

2022 WATER SUPPLY

AND

DEMAND REPORT

El Dorado Irrigation District 2890 Mosquito Road Placerville, California 95667

Presented to the EID Board of Directors October 24, 2022 This page intentionally left blank

TABLE OF CONTENTS

ES-1 E	EXECL	JTIVE SUMMARY	1
1	SUMN	IARY OF WATER METER AVAILABILITY	1
	1.1	El Dorado Hills Supply Area	1
	1.2	Western / Eastern Supply Area	3
	1.3	Calculation of Water Meter Availability	3
2	METH	IODOLOGY	14
	2.1	EID Policies and Regulations Pertaining to EDU Allocations	14
3	WATE	R SUPPLY	15
	3.1	CVP Contract	15
	3.2	Warren Act - Ditch/Weber Reservoir	15
	3.3	Water Rights Permit 21112	16
	3.4	Project 184 Supplies	16
	3.5	Jenkinson Lake Supplies	16
	3.6	Future - Fazio Central Valley Project Water Supply	17
4	ΤΟΤΑ	L POTENTIAL DEMAND	17
	4.1	Average Demand by User Category	17
	4.2	Active Demand	17
		4.2.1 Active Accounts	17 18
	4.3	Latent Demand	18
		4.3.1 Inactive Accounts	18
		4.3.2 Uninstalled Meters	18
	4.4	Other System Demand	18
		4.4.1 Authorized Oses 4.4.2 Potable Water Supplement to Recycled System	19
5	COM	/ITMENTS	19
	5.1	El Dorado Hills Supply Area	19
		5.1.1 Assessment District No. 3	20
		5.1.3 Weber Dam Advanced Funding Agreement Error! Bookmark r	20 10t
		defined.	00
		5.1.4 vvetsel-Ovlatt Agreement and Subsequent Amendment	20
	5.2	Western / Eastern Supply Area	22 22

6	GLOSSARY – Terms and Definitions 2	24
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LIST OF TABLES

TABLE 1	Water Meter Availability	.4
TABLE 2	Water Supply	.5
TABLE 3	Projected Demand, El Dorado Hills Supply Area	.6
TABLE 4	Projected Demand, Western/Eastern Supply Area	.7
TABLE 5	Active Demand, El Dorado Hills Supply Area	.8
TABLE 6	Latent Demand, El Dorado Hills Supply Area	.9
TABLE 7	Active Demand, Western/Eastern Supply Area	.10
TABLE 8A	Western Latent Demand	.11
TABLE 8B	Eastern Latent Demand	.12
TABLE 9	Other System Demand	.13
TABLE 10	Status of Commitments, El Dorado Hills Supply Area	.21
TABLE 11	Status of Commitments, Western/Eastern Supply Area	.22

LIST OF FIGURES

FIGURE A	Water Supply and Infrastructure Boundaries	2
FIGURE B	Service Zones	26

APPENDICES

APPENDIX A	El Dorado Hills Historical Trends	38
APPENDIX B	Western Region Historical Trends	39
APPENDIX C	Eastern Region Historical Trends	40

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ES-1 EXECUTIVE SUMMARY

The *Water Supply and Demand Report* is updated every three years to determine current water supply and water meter availability within the El Dorado Irrigation District (EID or District). Board Policy 5010, Water Supply Management, states that the District will not issue any new water meters if there is insufficient water supply. Administrative Regulation 5010, Water Availability and Commitments, outlines the responsibilities for annual reporting, shortages, and new meter restrictions. This policy and regulation provide the means to ensure that meter sales do not exceed water supply. In 2016 the Board directed staff to prepare the report at three-year intervals, rather than annually, given the sufficient water supply availability for the foreseeable future. The last Board presentation of this report was on August 26, 2019.

For purposes of calculating meter availability for the District, two water supply areas have been identified, one that receives water pumped from Folsom Reservoir, and one that receives water by gravity flow from the eastern supply sources – Project 184 and Jenkinson Lake. To determine the amount of water that will be available in the coming year for new meter sales, the District uses the various water supplies available in multiple dry years, and subtracts the total current potential demand for all uses of this water (excluding commitments). Previous reports looked at water supplies available in single dry years.

The supply areas are divided into the EI Dorado Hills supply area and the Western/Eastern supply area. The demands throughout the District have been divided into three regions: 1) EI Dorado Hills; 2) Western Region, which includes the communities of Bass Lake, Cameron Park, Shingle Springs, Logtown, El Dorado and Diamond Springs; and 3) Eastern Region, which includes Pleasant Valley, Sly Park, Pollock Pines, Camino, Placerville, and Lotus/Coloma. Water demands in each region are then further sub-divided into user categories depending upon the type of use for the water, such as residential or commercial, turf or agricultural irrigation, or municipal delivery to the City of Placerville.

A projected unit demand methodology was first developed for the 2011 Report for all user categories in each demand region Ten-year average unit demands are used in this 2021 report, which are slightly lower than those used in the 2019 report and reflect the trend in declining usage per customer.

With the execution of a long-term contract with Reclamation in 2016 for the District's 17,000 acre-foot Permit 21112 water right currently diverted at Folsom Lake, the unallocated water supply increased greatly from previous reports, along with the corresponding meter availability. In order to fully utilize these additional supplies throughout the service area, the District is pursuing a change in the point of diversion of this water right to add an additional authorized upstream point of diversion and rediversion to more effectively and efficiently manage water in the District's system and help meet future water demands within El Dorado County. The additional point of

diversion and re-diversion is located at the District's existing El Dorado Diversion Dam near Kyburz. In addition, the proposed project would add Jenkinson Lake as an authorized place of storage to allow for storage of Water Right Permit 21112 in Jenkinson Lake. Additional infrastructure improvements will be needed as growth occurs in the District and are not considered when determining meter availability. These improvements were detailed in the District's 2013 Integrated Water Resources Master Plan; and the District is currently performing an update to the Water Master Plan scheduled to be complete in 2023.

