El Dorado County Water Agency

Water Resources Development and Management Plan

January 25, 2019 DRAFT

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Cover insight page

El Dorado County Water Agency is the trusted, county-wide leader on water-resource issues, representing the long-term interest of our community, purveyors and residents.

Executive Summary

ES-1. Executive Summary

ES-2. Investment

ES-3. Implementation

Protecting and managing water resources today will help security water supplies for the future.

Table of Contents

Key Definitions

Act	El Dorado County Water Agency Act
Agency	El Dorado County Water Agency
County	County of El Dorado
CSD	Community Service District
CVP	Central Valley Project
EID	El Dorado Irrigation District
GDPUD	Georgetown Divide Public Utility District
GFCSD	Grizzly Flats Community Services District
RCD	Resource Conservation District
Reclamation	U.S. Department of the Interior, Bureau of Reclamation
SMUD	Sacramento Municipal Utility District
STPUD	South Tahoe Public Utility District
TCPUD	Tahoe City Public Utility District
WRDMP	Water Resources Development and Management Plan

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Acknowledgement

The authors of this document wish to thank the organizations and local water purveyors that provided practical assistance in the in the preparation of this update including the County of El Dorado (County), El Dorado Irrigation District (EID), Georgetown Divide Public Utility District (GDPUD), Grizzly Flats Community Services District (GFCSD), South Tahoe Public Utility District (STPUD), Tahoe City Public Utility District (TCPUD), and the City of Placerville.

Introduction

The El Dorado County Water Agency (Agency) was created in 1959 through the El Dorado County Water Agency Act (Act) to ensure that El Dorado County has adequate water to serve its multiple needs now and in the future. The territory of the Agency covers the entire El Dorado County , which resides on both sides of the Sierra Nevada with headwaters and National Forests. El Dorado County's diverse landscapes include a portion of Lake Tahoe Basin with unique ecological sensitivities, and the vast West Slope foothill area that experiences urbanization and pressures in preserving rural-agricultural way of life, creating significant challenges and opportunities for water management.

Currently, the Agency does not own any water facilities; however, the Agency collaborates with water purveyors to develop local water supplies and contracted with U.S. Department of the Interior, Bureau of Reclamation (Reclamation) for the Central Valley Project (CVP) water service contract deliveries to support El Dorado County's domestic use and economic development.

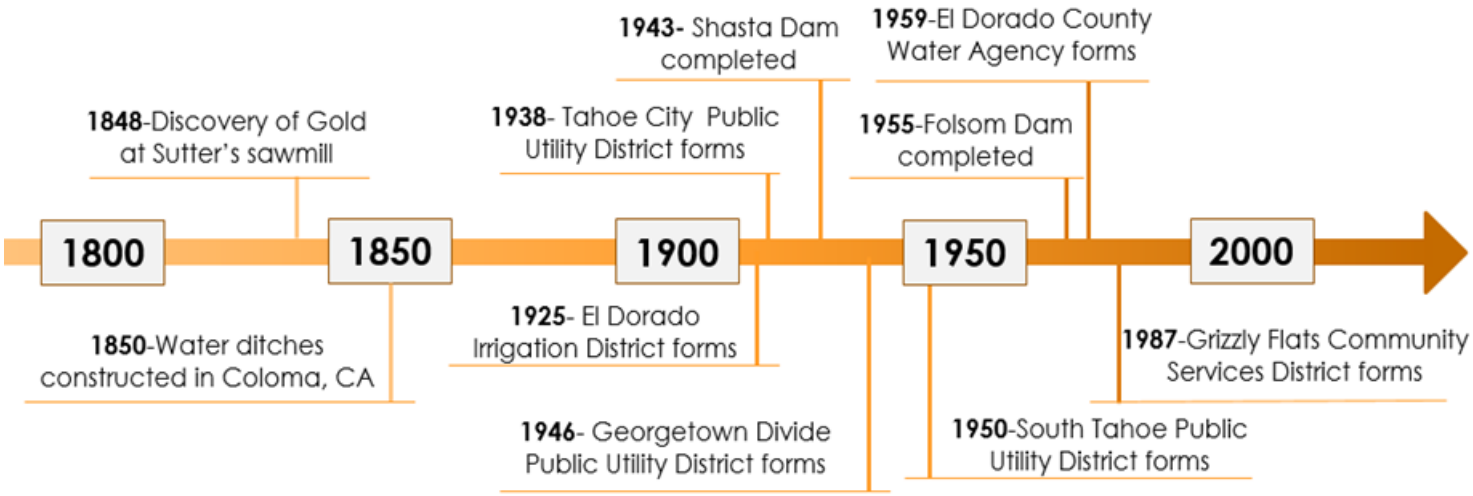
1.1 Needs

The Agency developed its first Water Resources Development and Management Plan (WRDMP) in 1993 to outline its strategy and actions for continued water resources development and management. Subsequently, the WRDMP was updated in 2007 and 2014 (for West Slope demands only).

In 2016, the Agency completed a Strategic Plan for 2016-2020 after experiencing a historic drought from 2012 through 2016, which left water managers in California a changed perspective for their water supply vulnerability and the extent of potential impacts. The Agency's Strategic Plan calls for improved organization functions and renewed attention to a more integrated and comprehensive water management approach to create benefits to the entire El Dorado County, especially for those who are not served by any water purveyors. Therefore, the WRDMP also requires an update to reevaluate and adjust, if warranted, Agency's current investments and reflect future investment priorities.

