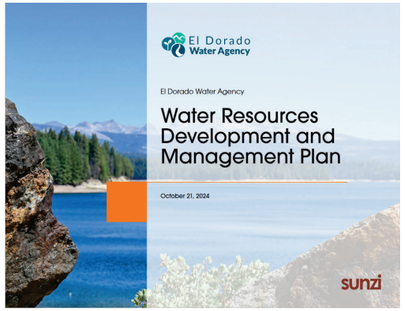
BlueprintTahoe
El Dorado Water Security Initiative

Regional Vulnerabilities and Their Pathways in the El Dorado Tahoe Basin

The detailed review of regional vulnerabilities and their pathways is to establish the foundation for regional planning under the Blueprint Tahoe to achieve water security. The outcome will improve the characterization of El Dorado Water Agency's 2024 Water Resources Development and Management Plan (WRDMP).



The WRDMP includes a summary of water resource related challenges in the West Slope and the Tahoe Basin with consistent categories and assigns the level of concern rating (high, moderate high, moderate low, and low) on categorical level. Blueprint Tahoe will have more refined considerations and corresponding assessments for level of concern, building on the WRDMP summary for the Tahoe Basin. For reference, the WRDMP summary for the Tahoe Basin is shown on the right.

Definitions

Stressor: External events, changes, or conditions influencing Tahoe Basin's water security that are generally beyond our control.

Generally, the stressors are population growth, climate change (natural hazards and more), ecosystem degradation, regulatory intervention (for environmental protection and human health and safety), and change in social values and preferences.

Vulnerability: The regional susceptibility or predisposition of communities, infrastructure, resources, and management to damage, failure, contamination, and disruption facing the stressors.

Level of Concern: A combined consideration for probability of occurrence and its consequences.

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 growth 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 • Emerging needs of using surface water due to groundwater contamination threat • Uncertain outcomes of ongoing water right proceeding for the California's share of Truckee River	• 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. • Water quality impacts from historical and emerging contamination in groundwater basin restricts existing water supply.	• 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, groundwater resource, and water bodies along highway corridors.	• 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. • Historical contamination of Perchloroethylene, Methyl tert-butyl ether, uranium, and natural occurring arsenic, and emerging contamination of per-and polyfluoroalkyl substances.	• Riverine flooding is not a substantial threat in the Tahoe Basin; however, rain on snow often causes extensive street flooding in certain areas. • Inflow and infiltration during flooding may overload the sewer system and prevent access sewer lines running through low-lying meadows.

Level of Concern

High | Moderate High | Moderate Low | Low

Water Supply

Long-term Water Supply-Demand Imbalance

Vulnerability	Applicable Condition	Pathway(s)	Level of Concern	Note
Regional water supply-demand imbalance	Regionwide	Insufficient water supply for planned development	Low	See Water Supply-Demand Imbalance handout
High ratio of transient population to resident population	Regionwide	Significant fluctuation of seasonal populations for recreation and jobs Existing elevated regulatory requirements for water conservation and reporting	High	See Water Supply-Demand Imbalance handout
Insufficient financial and technical capacity for standard operations and maintenance	Small water systems and domestic wells	Small rate base and historical private systems relying on volunteers and nonprofessional support Recent elevated regulations (e.g., SB 552, human rights to water), including mandatory metering, water loss monitoring, and annual reporting.	Moderate High	See Water Supply-Demand Imbalance handout
Lack of alternative sources of water	Regionwide	High cost for developing major surface water facilities for redundancy	Moderate Low	

Vulnerability during Droughts + Water Shortage Conditions (including Public Safety Power Shutoff events)

Vulnerability	Applicable Condition	Pathway(s)	Level of Concern	Note
Lack of alternative sources of water	Small water systems and domestic wells	Lack of interties and mutual aid agreement with adjacent larger water systems Lack of access to adjacent water systems due to isolation and/or terrains	Moderate High	

Loss of Water Supply Due to Other Resource Management Practices

Vulnerability	Applicable Condition	Pathway(s)	Level of Concern	Note
PCE contamination due to primarily past dry cleaning operations	Tahoe Key, Lukins Brothers, and STPUD (limited, relatively speaking)	Slow migrating plume affecting water quality requiring well head treatment and/or alternative facilities Uncertain schedule and outcome for regulatory process and mitigation	High (for impacted systems) Low (for region)	On state level, in the Sustainable Groundwater Management Act implementation context, there is a misperception of its level of impact on the sustainability of the underlying groundwater basin and regional water supply. See related entry in Water Quality section.
Water reuse not permitted	Regionwide	Existing regulations prohibiting water reuse in the region	N/A	Treated wastewater is used in other counties
Stormwater treated as hazard	Regionwide	Lack of integrated use opportunity as a water supply	Low	No water supply-demand imbalance or groundwater overdraft
Overgrown forests	Headwaters	Reduced ground accumulation of snow due to overgrown canopy Reduced runoff due to evapotranspiration from overgrown forests	Moderate High	Related to forest management in a watershed management context and associated wildfire mitigation strategy (out of scope)

Water Quality

Long-term Water Quality Impacts Due to Wildfire

Vulnerability	Applicable Condition	Pathway(s)	Level of Concern	Note
Burned scar from wildfire in watershed	Headwaters and forest lands	Erosion and debris from burned scars and reduced watershed regulating and retention capacity	Moderate High	Need specific input

Water Quality Impacts Due to Stormwater Runoff + (New) Other Built Infrastructure

Vulnerability	Applicable Condition	Pathway(s)	Level of Concern	Note
Vehicle use for recreation	Major transportation corridors	Increase in visitation and seasons for recreation interests in the Tahoe Basin	Moderate Low	Existing management structure and plan providing baseline protection
Front country and backcountry recreation	Recreation sites and watershed	Increase in visitation and seasons	Moderate Low	Existing management structure and plan providing baseline protection
Urbanization and intensification	Developed areas	Increase in pollutant and impermeable surfaces	Moderate Low	Existing management structure and plan providing baseline protection (TRPA Regional Plan and County Area Plan)
Sewer infrastructure in environmentally sensitive areas	Infrastructure footprints and adjacent areas	Infrastructure failure or malfunction Substantial sewer infiltration and inflow due to change in precipitation and hydrologic patterns	Moderate Low	See Sewer Line Sensitivity handout
Septic tanks and legacy isolated sewer systems	Site specific	Leakage and failure	Moderate Low (legacy systems) Low (septic tanks)	Need specific input

Concerns Over Groundwater Contamination

Vulnerability	Applicable Condition	Pathway(s)	Level of Concern	Note
PCE contamination due to primarily past dry cleaning operations	South "Y" Area	Slow migrating plume affecting water quality requiring well head treatment and/or alternative facilities Uncertain schedule and outcome for regulatory process and mitigation	High	See South Y Area PCE Contamination handout
Natural occurrence of contamination in groundwater	General regional condition	Elevated regulatory requirements, when approved	Current: Low Long-term: High	Arsenic, radioactive elements, and other contaminants in volcanic formation
Emerging contamination in groundwater and surface water	General regional condition	Elevated regulatory requirements, when approved	Current: Low Long-term: High	PFAS, etc., including release from material use in outdoor recreation attires and equipment, and other applications

Public Safety

Vulnerability to Flooding

Vulnerability	Applicable Condition	Pathway(s)	Level of Concern	Note
Community located downstream of dams	Downstream of DSOD jurisdictional dams	Dam failure with DSOD regulations and approved operations and maintenance practices.	Low	See Dam Breach handout
Community located in the riverine floodplain	FEMA 0.1 and 0.05 annual chance of flood hazard	Changes in hydrologic patterns Transportation chokepoints Backwater effects from Lake Tahoe Regulatory and permitting processes	Moderate High	See Flood Risk handout
Inadequate stormwater capacity	General drainage areas	Changes in precipitation and/or snowmelt patterns	Moderate High	See Flood Risk handout

(New) Fire Protection for Structures

Vulnerability	Applicable Condition	Pathway	Level of Concern	Note
Inadequate water infrastructure for structure protection	Utilities with hydrants	Insufficient distribution system capacity and hydrants during wildfire	Moderate-High	See Fire Protection handout
	Rural areas with limited or no hydrants	Insufficient ready sources (tanks, hydrants and others) during wildfire	High	See Fire Protection handout

(New) Extended Emergency Conditions

Vulnerability	Applicable Condition	Pathway	Level of Concern	Note
Constrained capacity for sustaining health and safety water delivery in extended emergency conditions	Regionwide	Insufficient fuels and power generating equipment to sustain extended emergency conditions due to relatively restricted access routes from outside of the Tahoe Basin	Low	Amplified drought and water shortage vulnerability

Cross Cutting

(New) Communication, Engagement, and Education

Vulnerability	Applicable Condition	Pathway	Level of Concern	Note
Insufficient and uneven public awareness and understanding about water management challenges and issues	General regionwide	Lack of a cohesive communication channel and coordinated messages on water issues and a standing means to engage all levels of water systems and interested parties, particularly in the following areas: • Water conservation regulatory changes • Increased drought and water shortage resilience requirements and enforcement actions for all water systems • Assistance needed for alleviating potential regulatory burdens and augmenting capacity for implementation	Moderate High	From scoping discussion – as it affects the effectiveness of our actions

BlueprintTahoe
El Dorado Water Security Initiative

Status of the Regional Perchloroethylene Groundwater Plume in the South "Y" Area

The regional perchloroethylene (PCE) groundwater plume is the 400-acre groundwater contamination site near the South "Y" area of South Lake Tahoe, primarily originating from past dry-cleaning operations. This is generally referenced as "legacy contamination." However, these are active sites within the Site Cleanup Program under the Lahontan Regional Water Quality Control Board.

Summary of Lahontan Regional Water Quality Control Board's Enforcement Actions

Cleanup and Abatement Order (CAO)	Date	Common Reference	Site Address	Assessor's Parcel Number (APN)	Current Status	Mandated Remediation Completion Date
R6-2025-0006	2/28/2025	Big O Tires	1961 Lake Tahoe Boulevard, South Lake Tahoe, CA 96150	023- 523- 008-000	Site Assessment	2/28/2030
R6-2025-0005	2/28/2025	Former Norma's Cleaners	961 Emerald Bay Road, South Lake Tahoe, CA 96150	023-191-21-100	Site Assessment	2/28/2030
R6T-2022-(PROPOSED)	8/17/2023	Lake Tahoe Laundry Works	1024 Lake Tahoe Boulevard, South Lake Tahoe, CA 96150	023-430-32-100	Agreement Negotiation[1]	TBD

Source: Lahontan Regional Water Quality Control Board

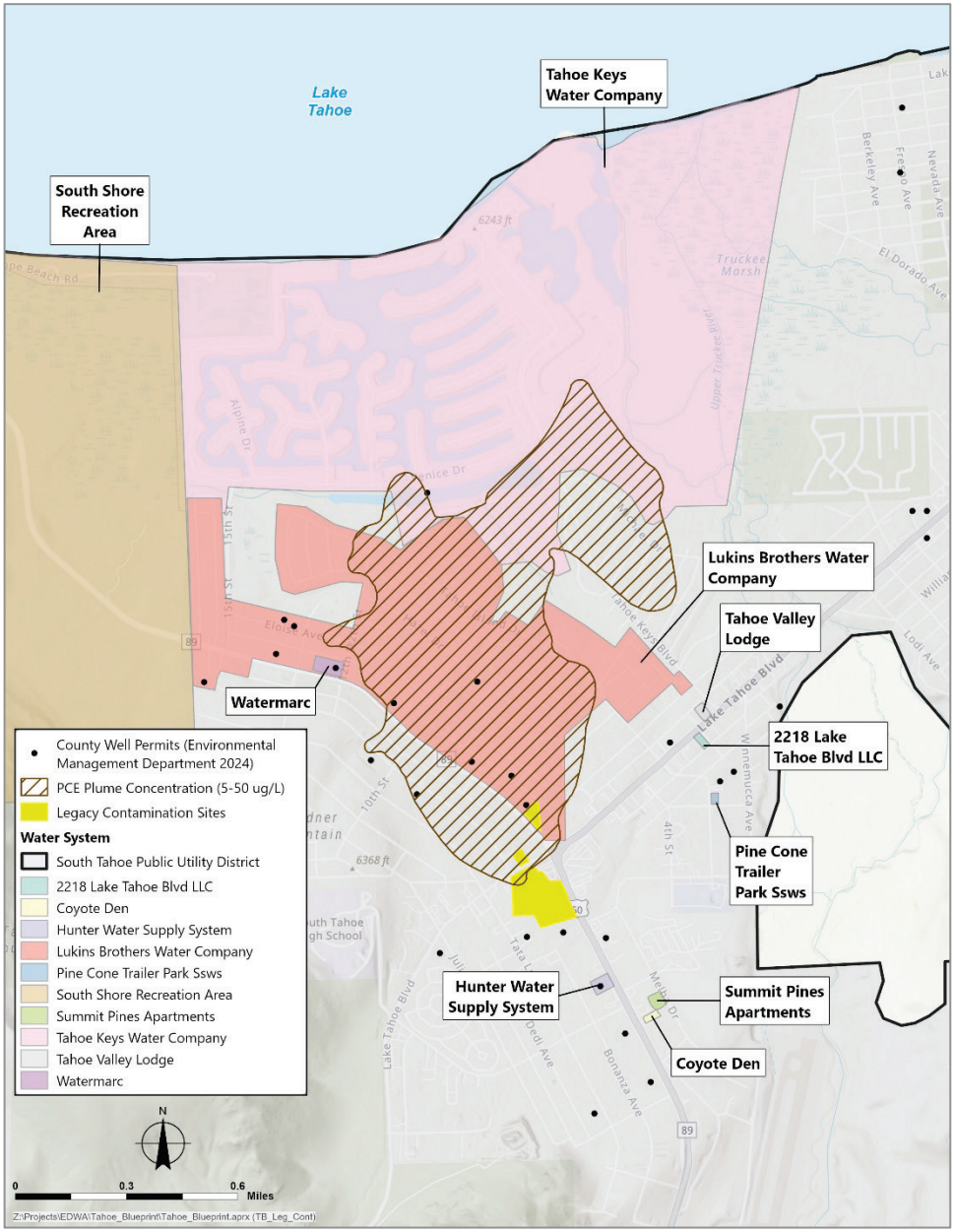
[1] As of April 8, 2026, the negotiation has come to a stalemate. Lahontan Regional Water Quality Control Board will consider a CAO for Lake Tahoe Laundry Works and the Regional Perchloroethylene Groundwater Plume at the board meeting on November 4-5, 2026.

Affected Water Systems (based on the plume delineation)

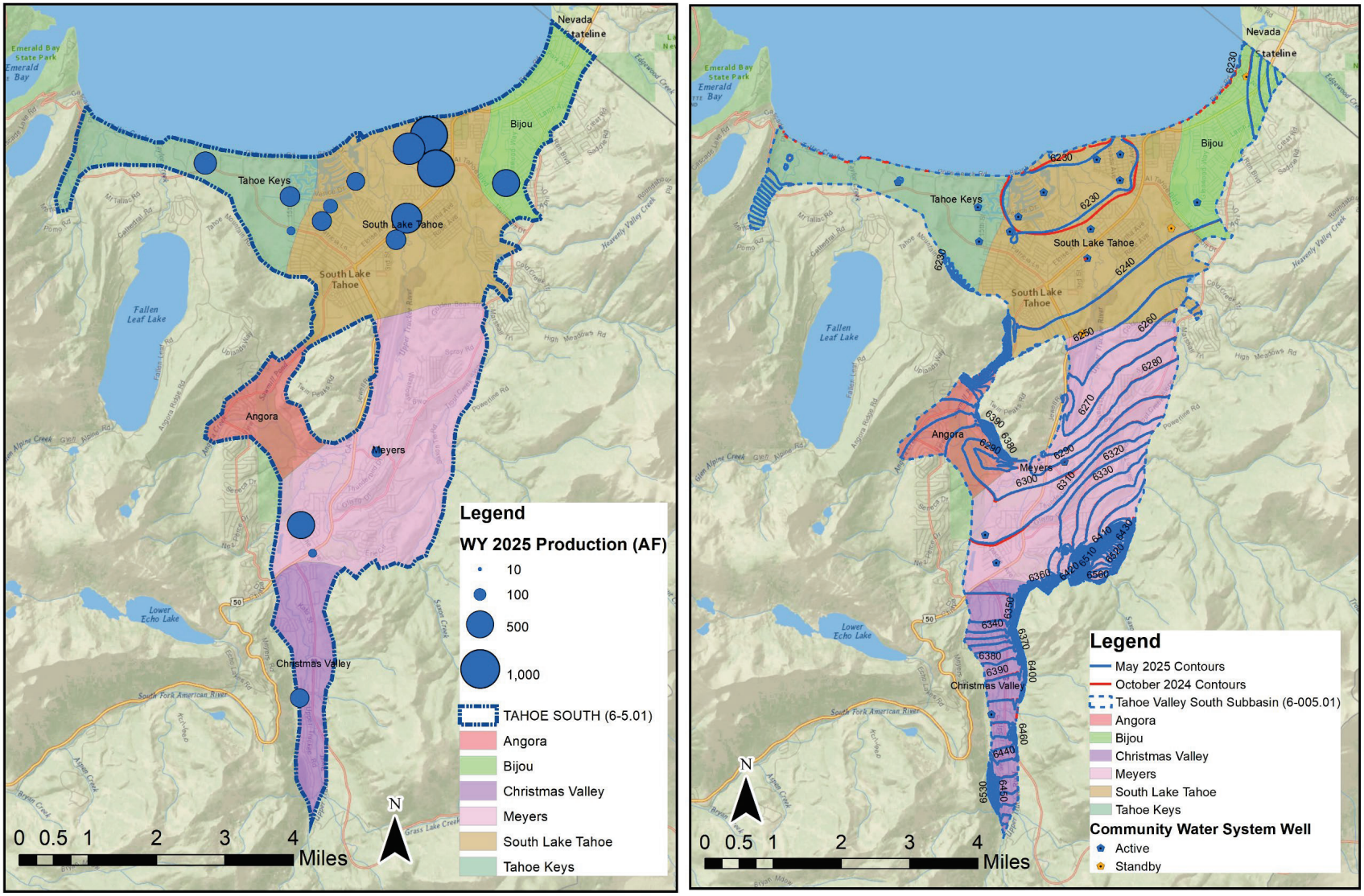
Water System[1]	Number of Connections	Population Served	Primary Source of Water
Tahoe Key Water Company (CA0910015)	1,599	1,420	Groundwater[2]
Lukins Brothers Water Company (CA0910007)	994	3,277	Groundwater[3]
South Tahoe Public Utility District (CA0910002)	14,125	44,937	Groundwater[4]

Source: CA Drinking Water Watch, State Water Resources Control Board (accessed April 2026)

[1] All three of these water systems are managed by State Water Resource Control Board, not Environmental Management Department, County of El Dorado (Local Primary Agency).
[2] Alternative well(s) and/or wellhead treatment for impact mitigation; additional sources of water including purchased water from Lukins Brothers and STPUD.
[3] Alternative well(s) and/or wellhead treatment for impact mitigation; additional sources of water including purchased water from Tahoe Key and STPUD.
[4] Alternative well(s) and distribution system facility modification for impact mitigation.