2022 WATER METER AVAILABILITY				
EL DORADO HILLS SUPPLY AREA	WESTERN/EASTERN SUPPLY AREA			
Water Supply = 21,235 AF	Water Supply = 30,580 AF			
Total Potential Demand = 11,635 AF	Total Potential Demand = 26,212 AF			
Unallocated Water Supply = 9,600 AF	Unallocated Water Supply = 4,368 AF			
Water Meter Availability = 16,910 EDUs	Water Meter Availability = 11,414 EDUs			

The following table reflects the current water meter availability for the District.

1 SUMMARY OF WATER METER AVAILABILITY

The water meter availability for EID is tracked within two distinct water supply areas; the EI Dorado Hills supply area and the Western/Eastern supply area, which are illustrated in Figure A. The unallocated water supply is calculated as annual acre-feet (AF), and then converted to equivalent dwelling units (EDUs).¹

Table 1 summarizes the respective water meter availability for these two water supply areas. The subsequent Tables 2 through 9 are used to quantify water supply and calculate the potential demand for both areas in order to determine the water meter availability.

1.1 El Dorado Hills Supply Area

The water supply for the El Dorado Hills supply area is in Table 2 and consists of three different water rights available at Folsom Reservoir. The water supply for each source is identified in the District's Urban Water Management Plan updates (Table 3-5), and the District is using the supply quantities projected to be available after three consecutive dry years (previous reports used single dry year supplies)The water supply is delivered from Folsom Reservoir via the newly constructed intake facilities and treated for consumptive use at the El Dorado Hills Water Treatment Plant. The active demand is provided in Table 5. Latent demand is shown in Table 6, while other system demand is shown in Table 9. The resulting unallocated water supply for the year is provided in Table 1.

The ten year average unit demands from 2012-2021 were used to convert the available water supply to meter availability.

In each supply area, there are several contractual commitments that have been established. These commitments are further described in Section 6, Commitments. The District's water supply is adequate to serve these commitments in addition to a general pool of meter availability.

¹ An EDU corresponds to a single-family residential dwelling served by a 3/4-inch water meter. Larger water meters, such as those for commercial applications, require additional EDUs.



1.2 Western / Eastern Supply Area

The water supply for the Western / Eastern supply area is described in Table 2, consisting of pre-1914 water rights from Project 184 and water rights associated with Jenkinson Lake. The water supply for each source is identified in the District's Urban Water Management Plan updates (Table 3-5), and the District is using the supply quantities projected to be available after three consecutive dry years (previous reports used single dry year supplies). These water supplies are treated and distributed for consumptive use at the Reservoir 1 and Reservoir A Water Treatment Plants. The active demand is provided in Table 7. Latent demand is shown in Tables 8A and 8B, while other system demand is shown in Table 9. The resulting unallocated water supply for the year is provided in Table 1.

The ten year average unit demands from 2012-2021 were used to convert the available water supply to meter availability.

The District also has contractual commitments within the Western/Eastern supply area from existing water supplies; these commitments are provided in Section 6, Commitments. The District's water supply is adequate to serve these commitments in addition to a general pool of meter availability.

1.3 Calculation of Water Meter Availability

The following Tables 1 through 9 describe the available water supply and calculate the potential demands of the two supply areas. Water meter availability is the difference between the available water supply and the total potential demand for each respective area. Total potential demand is the sum of active demand, latent demand, and other system demand. The active and latent demands have been determined using the average unit demands for each user category, multiplied by the number of active and latent accounts as of December 31st of the previous year. The other system demand includes recent water loss rates applied to the water supply, along with a 5-year historical average of recycled supplementation and other authorized uses.

TABLE 1 WATER METER AVAILABILITY

EL DORADO HILLS SUPPLY AREA			
Folsom Reservoir (Table 2)	21,235	Acre-Feet	
Calculated Potential Demand			
Active Demand (Table 5)	7,229		
Latent Demand (Table 6)	56		
Other System Demand (Table 9)	4,350		
Total Potential Demand	11,635	Acre-Feet	
2021 Unallocated Water Supply	9,600	Acre-Feet	
Supply minus Total Potential Demand			
Conversion to Equivalent Dwelling Units (EDUs)	0.57	Acre-Feet	
10-year average EDU demand for single-family residential		per EDU	
dwellings in the EI Dorado Hills Supply Area			
(Table 3 and Appendix Table A)			
2022 Water Meter Availability	16,910	EDUs ^[1]	
[1] These EDUs are subject to the El Dorado Hills Contractual Commitm	nents		

described in Section 6 and summarized in Table 10.

WESTERN / EASTERN SUPPLY AREA		
Supply from Eastern Sources (Table 2)	30,580	Acre-Feet
Calculated Potential Demand		
Active Demand (Table 7)	18,023	
Latent Demand (Tables 8A and 8B)	196	
Other System Demand (Table 9)	7,993	
Total Potential Demand	26,212	Acre-Feet
2021 Unallocated Water Supply	4,368	Acre-Feet
Supply minus Total Potential Demand		
Conversion to Equivalent Dwelling Units (EDUs)	0.38	Acre-Feet
10-year average EDU demand for single-family residential		per EDU
dwellings in the Western / Eastern Supply Area.		
(Table 4, and Appendix Tables B and C)		
2022 Water Meter Availability	11,414	EDUs ^[1]
[1] These EDUs are subject to the Western / Eastern Contractual Commi	tments	
described in Section 6 and summarized in Table 11.		

WATER SUPPLY El Dorado Hills and Western / Eastern Supply Areas

EL DORADO HILLS SUPPLY AREA				
Supply from Folsom Reservoir	21,235 Acre-Feet ^[1]			
WESTERN / EASTERN SUPPLY AREA				

Supply from Eastern Sources	30,580 Acre-Feet ^[2]

[1] For this report, three multi dry year allocation of supplies is used for the El Dorado Hills Supply Area. This includes supplies from Folsom Reservoir and consists of 1,235 AF from the USBR Water Service Contract, 3,000 AF from ditch/Weber Reservoir contract, and 17,000 AF from the Warren Act Contract for Permit 21112 supplies. In a normal year supply scenario, the allocation would be 7,550 from the USBR Water Service Contract, 4,560 from the USBR ditch/Weber Reservoir contract, and 17,000 AF from Permit 21112 supplies.