1.2 Goals

The primary goal for the Agency in the WRDMP update is to assist the County of El Dorado (County) in realizing the vision of its adopted General Plan. The County's General Plan is unique in several ways: (1) it contains land use designation for economic development and integrated natural resource protection and management; (2) It plans for the land capacity in considering future economic development beyond the typical near-term urbanization focus; and (3) it contains policies and considerations that allow urbanization but also preserve the way of life of rural-agricultural communities that the residents value significantly. Through the WRDMP, the Agency would develop corresponding water management strategies and investment priorities to fulfill this vision presented in County's General Plan.

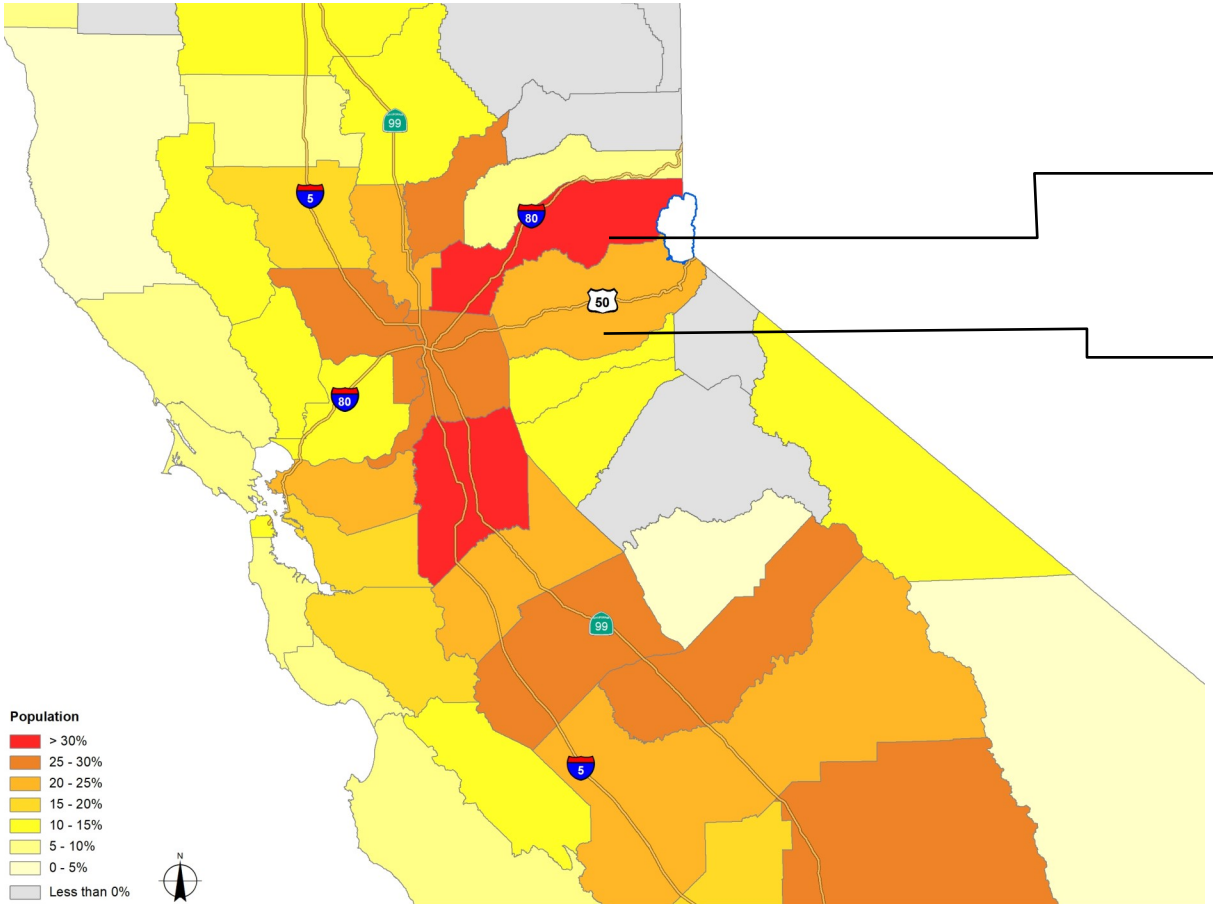


Additional goals for the Agency for revising the WRDMP include:

- Develop a concise policy-focused document to be adopted by its Board that is adaptable and commensurate to Agency's role and responsibilities.
- Incorporate the integrated water management approach to develop sustainable investment strategies and implementation.
- Address changes in countywide water supply conditions, regulations and our evolving understanding of climate change and its effects.
- Promote transparency and common understanding about the Agency's investment priorities in water resources development and management.
- Respect the role and responsibilities of water purveyors and other local agencies. The Agency has broad authority and charge from the Act; however, the Agency considers its greatest value is to promote countywide broad benefits and focus on improving water supply and other related resource management issues that are not fully covered by other local agencies.
- Promote dialogues among local agencies, economic interests, and stakeholders for mutual understanding. The Agency believes the realization of County's long-term vision

1.3 Principles

The Agency also outlines several principles in developing the WRDMP including:



Placer County is the number one county in California for growth.

El Dorado County's recent development is mostly adjacent to the boundary with Sacramento County.

In Northern California, economic development and the housing challenging in the Bay Area resulted in the growing population along major transportation corridors. The El Dorado County is experiencing the rapid development shared in adjacent Placer and Sacramento counties.

can be only established through collaboration. Therefore, the Agency established various advisory groups for the WRDMP development and establish a foundation for long-term collaborative forum for countywide water management issues.

