Water Resources Development and Management Plan

August 6, 2024 Version for PAG review and discussion only; subject to change.

Mission Statement

Ensure that El Dorado County has adequate and affordable water to maintain economic prosperity, protect the environment, and support the rural-agriculture way of life for today and in the future.

Board of Directors

Lori Parlin, Chair, El Dorado County Supervisor, District IV

Wendy Thomas, Second Vice Chair, El Dorado County Supervisor, District III

George Turnboo, El Dorado County Supervisor, District II

Nick Haven, South Tahoe Public Utility District

Pat Dwyer, El Dorado Irrigation District

General Manager

Rebecca Guo, P.E.

Preface

TBD.

Lori Parlin

Board Chair

El Dorado Water Agency
and El Dorado County Supervisor, District IV

Rebecca Guo, P.E.

General Manager

El Dorado Water Agency

Executive Summary

*[**Note to reviewers:** Below is the 2019 WRDMP Executive Summary. No review is needed on this section. 2019 text is provided for your background information only as it describes the strategic purposes for reformulating the WRDMP in 2019. The Executive Summary will be updated in a future draft.]*

Through the 1959 El Dorado County Water Agency Act, the El Dorado County Water Agency's (EDCWA or Agency) mission is to ensure that El Dorado County has adequate water for today and in the future. The Agency's responsible area covers the entire El Dorado County, on both sides of the Sierra Nevada in the Tahoe Basin as well as the West Slope foothill area (West Slope). This diverse landscape has headwaters and national forests with some urbanization and general rural-agricultural surroundings.

This 2019 update of the Water Resources Development and Management Plan (WRDMP) marks a new beginning of the Agency's service to El Dorado County. It reflects the Agency's progression toward countywide long-term water security and a renewed focus on advancing integrated water management to realize the vision of the General Plan adopted by the County of El Dorado (County) for economic development, environmental protection, and quality of life for all residents.

A Need for a New Perspective

The recent drought from 2012 through 2016 served as a wake-up call for water managers statewide, with the recognition of the severe vulnerabilities we face with our current water management practices. In addition, recent devastating wildfires exposed the weaknesses of current passive forest management and overall headwater management that are critical to climate resiliency in El Dorado County.

California continues to experience rapid growth of its population and economy, and the influence of socioeconomic changes that cross geographic boundaries is becoming more prevalent. Increasing regulatory requirements and rapidly manifesting consequences of climate change also contribute significantly to concerns over long-term water supply reliability and climate resiliency, as well as the overall economy and way of life.

The County General Plan lays out a vision that encourages a strong economy; and also preserves the rural-agricultural way of life in El Dorado County. Imbedded in that vision is the protection of El Dorado County's rich natural resources for future generations. However, about 53 percent of the land in the West Slope that is covered by the County General Plan

for economic development lacks adequate water supply for intended land use. The complexity and interrelationship of water resource-related challenges require a more integrated and collaborative approach. Future investments by many local, regional, and federal entities could be better coordinated and leveraged to create broader and long-lasting benefits for all communities countywide.

An Integrated and Collaborative Approach to a Better Future

The Agency does not currently own any water facilities nor provide water supply directly to any water users. Rather, it collaborates with water entities to develop local water supplies and is seeking to contract with the U.S. Department of the Interior, Bureau of Reclamation for Central Valley Project water service contract deliveries that support a portion of El Dorado County's domestic uses and economic development.

The Agency's 2016-2020 Strategic Plan calls for improved organization and a renewed focus on a more integrated and comprehensive water management approach to create benefits for El Dorado County, especially those not served by a water purveyor. This intent is fully reflected in this update of the WRDMP through its collaborative development process involving relevant County departments, water purveyors, stakeholders, and interested parties.

The WRDMP connects the identified water resource-related challenges to achieving the County General Plan vision with the Agency's implementation programs through an array of resource management strategies. Resource management strategies represent strategic directives that may mitigate the identified challenges through coordinated and collective efforts of all responsible parties. Key actions are established, along with the primary responsible agency(ies), and Agency's corresponding roles in leading, facilitating, or supporting a given activity are also clarified and consistent with its authority and best ways for the Agency to create direct value and benefits for all communities in El Dorado County.

A Policy-Oriented Planning Practice for Adaptive Management

Consistent with the Agency's renewed focus, this WRDMP includes governing policies and guidance that will be required for successful implementation. The plan provides the necessary flexibility and adaptability to allow the collaborating agencies to formulate efficient and effective means to weather the uncertainties of climate variability, regulatory changes, geopolitical influences, and social preferences throughout implementation.

For efficiency of investment and accountability, the Agency prepared this WRDMP as a living document to allow periodic reviews for changed conditions and necessary adjustments in actions and priorities. The Plan-Do-Assess cycle of adaptive management will be implemented through a 5-year update cycle to maintain the WRDMP's relevancy and ensure responsible governance.

Simplified Document Structure for Efficient Updates and Adoption

This WRDMP separates policy directives for Board adoption from the constantly evolving technical detail. Supporting technical information (e.g., data, tools, evaluation methods) are instead incorporated by reference, where needed. This approach results in a concise document with a structure that facilitates future updates. It also highlights the importance of establishing stable policies and guidance for the Agency's operations and implementation.

Table of Contents

Acknowledgement

The Water Resources Development and Management Plan was prepared collaboratively through the contribution of the following groups and individuals.

Plan Advisory Group Members

Adam Brown, Georgetown Divide Public Utility District
Adrian Combes, South Tahoe Public Utility District
Brian Mueller, El Dorado Irrigation District
Carla Haas, County of El Dorado, Chief Administrative Office
Charles Mansfield, El Dorado Wine Grape Growers Association (invited)
Elena DeLacy, American River Conservancy
Hardeep Singh, UC Agriculture and Natural Resources
Jeffrey Warren, County of El Dorado, Environmental Management Department
Karen Garner, County of El Dorado, Planning and Building Department
Kim Gustafson, Grizzly Flats Community Service District
LeeAnne Mila, County of El Dorado, Agricultural Commissioner
Mark Egbert, El Dorado and Georgetown Divide Resource Conservation Districts
Mike Ranalli, El Dorado County Farm Bureau
Rafael Martinez, County of El Dorado, Department of Transportation
Rebecca Guo, El Dorado Water Agency
Shiva Frentzen, El Dorado Local Agency Formation Commission
Sean Barclay, Tahoe City Public Utility District
Pierre Rivas, City of Placerville
TBD, City of South Lake Tahoe (invited)
TBD, Shingle Springs Band of Miwok Indians (invited)

Topic-Specific Consultations

TBD

Plan Development Team

Rebecca Guo, El Dorado Water Agency
Yung-Hsin Sun, Sunzi Consulting
Kenneth Payne, Payne Environmental

Facilitation Support

Orit Kalman, a sole proprietor

Technical Support

Kyle Ericson and Hannah Romero, El Dorado Water Agency
Samuel Price, Dynamic Geospatial Solutions
Ibrahim Khadam, Khadam Consulting
Jeff Meyer and Jared Emery, Western Hydrologics
Veola Sun and Julien Sun, Sunzi Consulting

Abbreviations and Acronyms

Act	El Dorado County Water Agency Act
Agency	El Dorado Water Agency
BLM	U.S. Department of the Interior, Bureau of Land Management
Board	El Dorado Water Agency Board of Directors
CABY	Cosumnes, American, Bear, Yuba
County	County of El Dorado
CVP	Central Valley Project
DWR	California Department of Water Resources
EDWA	El Dorado Water Agency

EID	El Dorado Irrigation District
EMD	Environmental Management Department
FEMA	Federal Emergency Management Agency
GDPUD	Georgetown Divide Public Utility District
GFCSD	Grizzly Flats Community Services District
GSA	Groundwater Sustainability Agency
IRWM	Integrated Regional Water Management
IRWMP	Integrated Regional Water Management Plan
LAFCO	Local Agency Formation Commission
M&I	Municipal and Industrial
OCA	Other County Area
Plenary	El Dorado Countywide Plenary for Water
PG&E	Pacific Gas and Electric Company
Reclamation	U.S. Department of the Interior, Bureau of Reclamation
RMS	Resource Management Strategies
RWA	Regional Water Authority
SGMA	Sustainable Groundwater Management Act
SMUD	Sacramento Municipal Utility District
SWRCB	State Water Resources Control Board
STPUD	South Tahoe Public Utility District
TAF	Thousand Acre-Feet
TCPUD	Tahoe City Public Utility District
TRPA	Tahoe Regional Planning Agency
USFS	U.S. Forest Service
West Slope	El Dorado County area west of the Sierra Nevada Crest
WRDMP	Water Resources Development and Management Plan

Photo Credits

TBD

[Note to reviewers: Glossary is at end of document and requires further work to include expanded use of specific terms.]

Section 1 – Introduction

The El Dorado Water Agency (Agency or EDWA) was created in 1959 through the El Dorado County Water Agency Act (Act) to ensure countywide water resources management for the conservation, development, control, and use water for the public good and for the protection of life and property in El Dorado County. The Agency's authority covers the entire El Dorado County, on both sides of the Sierra Nevada including both headwaters and national forests. This authority differentiates the Agency from water districts, municipalities, and water conservation districts that have authorities within portions of the county. The Agency's authorities address hydroelectric energy; controlling flood and stormwater; storing, conserving, and managing water resources; and procuring additional water supplies. To plan and develop priorities, the Agency cooperates with local water purveyors, federal, state and local agencies, and others to carry out its responsibilities.

El Dorado County's diverse landscapes include a portion of the Tahoe Basin located on the east of the Sierra Nevada Crest, which has unique governance and ecological sensitivities. The vast West Slope foothill area (West Slope) is located to the west of the Sierra Nevada Crest in El Dorado County. The West Slope has some urbanized areas along the boundary with Sacramento County, although the majority has a rural-agricultural setting, reflecting the preferred way of life for residents.

The Agency does not own or operate any water facilities. It collaborates with special districts, such as water purveyors and conservation districts, to develop water resource management programs and activities. The Agency holds a Central Valley Project (CVP) water service contract with the U.S. Department of the Interior, Bureau of Reclamation (Reclamation) for water supply to support El Dorado County's continued economic development in the western portion of the county. The 1959 Act provides the Agency the charge of a water resource manager for El Dorado County that is parallel to the County of El Dorado's (County) land use and administrative authorities. It provide the Agency to lead collaboration with federal, state and local agencies and interests to promote sustainable and responsible water resource development and management for countywide benefits that are often beyond the capacity of individual water purveyors.

1.1 Purposes of the Water Resources Development and Management Plan

The Water Resources Development and Management Plan (WRDMP) is the Agency's cornerstone document to outline its role and responsibilities for fulfilling the charges provided by the 1959 Act. It further contains long-term strategies and short-term actions to improve countywide water resources development and management with a set of implementation policies and guidance adopted by the Agency's Board of Directors (Board). The WRDMP and associated adopted implementation policies and guidance provide direction to the Agency's actions and investments, in collaboration with federal, state, and local agencies and interested parties, to implement water resource management actions through five distinct but interconnected programs to promote sustainable countywide benefits. These five programs are Governance and Partnership, Water Security, Watershed Management, Assistance and Innovation, and Communication and Advocacy.

The Agency developed its first WRDMP in 1993 to outline its strategy and actions for water resources development and management in El Dorado County. The 2007 update of the WRDMP brought forth emerging issues including climate change. In 2014, the Agency completed an update that was limited to only the West Slope water use demands. With heightened awareness during the 2012-2016 drought, equity in water supplies and climate change resiliency became a key priority for related resource management in El Dorado County. Thus, the Agency modernized the WRDMP in its 2019 update, in close collaboration with local jurisdictions, and interested parties, to include principles of integrated water management and measures for climate resilience and sustainable countywide benefits.

In 2018, the County and the Agency entered into an MOU to outlines their roles and responsibilities in the preparation of a countywide water management plan through the capacity conditions of County General Plan and facilitate coordination among public water purveyors in their Urban Water Management Plan (UWMP) preparation. The primary purpose of the MOU is to align water resources planning with land use, environmental management, and economic sustainability

activities within the county. The WRDMP met the intent of a countywide water management plan described in the MOU, County Ordinance No. 5096, and the Agency's role as a countywide water agency.

1.2 Goals

The primary goal of the WRDMP is to through coordinated water resource planning and management, support the County to realize its adopted General Plan through prudent and integrated land use and water resources management. The County's adopted General Plan is unique in several ways in that it:

- Contains a land use plan for economic development and integrated natural resource protection and management.
- Plans for land capacity for all purposes by considering future economic development beyond the typical near-term urbanization focus.
- Incorporates policies and considerations that allow for urbanization but also preserve the rural-agricultural way of life that residents value significantly.

Additional goals of the WRDMP include:

- Develop a concise, adaptable, and policy-focused plan with actions that are commensurate with the Agency's role and responsibilities.
- Incorporate an integrated countywide, long-term water management approach into sustainable investment strategies and implementation.
- Address changes in countywide water supply conditions, regulations, as well as the evolving understanding of climate change and its effects.
- Promote transparency and common understanding of the Agency's investment priorities in water resources development and management.

Through the WRDMP, the Agency developed corresponding resource management strategies based on an integrated water management concept and corresponding investment priorities to fulfill the vision presented in the County General Plan.

1.3 Development of the Water Resources Development and Management Plan

The Agency outlined several principles for its WRDMP including:

- ***Respect the roles and responsibilities of water purveyors and other local agencies.*** The Agency has broad authority and charge from the Act; however, it considers its greatest value to be promoting countywide broad benefits and focusing on improving water supply and other related water 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 the WRDMP development and established a foundation for long-term collaborative forums for countywide water management issues.

The Agency established a Plan Advisory Group (PAG) to collaborate in the WRDMP 2024 update, extending the same successful approach used in the 2019 WRDMP 2019 and continued in the Countywide Plenary for Water hosted by the Agency per Board Policy E-1001 adopted for implementing the WRDMP. consists of representatives from multiple departments of the County, Agricultural Commissioner, Tribes, public water purveyors, business interests, and environmental interests. In addition, a subgroup to the PAG, the Water Supply-Demand Imbalance Subgroup, was organized to assist in demand projections, water supply-demand imbalance projections, and consistency with participation from County planning department and agricultural commissioner, public water purveyors, business interests and academic representative. The collaboration reflects the above principles for WRDMP development and implementation.

Focus of 2024 Update

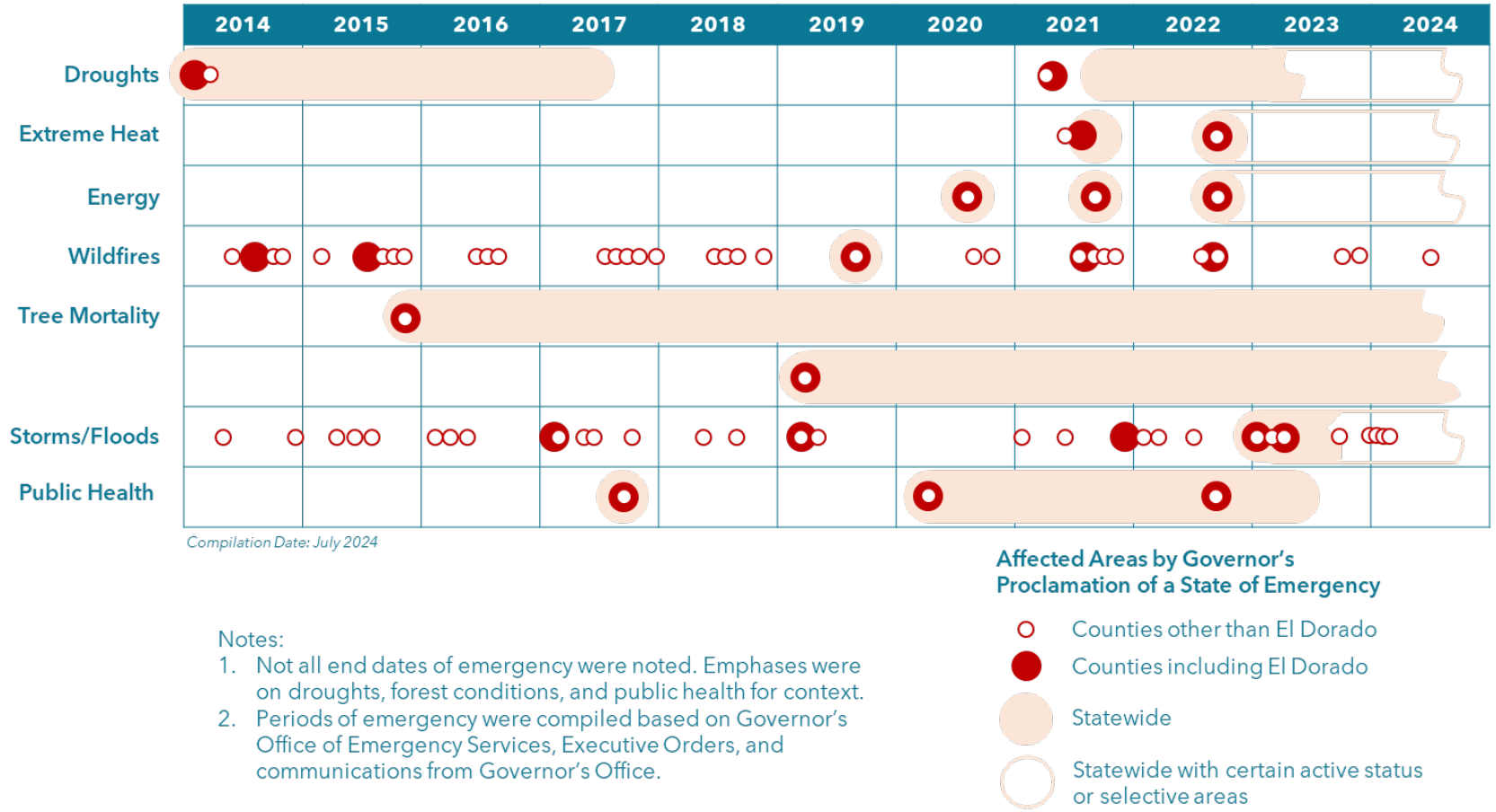
The Agency's Board formalized a 5-year update cycle for the WRDMP to address changed conditions and maintain focus on its investments to result in sustainable countywide benefits. Since the 2019 update, major emergencies and natural disasters that affect El Dorado County and beyond occurred in an unprecedented manner, including the 2020-2022 drought, 2020-2023 COVID pandemic, major wildfire events (2021 Caldor Fire and 2022 Mosquito Fire), and over 20 atmospheric events hitting California from December 2022 through March 2023. New laws and regulatory changes in response to these rapidly emerging threats have also significantly impacted the future of water management in the county and demand significant resources to expand and refine management programs and actions.

The WRDMP 2019 was intentionally developed to present durable and yet adaptable resource management strategies (RMS) and management actions to address identified water resource-related challenges. Although the overall strategies are not significantly changing, some tactical actions to address near-term needs and preserve future options are included

in this 2024 update. In addition, the Agency incorporated the applicable RMS and management actions of the 2023 Programmatic Watershed Plan (PWP) for the upper American River watershed. The PWP was completed by the Upper American River Watershed Group (UARWG) which was convened by the Agency under its Watershed Program. The PWP identified watershed-scale challenges and RMS and management actions to improve watershed health and community resilience. Many of these RMS augment the water resource-related RMS in the 2019 WRDMP and hence were included in the 2024 WRDMP.

The WRDMP and PWP complete a wholistic management construct on a watershed level that are mutually supportive. The outcome of the WRDMP 2024 update will inform the PWP update in 2028. This leapfrogging planning process is to ensure the Agency maintains unwavering attention to its role and responsibilities, as well as fostering efficiency in managing scope, workflow, and partnership.

The compounded effects from increasing extent and severity of natural disasters and emergencies in the past decade that affect El Dorado County in a fundamental way. They also signal that county's water future to be managed in an integrated and wholistic manner and through broad collaboration to address the underlying interrelated issues and symptoms.



1.4 Organization

The WRDMP is organized into 5 sections:

- **Section 1:** Introduction describes the charge of the Agency and the purpose of the WRDMP, including clarification of the Agency's goals and collaborative principles.
- **Section 2:** Current Water Management provides a description of land use and environmental protection outlined in the County General Plan, current water management practices and responsibilities, and existing major infrastructure that supports the implementation of the County General Plan.
- **Section 3:** Challenges Ahead identifies water resource-related challenges and recent changes that El Dorado County is facing, recognizing the differences between the West Slope and the Tahoe Basin, as well as the integrated nature of water resource management.
- **Section 4:** Resource Management Strategies describes resource management strategies to mitigate identified water resource-related challenges in El Dorado County including corresponding roles and responsibilities for implementation. Specific roles and responsibilities for the Agency are highlighted as appropriate and consistent with its authority.
- **Section 5:** Implementation describes the Agency's implementation policies and guidance, and the programs necessary to organize and coordinate the Agency's implementation efforts. For accountability, both recent accomplishments and prioritized actions for the next five years are described.

Section 2 – Current Water Management

An understanding of current water management practices, responsibilities, capital improvements, and commitments is critical to developing water management strategies and investment priorities that will provide opportunities for sustained economic development. This understanding forms the basis of the Agency's efforts in assisting County in fulfilling the vision in its adopted General Plan.