[2] For this report, three multi dry year allocation of supplies is used for the Western/Easetern Supply Area. The supply for the Western / Eastern Supply Area consists of 15,080 AF from Project 184; and 15,500 AF from Jenkinson Lake. During a critical dry year, the annual supply from Jenkinson Lake would be reduced pursuant to Board Policy 5010.

TABLE 3 PROJECTED 2021 DEMAND PER SERVICE El Dorado Hills Supply Area In Acre-Feet

User Categories	Demand F	2012-2021 Average Unit Demand		
	2019	2020	2021	Appendix A ^[1]
EL DORADO HILLS SUPPLY AREA				
Commercial	2.29	2.37	2.30	2.31
Multi-Family Residential (Units)	0.17	0.19	0.19	0.17
Recreational Turf Services	7.86	8.31	8.06	8.37
Single-Family Dual Potable	0.14	0.16	0.16	0.14
Single-Family Residential	0.50	0.58	0.56	0.57
Small Farm Irrigation	2.08	2.00	2.35	2.15

SERVICE ZONES WITHIN SUPPLY AREA (Zone #):

El Dorado Hills (02)

TABLE 4 PROJECTED 2021 DEMAND PER SERVICE Western / Eastern Supply Area In Acre-Feet

User Categories	Demand F	2012-2021 Average Unit		
	2019	2020	2021	Appendix A ^{[1][2]}
WESTERN REGION				
Agricultural Metered Irrigation	4.50	5.30	5.95	6.01
Commercial	1.14	1.07	1.06	1.14
Ditches	7.50	7.60	7.50	9.01
Multi-Family Residential (Units)	0.17	0.19	0.19	0.19
Recreational Turf Services	9.98	10.91	11.25	11.11
Single-Family Dual Potable	0.16	0.19	0.19	0.18
Single-Family Residential	0.39	0.45	0.44	0.43
Small Farm Irrigation	2.67	2.82	2.80	2.52
EASTERN REGION				
Agricultural Metered Irrigation	13.64	16.52	17.29	15.53
Commercial	0.99	1.03	1.02	1.21
Ditches	39.83	46.20	47.20	37.97
Multi-Family Residential (Units)	0.16	0.17	0.17	0.17
Municipal (City of Placerville)	76.92	95.75	101.33	92.51
Recreational Turf Services	4.63	5.71	4.88	5.40
Single-Family Residential	0.27	0.32	0.33	0.30
Small Farm Irrigation	2.41	2.93	3.35	2.73

SERVICE ZONES WITHIN SUPPLY AREA (Zone #):

<u>Western Region</u> Bass Lake (01), Cameron Park (04), Shingle Springs (05), Logtown (06), Diamond Springs/El Dorado (07) <u>Eastern Region</u>

Lotus/Coloma (03), Swansboro (09), Camino (10), Pleasant Valley (11), Sly Park (12), Pollock Pines (13), North Placerville (18), South Placerville (28)

TABLE 5				
ACTIVE DEMAND				
El Dorado Hills Supply Area				

ACTIVE DEMAND					
Active Account Categories	2012-2021 Average Unit Demand from Appendix A ^[1]	2021 Services or Units	Calculated Active Demand in AF		
Commercial	2.31	509	1,175		
Mulit-Family Residential (Units)	0.17	1,438	248		
Recreational Turf Services	8.37	36	301		
Single-Family Dual Potable	0.14	2,699	382		
Single-Family Residential	0.57	8,959	5,086		
Small Farm Irrigation	2.15	17	37		
Calculated Active Acre-Feet 7,229					

EL DORADO HILLS - ACTIVE DEMAND in Acre-Feet 7,229

TABLE 6LATENT DEMANDEl Dorado Hills Supply Area

IDLE ACCOUNTS					
Idle Account Categories	2021 <i>Idle</i> Services or Units	Calculated <i>Idle</i> Demand in AF			
Single-Family Residential 0.57		1	1		
		Subtotal Acre-Feet	1		

UNINSTALLED ACCOUNTS						
Uninstalled Meter Categories2012-2021 Average Unit Demand from Appendix A [1]2021 Uninstalled Services or UnitsCalculated Uninstalled in AF						
Commercial	2.31	21	48			
Single-Family Dual Potable	0.14	4	1			
Single-Family Residential0.57106						
Subtotal Acre-Feet 55						

Calculated Latent Demand Acre-Feet

56

EL DORADO HILLS - LATENT DEMAND in Acre-Feet

56

TABLE 7 ACTIVE DEMAND Western / Eastern Supply Area

WESTERN ACTIVE DEMAND					
User Categories for Active Accounts	2012-2021 Average Unit Demand from Appendix A ^[1]	2021 Services or Units	Calculated Active Demand in AF		
Agricultural Metered Irrigation	6.01	20	120		
Commercial	1.14	891	1,018		
Ditches	9.01	2	18		
Mulit-Family Residential (Units)	0.19	4,164	786		
Recreational Turf Services	11.11	44	489		
Single-Family Dual Potable	0.18	2,595	462		
Single-Family Residential	0.43	13,878	5,914		
Small Farm Irrigation	2.52	218	548		
Calculated WESTERN Acre-Feet 9,355					

EASTERN ACTIVE DEMAND					
User Categories for Active Accounts	2012-2021 Average Unit Demand from Appendix A ^[1]	D12-2021 Average2021 Services orJnit Demand fromUnits			
Agricultural Metered Irrigation	15.53	188	2,920		
Commercial	1.21	349	421		
Ditches	37.97	10	380		
Mulit-Family Residential (Units)	0.17	2,049	349		
Municipal (City of Placerville)	92.51	12	1,110		
Recreational Turf Services	5.40	25	135		
Single-Family Residential	0.30	9,428	2,823		
Small Farm Irrigation	2.73	194	530		
Calculated EASTERN Acre-Feet 8,668					