1.4 Plan Organization

To discuss Agency's role, responsibility, and focus in statewide and regional water management issues in El Dorado County the 2019 WRDMP has been organized into 5 sections as described below:

- **Section 1: Introduction** outlines the purpose of the WRDMP and the Agency's goals, and principles in plan development.
- **Section 2: Current Water Management** summarizes the El Dorado County's current water management structures and associated roles and responsibilities.
- **Section 3: Challenges Ahead** identifies the water resource-related challenges that the Agency should pay attention to.
- **Section 4: Resource Management Strategy** captures the approach and operating parameters in addressing the identified water resource-related challenges.
- **Section 5: Implementation** provides a roadmap for Agency's near-term actions and future investment priorities.

Protecting existing water rights and beneficial uses is the first step to ensure future prosperity.

Current Water Management

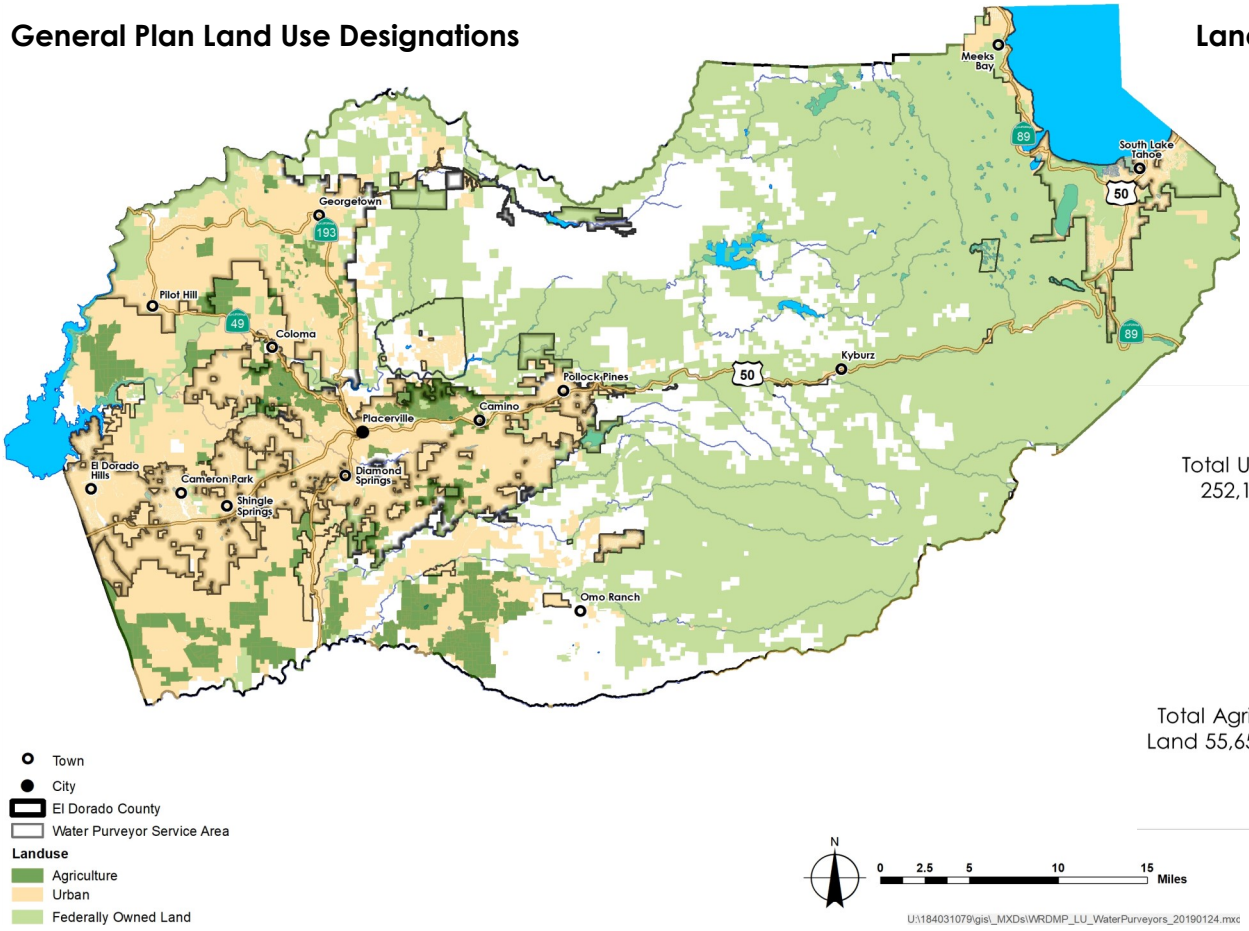
The diversity of land use and topography provides unique conditions for water management and opportunities for economic development in El Dorado County.

2.1 Current Economic Development

The General Plan contains land use designations for economic development and identifies areas where future higher density growth and urban activities are anticipated to occur.

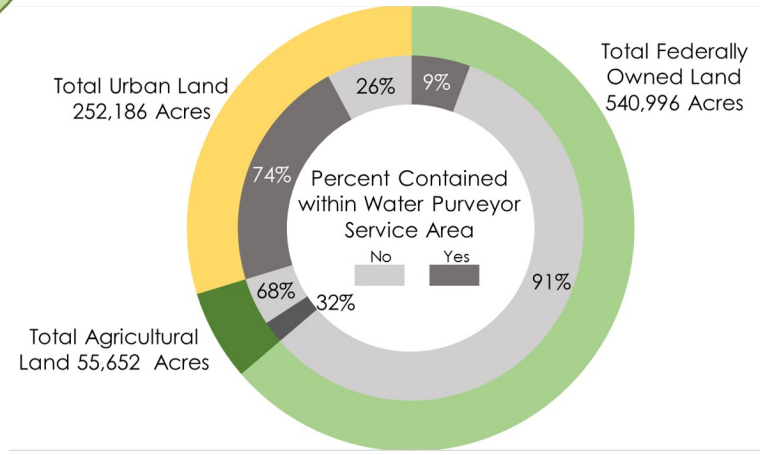
Given the rapid development observed in El Dorado County over the past years, the areas likely to experience development will be managed by the county located outside Federally owned land but within an active water service area. Currently, 32% of the agricultural land and 56% of the urban land designated by the General plan fall inside a water service area. To accommodate the anticipated growth, in El Dorado County the urban land served by a water purveyor is likely to further develop and drive economic growth in the County. For the remaining land managed by the County, economic development is hindered because of a lack of reliable water supplies.

