Resource Management Strategies

Notes for EDCWA's Role:

- Lead means EDCWA would assume the leadership in advancing the action implementation
- Facilitate means EDCWA would organize and facilitate, but not directly responsible, in advancing the action implementation
- Support means EDCWA would support as-needed communication and engagement, and minor coordinated actions in advancing the action implementation

Resource Management Strategy	Principle Implementation Agency(ies)	EDCWA's Role		
		Lead	Facilitate	Support
1. Secure water supply entitlements				
a. Secure the CVP service contract with Reclamation	EID, GDPUD, EDCWA	Completion of contract negotiation and execution for the 15-TAF CVP (Fazio) Service Contract		As-needed support to water purveyors with CVP contract in engagement with Reclamation and federal advocacy as needed
b. Secure the water rights for projected needs	EID, GDPUD, GFCSD, STPUD, TCPUD, EDCWA	Acquisition of the 40-TAF water right application with integration with use of SMUD agreement		As-needed support to water purveyors in their corresponding water right proceedings and activities
c. Develop water infrastructure to meet projected needs	EID, Placerville, GDPUD, GFCSD, STPUD, TCPUD, EDCWA	Representation of OCA in supply planning	Coordinate with water purveyors for needs based on LAFCo SOI planning area boundaries	
d. Manage and leverage SMUD storage agreement	EDCWA	Administration and management of the SMUD agreement for countywide benefits	Coordinate with water purveyors for needs based on projected service needs	
e. Develop operational agreements as needed for flexible use of water supply entitlements	EID, Placerville, GDPUD, GFCSD, STPUD, TCPUD, EDCWA	Agreement development associated with use of Fazio contract, and EDCWA-acquired entitlements	Coordinate with water purveyors for compatible strategy	
f. Determine the water purveyors for OCA	County, EDCWA	Develop a water supply plan for OCA		
2. Develop and implement demand management				
a. Review and update demands by incorporating regulatory changes and best management practices	EID, Placerville, GDPUD, GFCSD, STPUD, TCPUD, EDCWA	Update West Slope agricultural and M&I demands consistent with the capacity condition specified in County's General Plan	Countywide agricultural and M&I demand consistent with the capacity condition specified in County's General Plan	Communication, public information sharing, and advocacy
b. Engage statewide demand management policy, regulation and legislation development to ensure applicability in foothill communities and preserve county interests	EID, Placerville, GDPUD, GFCSD, STPUD, TCPUD, EDCWA	Participation and contribution to state policy, regulation, and legislation development	Coordinate consistent messages and approach among water purveyors	Communication, public information sharing, and advocacy
3. Implement sustainable groundwater management				
a. Manage groundwater basin in consistent with SGMA and other applicable law and regulation	STPUD, EDCWA		Coordinate the development and implementation of Groundwater Sustainability Plan in coordination with STPUD	Communication and information for public support and advocacy

Resource Management Strategies

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Resource Management Strategy	Principle Implementation Agency(ies)	EDCWA's Role		
		Lead	Facilitate	Support
b. Engage statewide sustainable groundwater management policy, regulation and legislation development to preserve county interests	STPUD, EDCWA		Coordinate consistent messages and approach with STPUD	
4. Increase water reuse	EID, Placerville, STPUD, TCPUD, County			Communication, public information sharing, and advocacy
5. Secure water infrastructure				
a. Ensure water infrastructure integrity and maintenance through Agency-specific Capital Improvement Program	EID, Placerville, GDPUD, GFCSD, STPUD, and TCPUD			Support advocacy and state and federal grant application support where appropriate
b. Develop new high mountain storage for replacing lost snowpack	EDCWA	Develop the Congress-authorized Alder Creek Water Storage and Conservation Project with Reclamation		
c. Reduce vulnerability of water infrastructure to large scale wildfires.	EID, GDPUD, GFCSD, Placerville, STPUD, TCPUD		Compile a list of at risk water infrastructure based on owner's input	Support advocacy and state and federal grant application support where appropriate
d. Develop post-fire water quality management plan	EID, GDPUD, GFCSD, Placerville, STPUD, TCPUD			Communication, information sharing, and advocacy
6. Manage stormwater as a resource				
a. Update stormwater resource management plan	Placerville, County		Update the Stormwater Resources Plan and provide program management support	Communication, information sharing, and advocacy; Support state and federal grant application where appropriate
b. Water quality control measures to address runoff from highways, streets and other priority impervious areas.	Placerville, County			Communication, information sharing, and advocacy
c. Stormwater management plan implementation (now also as part of the stormwater resource plan), and implementation of California Phase II Municipal Separate Storm Sewer System (MS4) Permit.	Placerville, County			Communication, information sharing, and advocacy
7. Improve drought preparedness and responses				
a. Expand the current drought plans for drought shortage contingency plans per AB 1668/SB 606	EID, GDPUD, GFCSD, STPUD, TCPUD, EDCWA	Develop and update the plan for the OCA, if necessary	Coordinate consistency in drought shortage contingency plans	Communication, information sharing, and advocacy

Resource Management Strategies

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Resource Management Strategy	Principle Implementation Agency(ies)	EDCWA's Role		
		Lead	Facilitate	Support
b. Include droughts as a hazard in the County's Multi-Hazard Mitigation Plan for emergency response coordination and potential future FEMA assistance.	County		Coordinate the development with County's xx	Communication, information sharing, and advocacy
c. Conduct vulnerability assessments for small water systems and rural communities	County, EDCWA	Develop vulnerability assessments		Communication, information sharing, and advocacy
d. Develop county plan for addressing drought vulnerability for small water systems and rural communities	County, EDCWA	Develop county plan		Communication, information sharing, and advocacy
e. Conduct weather modification projects (??)	??			
f. Development of West Slope Regional drought contingency plan to coordinate and align all drought plans in the West Slope	EDCWA	Develop the West Slope Regional Drought Contingency Plan per Reclamation's WaterSMART program grant		
8. Ensure all residents have adequate access to clean and affordable water				
a. Assess challenges in water accessibility and affordability in the county	County		Coordinate with County to conduct situation assessment	Communication, information sharing, and advocacy
b. Participate the statewide efforts in developing policy, regulations and legislation on affordability	County, EID, GDPUD, GFCSD, Placerville, STPUD, TCPUD, EDCWA			Communication, information sharing, and advocacy
9. Improve watershed management for water source-related benefits				
a. Headwater meadow restoration for water retention and quality management	CABY			Participation in and funding support to CABY; Communication and information sharing
b. Water-thirsty invasive species management.	El Dorado County Noxious Weed Group			Communication and information for sharing

Resource Management Strategies

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Resource Management Strategy	Principle Implementation Agency(ies)	EDCWA's Role		
		Lead	Facilitate	Support
c. Cooperate with USFS and BLM for improving forest management for water retention and fuel management, including possibility of forest thinning and removal of dead trees	USFS and BLM		Participate in SOFAR Cohesive Strategy Group and explore the feasibility of establishing similar groups for the rest of the area (??) Coordinate with ??? to conduct a pilot study that provides information on the benefits in water retention and overall water supply benefits from forest thinning in the Sierras in the Northern portion of California	Communication and information for sharing
d. Expand options for utilizing and disposing of woody biomass.	County			
e. Develop policy, implementation, and possible incentives to assist individual homeowners or landowners for onsite fuel management.	County			
10. Prevent contamination of surface water and groundwater resources				
a. Implement applicable law and regulations	County, EID, GDPUD, STPUD, TCPUD			
b. Apply advanced technology for water quality monitoring (surface water and groundwater), even remote sensing, for areas that are susceptible to water quality problems.	County, Farm Bureau			
c. Monitor septic tanks for potential contamination.	County		Coordinate with County and Placerville to develop regular status summary or website information	
d. Identification of potential vulnerable sewage lines.	County, Placerville, EID, GDPUD, STPUD, TCPUD		Coordinate with County and Placerville to develop regular status summary or website information	x
e. Manage agricultural practice for potential contamination in local shallow groundwater	County		Coordinate with County to maintain a summary GIS information for monitoring data	Communication, public information sharing, and advocacy; Potential grant application support for monitoring and best management implementation

Resource Management Strategies

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Resource Management Strategy	Principle Implementation Agency(ies)	EDCWA's Role		
		Lead	Facilitate	Support
f. Manage and inspect septic tanks for potential groundwater contamination (and/or surface water contamination)	County		Coordinate with County to maintain a summary GIS information for monitoring data	Communication, public information sharing, and advocacy
11. Reduce the risk of flooding for communities				
a. Conduct an inventory of water facilities in El Dorado County that are at risk of flooding.	EID, GDPUD, GFCSD, STPUD and TCPUD		Coordinate with parties to develop a status summary and update regularly	
b. Reduce local flooding	Placerville, County			Communication, advocacy and public outreach to Principle Agencies
c. Develop and implement flood risk reduction projects as outlined in the Stormwater resources plan	Placerville, County			Communication, advocacy and public outreach to Principle Agencies
d. Participate National Flood Insurance Program.	County, City of South Lake Tahoe, Placerville			
12. Additional policy development				
g. Incorporating renewable energy development as cost offset option for new infrastructure development	EDCWA	Develop the energy sustainability policy		
h. Leverage water markets for cost offset.	EDCWA	Develop the water marketing policy		

Key:
AB = Assembly Bill
BLM = Bureau of Land Management
CABY = Cosumnes, American, Bear, Yuba
County = County of El Dorado
CVP = Central Valley Project
EDCWA= El Dorado County Water Agency
EID = El Dorado Irrigation District
FEMA = Federal Emergency Management Agency
GDPUD = Georgetown Divide Public Utility District
GFCSD = Grizzly Flats Community Services District
GIS = Geographic Information Systems
LAFCo = Local Agency Formation Commissions
M&I = Municipal and Industrial
OCA = Other County Area
Placerville = City of Placerville
Reclamation = U.S. Department of the Interior, Bureau of Reclamation
SGMA= Sustainable Groundwater Management Act
SMUD= Sacramento Municipal Utility District
SOI = Sphere of Influence
STPUD= South Tahoe Public Utility District
TAF = Thousand Acre Foot
TCPUD = Tahoe City Public Utility District
USF = U.S. Forest Service

Section 5: Implementation

1 WRDMP

1.1 EDCWA's development and implementation of the WRDMP should benefit the county as a whole and facilitate the realization of County's General Plan vision.

1.2 EDCWA should update the WRDMP in years ending 4 and 9 thought a collaborative process.

1.3 EDCWA should establish a Countywide Plenary for Water to facilitate continued collaboration and review of water issues

1.3.1 an extension of the current Plan Advisory Group

2 Implementation Programs

2.1 Governance and Partnership

2.1.1 Capacity development

2.1.2 Strategic formation of governing body or authority

2.2 Water Security

2.2.1 Water supply development

2.2.1.1 Lead water supply development efforts to secure future water supply and quality for the county

2.2.1.2 water supply and demand gap analysis for general plan realization

2.2.1.3 Subtopic

2.2.2 Drought protection

2.2.2.1 Countywide drought planning

2.2.2.2 Small water systems and rural communities

2.2.2.3 Emergency responses

2.2.3 Stormwater as a resource

2.2.4 Flood protection

2.2.5 water quality

2.3 Watershed Management

2.3.1 forest management

2.3.1.1 forest thinning and maintenance

2.3.1.2 wildfire hazard mitigation

2.3.2 Headwater meadow restoration and preservation

2.4 Assistance and Innovation

2.4.1 Assistance

2.4.1.1 Technical assistance

2.4.1.1.1 grant information and application support

2.4.1.1.2 there is history of doing so. like drought plan. not recently

2.4.1.1.3 Invest studies or activities (cost-shared or not) to create data, tools, plans and other resources that can be used by all entities in the County

2.4.1.2 Financial assistance

2.4.1.2.1 Subject to "California Public Funds Doctrine"

2.4.1.2.2 Unsteady funding stream - subject to any surplus in funding

2.4.1.2.3 Likely in cost share format

2.4.1.2.3.1 Preferences over entities without a rate base

2.4.1.2.3.2 Through El Dorado County and Georgetown Divide Resources Conservation Districts???

Mark Egbert

2.4.2 Education

2.4.2.1 Sponsorship

2.4.2.2 Exhibition

2.5 Communications

2.5.1 Communication

2.5.1.1 Public Information

2.5.1.1.1 Website

2.5.1.1.2 Press releases and media relationship

2.5.1.2 Countywide communication

2.5.2 Advocacy

2.5.2.1 Federal advocacy

2.5.2.2 State advocacy

3 Accomplishments (Fiscal Years 2017-2019)

3.1 Governance and Partnership

3.1.1 Continued to participate in CABY IRWM Region for planning and implementation

3.1.2 Continued to participate RWA for regional collaboration and collective efforts

3.1.3 Formed a Groundwater Sustainability Agency with STPUD to manage groundwater in areas within the Tahoe Valley South Subbasin, outside of STPUD's service area in June 2017

3.1.4 Transitioned the El Dorado Water and Power Authority for streamlining governance structure in February 2019

3.1.4.1 Continued to administrate the SMUD agreement

3.2 Water Security

3.2.1 Redefined the El Dorado Water Reliability Project (formerly known as the Supplemental Water Rights Project) and issued the Notice of Preparation of the Environmental Impact Report in December 2017

3.2.2 Completed a Stormwater Resource Plan in collaboration with the County and Placerville in March 2018

3.2.2.1 First annual implementation report in January 2019

3.2.2.2 Working with the County to develop implementation program

3.2.3 Participated regional planning efforts

3.2.3.1 RWA's Regional Water Reliability Plan in 2019

3.2.3.2 North American River Basin Regional Drought Contingency Plan in 2017

3.2.4 Finalized the Fazio contract with Reclamation for the Central Valley Project water supply of up to15,000 acre-feet per year (anticipated) in June 2019

3.2.4.1 Draft EIS in April 2019

3.2.4.2 Final EIS and ROD in June 2019

3.2.4.3 Contract negotiations in April 2019

3.2.5 Completed the WRDMP in June 2019

3.2.5.1 Revised M&I and agricultural demand projections at capacity with considerations of long-term conservation, climate change and economic factors.

3.2.5.1.1 The demands are to be used for all projects

3.2.5.2 Included all Agency's responsible areas and interests that are not only limited by water supply such as land use, agriculture and conservation planning.

3.2.5.3 Recognize other water resource responsibilities for consistency with 1959 El Dorado Water Act.

3.2.6 Financial Assistance Awards

3.2.6.1 Awarded the American River Basin Study ($860K federal cost share) in 2016 under Reclamation's WaterSMART Program; in partnership with PCWA, Roseville, Folsom, Sacramento, and RWA.

3.2.6.2 Awarded the American River Basin Water Marketing Strategy Project ($400K federal cost share) in 2017 under Reclamation's WaterSMART Program; in partnership with PCWA, Folsom, SSWD, Sacramento, and RWA.