WESTERN / EASTERN - ACTIVE DEMAND in Acre-Feet

18,023

TABLE 8A WESTERN LATENT DEMAND Western / Eastern Supply Area

WESTERN IDLE ACCOUNTS						
Idle Account Categories 2012-2021 Average Unit Demand from Appendix A ^[1] 2021 Idle Calculated Idle						
Commercial	1.14	5	6			
Single-Family Residential 0.43 31 13						

Subtotal WESTERN Acre-Feet

19

WESTERN UNINSTALLED ACCOUNTS					
Uninstalled Meter Categories	2012-2021 Average Unit Demand from Appendix A ^[1] 2021 Uninstalled Services or Units		Calculated Uninstalled Demand in AF		
Commercial	1.14	47			
Mulit-Family Residential (Units)	0.19	36	7		
Single-Family Dual Potable	0.18	0	0		
Single-Family Residential 0.43 57 24					
Subtotal WESTERN Acre-Feet 78					

Calculated Latent Demand in Acre-Feet

WESTERN LATENT DEMAND in Acre-Feet

97

97

TABLE 8B EASTERN LATENT DEMAND Western / Eastern Supply Area

EASTERN IDLE ACCOUNTS					
Idle Account Categories	2012-2021 Average Unit Demand from Appendix A ^[1]	Calculated <i>Idle</i> Demand in AF			
Agricultural Metered Irrigation	15.53	4	62		
Commercial	1.21	2	2		
Mulit-Family Residential (Units)	0.17	0	0		
Single-Family Residential	0.30	10			
Subtotal EASTERN Acre-Feet 74					

EASTERN UNINSTALLED ACCOUNTS					
Uninstalled Meter Categories	2012-2021 Average Unit Demand from Appendix A ^[1]	Calculated <i>Uninstalled</i> Demand in AF			
Agricultural Metered Irrigation	15.53	16			
Commercial	1.21	5	6		
Single-Family Residential 0.30 9 3					
Subtotal EASTERN Acre-Feet 25					

Calculated Inactive and Uninstalled Acre-Feet

99

EASTERN - LATENT DEMAND in Acre-Feet

99

TABLE 9 OTHER SYSTEM DEMAND El Dorado Hills and Western / Eastern Supply Areas In Acre-Feet

OVERALL DISTRICT					
Overall System Firm Yield	Historical Real and Apparent Loss	Historical Real and Apparent Losses (13%) [1]	5-Year Average Other Authorized Uses [2]	5-Year Average Recycled System Supplement	Estimated Other System Demands
63,500	18.1%	11,200	2,498	726	14,425
OVERALL - OTHER SYSTEM DEMAND in Acre-Feet 14,425					14,425

EL DORADO HILLS SUPPLY AREA					
El Dorado Hills Supply	Historical Portion of Real and Apparent Loss	Historical Real and Apparent Losses [1]	5-Year Average Other Authorized Uses [2]	5-Year Average Recycled System Supplement	Calculated Other System Demands
23,775	18.1%	4,184	250	363	4,797
EL DORADO HILLS - OTHER SYSTEM DEMAND in Acre-Feet 4,797					4,797

WESTERN / EASTERN SUPPLY AREA										
Western / Eastern Supply	Historical Portion of Real and Apparent Loss	Historical Real and Apparent Losses [1]	5-Year Average Other Authorized Uses [2]	5-Year Average Recycled System Supplement	Calculated Other System Demands					
36,000	18.1%	6,336	2,248	363	8,947					
WESTERN / EASTERN - OTHER SYSTEM DEMAND in Acre-Feet 8,947										

[1] The real and apparent losses are estimated to be 18.1% overall based on five year average losses from Appendix D.

[2] The other authorized uses and recycled water supplementation have been distributed between the Western/Eastern and El Dorado Hills supply areas based on the consumption report.

2 METHODOLOGY

The methodology used in this report distinguishes the meter availability for El Dorado Hills versus the remainder of the District, while at the same time ensuring that meter allocations overall do not outpace available water supplies.

A separate calculation of supply was used to determine the available water supply for the EI Dorado Hills supply area and Western/Eastern supply area:

- 1) El Dorado Hills supply area This area receives water pumped from Folsom Reservoir.
- 2) Western/Eastern supply area This area includes the remaining higher elevation areas of the District that currently receive gravity water supply from the District's eastern sources Project 184 and Jenkinson Lake.

These two supply areas are shown in Figure A. This method provides an accurate way to analyze water availability that matches the existing configuration of the District's water system.

As water supply initiatives such as the Permit 21112 change petition is completed and there is more operational flexibility to draw supplies from multiple locations to serve our customers, the District should consider revising this report to one calculation of meter availability for the total service area instead of separate calculations for the two areas.

2.1 EID Policies and Regulations Pertaining to EDU Allocations

The District is governed by both Board Policies and Administrative Regulations that were developed in 2006. <u>Board Policy 5010 – Water Supply Management</u> states that the District will not issue any new water meters if there is insufficient water supply. <u>Administrative Regulation 5010 – Water Availability and Commitments</u> outlines the responsibilities for reporting, shortages, and new meter restrictions. This policy and regulation provide a means to ensure that meter sales do not exceed supply.

<u>Board Policy 9020 – Establishing New Service</u> and <u>Administrative Regulation 9021 –</u> <u>Eligibility for New Service</u> outline the process an applicant must comply with in order to purchase a water meter. As part of the application process for a project, an applicant must request a Facility Improvement Letter (FIL) from the District, which describes the existing system and any improvements that will be needed in order to receive service. For more complicated projects, the applicant must have a licensed engineer prepare a Facility Plan Report (FPR) for District review and approval. The FIL and FPR both assess the adequacy of the water system to provide service to the applicant and identify the necessary improvements that must be constructed prior to the issuance of water meters. These facility improvements range from distribution facilities that must be funded and constructed by the developer, to Facility Capacity Charge (FCC) funded District capital improvement projects such as transmission mains and water treatment plant expansions.

The applicant can receive service only when the required facilities are completed and accepted by the District. These regulations and service procurement procedures, coupled with the guidelines in this report of meter availability, provide a solid basis to ensure that both adequate supply and infrastructure are in place to serve existing and new connections throughout the District.