2.1 Economic Development

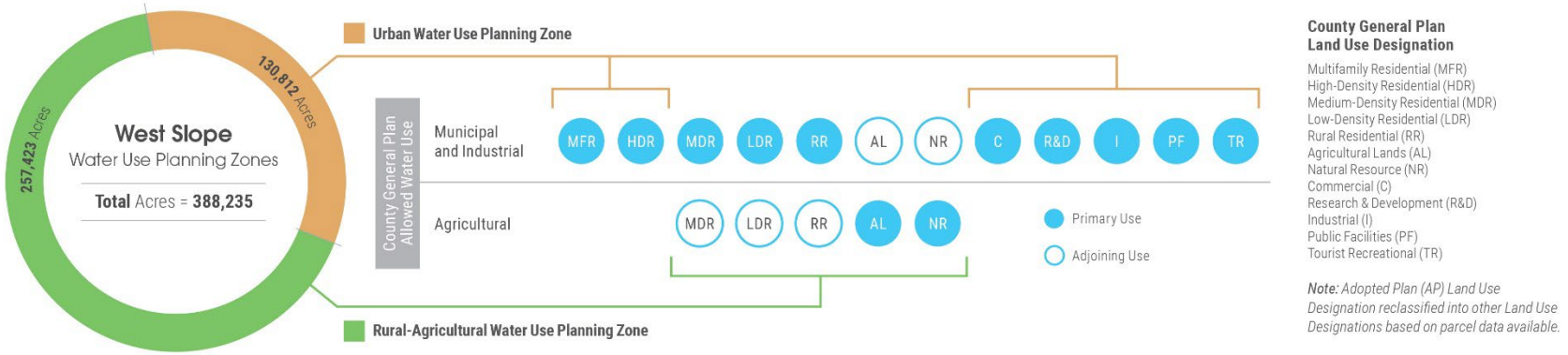
The County General Plan designates lands for economic development and identifies areas where community and agricultural development may occur. These lands are outside of national forest lands, private timber lands, and other state and federally managed lands. The County shares responsibility for land use regulation in the Tahoe Basin with the Tahoe Regional Planning Agency (TRPA), established through the Congressionally ratified Bi-State Compact between the states of California and Nevada. The resulting Tahoe Regional Plan is intended to provide orderly growth and development in the Tahoe Basin that is consistent with that area's environmental carrying capacity. The County General Plan reflects the intended coordination and alignment of land use. All projects in the Tahoe Basin area must be consistent with the Tahoe Regional Plan including TRPA and County codes and regulations. Decades of planning and development have resulted in the Tahoe Basin's economic development being more "mature" compared to the West Slope that is experiencing new growth.

For the West Slope, the County General Plan lays out a rural-agricultural dominated landscape with high density urban development concentrated in areas adjacent to Sacramento County and along Highway 50 using a combination of land use designation, zoning ordinance designation, and policies. Constrained by the terrain, commercial farming operations in El Dorado County are small in comparison to the Central Valley, on average less than 3 acres; large corporate farming operations do not exist in El Dorado County. For planning purposes, two water use planning zones are established, consistent with the County General Plan:

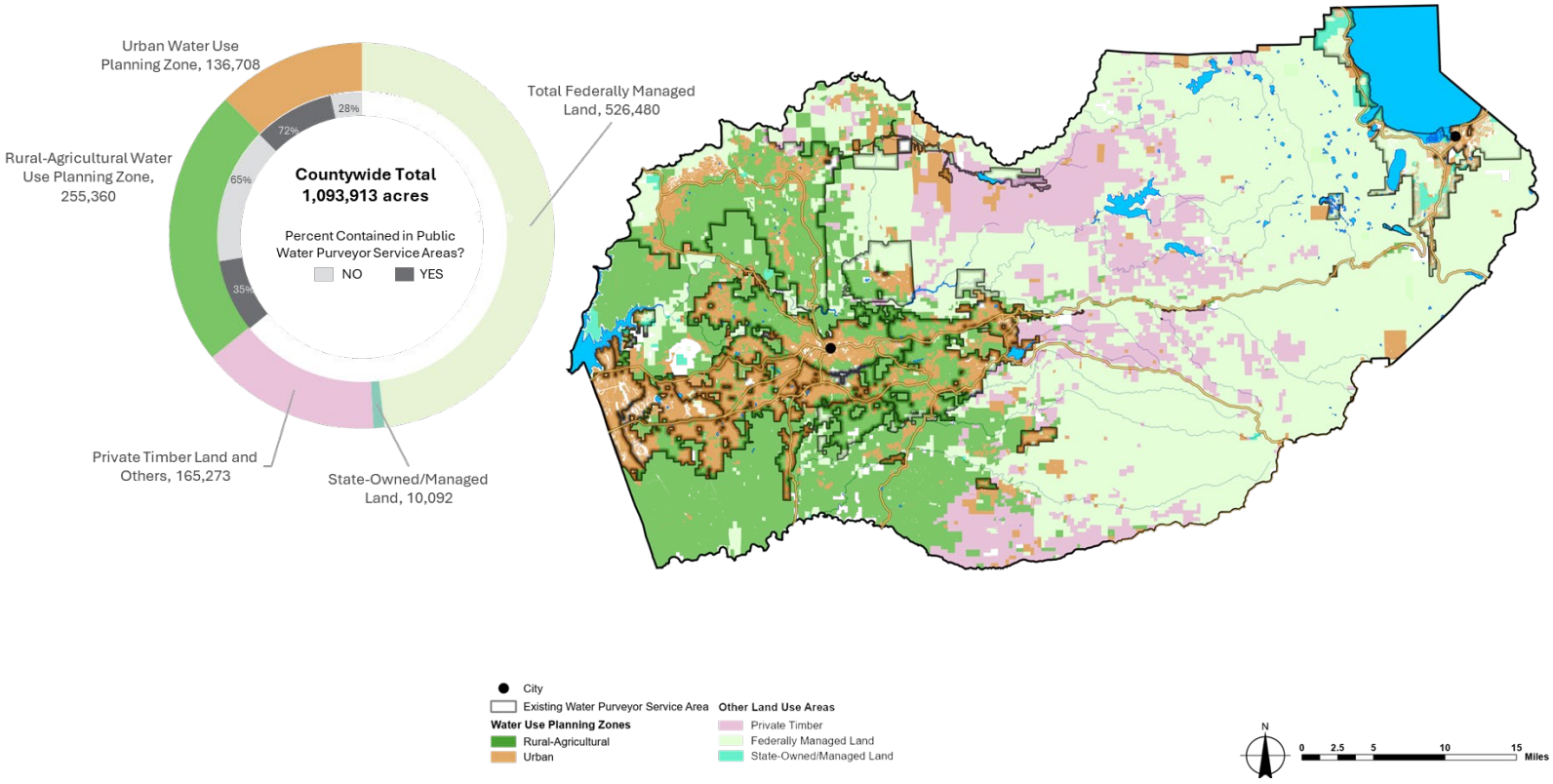
- **Urban water use planning zone:** Lands for economic development where the County General Plan allows only M&I water use. The delineation of this zone is relatively straightforward.
- **Rural-agricultural water use planning zone**: Lands for economic development where the County General Plan allows both M&I use (including rural domestic use) and agricultural use. The delineation of this zone is more

complex because the presence of M&I use and agricultural use may vary based on the County General Plan land use designation. For example, parcels within the Low-Density Residential land use designation are for residential use, resulting in M&I water use (i.e., primary use). However, the County General Plan also permits agricultural practices on larger residential parcels, resulting in agricultural water use (i.e., adjoining use). Similarly, a parcel designated as Agricultural Lands is dedicated to agriculture, resulting in agricultural water use (i.e., primary use). A farmhouse with domestic water use could also be permitted for complementing the intended farming operation, resulting in M&I water use (i.e., adjoining use). The preferred rural-agricultural way of life means that permitted agricultural practices in El Dorado County include both commercial and non-commercial purposes where non-commercial practices are to limited household consumption or limited local farmer's market sales.

These zones reflect the foundational policies in the County General Plan in terms of where and what water use may occur, and why. These policies do not guarantee water demands will be realized, as that requires consideration of other conditions such as physical constraints (e.g., slope and soil types), preferences (e.g., community centers and agricultural districts), and management strategies (e.g., water use efficiency and applied technology).



Reliable water supplies are foundational to ensure economic development and prosperity into the future. In the West Slope, a substantial portion of the land designated for economic development in the County of El Dorado General Plan is not currently served by any major water purveyor. Approximately 71 percent of the urban water use planning zone and 35 percent of the rural-agricultural water use planning zone are served by a public water purveyor. In the Tahoe Basin, areas of economic development are completely within the service areas of existing water purveyors.



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. Under the 1959 Act, the Agency is charged with developing a countywide water plan and participating in statewide water planning. It can negotiate contracts with the California Department of Water Resources (DWR), Reclamation, and other local, state, and federal agencies for water management, facility construction and water wholesale. The Agency supports actions to protect existing uses of water rights on which water purveyors and their customers depend and applies additional water rights as needed to augment water supply for beneficial uses in El Dorado County.

County is the authority of land use in El Dorado County, which translates into water supply and its reliability needs. The Agency provides expertise to assist the County in water resource planning and management issues per 2018 MOU and many other project/program-specific MOU and agreements. With the expanded collaboration, the County and the Agency are strengthening the communication for further improved government efficiency and mutually supported functions.

The Agency collaborates with six public water purveyors in El Dorado County for water management. El Dorado Irrigation District (EID), Georgetown Divide Public Utility District (GDPUD), City of Placerville (Placerville), and Grizzly Flats Community Services District (GFCSD) serve surface water in the West Slope. The City of Placerville receives wholesale treated water from EID and provides retail services within the city limits. EID's service area also includes lands of the Shingle Springs Band of Miwok Indians, a federally recognized tribe, and a small, planned development area in the City of Folsom located south of U.S. Highway 50, next to the county boundary.

In the Tahoe Basin, South Lake Tahoe Public Utility District (STPUD) uses groundwater to serve their customers in and near the City of South Lake Tahoe. STPUD and the Agency have an MOU to manage the underlying groundwater basin. Tahoe City Public Utility District (TCPUD) uses both groundwater and spring wells to serve the areas spanning both Placer and El Dorado counties on the west shore of Lake Tahoe.

EID, GDPUD, STPUD and TCPUD are considered urban water suppliers per California Water Code (CWC) Section 10617; GFCSD and City of Placerville are considered small water suppliers per CWC Section 10609.51(k). The aggregated service area of these six public water purveyors does not cover the entire El Dorado County. Currently, the

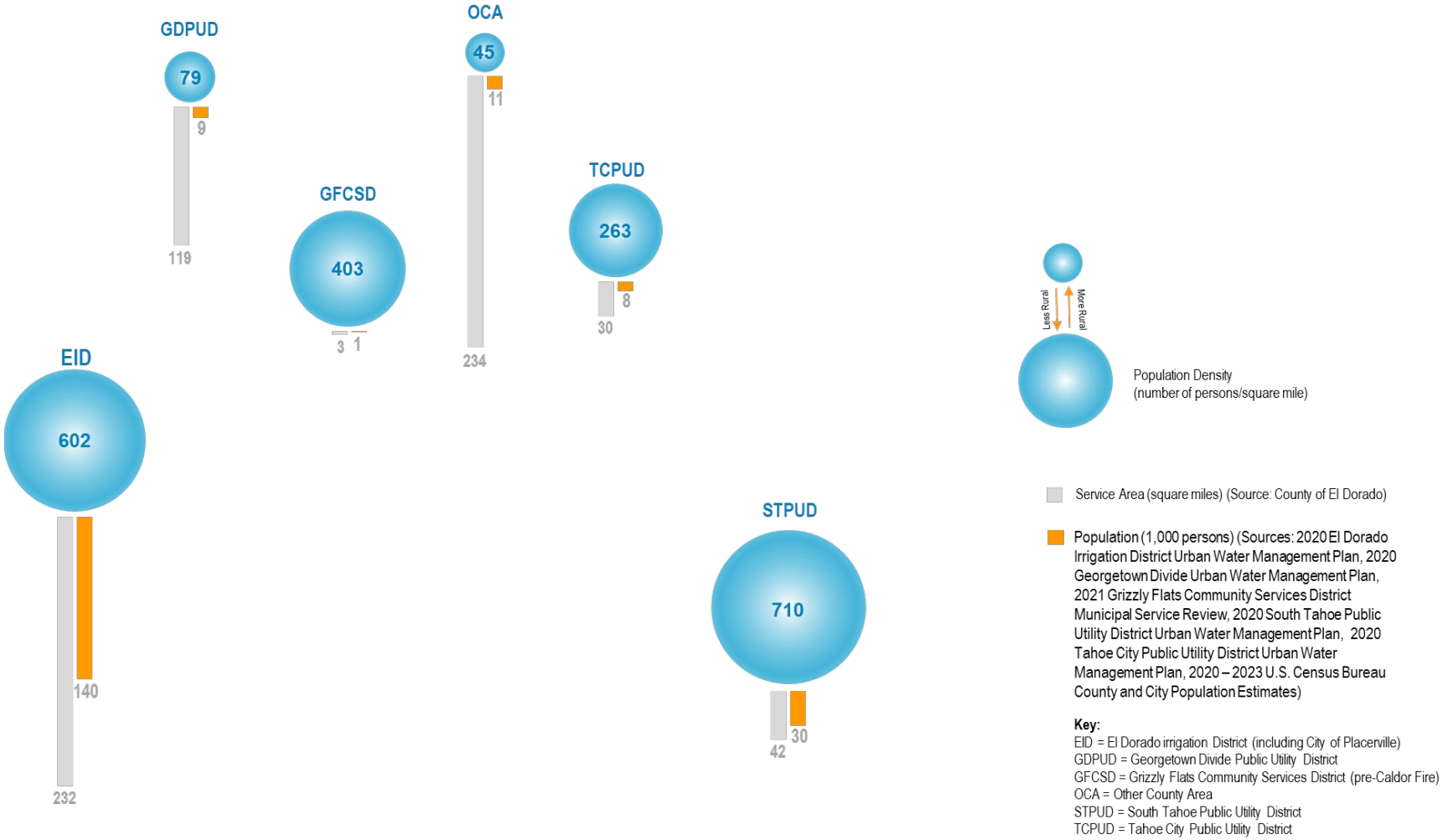
Agency represents the Other County Areas (OCAs), comprised of areas in El Dorado County that currently fall outside of the service areas of the above six public water purveyors, private timber land, and state and federally managed land.

Residents, farms, ranches, and businesses located outside of major water purveyor jurisdictions often rely on domestic wells or other small water systems for their consumptive use. In the Tahoe Basin, groundwater is extracted from either the Tahoe South or Tahoe West Subbasins in and near the service areas of STPUD and TCPUD, respectively. Per the regulatory requirements of the 2014 Sustainable Groundwater Management Act (SGMA), STPUD and the Agency assumed the roles of Groundwater Sustainability Agencies (GSA) for the Tahoe South Subbasin in areas within and outside of the STUPUD service area, respectively. DWR determined that the Tahoe West Subbasin is of a very low priority per the SGMA and thus, requires no establishment of a GSA or a Groundwater Sustainability Plan (GSP).

In the West Slope, the shallow groundwater wells draw from a fractured rock formation, which is not recognized as groundwater basins in California due to its unreliable and inconsistent water storage characteristics. It is worth noting that the sphere of influence (SOI) of the irrigation and special districts includes a significant portion of the OCAs that are south and north of the South Fork American River. Currently, long-term planning by the public water purveyors is limited. Due to relatively low projected growth rates within the OCAs, future planning is set up to respond to proposals for development within the OCAs. Extending service to the SOI areas is evaluated on a case-by-case basis as needed, and largely based on existing infrastructure capacities. Changes to improve or develop water resources services in the OCAs will require a review by the El Dorado County Local Aea Formation Commission.

--- call out

The differences in population density of public water purveyor's service area suggest their relative urban/rural characteristics. In comparison, the Other County Area is the most rural.

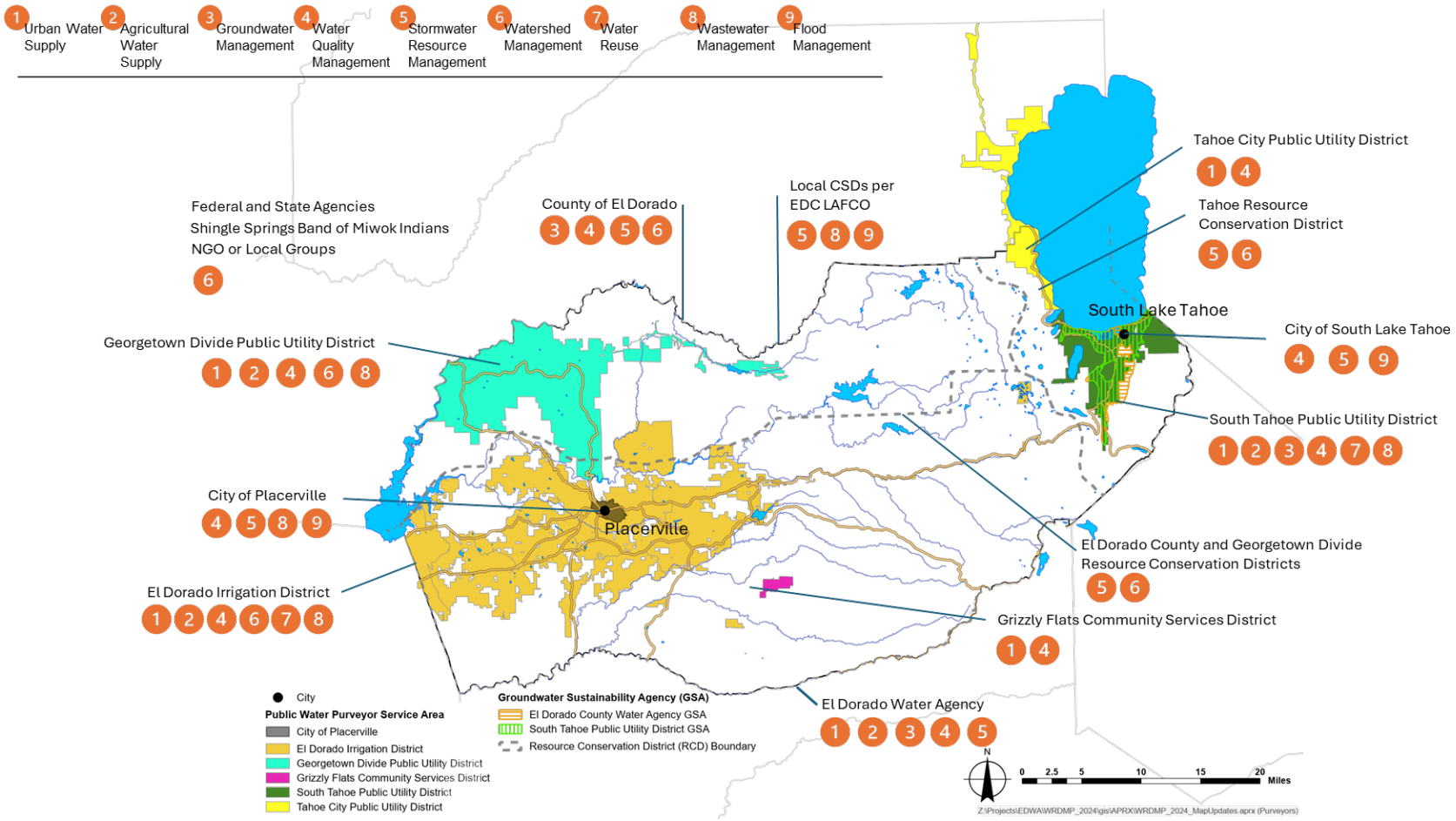


-Callout-

El Dorado Water Agency, the County of El Dorado, cities, public water purveyors, small private water systems, self-supplied entities, resource conservation districts, and other community services districts and group have active but different water resources management roles across El Dorado County.

Entity	***Urban Water Supply***	***Agricultural Water Supply***	***Groundwater Management***	***Water Quality Management***	***Stormwater Resource Management***	***Watershed Management***	***Water Reuse***	***Wastewater Management***	***Flood Management***
County of El Dorado			*x*	*x*	*x*	*x*			
El Dorado Water Agency	*x*	*x*	*x*	*x*	*x*	*x*	*x*		
City of Placerville				*x*	*x*			*x*	*x*
City of South Lake Tahoe				*x*	*x*				*x*
El Dorado Irrigation District	*x*	*x*		*x*		*x*	*x*	*x*	
Georgetown Divide PUD	*x*	*x*		*x*		*x*		*x*	
Grizzly Flats CSD	*x*			*x*					
Tahoe City PUD	*x*			*x*					
South Tahoe PUD	*x*	*x*	*x*	*x*			*x*	*x*	
Tahoe RCD					*x*	*x*			
El Dorado County and Georgetown Divide RCDs					*x*	*x*			
Local CSDs per ED LAFCO					*x*			*x*	*x*
Federal and State Agencies						*x*			
Shingle Springs Band of Miwok Indians						*x*			
NGO or Local Groups						*x*			

[The table below is for easy review. The updated information will be incorporated into the figure.]


1 Urban Water Supply
2 Agricultural Water Supply
3 Groundwater Management
4 Water Quality Management
5 Stormwater Resource Management
6 Watershed Management
7 Water Reuse
8 Wastewater Management
9 Flood Management
Federal and State Agencies
Shingle Springs Band of Miwok Indians
NGO or Local Groups
6
County of El Dorado
3 4 5 6
Local CSDs per EDC LAFCO
5 8 9
Tahoe City Public Utility District
1 4
Tahoe Resource Conservation District
5 6
South Lake Tahoe
City of South Lake Tahoe
4 5 9
Georgetown Divide Public Utility District
1 2 4 6 8
South Tahoe Public Utility District
1 2 3 4 7 8
City of Placerville
4 5 8 9
Placerville
El Dorado County and Georgetown Divide Resource Conservation Districts
5 6
El Dorado Irrigation District
1 2 4 6 7 8
Grizzly Flats Community Services District
1 4
El Dorado Water Agency
1 2 3 4 5
City
Public Water Purveyor Service Area
City of Placerville
El Dorado Irrigation District
Georgetown Divide Public Utility District
Grizzly Flats Community Services District
South Tahoe Public Utility District
Tahoe City Public Utility District
Groundwater Sustainability Agency (GSA)
El Dorado County Water Agency GSA
South Tahoe Public Utility District GSA
Resource Conservation District (RCD) Boundary
N
0 2.5 5 10 15 20
Miles
Z:\Projects\EDWA\WRDMP_2024\gis\APRX\WRDMP_2024_MapUpdates.aprx (Purveyors)

2.3 Major Built Water Infrastructure

Water supplies in El Dorado County originate as runoff from the Sierra Nevada snowpack that replenishes the rivers and lakes, as well as groundwater, on both sides of the mountain ridge. Assembly Bill (AB) 2480 of 2016 recognizes that headwaters are part of the overall water supply infrastructure for the state. The UARWG's 2023 PWP supports this recognition that both natural and built water supply infrastructure are needed to support continued economic prosperity of our communities.