3.2.6.3 Notified for selection of award for 2019 Regional Drought Contingency Plan

3.2.6.4 Completing Prop84 Grant with County, EID, and SYRCL for water conservation improvements and public education

3.2.6.5 Implement Cost Share projects with water retailers for long-term planning needs (2017 and 2018)

3.2.6.6 Develop MOA's with retailers for long-term planning within mandated programs regarding water supply and water management (2018-19)

3.3 Watershed Management

3.3.1 Completed initial watershed management scoping in December 2018

3.3.2 Subtopic

3.4 Assistance and Innovation

3.4.1 Education

3.4.1.1 Sponsorship

3.4.1.1.1 El Dorado County Ag in the Classroom
See document(s): agintheclass-edc.org

3.4.1.1.2 Water Education Foundation
See document(s): www.watereducation.org

3.4.1.2 Exhibition

3.4.1.2.1 El Dorado County Kids Expo
See document(s): kids-expo-placerville-tickets-55538143081

3.4.2 Assistance

3.5 Communications

3.5.1 Website and public information

3.5.2 Advocacy

3.5.2.1 Federal advocacy

3.5.2.1.1 Federal agency engagements

3.5.2.1.1.1 Reclamation

3.5.2.1.1.2 USDA

3.5.2.1.1.3 USFS/USDA

3.5.2.1.2 Elected officials

3.5.2.1.3 Develop prioritization for policy and project development with federal nexus

3.5.2.2 State advocacy

3.5.2.2.1 Countywide drought planning advisory group with DWR

3.5.2.2.2 Subtopic

3.5.2.3 Working through RWA, AWCA, etc.

4 Near-term Activities (Fiscal Years 2020 - 2024)

4.1 Governance and Partnership

4.1.1 Continued to participate in CABY IRWM Region for planning and implementation

4.1.2 Continued to participate RWA for regional collaboration and collective efforts

4.1.3 Collaborate with STPUD as a Groundwater Sustainability Agency to manage groundwater in areas within the Tahoe Valley South Subbasin, outside of STPUD's service area

4.2 Water Security

4.2.1 Water Supply and Drought Planning

4.2.1.1 American River Basin Water Marketing Strategy Project (Reclamation WaterSMART)

4.2.1.2 Upper American River Basin Regional Drought Contingency Plan

4.2.1.2.1 incorporate the consideration on

4.2.1.2.2 Add the droughts into the Hazard Mitigation Plan to position for FEMA funding if needed

4.2.1.3 El Dorado Water Reliability Project

4.2.1.3.1 40 TAF annual water right application

4.2.1.3.2 working with SMUD agreement for allowable storage

4.2.1.4 Alder Creek Water Conservation and Storage Project Feasibility Study

4.2.1.4.1 Congressional authorized feasibility study with Reclamation

4.2.1.4.2 Subtopic

4.2.1.5 CABY IRWMP update

4.2.1.6 Utilization plan of CVP (Fazio) Contract

4.2.2 Stormwater Resources Plan 2023 Update and annual progress reports

4.2.2.1 project development assistance to the county, if adequate

4.2.2.2 SWRCB Stormwater resources plan implementation grant application assistance

4.2.3 Special studies

4.2.3.1 water issues for disadvantaged communities, small water systems and affordability

4.3 Watershed Management

4.3.1 Local implementation of the National Cohesive Wildland Fire Management Strategy

See document(s): cohesivestrategy.shtml

4.3.1.1 Participate South Fork American River Cohesive Strategy Group for wildfire prevention and forest management

4.3.1.2 Seek opportunities in similar groups for remaining West Slope areas

4.3.1.3 Anything specific on Tahoe Basin??

4.3.1.4 Special studies

4.3.1.4.1 Compile wildfire at risk water infrastructure throughout the County

4.3.1.4.1.1 information development for better assisting fire grant applications and mitigation action implementation

4.3.2 Resources Conservation

4.3.2.1 Forest Management

4.3.2.1.1 Working with USFS for better management strategy

4.3.2.1.2 Special studies

4.3.2.1.2.1 Investigate interests and potential partnership to explore the relationship between forest density and water retention in sierra foothills

4.3.2.2 Watershed Conservation

4.3.2.2.1 Support El Dorado County and Georgetown Divide Resource Conservation Districts to identify and implement projects

4.3.2.3 Meadow restoration

4.3.2.3.1 Support CABY IRWM group to identify and implement restoration projects

4.4 Assistance and Innovation

4.4.1 Explore potential grant application assistance program

4.4.1.1 Types and scopes of grants

4.4.1.2 Grant information clearinghouse

4.4.2 Develop formal assistance criteria and priorities

4.4.2.1 provide assistance as needed and as appropriate

4.5 Communications

4.5.1 Public information

4.5.2 Countywide Plenary for Water

4.5.2.1 a forum for water management

4.5.3 Advocacy

Water Demands in Land Use Designations-Draft

The purpose of the Water Resources Development and Management Plan (WRDMP) is to support the vision outlined in the El Dorado County General Plan (General Plan). This includes the land use designations used in the General Plan. A meeting was held on March 12, 2019 between El Dorado County Water Agency, the El Dorado County Department of Agriculture/Weights and Measures, and the El Dorado County Planning and Building Department to discuss how to use the General Plan land use designations for developing demands for the WRDMP. A meeting outcome was that for the purposes of developing demands, the lands in El Dorado County that have Municipal and Industrial (M&I) and/or agricultural water demands should be divided into one of three categories:

1) **Urban**: Contains only M&I water demands
2) **Agricultural**: Contains only agricultural water demands
3) **Rural/Agricultural**: Contains a mixture of M&I and agricultural water demands

The following is a description of how land in El Dorado County was classified into Urban, Agricultural, or Rural/Agricultural. The land use designations are per the General Plan (see **Table 2** for definitions).

Urban

Land in El Dorado County that only has M&I water demands was classified as Urban. The land use designations that fit this category include Multifamily Residential (MFR), High-Density Residential (HDR), Commercial (C), Research & Development (R&D), Industrial (I), Public Facilities (PF), Tourist Recreational (TR), and portion of the Adopted Plan (AP). All of the AP is Urban except land that is privately owned for timber production, is State owned/managed, and/or is Federally owned/managed. The Urban land in El Dorado County is shown in **Figure 1** as a light orange color.

Total Area of El Dorado County (acres): 1,093,308

Total Urban land that only has M&I water demands in El Dorado County (acres): 50,353

Agricultural

Land in El Dorado County that only has agricultural water demands was classified as Agricultural. Official zoning ordinances were used to identify land within the General Plan land use designations that contained agricultural water demands. This includes Limited Agricultural (LA), Planned Agricultural (PA), Agricultural Grazing (AG), Timber Production (TPZ) that is greater than 10 acres, Rural Lands (RL), and Residential Estate (RE) that is greater than 10 acres that is within Medium-Density Residential (MDR), Low-Density Residential (LDR), and Rural Residential (RR). All Agricultural Lands (AL) contained agricultural water demands. **Table 1** lists the land use designations that were determined to contain agricultural water demands along with the applicable criteria used for identifying land that is likely to have agricultural water demands. **Figure 2** displays all the land in El Dorado County that has agricultural water demands as a green color. Note that those lands are broken into Agricultural, and Rural/Agricultural as shown in **Figure 1**.

Total Area of El Dorado County (acres): 1,093,308

Total Agricultural land with agricultural water demands in El Dorado County (acres): 188,153

Table 1. Land Use Designations with Agricultural Water Demands

General Plan Land Use Designation	Criteria for Determining Agricultural Water Demands within Land Use Designation
Medium-Density Residential (MDR)	Land with agricultural water demands is identified with the following criteria: • Zones AG, PA, RL, LA and RE greater than 10 acres
Low-Density Residential (LDR)	Land with agricultural water demands is identified with the following criteria: • Zones AG, PA, RL, LA and RE greater than 10 acres
Rural Residential (RR)	Land with agricultural water demands is identified with the following criteria: • Zones AG, PA, RL, LA, TPZ greater than 10 acres and RE greater than 10 acres
Agricultural Lands (AL)	None – Land use designation contains all agricultural water demands

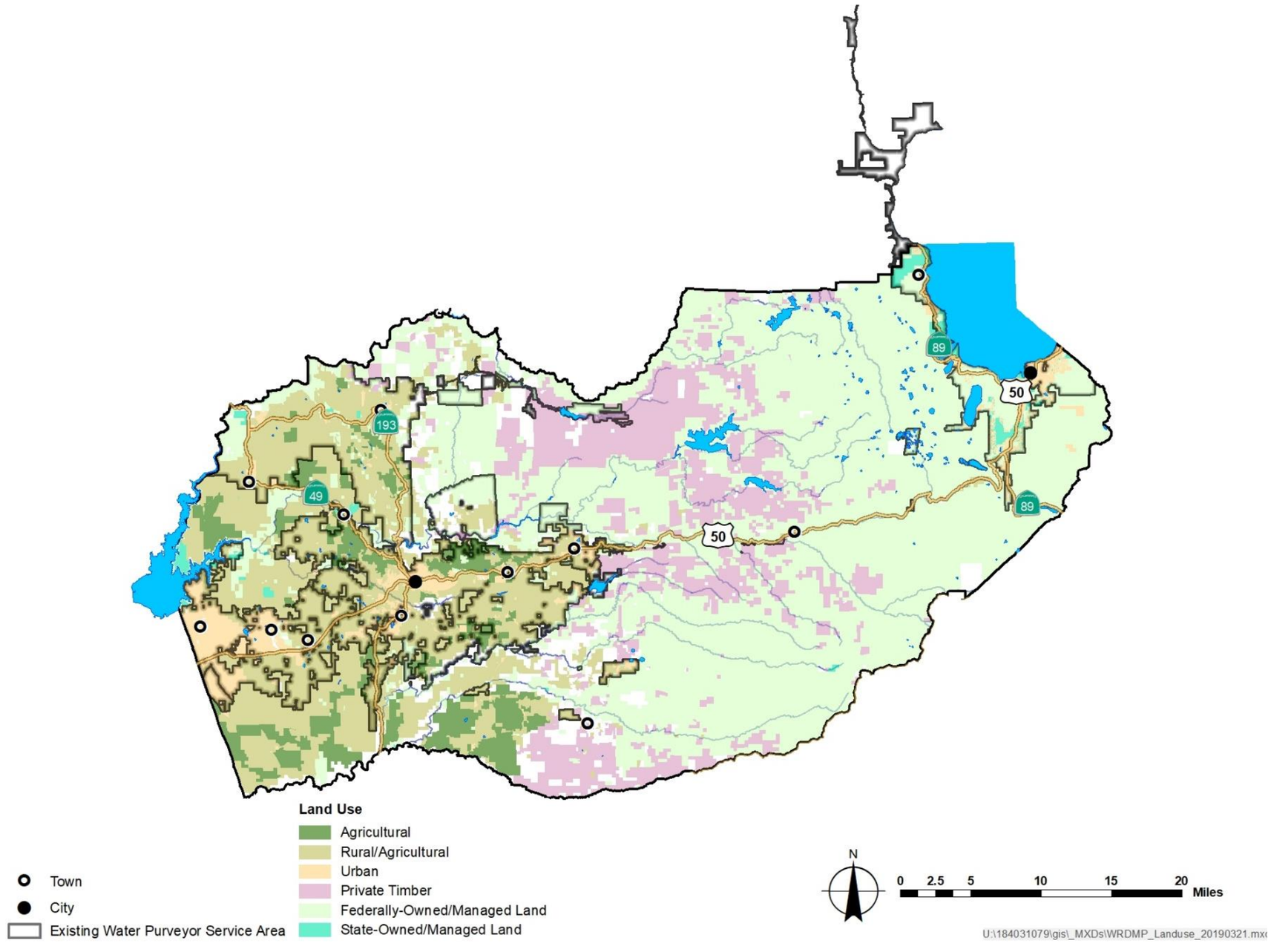
Rural/Agricultural

Land in El Dorado County that has both M&I water demands and agricultural water demands was classified as Rural/Agricultural. Rural/Agricultural includes all land designated as Medium-Density Residential (MDR), Low-Density Residential (LDR), and Rural Residential (RR). The Rural/Agricultural land in El Dorado County is shown in **Figure 1** as a muddy green color.

Total Area of El Dorado County (acres): 1,093,308

Total Rural/Agricultural land with a mixture of M&I and agricultural water demands in El Dorado County (acres): 231,357

Figure 1. El Dorado County Land Use



Note: Remaining land in El Dorado County is owned by public entities or private owners.