3 WATER SUPPLY

The El Dorado Hills supply is 21,235 AF, and includes a water service contract with the United States Bureau of Reclamation (USBR) for 7,550 AF (1,235 AF in multiple-dry years), a Warren Act contract for the Ditch/Weber Reservoir water rights totaling 4,560 AF (3,000 AF in multiple-dry years), and 17,000 AF from Water Right Permit 21112.

The Western/Eastern supply is 30,580 AF, consisting of 15,080 AF from Project 184 and approximately 15,500 AF from Sly Park's Jenkinson Lake.

Table 2 summarizes the overall system supplies, and breaks them down by supply area to calculate meter availability in a multiple-dry year scenario. The water supplies are briefly discussed below. The 2020 Urban Water Management Plan discusses the water rights in more detail.

3.1 CVP Contract

Surface water from Folsom Reservoir is provided through a Central Valley Project contract. The District is entitled to 7,550 AF per normal year by contract with USBR. The District assumes 3,775 AF is available during a single-dry year and the amount is reduced further to 1,235 AF in multiple dry years. The contract limits use to a particular area that generally encompasses the EI Dorado Hills and Cameron Park areas. Folsom Reservoir is operated by the USBR as part of the CVP, a multipurpose project that provides flood control, hydroelectricity, drinking water, and water for irrigation.

3.2 Warren Act - Ditch/Weber Reservoir

Water rights associated with Weber Reservoir, Weber Creek (Farmer's Free Ditch), Slab Creek (Summerfield Ditch), Hangtown Creek (Gold Hill Ditch), and Mill Creek (Project 184) are available to be diverted at Folsom Reservoir under a long-term Warren Act Contract, with up to 4,560 AF available each year combined from these sources during a normal year, and 3,000 AF during multiple -dry years.

3.3 Water Rights Permit 21112

The District holds Water Rights Permit 21112 in the amount of 17,000 AF per year. This entitlement is in addition to the 15,080 AF pre-1914 consumptive water supply associated with Project 184 discussed below. Although Project 184 operations make the Permit 21112 supplies available, permit conditions require that: 1) the water made available must be diverted at Folsom Reservoir, and 2) the District must enter into a Warren Act Contract with Reclamation for such diversions. On August 2, 2016, the USBR and the District entered into a Warren Act Contract which allows diversion of 17,000 AF of Permit 21112 supplies. The duration of the contract is through 2030, at which time the District would renew the contract. There are no anticipated reductions in this supply in dry or multiple dry years. The District is currently working to obtain approval from the State Water Resources Control Board to add an additional point of diversion at Kyburz diversion dam and rediversion to Jenkinson Lake to allow consumptive use of this water supply in the Western/Eastern part of the District's service area by gravity.

3.4 Project 184 Supplies

The District acquired Project 184 from Pacific Gas and Electric (PG&E) in 1999. Project 184 includes reservoirs and associated dams, 22 miles of canals, flumes and tunnels, 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. The supply is diverted from the South Fork American River at Kyburz 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. The District takes consumptive use of the water supply at the Reservoir 1 Water Treatment Plant, located downstream of Forebay Reservoir. The District now operates a new pipeline between Forebay Reservoir and the Reservoir 1 WTP which greatly reduces water loss and protects water quality by eliminating the previous Main Ditch conveyance. This supply contributes 15,080 acre-feet per year to the District's system firm yield in normal and multiple-dry years.

3.5 Jenkinson Lake Supplies

Licenses 11835 and 11836 allow for 33,400 AF of diversion in the District's upstream system in the Cosumnes River watershed. These diversions are stored in Jenkinson Lake, the largest storage reservoir in the District near Pollock Pines. Jenkinson Lake's maximum capacity is 41,033 AF. The facilities were constructed as part of the Sly Park Unit of the United States Bureau of Reclamation (USBR) CVP in 1955. With the transfer of ownership of the Sly Park Unit from the USBR in 2003, the District 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 during normal years, though the District's annual

water right is for 33,400 AF of total beneficial use. Jenkinson Lake contributes approximately 20,920 AF per year to the District's system in a single-dry year and the District's Urban Water Management Plan conservatively forecasted 15,500 AF in multiple dry years.

3.6 Future - Fazio Central Valley Project Water Supply

The District will have future access to at least 7,500 acre-feet of additional CVP water supplies at Folsom Lake. In June 2019 the EI Dorado Water Agency executed a contract with the USBR for up to 15,000 AF per year of Central Valley Project Municipal and Industrial water. EID would gain access to at least half of the water supply via a future subcontract agreement with the Water Agency. With ample District water supplies from Folsom Lake currently available, the District is not pursuing a near term agreement for this water supply and it has not been included when calculating meter availability in this report.

4 TOTAL POTENTIAL DEMAND

The total potential demand has been calculated for each customer class using the average demand from 2012 to 2021 to determine a current unit demand.

4.1 Average Demand by User Category

Tables 3 and 4 summarize the average demand per active meter for each user category over the last three years for the two designated supply areas. The tables also show the 10-year average unit demand for each category. The user categories include: singlefamily and multi-family residential, single-family dual plumbed dwellings (potable), small farm irrigation, agricultural metered irrigation, ditches, recreational turf services, commercial/industrial, and municipal water sales to the City of Placerville.

4.2 Active Demand

Table 5 summarizes the active demand for the El Dorado Hills supply area, and Table 7 the active demand for the Western/Eastern supply area. The active accounts, or dwelling units for multi-family, have been multiplied by the average unit demand for each user category from Tables 3 and 4, respectively.

4.2.1 Active Accounts

This category includes water meters that are installed in the ground, have an active billing status, and are charged a minimum bi-monthly billing regardless of recorded water use during the prior year. Pursuant to Article 3, Section 22280 of the California State Water Code, the Board of Directors adopted a policy on September 23, 1987 that requires all metered accounts to be billed from the date the water meter is installed.

Therefore, any meters installed after 1987, or any meters that have changed ownership since 1987, are considered to be active accounts and are included in this category.

4.2.2 Active Meters

Tables 3 and 4 summarize the average demand per service for the previous 3 years. Table 3 reports the average demand per service for the El Dorado Hills supply area; and Table 4 reports the average demand per service for the Western/Eastern supply area. In the case of multi-family residential, the projected unit demand is calculated per dwelling unit rather than per service to better represent the unit demands.

