

# EL DORADO IRRIGATION DISTRICT

## WATER SUPPLIES AND AVAILABILITY



## Topics Discussed

- Water Conveyance and Treatment
- Water Sources
- 2020 Urban Water Management Plan
- 2022 Water Supply and Demand Report
- State Policies

# Water Conveyance, Treatment, Delivery

The reliable delivery of high-quality water is a complex task that requires 24/7 vigilance, millions of dollars invested in state-of-the-art treatment plants and equipment to meet regulatory requirements, and highly trained, professional employees.

- 3 water systems
- 5 treatment facilities
- 1,298 miles of pipelines
- 36 storage reservoirs
- 38 pump stations
- 42,394 services



**A flume carries water from the high country to reservoirs and treatment plants**

## Recycled water

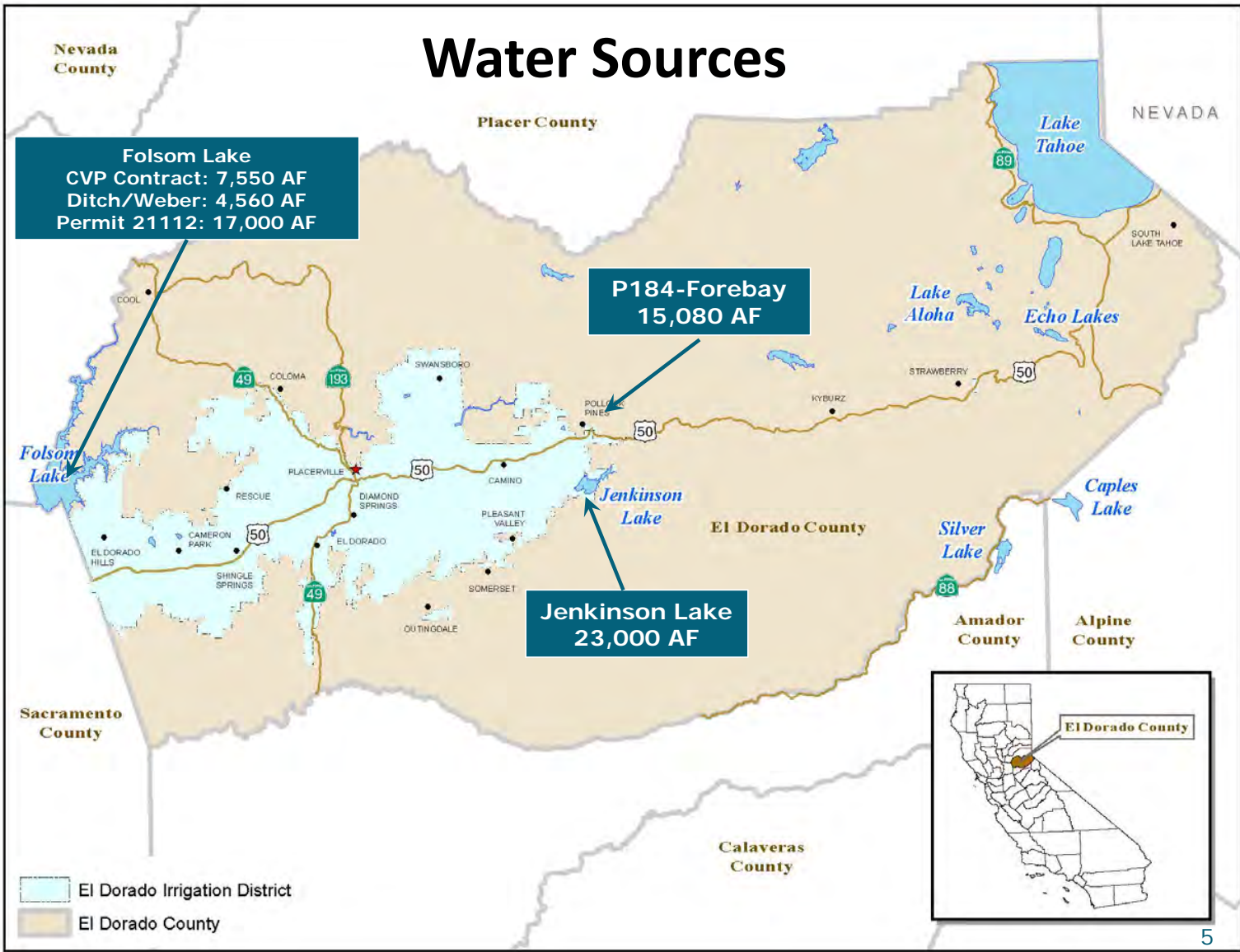
EID treats and delivers about 3,500 acre-feet of recycled water annually or 1.1 billion gallons. Begun in the late 1970s, the program is considered a leader in the recycled water industry.