Figure 2. All Land in El Dorado County with Agricultural Water Demands

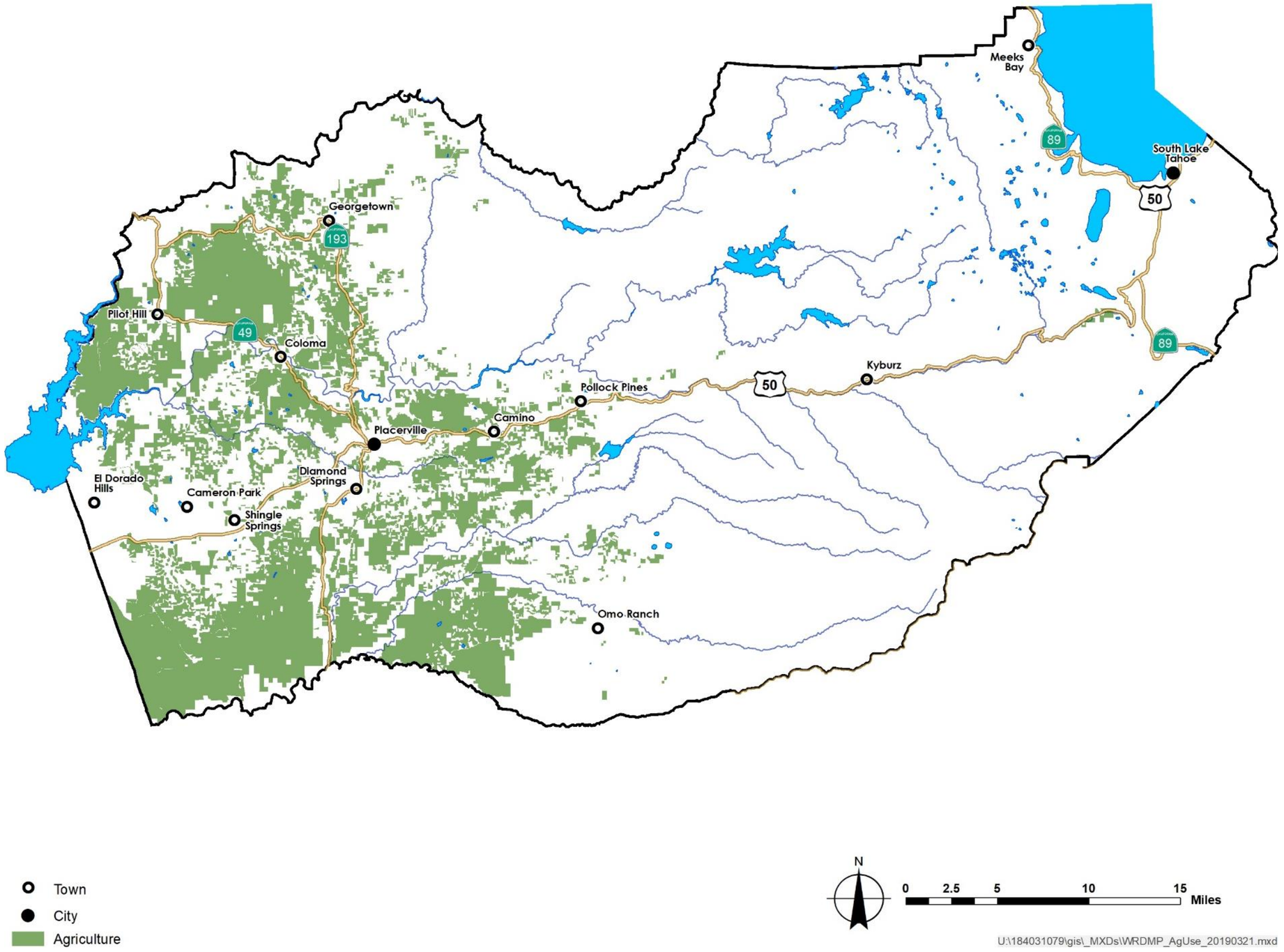


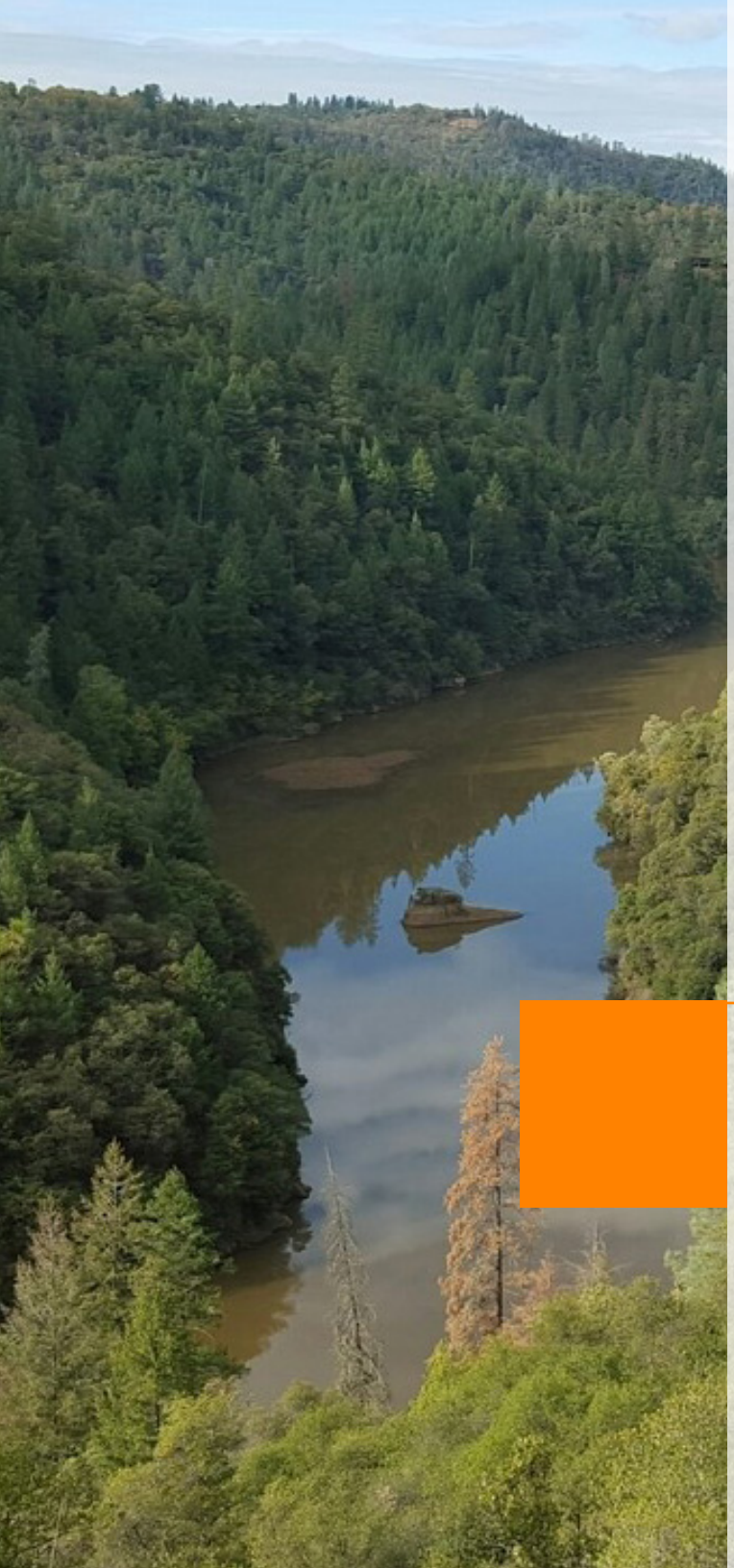
Table 2. Land Use Designations

Land Use Designation	Definition[1]	Criteria for Determining Agricultural Water Use within Land Use Designation	Applicable Water Demands
Multifamily Residential (MFR)	This land use designation identifies those areas suitable for high-density, single family and multifamily design concepts such as apartments, single-family attached dwelling units (i.e., air-space condominiums, townhouses and multiplexes), and small-lot single-family detached dwellings subject to the standards set for in the Zoning Ordinance and which meet the minimum allowable density. Mobile home parks, as well as existing and proposed manufactured home parks, shall also be permitted under this designation. Lands identified as MFR shall be in locations with the highest degree of access to transportation facilities, shopping and services, employment, recreation, and other public facilities. Mixed use development within Community Regions and Rural Centers which combine commercial and residential uses shall be permitted. Except as provided in Objective 2.2.6 (Site Specific Policy), the minimum allowable density is five dwelling units per acre, with a maximum density of 24 dwelling units per acre. Except as provided in Policy 2.2.2.3, this designation is considered appropriate only within Community Regions and Rural Centers. (Resolution 199-2018, September 25, 2018)	No agricultural use within specified land use designation.	M&I demand
High-Density Residential (HDR)	This land use designation identifies those areas suitable for intensive single-family residential development at densities from one to five dwelling units per acre. Allowable residential structure types include single-family attached (i.e., air-space condominiums, townhouses) and detached dwellings and manufactured homes. Except as provided in Policy 2.2.2.3, this designation is considered appropriate only within Community Regions and Rural Centers.	No agricultural use within specified land use designation.	M&I demand
Medium-Density Residential (MDR)	This land use designation establishes areas suitable for detached single-family residences with larger lot sizes which will enable limited agricultural land management activities. This designation shall be applied where the character of an area is single family residences; where the absence or reduced level of infrastructure including roads, water lines, and sewer lines does not justify higher densities; where the topography poses a constraint to higher densities; and as a transitional land use between the more highly developed and the more rural areas of the County. The maximum allowable density shall be one dwelling unit per 1.0 acre. Parcel sizes shall range from 1.00 to 5.00 acres. Except as provided in Policy 2.2.2.3, this designation is considered appropriate only within Community Regions and Rural Centers.	Mix of residential and agricultural uses. Agricultural use is identified with the following criteria: • Zones AG, PA, RL, LA and RE greater than 10 acres	M&I demand for all; Agricultural demand for those parcels with potential agriculture use
Low-Density Residential (LDR)	This land use designation establishes areas for single-family residential development in a rural setting. In Rural Regions, this designation shall provide a transition from Community Regions and Rural Centers into the agricultural, timber, and more rural areas of the County and shall be applied to those areas where infrastructure such as arterial roadways, public water, and public sewer are generally not available. This land use designation is also appropriate within Community Regions and Rural Centers where higher density serving infrastructure is not yet available. The maximum allowable density shall be one dwelling unit per 5.0 acres. Parcel size shall range from 5.0 to 10.0 acres. Within Community Regions and Rural Centers, the LDR designation shall remain in effect until a specific project is proposed that applies the appropriate level of analysis and planning and yield the necessary expansion of infrastructure.	Mix of residential and agricultural land. Agricultural land is identified with the following criteria: • Zones AG, PA, RL, LA and RE greater than 10 acres	M&I demand for all; Agriculture demand for those parcels with potential agriculture use
Rural Residential (RR)	This land use designation establishes areas for residential and agricultural development. These lands will typically have limited infrastructure and public services and will remain for the most part in their natural state. This category is appropriate for lands that are characterized by steeper topography, high fire hazards, and limited or substandard access as well as “choice” agricultural soils. The RR designation shall be used as a transition between LDR and the Natural Resource (NR) designation. Clustering of residential units under allowable densities is encouraged as a means of preserving large areas in their natural state or for agricultural production. Typical uses include single family residences, agricultural support structures, a full range of agricultural production uses, recreation, and mineral development activities. The allowable density for this designation is one dwelling unit per 10 to 160 acres. This designation is considered appropriate only in the Rural Regions.	Mix of residential and agricultural land. Agricultural land is identified with the following criteria: • Zones AG, PA, RL, LA, TPZ greater than 10 acres and RE greater than 10 acres	M&I demand for all; Agricultural demand for those parcels with potential agriculture use
Agricultural Lands (AL)	This designation is applied to lands described in Policy 8.1.1.8. A maximum of two residential dwellings used to support the agricultural use are allowed. The AL designation may be applied in Rural Regions only. Policy 8.1.1.8 Lands assigned the Agricultural Land (AL) designation shall be of sufficient size to sustain agricultural use and should possess one or more of the following characteristics: A. Are currently under a Williamson Act or Farmland Security Zone Contract; B. Contain the characteristics of choice agricultural land (i.e., contain choice agricultural soils and/or contain Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Locally Important Farmland); or C. Are under cultivation for commercial crop production or are identified as grazing land;	All agricultural use	Agricultural demand

[1] El Dorado County General Plan

	And one of the following: 1. Are located in the county's Rural Region; or 2. The County Department of Agriculture has determined that the land is well suited for agricultural production.		
Natural Resource (NR)	The purpose of the Natural Resource (NR) designation is to identify areas that contain economically viable natural resources and to protect the economic viability of those resources and those engaged in harvesting/processing of those resources including water resources development from interests that are in opposition to the managed conservation and economic, beneficial use of those resources. The important natural resources of the County include forested areas, mineral resources, important watershed, lakes and ponds, river corridors, grazing lands, and areas where the encroachment of development would compromise these natural resource values. Land under both public and private ownership that contain these resources, including wilderness areas and other lands managed for resource values and multiple use, are included in this category. This designation shall be applied to those lands which are 40 acres or larger in size and contain one or more important natural resource. Compatible uses on private land may include agriculture, rangeland, forestry, wildlife management, recreation, water resources development, and support single-family dwellings. The maximum allowable density for this designation is one dwelling unit per 160 acres or larger outside the National Forest Service lands and within "timber production" areas and one dwelling unit per 40 acres within river canyons outside of the "timber production" areas. This designation is considered appropriate only in the Rural Regions. Isolated parcels outside the National Forest Service lands and below 3,000 feet elevation may be exempt from the one dwelling unit per 160-acre parcel size. If it is determined that such lands are unsuitable for "timber production," one dwelling unit per 40 acres maximum density can be considered. Any modifications of this land use designation shall require one of the following findings: (1) No important natural resource exists on the property; or (2) If a project is proposed, it will significantly enhance the long-term production and preservation of the on-site resources through the application of development strategies such as fuels management plans, timber management plans, self-imposed setbacks buffers, and open space.	No agricultural use; the location may be high in elevation	Not Applicable-to be classified as Private Timber, Federally-Owned/Managed Land, State-Owned/Managed Land
Commercial (C)	The purpose of this land use category is to provide a full range of commercial retail, office, and service uses to serve the residents, businesses, and visitors of El Dorado County. Mixed use development of commercial lands within Community Regions and Rural Centers which combine commercial and residential uses shall be permitted. Commercially designated parcels shall not be developed with a residential use as the sole use of the parcel unless the residential use is either (1) a community care facility as described in goal HO-4 or (2) part of an approved mixed-use development as allowed by Policy 2.1.1.3 and 2.1.2.5, within an area zoned to allow for a mix of uses. Numerous zone districts shall be utilized to direct specific categories of commercial uses to the appropriate areas of the County. This designation is considered appropriate within Community Regions, Rural Centers and Rural Regions.	No agricultural use	M&I demands
Research & Development (R&D)	The purpose of this land use designation is to provide areas for the location of high technology, nonpolluting manufacturing plants, research and development facilities, corporate/industrial offices, and support service facilities in a rural or campus-like setting which ensures a high quality, aesthetic environment. This designation is highly appropriate for the business park/employment center concept. Lands designated as R&D can be located in Community Regions and in Rural Centers.	No agricultural use	M&I demands
Industrial (I)	The purpose of this land use category is to provide for a full range of light and heavy industrial uses. Types of uses that would be permitted include manufacturing, processing, distribution, and storage. Incompatible, non-industrial uses, excluding support services, shall be discouraged. Industrial lands in Rural Regions may have uses which support agriculture, timber resource production, mineral extraction, or other resource utilization. This designation is considered appropriate within Community Regions, Rural Centers and Rural Regions.	No agricultural use	M&I demands
Open Space (OS)	This land use category can be used to designate public lands under governmental title (County, State Parks, BLM, U.S. Bureau of Reclamation, U.S. Forest Service, etc.), where no development other than that specifically needed for government-related open space uses is desired. This land use includes State parks, ecological preserves, and public lands acquired specifically for open space uses. It may also be used on private lands to maintain natural features within clustered development where a General Plan amendment is processed. This designation is considered appropriate within Community Regions, Rural Centers, and Rural Regions.	No agricultural use	Not Applicable-to be classified as Private Timber, Federally-Owned/Managed Land, State-Owned/Managed Land
Public Facilities (PF)	This land use category includes only publicly owned lands used for public facilities such as sanitary landfills, storage and maintenance yards, regional parks and recreation facilities, fire stations, schools, community parks and recreation facilities, libraries, administration and support buildings, hospitals (including non-profit), airports, transit facilities, water and sewer treatment facilities, etc. This designation is considered appropriate within Community Regions, Rural Centers, and Rural Regions.	No agricultural use	M&I demands

Adopted Plan (AP)	This land use category recognizes areas for which specific land use plans have been prepared and adopted. These plans (e.g., specific plan or community plan) are accepted and incorporated by this reference, and the respective land use map associated with each such plan is hereby adopted as the General Plan map for each such area. The plans recognized by the AP category do not include the now-superseded Area Plans that comprised the County's General Plan prior to the adoption of this General Plan. The adopted plan for the Tahoe Basin is the Regional Plan for the Tahoe Basin and the Plan Area Statements, both adopted by the Tahoe Regional Planning Agency (TRPA), and the Meyers Area (Community) Plan, adopted by El Dorado County and TRPA. Tourist Recreational (TR): This land use designation is to provide areas for tourist and resident serving recreational uses, transit and seasonal lodging facilities, and supporting commercial activities. The land use category would have differing intensities of use based on the location. In the Community Regions and Rural Centers where infrastructure exists or can be extended, the uses permitted would be more intense and commercial in nature. In the Rural Regions, uses will be encouraged and defined that are compatible with the rural residential nature of those regions. Types of uses would include campgrounds, golf courses, ski areas, snow parks, riding stables, trail heads, museums, and other similar recreational and sightseeing activities. Lodging uses would include RV parks and other appropriate transit lodging. Tourist recreational activities, facilities, and industries shall be allowed throughout the County; however, specific activities and facilities shall be identified through zoning and permitted by right or special use permit, as appropriate.	No agricultural use	M&I demands
Tourist Recreational (TR)	This land use designation is to provide areas for tourist and resident serving recreational uses, transit and seasonal lodging facilities, and supporting commercial activities. The land use category would have differing intensities of use based on the location. In the Community Regions and Rural Centers where infrastructure exists or can be extended, the uses permitted would be more intense and commercial in nature. In the Rural Regions, uses will be encouraged and defined that are compatible with the rural residential nature of those regions. Types of uses would include campgrounds, golf courses, ski areas, snow parks, riding stables, trail heads, museums, and other similar recreational and sightseeing activities. Lodging uses would include RV parks and other appropriate transit lodging. Tourist recreational activities, facilities, and industries shall be allowed throughout the County; however, specific activities and facilities shall be identified through zoning and permitted by right or special use permit, as appropriate.	No agricultural use	M&I demands



El Dorado County Water Agency

Water Resources Development and Management Plan

March 27, 2019 DRAFT

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Executive Summary

El Dorado County Water Agency is the trusted, county-wide leader on water-resource issues, representing the long-term.

Executive Summary

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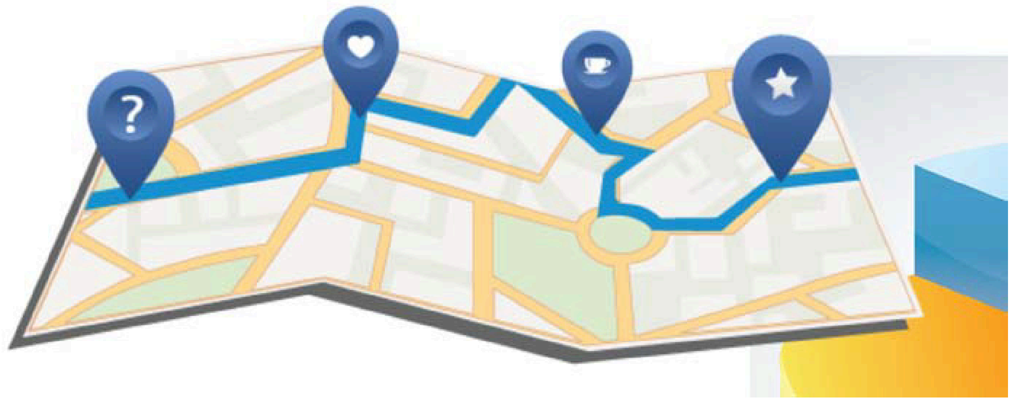

Protecting and managing water resources today will help security water supplies for the future.

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Abbreviations

Act	El Dorado County Water Agency Act
Agency	El Dorado County Water Agency
County	County of El Dorado
CSD	Community Services District
CPUC	California Public Utilities Commission
CVP	Central Valley Project
EID	El Dorado Irrigation District
GDPUD	Georgetown Divide Public Utility District
GFCSD	Grizzly Flats Community Services District
OCA	Other County Area
PUD	Public Utility District
RCD	Resource Conservation District
Reclamation	U.S. Department of the Interior, Bureau of Reclamation
SGMA	Sustainable Groundwater Management Act
SOFAR	South Fork American River Cohesive Strategy
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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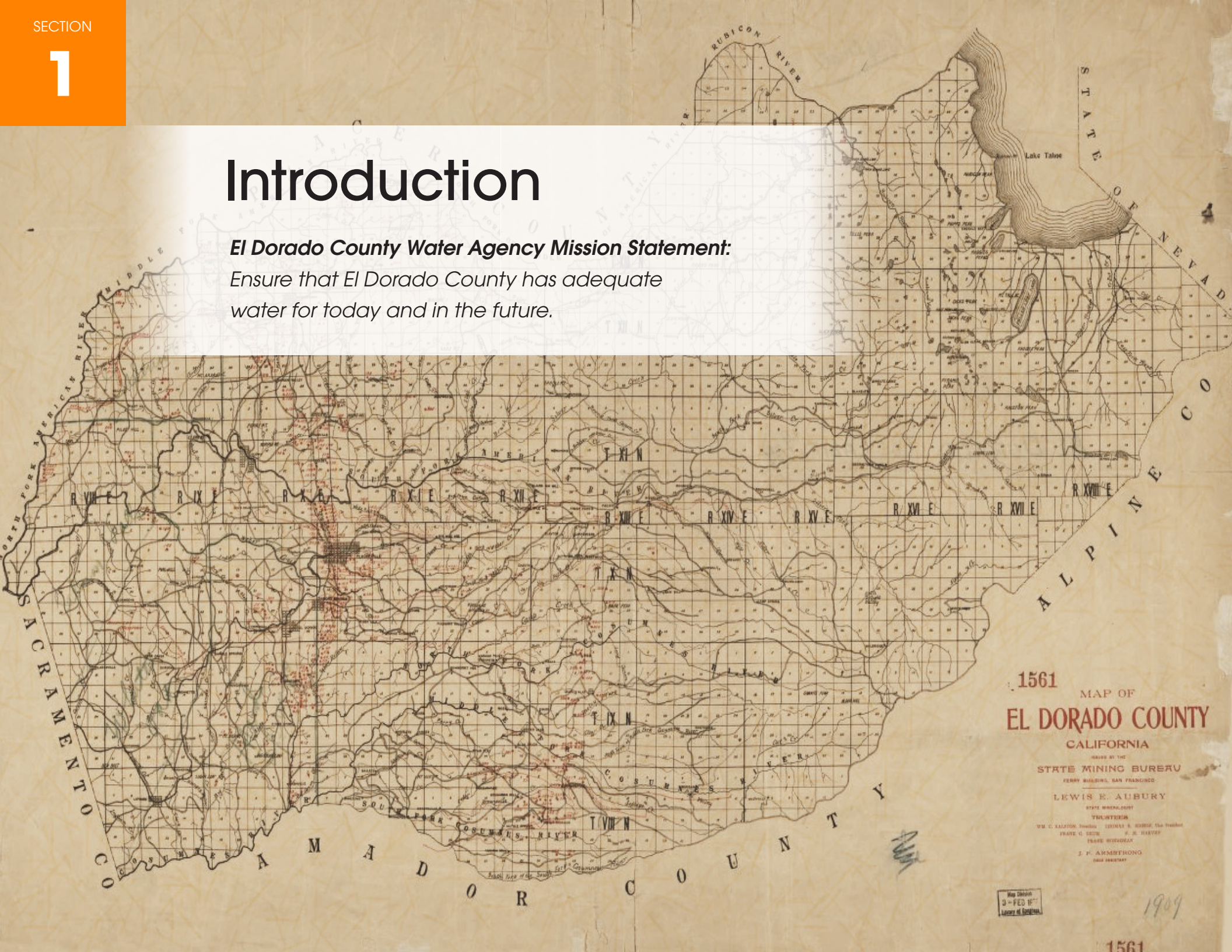
SECTION

1

Introduction

El Dorado County Water Agency Mission Statement:

Ensure that El Dorado County has adequate water for today and in the future.