4.3 Latent Demand

Table 6 summarizes the latent demand for the El Dorado Hills supply area, and Tables 8A and 8B summarize the latent demand for the Western/Eastern supply area. The latter area has been further separated into the Western and Eastern demand regions in order to more accurately calculate unit demands. Table 4 lists the individual service zones for these demand regions, and Figure B illustrates the service zones. The inactive accounts and uninstalled meters have been multiplied by the projected unit demand from the historical data for each user category from Tables 3 and 4.

4.3.1 Inactive Accounts

This category includes water meters that are installed in the ground but idle as of December 31st of the previous year. This category also includes water meters purchased prior to 1987 that were then allowed to remain idle, and have had no changes in ownership or recorded water use since 1987.

4.3.2 Uninstalled Meters

This category includes water meters that have been purchased to serve a parcel of land, but have not yet been installed nor has an account been set up for minimum billing purposes as of December 31st of the previous year. This category also includes those meters purchased under the "Crawford Allocation" during the declared Water Emergency in 1990, which are not required to be installed until needed.

4.4 Other System Demand

Table 9 summarizes the other system demand for the El Dorado Hills supply area and the Western/Eastern supply area. The other system demand includes real losses of water into the ground due to leaks and breaks, apparent or paper losses such as meter inaccuracies, supplementation of potable water to the recycled system, and other authorized uses of water such as operational flushing or environmental flows. The District tracks water losses annually. With the recent abandonment of the Main Ditch conveyance, combined with pending water loss standards that will apply to each water supplier in California, the District anticipates historical water losses will be reduced. The Other System Demand calculation will likely need to be revised in future reports. For this 2021 Report the District assumes historical losses of 18%.

4.4.1 Authorized Uses

The majority of authorized uses include miscellaneous uses of potable and raw water that is either metered or otherwise accounted for in the system. These uses include private fire service connections, temporary water use permits, bulk water stations, recycled water supplementation, and water released to Clear Creek for aesthetics flow maintenance.

Authorized use of water also includes EID operational uses that are classified as nonrevenue water because they are unbilled, but include both metered and unmetered uses. Examples of non-revenue water would include water quality and operational flushing, water meter testing, and the flushing and cleaning of sewage lift stations and the sewage collection system with potable water.

4.4.2 Potable Water Supplement to Recycled System

Potable water has been used to supplement the recycled water system since 2002 and is also included to calculate the District's "Other System Demand" in Table 9. Recycled water is used for residential and commercial landscape, and turf irrigation. Several recycled water storage tanks are the primary receiving points for supplemental potable water.

It is usually necessary to make releases to these receiving points during the summertime during peak demand periods. The potable water system will continue to supplement the recycled system unless and until additional recycled supply is available to meet recycled water demand.

5 COMMITMENTS

The District has several contractual commitments for water supply in both the El Dorado Hills and Western/Eastern supply areas. Below is a description of each of these commitments, along with their impact upon the District's existing and future water supplies.

5.1 El Dorado Hills Supply Area

The contractual commitments for the El Dorado Hills supply area is provided in Table 10.

5.1.1 Assessment District No. 3

In May of 1985, Assessment District No. 3 (AD3) was formed as a means to finance expansions and improvements to the El Dorado Hills water and sewer systems and related facilities.¹ The ultimate capacity of AD3 was based on 9,074 annual AF of water supply because of the likelihood that EID would be able to contract for additional water supplies beyond the current (1985) contracted amount of 7,550 AF. Using 600 gallons per dwelling unit per day or 0.67 AF/year,² the 9,074 AF was estimated to support 13,543 dwelling units or the equivalent.³ At the time AD3 was formed, EID was estimated to be serving or committed to serve 2,563 EDUs. Consequently, there was additional water capacity for approximately 10,980 EDUs.

5.1.2 Monte Vista Parcels

In April of 1994, the District Board of Directors took action to "grandfather" the existing parcels within the Monte Vista area into AD3 when this area was connected to the El Dorado Hills water system by a pipeline extension. This area had previously been served directly from Folsom Reservoir through a small water treatment plant. Water quality issues required EID to either upgrade the treatment plant or connect the Monte Vista water system to the El Dorado Hills system. The pipeline extension was the preferred solution and the connection was made.

5.1.3 Wetsel-Oviatt Agreement and Subsequent Amendment

In September of 2003, the District entered into a "Settlement Agreement" with Wetsel-Oviatt, Inc., (Wetsel) which established a pool of 1,900 AF/yr of water supply available solely to Wetsel from new water sources, of which not less than 1,600 AF/yr would be potable water and the remainder would be recycled water.

The new water supplies were defined as any water supply that increased the systemwide firm yield above 43,280 AF/yr; and the available water supplies to the El Dorado Hills region above 10,976 AF/yr. The new water supplies included Water Rights Permit 21112 for 17,000 AF/yr; the District's share of the prospective water service contract for 15,000 AF/yr contemplated by Public Law 101-514 (Fazio Water); and the permanent transfer in point of diversion to Folsom Reservoir of the water rights associated with the District's Farmer's Free Ditch, Gold Hill Ditch, Summerfield Ditch, and Weber Reservoir.

¹ Tax Free Municipal Bonds, El Dorado Irrigation District, El Dorado County, California, Assessment District No. 3, Phase Two, Final Offering Statement dated May 30, 1985.

² From a 1981 EID water system analysis of EI Dorado Hills.

³ The formation of AD3 was based on dwelling units, also known as equivalent dwelling units (EDUs). An EDU corresponds to a single-family residential dwelling served by a 3/4-inch water meter. Larger water meters, such as those for commercial applications, required additional EDUs.