Supplemental Information of the Tahoe Valley-Tahoe South (TVS) Subbasin (Basin No. 6-005.001)



Source: Tahoe Valley South Subbasin (6-005.01) Annual Report (STPUD, 2026)

STATUS OF STATE OF CALIFORNIA JURISDICTIONAL DAMS

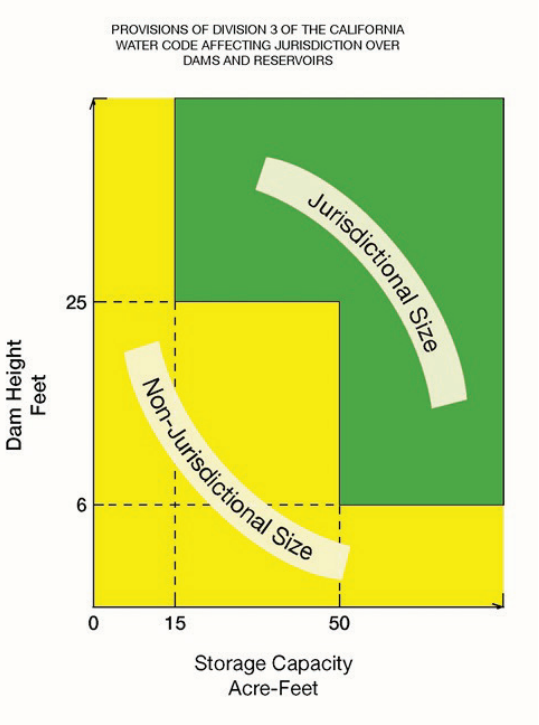
There are many small, low-head retention and diversion dams in the El Dorado Tahoe Basin with minimum flood risks for downstream communities. The following information focuses on the California Jurisdictional Dam. The major federal dam in the Lake Tahoe Basin (Lake Tahoe Dam) is in Placer County.

Summary of State of California Jurisdictional Dams in the Tahoe Basin, El Dorado County

Dam Number	Dam Name	Owner Name	Dam Height (ft)	Reservoir Capacity (ac-ft)	Certified Status	Condition Assessment	County
National ID No.	**Latitude, Longitude**	**Owner Type**	**Crest Length (ft)**	**Dam Type**	**Downstream Hazard**	**Reservoir Restrictions**	**Year Built**
53-9	Echo Lake	El Dorado Irrigation District	14	1,900	Certified	Satisfactory	El Dorado
CA00374	38.84, -120.04	Park, sanitation, utility, or water district	320	Gravity	Extremely High	No	1876
1062-2	Emergency Effluent Holding	South Tahoe Public Utility District	27	184	Certified	Satisfactory	El Dorado
CA01106	38.92, -119.97	Park, sanitation, utility, or water district	3,250	Earthen Embankment	High	No	1961

Source: California Department of Water Resources, Division of Safety of Dams (DSOD), 2025. *Dams within Jurisdiction of the State of California*. September. The double header format is standard for DSOD reporting and thus, it was retained.

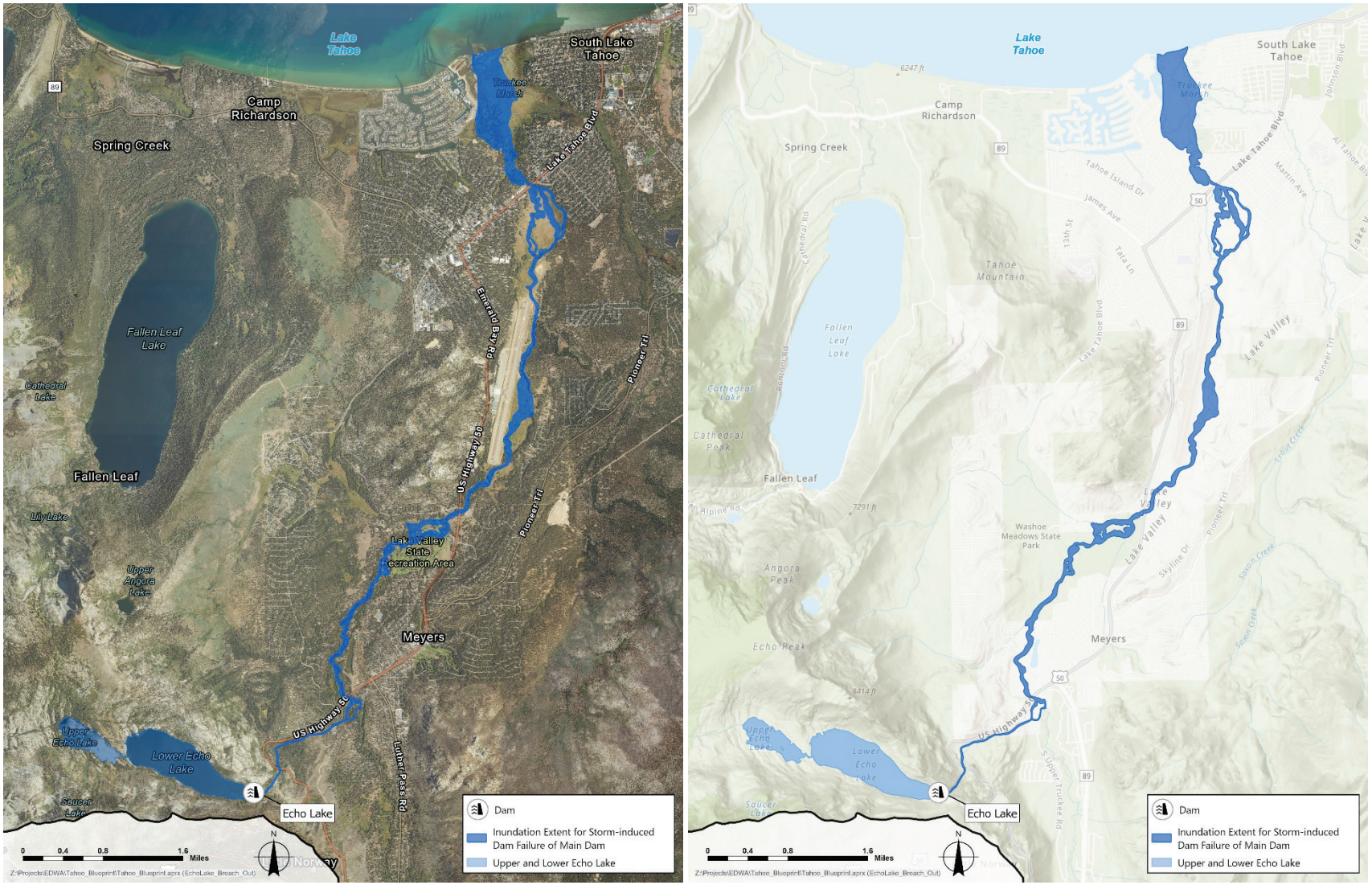
Definition of Jurisdictional Dams: See relevant California Water Code Sections: 6002, 6002.5, and 6003; the relevant dam size information is summarized in the figure to the right.



Exemptions:

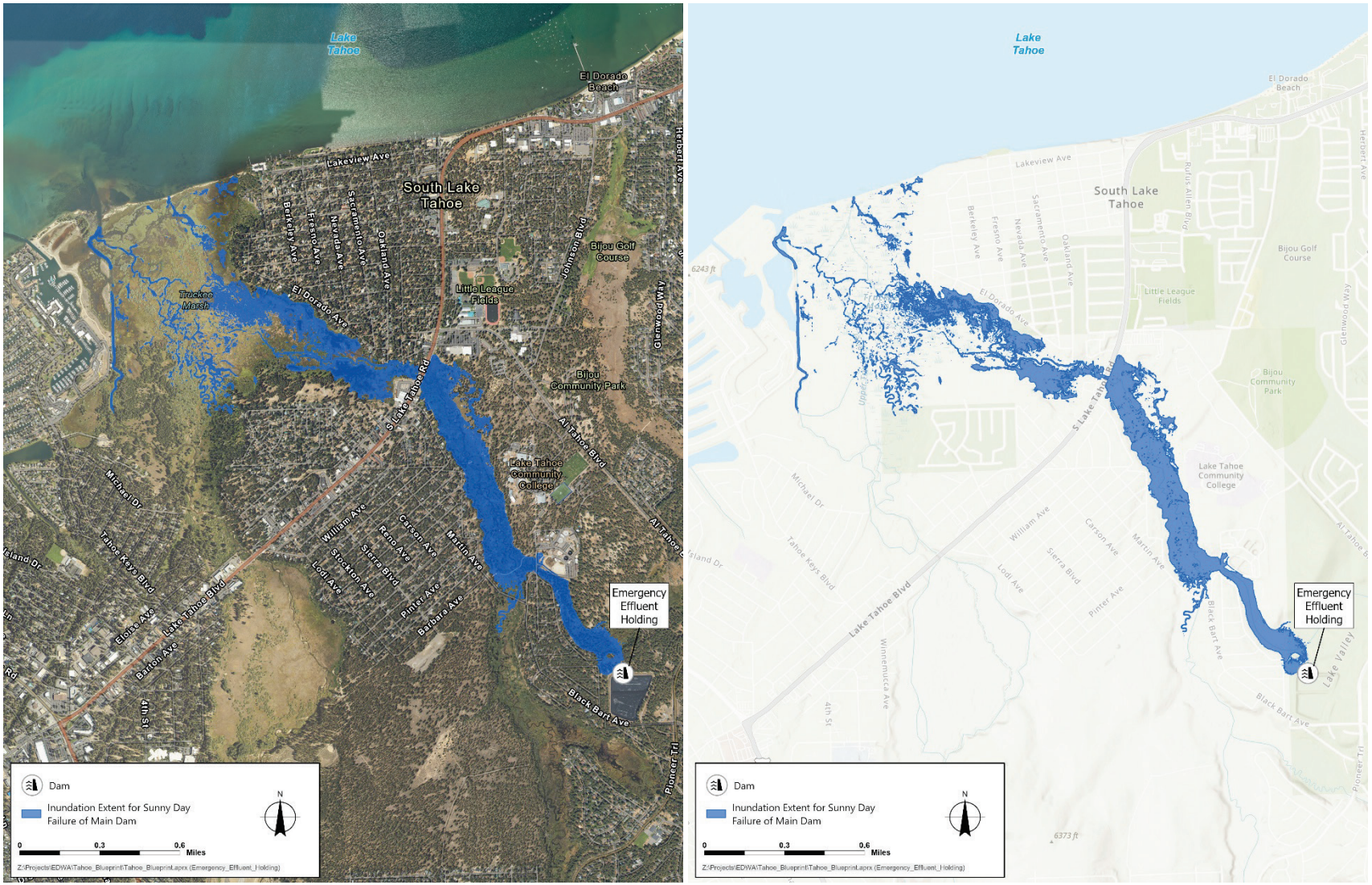
- Obstructions in a canal to raise, lower or divert water there from
- Levees, railroad fills
- Road or highway fills
- Circular tanks
- Tanks elevated above the ground
- Certain non-circular tanks in San Diego County
- Barriers off-stream for agricultural use or use as sewage sludge drying facilities
- Obstructions in channels or watercourses which are 15 feet or less in height, with single purpose of spreading water within the bed of the stream or watercourse upstream for percolation underground
- Wastewater control facility ponds, which are 15 feet or less in height, have a maximum storage capacity of 1500 acre-feet or less, are off-stream, and the operating public agency adopts certain resolutions
- Barriers in the Salton Sea within or below the minus 220-foot contour
- Federal dams

Dam Breach Inudation Map: Echo Lake



Source: DSOD. California Dam Breach Inundation Maps. Last accessed: April 10, 2026.

Dam Breach Inudation Map: Emergency Effluent Holding



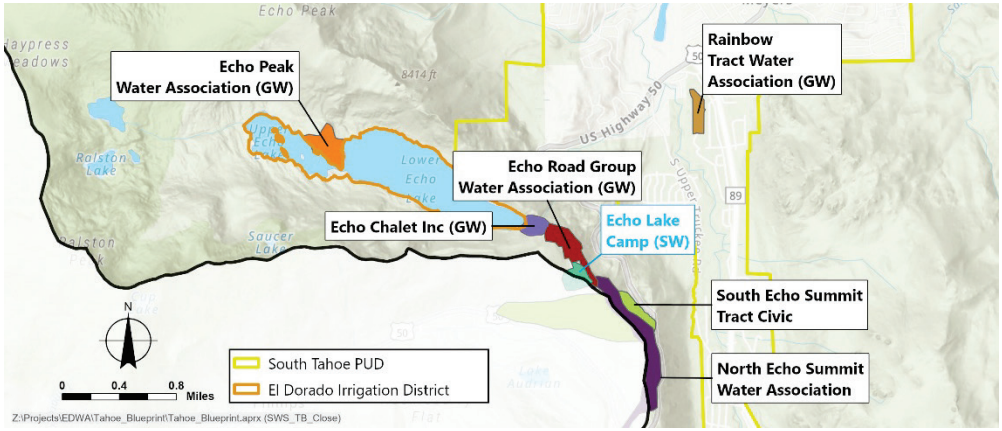
Source: DSOD. California Dam Breach Inundation Maps. Last accessed: April 10, 2026.

Supplemental Information

Echo Lake

Echo Lake and Dam are owned and operated by El Dorado Irrigation District (EID), which has its service area in the West Slope area of El Dorado County. In other words, EID imported water from the Lake Tahoe watershed to the American River watershed. The annual average amount is about 25 thousand acre-feet based on the long-term planning model maintained by Western Hydrologics for El Dorado Water Agency (see Soares et al., 2025, *A New View of Water Value: A Valuation of Water Supply from the Upper American River Watershed*).

As shown in the figure below, there are several small water systems around and near Echo Lake, using surface water and groundwater for their water supply needs.

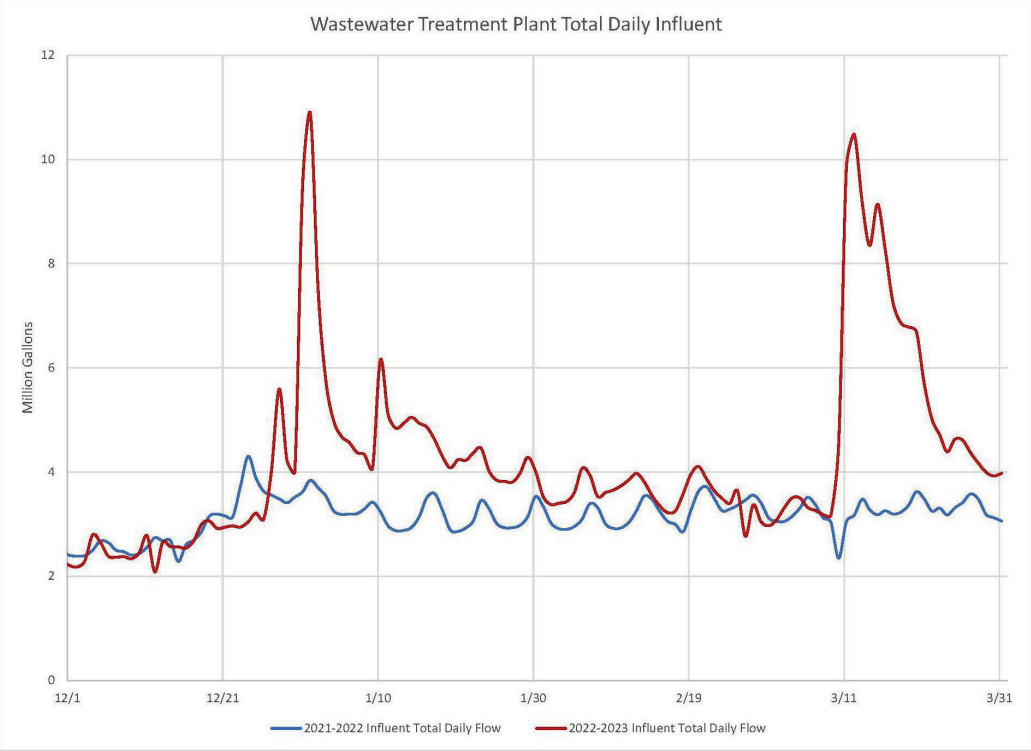


Emergency Effluent Holding

South Tahoe Public Utility District (STPUD) collects and treats wastewater from businesses and residents within its service areas in the City of South Lake Tahoe and unincorporated area of El Dorado County within the Tahoe Basin. The effluent from STPUD's Wastewater Treatment Plant is pumped to the Harvey Place Reservoir in Alpine County for agricultural use. The Emergency Effluent Holding facility is only used during emergencies such as the storm events in early 2023.