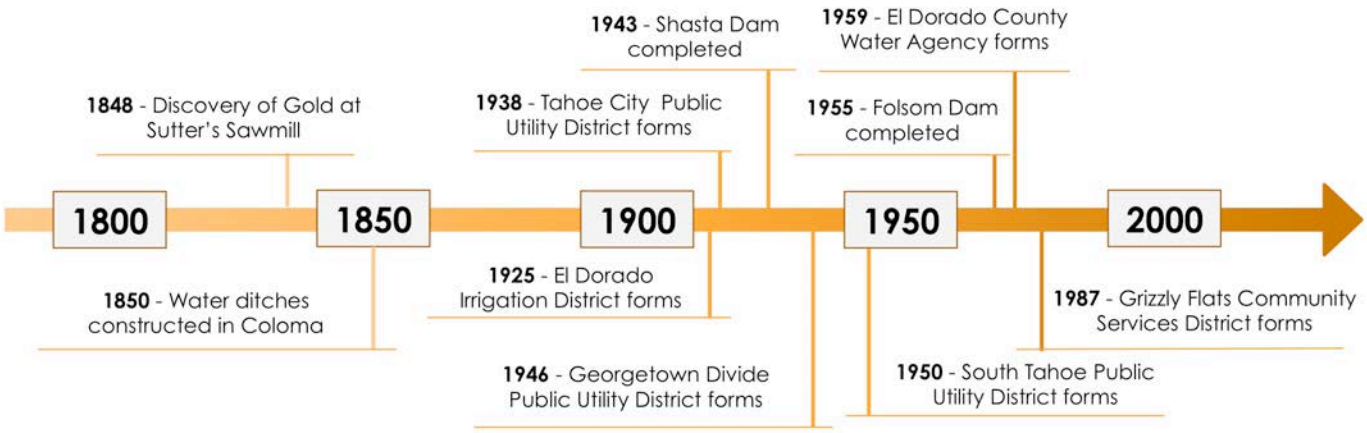
The El Dorado County Water Agency (Agency) was created in 1959 through the El Dorado County Water Agency Act (Act) to ensure that El Dorado County had adequate water to serve its many needs then and into the future. The Agency covers the entire El Dorado County, on both sides of the Sierra Nevada with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

Although the Agency does not currently own any water facilities, it collaborates with water purveyors to develop local water supplies and is contracted with the U.S. Department of the Interior, Bureau of Reclamation (Reclamation) for Central Valley Project (CVP) water service contract deliveries that support El Dorado County's domestic uses 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).

The historic drought from 2012 through 2016 left water managers throughout California with changed perspectives regarding their water supply vulnerabilities and the extent of potential impacts. The Agency was no different, completing a 2016-2020 Strategic Plan in 2016 that called for improved organization and renewed focus on a more integrated and comprehensive water management approach to create benefits for the entire El Dorado County, especially for those not served by a water purveyor. This 2019 update of the WRDMP also requires the reevaluation and adjustment, if warranted, of the Agency's current investments and future investment priorities to reflect direction provided in the Strategic Plan.



1.2 Goals

The primary goal of the Agency in the 2019 WRDMP was to assist the County of El Dorado (County) with realization of its adopted General Plan. The County General Plan is unique in several ways:

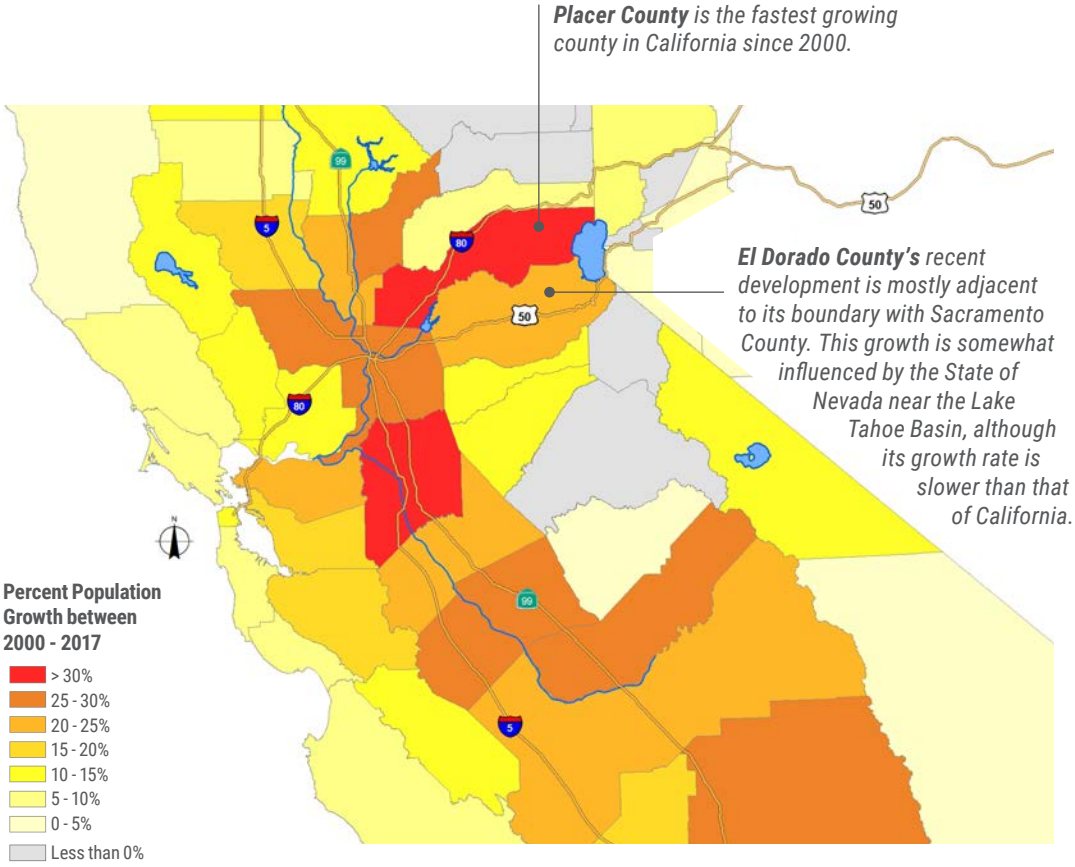
- It contains a land use designation for economic development and integrated natural resource protection and management.
- It plans for the land capacity in considering future economic development beyond the typical near-term urbanization focus.
- It contains policies and considerations that allow for urbanization but also preserves the way of life of rural-agricultural communities that residents value significantly.

Through the 2019 WRDMP, the Agency has developed corresponding water management strategies and investment priorities to fulfill the vision presented in the County General Plan.

Additional goals of the Agency in the revision of the WRDMP included:

- Develop a concise, adaptable, and policy-focused document to be adopted by the Agency's Board that is commensurate with the Agency's role and responsibilities.
- Incorporate an integrated water management approach into sustainable investment strategies and implementation.
- Address changes in countywide water supply conditions, regulations, and the 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.

In Northern California, economic development and housing challenges in the Bay Area resulted in population growth along major transportation corridors. El Dorado County is experiencing rapid development, along with adjacent Placer and Sacramento counties. El Dorado County must prepare for such continued growth.



Source: United States Census, 2000 and 2017 Quickfacts

1.3 Principles

The Agency also outlined several principles for its 2019 WRDMP including:

- 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 to be promoting countywide broad benefits and focusing 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 County's long-term vision can only be realized through collaboration, so it formed various advisory groups for WRDMP development and established a foundation for long-term collaborative forums for countywide water management issues.

1.4 Organization

To discuss the Agency's role, responsibilities, and focus in regional and statewide water management issues in El Dorado County, the 2019 WRDMP is organized into 5 sections:

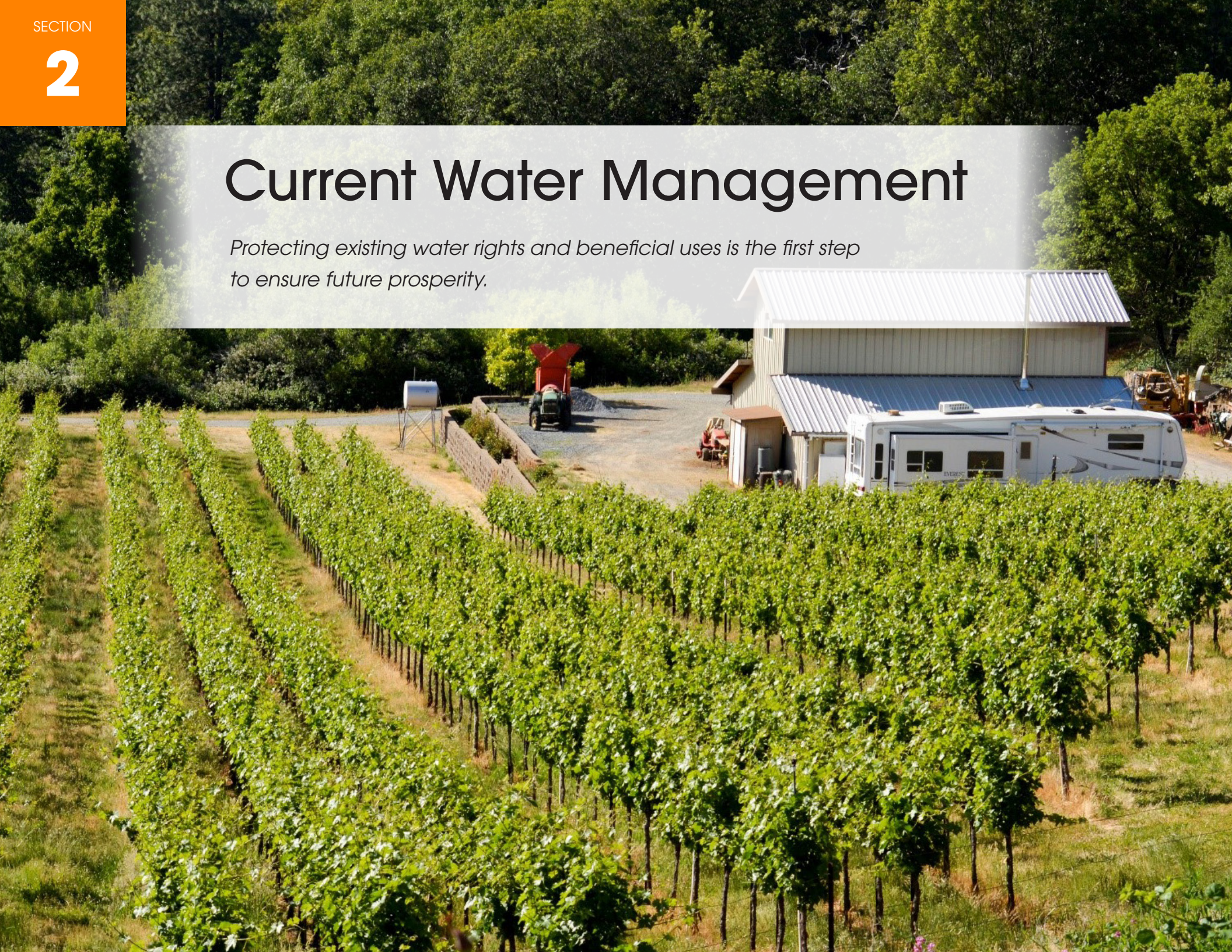
- **Section 1: Introduction** outlines the purpose of the WRDMP and the Agency's goals and principles for plan development.
- **Section 2: Current Water Management** summarizes El Dorado County's current water management structures and associated roles, responsibilities, and services.
- **Section 3: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

SECTION

2

Current Water Management

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

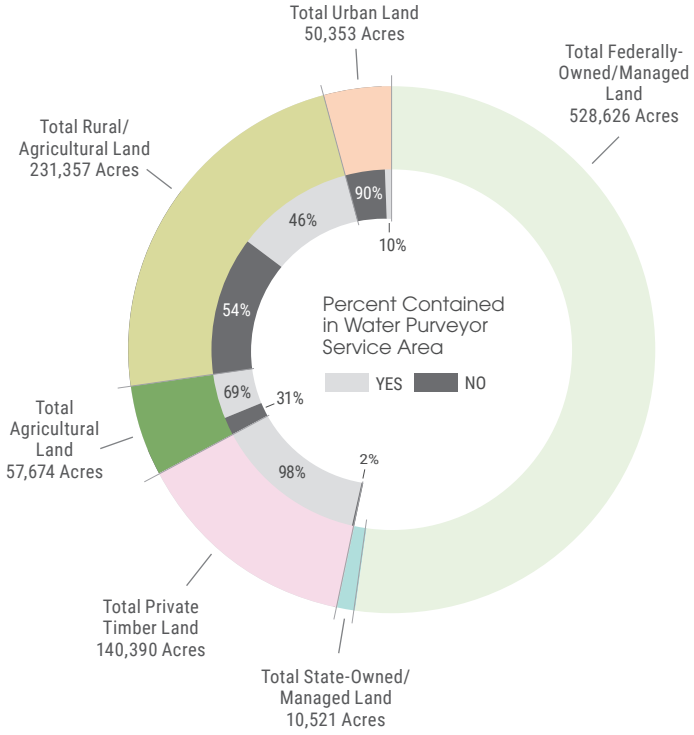


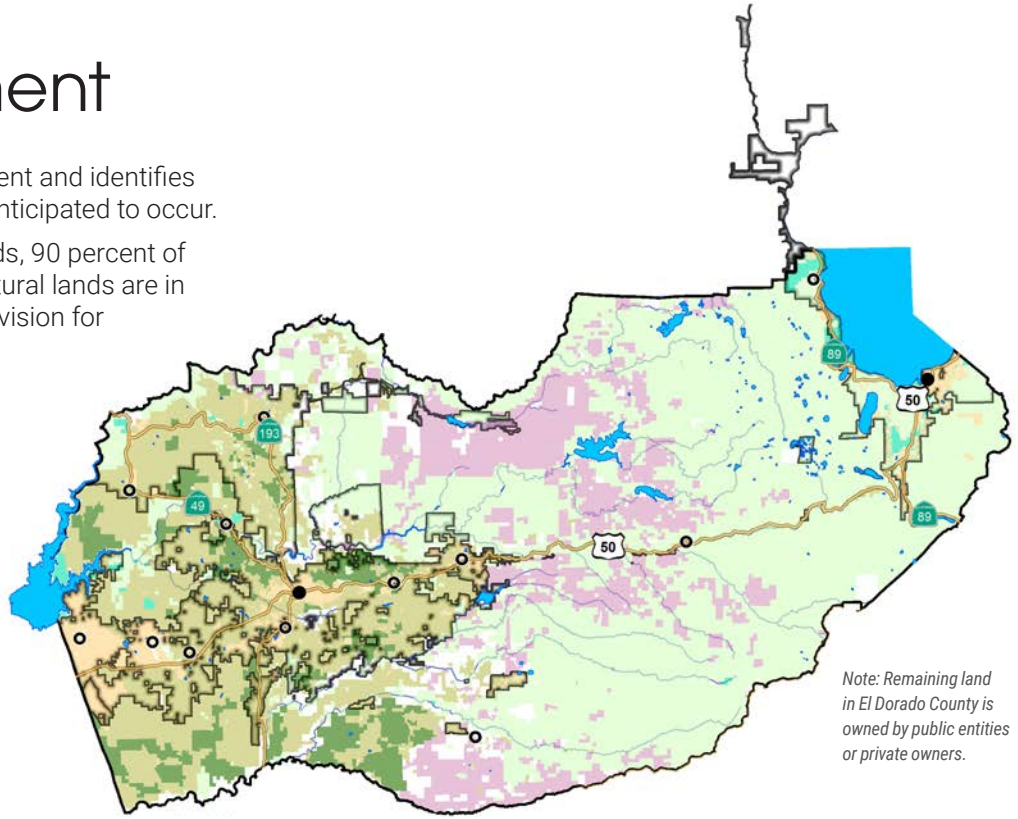
Understanding current water management practices, responsibilities, infrastructure, and commitments is critical to developing water management strategies and investment priorities that will provide opportunities for sustained economic development and help the Agency fulfill the vision in the County General Plan.

2.1 Economic Development

The County General Plan designates lands for economic development and identifies areas where future higher density growth and urban activities are anticipated to occur.

At present, approximately 31 percent of designated agricultural lands, 90 percent of designated urban lands, and 54 percent of designated rural/agricultural lands are in areas currently served by five public water purveyors. Realizing the vision for sustained economic growth in the remaining areas will depend on development of reliable, long-term water supplies.





Note: Remaining land in El Dorado County is owned by public entities or private owners.