- 2 ww facilities produce Title 22 recycled water
  - El Dorado Hills and Deer Creek
- 93 miles of recycled pipelines
- 5 storage tanks
- 5 pump stations
- 5,546 services



Recycled pipeline

# Water Sources



# Project 184 Supplies

Lake Aloha



Caples Lake



Silver Lake



Echo Lake



# Forebay Reservoir



New Pipeline



Reservoir 1 Water Treatment Plant



# Sly Park's Jenkinson Lake



## Reservoir A Water Treatment Plant





## Folsom Reservoir



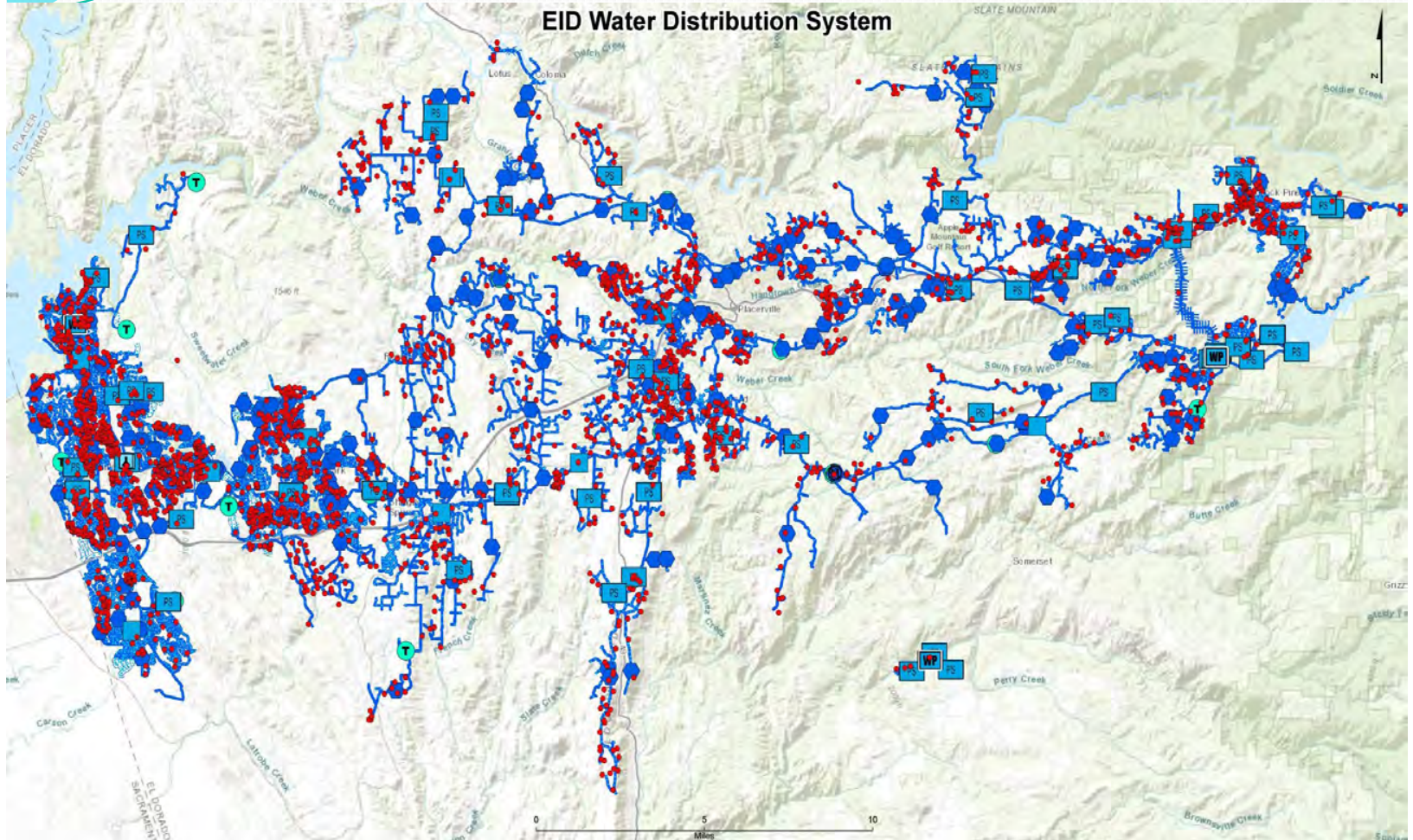
## Folsom Lake Pump Station



## El Dorado Hills Water Treatment Plant



# Water System



# 2020 Urban Water Management Plan



## Background

- Urban Water Management Plan update (UWMP) required by the state every five years:
  - Water suppliers delivering over 3,000 acre-feet annually or serving more than 3,000 customers
  - Summarizes long-term adequacy of water supplies compared to anticipated growth and drought conditions
  - Used to support water supply assessments (WSA) for 500+ lot developments during next five year period
- Approved by EID Board of Directors June 28, 2021



# Water Supplies

- Current and future water supplies:
  - Weber Reservoir/Ditch rights
  - Sly Park Reservoir
  - Central Valley Project (CVP) Water Service Contract
  - Project 184 pre-1914 rights
  - Project 184 Permit 2112
  - Recycled Water
  - CVP Fazio water – future

# Projected Average Year Supply

Water Right or Entitlement	Maximum Water Assets Available	Average Year Planned Availability				
		2025	2030	2035	2040	2045
<b>Existing Supplies</b>						
Ditches / Weber Reservoir Rights (License 2184 and Pre-1914 Water Rights)	4,560	4,560	4,560	4,560	4,560	4,560
Sly Park Reservoir (Licenses 11835 and 11836)	33,400	23,000	23,000	23,000	23,000	23,000
CVP Contract (Contract 14-06-200-1375A-LTR1)	7,550	7,550	7,550	7,550	7,550	7,550
Project 184 (Pre-1914 at Forebay)	15,080	15,080	15,080	15,080	15,080	15,080