Lahontan Regional Water Quality Control Board's Executive Officer's Report (March 2023) provides a summary of STPUD's successful emergency operations, including leveraging the Emergency Effluent Holding facility, to mitigate impacts to their

collection system and recycled water operations from heavy snow and rain events in January through March 2023. The figure below shows the comparison of influents into STPUD's wastewater treatment plant during winter of 2021- 2022 and 2022- 2023 for appreciation of the magnitude difference in influent during the emergency operations.



SMALL WATER SYSTEMS IN THE TAHOE BASIN

There are two urban water suppliers in the Tahoe Basin: South Tahoe Public Utility District and Tahoe City Public Utility District.

There are 56 small water systems in the Tahoe Basin within El Dorado County.

Water System	Number of Systems
Community water system	3
Noncommunity water system	40
Nontransient noncommunity water system	3
State small water system	10

Definitions

California Health and Safety Code Section 116275.

(e) "Human consumption" means the use of water for drinking, bathing or showering, hand washing, oral hygiene, or cooking, including, but not limited to, preparing food and washing dishes.

(h) "Public water system" means 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. 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.*

(i) "Community water system" means 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.

(j) "Noncommunity water system" means a public water system that is not a community water system.

(k) "Nontransient noncommunity 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 six months per year.

(n) "State small water system" means a 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.

(o) "Transient noncommunity water system" means a noncommunity water system that does not regularly serve at least 25 of the same persons over six months per year.

*(s) "Servic*e connection" means the point of connection between the customer's piping or constructed conveyance, and the water system's meter, service pipe, or constructed conveyance.

A useful tool for water system classification: California State Water Resources Control Board's Decision Tree for Classification of Water Systems.

Senate Bill 552 Requirements

Under Senate Bill 552 (SB 552) of 2021, passed and signed by Governor Gavin Newsom in September 2021, State and local governments will share the responsibility in preparing and acting in the case of a water shortage event. Refer to DWR website for more information.

For local governments, SB 552 requires:

- Small water suppliers - defined as those with 1,000 to 2,999 connections and serving fewer than 3,000 acre-feet per year - and a nontransient noncommunity water system that is a school to have an abridged **water shortage contingency plan**, annually report their water supply conditions and use by month, and upgrade their infrastructure to drought resilient standards, if needed.

  Available Water Shortage Contingency Plan Templates:

  - Small Water Supplier 1,000 to 2,999 connections
    - Small Water Supplier Template (Word)
    - Small Water Supplier Best Practices Template Example (Word)
  - Nontransient Noncommunity (NTNC) Schools
    - Schools Water Supplier Template (Word)
    - Schools Best Practices Template Example (Word)

- Subject to funding availability, small water suppliers and nontransient noncommunity water systems that are schools to implement practices including groundwater monitoring (by 2023), mutual aid membership (by 2023), backup power supply (by 2024), backup water supply (by 2027), **metering** (by 2032), and meeting **fire flow requirements**.

  El Dorado Water Agency is working with DWR for an experimental program to assist groundwater monitoring at school.

- Each county to have a **standing drought task force** to facilitate drought and water shortage preparedness for state small water systems (serving 5 to 14 connections), domestic wells, and other privately supplied homes within the county's jurisdiction. Each

county must also develop a **county drought resilience plan** demonstrating the potential drought and water shortage risk and proposed interim and long-term solutions for state small water systems and domestic wells within the county

El Dorado Water Agency, per request of County of El Dorado, led the compliance with SB 552 and established the standing El Dorado County Drought and Water Shortage Task Force in 2022, and complete the County Drought and Water Shortage Resilience Plan in 2025.

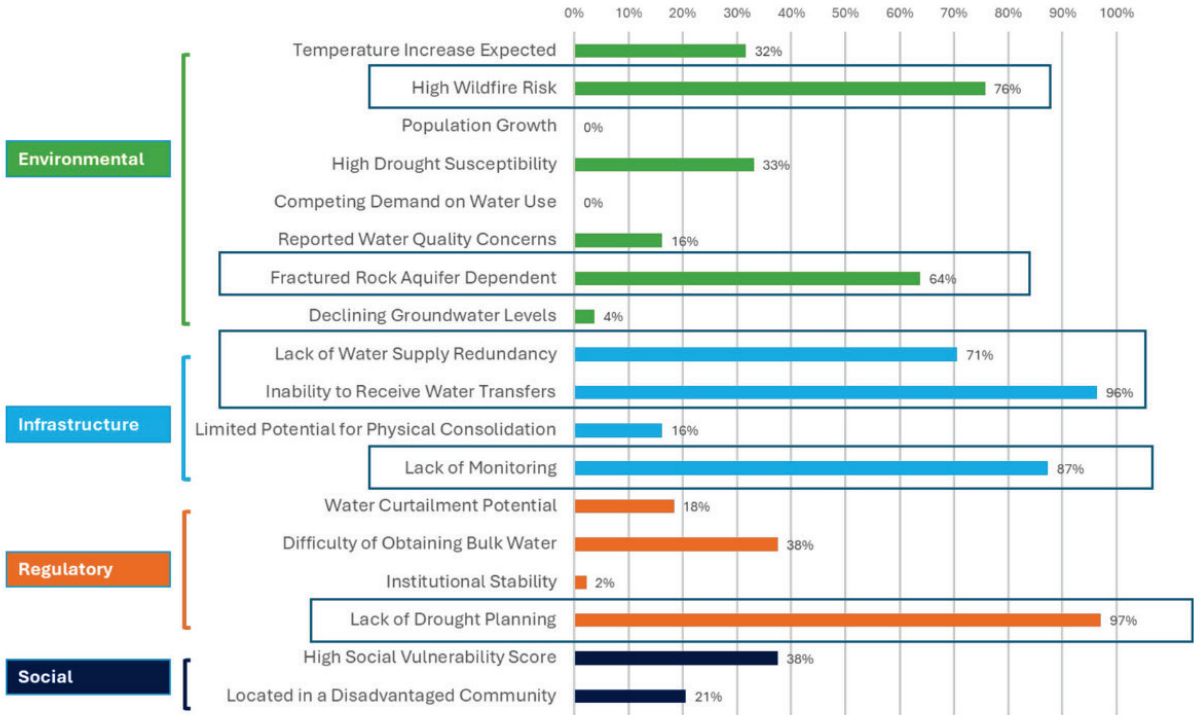
Per the direction of El Dorado Water Agency's Board, **the County Drought and Water Shortage Resilience Plan was developed to cover ALL small water systems and domestic wells**, not the minimum requirements by SB 552. This plan is part of the countywide drought and water shortage planning efforts, which also include regional drought planning and collaboration with urban water suppliers. See El Dorado Water Agency's website for more information.

Vulnerability Assessment

El Dorado Water Agency's 2025 El Dorado County Drought and Water Shortage Resilience Plan includes a vulnerability assessment customized for small water systems and domestic wells.

The following findings may be refined in Blueprint Tahoe effort. Details are provided in later section of this document.

Countywide Summary (Tahoe Basin and West Slope).



Comparison between Tahoe Basin and West Slope

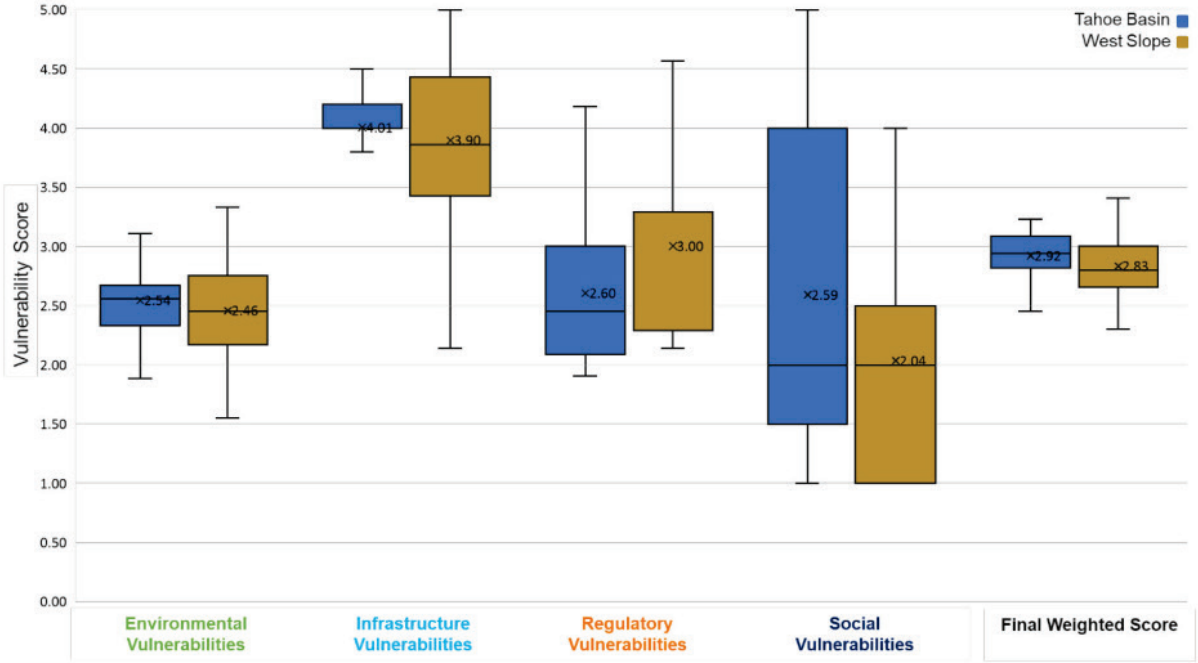


Figure 2-9. Tahoe Basin vs West Slope average vulnerability scores by vulnerability category

Table 2-9. Tahoe Basin and West Slope Common Issues and Strengths

Vulnerability Category	Common Issues	Common Strengths
Environmental	• High wildfire risk • Medium drought susceptibility	• Low population growth • Low reports on water quality concerns • Stable groundwater levels
Infrastructure	• Inability to receive water transfers • Low potential for consolidation • Lack of monitoring/metering	Not applicable
Regulatory and Organizational	• Lack of drought planning (especially for OCAs) • Larger urban water purveyors have drought planning documents but OCA do not	• Few systems susceptible to water curtailments • Few institutional barriers (i.e., certifications)
Social	• Both contain locations identified as disadvantaged	Not applicable

Table 2-10. Unique Characteristics of Tahoe Basin and West Slope

Category	Tahoe	West Slope
Environmental	Not applicable	• Greater Fractured Rock Aquifer Dependency
Infrastructure	• Difficulty of obtaining bulk water =2.3 • Higher lack of water supply redundancy = 4.7 • 21 systems are missing information on monitoring; majority are in Tahoe Basin	• Greater difficulty of obtaining bulk water =3.3 • Lack of water supply redundancy = 4.0 • Most at risk systems (infrastructure-wise) with "5's" in all infrastructure factors are all in West Slope (four NC system campgrounds and one rural/rural-suburban commercial center)
Regulatory and Organizational	Not applicable	• More of the connections dependent on a water right are in the West Slope • Majority of the 53 systems not located near a major transportation corridor are in the West Slope; most of these rely on wells
Social	• Higher proportion of disadvantaged communities=2.1 • All 12 of the systems identified as located within a severely disadvantaged community are in Tahoe Basin	• Proportion of disadvantaged communities=1.3

Summary of Vulnerability Scores for Small Water Systems

Water Systems		Vulnerabilities Risk Assessment Data																		Scores
		Environmental Vulnerabilities								Infrastructure Vulnerabilities				Regulatory and Organizational Vulnerabilities				Social Vulnerabilities		Final
SWS ID	Small Water System Name	Temperature Increase Expected	High Wildfire Risk	Population Growth	High Drought Susceptibility	Competing Demand on Water Use	Reported Water Quality Concerns	Fractured Rock Aquifer Dependent	Declining Groundwater Levels	Lack of Water Supply Redundancy	Inability to Receive Water Transfers	Limited Potential for Physical Consolidation	Lack of Monitoring	Water Curtailment Potential	Difficulty of Obtaining Bulk Water	Institutional Stability	Lack of Drought Planning	High Social Vulnerability Score	Located in a Disadvantaged Community	Final Weighted Score
CA0900669	2218 Lake Tahoe Blvd Llc	4	3	1	3	NA	1	1	1	5	5	1	NA	1	3	1	5	4	5	3.15
CA0901281	30 Milestone # 1 Tract Red	2	3	3	4	NA	3	NA	1	5	5	1	NA	5	1	1	5	3	1	2.98
CA0901282	30 Milestone # 2 Tract Blue	2	3	3	4	NA	3	NA	1	5	5	2	NA	5	1	1	5	3	1	3.05
CA0900551	Alder Inn	4	3	1	3	NA	1	1	1	5	5	1	5	1	1	1	5	5	3	3.09
CA0900576	Alpine Inn & Spa	4	2	1	3	NA	1	1	1	5	5	1	5	1	1	1	5	4	1	2.73
CA0900629	American Legion Tract Resort Assoc	4	3	1	3	NA	1	1	1	5	5	1	5	1	1	1	5	3	3	2.97
CA0900515	Angora Lakes Resort	3	3	1	4	NA	3	NA	1	3	5	4	5	1	5	1	5	1	1	2.86
CA0900654	Baldwin Beach	3	3	1	3	NA	1	1	1	5	5	1	5	1	3	1	5	2	1	2.71
CA0900553	Beverly Lodge	4	1	1	3	NA	1	1	1	5	5	1	5	1	1	1	5	5	3	2.76
CA0910301	Ca State Parks - D.L. Bliss	3	3	1	4	NA	1	NA	1	5	5	4	5	5	3	3	5	2	1	3.12
CA0910305	Ca State Parks - Emerald Bay, Boat Campg	3	3	1	4	NA	1	NA	1	5	5	2	1	5	5	2	5	2	1	2.83
CA0910303	Ca State Parks - Emerald Bay, Eagle Poin	3	3	1	3	NA	1	NA	1	5	5	2	5	5	3	2	5	2	1	2.93
CA0910302	Ca State Parks - Emerald Bay, Vikingshol	3	3	1	4	NA	1	NA	1	5	5	5	1	5	3	2	5	2	1	2.94
CA0900631	Camp Concord	4	3	1	3	NA	2	1	1	5	5	1	5	1	3	1	5	2	1	2.88
CA0900505	Camp Shelly	4	3	1	3	NA	1	1	1	5	5	1	5	1	3	1	5	2	1	2.82
CA0900523	Cascade Mutual Water Company	3	3	1	3	NA	5	1	1	5	5	2	5	1	3	1	5	2	1	2.98
CA0900511	Cathedral Water Association	4	3	1	4	NA	5	NA	1	5	5	1	5	1	5	1	5	2	1	3.15
CA0900313	Deer Crossing Camp	2	3	1	3	NA	1	NA	1	5	5	2	NA	5	5	1	5	1	1	2.73
CA0900592	Deerfield Lodge @ Heavenly	4	3	1	3	NA	2	1	1	5	5	1	5	1	1	1	5	4	1	2.96
CA0900559	Della Cella	4	3	1	3	NA	3	1	1	5	5	1	NA	1	1	1	5	4	5	3.21
CA0900652	Echo Chalet Inc	4	2	1	4	NA	1	1	1	3	5	1	5	1	1	1	5	1	1	2.45
CA0900603	Echo Peak Water Association	3	2	1	4	NA	2	NA	1	5	5	2	5	1	1	1	5	1	1	2.60
CA0900525	Echo Road Group Water Assoc	4	3	1	4	NA	2	NA	1	5	5	1	5	1	1	1	5	1	1	2.83
CA0900536	Econo Lodge Inn & Suites	4	3	1	3	NA	1	1	1	3	5	1	5	1	1	1	5	4	5	3.00
CA0900615	Fallen Leaf Camp Assoc	4	3	1	4	NA	5	NA	1	5	5	1	NA	5	5	1	5	2	1	3.23
CA0900641	Fallen Leaf Mutual Water Co	4	3	1	4	NA	1	NA	1	5	5	3	5	5	5	2	5	1	1	3.13
CA0900560	Fll Mutual	4	3	1	4	NA	1	1	1	5	5	1	5	1	5	2	5	1	1	2.90
CA0900585	Ginger Mountain Lodge	4	2	1	3	NA	1	1	1	5	5	1	5	1	1	1	5	5	3	2.92
CA0910024	Glenridge Water Company	3	3	1	3	NA	1	1	1	5	5	2	5	1	3	1	5	2	1	2.76
CA0900562	Heather Lake Road Tract	4	3	1	3	NA	1	1	1	5	5	1	5	1	1	1	5	5	1	2.97
CA0900578	Coyote Den	4	3	1	3	NA	1	1	1	5	5	1	1	1	1	1	5	4	5	2.95
CA0900665	Heavenly Gondola	5	2	1	3	NA	1	1	1	5	5	3	1	1	1	3	5	3	1	2.75
CA0900660	Heavenly Ski Creek Station	5	3	1	3	NA	1	1	1	5	5	4	4	1	1	2	5	3	1	3.09
CA0900587	Heavenly Ski Sky Deck	5	3	1	3	NA	1	1	1	5	5	5	1	1	5	3	5	4	1	3.17
CA0900588	Heavenly Valley Trailer Park	4	3	1	3	NA	3	1	1	5	5	1	NA	1	1	1	5	4	1	2.96
CA0900566	Hunter Water Supply System	4	3	1	3	NA	2	1	1	5	5	1	NA	1	1	1	5	4	5	3.16
CA0900564	King'S Iv Condominiums	4	3	1	3	NA	1	1	1	5	5	1	5	1	1	1	5	4	1	2.90
CA0910019	Lakeside Park Association	4	2	1	3	NA	1	NA	1	1	1	1	NA	5	1	2	5	4	5	2.35
CA0900595	Lower Emerald Bay Tract Ssws	3	3	1	4	NA	5	NA	1	5	5	3	NA	5	3	1	5	2	1	3.20
CA0910007	Lukins Brothers Water Company	4	3	1	3	NA	1	1	5	3	1	2	4	1	3	3	1	4	3	2.78
CA0900672	Meadow Park Village	4	2	1	3	NA	2	1	1	5	5	1	NA	1	1	1	5	4	3	2.86
CA0900667	Pine Cone Trailer Park Ssws	4	3	1	3	NA	2	1	1	5	5	1	NA	1	3	1	5	4	5	3.20
CA0900656	Rainbow Tract Water Assoc	4	3	1	3	NA	1	1	1	5	5	1	5	1	3	1	5	3	1	2.89
CA0900649	South Shore Recreation Area	4	3	1	3	NA	1	1	5	5	1	3	5	1	3	2	5	3	1	2.94
CA0900506	Spring Creek Tract Association	4	3	1	3	NA	1	1	1	3	5	3	5	1	3	1	5	2	1	2.77
CA0900507	Stanford Sierra Camp	4	3	1	4	NA	1	NA	1	5	5	2	5	5	5	2	5	2	1	3.15
CA0900529	Station House Inn	4	2	1	3	NA	1	1	1	5	5	1	5	1	1	2	5	4	1	2.77
CA0900117	Strawberry Trt 1-6, 36-38	3	2	3	5	NA	1	NA	1	5	5	1	NA	1	1	1	5	3	1	2.73
CA0910012	Tahoe City Pud - Rubicon	2	2	1	4	NA	1	1	1	3	5	3	1	1	3	3	1	3	1	2.23
CA0910015	Tahoe Keys Water Company	4	3	1	3	NA	1	1	1	3	1	2	4	1	3	3	5	5	5	2.88
CA0900623	Tahoe Travel Inn	4	2	1	3	NA	1	1	1	5	5	1	3	1	1	1	5	5	3	2.82
CA0900565	Tahoe Valley Lodge	4	3	1	3	NA	1	1	1	5	5	1	5	1	3	1	5	4	3	3.07
CA0900582	The Jeffrey Hotel	4	2	1	3	NA	1	1	1	5	5	1	5	1	1	1	5	4	5	2.98
CA0900554	The Trailhead	4	3	1	3	NA	1	1	1	5	5	1	5	1	1	1	5	4	5	3.15
CA0901285	Upper 34 Milestone Tract	3	3	3	5	NA	1	NA	1	5	5	4	NA	1	1	1	5	3	1	3.09
CA0900624	Villa Tahoe Condominiums	4	3	1	3	NA	1	1	1	5	5	1	5	1	1	1	5	4	1	2.90
CA0900557	Watermarc	4	3	1	3	NA	1	1	1	5	5	1	NA	1	3	1	5	4	1	2.90
CA0900535	Pinewood Inn	4	3	1	3	NA	1	1	1	5	5	1	5	1	1	1	5	4	5	3.15
CA0900621	Summit Pines Apartments	4	3	1	3	NA	1	1	1	3	5	1	5	1	1	1	5	4	5	3.00