Land Use

- Agricultural
- Rural/Agricultural
- Urban
- Private Timber
- Federally-Owned/Managed Land
- State-Owned/Managed Land
- Town
- City
- Existing Water Purveyor Service Area

Source: County of El Dorado Geographic Information Systems, January 2019

N

0 2.5 5 10 15 20 Miles

Reliable water supplies are foundational to ensure economic development and prosperity into the future. Today, a substantial portion of the land designated for economic development in the El Dorado County General Plan is not served by a water purveyor.

2.2 Roles and Responsibilities in Water Management

Many entities have active water management roles at the local or regional level including the Agency, County, public water purveyors, private water companies, and those that are considered self-supplied.

The Agency is charged with developing a county-wide water plan and participating in statewide water planning. It can negotiate contracts with the California Department of Water Resources; Reclamation; and other local, State, and Federal agencies for water management and facility construction. It works to protect existing uses of water rights on which water purveyors and their customers depend, and it applies for the use of additional water rights as needed for the beneficial use of future customers or to extend service boundaries to include existing landowners.

There are five public water purveyors in El Dorado County. El Dorado Irrigation District (EID), Georgetown Divide Public Utility District (GDPUD), and Grizzly Flats Community Services District (GFCSD) serve surface water on the West Slope. South Lake Tahoe Public Utility District (STPUD) serves groundwater, and Tahoe City Public Utility District (TCPUD) serves water from both groundwater and spring wells to the Lake Tahoe Basin. Additionally, EID wholesales water to the City of Placerville. These purveyors' service areas do not cover the entire El Dorado County. Residents, farms, and businesses outside the purveyors' boundaries primarily rely on groundwater. In the West Slope, shallow groundwater wells are used, and in the Lake Tahoe Basin, groundwater is extracted from either the Tahoe South or Tahoe West Subbasin.

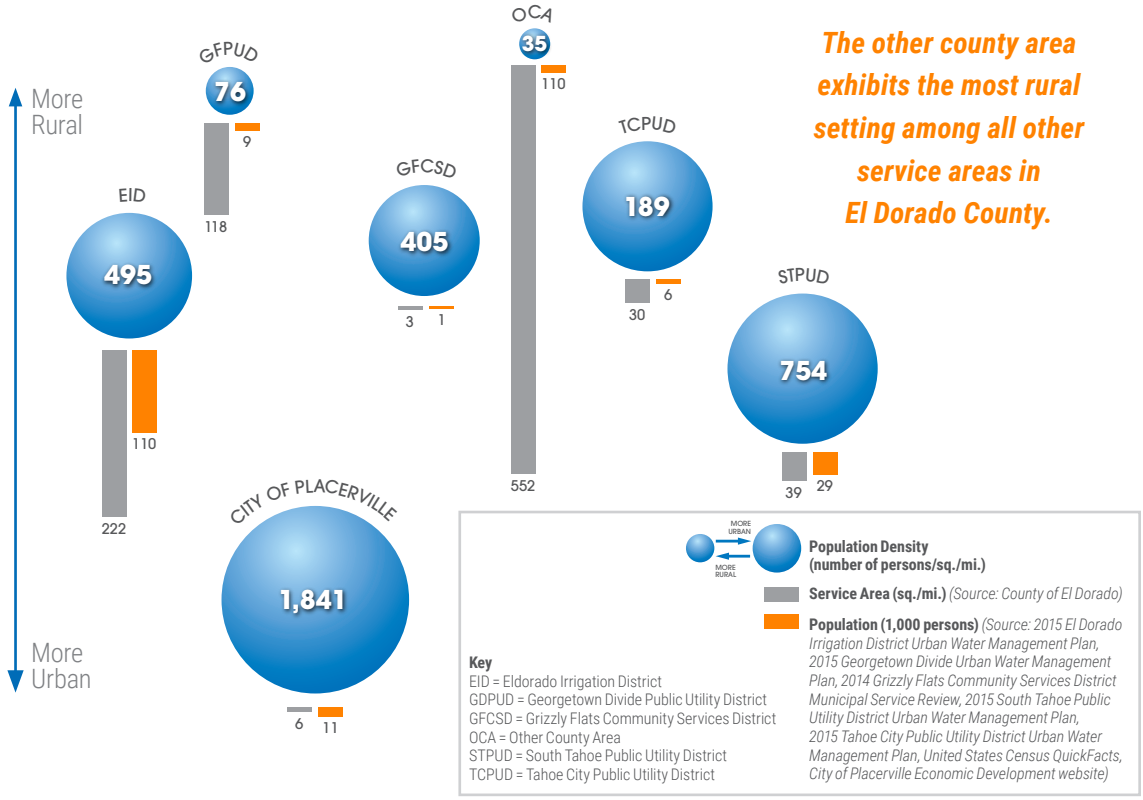
The Agency can collaborate with EID, GDPUD, GFCSD, STPUD, TCPUD, and the City of Placerville, and it is able to represent those areas that are outside the water purveyors' service areas.

COMMUNITY SERVICES DISTRICTS – *Community services districts* (CSD) 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.

OTHER COUNTY AREA – Area in El Dorado County that falls outside Federally-owned/managed land and a water purveyors' service area is know as the *other county area* (OCA).

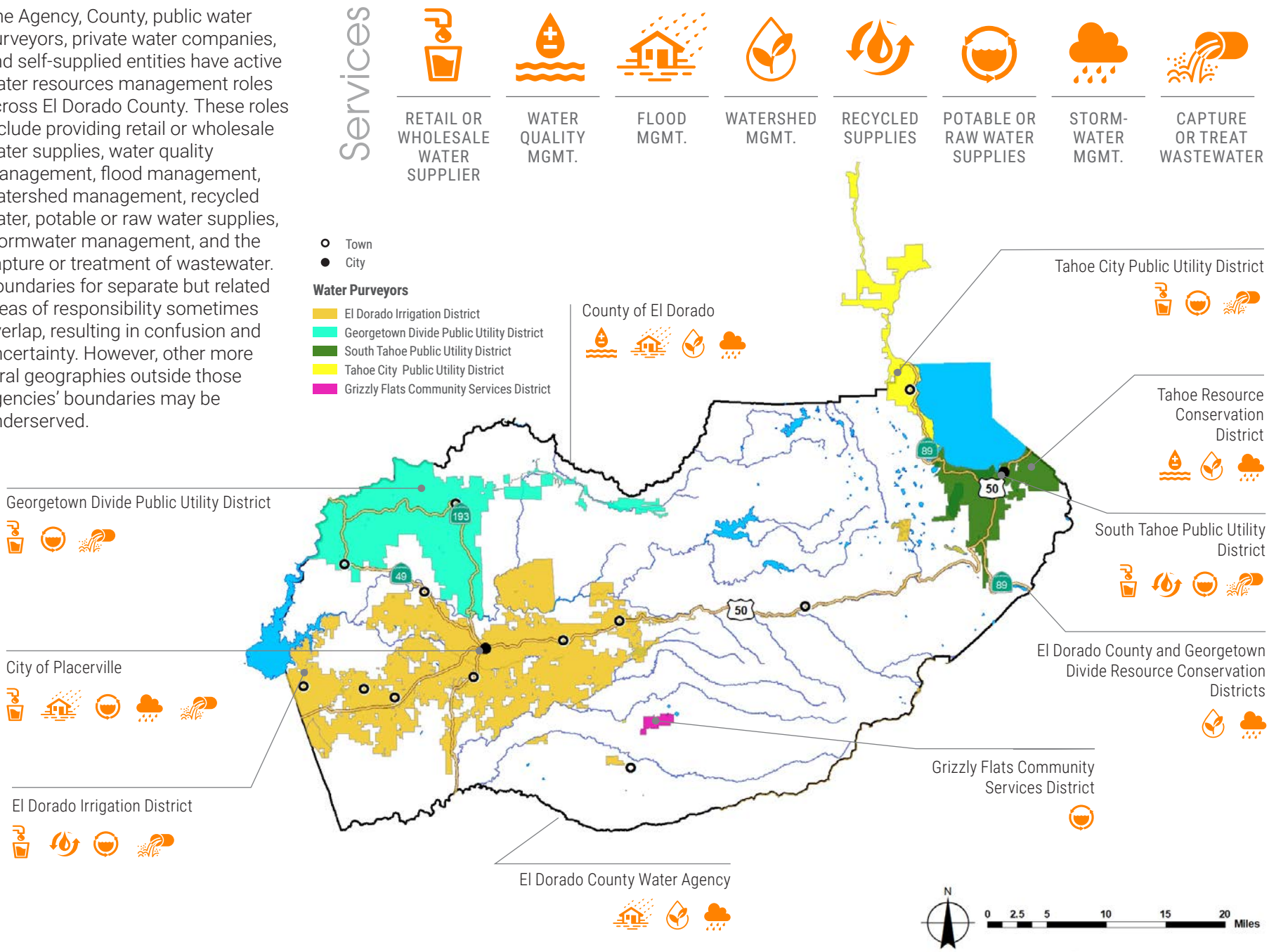
PUBLIC UTILITY DISTRICTS – A *public utility district* (PUD) is a community-owned locally regulated utility authorized to provide electricity, water and sewer services, and wholesale telecommunications. A PUD may provide one or more of these services, depending on the needs of the community.

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. *Resource conservation districts* (RCD) have a role in watershed management, water quality management, and stormwater management.



The other county area exhibits the most rural setting among all other service areas in El Dorado County.

The Agency, County, public water purveyors, private water companies, and self-supplied entities have active water resources management roles across El Dorado County. These roles include providing retail or wholesale water supplies, water quality management, flood management, watershed management, recycled water, potable or raw water supplies, stormwater management, and the capture or treatment of wastewater. Boundaries for separate but related areas of responsibility sometimes overlap, resulting in confusion and uncertainty. However, other more rural geographies outside those agencies' boundaries may be underserved.



2.3 Major Water Infrastructure

The majority of El Dorado County water supplies originates as runoff from the Sierra Nevada snowpack. This water is stored and distributed throughout El Dorado County for supply and hydropower generation purposes.

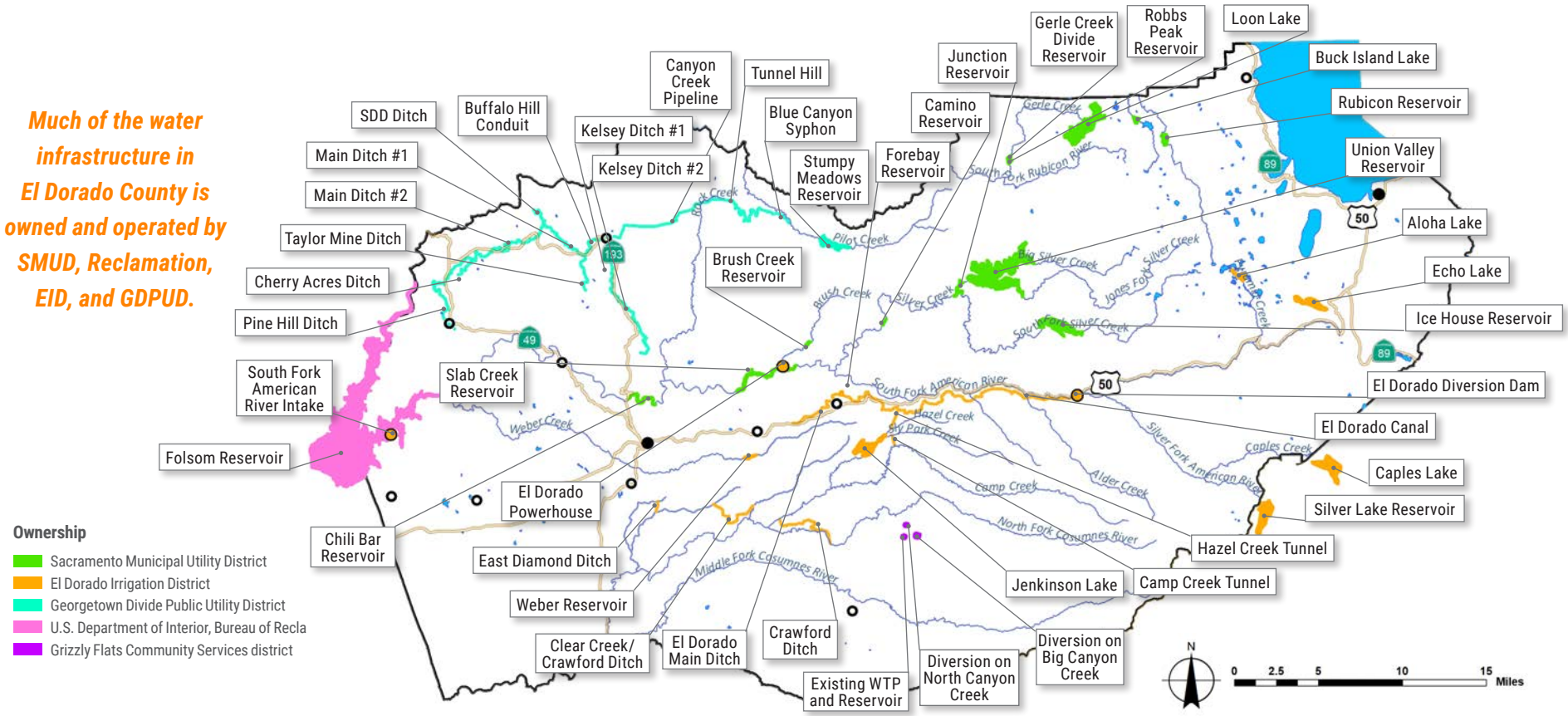
Some of the water infrastructure in the Sacramento Municipal Utility District (SMUD) Upper American River Project is located in El Dorado County including 11 dams, 8 powerhouses to meet electricity demands, and Loon Lake (a major water storage reservoir)[1]. Folsom Reservoir is owned and operated by Reclamation as part of the CVP to provide flood control, hydropower, and water supplies.

In the West Slope, EID owns and operates Jenkinson Lake Reservoir in Pollock Pines and Project 184 including Echo, Aloha, Caples, and Silver lakes. EID also contracts for water from Folsom Reservoir via two Reclamation water service contracts[2]. GDPUD owns and operates Stumpy Meadows Reservoir east of Georgetown in addition to several ditches[3]. GFCSD owns and operates its own reservoir and contains diversions on North Canyon Creek and Big Canyon Creek[4]. Some of the infrastructure owned by EID and GDPUD is from the Gold Rush era. This infrastructure is aged and consists of several wooden flumes.

In the Lake Tahoe Basin, STPUD serves its customers from wells. TCPUD serves its customers from 10 groundwater and 2 spring wells.

Most rural areas are served from groundwater wells by either small private water companies or are self-supplied. The Agency does not own any water facilities at this time.

Much of the water infrastructure in El Dorado County is owned and operated by SMUD, Reclamation, EID, and GDPUD.



2.4 Environmental Protection

The County General Plan includes land use designations for integrated natural resource protection and management. To carry out this vision, the Agency must be proactive in supporting environmental protection and promote water management strategies and investment priorities that are protective of natural resources.

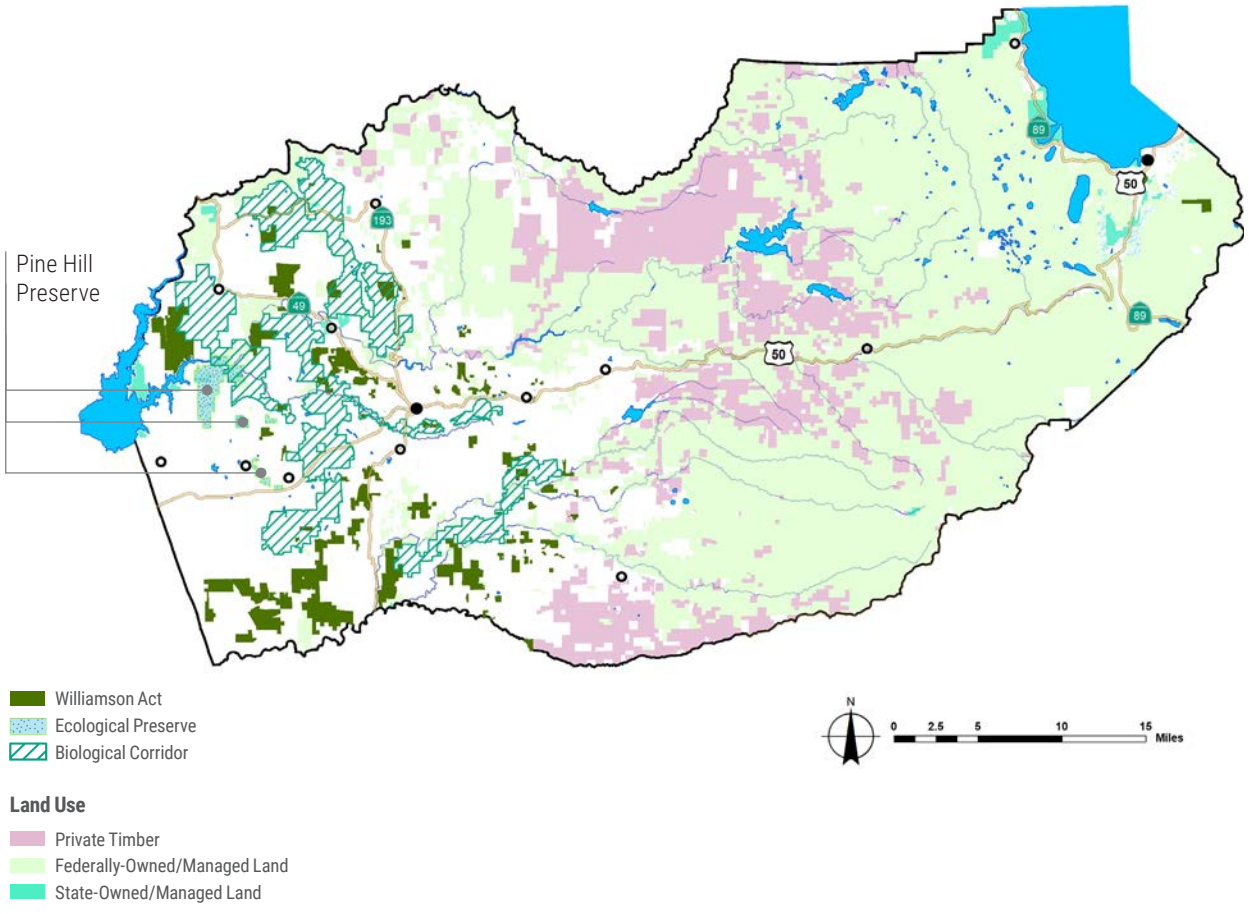
Areas in El Dorado County that the Agency will help protect include agricultural lands under:

The Williamson Act – Enacted in 1965, this State law enables local governments to enter into contracts with private landowners to restrict specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments that are much lower than normal.