General Plan Land Use Designations



Land Use Available for Economic Development

Economic development in El Dorado County is limited by water supply availability and the Federally owned land.



2.2 Roles and Responsibilities in Water Management

The Agency is charged to develop a countywide water plan and to participate in statewide water planning. The Agency can collaborate with EID, GDPUD, GFCSD, STPUD, TCPUD, and the City of Placerville and represent the unrepresented areas found outside the service area of the water purveyors. The Agency can negotiate contracts with the Department of Water Resources, the U.S. Bureau of Reclamation and other local, state and federal agencies for water management and facility construction.

To assure that El Dorado County has suitable water resources, the Agency, County, water purveyors, community service districts (CSD), and resource conservation districts (RCD) have active water management roles as described to the right.

Most residents obtain their water supplies from EID, the City of Placerville, GDPUD, GFCSD, STPUD, or TCPUD. For the areas located outside a water purveyor's service area, residents in the West Slope use shallow groundwater wells whereas residents in the Lake Tahoe basin use groundwater wells that pump water from the Tahoe Valley Groundwater Basin, Tahoe South Subbasin or the Tahoe Valley Groundwater Basin, Tahoe West Subbasin.

Water Management Roles

Water Supply: Provides surface water or groundwater supplies for urban and or agricultural water demands.

Water Quality Management: Runs a water quality program, implements a plan that improves water quality, and or implements a plan that prevents water quality degradation.

Flood Management: Implements flood management actions that reduce runoff rates or volumes of water.

Watershed Management: Performs headwater management, maintains parks, provides watershed management, and or provides fire protection.

Recycled Water: Collects wastewater to treat and provide recycled water for landscape irrigation.

Water Treatment: Obtains groundwater or surface water to treat and distribute for potable water use.

Stormwater Management: Runs a stormwater management program, implements a stormwater resource plan, and or implements a stormwater management plan.

Wastewater Treatment: Collects and treats wastewater for treatment and discharge.