Vulnerability of Domestic Wells

There are not many domestic wells in the Tahoe Basin.

Table 2-15. Vulnerability Categories and Risk Factors for Domestic Wells

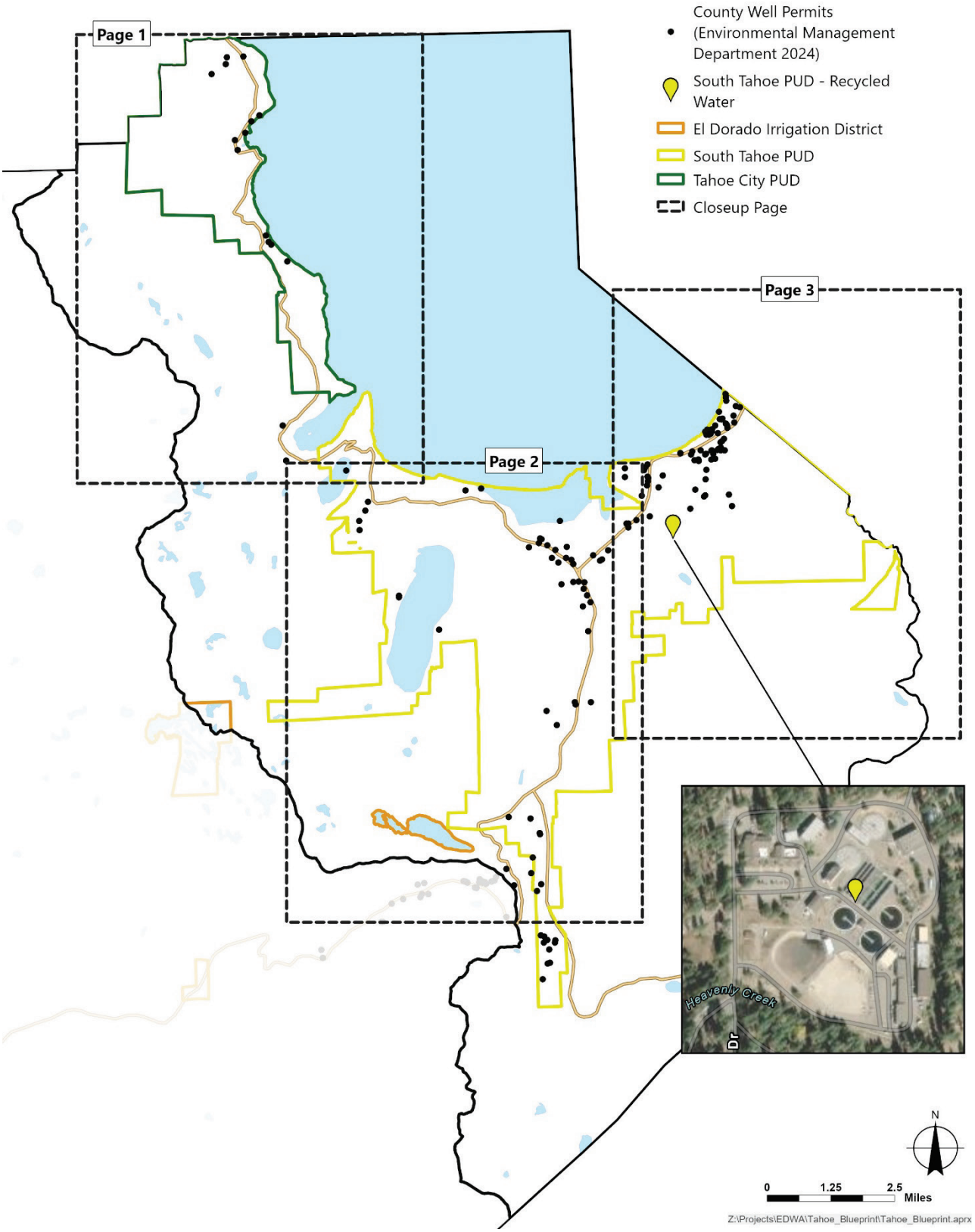
Vulnerability Category	Risk Factors
Environmental	Internal: • Fractured Rock Aquifer Dependent • Aquifer Water Quality Risk External: • Temperature Increase Expected • High Wildfire Risk • High Drought Susceptibility
Infrastructure	• Outside of Water Purveyor Service Area • Shallow Well
Social	• High Social Vulnerability Score • Located in a Disadvantaged Community

Small Water System Location Maps

In the following maps, the colors in water system labels means:

- White label = System managed by State Water Resources Control Board
- Yellow label = System managed by Environmental Management Department, County of El Dorado as the Local Primary Agency
- Blue texts with SW = System's primary source of water is surface water
- Black texts with GW = System's primary source of water is groundwater
- Black texts without GW = System's primary source of water is unknown

Source: State Water Resources Control Board.


Page 1
Page 2
Page 3
County Well Permits (Environmental Management Department 2024)
South Tahoe PUD - Recycled Water
El Dorado Irrigation District
South Tahoe PUD
Tahoe City PUD
Closeup Page
Heavenly Creek Dr
N
0
1.25
2.5
Miles
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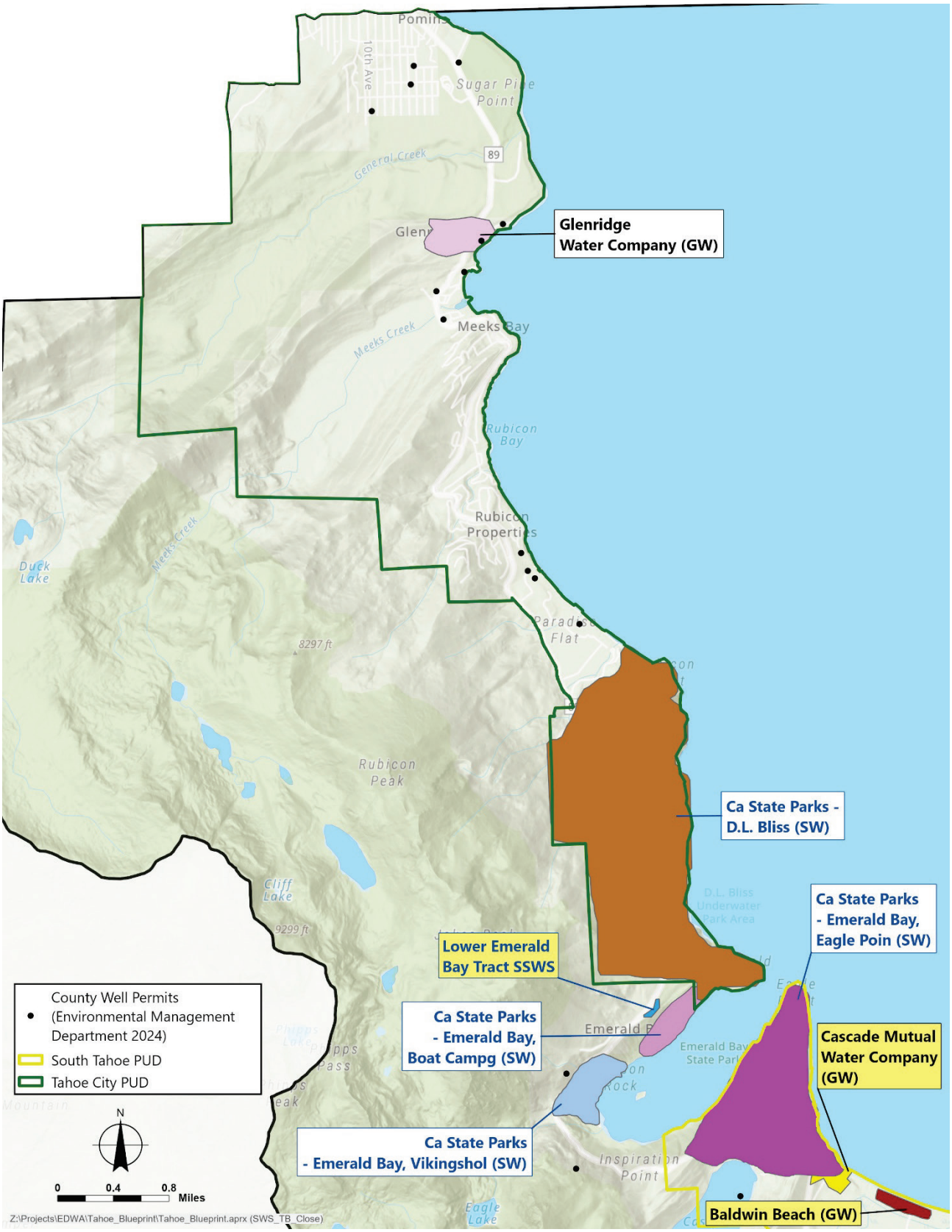
Glenridge Water Company (GW)
Ca State Parks - D.L. Bliss (SW)
Ca State Parks - Emerald Bay, Eagle Poin (SW)
Lower Emerald Bay Tract SSWS
Ca State Parks - Emerald Bay, Boat Campg (SW)
Cascade Mutual Water Company (GW)
Ca State Parks - Emerald Bay, Vikingshol (SW)
Baldwin Beach (GW)
County Well Permits (Environmental Management Department 2024)
South Tahoe PUD
Tahoe City PUD
N
0 0.4 0.8 Miles
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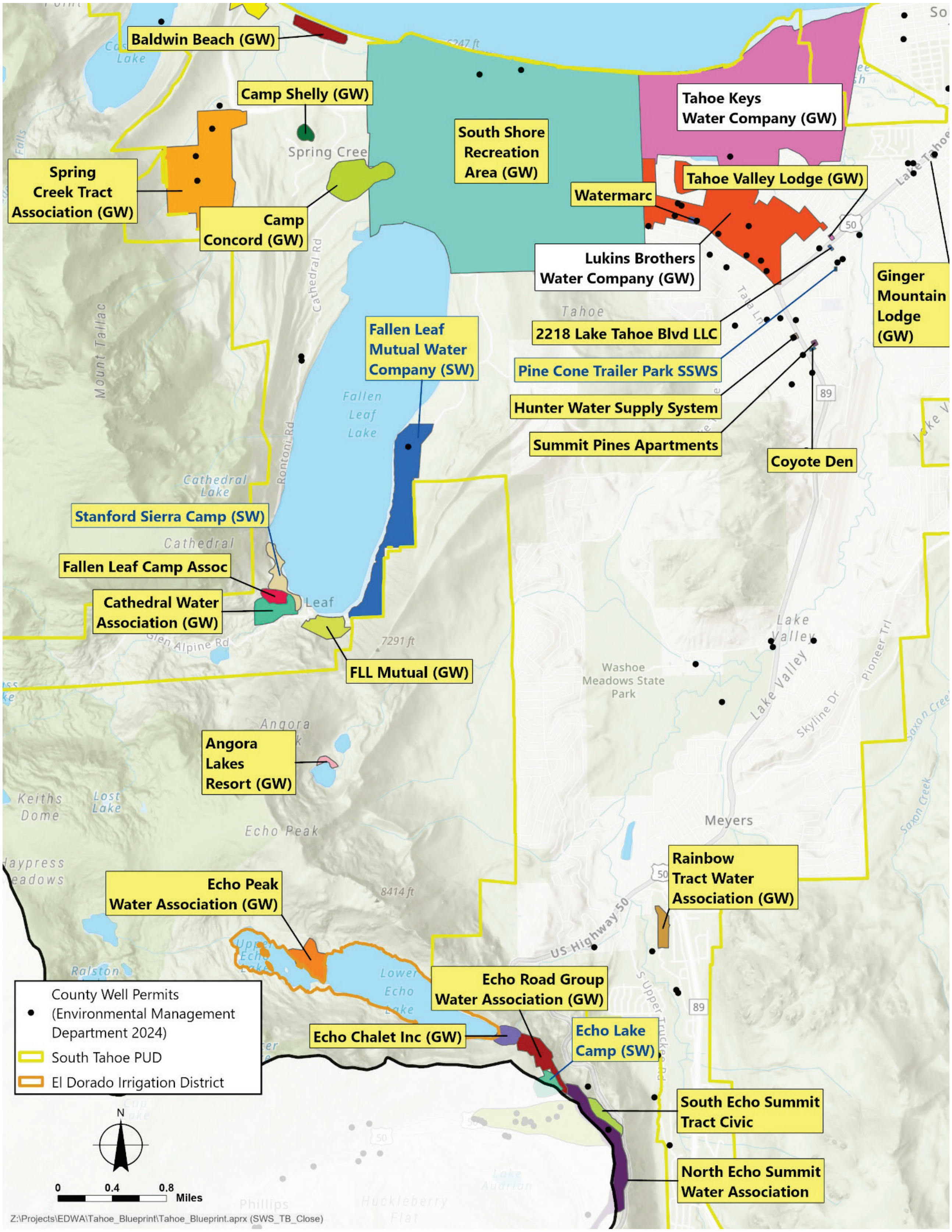
Meeks Bay
Rubicon Bay
Rubicon Properties
Rubicon Peak
Sugar Pine Point
General Creek
Meeks Creek
Duck Lake
Cliff Lake
Eagle Lake
Emerald Bay State Park
Inspiration Point
8297 ft
9299 ft
89