Biological Corridors – 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 coyotes.

Ecological Preserves – These lands have been or will be established as habitat preserves for rare or endangered plant and animal species, critical wildlife habitat, natural communities of high quality or of statewide importance. Pine Hill Preserve is such an area because of the presence of rare plant species and habitats.

County of El Dorado General Plan recognizes the importance of protecting natural resources contained in the Williamson Act, Biological Corridors, and Ecological Preserves that are not managed by State or Federal agencies.



Source: County of El Dorado Geographic Information Systems, January 2019

SECTION

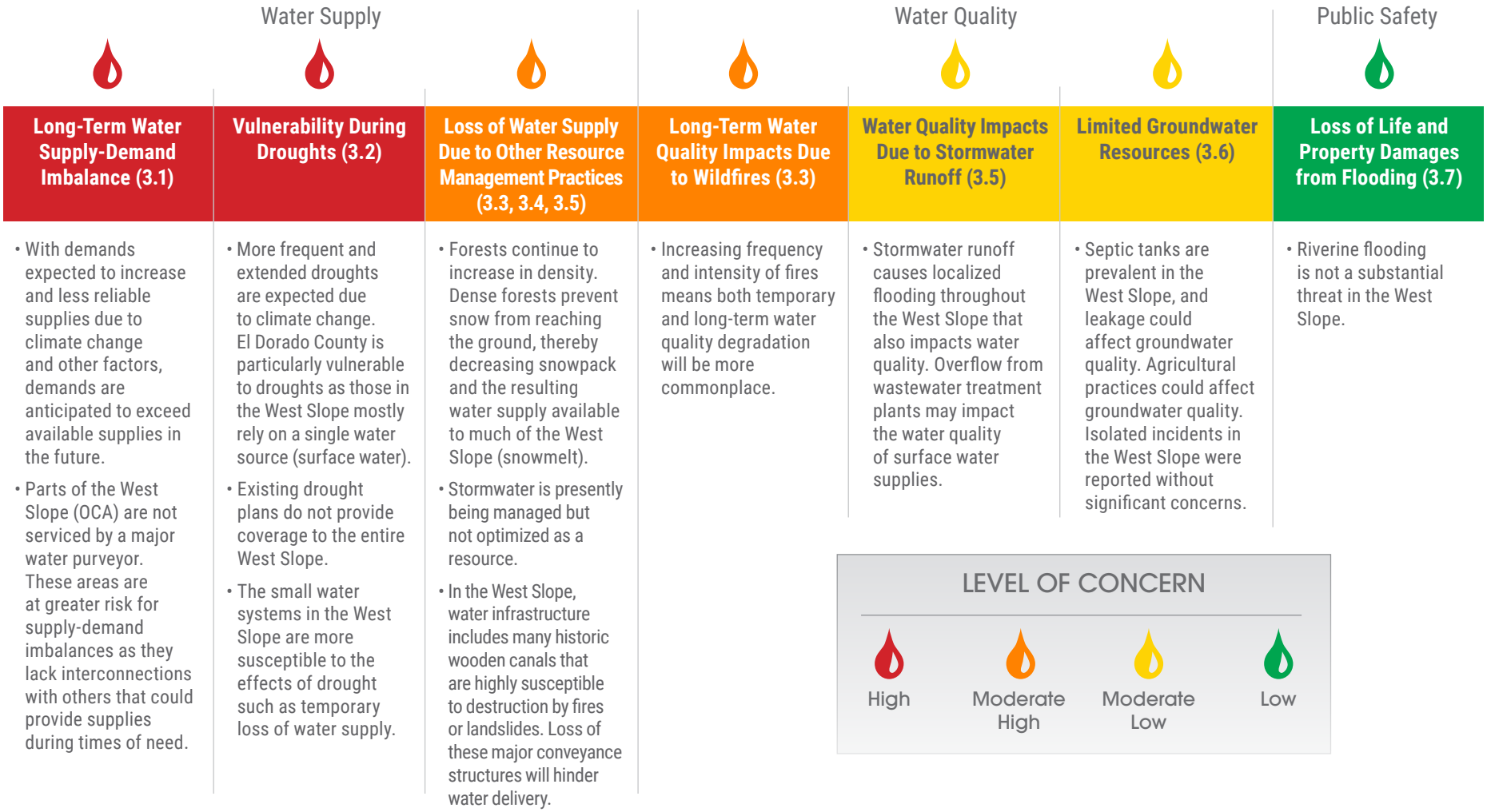
3

Challenges Ahead

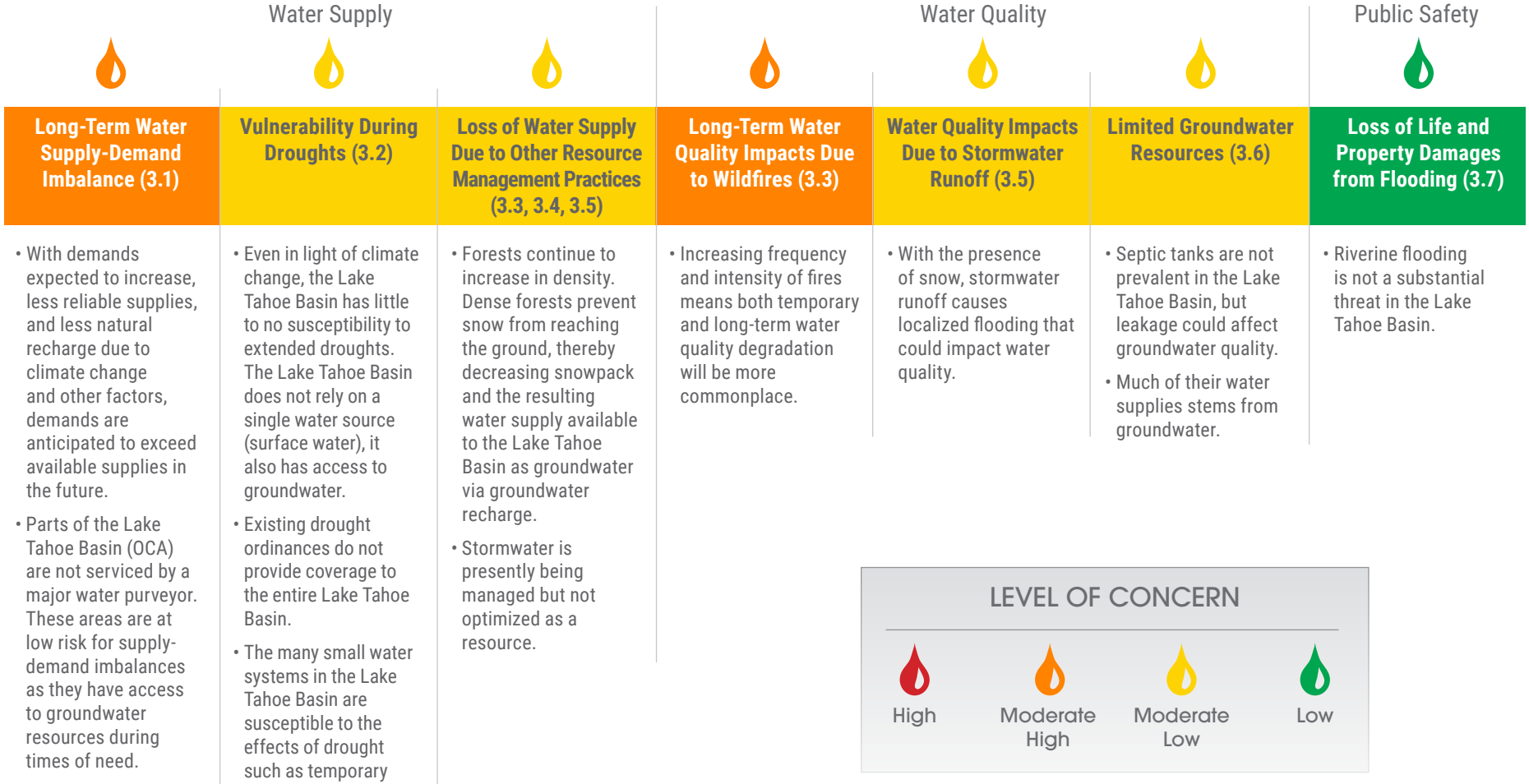
Improved watershed management will provide beneficial results for current and future water supply and quality.

Many have invested considerable time, effort, and funds to ensure continued water reliability and economic prosperity in El Dorado County over the years. But ever-changing conditions—both within and outside the direct control of local government and residents—mean that we must remain attentive and forward-thinking to prepare for the challenges that may lie ahead. El Dorado County must plan for and adapt to the water-resources related challenges it will continue to face. These often inter-related water supply, water quality, and public safety issues are summarized below in order of level of concern. More detail is presented later in this section.

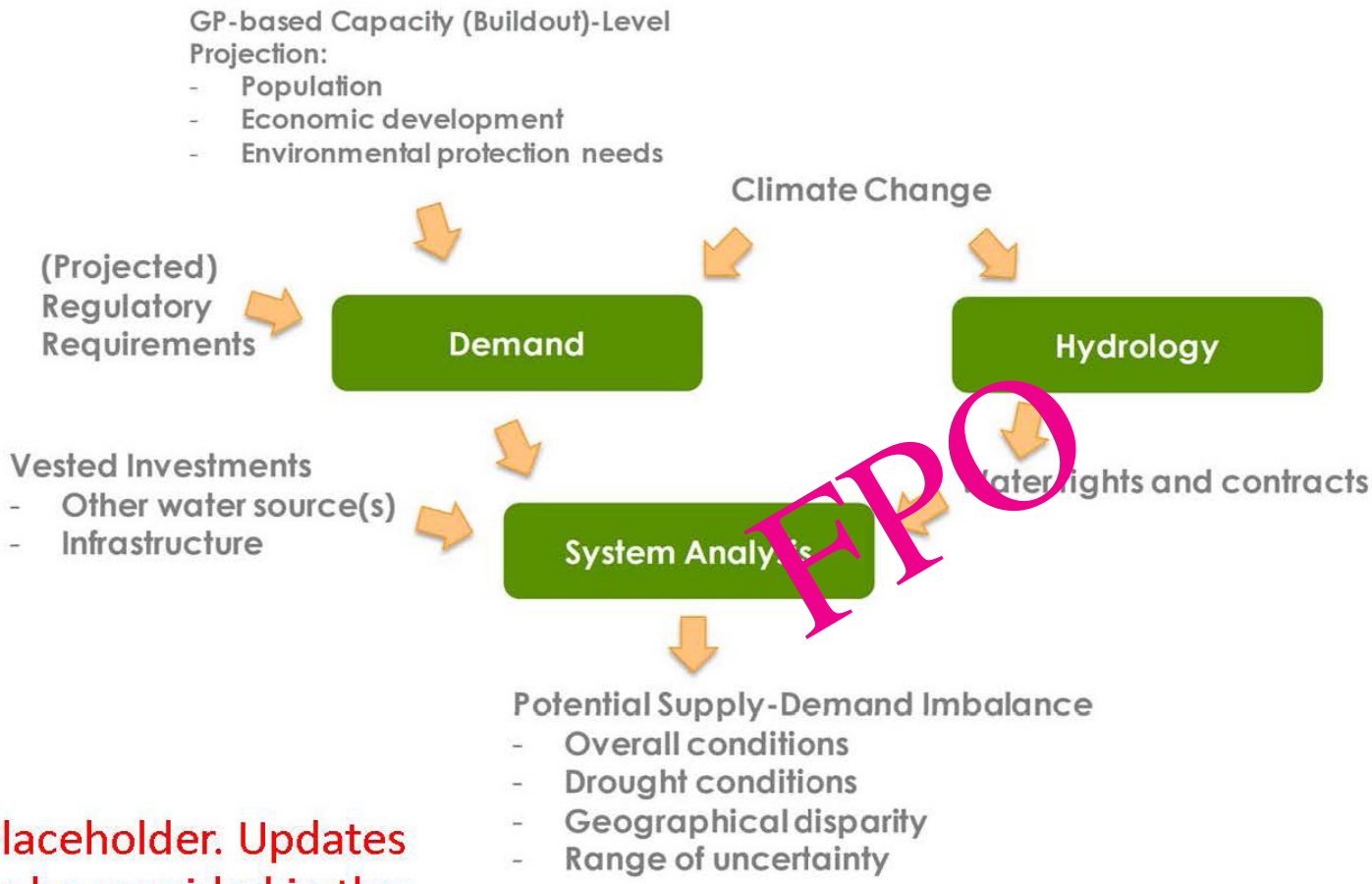
Water Resource Related Challenges in the WEST SLOPE AREA



Water Resources Related Challenges in the LAKE TAHOE BASIN



3.1 Water Supply-Demand Scenario



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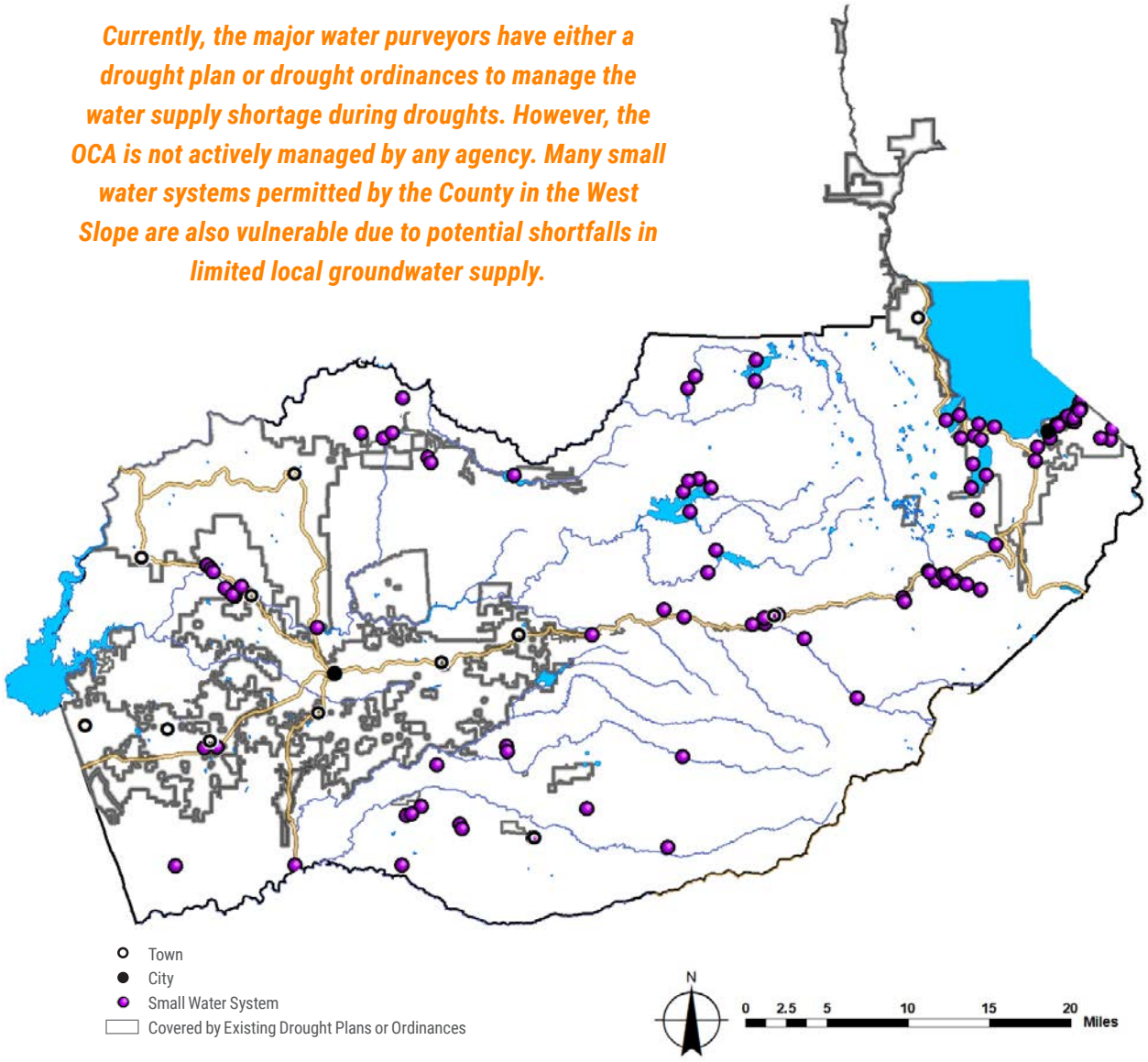
3.2 Vulnerability During Droughts

Currently, the major water purveyors have either a drought plan or drought ordinances to manage the water supply shortage during droughts. However, the OCA is not actively managed by any agency. Many small water systems permitted by the County in the West Slope are also vulnerable due to potential shortfalls in limited local groundwater supply.