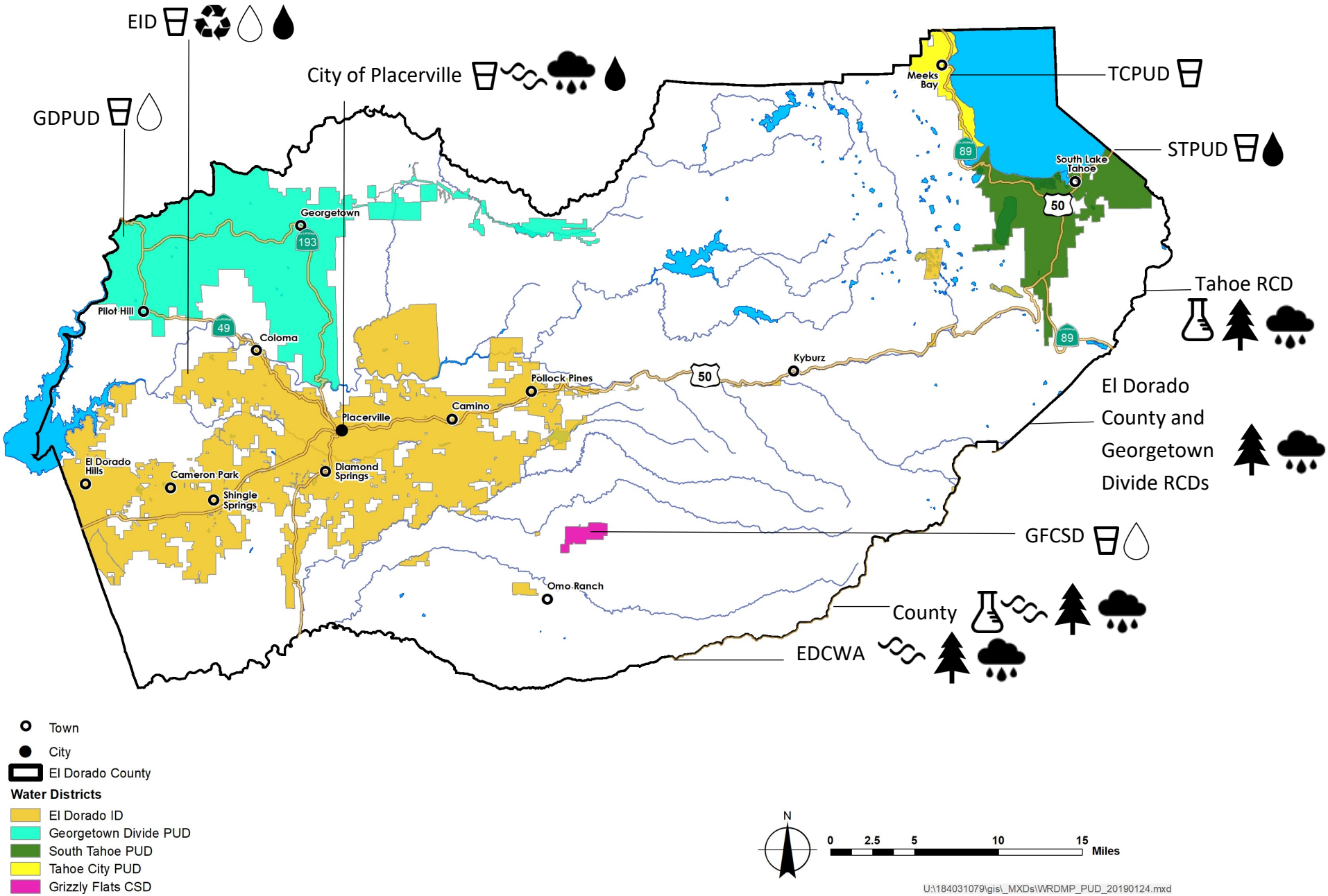
COMMUNITY SERVICES DISTRICTS

CSDs are a form of independent local government used to provide services in unincorporated areas of a county. CSDs may provide water supply, watershed management, flood management, or wastewater treatment.

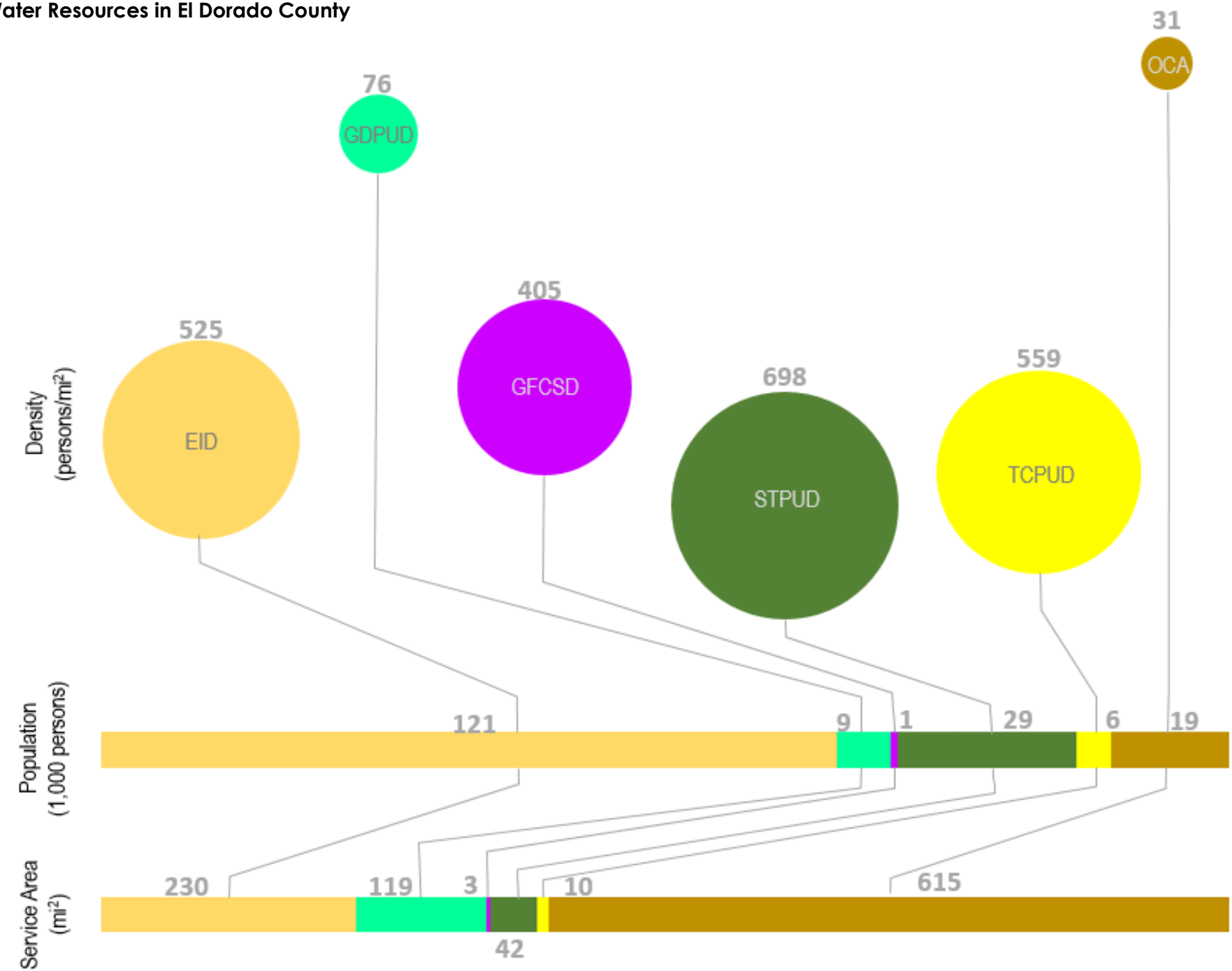
RESOURCE CONSERVATION DISTRICTS

Local, independent, non-enforcement, non-regulatory districts that are self-governed. They advise and assist individual landowners and public agencies in planning and implementing conservation practices for the protection, restoration, or development of land, water, and related natural resources. RCDs have a role in watershed management, water quality management, and stormwater management.

Water Resources Management in El Dorado County



Water Resources in El Dorado County



2.3 Major Water Infrastructure

El Dorado County's main water supplies stems from runoff from the Sierra Nevada snowpack. This water is stored and distributed throughout El Dorado County for water supplies and hydropower generation.

