | 730                     | 714    | 714    | 714    | 714    | 714    |
|                       | Recreational Turf           | 588                     | 576    | 576    | 576    | 576    | 576    |
|                       | New Recycled customers      | 48                      | 120    | 241    | 361    | 457    | 481    |
|                       | Distribution System Loss    | 253                     | 250    | 261    | 268    | 277    | 279    |
|                       | Total Recycled Demand       | 3,160                   | 3,125  | 3,256  | 3,354  | 3,459  | 3,485  |
| Total District Demand |                             | 43,477                  | 46,833 | 50,696 | 53,128 | 56,068 | 58,815 |

**Table 3-3: 2015 UWMP Supply Availability after 2040**  
(source: 2015 UWMP Table 3-3)

| Water Asset                                                 | Normal Year | Single Dry Year | Multi-Dry Year |        |        |
|-------------------------------------------------------------|-------------|-----------------|----------------|--------|--------|
|                                                             |             |                 | Year 1         | Year 2 | Year 3 |
| Existing Supplies                                           |             |                 |                |        |        |
| License 2184 and Pre-14 rights                              | 4,560       | 3,000           | 3,000          | 3,000  | 3,000  |
| Licenses 11835 and 11836                                    | 23,000      | 20,920          | 20,920         | 17,000 | 15,500 |
| CVP Contract                                                | 7,550       | 3,775           | 3,775          | 3,775  | 1,888  |
| Project 184                                                 | 15,080      | 15,080          | 15,080         | 15,080 | 15,080 |
| Permit 21112                                                | 17,000      | 17,000          | 17,000         | 17,000 | 17,000 |
| Subtotal Existing                                           | 67,190      | 59,775          | 59,775         | 55,855 | 52,468 |
| Planned Supplies                                            |             |                 |                |        |        |
| CVP Fazio water                                             | 7,500       | 3,750           | 3,750          | 3,750  | 1,875  |
| Applications 5645X12, 5644X02<br>(El Dorado-SMUD Agreement) | 30,000      | 5,000           | 5,000          | 5,000  | 5,000  |
| Subtotal Planned                                            | 37,500      | 8,750           | 8,750          | 8,750  | 6,875  |
| Recycled Water                                              | 3,500       | 3,500           | 3,500          | 3,500  | 3,500  |
| Total Supplies                                              | 108,190     | 72,025          | 72,025         | 68,105 | 62,843 |

### 3.4 EID WATER SYSTEM RELIABILITY

As detailed in Chapter 7 of the 2015 UWMP, EID compared the supply availability to the forecast future demand through 2045 for normal, single dry, and multiple dry years. Because this analysis extended to 2045, it provides an analysis that incorporates the planning horizon required for this WSA, allowing the 2015 UWMP's water system reliability to be used to assess water supply availability for purposes of the Proposed Project.

**Table 3-4** through **Table 3-6** present the results of the 2015 UWMP's normal, single-dry, and multiple dry year reliability analysis. As represented under all conditions, the 2015 UWMP indicates EID will have sufficient water supplies to adequately meet all of the forecast water demand through 2045.

**Table 3-4: 2015 UWMP Normal Year Supply and Demand Comparison**  
(source: 2015 UWMP Table 7-1)

| (acre-feet/yr) | 2020   | 2025    | 2030    | 2035    | 2040    | 2045    |
|----------------|--------|---------|---------|---------|---------|---------|
| Supplies       | 77,490 | 107,690 | 107,790 | 107,990 | 108,190 | 108,190 |
| Demands        | 43,477 | 46,833  | 50,696  | 53,128  | 56,068  | 58,815  |
| Difference     | 34,013 | 60,857  | 57,094  | 54,862  | 52,122  | 49,375  |

**Table 3-5: 2015 UWMP Dry Year Supply and Demand Comparison**  
(source: 2015 UWMP table 7-2)

| (acre-feet/yr) | 2020   | 2025   | 2030   | 2035   | 2040   | 2045   |
|----------------|--------|--------|--------|--------|--------|--------|
| Supplies       | 66,325 | 71,525 | 71,625 | 71,825 | 72,025 | 72,025 |
| Demands        | 45,651 | 49,175 | 53,231 | 55,784 | 58,871 | 61,756 |
| Difference     | 20,674 | 22,350 | 18,394 | 16,041 | 13,154 | 10,269 |

**Table 3-6: 2015 UWMP Multiple Dry Year Supply and Demand Comparison**  
(source: 2015 UWMP table 7-3)

| Year 1 | (acre-feet/yr) | 2020   | 2025   | 2030   | 2035   | 2040   | 2045   |
|--------|----------------|--------|--------|--------|--------|--------|--------|
|        | Supplies       | 66,325 | 71,525 | 71,625 | 71,825 | 72,025 | 72,025 |
|        | Demands        | 45,651 | 49,175 | 53,231 | 55,784 | 58,871 | 61,756 |
|        | Difference     | 20,674 | 22,350 | 18,394 | 16,041 | 13,154 | 10,269 |
|        |                | 2020   | 2025   | 2030   | 2035   | 2040   | 2045   |
| Year 2 | Supplies       | 62,405 | 67,605 | 67,705 | 67,905 | 68,105 | 68,105 |
|        | Demands        | 43,369 | 46,716 | 50,569 | 52,995 | 55,928 | 58,668 |
|        | Difference     | 19,036 | 20,889 | 17,136 | 14,910 | 12,177 | 9,437  |
|        |                | 2020   | 2025   | 2030   | 2035   | 2040   | 2045   |
| Year 3 | Supplies       | 57,143 | 62,343 | 62,443 | 62,643 | 62,843 | 62,843 |
|        | Demands        | 41,086 | 44,258 | 47,908 | 50,206 | 52,984 | 55,580 |
|        | Difference     | 16,056 | 18,085 | 14,535 | 12,437 | 9,858  | 7,262  |
|        |                | 2020   | 2025   | 2030   | 2035   | 2040   | 2045   |

## SECTION 4 – SUFFICIENCY CONCLUSION

As detailed in the 2015 UWMP, EID has sufficient water supplies to meet future demands in all conditions. Specifically, EID concludes sufficient supplies through 2045 for all existing and planned uses as detailed in Chapter 7 of the 2015 UWMP.

Therefore, pursuant to Water Code Section 10910 et seq, EID will have sufficient water supply to meet the Proposed Project's estimated build-out water demand of 475 acre-feet per year.