Water purveyors and agencies continue to actively plan for emergencies and extended droughts, and overall, there is broad coverage throughout El Dorado County. All agencies are required to have drought plans (or be in compliance with ordinances) and have established ways to respond when needed.

Through the lens of climate change, the West Slope is vulnerable to drought because it relies primarily on surface water and does not have access to much groundwater or other forms of supply during times of scarcity. GFCSD, EID, and GDPUD oversee drought plans, but in the rest of the West Slope, the OCA is likely to experience hardships as a result of not having secure water supplies.

The Lake Tahoe Basin is less susceptible to dry conditions and has not experienced drought like the West Slope and the rest of California. The majority of this area is covered by drought ordinances overseen by STPUD and TCPUD. In this part of El Dorado County, the OCA has had the ability to access groundwater when surface water is scarce.

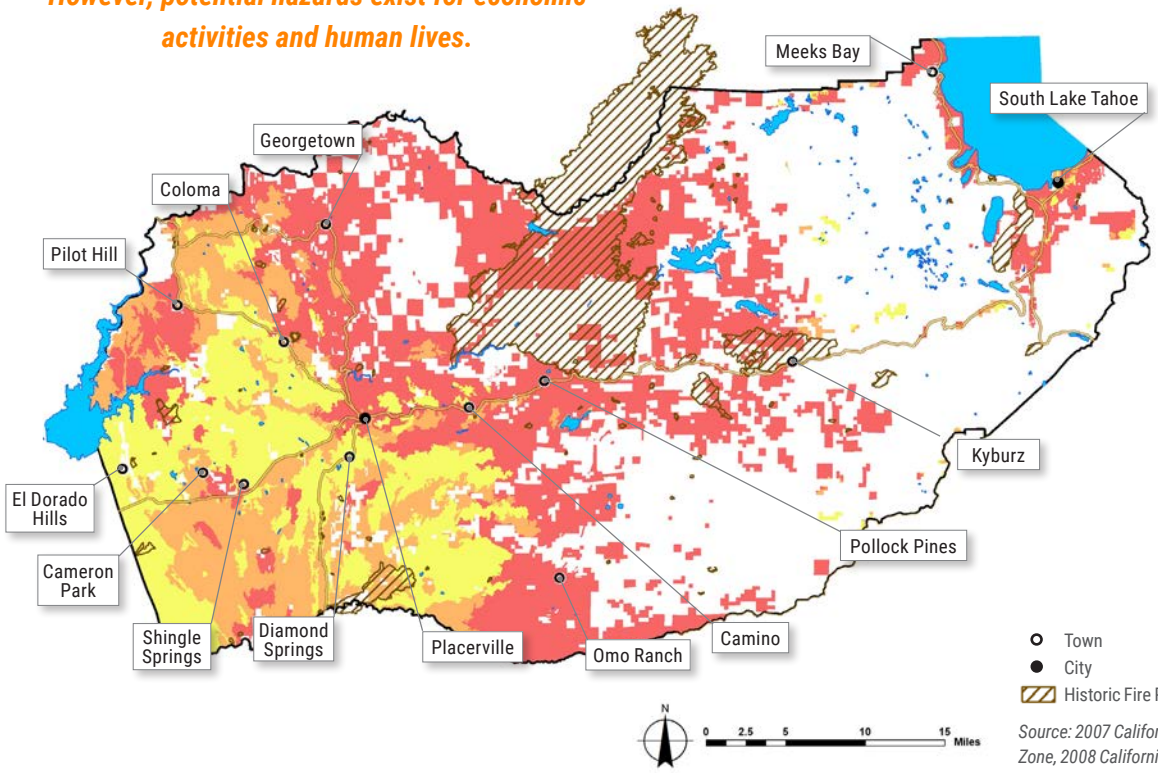
Currently, 119 small water systems[5] are overseen by the County Environmental Management Department through the Small Water System Program. These small systems serve a total population of more than 25,000 in both the West Slope and Lake Tahoe Basin. These small systems are often isolated and not connected to larger water purveyors and agencies, even if they are in close proximity. Therefore, these small systems have an increased likelihood of water supply impacts during drought conditions as well as reductions in the quality of groundwater when wells are used.

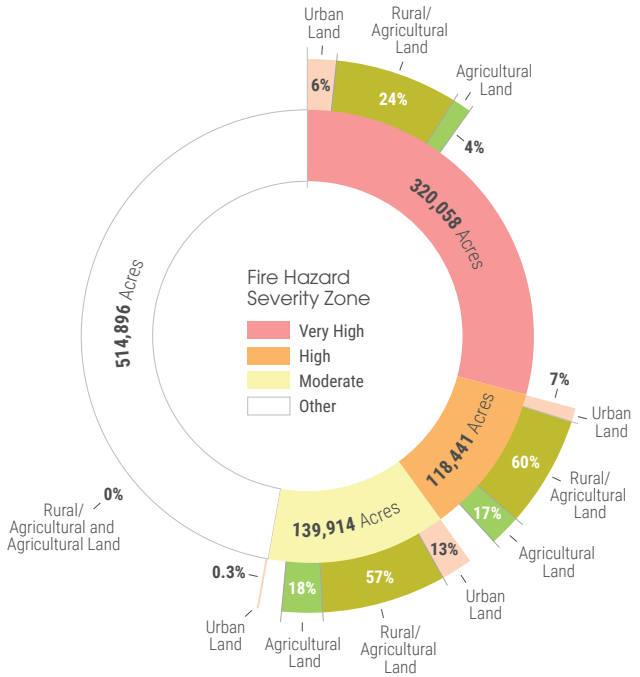
3.3 Wildfires as a Signal of Water Resources – Related Challenges

Wildfire damages and suppression costs have risen continuously over time. And the frequency, size, and intensity of these fires are expected to grow – another effect of climate change, overly dense forests, and prolonged drought. Loss of life and structures as a direct or proximate result of wildfires is at an all-time high. However, compared to statewide trends, El Dorado County has had fewer occurrences, accumulated acreage burned, and overall damages.

In recent years, the majority of wildfires of concern in the State (fires in Mendocino, Santa Barbara/ Ventura, Sonoma, and Butte Counties in 2017 and 2018) are reported to be related to utilities and transmission lines, although official data on many of these fires are yet to be confirmed. In the past two decades in El Dorado County, only the Latrobe Fire in 2000 was caused by a power line. The Latrobe Fire was is in the Tier 3 high hazard zone for utility fires recently published by the California Public Utilities Commission (CPUC). The largest fire in El Dorado County – the 2014 King Fire – was caused by arson.

Compared to statewide trends, El Dorado County is relatively less damaged by wildfires. However, potential hazards exist for economic activities and human lives.





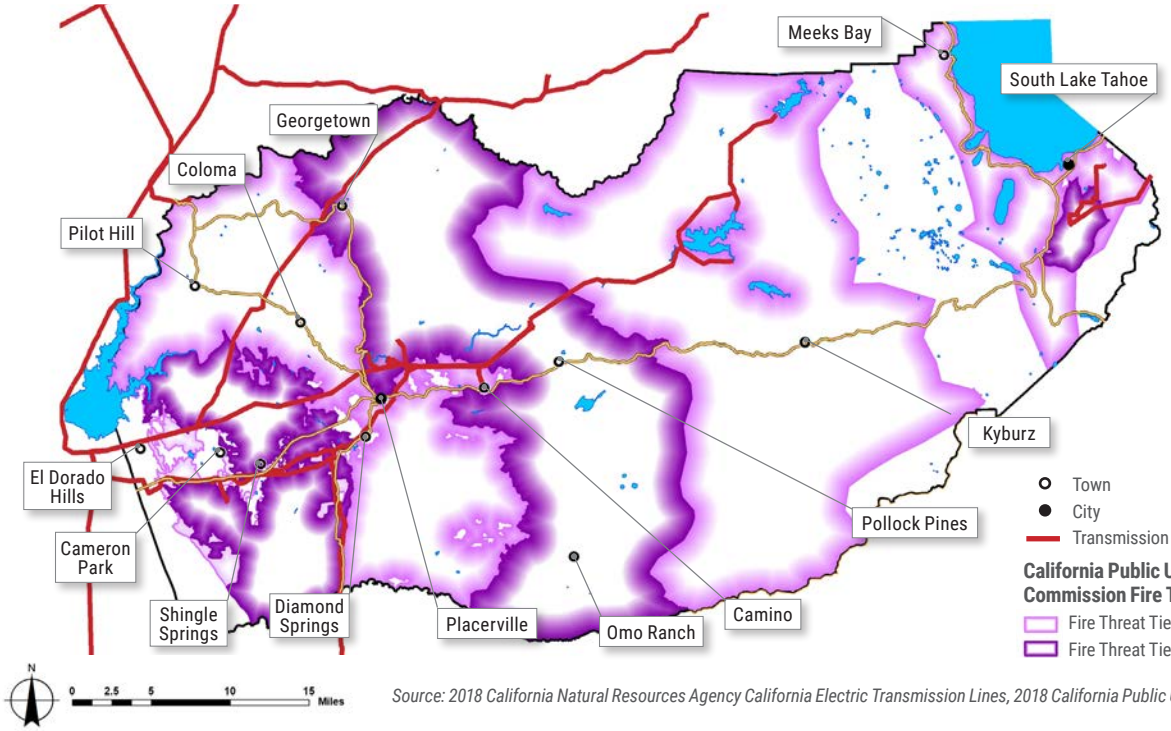
Fire Hazard Severity Zone

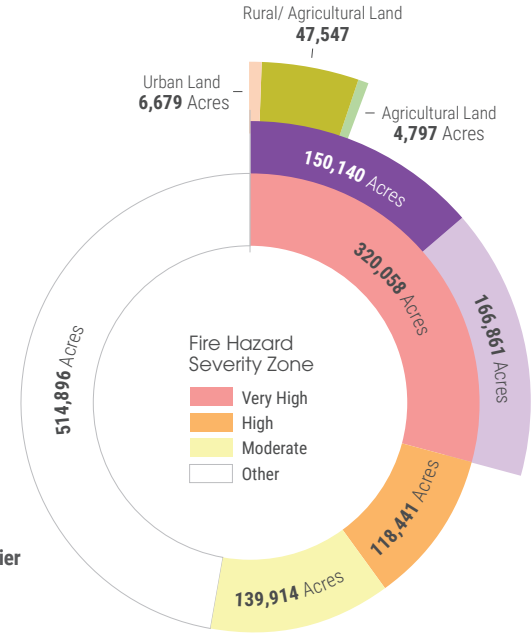
- Moderate
- High
- Very High

Source: 2007 California Department of Forestry and Fire Protection State Responsibility Area Fire Hazard Severity Zone, 2008 California Department of Forestry and Fire Protection Local Responsibility Area Fire Hazard Severity Zone

California Public Utilities Commission's utility fire threat assessment shows a different geographic distribution than the fire hazard severity zones from California Department of Forestry and Fire Protection due to the use of different criteria. The vegetation for the southwest county area is predominately grass.

Fire Hazard Severity Zone very high and California Public Utility Commission Fire Threat Tier 3 overlap





Source: 2018 California Natural Resources Agency California Electric Transmission Lines, 2018 California Public Utilities Commission

The overlap between the very high fire hazard severity zone from the California Department of Forestry and Fire Protection and the California Public Utilities Commission's Fire Threat Tier 2 and 3 are areas in El Dorado County that are most susceptible to wildfires. With continued fire prevention activities wildfires can be effectively decreased in California, with the exception of wildfires causes by utility or transmission lines[6]. Therefore, El Dorado County agencies and residents should remain vigilant to the ever-present threat of wildfire.

Water resources-related impacts from wildfires can be direct or indirect, with both affecting the ability to reliably deliver water of acceptable quality. In El Dorado County, direct impacts are things such as damage to water supply-related infrastructure (treatment facilities, powerhouses, conveyance, etc.), and indirect impacts are things such as landslides, erosion, and water pollution that can cause damage often realized long after the fire has burned out. Increasing frequency and intensity of wildfires means more potential for compromised water quality – both during active burning, and for months and years after a fire has been contained. During active burning, ash can settle on lakes and reservoirs used for drinking water supplies. Later, wildfires can increase susceptibility of watersheds to both flooding and erosion which can impair water supplies.

Wooden flumes from the Gold Rush era and other delivery structures are particularly vulnerable to both direct impacts (destruction during a fire) and indirect impacts (damage from later mudslides originating at the burned site).

Furthermore, the ever-increasing wildfires are also a symptom of improper forest management and high concentration of dead trees as the effects of prolonged droughts (discussed in the next section, *Headwaters Management*).

3.4 Headwaters Management

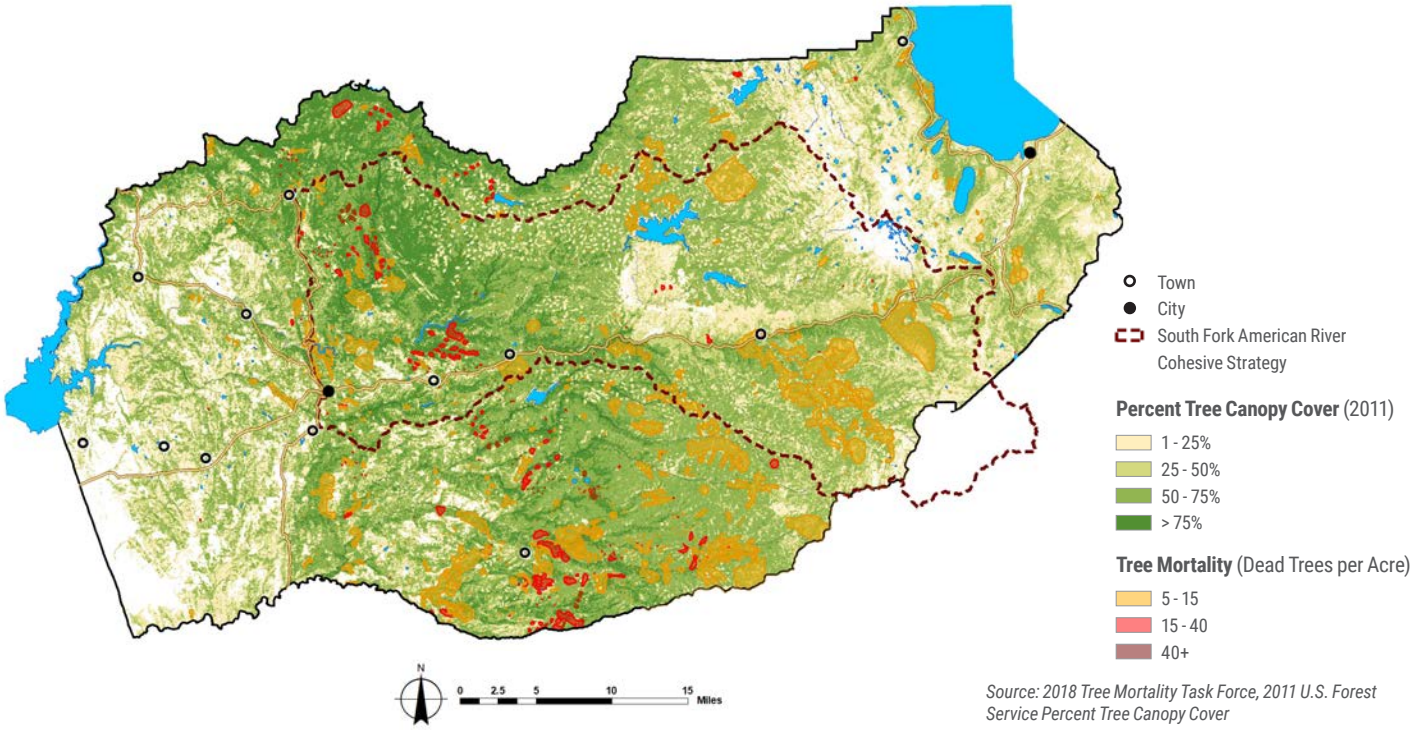
El Dorado County is in the American River headwaters, and the health of the headwaters and its management could affect El Dorado County water supplies, especially in communities relying on local minor streams or springs. Headwater management could also have broader effects on statewide water supply conditions, as these headwaters are a significant source of statewide water supply and mostly regulated at Folsom Reservoir.