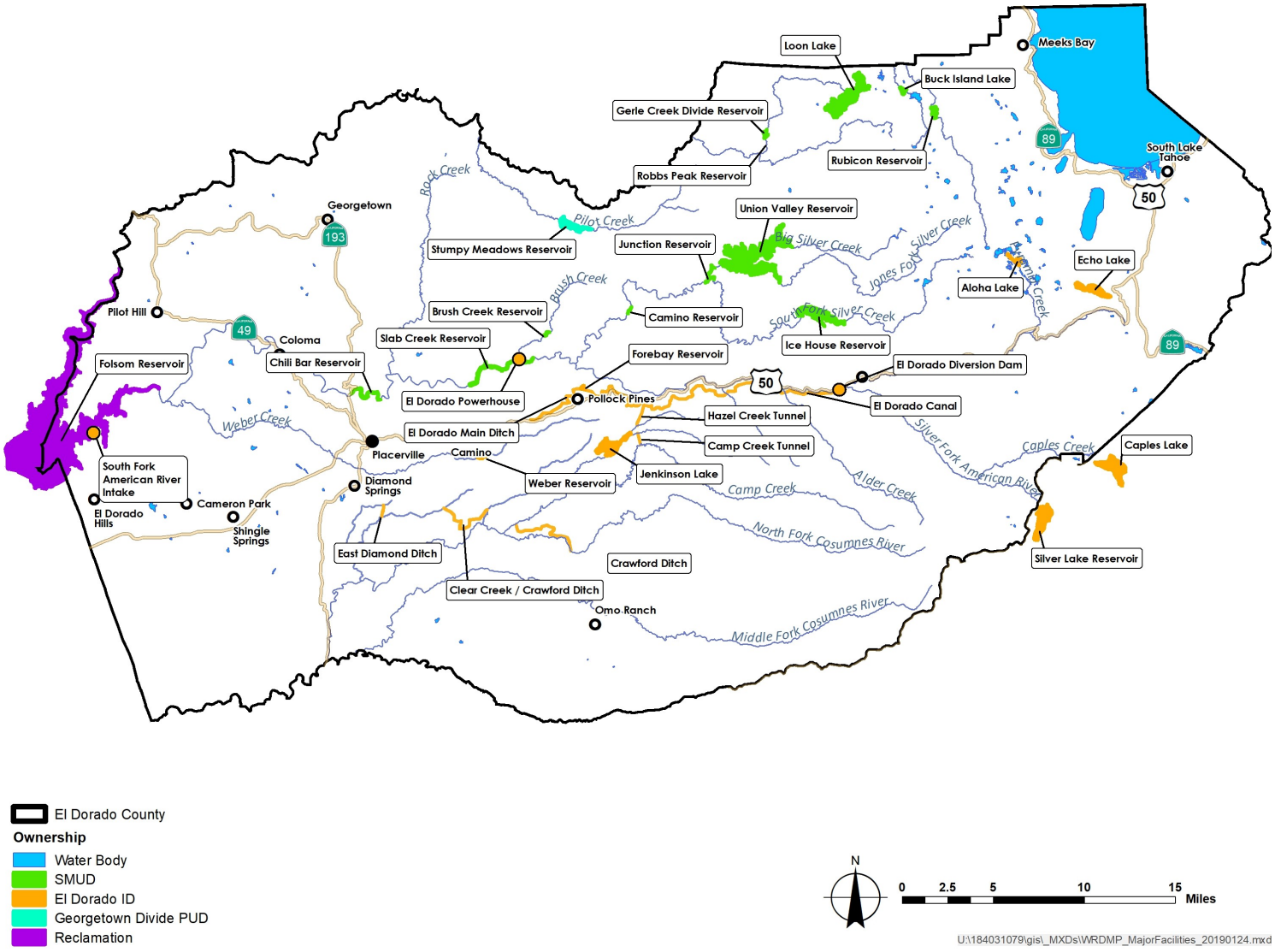
The water infrastructure in El Dorado County is owned and operated by Sacramento Municipal Utility District (SMUD), Reclamation, EID or GDPUD. Under SMUD's Upper American River Project El Dorado County has 11 dams, reservoirs, and 8 powerhouses to meet electricity demands. From the Upper American River Project Loon Lake is a major water storage reservoir.

Folsom Reservoir is owned and operated by Reclamation as part of the CVP to provide flood control, hydropower, and water supplies. EID can receive 7,550 AF from Folsom Reservoir under its contract with Reclamation.

EID is the largest water purveyor in El Dorado County that owns several pieces of water infrastructure for water conveyance and hydropower generation. There are three points of diversion that deliver water to the system 1) Sly Park Dam and Jenkinson Lake, 2) El Dorado Hydroelectric Federal Energy Regulatory Commission Project 184 at Forebay Reservoir, and 3) Folsom Reservoir .

GDPUD is a smaller water purveyor that owns and operates Stumpy Meadows Reservoir for water storage.

To support the economic development in El Dorado County additional water infrastructure would be required in areas that lack reliability water supplies.



2.4 Environmental Protection

The County's General Plan contains land use designations for integrated natural resource protection and management. To facilitate the vision of the General Plan the Agency will be proactive and support the protection of the environment. The Agency will develop corresponding water management strategies and investment priorities to protect the natural resources.

Areas in El Dorado County that the Agency will help protect include the agricultural land under the Williamson Act, Biological Corridors, and Ecological Preserves.