Baldwin Beach (GW)
Camp Shelly (GW)
South Shore Recreation Area (GW)
Tahoe Keys Water Company (GW)
Spring Creek Tract Association (GW)
Camp Concord (GW)
Watermarc
Tahoe Valley Lodge (GW)
Lukins Brothers Water Company (GW)
Ginger Mountain Lodge (GW)
2218 Lake Tahoe Blvd LLC
Fallen Leaf Mutual Water Company (SW)
Pine Cone Trailer Park SSWS
Hunter Water Supply System
Summit Pines Apartments
Coyote Den
Stanford Sierra Camp (SW)
Fallen Leaf Camp Assoc
Cathedral Water Association (GW)
FLL Mutual (GW)
Angora Lakes Resort (GW)
Rainbow Tract Water Association (GW)
Echo Peak Water Association (GW)
Echo Road Group Water Association (GW)
Echo Chalet Inc (GW)
Echo Lake Camp (SW)
South Echo Summit Tract Civic
North Echo Summit Water Association
County Well Permits (Environmental Management Department 2024)
South Tahoe PUD
El Dorado Irrigation District
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0 0.4 0.8 Miles
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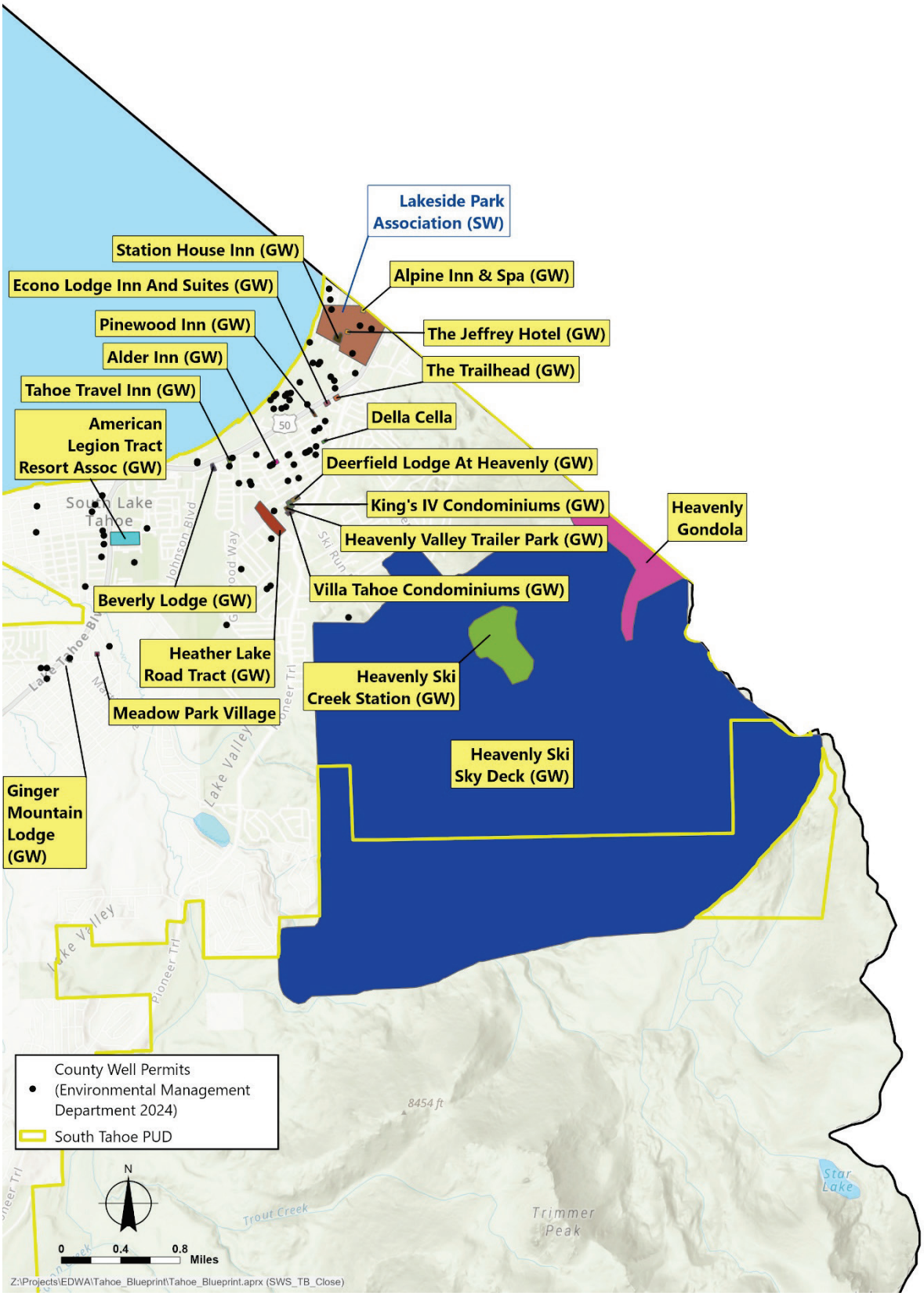
Lakeside Park Association (SW)
Station House Inn (GW)
Alpine Inn & Spa (GW)
Econo Lodge Inn And Suites (GW)
Pinewood Inn (GW)
The Jeffrey Hotel (GW)
Alder Inn (GW)
The Trailhead (GW)
Tahoe Travel Inn (GW)
Della Cella
American Legion Tract Resort Assoc (GW)
Deerfield Lodge At Heavenly (GW)
King's IV Condominiums (GW)
Heavenly Gondola
Heavenly Valley Trailer Park (GW)
Villa Tahoe Condominiums (GW)
Beverly Lodge (GW)
Heather Lake Road Tract (GW)
Heavenly Ski Creek Station (GW)
Meadow Park Village
Heavenly Ski Sky Deck (GW)
Ginger Mountain Lodge (GW)
South Lake Tahoe
Lake Tahoe Blvd
Johnson Blvd
Ski Run
Lake Valley
Pioneer Trl
50
8454 ft
Star Lake
Trout Creek
Trimmer Peak
County Well Permits (Environmental Management Department 2024)
South Tahoe PUD
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0.8
Miles
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Major Attributes of Small Water Systems in the Tahoe Basin (El Dorado County)

Water System Number	Water System Name	Regulating Agency	Classification	Service Connections	Service Area Type	Primary Source Water Type
CA0900505	Camp Shelly	LPA39	NC	15	Summer Camp	GW
CA0900506	Spring Creek Tract Association	LPA39	NC	137	Residential Area	GW
CA0900507	Stanford Sierra Camp	LPA39	NC	32	Summer Camp	SW
CA0900511	Cathedral Water Association	LPA39	NC	26	Other Residential Area	GW
CA0900515	Angora Lakes Resort	LPA39	NC	14	Other Transient Area	GW
CA0900523	Cascade Mutual Water Company	LPA39	NC	33	Residential Area	GW
CA0900525	Echo Road Group Water Association	LPA39	NC	19	Other Residential Area	GW
CA0900529	Station House Inn	LPA39	NTNC	4	Hotel/Motel	GW
CA0900535	Pinewood Inn	LPA39	NC	1	Hotel/Motel	GW
CA0900536	Econo Lodge Inn and Suites	LPA39	NC	7	Hotel/Motel	GW
CA0900551	Alder Inn	LPA39	NC	3	Hotel/Motel	GW
CA0900553	Beverly Lodge	LPA39	NC	2	Hotel/Motel	GW
CA0900554	The Trailhead	LPA39	NC	1	Hotel/Motel	GW
CA0900557	Watermarc	LPA39	SSWS	8	Not Available	-
CA0900559	Della Cella	LPA39	SSWS	6	Not Available	-
CA0900560	FLL Mutual	LPA39	NC	41	Residential Area	GW
CA0900562	Heather Lake Road Tract	LPA39	NC	13	Residential Area	GW
CA0900564	King's IV Condominiums	LPA39	NC	4	Residential Area	GW
CA0900565	Tahoe Valley Lodge	LPA39	NC	3	Hotel/Motel	GW
CA0900566	Hunter Water Supply System	LPA39	SSWS	Not Available	Not Available	-
CA0900576	Alpine Inn & Spa	LPA39	NC	4	Hotel/Motel	GW
CA0900578	Coyote Den	LPA39	NC	1	Hotel/Motel	-
CA0900582	The Jeffrey Hotel	LPA39	NC	2	Hotel/Motel	GW

Water System Number	Water System Name	Regulating Agency	Classification	Service Connections	Service Area Type	Primary Source Water Type
CA0900585	Ginger Mountain Lodge	LPA39	NC	2	Hotel/Motel	GW
CA0900587	Heavenly Ski Sky Deck	LPA39	NC	2	Recreation Area	GW
CA0900588	Heavenly Valley Trailer Park	LPA39	SSWS	13	Not Available	-
CA0900591	North Echo Summit Water Association	LPA39	NC	15	Other Residential Area	-
CA0900592	Deerfield Lodge At Heavenly	LPA39	NC	2	Hotel/Motel	GW
CA0900595	Lower Emerald Bay Tract SSWS	LPA39	SSWS	9	Not Available	-
CA0900603	Echo Peak Water Association	LPA39	NC	26	Residential Area	GW
CA0900615	Fallen Leaf Camp Assoc	LPA39	SSWS	Not Available	Not Available	-
CA0900621	Summit Pines Apartments	LPA39	NC	1	Residential Area	-
CA0900623	Tahoe Travel Inn	LPA39	NC	6	Hotel/Motel	GW
CA0900624	Villa Tahoe Condominiums	LPA39	NC	4	Residential Area	GW
CA0900629	American Legion Tract Resort Assoc	LPA39	NC	34	Residential Area	GW
CA0900631	Camp Concord	LPA39	NC	10	Summer Camp	GW
CA0900641	Fallen Leaf Mutual Water Company	LPA39	NC	103	Other Residential Area	SW
CA0900649	South Shore Recreation Area	LPA39	NTNC	200	Recreation Area	GW
CA0900650	Echo Lake Camp	LPA39	NC	11	Summer Camp	SW
CA0900652	Echo Chalet Inc	LPA39	NC	6	Other Transient Area	GW
CA0900654	Baldwin Beach	LPA39	NC	16	Recreation Area	GW
CA0900656	Rainbow Tract Water Association	LPA39	NC	23	Other Residential Area	GW
CA0900660	Heavenly Ski Creek Station	LPA39	NTNC	5	Recreation Area	GW
CA0900663	South Echo Summit Tract Civic	LPA39	SSWS	13	Not Available	-
CA0900665	Heavenly Gondola	LPA39	NC	4	Recreation Area	GW
CA0900667	Pine Cone Trailer Park	LPA39	SSWS	9	Not Available	-

Water System Number	Water System Name	Regulating Agency	Classification	Service Connections	Service Area Type	Primary Source Water Type
CA0900669	2218 Lake Tahoe Blvd LLC	LPA39	SSWS	Not Available	Not Available	-
CA0900672	Meadow Park Village	LPA39	SSWS	11	Not Available	-
CA0910007	Lukins Brothers Water Company	D09	C	982	Residential Area	GW
CA0910015	Tahoe Keys Water Company	D09	C	1566	Residential Area	GW
CA0910019	Lakeside Park Association	D09	C	139	Residential Area	SW
CA0910024	Glenridge Water Company	D02	NC	46	Residential Area	GW
CA0910301	CA State Parks - D.L. Bliss	D09	NC	14	Recreation Area	SW
CA0910302	CA State Parks - Emerald Bay, Vikingsholm	D09	NC	2	Recreation Area	SW
CA0910303	CA State Parks - Emerald Bay, Eagle Point	D09	NC	13	Recreation Area	SW
CA0910305	CA State Parks - Emerald Bay, Boat Campground	D09	NC	5	Recreation Area	SW

Key:
C = Community Water System; NC = Noncommunity Water System; NTNC = Nontransient Noncommunity Water System; SSWS = State Small Water System
LPA39 = Environmental Management Department, County of El Dorado; D02 = District 02 - Lassen; D09 = District 09 – Sacramento
GW = Groundwater; SW = Surface water; "-" = No information

BlueprintTahoe
El Dorado Water Security Initiative

Fire Protection for Structures in the Tahoe Basin Area of El Dorado County

Wildfire protection and overall fuel management are complex under climate change, requiring landscape-scale, multi-jurisdictional coordination and implementation.

Tahoe Basin-wide Approach

In the Lake Tahoe region, the USDA Forest Service (USFS) Lake Tahoe Basin Management Unit led the basin-wide strategy development with the Tahoe Fire and Fuels Team[1] partners. The latest update of this strategy was signed in August 2025 and is often referenced through the updated 2025 Tahoe Basin Community Wildfire Protection Plan (CWPP). The CWPP provides complete information about the basin-wide approach and implementation and sets a 10-year framework through 2035 to accelerate forest thinning, increase prescribed burning, and bolster defensible space.

Additional information can also be found in other sites like Tahoe Living with Fire, which provides public information and education in becoming a fire adapted community, or Fire Adapted Communities Learning Network through the Watershed Research and Training Center.

Blueprint Tahoe's Planning Focus

El Dorado Water Agency conducts Blueprint Tahoe as a water security initiative with a regional focus, adhering to the planning principle of respecting roles and responsibilities of all partners. The following provides clarification of Blueprint Tahoe's planning focus in the context of fire protection.

Focus on Water Security

As a water security initiative, Blueprint Tahoe will not cover the topics of broad fire and fuels strategy. However, opportunity could be considered as cobenefits in implementing measures to improve regional water security.

Similarly, the regional egress routes and other transportation related issues raised in the October 2025 scoping session (the special Countywide Plenary for Water with Regional Focus) are covered in the ongoing El Dorado Area Plan led by the County of El Dorado.

[1] The Tahoe Fire and Fuels Team consists of representatives of Tahoe Basin fire agencies, CAL FIRE, Nevada Division of Forestry and related state agencies, University of California and Nevada Cooperative Extensions, the Tahoe Regional Planning Agency, the USDA Forest Service, conservation districts from both states, the California Tahoe Conservancy and the Lahontan Regional Water Quality Control Board.

Water Supply as Part of the Solution of Fire Protection for Structures

For Blueprint Tahoe, fire protection for structures in the context of community resilience does not differentiate critical infrastructure, which may be defined with varying criteria, and general residential and commercial structures. In general, there are four parts of strategy:

- Defensible space
- Home hardening
- Evacuation planning
- Water supply for fire suppression

The first three elements are out of scope for Blueprint Tahoe. It is also noted that these three elements are more standardized now after many recent legislation and regulatory updates.

A general observation, not criticism, is that the water supply element for fire suppression may be the least standardized element among all, considering the general rural landscape in the Tahoe Basin with geographically distributed urban development. There are many good reasons to use different approaches to protect rural areas and urbanized areas including affordability and effectiveness.

The need for water supply (quantity, capacity, and accessibility) and associated means to provide such water supply are dependent on the level of implementation of the requirements for defensible space and home hardening, community setting, and the requirements of the governing regulatory framework and practice.

Fire Agencies

The communities in the Tahoe Basin areas are served by the following fire agencies. A set of maps are provided later in this document.

1. South Lake Tahoe Fire Rescue
2. Lake Valley Fire Protection District
3. Fallen Leaf Lake Fire Department
4. North Tahoe Fire Protection District for the service areas of the former Meeks Bay Fire Protection District that the district annexed in January 2025)

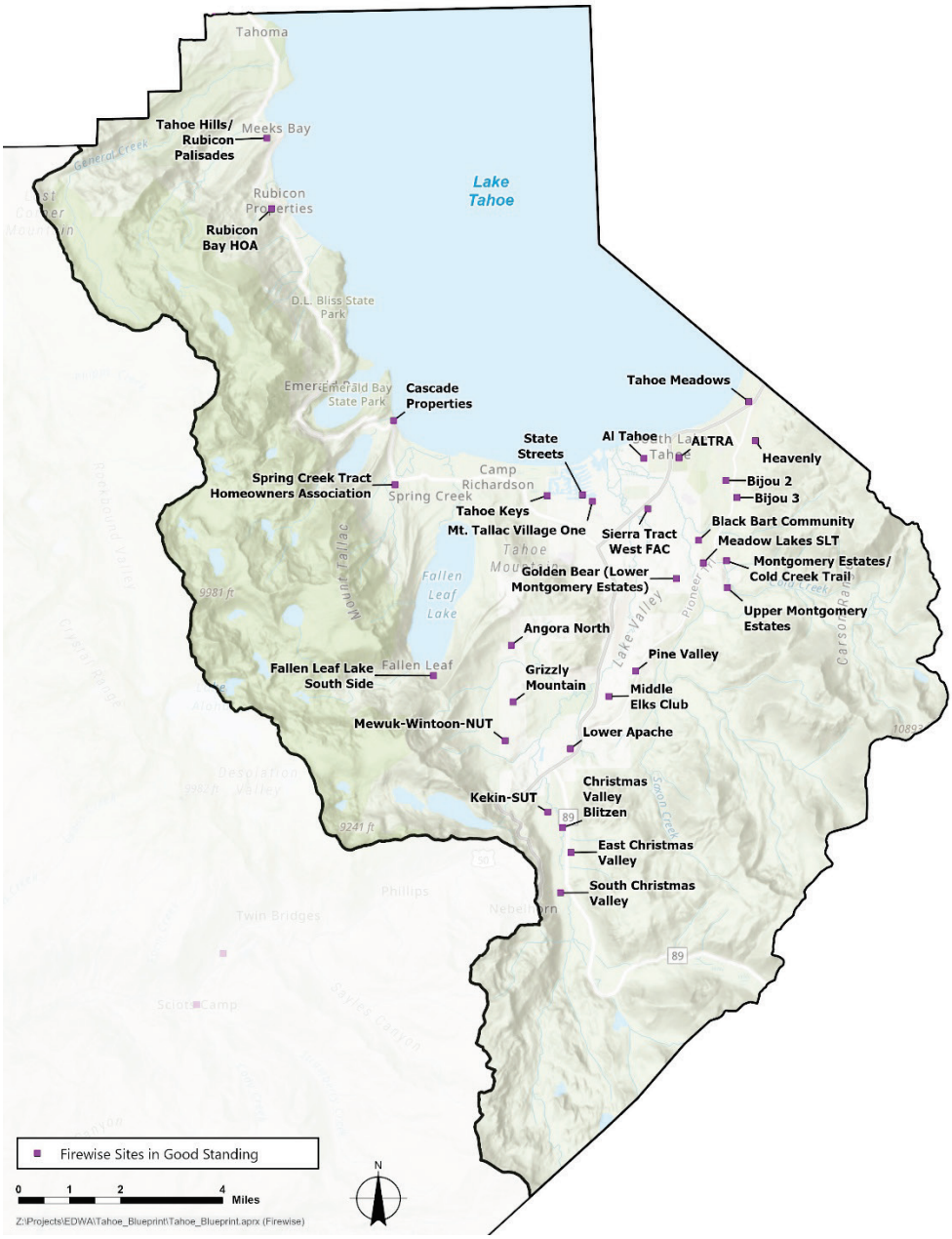
The CWPP provides an excellent source of information for these fire agencies in an interactive format.