Two areas of headwaters management are critical: (1) meadow health that can affect water retention and water quality, and (2) forest management to avoid high tree density with significant canopy cover that intercepts snowpack and reduces water retention. El Dorado County is part of the Cosumnes, American, Bear, Yuba Integrated Regional Water Management region, and these headwaters management issues were included in that effort. However, forest thinning is not often considered or implemented. And decades of improper forest management have resulted in dense forests that not only affect water supply but also increase the threat of wildfires.

Exacerbating fire risk is the increased urban/wildland interface and prolonged drought conditions that have caused pervasive tree mortality across the Central and Southern Sierra Nevada Mountains. It is estimated that over 129 million trees have died since 2010, and this number continues to grow. El Dorado County is not immune to this epidemic and has declared an emergency for unprecedented tree mortality due to drought conditions and related bark beetle infestations.

As part of the U.S. Forest Service-led National Cohesive Strategy in forest fire management, the South Fork American River Cohesive Strategy (SOFAR) is a locally-organized group that focuses on problem area identification, project development, and implementation in the South Fork American River drainage area above the City of Placerville. However, there are still sizeable areas in El Dorado County that need attention.

The South Fork American River Cohesive Strategy (SOFAR) covers the South Fork American River drainage area above the City of Placerville. Significant areas of El Dorado County are without organized efforts to improve conditions.



Source: 2018 Tree Mortality Task Force, 2011 U.S. Forest Service Percent Tree Canopy Cover

3.5 Stormwater as a Resource

For many years, stormwater was considered a nuisance to be managed to reduce pollution of rivers, lakes, and the ocean. Stormwater runoff tends to have limited water quality impacts in most of El Dorado County. However, Lake Tahoe's largest source of pollution is urban stormwater runoff. Stormwater discharges in California are regulated through the National Pollutant Discharge Elimination System permits.

In El Dorado County, there are some impaired bodies of water on the Clean Water Act 303(d) list because they have high presence of Mercury, Aluminum, Manganese, E. Coli, Invasive Toxic Species, Sediment, or Iron. This means that stormwater management is an important issue to protecting water quality and supply.

During intense rain events, wastewater treatment plants could present a risk to water quality if collection lines overflow or leak into nearby water bodies. The City of Placerville is an area where this risk is present.

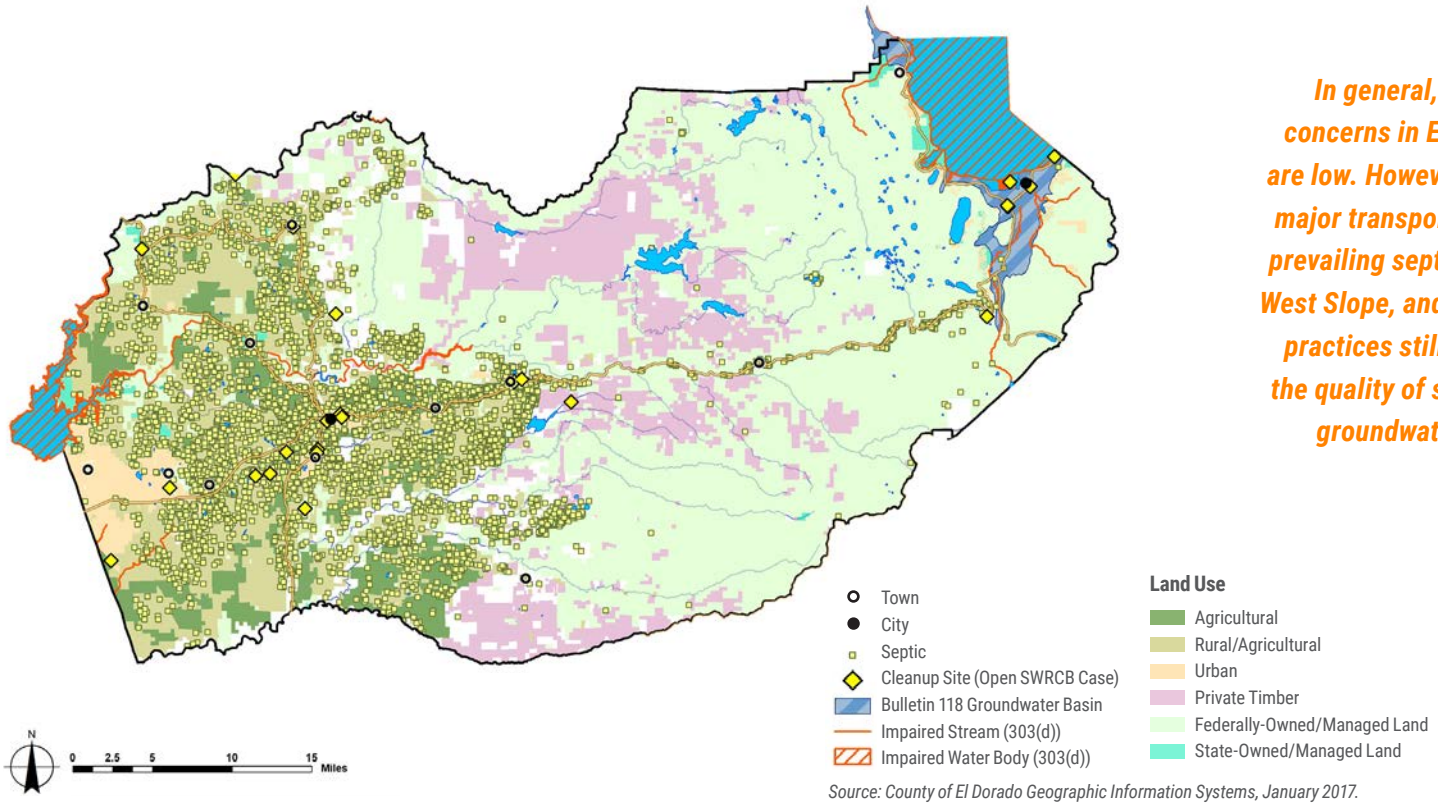
Recent changes in State water management policy present the opportunity to treat stormwater as a different source of water that can be leveraged for reliability purposes, in particular, for groundwater recharge. In the Lake Tahoe Basin, groundwater recharge from stormwater occurs naturally, but the West Slope is more of a foothill setting with no significant groundwater capacity to realize such a potential benefit. Implementation of stormwater resource planning requires customization for these local conditions, as reflected in recently-completed stormwater resource plans for the West Slope (2018) and Tahoe-Sierra Region (2018).

3.6 Limited Groundwater Resources

The only recognized groundwater basin in El Dorado County is in the South Lake Tahoe area, where it is the primary source of water supply for STPUD and other local water suppliers (small water systems). This is the only groundwater basin in El Dorado County that is subject to the requirements and regulatory framework under the Sustainability Groundwater Management Act (SGMA). Currently, STPUD and the Agency are serving as the Groundwater Sustainability Agencies under SGMA for areas in and outside of the STPUD service area. Groundwater is replenished by local snowmelt and stream flows, meaning that recharge is sensitive to snowpack conditions and potential climate change effects.

In the rest of the Lake Tahoe Basin and the West Slope, groundwater resources are shallow and localized. In these areas, groundwater provides limited water supply to existing agricultural practices and domestic uses from the permitted small water systems. This resource becomes potentially vulnerable in prolonged drought conditions and is also susceptible to potential contamination from the many septic tanks and agricultural water use throughout the area. In the past, there were reported incidents of septic tanks contaminating local water supplies. Although, there have not been widespread incidents, it is worthwhile to monitor the water quality of shallow and localized groundwater resources. However, if there were widespread incidents it would warrant a different management approach. Mobile home parks and other areas close to water bodies may pose greater contamination threats.

Groundwater issues in the South Lake Tahoe Basin have included contamination from PCE. Since at least the 1980s, there has been a great deal of study on a PCE plume that has been slowly migrating from the "Y" area towards Lake Tahoe.



Source: County of El Dorado Geographic Information Systems, January 2017.

In general, water quality concerns in El Dorado County are low. However, pollution from major transportation corridors, prevailing septic tank use in the West Slope, and local agricultural practices still pose threats to the quality of surface water and groundwater resources.

3.7 Localized Flooding Hazards

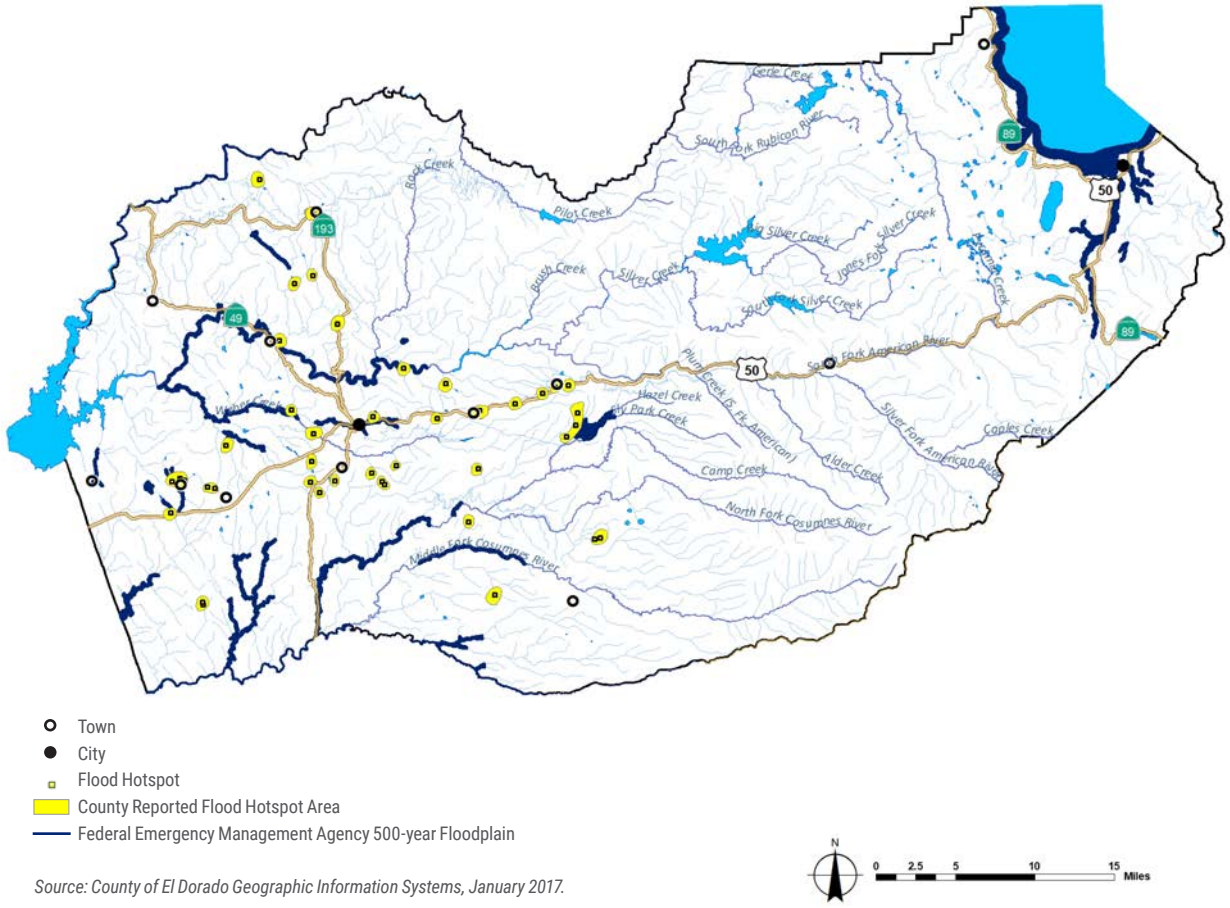
Overall, El Dorado County does not experience widespread riverine flooding. The combination of West Slope hydrology, soils, and land-surface slopes means that this area sees more frequent and localized flooding than the Lake Tahoe Basin.

Historically, drainage problems and occasional flooding have occurred in Cameron Park, as it is at lower elevation but surrounded by areas at higher elevation. Any runoff generated is discharged into local creeks and tributaries, and that high flow contributes to occasional flooding. Culverts that are undersized or blocked with debris and sediment intensify that flooding, such as near Slate Creek in the Town of El Dorado and the Sly Park Portal Subdivision in Pollock Pines.

Localized flooding has not been reported in the Lake Tahoe Basin. But when there is both snow and rainfall, runoff is often generated as the rain cannot infiltrate the soil through the layer of snow.

There is a fragmented presence of the FEMA 500-year floodplain in El Dorado County. This floodplain is designated as a Moderate Flood Hazard Area, meaning that the areas are not in immediate danger from flooding caused by overflowing rivers or hard rains but are still at risk of floods. The floodplain closely follows some of the West Slope local rivers and streams, Lake Tahoe Basin tributaries, and Lake Tahoe itself.

Because of the terrain, El Dorado County is not at risk for widespread riverine flooding. Most flooding is localized, and hotspots are often related to capacity conveyance issues.



Source: County of El Dorado Geographic Information Systems, January 2017.

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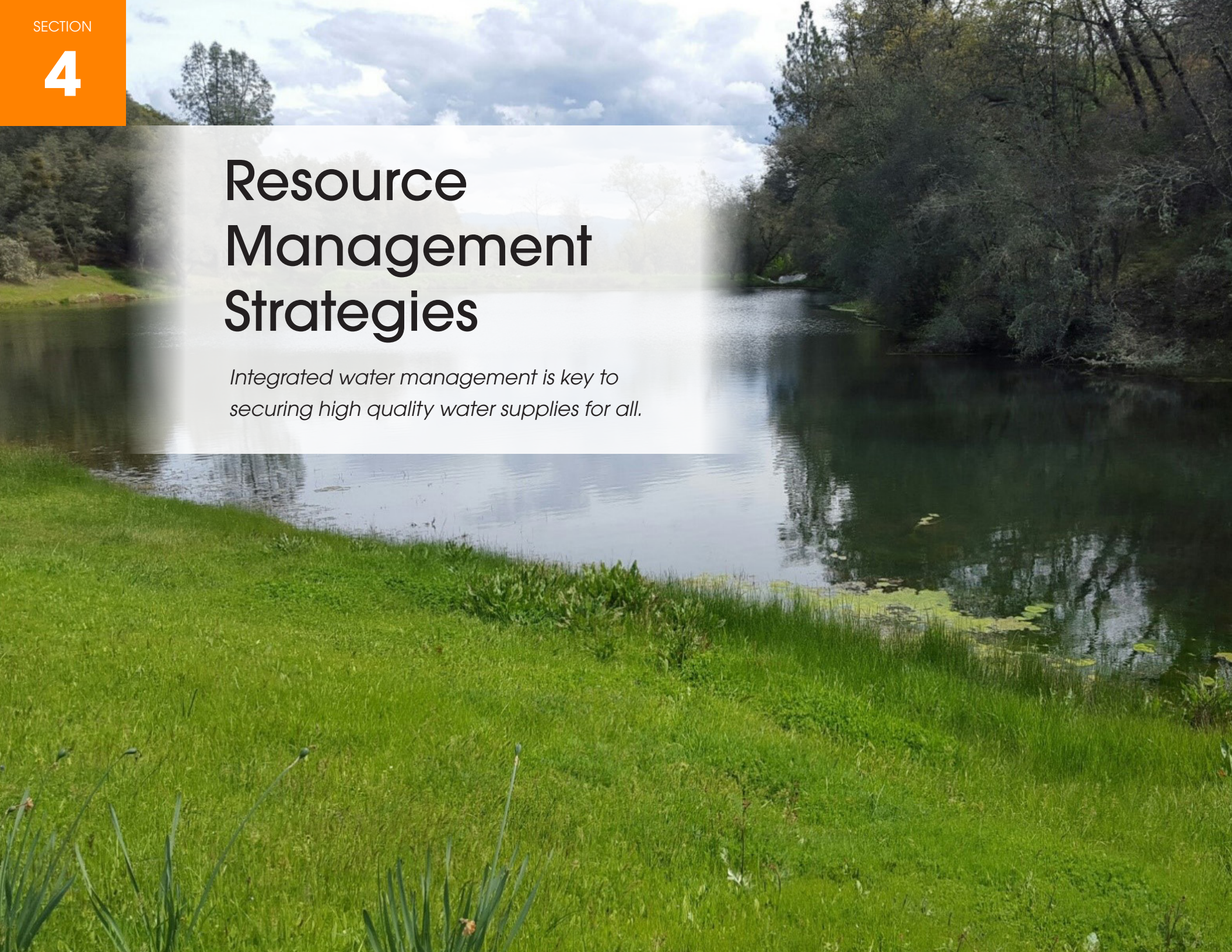
SECTION

4

Resource Management Strategies

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



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SECTION

5

Implementation

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

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References

1 Upper American River Project, https://www.smud.org/en/Corporate/Environmental-Leadership/Power-Sources/Upper-American-River-Project

2 Integrated Water Resources Master Plan El Dorado Irrigation District, 2013

3 El Dorado County Water Agency's library, Georgetown Divide Public Utility District Ditch Water System Map.

4 Water Supply and Demand Update for the Grizzly Flats Community Services District, 2017.

5 County of El Dorado Environmental Management Department, 2018

6 Historical Patterns of Wildfire Ignition Sources in California Ecosystems , 2018.