The Agency does not own any built water facilities at this time. In the past, the Agency has collaborated with water purveyors within El Dorado County to develop funding, secure permits or agreements, planning, acquisitions for water supplies, water infrastructure and other related assets. Historically, once development is achieved for a new asset, the water purveyor often assumed ownership and management responsibilities. For equity and to share any future benefits, this practice should be modified , as appropriate when capital improvements could provide countywide benefits in the OCAs to ensure a countywide perspective for water management.

In the West Slope, water is stored and distributed throughout El Dorado County for supply and hydropower generation purposes. Most of the water infrastructure in the Sacramento Municipal Utility District (SMUD) Upper American River Project (UARP) is located in El Dorado County including 11 dams, 8 powerhouses to meet electricity demands, and Loon Lake (a major water storage reservoir). SMUD operates the UARP to meet energy demands in its service area in Sacramento County and its hydropower operation is a major component of water management in El Dorado County. As part of permit conditions from Federal Energy Regulatory Commission (FERC), SMUD entered into a settlement agreement with parties in El Dorado County in 2005 to collaborate management actions and operations to create benefit for residents in El Dorado County. Under the terms of this El Dorado-SMUD Cooperation Agreement, the Agency is the *El Dorado Designed Representative* for the El Dorado Parties, which includes the County of El Dorado, El Dorado Irrigation District, El Dorado Water Agency and Georgetown Divide Public Utility District. In addition to SMUD, EID and other small producers also have hydropower facilities in El Dorado County. Facilities previously owned by Pacific Gas & Electricity (PG&E), other than its transmission system, were sold and transferred to different parties.

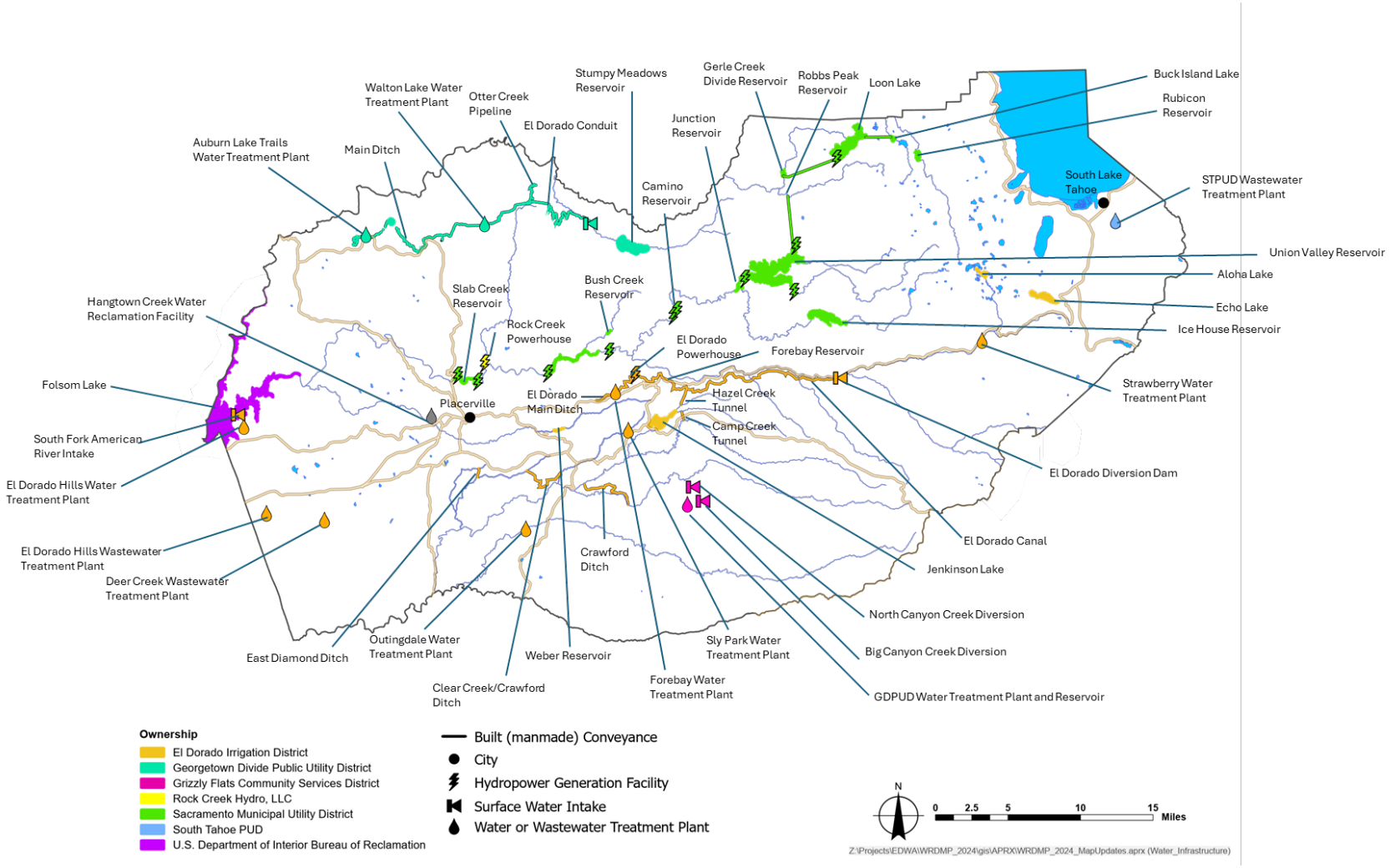
At the western edge of the county, Folsom Reservoir is owned and operated by Reclamation as part of the CVP to provide flood control, hydropower, and water supplies. The Agency acquired a CVP water service contract with Reclamation in 2019 to provide additional water supply to support continued economic development in the western portions of El Dorado

County. Other water storage reservoirs are owned and operated by EID, GDPUD, and GFCSD. EID owns and operates Jenkinson Lake Reservoir in Pollock Pines with imported water from the Cosumnes River and Project 184 on the South Fork American River including Echo, Aloha, Caples, and Silver Lakes. EID also diverts its CVP contract water from Folsom Reservoir to serve the demands in El Dorado Hills and adjacent areas. GDPUD owns and operates Stumpy Meadows Reservoir east of Georgetown in addition to several ditches used for conveyance. Some of the infrastructure owned by EID and GDPUD are from the Gold Rush era and consist of several wooden flumes used for conveyance. With a much smaller service area compared with EID and GDPUD, GFCSD owns and operates its own reservoir and diverts water from North Canyon Creek and Big Canyon Creek.

In the Tahoe Basin, snowmelt runoff recharges groundwater basins and drains into Lake Tahoe and then to the Truckee River. Water purveyors rely on the groundwater for water supply and lack other major water infrastructure. In the Tahoe Basin, STPUD and TCPUD serve their customers from wells. The STPUD has surface water permits with the California State Water Resources Control Board (SWRCB) and has a SWRCB surface water application in progress to maintain its water rights on the Upper Truckee River. However, STPUD does not currently divert or use surface water.

Most rural areas in both the West Slope and the Tahoe Basin are served from groundwater wells by either small private water companies or are self-supplied. In addition to the major water purveyors, there are many small water systems owned and operated by various entities and communities that provide water supply with mostly groundwater from generally low-yield fractured rock aquifers.

Wastewater services are limited in El Dorado County due to its associated costs and the prevalent use of septic tank systems in a rural-agricultural setting. EID is the largest wastewater service provider in West Slope, serving El Dorado Hills, Cameron Park, and other smaller unincorporated areas. Recycled water is used for outdoor irrigation and recreation facilities such as golf courses. STPUD has the only wastewater facility in South Lake Tahoe. In addition to limited local use for agricultural irrigation purposes, STPUD exports recycled water to Alpine County due to regulatory constraints for in-basin discharge. The City of Placerville provides wastewater services but no recycled water use. GDPUD manages the Auburn Lake Trails On-site Wastewater Disposal Zone for the State.


Walton Lake Water Treatment Plant
Otter Creek Pipeline
Stumpy Meadows Reservoir
Gerle Creek Divide Reservoir
Robbs Peak Reservoir
Loon Lake
Buck Island Lake
Rubicon Reservoir
Auburn Lake Trails Water Treatment Plant
Main Ditch
El Dorado Conduit
Junction Reservoir
Camino Reservoir
South Lake Tahoe
STPUD Wastewater Treatment Plant
Union Valley Reservoir
Aloha Lake
Echo Lake
Ice House Reservoir
Hangtown Creek Water Reclamation Facility
Slab Creek Reservoir
Bush Creek Reservoir
Rock Creek Powerhouse
El Dorado Powerhouse
Forebay Reservoir
Strawberry Water Treatment Plant
Folsom Lake
Placerville
El Dorado Main Ditch
Hazel Creek Tunnel
Camp Creek Tunnel
South Fork American River Intake
El Dorado Diversion Dam
El Dorado Hills Water Treatment Plant
El Dorado Canal
El Dorado Hills Wastewater Treatment Plant
Crawford Ditch
Jenkinson Lake
Deer Creek Wastewater Treatment Plant
North Canyon Creek Diversion
Outingdale Water Treatment Plant
Sly Park Water Treatment Plant
Big Canyon Creek Diversion
East Diamond Ditch
Weber Reservoir
Clear Creek/Crawford Ditch
Forebay Water Treatment Plant
GDPUD Water Treatment Plant and Reservoir
Ownership
El Dorado Irrigation District
Georgetown Divide Public Utility District
Grizzly Flats Community Services District
Rock Creek Hydro, LLC
Sacramento Municipal Utility District
South Tahoe PUD
U.S. Department of Interior Bureau of Reclamation
Built (manmade) Conveyance
City
Hydropower Generation Facility
Surface Water Intake
Water or Wastewater Treatment Plant
N
0 2.5 5 10 15 Miles
Z:\Projects\EDWA\WRDMP_2024\gis\APRX\WRDMP_2024_MapUpdates.aprx (Water_Infrastructure)

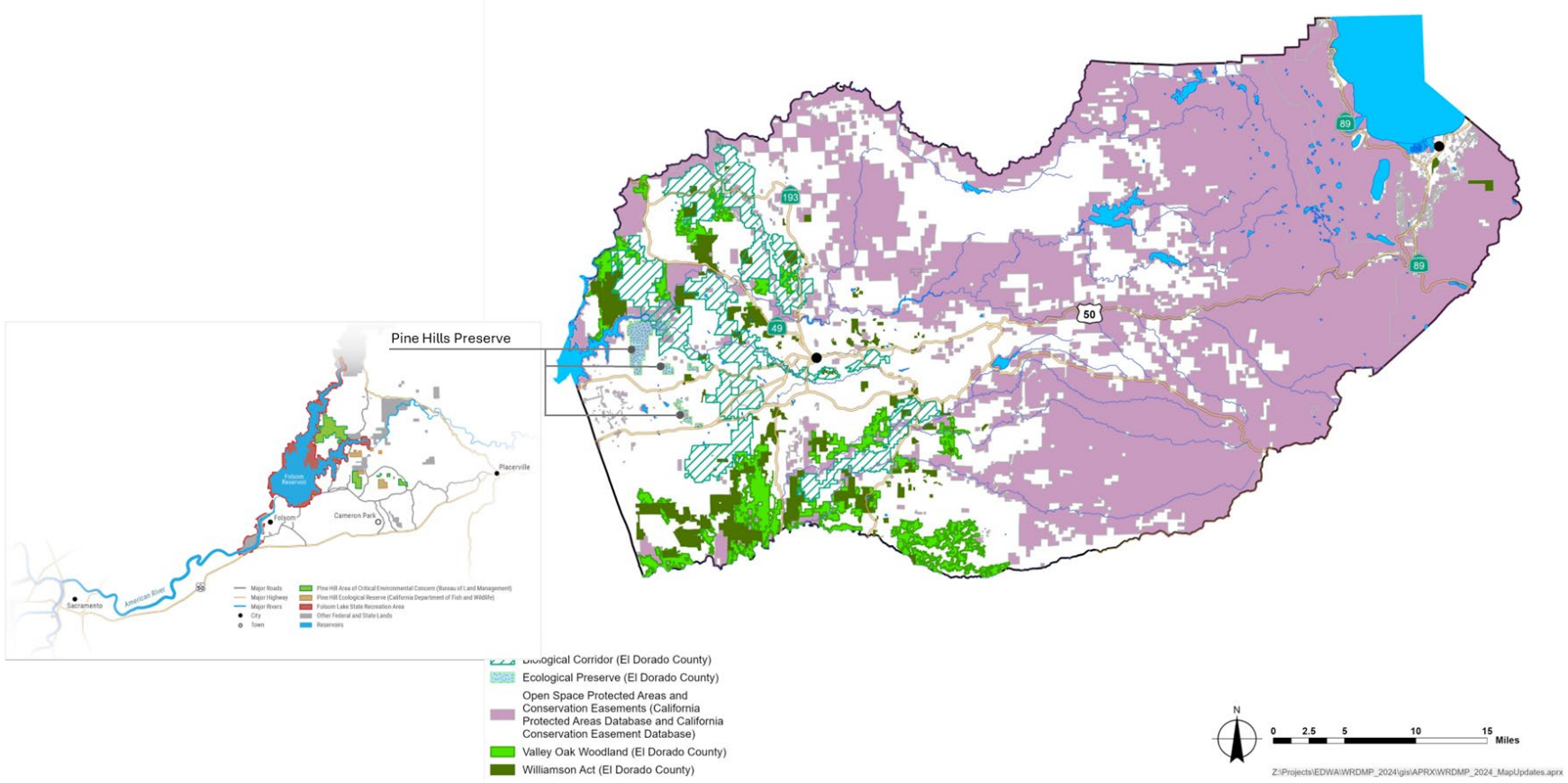
2.4 Environmental Conservation

The County General Plan includes land use designations for integrated natural resource protection and management. Federal, state, and non-profit organizations (e.g., American River Conservancy) also contribute to environmental conservation. These include the following:

- 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 – Biological Corridors in El Dorado County apply 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, and natural communities of high quality or of statewide importance. These lands are in addition to the resources managed by state and federal agencies, such as national forests. Pine Hill Preserve, the only Ecological Preserve in El Dorado County, has rare plant species and habitats. The County General Plan identifies necessary mitigation for the planned economic development. Parcels in El Dorado County are characterized for the needed level of mitigation should they be used for economic development purposes. Ecological Preserves are areas classified as Mitigation Area 0, which do not allow any level of development as described in the County's Zoning Ordinance 130.71.030.

Through the implementation of the WRDMP and PWP, the Agency incorporates considerations of these conservation efforts in water use planning to promote integrated approach to sustainable water management for economic development.

The County of El Dorado General Plan recognizes the importance of protecting natural resources contained in the Williamson Act, biological corridors, and ecological preserves for long-term environmental protection and ecological needs, adding to those managed by state and federal agencies. The Pine Hill Preserve is an example of such policy implementation and is currently managed by the U.S. Department of the Interior, Bureau of Land Management.



Section 3 – Challenges Ahead

Many have invested considerable time, effort, and funds over the years to ensure continued water reliability and economic prosperity in El Dorado County. 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. Through the "lens" of the Agency's authority, these water resources-related challenges are summarized by category: water supply, water quality, and public safety. These three inter-related issues in the West Slope and the Tahoe Basin are shown separately to highlight the differences in water resource management priorities between the two regions. The rest of the section provides more detail.

Level of Concern in the summary tables.

High	Moderate High	Moderate Low	Low

Water-Resource Related Challenges in the West Slope						
Water Supply			**Water Quality**			**Public Safety**
Long-Term Water Supply-Demand Imbalance	Vulnerability During Droughts	Loss of Water Supply Due to Other Resource Management Practices	Long-Term Water Quality Impacts Due to Wildfires	Water Quality Impacts Due to Stormwater Runoff	Concerns Over Groundwater Contamination	Vulnerability to Flooding
• Expected increase in demands and less reliable supplies due to limited availability of groundwater from local fractured rock aquifers and changes in surface water availability. • Climate change-impacted hydrology and loss of snowpack result in long-term reduction in reliable water supply. • The Other County Area is not serviced by a water purveyor and therefore may lack reliable water supply for planned economic growth	• There is no meaningful groundwater supply in the region and water supply can be vulnerable due to reliance on a single source of water (surface water). • The Other County Area is not covered by an existing active drought mitigation planning. • More than 100 small water systems and many domestic wells are susceptible to water shortage due to drought or other contributing factors including power shutoff during extreme weather conditions.	• Dense forests prevent snow from reaching the ground, resulting in a reduction in water supply availability. • Stormwater is managed as a hazard and for water quality compliance purposes but not as a potential resource for broader benefits. • Water infrastructure includes historic unlined ditches and wooden flumes that are susceptible to destruction by fires or landslides. Loss of these major conveyance structures would hinder water deliveries.	• Increasing frequency and intensity of wildfires result in both temporary and long- term water quality degradation on a landscape scale.	• Stormwater runoff may impact water quality, especially along the highway corridor. • Wastewater discharges or spills from damaged facilities located near surface water could create water quality concerns.	• Septic tank systems and pollution from runoff pose potential threats to local groundwater quality, although no significant issues have been identified to-date. • Natural occurrence of arsenic in the West Slope could affect water quality in certain areas.	• Riverine flooding is not a substantial threat in the West Slope; however, localized flooding is common in some communities with chronic drainage problems and increase in storm intensity.

Water-Resource Related Challenges in the Tahoe Basin						
Water Supply			**Water Quality**			**Public Safety**
Long-Term Water Supply-Demand Imbalance	Vulnerability During Droughts	Loss of Water Supply Due to Other Resource Management Practices	Long-Term Water Quality Impacts Due to Wildfires	Water Quality Impacts Due to Stormwater Runoff	Concerns Over Groundwater Contamination	Vulnerability to Flooding
• The planned economic development areas are covered by the existing service areas of major water purveyors, although many small water systems exist. • The growth restrictions and land use in the Tahoe Regional Plan significantly reduce the risk of water supply-demand imbalance • Ongoing water right proceeding and process to resolve the 23,000 AF allocation for California parties per Public Law 101- 618 (Settlement Act) poses uncertainty in long-term water supply	• The Tahoe Basin is less susceptible to extended droughts, relying on both surface water and groundwater. • Existing drought ordinances do not provide coverage to the entire Tahoe Basin, although most areas have human consumption. • Small water systems and domestic wells are susceptible to water shortage due to drought or other contributing factors including power shutoff during extreme weather conditions.	• Dense forests prevent snow from reaching the ground, resulting in reduced water supply available to the Tahoe Basin as groundwater via recharge. • Stormwater is presently being managed as a hazard and for water quality compliance purposes but not as a potential resource for broader benefits.	• Increasing frequency and intensity of wildfires result in both temporary and long- term water quality degradation.	• Stormwater runoff may impact water quality in Lake Tahoe and along the highway corridor.	• Septic tanks are not prevalent in the Tahoe Basin, but leakage could affect groundwater quality. • Long-term groundwater availability is less of a concern because runoff and snowmelt, even under climate change, are adequate for recharge. • Perchloroethylene contamination has been observed in the South Tahoe Basin.	• Riverine flooding is not a substantial threat in the Tahoe Basin; however, rain on snow often causes extensive street flooding in certain areas.

3.1 Water Supply-Demand Imbalance

The economic prosperity that balances urbanization and the rural-agricultural way of life envisioned in the County General Plan requires clean, affordable, and reliable water supplies. Moving into the future, continued economic growth, climate change effects, technological advancements, and regulatory changes may affect both demand and water supply outlooks, resulting in a potential "water supply-demand imbalance" (an aggregated outcome of these changing factors).

To assist the County in realizing the vision of its General Plan, a water supply-demand imbalance assessment was completed at the capacity level defined in the County General Plan. The capacity level is generally considered to extend beyond a 50-year planning horizon. The water supply-demand imbalance assessment does not analyze interim or nearer-term conditions (e.g., the next 20 years as required for an UWMP).

Changes and Adaptation

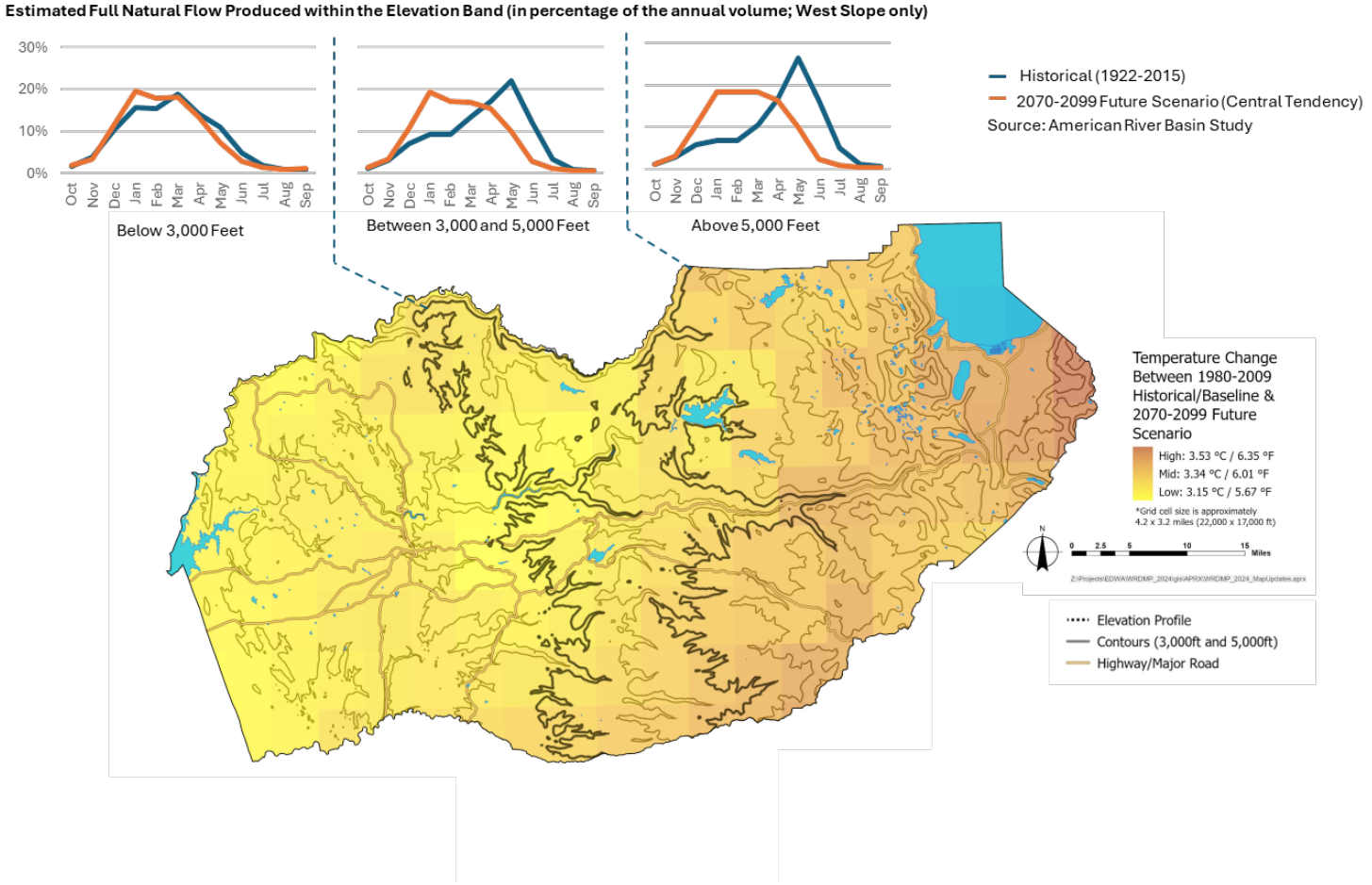
Many state, federal, and regional entities, including the Agency, are engaged in activities to improve understanding of the potential imbalance, and update policies and develop short-term and long-term actions to lessen the impacts. The concepts of safe yield and firm yield and any perceived assurance of water availability from senior water rights or major infrastructure are gradually fading into the past. Investment decisions in structural and non-structural measures should consider integration of resource management with institutional arrangements to reduce both individual and collective vulnerabilities over a broad range of future scenarios. This approach has proven to be a more effective and financially sustainable way to weather the vast uncertainties from numerous influencing factors.