Permit 21112 (Project 184 Warren Act Contract)	17,000	17,000	17,000	17,000	17,000	17,000
Outingdale/ Middle Fork Cosumnes (Permit 4071)	104	104	104	104	104	104
Recycled Water (Non-potable)	3,500	3,500	3,500	3,500	3,500	3,500
<b>Subtotal Existing</b>	<b>81,494</b>	<b>70,794</b>	<b>70,794</b>	<b>70,794</b>	<b>70,794</b>	<b>70,794</b>
<b>Planned Supplies</b>						
CVP Fazio Water entitlement	7,500	0	0	7,500	7,500	7,500
<b>Subtotal Planned</b>	<b>7,500</b>	<b>0</b>	<b>0</b>	<b>7,500</b>	<b>7,500</b>	<b>7,500</b>
<b>Total</b>	<b>88,694</b>	<b>70,794</b>	<b>70,794</b>	<b>78,294</b>	<b>78,294</b>	<b>78,294</b>

# Projected Multiple Dry Year Supply

Water Right or Entitlement	Maximum Water Assets Available	Normal Year	Single Dry Year	Multiple Dry Years				
				Year 1	Year 2	Year 3	Year 4	Year 5
<b>Existing Supplies</b>								
Ditches / Weber Reservoir Rights (License 2184 and Pre-1914 Water Rights)	4,560	4,560	3,000	3,000	3,000	3,000	3,000	3,000
Sly Park Reservoir (Licenses 11835 and 11836)	33,400	23,000	20,920	20,920	17,000	15,500	15,500	15,500
CVP Contract (Contract 14-06-200-1375A-LTR1-P)	7,550	7,550	3,775	3,775	3,775	1,235	1,235	1,235
Project 184 (Pre-1914 at Forebay)	15,080	15,080	15,080	15,080	15,080	15,080	15,080	15,080
Permit 21112 (Project 184 Warren Act Contract)	17,000	17,000	17,000	17,000	17,000	17,000	17,000	17,000
Outingdale/ Middle Fork Consumnes (Permit 4071)	104	104	104	104	13	13	13	13
Recycled Water (non-potable)	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
<b>Subtotal Existing</b>	<b>81,194</b>	<b>70,794</b>	<b>63,379</b>	<b>63,379</b>	<b>59,368</b>	<b>55,328</b>	<b>55,328</b>	<b>55,328</b>
<b>Planned Supplies</b>								
CVP Fazio Water entitlement	7,500	7,500	3,750	3,750	3,750	1,235	1,235	1,235
<b>Subtotal Planned</b>	<b>7,500</b>	<b>7,500</b>	<b>3,750</b>	<b>3,750</b>	<b>3,750</b>	<b>1,235</b>	<b>1,235</b>	<b>1,235</b>
<b>Total</b>	<b>88,694</b>	<b>78,294</b>	<b>67,129</b>	<b>67,129</b>	<b>63,118</b>	<b>56,563</b>	<b>56,563</b>	<b>56,563</b>