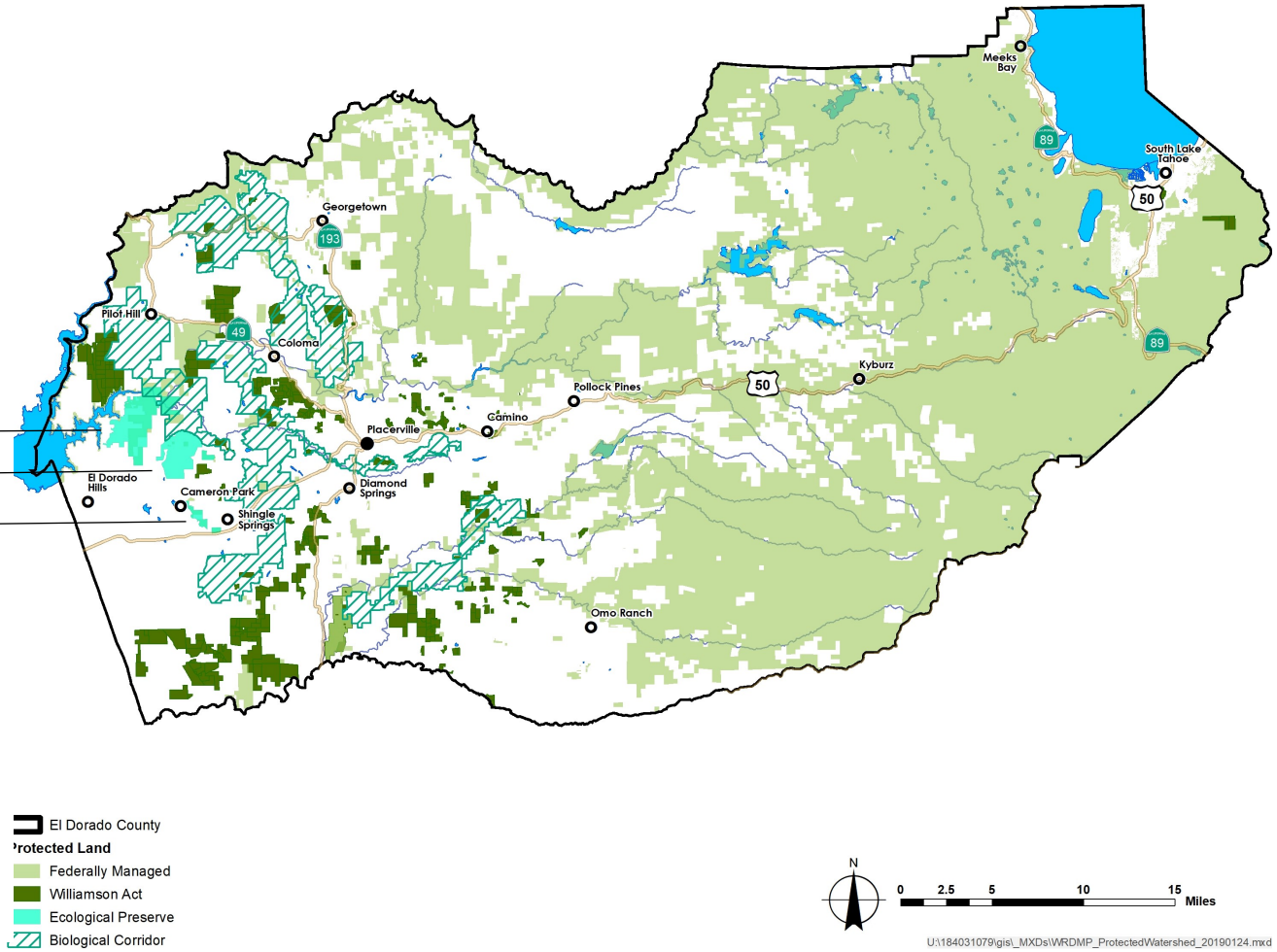
The Williamson Act is a law that provides relief of property tax to owners of farmland and open-space land in exchange for a rolling term ten-year agreement that the land will not be developed or otherwise converted to another use. The Williamson Act states that a board or council by resolution shall adopt rules governing the administration of agricultural preserves.

The Biological Corridor in El Dorado County applies to lands having high wildlife habitat values because of extent, habitat function, connectivity, and other factors. Biological Corridors are home to large mammals such as mountain lions, bobcats, mule deer, the American black bear, and coyote.

An Ecological Preserve is land that has been or will be established as a habitat preserve for rare or endangered plant and animal species, critical wildlife habitat, natural communities of high quality or of Statewide importance. Pine Hill Preserver is an Ecological Preserver because of the rare plant species and habitats contained within the land.

Ultimately, the land contained within the Williamson Act, a Biological Corridor, or Ecological Preserve will not be developed. These lands will remain protected.

Pine Hill State Ecological Reserve



Challenges Ahead

Improved watershed management will provided beneficial results for current and future water supply and quality.

Integrated water management is key to securing high quality water supplies for all.

Resource Management Strategy

EDCWA will be a leader and support the protection of water resources in El Dorado County by collaborating with local agencies.