The history of conflicts in the Tahoe Basin was settled under the 2015 Truckee River Operating Agreement (TROA) negotiated to satisfy provisions of Public Law 101-618 (Settlement Act), which provides a watershed approach to guide the use of Truckee River by all parties from its headwaters at Lake Tahoe to its terminus at Pyramid Lake. TRPA and other regional collaborations prioritized actions and aligned focus for investment needs. Significant federal and state resources are dedicated to improving understanding and implementing actions to protect the unique ecosystem and associated communities.

Conditions in the West Slope are very different. Expansive federal and state managed lands are present along with significant private timber lands. The vast OCA areas are without a public water purveyor. Regional collaboration to improve water management has improved since the Agency's adoption and implementation of the 2019 WRDMP update;

however, its long-term success also needs the support of sustainable watershed management. The Agency's effort in convening UARWG to develop the 2023 PWP, highlights the importance of maintaining watershed health to enable water and other resources to continue benefiting county residents and beyond.

Climate change will likely result in increased runoff during winter months and reduced snowmelt in spring months for water supply. The existing facilities, which were designed and operated based on historical hydrology, will be overwhelmed and unable to provide adequate flood protection or water supply for all beneficial uses. The projected changes in hydrology vary between different elevation bands signaling potential significant impacts on the way of life in foothill communities particularly in areas above 3,000 ft in elevation.



The Agency, in partnership with Reclamation and other regional agencies, completed the *American River Basin Study* to evaluate potential effects of climate change and develop adaptation strategies for the American River Basin, of which the upper watershed is mostly within the West Slope. Projected climate change through 2100 is expected to reduce snowpack (the primary source of water for the West Slope communities and downstream Sacramento region) due to more precipitation falling as rain instead of snow.

Projected increases in temperature will increase agricultural and urban outdoor water needs. More importantly, the seasonal distribution of precipitation will shift – the runoff midpoint (when 50 percent of the total annual runoff has occurred) may shift from March to between 30 and 35 days earlier according to the mid-century and end-of-century, respectively, projections although the total volume of runoff may remain about the same. This shift will result in "flashier" hydrology that could overwhelm existing facilities for water supply and flood management that were designed and are operated according to historical hydrology.

Changing climate conditions have already impacted water use by residents and resulted in agricultural cultivation practices to migrate upward in elevation. Losing snowpack, which is the predominant storage for El Dorado County and the state, is particularly troublesome for the West Slope due to limited opportunities for alternative water supplies from fractured rock formation or water reuse. Expanding conjunctive use in the lower American River basin can help attenuate the changing hydrology in Sacramento region but is not a viable source of water for this upper watershed due to the thousands of feet in elevation difference. Thus, the American River Basin Study also identifies a specific adaptation portfolio for the upper watershed; the Alder Creek Storage and Conservation Portfolio consists of a high-elevation offstream storage that is modest in size but provides necessary storage to preserve water supply reliability in the upper watershed and support operation flexibility of Folsom Reservoir. The portfolio also includes the basic elements of continued water conservation and forest management which are included in all portfolios. The Agency plays a key role in the forest management element (more in Headwaters Management).

Water management in California adjusts its trajectory after each major drought. In the short but intense 1977-78 drought, statewide demands for water supply and environmental protection were still relatively low. Changes in water management were mostly reflected in operations and continued implementation of major water infrastructure projects. The persistent 1987-92 drought, and subsequent endangered species protection needs, drastically changed water system operational priorities and increased conflicts in providing for all beneficial uses, resulting in substantial reductions in yields from both

the federal CVP and California's State Water Project. Positive outcomes from this period, however, included (1) emergence of market-based water management tools such as water banking and water transfers, which public water purveyors in West Slope have historically limited participation, and (2) interest in integrated regional water management incentivized by state policies and financial assistance. Technological advancements resulted in increased water use efficiency, operational efficiency, and opportunities to diversify sources of water (e.g., water reuse). However, the Sacramento-San Joaquin Rivers system continues to experience ecosystem collapse, prompting the call for additional environmental protection even as statewide economic development continues to drive up water supply needs.

Despite the improvements, the increasing frequency and severity of extreme conditions continue testing the limits of water management throughout the state. California experienced two back-to-back severe droughts in 2023-16 and 2020-22; both with record-breaking persistence and intensity that stressed and overwhelmed the Sacramento and San Joaquin Rivers system. While the larger water purveyors in the county had sufficient water stored in their local reservoirs to meet customer demand, some smaller water systems and domestics wells had springs and groundwater wells run dry. Furthermore, under emergency drought declarations during these two droughts, the SWRCB implemented unprecedented curtailments of senior water rights and statewide mandatory water conservation that impacts communities throughout the state including El Dorado County.

Regulatory changes related to environmental protection and other public benefits will push water managers to improve efficiency and effectiveness in managing limited water supplies for all beneficial uses and the overall water supply and demand. The SWRCB recently adopted efficient urban water use standards, variances, and performance measures per Senate Bill (SB) 606 and AB 1668 of 2018. The budget-based water conservation requirements, termed as "Making Conservation a California Way of Life," replaced the volume-based water conservation approach as required in SB X7-7 of 2009. In El Dorado County, EID, GDPUD, STPUD, and TCPUD are among the urban retail water suppliers who are subject to the new requirements effective on January 1, 2025.

Representing the collective interests of the county, the Agency has engaged with DWR and SWRCB throughout the recommendation development and rulemaking process. This adopted regulation has many implementation details unresolved, imposing significant uncertainties on water demands and supply reliability. The resources needed for developing individual bottom-up water budgets for distinct uses is likely significant. There is a large amount of detailed data needed to estimate allowable water budget on a purveyor-level because most does not manage water use in such a

refined level. Separately, additional details also need to capture unique water use as variances for approval by the SWRCB; outdoor residential water use, small farm operations in rural residential areas, and seasonal populations are among the primary identified challenges for El Dorado County. Continued conservation is necessary and beneficial; however, it also hardens demands, requiring more robust drought preparedness and response actions.

Other concurrent state policies – such as the SGMA implementation, and voluntary and mandatory water system consolidation – also actively promoted to enhance regional self-reliance and more rigorous drought protection efforts, especially as they relate to vulnerable populations and rural communities. SB 552 of 2021 also provides further requirements for certain small water systems and counties to improve drought planning and resilience. Such significant changes in practices will be critical to planning for future water supply needs. More discussions are included later in this section.

Imbalance Assessment

Supporting the vision of the County General Plan requires that land use, at the capacity level, be consistent with the policies, requirements, and conditions in the adopted County General Plan. Section 2.1 (see page x) sets forth the eligibility criteria for certain water uses based on land use designations and zoning ordinances. While a given parcel may be identified as eligible for a certain water use, it does not imply that demands will be realized because additional factors will affect the owner's decision and County's approval to incur certain demands such as:

- Physical conditions (e.g., soil types, slopes)
- Setting (e.g., access roads, limits in dwelling density, preferences in agricultural districts or community center designations)
- Economic development potential (e.g., promote agritourism or ag-commercial)
- Other policies in the County General Plan and associated regulations and permitting requirements (e.g., the total population cap)

These factors can be used to screen parcels to inform the demand estimate, where applicable economic activities, demand management practices, use of technology, and other water management strategies are also considered.

Such an assessment must be updated regularly to reflect changing conditions and new information, re-evaluate risks and uncertainties, and account for the lengthy lead time to go from planning to implementation of an action or infrastructure.

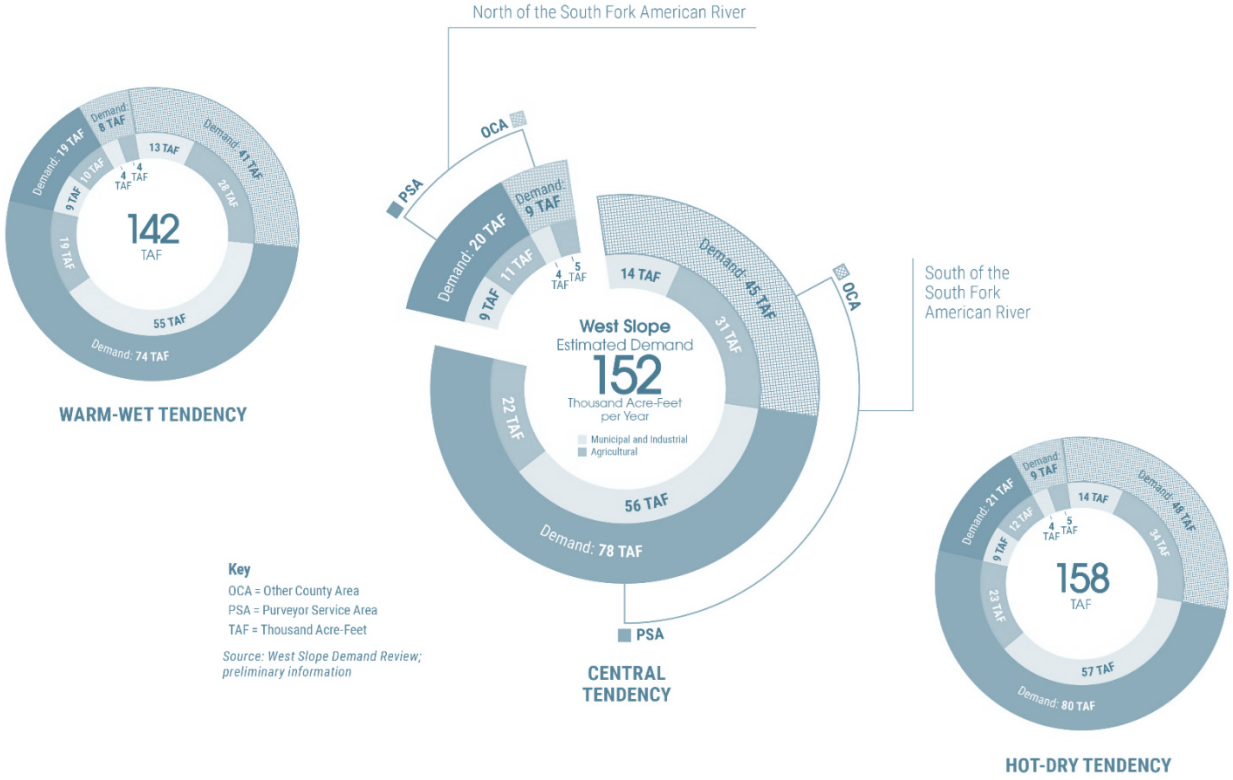
Preliminary findings from the ongoing effort to assess the water supply-demand imbalance in both the West Slope and in the Tahoe Basin are summarized below.

West Slope. The ongoing assessment integrates an in-progress demand revision that includes scenarios for future implementation of urban water conservation requirements, and market-informed economic development potential for commercial agricultural practices and agritourism. Hydrology, precipitation, and evaporation potential under climate change conditions were obtained from the *American River Basin Study* with supplemental information from the State. The findings suggested that existing facilities and operations are likely to be less effective in providing flood protection that is also used for capturing needed water supply. As a result, a substantial water supply-demand imbalance is likely to occur at the capacity level defined in the County General Plan. The imbalance is expected to be intensified during drought conditions. These findings are consistent with those of previous studies that identified the need for additional long-term water supply to sustain countywide socioeconomics, and to provide adequate drought protection with updates and refined details.

Tahoe Basin. The ongoing assessment integrates interim findings from both the in-progress water right entitlement discussion and demand evaluation. Tahoe Basin demands are based on population growth, economic development, and water-based tourism. A unique consideration in this area is the considerable fluctuation in water use – both seasonally, and during the weekends and holidays – with the influx of tourists. Transient water demands present a challenge to implement water management strategies effectively. Fortunately, the water supply-demand imbalance is likely to be minimal in the Tahoe Basin because projected demands are relatively low in comparison to the available snowpack, even under climate change conditions. Groundwater recharge is expected to continue, irrespective of the form of precipitation. Any imbalance is likely to be tempered by both groundwater accessibility and the limitations on growth and other uses imposed by the TRPA. Tahoe Basin water purveyors in the Tahoe Basin will need to secure the water rights under the TROA, which limits California's total gross diversions in the Lake Tahoe Basin to 23,000 acre-feet per year from all natural sources, including both direct diversion from Lake Tahoe and groundwater. As the SWRCB administers surface water rights and groundwater rights differently, reconciliation of the different institutional requirements and limitations must be a high priority for affected Tahoe Basin water purveyors (TCPUD, STPUD, and North Tahoe Public Utility District) to ensure long-term water supply reliability.

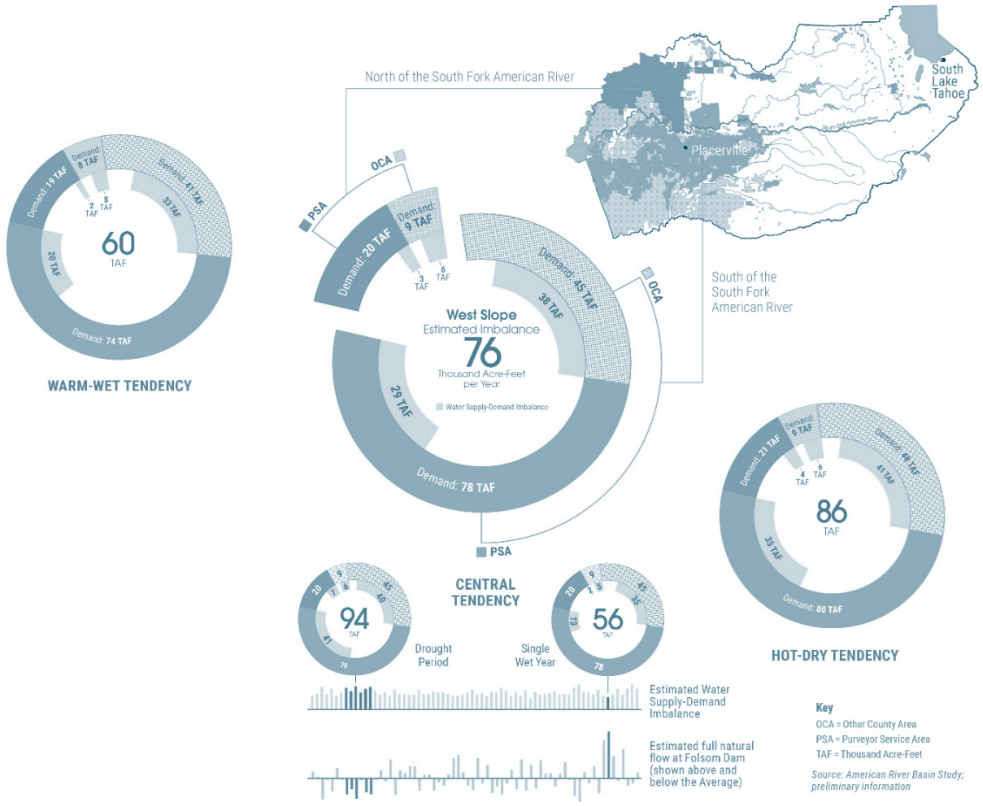
The projected water demand associated with the economic activities and way of life at the capacity level envisioned in the County of El Dorado General Plan is assumed to be realized by 2070. The projected capacity-level demands incorporate considerations of foreseeable demand management practices, technology advancement, and regulatory changes. Climate change also affects agricultural demands and municipal and industrial outdoor demands.

[Note to reviewers: analysis still under development through support from the Water Supply-Demand Imbalance Subgroup. The figure from 2019 WRDMP serves as a placeholder and shows intended information.]



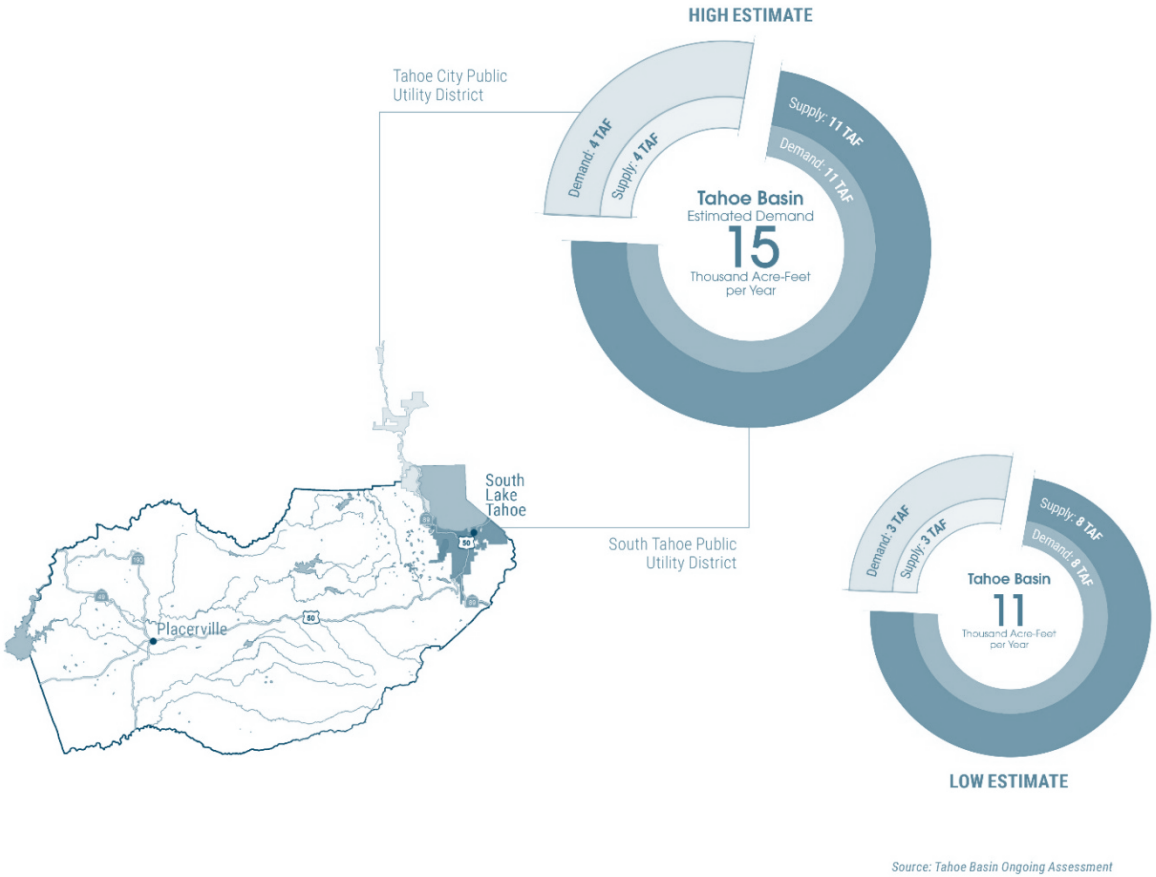
The results from applying the demand projection and climate hydrology in 2070 suggest a significant water supply-demand imbalance at the capacity level, especially during drought conditions, based on existing facilities and operations. Additional adaptation strategies are required for sustaining the socioeconomic conditions and way of life in the West Slope.

[Note to reviewers: The analysis is still under development through support from the Water Supply-Demand Imbalance Subgroup. The figure from 2019 WRDMP serves as a placeholder and shows intended information.]



The Tahoe Basin is unlikely to have a water supply-demand imbalance because of the relatively low demands in comparison with the available snowpack and runoff, even under climate change conditions.

[Note to reviewers: The information and discussion with Tahoe parties are pending. The figure from 2019 WRDMP serves as a placeholder and shows intended information.]



3.2 Limited Groundwater Resources

There are two recognized groundwater basins in El Dorado County: Tahoe Valley South Subbasin and Tahoe Valley West Subbasin. Tahoe Valley South Subbasin is the source of water supply for STPUD and other local water suppliers (small public water systems) on the south shore of Lake Tahoe. This subbasin is of medium priority under SGMA regulations. STPUD and the Agency are serving as the Groundwater Sustainability Agencies (GSA) for areas in and outside of the STPUD service area, respectively, with an approved Alternative to a Groundwater Sustainability Plan (GSP) developed by STPUD in coordination with the Agency. The Tahoe Valley West Subbasin is mostly in Placer County and is a source of TCPUD's water supply. This subbasin is of very low priority and thus requires no GSA or GSP under SGMA. Groundwater in the Tahoe Basin is replenished by local snowmelt and stream flows, meaning that recharge is sensitive to snowpack conditions and potential climate change effects.