County Service Area (CSA) 3 covers the service areas of the above fire agencies and provides emergency services operations through the California Tahoe Emergency Services Operations Authority (a Joint Power Authority; Cal Tahoe JPA). The Cal Tahoe JPA operates under the direction of the Board of Directors comprised of two members from City of South Lake Tahoe, two members from Lake Valley Fire Protection District, and one elected official from Fallen Leaf

Lake Community Service District Fire Department. In addition, the Fire Chief of each agency is also involved on the Board (El Dorado Local Agency Formation Commission, 2022).

Fire-Adapted Communities

Fire-adapted communities in California are designated through programs like **Firewise USA®** and the state's **Fire Risk Reduction Community List**, which includes areas meeting best practices for wildfire planning. The figure below shows the Firewise sites in Good Standing as of January 29, 2026. Lukins Brothers Water Company is aiming to be the first water company in the Lake Tahoe Basin that is Firewise certified; the potential benefits include lowering insurance rates between 10 to 30 percent.



California Wildfire & Forest Resilience Task Force established the Fire Risk Reduction Community List per Public Resources Code 4290.1. The list of communities is updated biannually. The 2024 list includes North Tahoe Fire Protection District, Meeks Bay Fire Protection District (now part of the North Tahoe Fire Protection District), and County of El Dorado. The 2026 updated list is scheduled for July 2026.

Building Blocks for Water Supply Strategy

In the Tahoe Basin areas, considerations for two distinct conditions are necessary:

- Areas with hydrants (i.e., more urban settings)
- Areas with sparse hydrants or no hydrants (i.e., more rural settings)

Additional considerations for areas without hydrants may include:

- Access road conditions

- Distances to useful fire water
- Strategy for using onsite storage, water tenders, and other tactics
- Winter operation needs

Applicable Code and Regulations

While additional research is needed, the following provides the regulatory framework:

- California Fire Code (CFC) – Title 24, Part 9
    - Chapter 49 – Wildland-Urban Interface (WUI) requirements applicable to Very High Fire Hazard Severity Zones
    - Appendix B – Fire flow requirements for buildings, and
    - Appendix C – Fire hydrant locations and distribution. The CFC is based on the International Fire Code.
- California Building Code (CBC) – Title 24, Part 2, used in conjunction with CFC.
- County of El Dorado adopted 2022 CFC (including the amendments) with local amendments. County also meets the CAL FIRE requirements for the State Responsible Area as described in the California Code of Regulations (CCR) Title 14, Division 1.5, Chapter 7, Subchapter 2 – SRA Fire Safe Regulations (Defensible Space & Access & Water Supply).
- Local adoption and amendments by local jurisdictions (e.g., the fire agencies), building on the basis established by state and county.

Tahoe Water for Fire Suppression Partnership

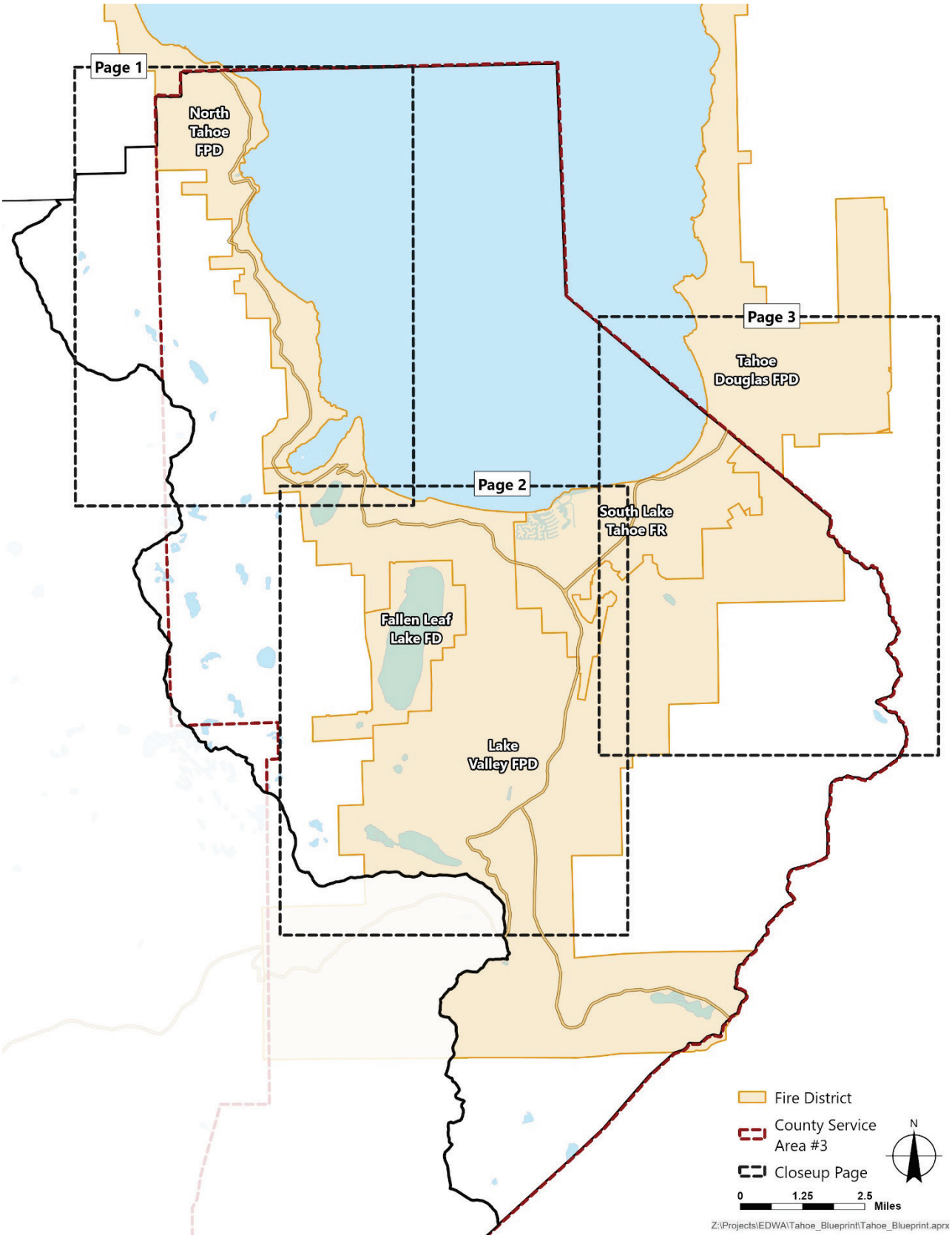
Tahoe Water for Fire Suppression Partnership[2] provides a solid representation for utility-scale approaches and effectiveness of collaborated and coordinated actions.

Established after the 2007 Angora Fire, this partnership is a bi-state coalition of water agencies in the Lake Tahoe Basin to address gaps in water supply for firefighting and to accelerate investment in resilience water infrastructure for fire suppression for communities, environment and regional economy. It has recently received $2.125 million in federal funding in January 2026 for critical water infrastructure projects, adding to previous federal funding and local utility district capital funding.

[2] The participant agencies California parties (North Tahoe Public Utility District, South Tahoe Public Utility District, Tahoe City Public Utility District, Incline Village General Improvement District, Lakeside Mutual Water Company, Lukins Brothers Water Company, Tahoe Park Water Company/Talmont Resort, Tahoe Swiss Village, Tahoe Key Water Company, and Spring Creek) and Nevada parties (Round Hill General Improvement District, Douglas County Community Development, and Kingsburg General Improvement District).

Rural Areas with Isolated Water Systems

The areas with isolated water systems could have higher fire risks due to the limited capacity to provide adequate water supply for fire protection. Under these conditions, insurance and wildfire underwriting are an emerging force for stricter requirements. Some considered that the trend may transform the requirements from the infrastructure standard to a risk-based performance consideration. Insurability may become the de facto enforcement mechanism.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Tahoe Douglas FPD
Page 2
South Lake Tahoe FR
Fallen Leaf Lake FD
Lake Valley FPD
Fire District
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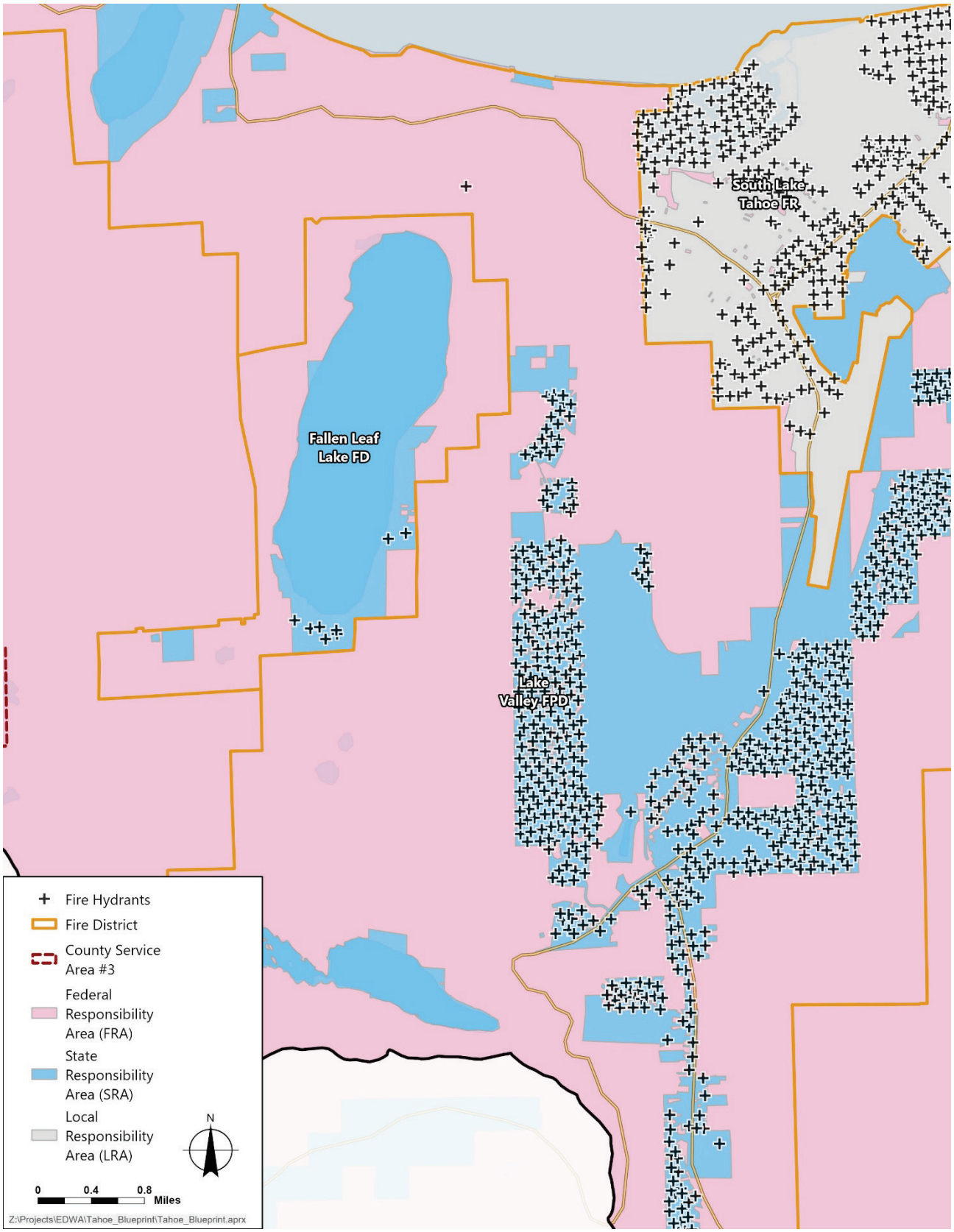
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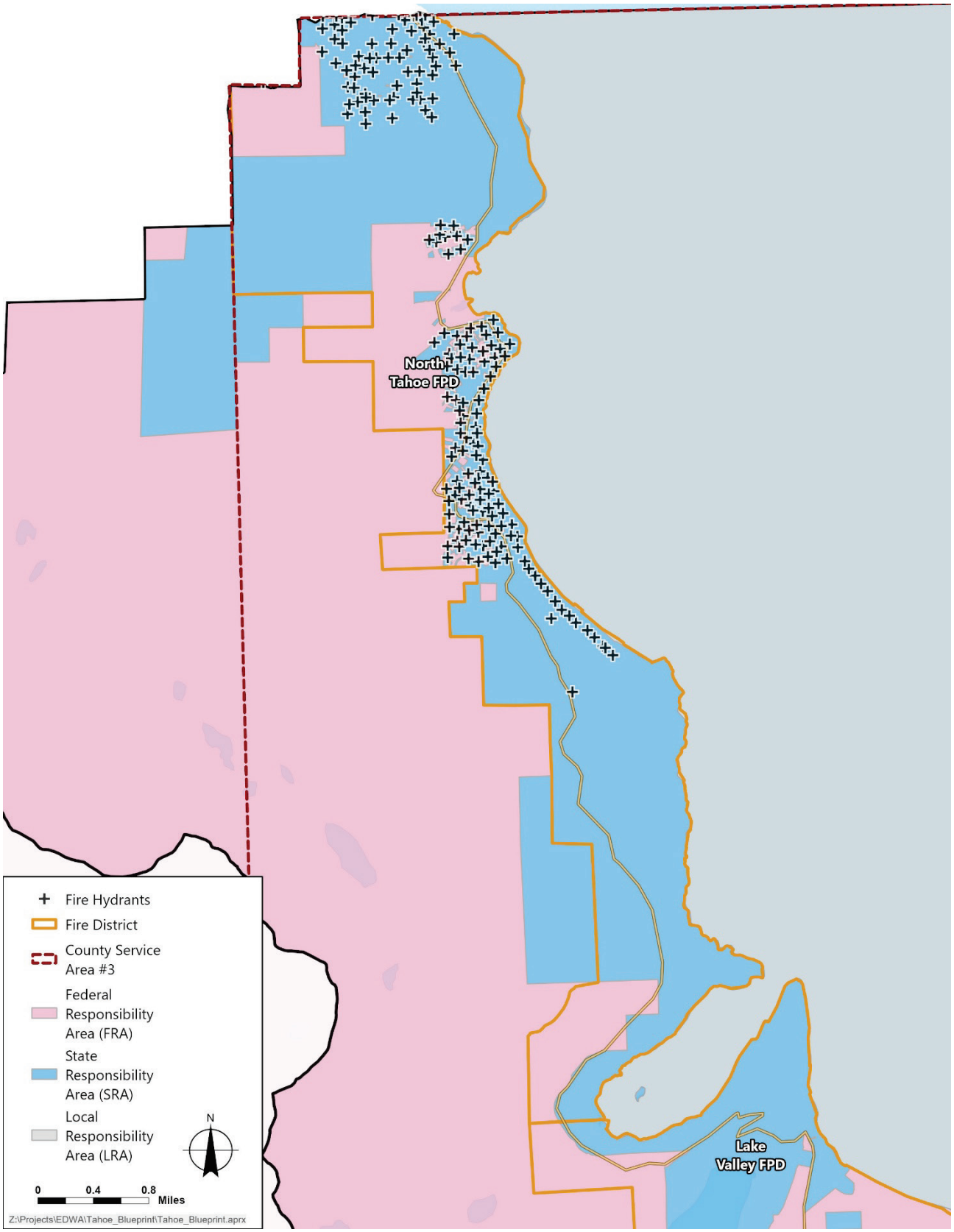
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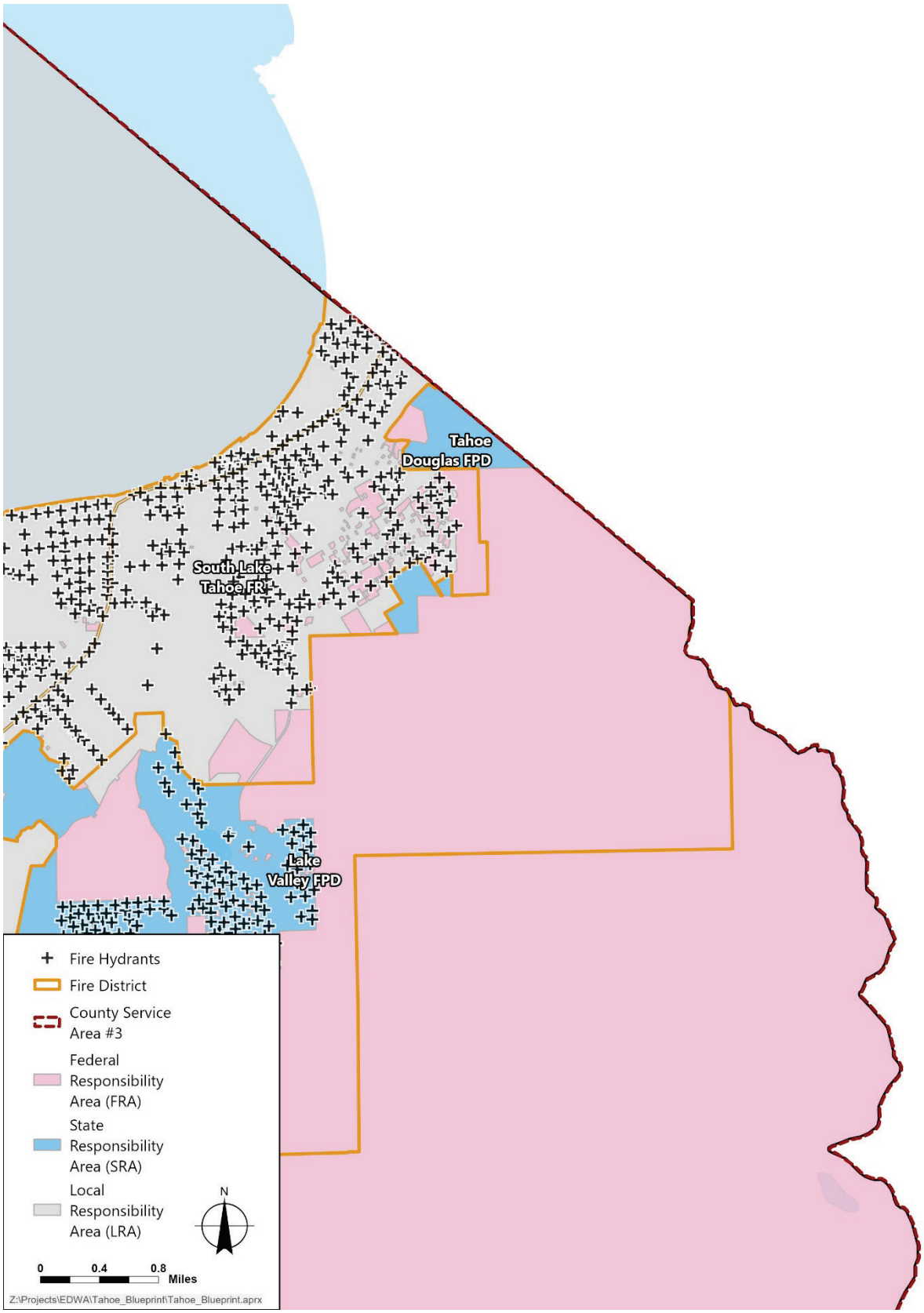
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BlueprintTahoe
El Dorado Water Security Initiative