Implementation

5.1 EDCWA Programs

5.2 Funding Strategy

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WRDMP – Challenges Summary Table

Challenge	Relevance to EDCWA's Authority	Trending Impact			Other Agencies
		Water Supply	Water Quality	Public Safety	
Supply Demand Imbalance	There is a gap between future demand projections and available supply.	🔴	🟢	🟢	• EID, GFCSD, GDPUD, STPUD, TCPUD
Vulnerable Small Water Systems and Rural Communities	There are many small water systems in El Dorado County. Their hardships are higher and more likely. More susceptible to drought and forest fires which may lead to a decrease in the quality of life.	🟡	🟡	🟢	• El Dorado County - Small Water System Program, Environmental Management Department
Drought Protection	Considering climate change, El Dorado County is especially vulnerable to droughts because West Slope mostly relies on a single source (surface water).	🔴	🟢	🟢	• EID, GFCSD, GDPUD, STPUD, TCPUD
	Drought Contingency Plans only provide partial coverage throughout El Dorado County.	🔴	🟢	🟢	• EID, GFCSD, GDPUD
Forest Fires	Increasing frequency and intensity of fires means more frequent occasions of water quality degradation.	🟢	🔴	🟡	• U.S. Forest Service
Headwater	Forests have been increasing in density. Dense forests prevent snow from reaching the ground; therefore, the main source of supply (snowpack) is decreasing.	🔴	🟢	🟢	• U.S. Forest Service
Flooding	Only localized flooding threats throughout El Dorado County.	🟡	🟢	🟡	• El Dorado County, City of Placerville
Water Quality	Large reliance on septic tanks. Leakage from septic tanks may affect groundwater quality.	🟢	🟡	🟢	• El Dorado County - Environmental Management Department
	Only a few impaired waters in El Dorado County. Potential additional surface water quality impacts from waste water treatment plant discharge and agriculture run-off.	🟢	🟡	🟢	• El Dorado County- Environmental Management Department, MS4 permits • El Dorado Agricultural Water Quality Management • Sacramento Valley Water Quality Coalition

Key:
EDCWA= El Dorado County Water Agency
EID= El Dorado Irrigation District
GDPUD = Georgetown Divide Public Utility District
GFCSD = Grizzly Flatts Community Services District
STPUD = South Tahoe Public Utility District
TCPUD = Tahoe City Public Utility District
U.S. = United States
WRDMP= Water Resources Development and Management Plan

Table 2. EXAMPLE -Key Criteria-Table of Values. Values are Subject to Adjustment by PDP and TRT as Part of Calibration Work Stream. Low, Medium High values address fire threat level associated with the specified Key Criteria ranges.

Key Criteria	Low	Medium	High	Data Source
Fuel				
Type	Predominantly low fuel load fuels (e.g., non-burnable surfaces, pavement, grasslands)	Predominantly moderate low fuel load fuels (e.g., timber (> 15 feet in height) without ladder fuels, brush (< 15 feet in height))	Predominantly high fuel loads (e.g., timber (> 15 feet in height) with ladder fuels)	FRAP Map: GIS layer (GRID format) of Surface Fuels data (FBPS) compiled from multiple sources http://frap.fire.ca.gov/data/firedata-fuels-fuelsfr as adjusted by local knowledge
Average Dead Fuel Moisture Content (During Fire Season*)	>2% by weight	1-2% by weight	0-1% by weight	National Climatic Data Center, a division of NOAA (Past 30 years)
Density	Predominantly 0-30% crown cover	Predominantly 31% to 70% crown cover	Predominantly 71% to 100% crown cover	Crown cover codes and data -- FRAP Map: GIS layer (GRID format) of Surface Fuels data (FBPS) compiled from multiple sources http://frap.fire.ca.gov/data/firedata-fuels-fuelsfr as adjusted based on local knowledge
Climatology				
Fire Wind (Peak Gusts During Fire Season*)	Not Med or High	25 or more days of >10 mph winds without precipitation in prior 10 day period	25 or more days of >30 mph winds without precipitation in prior 10 day period	RAWS or WRF data (Past 20 years)
Maximum Temperature (During Fire Season*)	Not Med or High	500 or more days of >65°F & <80°F	500 or more days of >80°F	National Climatic Data Center, a division of NOAA (Past 30 years)
Precipitation (During Fire Season*)	Average annual measurable precipitation (during fire season) >10 days	Average annual measurable precipitation (during fire season) 5-10 days	Average annual measurable precipitation (during fire season) <5 days	National Climatic Data Center, a division of NOAA (Past 30 years)
Terrain				
Slope	Predominantly flat, 0-5% grade (rise over run)	Predominantly moderately steep, 5-15% grade (rise over run)	Predominantly extremely steep, >15% (rise over run)	GIS data
Ruggedness	Predominantly smooth, >[___]TRI	Predominantly moderate, >[___] TRI but <[___] TRI	Predominantly rugged, >[___] TRI	GIS data—Topographical Ruggedness Index
Access	Accessible to majority of ground based fire fighting resources/ equipment	Accessible to limited types of ground based fire fighting resources/ equipment	Arial access required for firefighting resources	Confer with local fire fighting resources
Fire Break	Nature and quantity of breaks substantially limits flame/ember spread	Nature and quantity of breaks mitigates flame/ember spread when combined with expected fire wind conditions	No or limited breaks	Confer with local fire fighting resources/evaluate fire spread history—CAL-FIRE

Populations at Risk	Definition	Data Source
Populations at Low Risk	Low population density OR populations substantially insulated from fire spread due to non-burnable infrastructure or otherwise (e.g., San Francisco)	Census track data (REAX work product), CARs (CAL-FIRE work product); GIS data for infrastructure
Populations at Moderate Risk	Moderate population density OR populations with some insulation from fire spread due to non-burnable infrastructure or otherwise	Census track data (REAX work product), CARs (CAL-FIRE work product); GIS data for infrastructure
Populations at High Risk	High population density OR populations with little or no insulation from fire spread due to non-burnable infrastructure or otherwise	Census track data (REAX work product), CARs (CAL-FIRE work product); GIS data for infrastructure

*Fire Season to be determined on a per HEZ basis by PDP based on fire rotation data set underlying CAL-FIRE's FRAP Map.