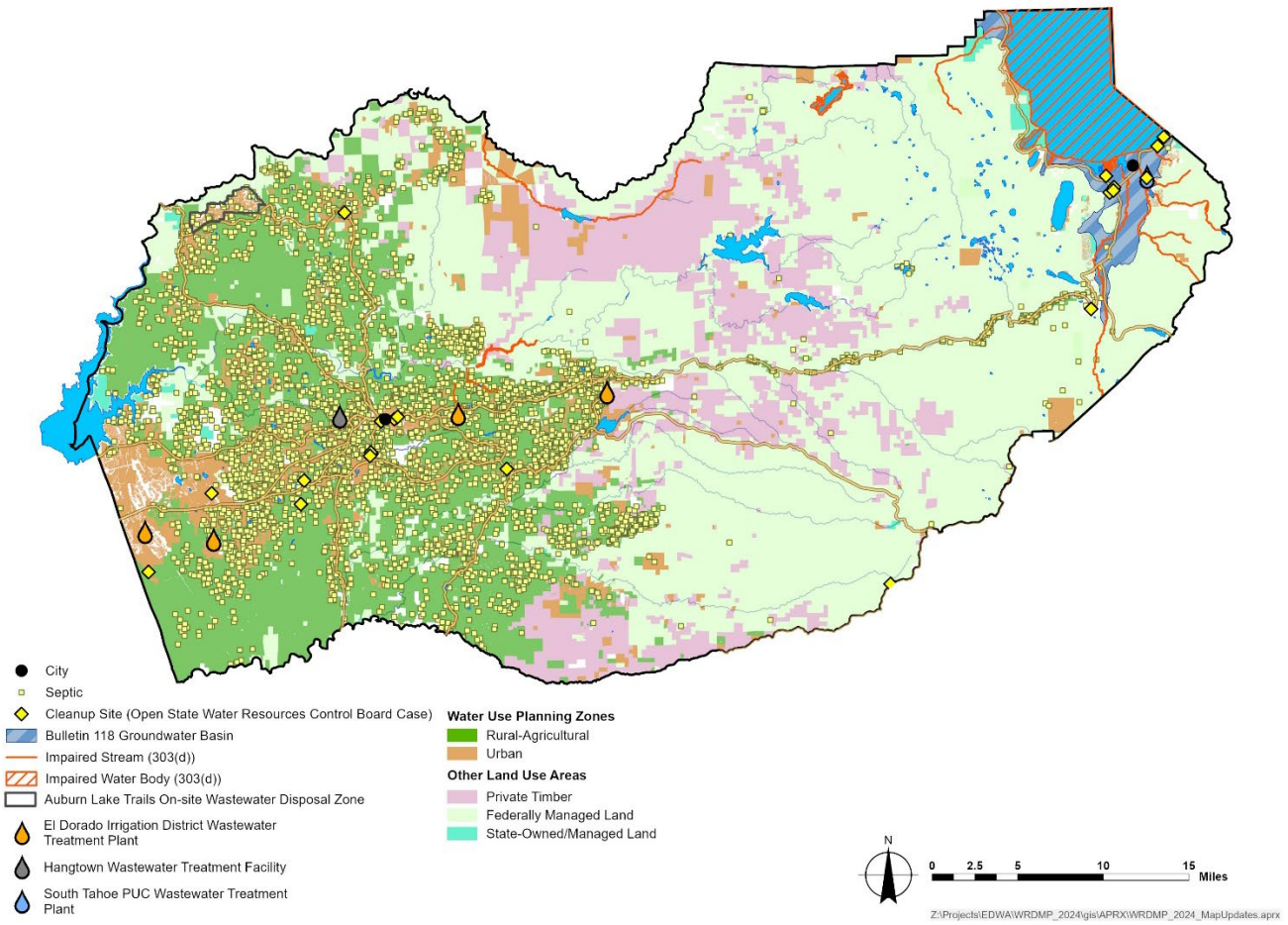
In the rest of the Tahoe Basin and the West Slope, localized groundwater resources are often shallow and unreliable in fractured rock formation. In these areas, groundwater provides limited water supply to existing agricultural practices and domestic uses from the permitted small water systems or domestic wells that could be vulnerable during prolonged droughts and other factors causing water shortage conditions (e.g., power shutoffs during severe weather conditions).

Groundwater is also susceptible to pollution from runoff or contamination from highways, urban development, and agricultural practices. In the South Tahoe Basin, groundwater quality issues include perchloroethylene contamination. The perchloroethylene plume that has been slowly migrating from the "Y" area of the South Tahoe Basin towards Lake Tahoe has been studied since the 1980s. In the West Slope, naturally occurring arsenic can sometimes create water quality concerns, resulting in water supply challenges. The extensive agricultural practices in the West Slope are of low toxicity and pose a limited risk of groundwater contamination. In rural areas, spreading and leach field discharges are used by EID's Camino Heights Wastewater Treatment Plant and Gold Ridge Forest Wastewater Treatment Facility, as well as GDPUD's Auburn Lake Trails Water Treatment Plant, under the regulatory oversight of the Central Valley Regional Water Quality Control Board (CVRWQCB).

There have been reported incidents of contamination from the septic tank systems found throughout the West Slope along the highway corridor. Although there is no current prevailing problem of polluted runoff or septic tank systems impacting the limited groundwater resources, it is worthwhile to monitor the water quality of shallow and localized groundwater resources. Mobile home parks and other areas close to water bodies may pose greater contamination threats. The County

EMD is responsible for permit issuance and administration of septic tank systems in El Dorado County. In the Auburn Lake Trails Wastewater Zone, GDPUD is charged by the State to manage and inspect septic tanks systems.

In general, water quality concerns in El Dorado County are low. However, monitoring to protect surface water and groundwater resources from pollution should continue.



3.3 Vulnerability During Droughts

Water purveyors and agencies continue to actively plan for emergencies and extended droughts. The Agency was proactive in previously sponsoring regional drought plans to provide overall broad coverage throughout El Dorado County. All l public water purveyors are required to have drought plans (or be in compliance with drought ordinances) and have established ways to respond when needed. Historical drought response in El Dorado County has been positive. For example, after the 1976-1977 drought, water meters were installed to improve water management.

The West Slope is vulnerable to drought because it relies primarily on surface water and the underlying fractured rock formation does not provide reliable groundwater. Water reuse is limited and challenging for rural foothill communities. EID and STPUD are two public water purveyors who have portions of their service area that are conducive for recycled water use. The current water reuse is mostly for outdoor landscape irrigation. EID had completed a master plan to increase water reuse with its Deer Creek and El Dorado Hills Wastewater Treatment Plants. EID's recycled water system is nearing buildout as stated in the 2020 UWMP. EID does not anticipate growth in the recycled systems service area; and the economic feasibility to expand the system is not justified in consideration of the additional capital costs of the infrastructure, long term operational costs, and sufficient potable water supplies already exist. Due to the stringent discharge requirements in the Tahoe Basin, STPUD has limited water reuse for alfalfa growing and exports most of the recycled water from its wastewater treatment facility to Alphine County. STPUD is exploring options under its strategic planning effort.

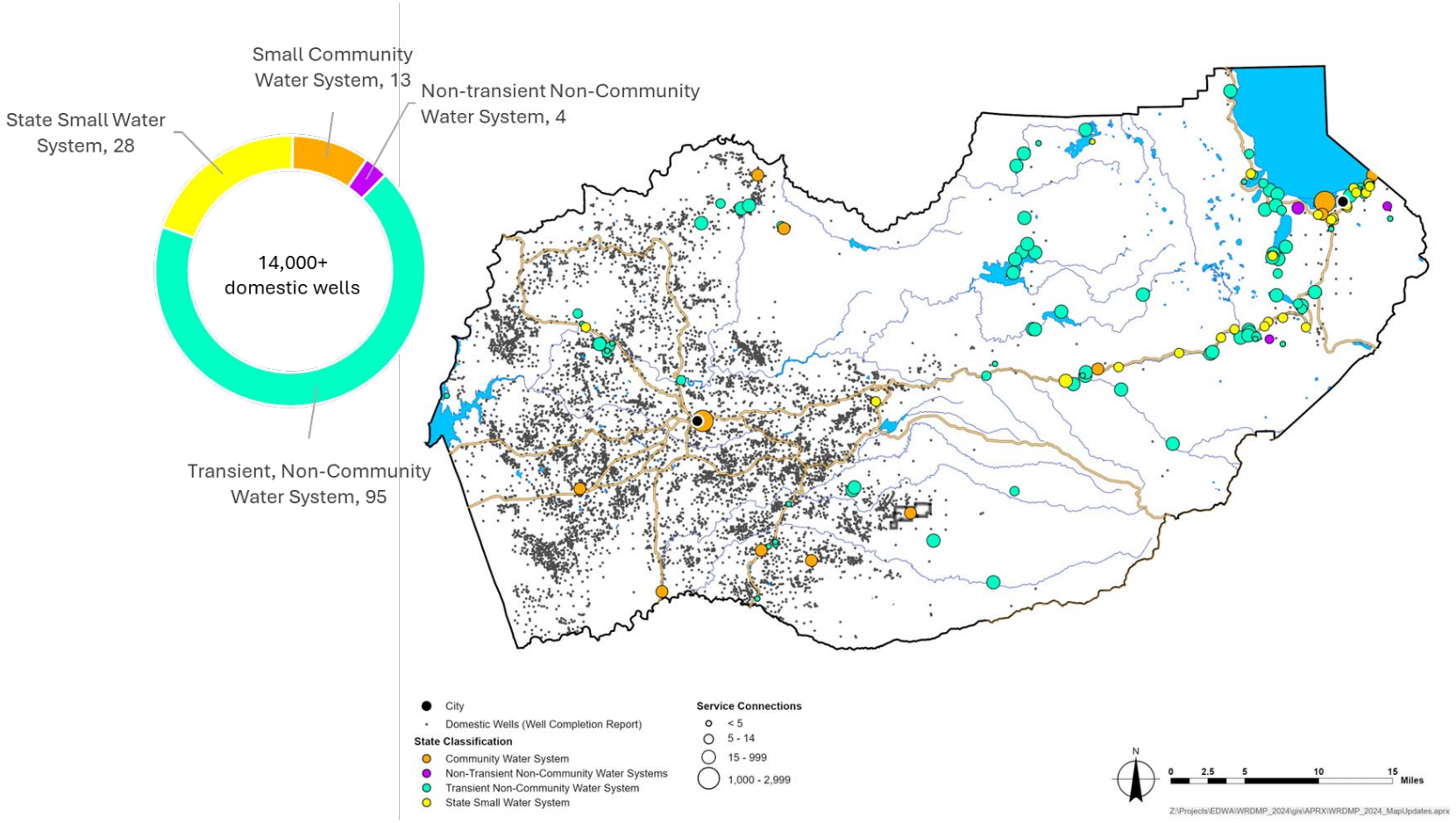
Per requirements under SB 606, urban water suppliers like EID, GDPUD, STPUD, and TCPUD were required to update their UWMP and develop a Water Shortage Contingency Plan to improve drought preparedness. In the Tahoe Basin, suppliers are less susceptible to drought conditions and is managed under TROA. Most of this area is covered by drought ordinances overseen by STPUD and TCPUD, and the OCA areas in the Tahoe Basin is primarily open space. In the West Slope, the OCA and small water suppliers are likely to experience hardships as a result of not having secure water supplies or lack of backup supplies. GFCSD is the largest small water system in the West Slope and oversees its own drought plan. In the recent droughts, residents with dry wells obtained needed water supplies from EID's bulk water stations.

Through a Local Primary Agency agreement with the SWRCB, the County EMD oversees 112 small public water systems. With the delegated authority from the County Health Officer, EMD also oversees 28 state small water systems. Larger public water systems (e.g., water systems of major water purveyors) are overseen by the SWRCB directly. These small public water systems and state small water systems are often isolated – not connected to larger water purveyors and agencies, even if they are in close proximity – increasing the likelihood of water supply impacts during drought conditions as well as reductions in the quality of groundwater when wells are used. Most of the small public water systems in El Dorado County serve transient populations. There are hundreds of domestic wells providing domestic water use as well.

Small water suppliers (i.e., small public water systems, state small water systems, and domestic wells) are often less resilient to natural disasters, such as drought and fire, have more difficulty adjusting to regulatory changes, and may struggle to fund infrastructure maintenance and replacement due to poor economies of scale and lack of staff. To improve drought resilience, the SWRCB encourages water system partnerships and voluntary consolidation, and SB 88 of 2015 further authorizes the SWRCB to require certain water systems that consistently fail to provide safe drinking water to consolidate with, or receive an extension of service from, another public water system. The County EMD has worked with water purveyors and small public water system owners on potential consolidations to achieve better water supply reliability and public health under the SWRCB's water system partnerships and voluntary consolidation program. The successful cases are mostly in the Tahoe Basin. The substantial infrastructure needed for a small water system to overcome the difficult terrain and extensive distance to connect to a major public water purveyor is often cost prohibitive. Even if federal or state governments provide financial assistance to cover initial infrastructure costs for connection, the long-term operation and maintenance costs are likely unaffordable for most rural communities.

To improve the understanding of drought impacts in the West Slope and develop response and mitigation actions on a regional level, the Agency completed an Upper American River Basin Regional Drought Contingency Plan in 2023 in collaboration with Reclamation, County, public water purveyors, and interested parties. The Agency is currently expanding the planning efforts to develop a County Drought Resilience Plan for the County to cover the requirements by SB 552 of 2021 to improve drought planning for small water suppliers. Going beyond SB 552 requirements, the Agency's County Drought Resilience Plan will include water shortage vulnerability assessment and identified response and mitigation actions for all small water suppliers to ensure equity and comprehensive coverage. In addition, the Agency also worked with County's Office of Emergency Services to update the drought component of the Multi-Hazard Mitigation Plan to further improve alignment.

Upon completion of the County Drought Resilience Plan per SB 552, El Dorado County will have complete drought planning coverage for all residents.



3.4 Impacts of Wildfires

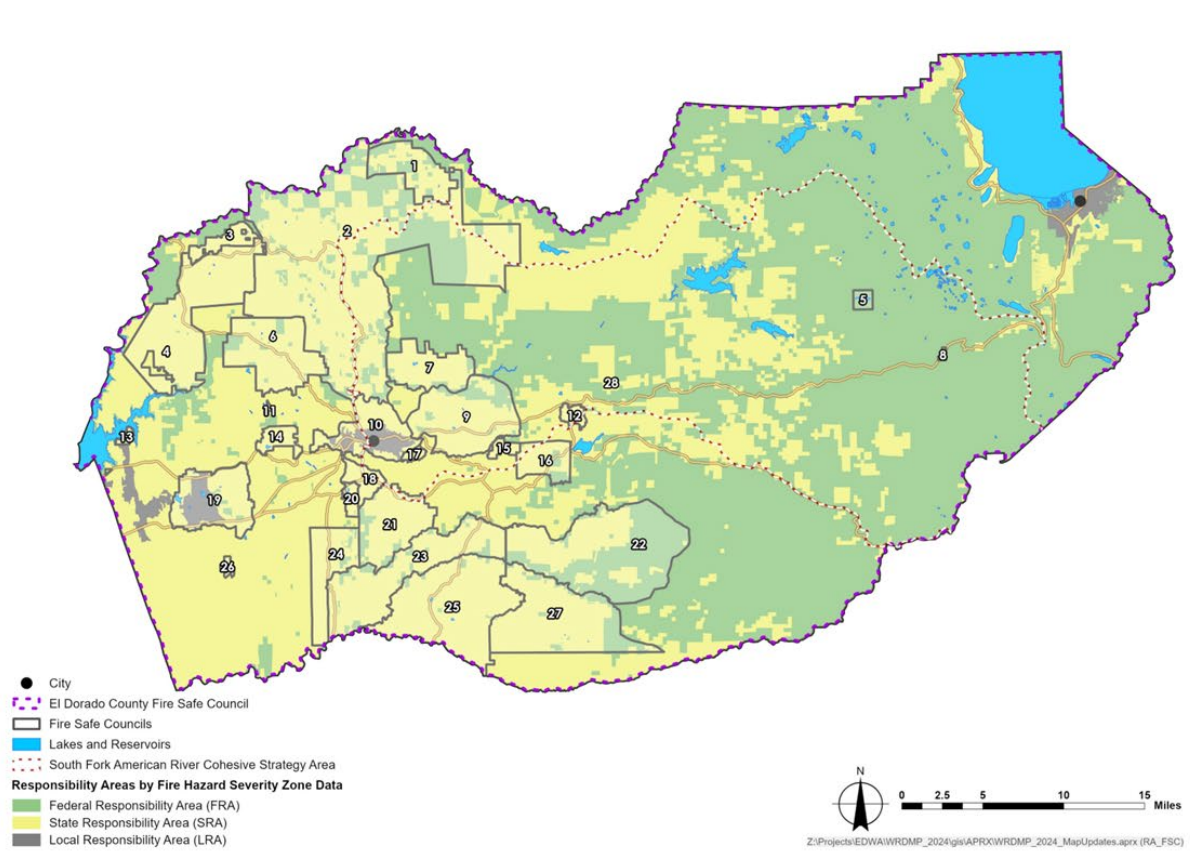
Wildfire damage and suppression costs have risen continuously over time. In addition, the frequency, size, and intensity of these fires are expected to continue to grow – another effect of climate change, past forest management decisions, overly dense forests, and prolonged droughts. Loss of life and structures as a direct or proximate result of wildfires is at an all-time high. The significant high wildfire risks highlighted in 2019 WRDMP unfortunately became reality in 2021 Caldor Fire and 2022 Mosquito Fire. FEMA recently published its National Risk Index system, which suggests that El Dorado County is over 91 percentile in the nation for wildfire risk and over 32 percentile in California when considering expected annual loss, social vulnerability, and community resilience.

Fire protection is divided between Federal, State and Local responsibility. Within the State and Local Responsibility Areas, the California Department of Forestry and Fire Protection identified zones likely to experience fire hazards. Although equivalent information is not available for the Federal Responsibility Area the fire hazard is considered high because of the accumulation of biomass in the national forest areas.

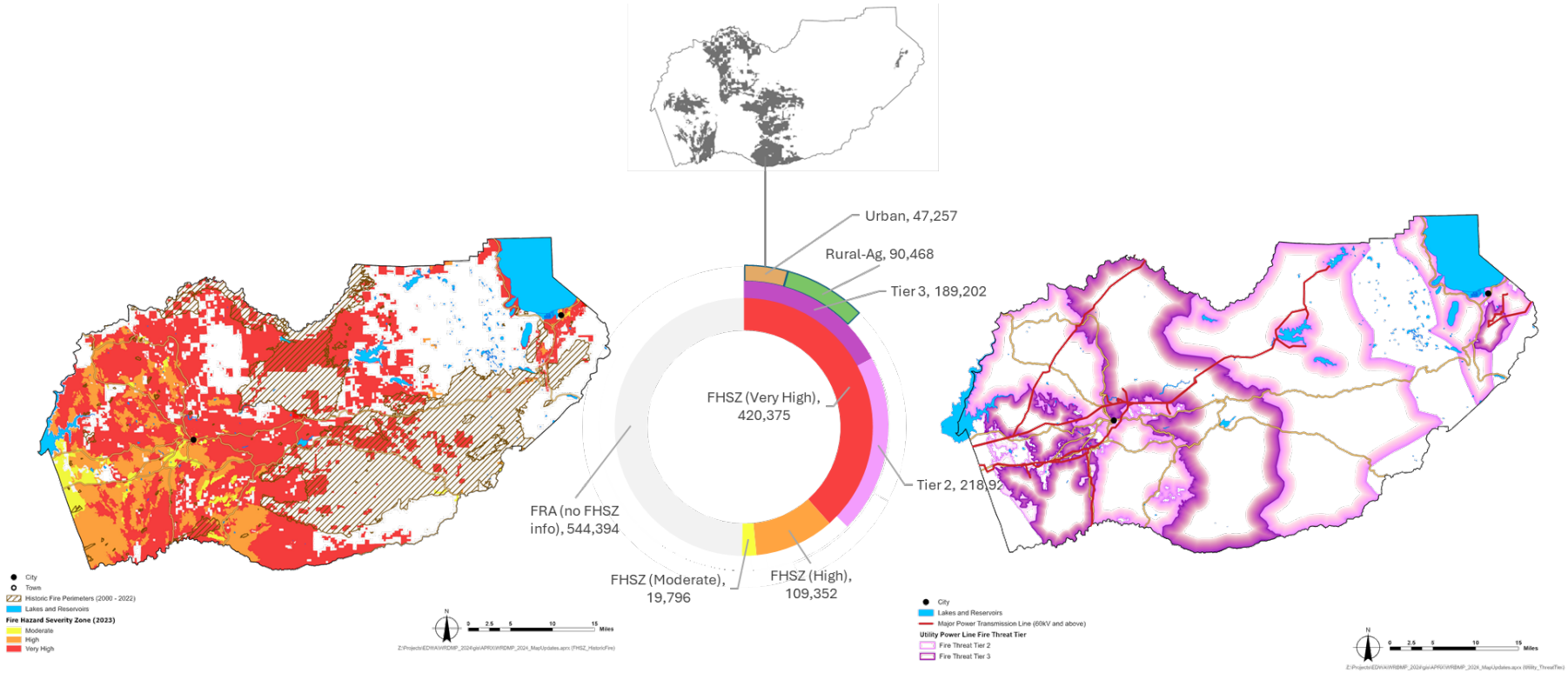
As part of the U.S. Forest Service-led National Cohesive Strategy for forest fire management, the South Fork American River Cohesive Strategy is being implemented in collaboration with both federal and state management agencies. Recognizing sizeable areas in El Dorado County are without this level of attention, the County established the Office of Wildfire Preparedness and Resilience after the Caldor Fire to organize local agencies and communities to provide resources, outreach, and planning support to foster coherent and coordinated mitigation to wildfire risk. It also leading the effort to update the Community Wildfire Protection Plan for the West Slope in collaboration with community-based Fire Safe Councils to identify projects and activities needed to protect communities from the risk of wildfire and provides a framework for local communities, organizations, and agencies to take action. El Dorado County was named in the 2024 Fire Risk Reduction Community List per Public Resources Code Section 4290.1 by the California Department of Forestry and Fire Protection (CAL FIRE). Prior, TCPUD was named in CAL FIRE’s inaugurating 2022 list.