# Growth Projections

- Expected housing growth in EID's service area was evaluated in a study commissioned by El Dorado County in 2020:
  - ~1% annual growth in the El Dorado Hills region
  - ~0.5% annual growth in the upper Western/Eastern region
- Used to forecast growth in connections to the District



# Expected Total Connections

Customer Class	2025	2030	2035	2040	2045
Single Family Residential	34,141	37,813	39,609	41,473	43,431
Single Family Residential - Dual	5,244	5,244	5,244	5,244	5,244
Multi-Family Residential	1,021	1,118	1,163	1,211	1,259
Commercial / Industrial	1,336	1,504	1,588	1,672	1,756
Commercial Landscape	401	427	440	453	466
Recreational Turf Services	109	119	124	129	134
Ditch Systems (potable)	14	14	14	14	14
Small Farm Irrigation	445	470	483	496	509
Agricultural Metered Irrigation	224	239	246	253	260
<b>Total Connections</b>	<b>42,935</b>	<b>46,948</b>	<b>48,911</b>	<b>50,944</b>	<b>53,073</b>



# Demand Pattern Analysis

- Specific demand factors developed for two classifications:
  - Existing customers with current usage patterns
    - Maintained current 2020 usage through 2045
  - New future customers expected to have lower demand patterns
    - Incorporates Green Building Standards Code (CAL Green Code), Model Water Efficient Landscape Ordinance (MWELO)
    - Estimated 15% reduction compared to existing customers

# Future Demands (acre-feet per year)

Land-class		2025	2030	2035	2040	2045
Existing Potable Uses	Single Family	14,400	14,400	14,400	14,400	14,400
	Single Fam. (dual potable)	840	840	840	840	840
	Multi-family	1,520	1,520	1,520	1,520	1,520
	Commercial (all)	2,320	2,320	2,320	2,320	2,320
	Recreational Turf	990	990	990	990	990
	City of Placerville	1,150	1,150	1,150	1,150	1,150
	<b>Subtotal</b>	<b>21,220</b>	<b>21,220</b>	<b>21,220</b>	<b>21,220</b>	<b>21,220</b>
New Customers	EDH Region	580	1,210	1,830	2,480	3,170
	Western Region	100	180	260	340	420
	Eastern Region	200	360	530	700	870
	City of Placerville	10	40	70	140	140
	<b>Subtotal</b>	<b>890</b>	<b>1,790</b>	<b>2,690</b>	<b>3,660</b>	<b>4,600</b>
	<b>Total Municipal</b>	<b>22,110</b>	<b>23,010</b>	<b>23,910</b>	<b>24,880</b>	<b>25,820</b>
Other	Other Authorized Uses/Recycled Water Supplementation	3,300	3,300	3,300	3,300	3,300
	Agriculture (potable)	5,210	5,360	5,510	5,660	5,810
	Distribution System Loss	4,120	3,860	3,960	4,050	4,150
	<b>Total Potable Demand</b>	<b>34,740</b>	<b>35,530</b>	<b>36,680</b>	<b>37,890</b>	<b>39,080</b>
Recycled	Single Family - Dual (landscape)	2,450	2,450	2,450	2,450	2,450
	Commercial	990	990	990	990	990
	Recreational Turf	490	490	490	490	490
	Distribution System Loss	310	310	310	310	310
	<b>Total Recycled Demand</b>	<b>4,240</b>	<b>4,240</b>	<b>4,240</b>	<b>4,240</b>	<b>4,240</b>
	<b>Total District Demand</b>	<b>38,980</b>	<b>39,770</b>	<b>40,920</b>	<b>42,130</b>	<b>43,320</b>