WATER SUPPLY-DEMAND IMBALANCE

The Tahoe Regional Planning Agency set strict growth and land use restrictions with its 2012 Regional Plan to reduce the risk of water supply-demand imbalances. The Tahoe Basin is less susceptible to drought given the community relies on both surface water and groundwater; however, there are small water systems that are vulnerable to the effects of drought in the event of a temporary loss of water supply. Long-term groundwater availability is also less of a concern because runoff and snowmelt are adequate for recharge. However, the increased frequency of wildfires can degrade long-term water quality.[1]

A Short Note on California's Share of Surface Water Rights in the Truckee River Basin

Under the Truckee River Operating Agreement (TROA), California has water rights up to 23,000 acre-feet per year among authorized users in California, under the management of State Water Resources Control Board. TCPUD historically uses both surface water and groundwater for water supply. TCPUD has pending water right petitions for change and extension of time. STPUD does not historically use surface water for water supply. STPUD has a pending water right petition for 6,390 acre-feet per year. There are minor uses by other water users in the Tahoe Basin.

TCPUD's new surface water intake and treatment plant (West Lake Tahoe Regional Water Treatment Plant) was completed in September 2025 with significant federal and state funding support, including the American Rescue Plan Act funding administrated by El Dorado Water Agency. This facility improves TCPUD's capacity to exercise its surface water rights.

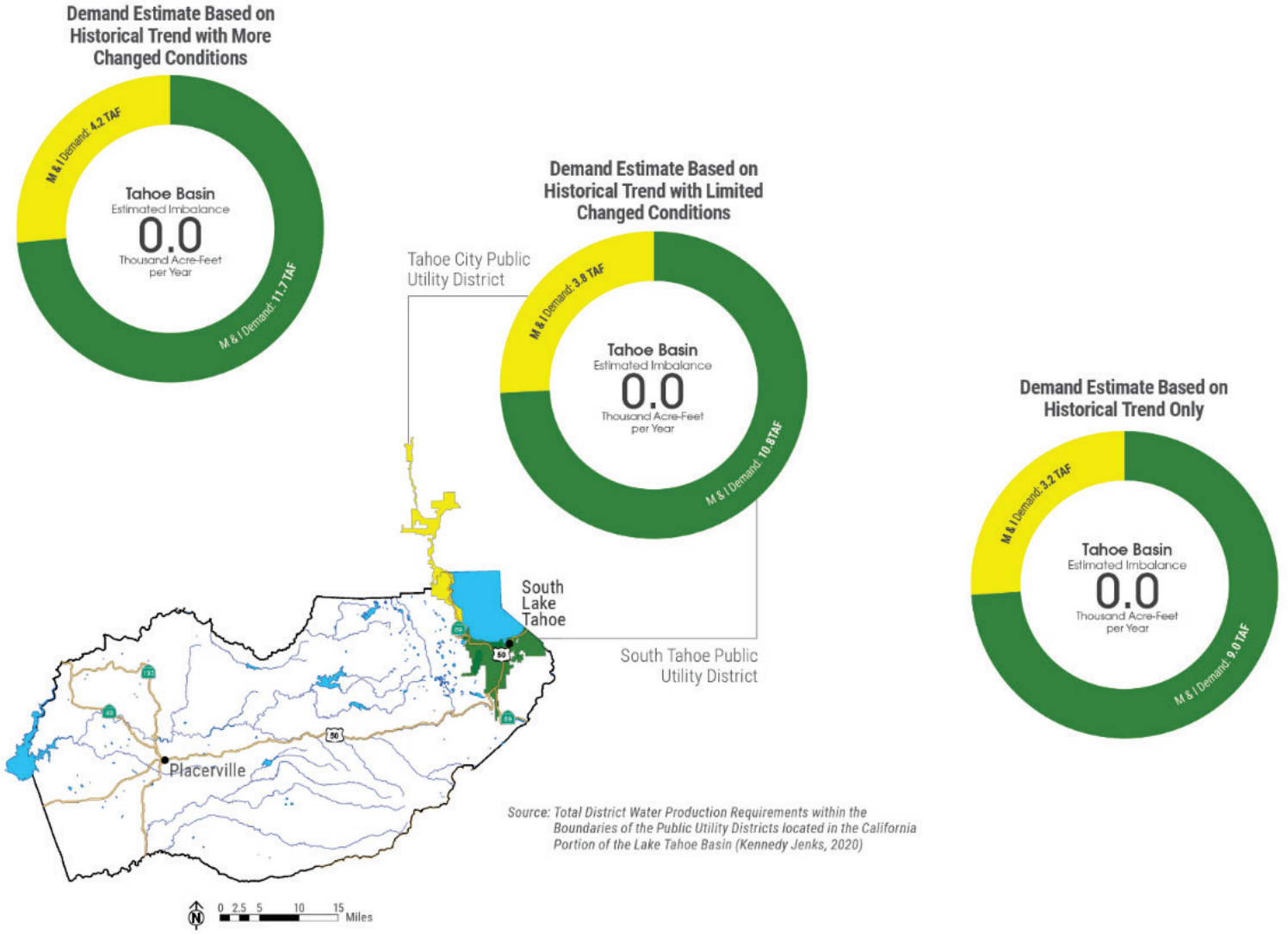
A Detailed Look of Projected Long-term Water Supply-Demand Imbalance

El Dorado Water Agency's 2024 Water Resources Development and Management Plan (i.e., El Dorado County Water Plan for long-range planning) provides further confirmation through an assessment in coordination with South Tahoe Public Utility District (STPUD) and Tahoe City Public Utility District (TCPUD). 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. See the figure on the next page.

The demand estimates are based on 2020 study conducted for STPUD, TCPUD, and the North Tahoe Public Utility District (NTPUD) to support water right petitions pursuant to the TROA. The demand estimates include unmetered demands in the district's water and sewage service areas using best available public information, including those of small water systems and

[1] County of El Dorado's 2023 Climate Vulnerability Assessment conducted to support the General Plan Safety Element Update.

domestic wells. The estimates were considered comprehensive and representative using the same conventional methodology based on historical use consistently in all areas.



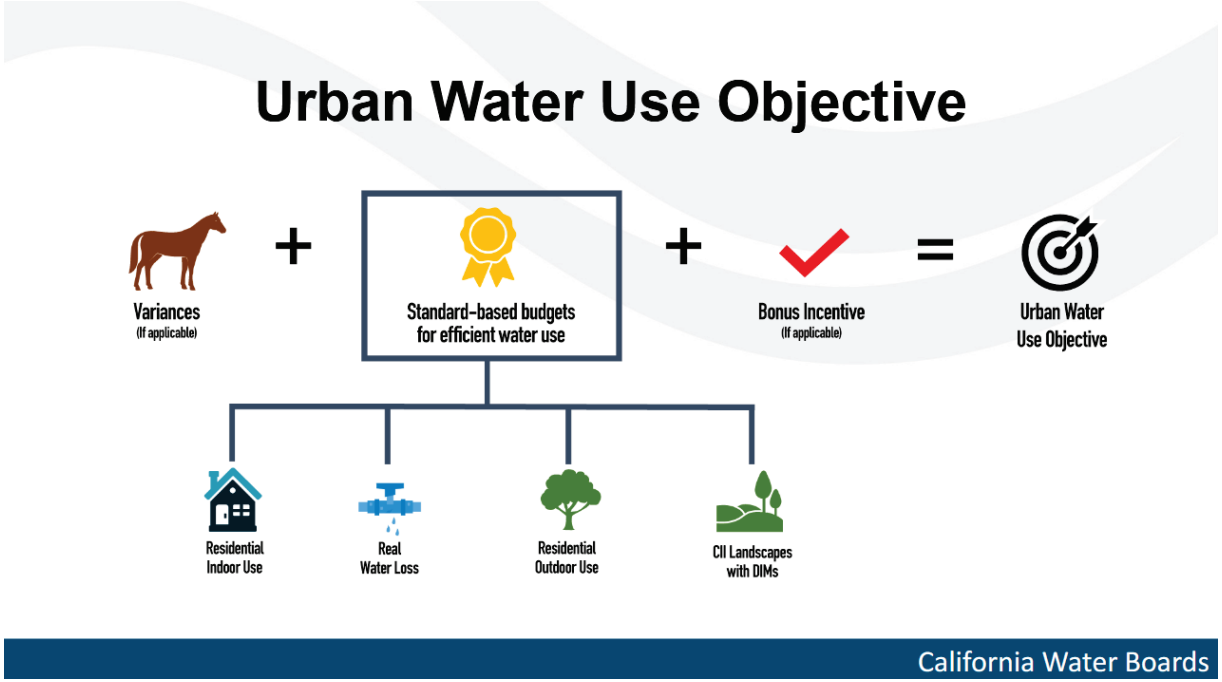
Source: Total District Water Production Requirements within the Boundaries of the Public Utility Districts located in the California Portion of the Lake Tahoe Basin (Kennedy Jenks, 2020)

The 2020 study methodology was considered standard when the study was prepared; however, the different approach is required under the Making Conservation a California Way of Life regulation per SB 606 and AB 1668 of 2018. The regulation was adopted by State Water Resources Control Board (SWB) in 2024 and became effective on January 1, 2025.

Making Conservation a California Way of Life Regulation

Both STPUD and TCPUD are conducting reviews to refine their demand estimates and meet the Urban Water Use Objective required under the Making Conservation a California Way of Life regulation.

Advocating the interests and unique conditions of rural mountain counties, El Dorado Water Agency participated in the standard development process with California Department of Water Resources (DWR) to formulate its recommendations to SWB for adoption in October 2022.



Urban Water Use Objective

The adopted regulation requires urban water suppliers[2] (including urban wholesale water suppliers and urban retail water suppliers[3]) to use a bottom-up approach to demonstrate efficient

[2] California Water Code (CWC), Section 10617, "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. This part applies only to water supplied from public water systems subject to Chapter 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code.

[3] CWC Section 10608.12(af) "Urban retail water supplier" means a water supplier, either publicly or privately owned, that directly 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 for municipal purposes.

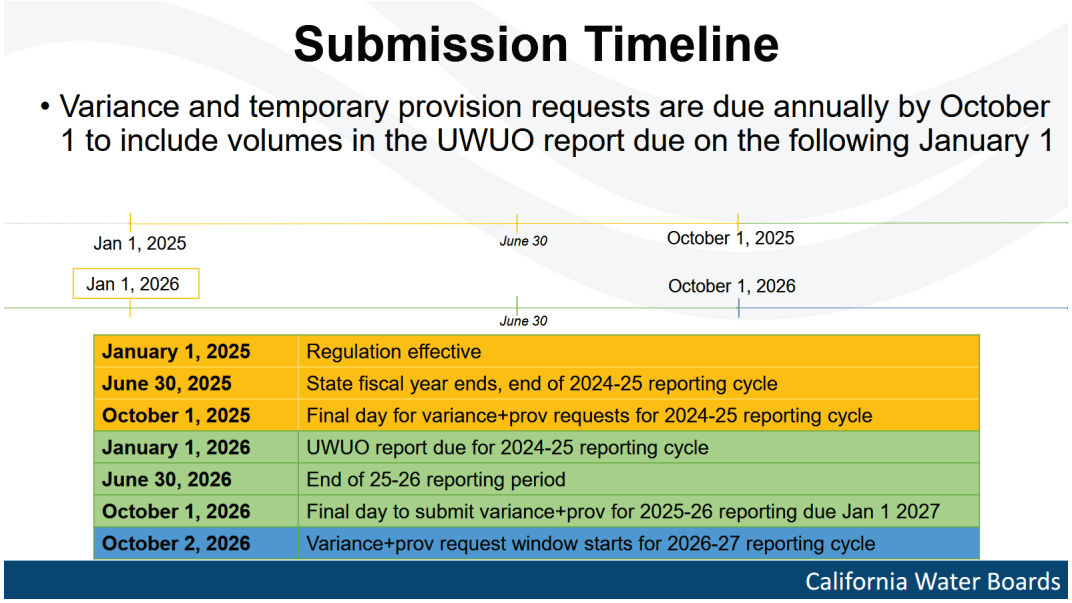
water use through comparison with the Urban Water Use Objective (UWUO).[4] See the above figure for components in the UWUO. This is a major change from the historical water use efficiency standard, which is a lump sum for applicable uses. The calculation and compliance process are significantly more complicated than the previous requirements, especially when alternative data is used.

TCPUD became an urban retail water supplier several years ago after multiple system consolidations. Therefore, it is now subject to the annual reporting and meeting with the UWUO.

Available Variances

The following variances are available under the current regulation.

- Variances available for indoor residential use include significant use for (1) evaporative coolers, and (2) seasonal population.
- Variances available for outdoor residential use for (1) horses and other livestock; (2) dust control on horse corrals and other animal exercise arenas; (3) irrigated residential agricultural landscapes; (4) response to respond to a state or local emergency declared in accordance with Government Code section 8558 (b) or 8558 (c), not including a drought; (5) landscapes irrigated with recycled water containing high levels of TDS; (6) ponds and lakes for sustaining wildlife, if the pond or lake is required to be maintained by regulation or local ordinance; (7) irrigation of existing residential trees (available only after January 1, 2040).



[4] CWC Section 10608.12(ah), "Urban water use objective" means an estimate of aggregate efficient water use for the previous year based on adopted water use efficiency standards and local service area characteristics for that year, as described in Section 10609.20.

- Variances available for CII landscape irrigation with dedicated meters include items 4, 5, 6, and 7 in the variances for outdoor residential use.

Each variance has its own threshold of significance and requires its own application and approval by SWB prior to being included in the UWUO. See SWB information package for more detail.

Variance for Seasonal Population

Seasonal population is a major challenge in demand projection in recreation destinations like Lake Tahoe. The following data are from STPUD's and TCPUD's annual report to State Water Resources Control Board.

Category	STPUD1	TCPUD[1,2]
Resident Population	37,592	8,556[3]
Transient Population	62,408	270[3]

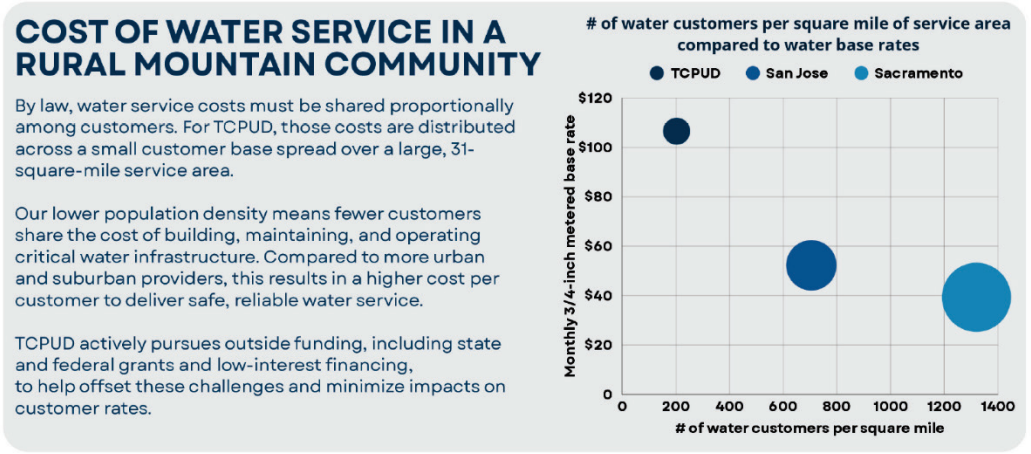
[1] Source: State Water Resources Control Board 2024 electronic Annual Report (eAR).
[2] Including all TCPUD systems in both Placer and El Dorado counties.
[3] Many TCPUD systems do not have transient population reported; therefore, the resident population is likely overestimated, and the transient population underestimated. In a separate TCPUD document, the 2020 US Census Data shows 4,762 population. In other words, transient population could be near 50 percent of the total population.