Wildfires do not observe jurisdictional boundaries and communities with mixed responsible parties need to take leadership in coordinating implementation of mitigation actions. That is why community-based planning and efforts need to be integrated as part of regional wildfire management which is divided among federal, state and local agencies. The County's Office of Wildfire Preparedness and Resilience plays an important role in bridging this coordination.

Label	Fire Safe Council (FSC)
1	Volcanoville FSC
2	Georgetown FSC
3	Auburn Lake Trails FSC
4	Cool-Pilot HIll FSC
5	Wrights FSC
6	Coloma-Lotus FSC
7	Mosquito FSC
8	Strawberry FSC
9	Camino FSC
10	Placerville FSC
11	Gold Hill Estates FSC
12	Gold Ridge Forest FSC
13	Lakehills FSC
14	Greenstone FSC
15	Rancho Del Sol FSC
16	Sierra Springs Regional FSC
17	Texas Hill FSC
18	Diamond Springs FSC
19	Greater Cameron Park Area FSC
20	Patterson Ranch FSC
21	Oak Hill FSC
22	Grizzly Flats FSC
23	Sandridge FSC
24	Logtown FSC
25	Aukum Fairplay FSC
26	Royal Equestrian FSC
27	Omo Ranch FSC
28	El Dorado County FSC



The overlapped areas of the Very High Fire Hazard Severity Zone and Tier 3 Utility Power Line Fire Threat area are of the most concern in the West Slope with planned development shown by water use planning zone designations. There is also a small overlapping area in the Tahoe Basin.



The fire hazard severity zones are based on relevant factors such as fuels, terrain, and weather and are described according to their potential for ignition to buildings. The fire hazard severity zones also relate to building codes designed to reduce ignition to buildings. New buildings associated with the anticipated economic growth in El Dorado County in the State and Local Responsibility Area must comply with the Wildland Urban Interface Codes designed to ensure that structures are built with fire resistant material that minimize damage to those structures during a wildfire. A large fraction of the areas in the “very high” fire hazard severity zone are timber lands that are managed by private entities and federal lands in national forests.

The U.S. Geological Survey’s 2018 study on *Historical Patterns of Wildfire Ignition Sources in California Ecosystems,* indicates that wildfires can be effectively decreased in California, except for those caused by utility power or transmission lines. It states that the most devastating fires could occur in areas with both abundant vegetation (forests, grasses, agricultural activities, etc.) and utility power transmission lines. In recent years, most 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 falling utility power transmission lines, although official data on some of these fires are yet to be confirmed. California Public Utility Commission publishes risk maps with different tiers for public awareness. In El Dorado County, the 2000 Latrobe Fire and 2016 Emerald Fire were caused by utility power line issues. The 2022 Mosquito Fire may be another example, but the determination is not final.

The prevalent utility fires resulted in significant liabilities on utilities at fault; even with the State’s assistance, this resulted in major energy rate hikes by PG&E, which also is the primary energy purveyor in El Dorado County, raising challenges in affordability in rural communities. In response, Pioneer Community Energy began its service in El Dorado County as a local community choice aggregate in 2022. The concern over wildfires caused by utility facilities also resulted in Public Safety Power Shutoffs in severe weather conditions by utilities. Without backup power, rural communities cannot use groundwater pumps for basic water supplies, creating a water shortage condition independent of drought.

Another unique aspect in El Dorado County is that the wooden flumes from the Gold Rush era and other delivery structures are particularly vulnerable to both direct impacts (destruction during a wildfire) and indirect impacts (damage from later mudslides and trees falling, originating at the burned site). In many cases, unlined ditches and canals are also subject to indirect impacts from wildfires. The wooden flumes and unlined ditches are major water conveyances in the West Slope, and interruption of water supply due to fire damage would be significant. EID’s wooden flume system was

heavily damaged in 2021 Caldor Fire, impacting one third of its water supply as an example and now has a more durable replacement.

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 on water supply from the damage to water supply-related infrastructure (treatment facilities, powerhouses, conveyance, etc.), and indirect impacts (such as increased risks for landslides, erosion, water pollution and flooding that can cause damage) are often realized long after the disaster. Vegetation management can be important for minimizing the direct and indirect impacts from wildfires. On the other hand, GFCSD also reported increased summer flow post-Caldor Fire at the springs in its watershed which provide water supply to the wildfire-battered Grizzly Flats community. The threats for future wildfires can be addressed through support for effective forest management, and removal of the high concentrations of dead trees, which can be attributed to the prolonged droughts and accumulated biomass. These compounded effects support the need for a more holistic approach to headwaters management.

3.5 Headwaters Management

Headwaters significantly contribute to California's water quality and water supply reliability. But variables such as climate change, increasing wildfires, groundwater overdraft, and reduced snowpack are looming and will threaten headwaters' ability to continue serving that purpose. El Dorado County is in the American River headwaters, and the health of the headwaters and its management directly affect El Dorado County water supplies, especially in communities relying on local minor streams or springs. Properly managed American River headwaters could also have broader effects on statewide water supply because the American River flows regulated at Folsom Reservoir are a major source of statewide water supply.

Two areas of headwaters management are critical:

(1) Meadow health that can affect water retention and water quality

(2) Forest management to address both high tree density with significant canopy cover that intercepts snowpack and post-wildfire forest density reduction - both reduces water retention, and increase evapotranspiration, resulting in less water supply.

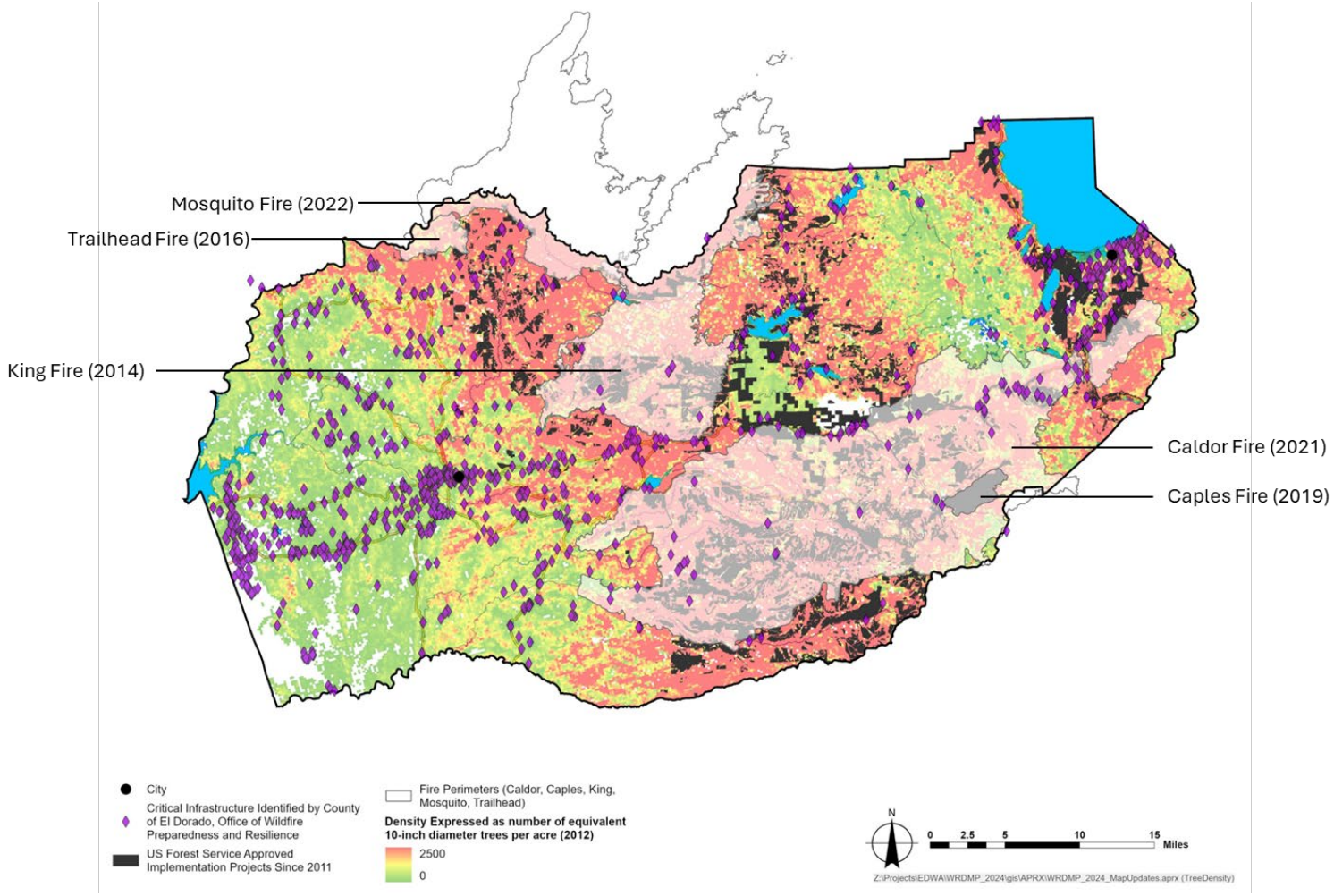
El Dorado County is part of the Cosumnes, American, Bear, Yuba (CABY) Integrated Regional Water Management region, and these headwaters management issues were included in the plan; however, implementation was limited due to lack of funding for these low population areas and the plan was not vertically integrated with local jurisdictions. Decades of improper forest management have resulted in dense forests that not only affect water supply but also increase the threat of wildfires. According to the 2011 *Forests and Water in the Sierra Nevada: Sierra Nevada Watershed Ecosystem Enhancement Project*, first-order estimates based on average climate information suggest that reducing forest cover by 40 percent of the maximum levels across a watershed can potentially increase water yields by 9 percent.

Exacerbating fire risk is the increase in development in the urban/wildland interface and pervasive tree mortality due to prolonged drought conditions across the Central and Southern Sierra Nevada. It is estimated that over 129 million trees have died across the state since 2010, and this number continues to grow. El Dorado County is not immune to this epidemic and declared an emergency for unprecedented tree mortality in March of 2016 due to drought conditions and related bark beetle infestations. The emergency declaration is still in effect today.

The Agency convened the UARWG to develop the PWP in 2023 to develop a cohesive and comprehensive plan for managing the upper American River watershed for long-term sustainability and promote resilience of the communities within. The holistic approach to leverage natural, built, and social capitals to create and reinforce the expansion of natural, built, and social capacities in the watershed. The Agency is currently working closely with U.S. Forest Service, RCDs, and other partners to promote changes in management and project implementation on a landscape level.

California Department of Finance published its new 2060 population projection in March 2024 showing consistent decline of rural communities across all headwater regions and increase into the dangerous floodplains in the Central Valley. This is unavoidably contributed in part due to the unrelenting wildfire incidents and other natural disasters, increasing regulatory requirements in urban wildland interface areas, and unaffordable or unavailable home insurance. Recovery of wildfire-impacted communities like Grizzly Flats is slow and challenging. The overall management of headwaters must change and fit regional needs and unique conditions. Recently, the Agency further developed a first-ever watershed-level valuation of ecosystem goods and services to support the implementation of the PWP. The anticipated utility of this new information is to facilitate state and federal policy changes and develop innovative funding mechanisms that are durable and equitable for maintaining healthy forests and rural communities.

Overly dense forests reduce water yield and increase wildfire risks to the communities and critical infrastructure. Approved forest treatments need to be at an increased pace to prevent additional catastrophic wildfire events, especially in the Georgetown-Quintette area.



3.6 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 has limited water quality impacts in most of El Dorado County, and runoff tends to occur along transportation corridors. Urban stormwater runoff is the largest source of pollution in Lake Tahoe. Stormwater discharges are regulated through 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 a high presence of mercury, aluminum, manganese, Escherichia 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 cities of Placerville and South Lake Tahoe are areas where this risk exists.

Recent changes in state water management policy present an opportunity to treat stormwater as a source of water that can be leveraged for reliability purposes, in particular, for groundwater recharge. In the Tahoe Basin, groundwater recharge from stormwater occurs naturally to serve as a reliable water supply, but the West Slope is sitting on a fractured rock formation with no significant groundwater capacity to realize such a benefit. Stormwater resource planning requires customization for these local conditions, as reflected in the stormwater resource plans for the West Slope and Tahoe-Sierra Region which recognize stormwater as an additional water resource that will require continued efforts for implementation.

3.7 Vulnerability to Flooding

El Dorado County is not completely immune from flood risks being located in a headwater setting with steep terrains. There is a fragmented presence of the 500-year floodplain in El Dorado County as delineated by Federal Emergency Management Agency. This floodplain is designated as a Moderate Flood Hazard Area, meaning that the areas are not in immediate danger from floods caused by overflowing rivers or hard rains but are still at risk of flooding. The floodplain closely follows some of the West Slope local rivers and streams, Tahoe Basin tributaries, and Lake Tahoe itself.

The combination of West Slope hydrology, soils, and land-surface slopes means that it generally experiences infrequent and localized flooding. Chronic drainage problems and resulting occasional flooding have occurred in low-lying areas of established communities. Runoff that is discharged into local creeks and tributaries can also be constrained by culverts

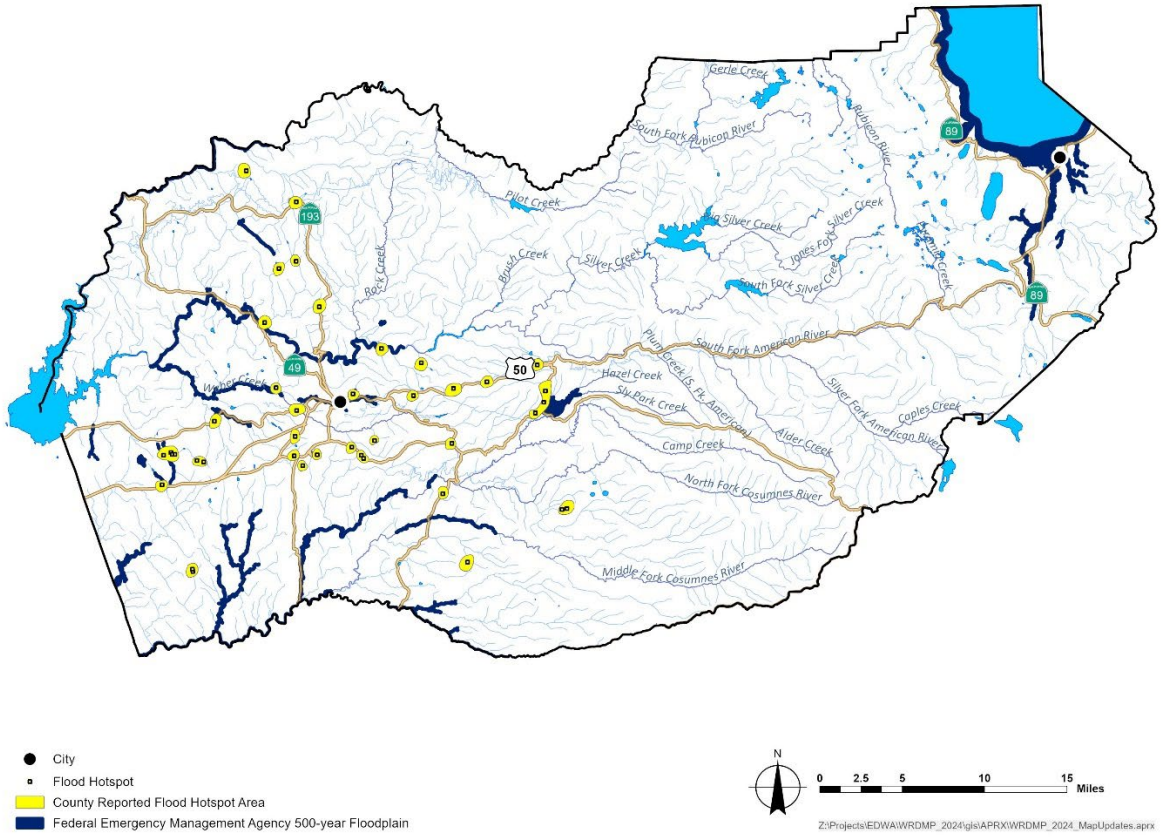
that are undersized or are blocked with debris and sediment, which intensify that flooding. The increase in rainfall intensity under climate change could overwhelm aged system designs in some communities. More than 10 atmospheric river events in series impacted California in early 2023 created major flooding in many neighborhoods.

Flooding reported in the Tahoe Basin is mostly from rainfall on snow events. Residential areas and roads plowed for snow removal are likely to experience flooding during rain events when runoff cannot infiltrate through the snow layer or the impermeable plowed surfaces.

.

Most flooding is localized, and hotspots are often related to capacity conveyance concerns in the West Slope. In the Tahoe Basin any flooding generally results from rain on snow events.

Pending County update on hot spot information, and additional information for the Tahoe Basin.



Section 4 – Resource Management Strategies

[Note to reviewers: This section does not require review and will be further developed for discussion in the 9/4 PAG meeting. The section contains only early compilation of 2019 WRDMP and 2023 PWP RMS and management actions. This is retained in this draft for awareness only.]

Achieving the vision in the County General Plan requires an integrated approach and comprehensive strategies that accommodate continual changes in climate variability, regulatory environment, and progress made in various mitigation and adaptation actions. For an issue as vexing as water management, there is not a 1-to-1 relationship between a challenge and a management strategy or action. Although partnerships with other regional/state/federal agencies cannot be overemphasized for successful implementation, we, as resource managers in El Dorado County must take the initiative.

Broad Resource Management Strategies (RMS) have been developed to help address identified water resource-related challenges described in Section 3. Each RMS represents *what* needs to be done on a broad, strategic level as well as *who* is (or are) primarily responsible for making it a reality. Correspondingly, the Agency has different roles and responsibilities. The Agency's role may be to lead, facilitate, or support an RMS, or some combination of those roles with specific emphases and focused outcomes, consistent with its authority and the principles of engagement (described in Section 1).

Water Resources Management Challenges in El Dorado County (Baseball Chart)

4.1 RMS1 – Secure Surface Water Supply Entitlements

At its core, water supply planning is about looking at all aspects of available water sources (yield, reliability, quality, infrastructure, cost, etc.). The basis for a surface water supply includes water rights and contract entitlements, and such a supply is subject to increasing hydrologic variability and regulatory constraints. Protecting existing water rights and contract entitlements from further reductions in reliability is as important as securing pending and planned water rights and contract entitlements – planning for robust economic development cannot leverage what does not yet exist. The Agency

has secured the long-waited Public Law 101- 514 (Fazio) CVP Water Supply Contract in 2019 and continued to pursue additional area-of-origin water rights and facilities as climate adaptation strategies.

RMS Actions	West Slope	Tahoe Basin	Principal Implementing Agencies	Agency's Role(s)
~~1a. Secure CVP long-term water service contracts with Reclamation~~	~~X~~		~~EDWA, EID, GDPUD~~	~~L – Complete contract negotiation and execution for 15-TAF CVP (Fazio) Water Service Contract, and in coordination with water purveyors and regional partners, lead the development of additional plan and actions for full utilization~~ ~~S – Support water purveyors and regional partners in engagement with Reclamation and federal advocacy~~
1b. Secure water rights for projected needs	X	X	EDWA, EID, GDPUD, GFCSD, STPUD, TCPUD	**L** – Acquire 40-TAF water right and integrate with use of Sacramento Municipal Utility District storage agreement, and other opportunities that could contribute to long-term water supply reliability **S** – Support water purveyors in water right proceedings (e.g. surface water and groundwater rights) and advocacy
1c. Develop water infrastructure to meet projected needs	X	X	City of Placerville, EDWA, EID, GDPUD, GFCSD, STPUD, TCPUD	**L** – Represent OCA in water supply and infrastructure planning **F** – Coordinate with water purveyors on water supply needs, to improve overall countywide infrastructure planning and Agency's actions
1d. Manage and leverage Sacramento Municipal Utility District storage agreement	X		EDWA	**L** – Administrate and manage the El Dorado Sacramento Municipal Utility District Agreement for countywide benefits, and in coordination with water purveyors, lead the development of the plan and actions for full utilization **L** – Develop management strategies for strategic use in coordination with water purveyors and other potential water users
1e. Develop operational agreements as needed for flexible use of water supply entitlements	X	X	City of Placerville, EDWA, EID, GDPUD, GFCSD, STPUD, TCPUD	**L** – Develop additional agreements with water purveyors and regional partners for use of Fazio contract and EDWA's water rights, when acquired **F** – Coordinate with water purveyors on compatible strategy for water use
1f. Determine water purveyors for OCA	X	X	County, EDWA, El Dorado County LAFCO	**L** – Develop work plan and actions for the determination in collaboration with County, and coordinate with El Dorado County LAFCO for approval process

4.2 RMS2 – Develop and Implement Demand Management

Water is a precious resource, and it supports multiple beneficial uses directly and indirectly, both in El Dorado County and beyond. Responsible use of this limited resource is a shared duty of all Californians. A comprehensive approach to efficient M&I and agricultural uses is important to align with the statewide implementation of long-term water conservation

policies. At the same time, local implementation of conservation policies should account for El Dorado County's unique conditions, availability of supplemental water, and complementary needs and planning for emergencies (e.g., severe droughts and wildfires).

RMS Actions	West Slope	Tahoe Basin	Principal Implementing Agencies	Agency's Role(s)
2a. Review and update demands by incorporating regulatory changes and best management practices	X	X	City of Placerville, County, EDWA, EID, GDPUD, GFCSD, STPUD, TCPUD	**L** – Update West Slope agricultural and M&I demands consistent with the County General Plan **F** – Coordinate the development of agricultural and M&I demands (including seasonal demands due to transient visitors) consistent with TRPA's Tahoe Regional Plan for the Tahoe Basin **S** – Support communications, information sharing and advocacy efforts
2b. Engage in the development of statewide long-term conservation policies, regulations, and legislation to ensure applicability in foothill and forested/ mountain communities and related to preservation of countywide interests	X	X	City of Placerville, County, EDWA, EID, GDPUD, GFCSD, STPUD, TCPUD	**L** – Participate in and contribute to the development of state policy, regulation, and legislation **F** – Coordinate consistent messages and approach amongst water purveyors **S** – Support communications, information sharing and advocacy efforts

4.3 RMS3 – Implement Sustainable Groundwater Management

SGMA defines sustainable groundwater management as the management of groundwater supplies in a manner that can be maintained during the planning and implementation horizon without causing undesirable results. Although groundwater is primarily used in the South Tahoe Basin and is limited in other parts of
El Dorado County, the principles of sustainable groundwater management apply everywhere it is used, and that is the focus of this strategy. For this strategy, the Agency has an oversight role in the West Slope (outside the STPUD service area) but has a less prominent role in the Tahoe Basin.