# Five Consecutive Dry Years through 2045 (af/yr)

		2025	2030	2035	2040	2045
Year 1	Supply	63,400	63,400	63,400	63,400	63,400
	Demand	40,930	41,760	42,970	44,240	45,490
	Difference	22,470	21,640	20,430	19,160	17,910
Year 2	Supply	59,400	59,400	63,100	63,100	63,100
	Demand	41,100	42,000	43,220	44,490	45,490
	Difference	18,300	17,400	19,880	18,610	17,610
Year 3	Supply	55,300	55,300	56,600	56,600	56,600
	Demand	41,270	42,240	43,470	44,740	45,490
	Difference	14,030	13,060	13,130	11,860	11,110
Year 4	Supply	55,300	55,300	56,600	56,600	56,600
	Demand	41,440	42,480	43,720	44,990	45,490
	Difference	13,860	12,820	12,880	11,610	11,110
Year 5	Supply	55,300	55,300	56,600	56,600	56,600
	Demand	41,610	42,720	43,970	45,240	45,490
	Difference	13,690	12,580	12,630	11,360	11,110

# 2022 Water Supply and Demand Report





## Report Purpose

- This report is not a planning document to address future supply needs
  - short term planning to not over commit water supply
- Long term supply and infrastructure needs addressed in:
  - 2013 Integrated Water Master Plan (2023 Update)
  - 2020 Urban Water Management Plan
  - Water Supply Assessments – project specific
  - 5-Year Capital Improvement Plan
- Approved by EID Board of Directors Oct. 24, 2022



# Water Supply

- Divided into two areas based on source of water rights:
  - Folsom Lake Supplies
    - El Dorado Hills supply area in report
  - Project 184 / Jenkinson Lake Supplies
    - Western/Eastern supply area in report



## El Dorado Hills supply

### Contractual / Normal Year Supplies

● USBR Water Service Contract	7,550 AF
● Ditch/Weber Reservoir	4,560 AF
● Permit 21112	<u>17,000 AF</u>
	<b>29,110 AF</b>

### 3 –Consecutive Dry Year Supplies – used in Report

● USBR Water Service Contract	1,235 AF
● Ditch/Weber Reservoir	3,000 AF
● Permit 21112	<u>17,000 AF</u>
	<b>21,235 AF</b>