	EQUIVALENT DWELLING UNITS (EDUs)										
Type of Commitment	Zone	Original Commitments EDUs Sold or Expired		Remainder of Commitments Zone 1 and/or 2 ^[1]							
Considered in the Formation of AD3 Existing Dwelling Units - 2,563 New Dwelling Units - 10,980	1, 2	13,543	13,298	245							
Monte Vista Parcels	2	112	63	49							
	Zone	Total Potable Commitment (AF)	Current potable commitment (AF)	EDU commitment							
Wetsel-Oviatt Agreement [2]	2	1,600	1,600	2,807							
		EL DORADO HILLS COMMITMENTS in EDUs									

TABLE 10 STATUS OF COMMITMENTS El Dorado Hills Supply Area

[1] Zone 2 is the El Dorado Hills Service Zone. Zone 1 is the Bass Lake Service Zone.

[2] This commitment is conditional upon certain augmentations to the District's water supply. With increases in supply to EDH, the full allotment of 1,600 AF of potable water has been assigned to this pool.

5.2 Western / Eastern Supply Area

The total contractual commitments for the Western/Eastern supply area is provided in Table 11.

5.2.1 Apple Mountain

In April of 2001, the District entered into a "Water Service Agreement" with Apple Mountain, LP for property known as the Apple Mountain Golf Course. The District committed to provide up to 270 AF/yr of water for golf course irrigation and non-potable uses. The annual amount is further restricted with no more than 240 AF between May 15 and October 15; and no more than 60 AF in each of the months of July and August.

COMMITMENTS - EQUIVALENT DWELLING UNITS (EDUs)											
	Zone	Original Commitment (AF)	Average Amount Used last 10 Years (AF)	Remaining Commitment (AF)	Converted to EDUs						
Apple Mountain Water Service Agreement	10	270	49	221	582						
TOTAL COMMITMENTS in EDUs											

TABLE 11 STATUS OF COMMITMENTS Western / Eastern Supply Area

WESTERN / EASTERN COMMITMENTS in EDUs 582



6 GLOSSARY – Terms and Definitions

The following terms and definitions are tailored to reflect the terminology of the El Dorado Irrigation District (EID). In general terms, the normal water measurements used by EID are as follows: cubic feet (CF) for metered customer demands; acre-feet (AF) for water supplies; cubic feet per second (CFS) or million gallons per day (MGD) for flow rates and treatment plant capacities; and miners inches (MI) for some ditch deliveries.

Active Water Accounts

Any account established after September 1987 where the meter has been installed and the account is charged a minimum bi-monthly billing, regardless of recorded water use; or any account established prior to September 1987 which has recorded water use or has changed ownership since 1987. Excludes those accounts temporarily disconnected for non-payment of a bill or seasonal accounts.

Active Water Meters

Any water meter installed in the ground with recorded water use during the reporting year.

Assessment District No. 3 (AD3)

An assessment district formed on May 30, 1985 that offered tax free municipal bonds to finance the expansion and improvement of the El Dorado Hills water and sewer systems and related facilities.

Authorized Uses

The majority of authorized use generates revenue, and includes both potable water that is metered and billed to EID customers, and raw water that is both metered and unmetered but billed to EID customers. The other minor portion of authorized uses includes District operational uses of potable water that are considered non-revenue water because they are unbilled, and include both metered and unmetered uses.

Contiguous Water System

The main, interconnected transmission and distribution system of the District, generally between the Sly Park and Forebay water treatment plants in the east, and the El Dorado Hills water treatment plant in the west, excluding the satellite water systems in the communities of Outingdale and Strawberry.

Contractual Commitments

Legal obligations of the District to reserve water supply or provide water service to designated parties, entered into by the adoption of a Board resolution, the formation of an assessment district, or the signing of a contract. Refer to Tables 10 and 11.

Crawford Allocation

The EID Board of Directors considered the "Crawford Project Water Allocation Plan," on April 23, 1990, in response to a water emergency declared on March 12, 1990. The Crawford Ditch Project was to net EID nearly 2,800 AF of new water, which equated approximately 3,500 EDUs. Resolution No. 90-87 was adopted on April 30, 1990, adding a surcharge of \$2,200 to the Facility Capacity Charge (FCC) for each new water meter sold under the allocation plan. These funds were then used to make improvements to the Crawford Ditch System as well as EID's Reservoir 7 water treatment plant. Water meters purchased under the Crawford Allocation were not required to be installed at the time of purchase, but rather only as needed. These meters are in the latent demand as uninstalled meters. Over time, the number of Crawford Allocation uninstalled meters has steadily diminished as these projects are built and the meters are installed.

Equivalent Dwelling Unit (EDU)

An EDU pertains to the average water demand for a detached, single-family dwelling unit served by a 3/4-inch water meter, and is referenced within this report as acre-feet (AF) per year. This demand is measured at the customer's water meter, and therefore does not include losses in the delivery system. Larger water meters, such as those for commercial applications, required additional EDUs. A specific unit demand of an EDU is for the EI Dorado Hills and Western / Eastern Supply Areas.

Inactive Water Account

This category includes water meters purchased prior to 1987 that were then allowed to remain idle, and have had no changes in ownership or recorded water use since 1987.

Metered Water Demand (Consumption)

The total amount of measured and billed water that is delivered through the customer's meter. This demand is usually measured and billed once every two months, and reported statistically on an annual calendar basis.

Monte Vista

A community along Salmon Falls Road to the northeast of El Dorado Hills, possibly named after the old Monte Vista Campground, and at one time a separate District service zone called the Monte Vista / Salmon Falls (Zone 1) until it was connected and incorporated into the El Dorado Hills Service Zone 2.

Potential Water Demand

A calculated annual amount of water demand , which includes active, latent, and other system demands.

Recycled Water

Tertiary treated and disinfected wastewater effluent meeting the water quality requirements of the Department of Health Services Title 22 regulations that is pure enough for human contact but not for human consumption. Within EID, recycled water is used solely for landscape and turf irrigation, including residential landscaping, golf courses, parks, and other uses where human body contact is a potential occurrence.

Supply Areas

The two areas are the El Dorado Hills supply area and the Western/Eastern supply area as illustrated in Figure A. El Dorado Hills receives water from Folsom Lake, with additional water provided by gravity flow from the Gold Hill Intertie (GHI). The Western/Eastern includes all other service zones (Figure B) that currently receive gravity water supply from the District's eastern sources – Project 184 and Jenkinson Lake.