RMS Actions	West Slope	Tahoe Basin	Principal Implementing Agencies	Agency's Role(s)
3a. Implement sustainable groundwater management consistent with the SGMA for major groundwater basins		X	EDWA, STPUD	**F** – Coordinate development and implementation of the Tahoe Valley South Basin Groundwater Sustainability Plan, working with STPUD as the Groundwater Sustainability Agency in that basin **S** – Support communications, information sharing and advocacy efforts
3b. Engage in the development of statewide sustainable groundwater management policies, regulations, and legislation related to the preservation of El Dorado County interests	X	X	County, EDWA, STPUD	**F** – Coordinate consistent messages and engagement approach with STPUD and other groundwater users in El Dorado County **S** – Support communications, information sharing and advocacy efforts
3c. Improve understanding of conditions and use of localized and shallow groundwater resources outside of the major groundwater basins	X	X	County, EDWA	**L** – Explore data sufficiency and adequacy in coordination with the County for groundwater monitoring and condition assessment and coordinate efforts for improving understanding as appropriate **F** – Integrate data and information for countywide coverage and assessment needs **S** – Support communications, information sharing and advocacy efforts
3d. Improve understanding of level of public health concerns associated with private wells that are not subject to regulations	X	X	County, EDWA	**F** – Explore data collection in terms of use, water level and water quality in coordination with the County to improve understanding and identify potential needs for assistance **S** – Support communications, information sharing, and advocacy efforts

4.4 RMS4 – Increase Water Reuse

Where possible, water reuse should be considered. In the long run, use of recycled water (water reuse) can be separated into two categories – *potable reuse* (recycled water used to augment drinking water supplies and includes both indirect and direct uses) and *non-potable reuse* (all recycled or reclaimed water applications except those related to water supply augmentation and drinking water). Currently, non-potable reuse in El Dorado County is mostly landscape irrigation and limited agricultural use. In the Tahoe Basin, both the terrain and regulatory requirements for discharge pushing the use of regional facility outside of the service area (e.g., TCPUD) or exporting recycled water to neighboring county (e.g., STPUD)

RMS Actions	West Slope	Tahoe Basin	Principal Implementing Agencies	Agency's Role(s)
4a. Explore potential for and implement potable reuse of treated wastewater	X	X	City of Placerville, County, EID, STPUD	**S** – Support communications, information sharing and advocacy efforts **S** – Support state and federal grant applications (where appropriate)
4b. Increase non-potable reuse of treated wastewater onsite	X		City of Placerville, County, EID	**S** – Support communications, information sharing and advocacy efforts **S** – Support state and federal grant applications (where appropriate)
4c. Increase non-potable reuse of treated wastewater for instream flow augmentation		X	STPUD	**S** – Support communications, information sharing and advocacy efforts **S** – Support state and federal grant applications (where appropriate)
4d. Encourage greywater reuse and rainfall harvest practices on household and individual facility level	X	X	City of Placerville, County, EID, GDPUD, GFCSD, STPUD, TCPUD	**S** – Support communications, public information sharing and advocacy efforts **S** – Support state and federal grant applications (where appropriate)

4.5 RMS5 – Secure Water Infrastructure

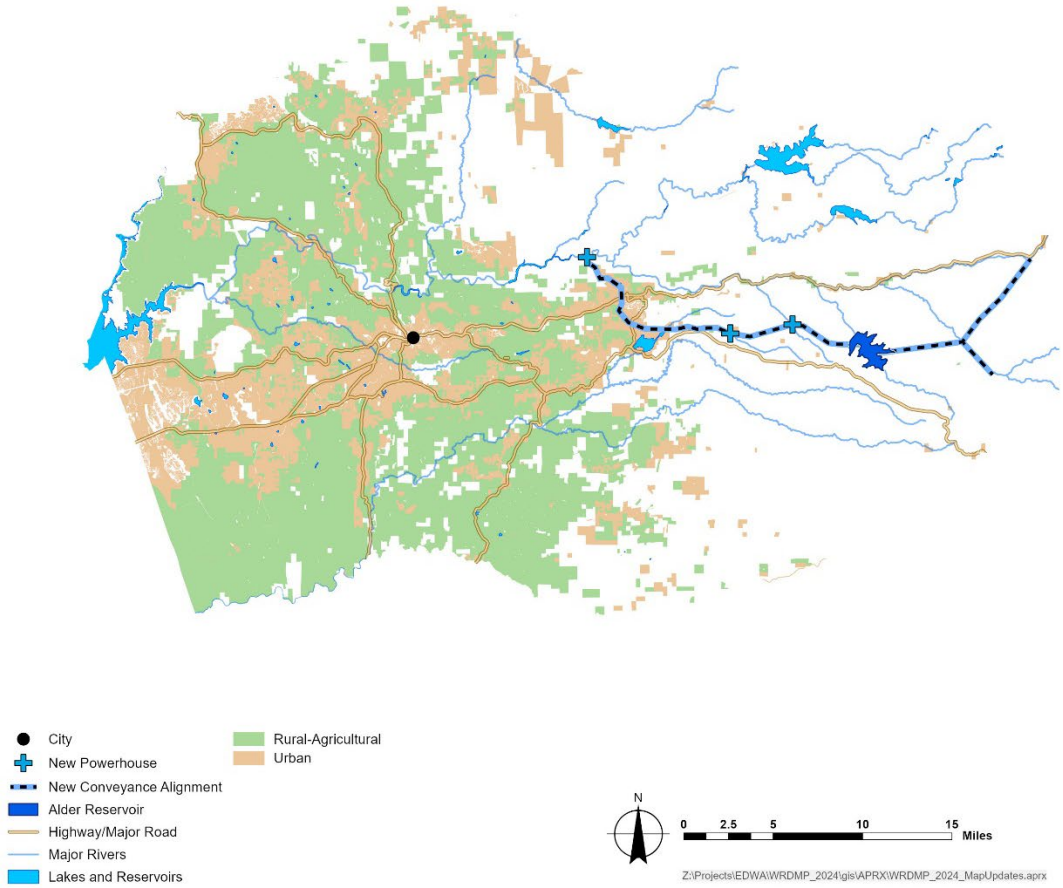
The lifespan of any infrastructure is finite, and the consequences of neglected infrastructure can be expensive, wasteful, and harmful. Owners of existing water infrastructure in El Dorado County must responsibly continue their ongoing operations, maintenance, repair, and rehabilitation to ensure that facilities are working properly, are safe, are free from contaminants, and are cleared of nearby hazards. New infrastructure that augments water supply reliability and flexibility and reduces risks to water supply and quality should also be investigated and developed (where appropriate).

RMS Actions	West Slope	Tahoe Basin	Principal Implementing Agencies	Agency's Role(s)
5a. Ensure water infrastructure integrity, operations, and maintenance through agency-specific Capital Improvement Programs	X	X	City of Placerville, EID, GDPUD, GFCSD, STPUD, TCPUD	**S** – Support communication, information sharing and advocacy efforts **S** – Support state and federal grant applications (where appropriate)

5b. Develop new high elevation storage to replace lost snowpack and increase water supply reliability	**X**		County, City of Placerville, EDWA, EID, GFCSD	**L** – Develop Congressionally-authorized Alder Creek Water Storage and Conservation Project with Reclamation for countywide and regional benefits
5c. Reduce vulnerability of water infrastructure to large-scale wildfires	**X**	**X**	City of Placerville, EID, GDPUD, GFCSD, STPUD, TCPUD	**F** – Compile and synthesize wildfire risk information and develop a list of at-risk water infrastructure in coordination with facility owners **S** – Support communications, public information sharing and advocacy efforts **S** – Support state and federal grant applications (where appropriate)
5d. Update emergency response and communication plan regularly to maintain current, including consideration of wildfire and potentially extended power shutoff under threat	**X**	**X**	City of Placerville, EID, GDPUD, GFCSD, STPUD, TCPUD	**S** – Support communications, information sharing and advocacy efforts

---

The high-elevation, off-string Alder Creek Storage and Conservation project is a climate adaptation for the vulnerable headwater communities under climate change with diminishing snowpack. Conceptually, it provides a needed upstream storage of 168,000 acre-feet (18 percent of Folsom Lake) to provide water supply, hydropower, flood risk reduction, and other broad benefits through enhanced Reclamation's operational flexibility of Folsom Reservoir as part of the CVP. The Agency is in discussion with Reclamation for further study.



4.6 RMS6 – Manage Stormwater as a Resource

No longer perceived as a hazard, stormwater is a recognized alternative source of water in the context of integrated water management. Stormwater Resource Plans for the West Slope and Tahoe-Sierra Region were developed as the beginning of this new approach in El Dorado County, thereby providing eligibility for future state financial assistance. Implementation of this new approach requires additional organizational and budgetary support.

RMS Actions	West Slope	Tahoe Basin	Principal Implementing Agencies	Agency's Role(s)
6a. Update Stormwater Resource Plans	X	X	City of Placerville, City of South Lake Tahoe, County, Tahoe Resource Conservation District, ED/PC, EDWA, Auburn	**L** – Update West Slope Stormwater Resource Plan and provide program management support with implementing agencies **F** – Coordinate with implementing agencies on the update of the Tahoe-Sierra Region Stormwater Resource Plan **S** – Support communications, information sharing and advocacy efforts **S** – Support state and federal grant applications (where appropriate)
6b. Implement water quality control measures and best management practices to address runoff from highways, streets, and other priority impervious areas	X	X	City of Placerville, City of South Lake Tahoe, County, EDWA, CSD(WQ)	**S** – Support communications, information sharing and advocacy efforts
6c. Implement Stormwater Management Plan (now also as part of the stormwater resource plan), and implement California Municipal Separate Storm Sewer Systems Permits – Phase I (Tahoe Basin) and Phase II (West Slope)	X	X	City of Placerville, City of South Lake Tahoe, County	**S** – Support communications, information sharing and advocacy efforts

4.7 RMS7 – Improve Drought Preparedness and Responses

California is drought-prone, and climate change may further increase the frequency, duration, and intensity of future droughts. Small public water systems and rural communities in El Dorado County are particularly vulnerable during extended droughts. Recurring situation assessments and improvements are critical to ensure all residents in El Dorado

County have adequate water supplies and to preserve options for leveraging available state and federal assistance when necessary.

RMS Actions	West Slope	Tahoe Basin	Principal Implementing Agencies	Agency's Role(s)
7a. Expand current agency-specific drought plans to address drought planning requirements specified in Assembly Bill 1668/Senate Bill 606	X	X	County, EDWA, EID, GDPUD, GFCSD, STPUD, TCPUD	**L** – Develop and update plan for the Other County Area (as necessary) **F** – Coordinate consistency of drought planning efforts in El Dorado County **S** – Support communications, information sharing and advocacy efforts
7b. Include droughts as a hazard in El Dorado County's Multi-Jurisdictional Hazard Mitigation Plan for emergency response coordination and potential future FEMA assistance	X	X	County	**F** – Coordinate plan development with the County's Long Range Planning department **S** – Support communications, information sharing and advocacy efforts
7c. Conduct vulnerability assessments for small water systems and rural communities	X	X	County, EDWA	**L** – Develop vulnerability assessments **S** – Support communication, information sharing and advocacy efforts
7d. Develop countywide plan for addressing drought vulnerability for small public water systems and rural communities	X	X	County, EDWA	**L** – Develop countywide plan **S** – Support communications, information sharing and advocacy efforts
7e. Develop West Slope Regional Drought Contingency Plan to coordinate and align all drought plans in the West Slope	X		County, EDWA, EID	**L** – Develop West Slope Regional Drought Contingency Plan per Reclamation's WaterSMART Program guidance and requirements

4.8 RMS8 – Ensure All Residents Have Water Accessibility and Affordable Water

California leads the nation in recognizing the human right to water. As stated in California Water Code Section 106.3, it is "…the established policy of the state that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes." The legislative intent is consistent with the water management policy in El Dorado County, as reflected in the Agency's mission statement. To protect residents and foster economic development in El Dorado County, it is essential that sufficient, safe, acceptable, physically accessible, and

affordable water be available for personal and household uses, requiring collaboration of many departments and agencies.

It is also recognized that the provisions in Proposition 218 of 1996 prohibit public water agencies from providing a subsidized rate for low-income households, creating a significant obstacle to water accessibility and affordability. However, it is possible for water purveyors (e.g., STPUD) to provide assistance using an alternative revenue source. At the state level, implementation details are currently under development, so it is critical to understand needs throughout El Dorado County and continue working with state agencies and other communities to formulate adequate implementation strategies and protocols.

RMS Actions	West Slope	Tahoe Basin	Principal Implementing Agencies	Agency's Role(s)
8a. Assess challenges in water accessibility and affordability in El Dorado County (Human Right to Water, California Water Code Section 106.3)	X	X	City of Placerville, County, EID, GDPUD, GFCSD, STPUD, TCPUD	**F** – Coordinate with County to conduct situation assessment **S** – Support communications, information sharing and advocacy efforts
8b. Participate in statewide efforts to develop policy, regulations, and legislation related to water affordability that is workable for specific communities	X	X	City of Placerville, County, EDWA, EID, GDPUD, GFCSD, STPUD, TCPUD	**L** – Represent OCA **F** – Coordinate with purveyors as cooperating party to improve affordability and accessibility **S** – Support communications, information sharing and advocacy efforts

4.9 RMS9 – Improve Watershed Management for Water Resource-Related Benefits

Successful watershed management integrates and coordinates activities that affect a watershed's natural resources and water quality in a comprehensive manner. It requires the expertise, authorities, engagement, and actions of multiple agencies and organizations involved in land use, water management, and related efforts, meaning that no one entity can accomplish it alone. Watershed management is broad in both scope and geographic coverage. Many watershed management actions have direct (or indirect) effects on water availability and quality; however, while both the County and the Agency will advise and assist with broad watershed management, many state and federal agencies are ultimately

responsible for forest and headwater health. As such, collaboration and observation roles and responsibilities are important in implementation of watershed management.

RMS 9.1 - Develop Data and Tools for Improved Watershed Understanding, Knowledge Sharing, and Transparency

RMS Actions	West Slope	Tahoe Basin	Principal Implementing Agencies	Agency's Role(s)
9.1a. Improve hydrological and meteorological data acquisition to support planning needs and improve forecasting.	X		DWR, EDWA, GDPUD, EID, RCD, SWB, SMUD, SAFCA, PCWA	L – Upgrade the American River Basin Hydrologic Observatory wireless sensor network in collaboration with DWR, Reclamation, and UC Merced. F – Coordinate with SAFCA on watershed-scale forecast-informed reservoir operation for improving skills in storm forecast, runoff prediction and operation. See RMS11e. S – Support communications, information sharing and advocacy efforts; Support state and federal grant applications (where appropriate)
9.1b. Develop and synthesize the potential economic values of ecosystem goods and services in the upper American River watershed to help properly characterize the value of the watershed.	X		EDWA, ED/PC, RCD, USFS, BLM, FB, FSC, EID, PCWA, GFCSD, GDPUD, Tribes	L – Coordinating with implementing agencies to develop a valuation study for watershed ecosystem goods and services S – Support communications, information sharing and advocacy efforts
9.1c. Develop and maintain a common platform that is publicly accessible for sharing water resource-related data and analytical tools, to avoid duplicate investments in their development and promote transparency.	X		EDWA, EDC, RCD, ARC	L – Coordinating with implementing agencies and in collaboration with County to develop a common platform for water resource-related data and information sharing. S – Support communications, information sharing and advocacy efforts
9.1d. Assess the impacts of recent wildfires on ecosystem goods and services, including water supply, flood, water quality (including sedimentation), power generation, and outdoor recreation.	X		EDWA, County, RCD, USFS, BLM, FB, FSC, EID, PCWA, GFCSD, GDPUD, ARC, Tribes	L – Collaborate with implementation agencies to conduct impact assessment and identify potential remedial actions. S – Support communications, information sharing and advocacy efforts See RMS9.1a.
9.1e. Develop a cultural heritage management strategy in collaboration with Tribes, including protocols for collaboration and consultation.	X		ED/PC, Tribes, EDWA, PCWA	

RMS Actions	West Slope	Tahoe Basin	Principal Implementing Agencies	Agency's Role(s)
9.1f. Inventory upper American River watershed forests for vegetation types and other attributes to support wildfire mitigation efforts.	X		USFS, RCD, ED/PC, ARC	F – Coordinate with Shingle Springs Band of Miwok Indians, County and other local, state, and federal agencies, practitioners and professionals to develop a cultural heritage management strategy.
9.1g. Inventory upper American River watershed headwater meadows.	X		USFS, County, RCD, ARC, SMP	

RMS 9.2 - Implement Sustainable Forest Management

RMS Actions	West Slope	Tahoe Basin	Principal Implementing Agencies	Agency's Role(s)
9.2a. Inventory and assess the health of upper American River watershed forests, including the existing and planned levels of treatment for hazard reduction.			USFS, RCD, ED/PC, ARC, SOFAR, FSC	F – Coordinate with implementing agencies to compile watershed-specific information and fire hazard mitigation strategy. S – Support communications, information sharing and advocacy efforts
9.2b. Develop a regional post-fire forest restoration plan that promotes consistent management practices to support long-term forest health and public safety and cross-connects lands managed by federal agencies, local agencies, and private entities.			ED/PC, USFS, RCD, EID, SMUD, PCWA, BLM, SPI, FSC	F – Coordinate with implementing agencies for plan development and implementation S – Support communications, information sharing and advocacy efforts; Support state and federal grant applications (where appropriate)
9.2c. Develop a watershed-level forest management strategy that is consistent with the National Cohesive Strategy and promotes consistent management practices for long-term forest health and public safety and cross-connects lands managed by federal agencies, local agencies, and private entities.			ED/PC, USFS, RCD, EID, SMUD, PCWA, BLM, SPI, FSC	F – Coordinate with implementing agencies for strategy development and implementation, including funding strategy S – Support communications, information sharing and advocacy efforts; Support state and federal grant applications (where appropriate) See RMS12c.
9.2d. Expand options for using and disposing of woody biomass.			ED/PC, GDPUD, GFCSD, PCWA	S – Collaborate with implementation agencies and stakeholders to explore options including incentives for biomass energy productions, coordination with logging companies, and other creative solutions and advocacy efforts. S – Support communications, information sharing and advocacy efforts

9.2e. Collaborate with resource management agencies, power utilities, water purveyors, and interested parties to promote sustainable forest management strategies that provide long-term benefits to water supply, infrastructure, biodiversity, and ecosystem functions.			ARC, USFS, CAL FIRE, SNC, ED/PC, SPI, PG&E, PCWA, SMUD, EID, GDPUD, GFCSD, RCD, SOFAR	

RMS 9.3 - Implement Multi-benefit Watershed Protection and Restoration Projects

RMS Actions	West Slope	Tahoe Basin	Principal Implementing Agencies	Agency's Role(s)
9.3a. Improve vegetation management with livestock grazing.			ED/PC, EDWA, ARC, NRCS, UCCE	L – Coordinate with the US Department of the Interior, Bureau of Reclamation and California Department of Parks and Recreation to develop a pilot vegetation management project using grazing. S – Support communications, information sharing and advocacy efforts
9.3b. Implement invasive species management.			WMG	S – Support communications and information sharing efforts
9.3c. Assess the health of upper American River watershed headwater meadows using the inventory from RMS9.1g.			RCD, SMP, ARC, ED/PC	F – Coordinate with implementing agencies and Sierra Meadows Partnership to compile watershed-specific information and restoration strategy. S – Support communications, information sharing and advocacy efforts
9.3d. Implement headwater meadow restoration to improve water retention for water supply and flood risk reduction, water quality, and other ecosystem functions, including outdoor recreation.			RCD, USFS, NGO, ARC, ED/PC, CABY	S – Support communications, information sharing and advocacy efforts; Support state and federal grant applications (where appropriate) See RMS11e.

9.3e. Develop an agricultural economy consistent with the ED/PC General Plans and working landscape principles to realize its potential for applicable ecosystem goods and services.			ED/PC, EDWA, FB	F – Coordinate with County, agricultural interests, Farm Bureau for economic development planning and implementation. S – Support communications, information sharing and advocacy efforts; Support state and federal grant applications (where appropriate) See RMS1, RMS2, RMS5, and RMS13b.
9.3f. Implement water resource-related infrastructure development and modifications, incorporating considerations to promote co-benefits from compatible ecosystem goods and services and increased flexibility in public financing for implementation.			ED/PC, EDWA, EID, GDPUD, PCWA	S – Support communications, information sharing and advocacy efforts; Support state and federal grant applications (where appropriate) See RMS5, RMS6, RMS7, and RMS11.
9.3g. Establish conservation easements and preservation with willing landowners that promote co-benefits from compatible ecosystem goods and services.			ED/PC, NGO, ARC, RCD	S – Support communications, information sharing and advocacy efforts; Support state and federal grant applications (where appropriate)
9.3h. Conduct research on alternatives and options for disposing short-lived climate pollutants (e.g., organic food waste) without redirecting impacts on environment or local economy.			ED/PC, NGO	

4.10 RMS10 – Prevent Contamination of Surface Water and Groundwater Resources

Overall, El Dorado County's surface water and groundwater are of good quality. But it is critically important to maintain the water quality we currently enjoy. Contamination of water supplies – either surface water or groundwater – can have dire consequences. Contamination can restrict potable uses, exacerbate the existing supply-demand imbalance, be expensive to remediate, have negative effects on the environment, and impact agriculture and recreation thereby endangering economic prosperity in the long run.