# Western/Eastern Supply

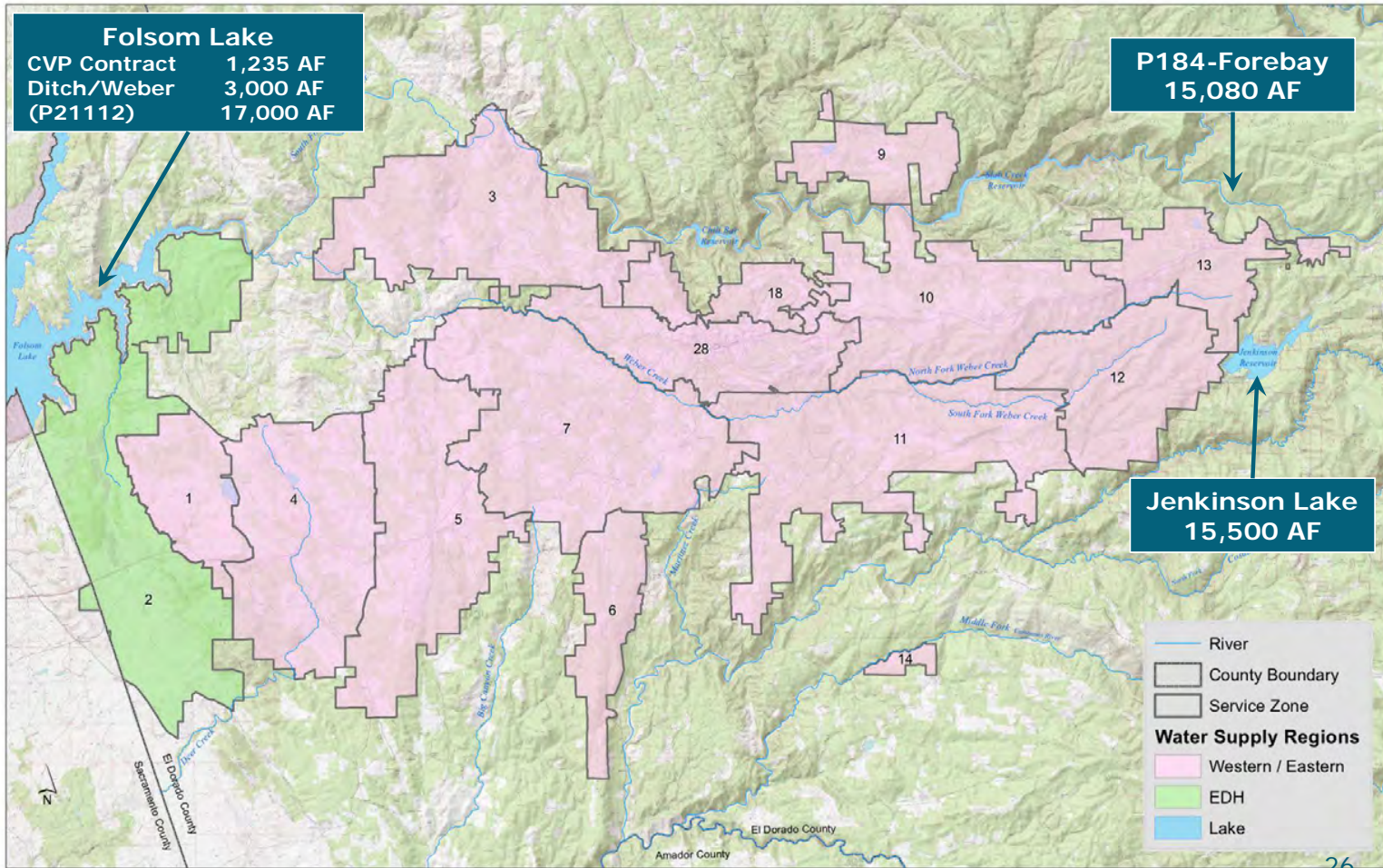
## Contractual / Normal Year Supplies

- P184 at Forebay: 15,080 AF
  - Jenkinson Lake: 23,000 AF
- 38,080 AF**

## 3 –Consecutive Dry Year Supplies – used in Report

- P184 at Forebay: 15,080 AF
  - Jenkinson Lake: 15,500 AF
- 30,580 AF**

# 3<sup>rd</sup> Dry-Year Water Sources





# Potential Demand

- Active demand
  - meters installed and billed
- Latent demand
  - inactive and uninstalled meters
- Other system demands
  - water loss, operational uses, recycled water supplementation
- 2021 data used in the report

# Total Potential Demand

<b>Demand Type</b>	<b>El Dorado Hills Supply Area (AF)</b>	<b>Western/Eastern Supply Area (AF)</b>
<b>Active Demand</b>	7,229	18,023
<b>Latent Demand</b>	56	196
<b>Other System Demand</b>	4,350	9,993
<b>Total Potential Demand</b>	<b>11,635</b>	<b>26,212</b>

# Unallocated Water Supply

	<b>EDH Supply Area (AF)</b>	<b>Western/Eastern Supply Area (AF)</b>
<b>Available Supply</b>	21,235	30,580
<b>Total Potential Demand</b>	11,635	26,212
<b>Unallocated Water Supply</b>	9,600	4,368

# 2022 Water Meter Availability

<b>El Dorado Hills Supply Area</b>	<b>Western/Eastern Supply Area</b>
<b>Unallocated Water Supply</b> 9,600 AF	<b>Unallocated Water Supply</b> 4,368 AF
<b>Residential Unit Demand</b> 0.57 AF/EDU	<b>Residential Unit Demand</b> 0.38 AF/EDU
<b>Water Meter Availability</b> <b>16,910 EDUs</b>	<b>Water Meter Availability</b> <b>11,414 EDUs</b>

# Drought and State Policies

# EID Drought Action Plan

## Drought Stages

Normal Water Supply	None	Normal
Slightly Restricted	Stage 1 Water Alert	Up to 15%
Moderately Restricted	Stage 2 Water Warning	Up to 30%
Severely Restricted	Stage 3 Water Crisis	Up to 50%
Extremely Restricted	Stage 4 Water Emergency	Greater than 50%





# Drought actions

- In 2021, EID enacted Stage 1 due to worsening water supply conditions
  - The Governor also declared a statewide drought emergency in 2021 and called on Californians to reduce water usage by 15%.
- March 2022: Governor Newsom ordered the State Water Resources Control Board (SWRCB) to consider adopting emergency regulations requiring urban water suppliers to implement water shortage response actions for a shortage level of up to twenty percent.
- The District's Stage 1 actions currently in effect are consistent with these new proposed regulations.
- EID water supplies sufficient to meet demands, however we must comply with State orders



# State Water Conservation Regulations

- Urban Water Use Objectives
  - Indoor residential water use
  - Outdoor residential water use
  - Commercial outdoor irrigation
  - Water loss standards
- State Water Board will start public comment process in 2023
- After adoption, suppliers to calculate their targets and report progress towards those targets by Jan 1, 2024.

# Discussion and Questions