Service Zones

The individual service zones illustrated in Figure B, consisting of 14 contiguous service zones and 2 satellite water systems. The boundary between service zones is usually a storage tank or reservoir.

Supplement to the Recycled System

The quantity of potable water that is needed to make up the difference between what the recycled water system is able to produce and the demand for recycled water, due to a lack of seasonal recycled water storage.

Unallocated Water Supply

The quantity of water supply available for sale during the reporting year, which is the difference between the annual water supply and the total potential demand. Calculated as annual acre-feet and then converted to an equivalent dwelling unit.

Uninstalled Water Meters

A meter which has been purchased to serve a parcel of land, but has not been installed nor has an account been set up for billing purposes.

User Categories

Designates different water rate structures used within the financial billing system, which are then used to separate classes of services for statistical reporting. The user categories include single-family and multi-family residential; single-family dual potable; commercial/industrial; small farm, agricultural, ditch, recreational turf and domestic irrigation; and municipal water sales to the City of Placerville.

Warren Act Contract

A one-year or multiple-year contract between the District and the United States Bureau of Reclamation (USBR), which authorizes and charges a fee for the use of a Federal facility, such as Folsom Reservoir, to store non-Federal water for District use.

Water Supply Management Conditions

According to District Administrative Regulation No. 5011, Water Supply Management Conditions, incremental steps would be needed to manage increasing levels of shortages due to either drought or water emergency. Specific procedures are outlined in the above referenced water supply matrix, although the District is in the process of completing a comprehensive drought plan that will eventually replace the water supply matrix.

Water Year

A continuous 12-month period during which a complete cycle occurs, arbitrarily selected from the presentation of data relative to hydrologic or meteorological phenomena. The U.S. Geological Survey uses the period October 1 to September 30 in the publication of its records of stream flow. The Water Resources Report is based on the previous calendar year.

APPENDICES

APPENDIX TABLE A EL DORADO HILLS HISTORICAL TRENDS EL DORADO HILLS SERVICE AREA

	Historical Unit Demands in Acre-Feet											
User Category	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Average Unit Demand	
Commercial	2.64	2.81	2.10	1.96	2.06	2.27	2.30	2.29	2.37	2.30	2.31	
Multi-Family Residential (Units)	0.18	0.18	0.16	0.15	0.16	0.17	0.17	0.17	0.19	0.19	0.17	
Recreational Turf Services	9.66	10.08	8.06	7.89	7.48	7.97	8.33	7.86	8.31	8.06	8.37	
Single-Family Dual Potable	0.15	0.14	0.13	0.12	0.13	0.14	0.14	0.14	0.16	0.16	0.14	
Single-Family Residential	0.67	0.70	0.55	0.49	0.52	0.55	0.55	0.50	0.58	0.56	0.57	
Small Farm Irrigation	3.71	2.37	1.95	1.55	1.68	1.57	2.29	2.08	2.00	2.35	2.15	

SERVICE ZONES WITHIN SERVICE AREA (Zone #):

El Dorado Hills (02)

APPENDIX TABLE B WESTERN REGION HISTORICAL TRENDS Western / Eastern Service Area

	Historical Unit Demands in Acre-Feet											
User Category	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Average Unit Demand	
Agricultural Metered Irrigation	7.00	8.57	7.87	5.52	4.62	5.23	5.52	4.50	5.30	5.95	6.01	
Commercial	1.39	1.40	1.06	0.97	0.99	1.23	1.12	1.14	1.07	1.06	1.14	
Ditches	14.50	15.50	7.50	7.50	7.50	7.50	7.50	7.50	7.60	7.50	9.01	
Multi-Family Residential Units	0.22	0.23	0.19	0.16	0.17	0.19	0.18	0.17	0.19	0.19	0.19	
Recreational Turf Services	12.74	13.90	10.15	10.69	9.16	11.83	10.45	9.98	10.91	11.25	11.11	
Single-Family Dual Potable	0.18	0.18	0.18	0.17	0.20	0.15	0.17	0.16	0.19	0.19	0.18	
Single-Family Residential	0.49	0.50	0.41	0.36	0.39	0.42	0.42	0.39	0.45	0.44	0.43	
Small Farm Irrigation	2.94	2.54	2.07	1.83	2.18	2.63	2.67	2.67	2.82	2.80	2.52	

SERVICE ZONES WITHIN SERVICE AREA (Zone #):

Western Region

Bass Lake (01), Cameron Park (04), Shingle Springs (05), Logtown (06), Diamond Springs/El Dorado (07)

APPENDIX TABLE C EASTERN REGION HISTORICAL TRENDS Western / Eastern Service Area

	Historical Unit Demands in Acre-Feet											
User Category	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Average Unit Demand	
Agricultural Metered Irrigation	16.01	16.26	14.03	13.67	15.95	15.76	16.18	13.64	16.52	17.29	15.53	
Commercial	1.34	1.50	1.24	1.10	1.23	1.35	1.26	0.99	1.03	1.02	1.21	
Ditches	53.27	26.63	26.04	21.08	24.14	56.15	39.17	39.83	46.20	47.20	37.97	
Multi-Family Residential Units	0.20	0.19	0.16	0.15	0.16	0.17	0.17	0.16	0.17	0.17	0.17	
Municipal-City of Placerville	84.60	102.38	101.27	64.94	100.51	106.86	90.54	76.92	95.75	101.33	92.51	
Recreational Turf Services	8.28	8.00	4.32	3.01	4.26	5.22	5.71	4.63	5.71	4.88	5.40	
Single-Family Residential	0.33	0.35	0.28	0.25	0.28	0.29	0.29	0.27	0.32	0.33	0.30	
Small Farm Irrigation	2.85	2.93	2.41	2.23	2.67	2.74	2.78	2.41	2.93	3.35	2.73	

SERVICE ZONES WITHIN SERVICE AREA (Zone #):

Eastern Region

Lotus/Coloma (03), Swansboro (09), Camino (10), Pleasant Valley (11), Sly Park (12), Pollock Pines (13), North Placerville (18), and South Placerville (28)