RMS Actions	West Slope	Tahoe Basin	Principal Implementing Agencies	Agency's Role(s)

10a. Apply advanced technologies for water quality monitoring (surface water and groundwater), including remote sensing, for areas susceptible to water quality problems	X	X	County, EID, El Dorado County Agricultural Water Quality Management Corporation	**F** – Facilitate innovation and pilot for advanced technology
10b. Implement Sewage System Management Plans in coordination with system owners including emergency response protocols and vulnerability assessment	X	X	City of Placerville, County, EID, GDPUD, STPUD, TCPUD	**F** – Coordinate with the County and water purveyors to identify vulnerable sewage lines with high risk of contaminating surface water or groundwater resources **S** – Support communications, information sharing and advocacy efforts
10c. Implement the Nutrient Management Plan for agricultural practice to reduce the risk of long-term effects on the quality of surface water and groundwater resources	X	X	County	**F** – Coordinate with the County to evaluate the monitoring of data available and synthesize the data for public access and information sharing **S** – Support communications, information sharing and advocacy efforts **S** – Support grant applications for monitoring and best management practices implementation (where appropriate)
10d. Implement County Local Agency Management Plan for Onsite Wastewater Treatment Systems, including enforcement on guidelines for approval and repairs	X	X	County	**F** – Coordinate with the County to evaluate the monitoring of data available and synthesize the data for public access and information sharing **S** – Support communications, information sharing and advocacy efforts
10e. Conduct public outreach and education activities to encourage prevention of water supply contamination	X	X	City of Placerville, County, EID, GDPUD, GFCSD, STPUD, TCPUD	**S** – Support communications, information sharing and advocacy efforts
10f. Inspection of permitted septic tank systems in the Auburn Lake Trails Wastewater Zone	X		GDPUD	Not applicable

4.11 RMS11 – Reduce the Risk of Flooding in Communities

Historically, most flooding in El Dorado County has been localized due to the terrain and headwater location, or as a result of rainfall on snow. However, climate change may result in more extreme flooding conditions, with expanded areas of impact and increased severity as well as potential effects on critical infrastructure (including major water facilities). Continued flood management efforts are critical for local communities and may produce additional benefits to downstream communities outside of El Dorado County.

RMS Actions	West Slope	Tahoe Basin	Principal Implementing Agencies	Agency's Role(s)
11a. Update potential risks of flooding and infrastructure vulnerability	X	X	City of Placerville, City of South Lake Tahoe, County, EID, GDPUD, GFCSD, STPUD, TCPUD, CSD(Flood), Auburn, PCWA	F - Collaborate with implementing agencies in risk and vulnerability assessments F – Communicate flood risks in coordination with the County and City of Placerville and City of South Lake Tahoe F – Develop and maintain coordination with facility owners, and an inventory of water infrastructure that is vulnerable to flooding S – Support communication, information sharing and advocacy efforts
11b. Develop and implement flood risk reduction projects to reduce localized and neighborhood flooding	X	X	City of Placerville, City of South Lake Tahoe, County, CSD(Flood)	**F** – Collaborate with the implementing agencies in developing and implementing flood risk reduction projects **S** – Support state and federal grant applications (where appropriate) **S** – Support communications, information sharing and advocacy efforts – See RMS6a for relevant actions
11c. Improve implementation of residual flood risk mitigation actions including participation of the National Flood Insurance Program and voluntary use of flood resistant materials and other California Building Code requirements as appropriate	X	X	City of Placerville, City of South Lake Tahoe, County	**S** – Support communications, information sharing and advocacy efforts
11d. Incorporate the effects of climate change in the frequency and intensity of flood-causing storm events in facility planning (siting and design) for long-term sustainability	X	X	County, EID, GDPUD, GFCSD, STPUD, TCPUD, CSD (Flood)	**S** – Support state and federal grant applications (where appropriate) **S** – Support communications, information sharing and advocacy efforts
11e. . Develop strategies and collaborate to combine nature-based solutions in the upper American River watershed to reduce expenditure, facilitate additional flexibility of pooled funding use, and prolong the effectiveness of hard infrastructure investment and operational changes for flood risk reduction in the greater Sacramento metropolitan area.			EDWA, ARC, RCD, SAFCA, PCWA, SMUD	

4.12 RMS 12 – Promote Fire-Adapted Communities

The upper American River watershed is in very high or high FHSZ as delineated by CAL FIRE. The ongoing revision is not expected to have major changes in these classifications. Devastating wildfires in recent years have caused widespread damage to homes, businesses and infrastructure, while also impact ecosystem health. Promoting fire-adapted communities through fuel reduction projects, creating defensible space, and educating the public can help reduce the risk of future wildfires and the damage they cause.

RMS Actions	West Slope	Tahoe Basin	Principal Implementing Agencies	Agency's Role(s)
12a. Update the County and City General Plan's Safety Element to protect communities from unreasonable risks of hazards including wildfire and associated considerations of safe egress route requirements and building code amendments for home fire hardening.			ED[1]/PC, Placerville, Auburn	S – Collaborate with County in developing updates for protecting communities from unreasonable risks of water resource-related hazards S – Support communications, information sharing and advocacy efforts.
12b. Update and enforce vegetation management and defensible space ordinances, including coordination with Cal Fire in prioritizing County Focus Area inspection.			ED[2]/PC	S – Support communications, information sharing and advocacy efforts.
12c. Update the requirements for building permits to include the acknowledgement by owner(s) of being located in Cal Fire high and very high fire hazard severity zones, and for deed recording to provide sufficient evidence for meeting fire disclosure requirement by real property seller(s) and Home Owner Association for common areas if applicable per AB 38 of 2019.			ED/PC, Placerville, Auburn	S – Support communications, information sharing and advocacy efforts.

RMS Actions	West Slope	Tahoe Basin	Principal Implementing Agencies	Agency's Role(s)
12d. Develop the countywide community wildfire protection plan includes assessment of fire protection needs of communities within the Urban Wildland Interface in coordination with Fire Safe Councils and associated implementation plan including financing plan and funding acquisition assistance.			ED/PC, FSC, USFS, BLM, Tribes	F – Coordinate with federal and state agencies to support EDC OWPR and FSC in the assessment and funding acquisition S – Support communications, information sharing and advocacy efforts.
12e. Develop public education campaign by leveraging FSC and similar channels to improve wildfire preparedness and resident awareness for relevant law and regulations and best management practices, and facilitate community-specific wildfire emergency preparedness and response plans.			ED/PC, FSC	S – Support communications, information sharing and advocacy efforts.

4.13 RMS13 – Increase Capacity for Sustainable Management and Resilience to Major Disasters

Many resources are needed to implement the RMS identified for the upper American River watershed. These resources include adequate partner institutional and financial capacity, as well as commercial capacity, and a local workforce that can meet the needs of watershed management projects and activities.

RMS Actions	West Slope	Tahoe Basin	Principal Implementing Agencies	Agency's Role(s)
13a. Coordinate with counties, economic development interests, and the California Community College to develop workforce needs, curriculums, and programs to foster local workforce growth to support long-term sustainable watershed management.			ED/PC, EDWA, PCWA, USFS, BLM	F – Coordinate with implementing agencies to identify gaps to support long-term sustainability and resilience to major disasters. S - Support communications, information sharing and advocacy efforts

13b. Perform a regional transportation needs assessment to support agricultural development consistent with the ED/PC General Plans that incorporates working landscapes, improves outdoor recreation access, expands broadband availability in rural-agricultural areas, and promotes safe egress of communities during wildfires and other emergencies.	**X**	**X**	ED/PC, FB, TC/PA, SMUD, PCWA	F – Coordinate with implementing agencies for transportation and broadband service plan development. S - Support communications, information sharing and advocacy efforts
13c. Investigate the opportunities to create new, or expand existing, wood-utilization businesses within the watershed in collaboration with state and federal agencies	**X**	**X**	ED/PC, COC	S - Support communications, information sharing and advocacy efforts See RMS9c.
13d. Explore potential alternative funding mechanisms based on the findings from the ecosystem good and service valuation (RMS 9.1b) to support long-term sustainable RMS implementation.	**X**	**X**	ED/PC, EDWA, PCWA, RCD, EID	F – Coordinate with implementing agencies to develop and evaluate options for alternative funding mechanisms. S - Support communications, information sharing and advocacy efforts
13e. Improve wildfire emergency response planning and the shared understanding of the roles and responsibilities of involved agencies and entities; and expand and share tools for wildfire recovery.			ED/PC, EDWA, EID, GDPUD, RCD, Placerville, Auburn, PCWA	
13f. Determine water suppliers for areas within the ED/PC General Plans that are currently outside of service areas of any major water suppliers to ensure water resilience for planned development.			ED/PC, EDWA, PCWA, LAFCo	S – Support EDC OWPR in coordinating with implementation agencies for improvement actions and capture of lessons learned. S – Support communications, information sharing and advocacy efforts.

Section 5 – Implementation

[Note to reviewers: This section does not require review and will be further developed for discussion in the 9/4 PAG meeting. The section contains the five program description and adopted policies and guidance for the Agency's implementation for awareness only.]

Implementation of the WRDMP will be a continual, incremental, and an adaptive process. Some progress on actions has already been made, other actions will be underway or completed before the next update of the WRDMP in 2029, and still others will require more time to develop and implement.

The RMSs and actions identified in Section 4 are wide-ranging, and their implementation will be a shared responsibility between the identified principal implementing agencies, requiring both organization and coordination. The Agency will play a vital role in advancing actions that are consistent with its authorities and priorities, and it will need to develop policies and guidance for its continued involvement, to evaluate progress, and to focus its efforts. This section describes the *how* and the *when* for the Agency's involvement in water resources development and management in El Dorado County in collaboration with other local/regional and federal entities to realize the vision in the County General Plan.

5.1 Implementation Programs

To do its part in furthering the RMSs and actions outlined in the previous section (Section 4), the Agency has created five implementation programs:

- Governance and Partnership
- Water Security
- Watershed Management
- Assistance and Innovation
- Communication and Advocacy

These programs align with the Agency's authorities and are reflective of its levels of engagement in the RMSs and actions. Together, the programs encompass the work required of the Agency.

Governance and Partnership Program

The Governance and Partnership Program focuses on how the Agency will function throughout WRDMP implementation in creating benefits for all El Dorado County. The extent of this program is defined by the Agency's authority in the Act, and it includes the Agency's involvement in advancing RMSs, actions, water sale agreements, coordinated operations, and other water-related efforts. Initial program activities include the strategic formation of a governing body (or authority) for WRDMP implementation and building capacity to support future Agency activities.

Water Security Program

The Water Security Program focuses on the Agency's effort to prepare El Dorado County for an uncertain water future, and it is the most important program for the Agency. It encompasses the Agency's role in the ongoing water supply and demand gap analysis, water supply development, drought protection and response, developing stormwater as a resource, flood management, and water quality. This program is at the center of the Agency's work, requiring the most effort and the greatest financial investment in comparison with other programs.

Watershed Management Program

The Agency has broad authority to engage in water management actions related to water supply, water quality and flood management. It is more likely to take a supporting (rather than leading) role in watershed management and primarily in areas with direct correlations to water management. As such, the Agency's Watershed Management Program involves participating in actions that meaningfully contribute to long-term water supply reliability and water quality protection for El Dorado County, in the areas of headwater management, water quality management for rural and agricultural communities, and habitat and other ecosystem function enhancement.

Assistance and Innovation Program

Innovation is the key to continued improvement of both the understanding and management of water resource-related challenges. Through the Assistance and Innovation Program, the Agency aims to encourage the development and use of innovative ideas in water planning and management, as well as provide technical and educational assistance to other entities involved in RMS and action development and implementation. At present, the Agency's ability to provide direct financial assistance is limited, but it may explore alternative mechanisms that are within its authority.

Communication and Advocacy Program

The intent of the Communication and Advocacy Program is to coordinate efforts throughout El Dorado County so they are more consistent, efficient, and effective. It consists of public information, countywide communications, and federal and state advocacy related to water resource issues and management. This program is crucial to WRDMP implementation, as it fosters coherent and effective messages regarding investments and actions. This program also facilitates consistent Agency engagement in implementation and coordination efforts with other local/regional, state and federal agencies, stakeholders and interested parties.

5.2 Implementation Policies and Guidance

Related to WRDMP implementation, the Agency's Board of Directors (Board) adopted the following policies that affirm the purposes of the WRDMP and associated adaptive management for its long-term implementation.

- Policy WRDMP-01: The WRDMP shall be the countywide water plan to support the realization of the vision established in the County General Plan.
- Policy WRDMP-02: The WRDMP shall include resource management strategies to improve water resources management in El Dorado County, with anticipated economic and public benefits accrued in all communities throughout El Dorado County.
- Policy WRDMP-03: The WRDMP shall identify and prioritize the Agency's implementation actions and priorities consistent with the authority and roles provided by the Act.
- Policy WRDMP-04: The implementation of the WRDMP shall be based on collaborative principles for developing partnership with regional, state, and federal agencies who share resource management responsibilities and cooperate in creating mutual benefits.
- Policy WRDMP-05: The WRDMP shall be updated every 5 years by June 30 in years ending in 4 and 9 to address changed conditions, assess progress of implementation, and realign priorities of the Agency's actions.

The Board also adopted the following guidance for the Agency's implementation of the WRDMP.

- Guidance WRDMP-01: The Agency shall convene a chartered Countywide Plenary for Water (Plenary) to foster collaboration on the water resources development and management in El Dorado County. The Agency shall

convene the Plenary twice per year with representation from, at a minimum, the County's planning department, cities, water purveyors, and other water-resource related resource management entities.

- Guidance WRDMP-02: The Agency shall develop alternative revenue sources to support incentives and innovations to improve countywide water management.
- Guidance WRDMP-03: The Agency shall maximize available state and federal technical and financial assistances in implementation actions, where feasible.
- Guidance WRDMP-04: The Agency shall allocate cost of project development and implementation fairly among beneficiaries.
- Guidance WRDMP-05: The Agency shall leverage significant opportunities for hydropower generation in El Dorado County in its project development, where feasible, as a cost-offset mechanism.
- Guidance WRDMP-06: The Agency shall consider regional and statewide water market transfers in its project development, where appropriate, as a cost-offset mechanism. No water market transfers can result in water supply impacts within El Dorado County.

5.3 Recent Accomplishments (2020–2024 Fiscal Years)

Governance and Partnership Program

-

Water Security Program

-

Watershed Management Program

- .

Assistance and Innovation Program

-

Communications and Advocacy Program

-

5.4 Near-Term Priority Actions (2025-2029 Fiscal Years)

Following adoption of the WRDMP 2024 update, the Agency has prioritized actions under different programs. This list of actions is neither exhaustive nor is it static. The Agency expects that it will need to be flexible, adapting to changing conditions and new developments to ensure adequate water for today and in the future.

Governance and Partnership Program

Water Security Program

Watershed Management Program

Assistance and Innovation Program

Communications and Advocacy Program

Glossary

The following key terms are listed below for easy reference. Where applicable, existing definitions from the statute and regulations are provided.

Adjoining Use — The type of water use (agricultural water use or municipal and industrial water use) that can be allowed by the adopted County General Plan when the primary use for a parcel in the rural-agricultural water use planning zone has been established. Also see the definition of primary use.

Capacity — The buildout capacity for an undetermined point in time when all land use capacity is utilized, as defined in the County General Plan.

Community Services District — A form of independent local government used to provide services in unincorporated areas of a county under the Community Services District Law (Government Code §61000-61850) to provide a wide variety of services including water, wastewater, solid waste, fire protection, and other essential services.

Community Water System — A public water system that serves at least 15 service connections used by yearlong residents or regularly serves at least 25 yearlong residents of the area served by the system, as described in Health and Safety Code §116275(i).

Disadvantaged Community — A community with a median household income less than 80 percent of the statewide average, as described in Public Resources Code §75005(g).

Federal Poverty Level — It is a measure of income used by the U.S. government to determine who is eligible for subsidies, programs, and benefits.

Noncommunity Water System — A public water system that is not a community water system, as described in Health and Safety Code §116275(j).

Non-Potable Reuse — All recycled or reclaimed water applications except those related to water supply augmentation and drinking water.

Nontransient Noncommunity Water System — A public water system that is not a community water system and that regularly serves at least 25 of the same persons over six months per year, as described in Health and Safety Code §116275(k).

Other County Area — Comprised of areas in El Dorado County that fall outside federally-managed land and a water purveyors' service area.

Potable Reuse — Recycled water used to augment drinking water supplies and including both indirect and direct uses.

Primary Use — The type of water use (agricultural water use or municipal and industrial water use) associated with the land use designation of a parcel within the rural-agricultural water use planning zone, allowed by the adopted County General Plan.

Public Utility District — A public utility district is a community-owned, locally-regulated utility authorized to provide electricity, water and sewer services, and wholesale telecommunications. A public utility district may provide one or more of these services, depending on the needs of the community under the Public Utility District Act (Public Utilities Code §15501-18055).

Public Water System — A system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year, as described in Health and Safety Code §116275(h). A public water system includes the following:

(1) Any collection, treatment, storage, and distribution facilities under control of the operator of the system that are used primarily in connection with the system.

(2) Any collection or pretreatment storage facilities not under the control of the operator that are used primarily in connection with the system.

(3) Any water system that treats water on behalf of one or more public water systems for the purpose of rendering it safe for human consumption.

Resource Conservation District — Resource conservation districts are special districts of the state of California, set up to be locally governed agencies with their own locally appointed or elected, independent board of directors to conserve soil

and water, control runoff, prevent and control soil erosion, manage watersheds, protect water quality, and develop water storage and distribution (Public Resources Code §9001-9972). California resource conservation districts implement projects on public and private lands, and educate landowners and the public about resource conservation.

Rural-Agricultural Water Use Planning Zone — A geographic delineation of land that may have both agricultural water use and municipal and industrial water use (including rural domestic water use), allowed by the adopted County General Plan.

Severely Disadvantaged Community — A community with a median household income less than 60 percent of the statewide average, as described in Public Resources Code § 75005(g).

Small Water Supplier — Serves 15 to 2,999 service connections or delivers less than 3,000 acre-feet of water in a year.

State Small Water System — System for the provision of piped water to the public for human consumption that serves at least five, but not more than 14, service connections and does not regularly serve drinking water to more than an average of 25 individuals daily for more than 60 days out of the year, as described in Health and Safety Code §116275(n).

Transient Noncommunity Water System — Noncommunity water system that does not regularly serve at least 25 of the same persons over six months per year, as described in Health and Safety Code §116275(o).

Water Use Planning Zone — A geographic delineation of land that may have a certain type of water use, allowed by the adopted County General Plan. Also see the definitions of the urban water use planning zone and rural-agricultural water use planning zone.

Urban Water Supplier — Means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers, as described in Water Code §10617.

Urban Water Use Planning Zone — A geographic delineation of land that may have only municipal and industrial water use allowed by the adopted County General Plan.

County Drought Resilience Plan. A plan demonstrating the potential drought and water shortage risk and proposed short-term response actions and long-term mitigation actions for state small water systems and domestic wells within a county.

domestic well. A groundwater well used to supply water for the domestic needs of an individual residence or a water system that is not a public water system and that has no more than four service connections, as defined in California Health and Safety Code Section 116681(g) and California Water Code Section 10609.51(k)

local primacy agency. A local health officer that has applied for and received primacy delegation pursuant to California Health and Safety Code Section 116330 (California Health and Safety Code Section 116275(r))

non-transient, non-community water system. Means a public water system that is not a community water system and that regularly serves at least 25 of the same persons over 6 months per year, as defined in Health and Safety Code Section 116275(k). Example of this includes a school (California Water Code Section 10609.51(g)).

rural community. A community with fewer than 15 service connections or regularly serving less than 25 individuals daily at least 60 days out of the year, including domestic wells (California Water Code Section 10609.51(j)). In other words, rural community in this law covers all water systems or domestic wells for human consumption that are not a public water system.

small water supplier. A community water system serving 15 to 2,999 service connections, inclusive, and that provides less than 3,000 acre-feet of water annually (California Water Code Section 10609.51(k)).

state small water system. Provides piped water to the public for human consumption that serves at least 5, but not more than 14, service connections and does not regularly serve drinking water to more than an average of 25 individuals daily for more than 60 days out of the year as defined in California Health and Safety Code Sections 116275(n) and 116681(m), and California Water Code Section 10609.51(m).

Urban Water Management Plan. A plan required per California Water Code Section 10610 et seq. for publicly and privately owned urban water suppliers that provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail or wholesale cost for municipal purposes

vulnerability. The propensity or predisposition to be adversely affected. Such predisposition constitutes an internal characteristic of the affected element, whereas exposure to a hazard is a condition or event to which the affected element (i.e., supplier or community) is subjected. In the field of disaster risk management, this includes the characteristics of a

person or group and their situation that influences their capacity to anticipate, cope with, resist, and recover from the adverse effects of physical events (Wisner et al. 2003).

water shortage. An insufficient quantity of water to meet indoor water uses, such as drinking and sanitation, and other critical water needs, which can be caused by chronic conditions, extreme events, or both. This includes the physical lack of supply coming out of the tap, a problem that can be caused by dry wells or surface water, a regulatory restriction on accessing surface water, or some physical obstruction impeding water supply.

Water Shortage Contingency Plan. A document required per California Water Code Section 10617.5 for publicly and privately owned urban water suppliers that incorporates the provisions detailed in California Water Code Section 106329(a).

risk. Consistent with the Intergovernmental Panel on Climate Change 2012 Special Report (Cardona et al. 2012) and its upcoming Sixth Assessment Report, risk is the combination of vulnerability and the extent of exposure to a hazardous event or conditions, including projected future hazards (IPCC 2017)

county. City and county, as defined in California Water Code Section 14.

2018 Legislation. Senate Bill 606 (Hertzberg) and Assembly Bill 1668 (Friedman) of 2018.

References

IPCC (Intergovernmental Panel on Climate Change). 2017. Chapter Outline of the Working Group II Contribution to the IPCC Sixth Assessment Report (AR6), As Adopted by the Panel at the 46th Session of the IPCC, Montreal, Canada.

Cardona, O., S. Allen, V. Barros, I. Burton, D. Campell-Lendrum, S. Cutter, O. Paulin Dube, K. Ebi, C. Field, J. Handmer, P. Lal, A. Lavell, K. Mach, M. Mastrandrea, G. McBean, R. Mechler, T. Mitchell, N. Nicholls, K. O' Brien, T. Oki, M. Oppenheimer, M. Pelling, G. Plattner, R. Pulwarty, S. Seneviratne, T. Stocker, M. van Aalst, C. Vera, and T. Willbanks. 2012. IPCC Special Report of Working Groups I and II: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (eds Field, C. et al.) 65–108 (Cambridge Univ. Press, 2012). Available online: https://www.ipcc.ch/site/assets/uploads/2018/03/SREX_Full_Report-1.pdf