Significant fluctuations in seasonal population could be a variance, which requires a separate approval before including in the UWUO calculation. In coordination with El Dorado Water Agency, STPUD and other two water suppliers participated in the variance methodology development using their historical records during the efficient urban water use standard development phase. SWB adopted the resulting recommendation and methodology for seasonal population variance. DWR also developed an Excel-based variance calculation tool (including an instructional video) for potential use by urban retail water suppliers statewide.

Californian Water Efficiency Partnership also developed a variance estimator for their members to streamline evaluation of potential variances to develop a better strategy in maximizing their corresponding opportunity in meeting the UWUO.

Affordability

The cost of water service is a major challenge for small water systems in rural mountain areas. However, large water systems with small rate base could face the same challenge. This is illustrated by a TCPUD figure shown on the right.



System Consolidation

In the past years, both STPUD and TCPUD have consolidated many small water systems. El Dorado County's Environmental Management Department (EMD) received a consolidation award from the California Division of Drinking Water in 2017. This award recognized successful efforts to consolidate small, failing water systems within the county, with records indicating several systems completed the process between 2017 and 2018. Many of the consolidated systems were in the Tahoe Basin.

Costs are often the most challenging obstacle for system consolidation, including the initial cost and operations and maintenance cost. The significant distance of the isolated water systems and communities from the larger water system in the Tahoe Region further acerbates the cost concern. Depending on the conditions of the consolidated system, additional capital costs are often required to rehabilitate or replace the existing system. TCPUD published an article on March 11, 2026, via the Association of California Water Agencies, Why TCPUD Consolidates Water System – And What It Means for Customers, provides some insights associated with its system consolidation experience.

The independent spirit that is prevailing in rural mountain areas and the preservation of cultural heritage could also affect the willingness for system consolidation.

Representation of the Other County Area

For water supply issues, El Dorado Water Agency is the de facto representative for the unincorporated county areas that are outside of the service areas of major water purveyors (i.e., STPUD and TCPUD). Per request by the County of El Dorado, the Water Agency is also the lead agency for establishing a standing county drought and water shortage task force in 2022 and completing the County Drought and Water Shortage Resilience Plan in 2025 to meet requirements of SB 552.

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El Dorado Water Security Initiative

Flood Risks in the El Dorado Tahoe Basin

Increase in Flood Risks

Effects of climate change may be reflected in the following conditions:

- More precipitation falling as rain instead of snow
- Earlier and faster snowmelt
- Higher rainfall intensity and variability

This hydrologic pattern will amplify flood risks in the El Dorado Tahoe Basin, including the Upper Truckee River, Tahoe tributary creeks, and urbanized South Lake Tahoe drainage areas.

Wildfires could degrade the capacity of the watershed in water regulation and response.

For planning purposes, it is necessary to differentiate the riverine flooding and local flooding due to overwhelmed stormwater systems. However, other factors may be also present:

- Transportation chokepoints, such as the Upper Truckee River crossing, Meyers/South Upper Truckee tributaries, and Trout Creek corridor.
- Potential backwater effect from Lake Tahoe affecting shoreline areas.

FEMA's National Flood Hazard Information

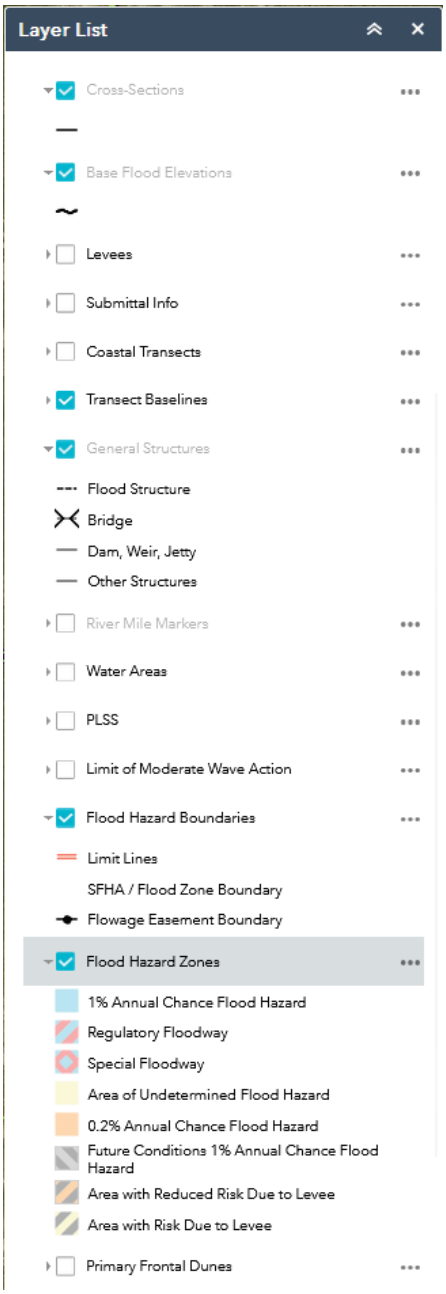
FEMA's National Flood Hazard Layer (NFHL) Viewer provides an interactive platform to review flood risk information in detail.

Flood risk assessments have been conducted for the Upper Truckee River, Trout Creek, Bijou Creek, and Tahoe Keys Marina area. These rivers have established regulatory floodways, 1% annual chance of flood hazard (Zone AE), and 0.5% annual chance of flood hazard (Zone X). The last update was completed in 2012.

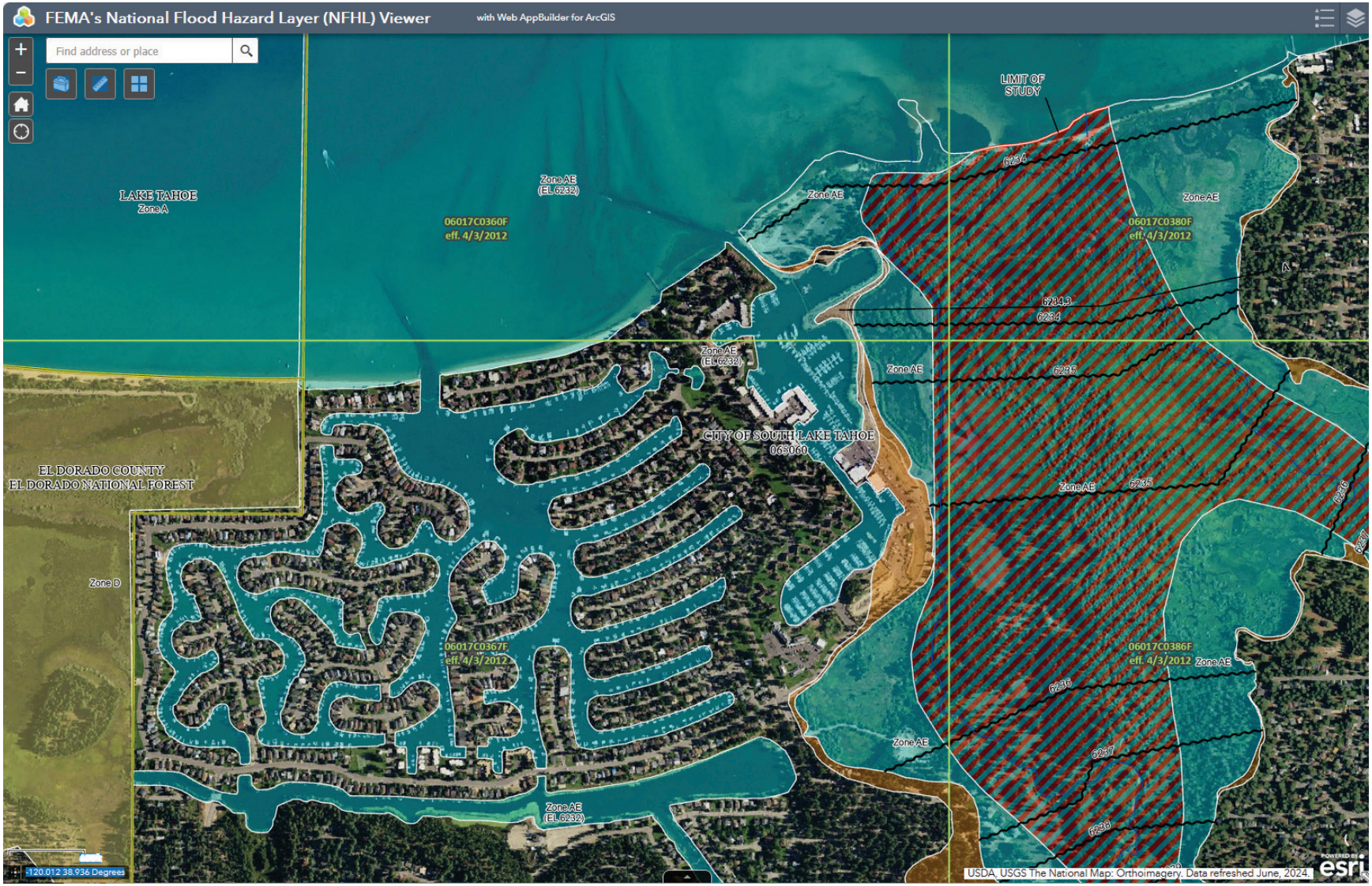
Other areas are considered Zone D with possible but undetermined flood hazards, as no analysis has been conducted.

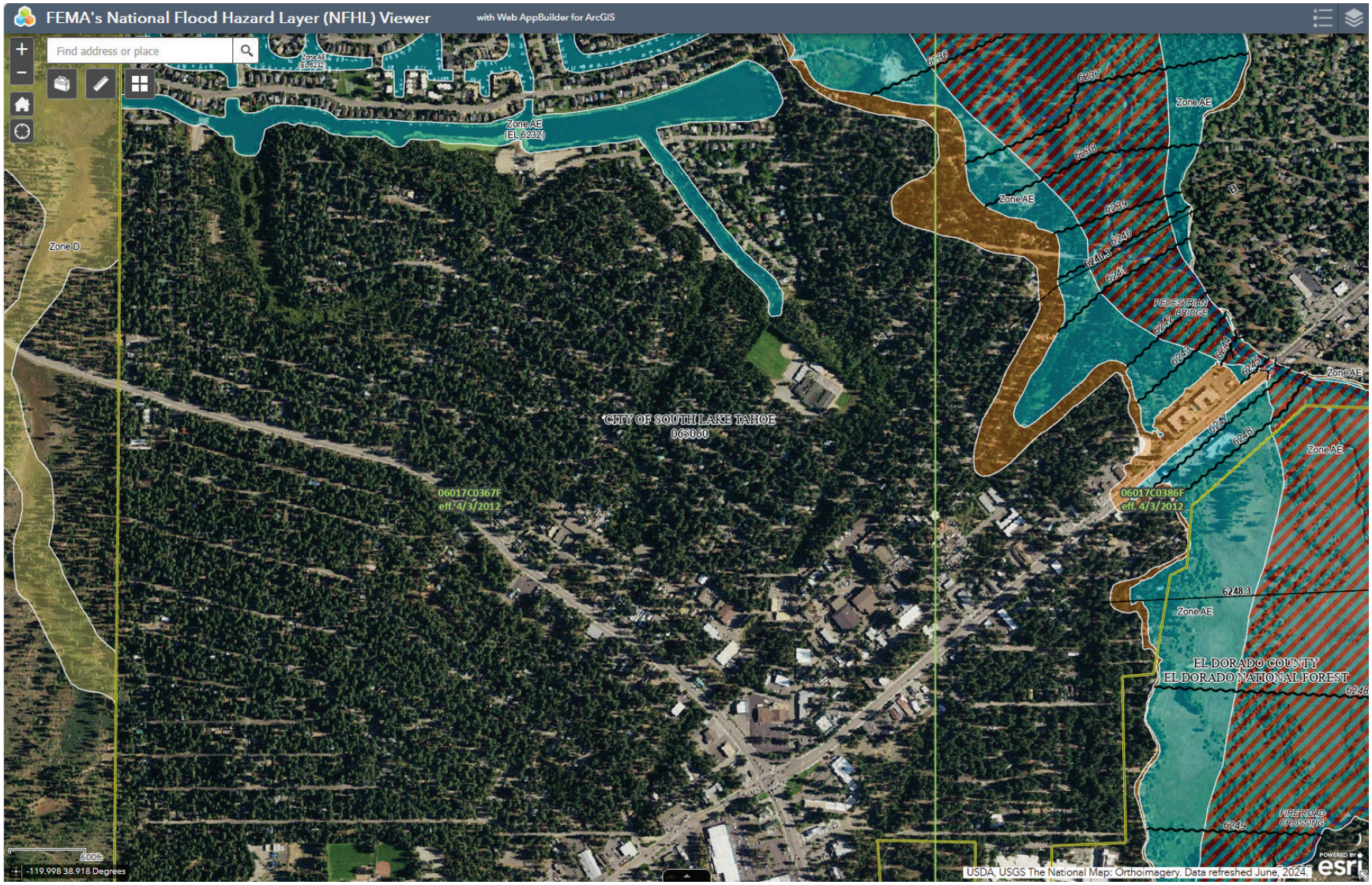
Levees and floodwalls are not used for flood protection in the El Dorado Tahoe Basin.

The following pages show the NFHL information with the legend shown on the right.



Upper Truckee River (including Tahoe Keys Marina Area)

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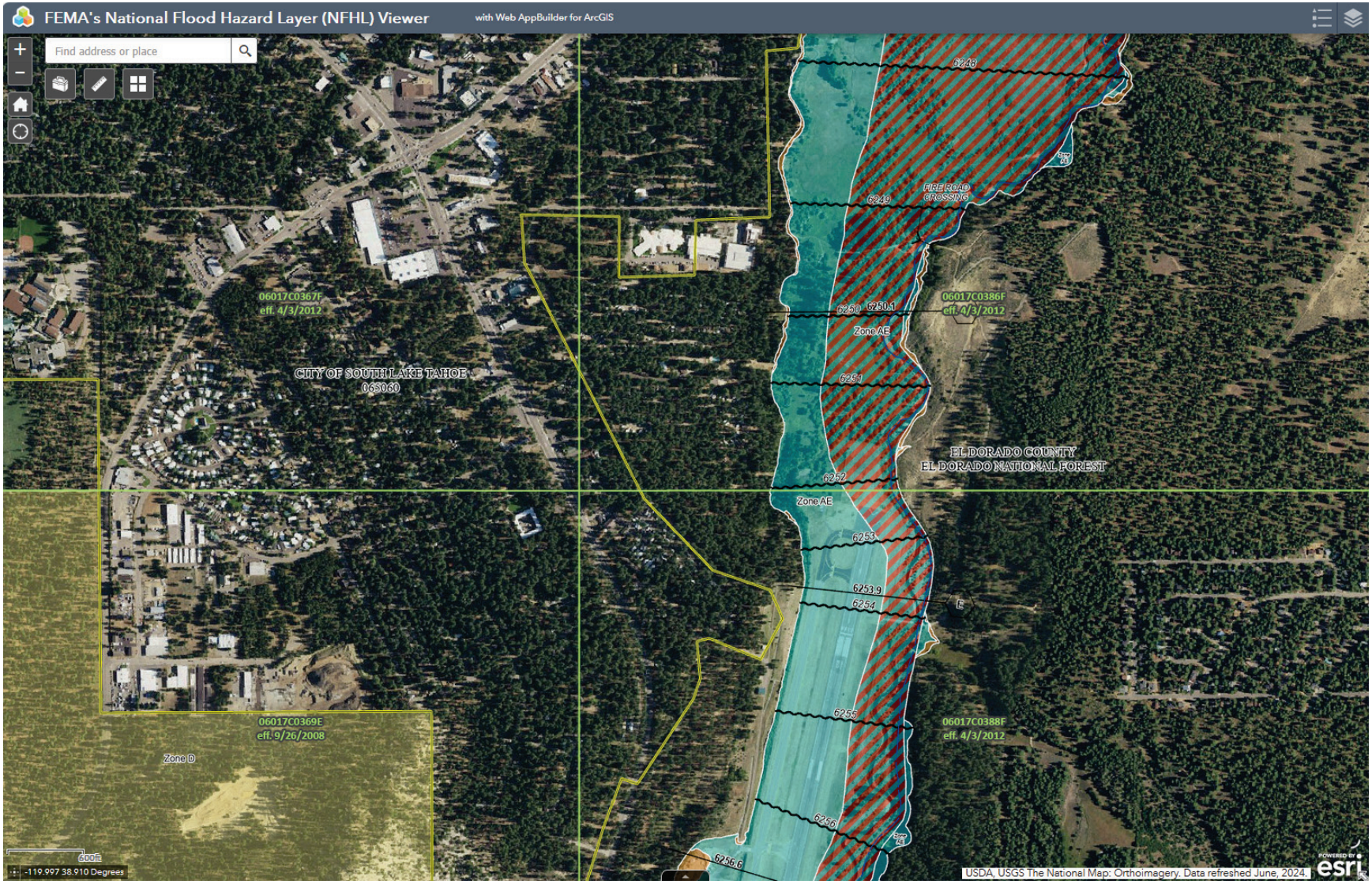
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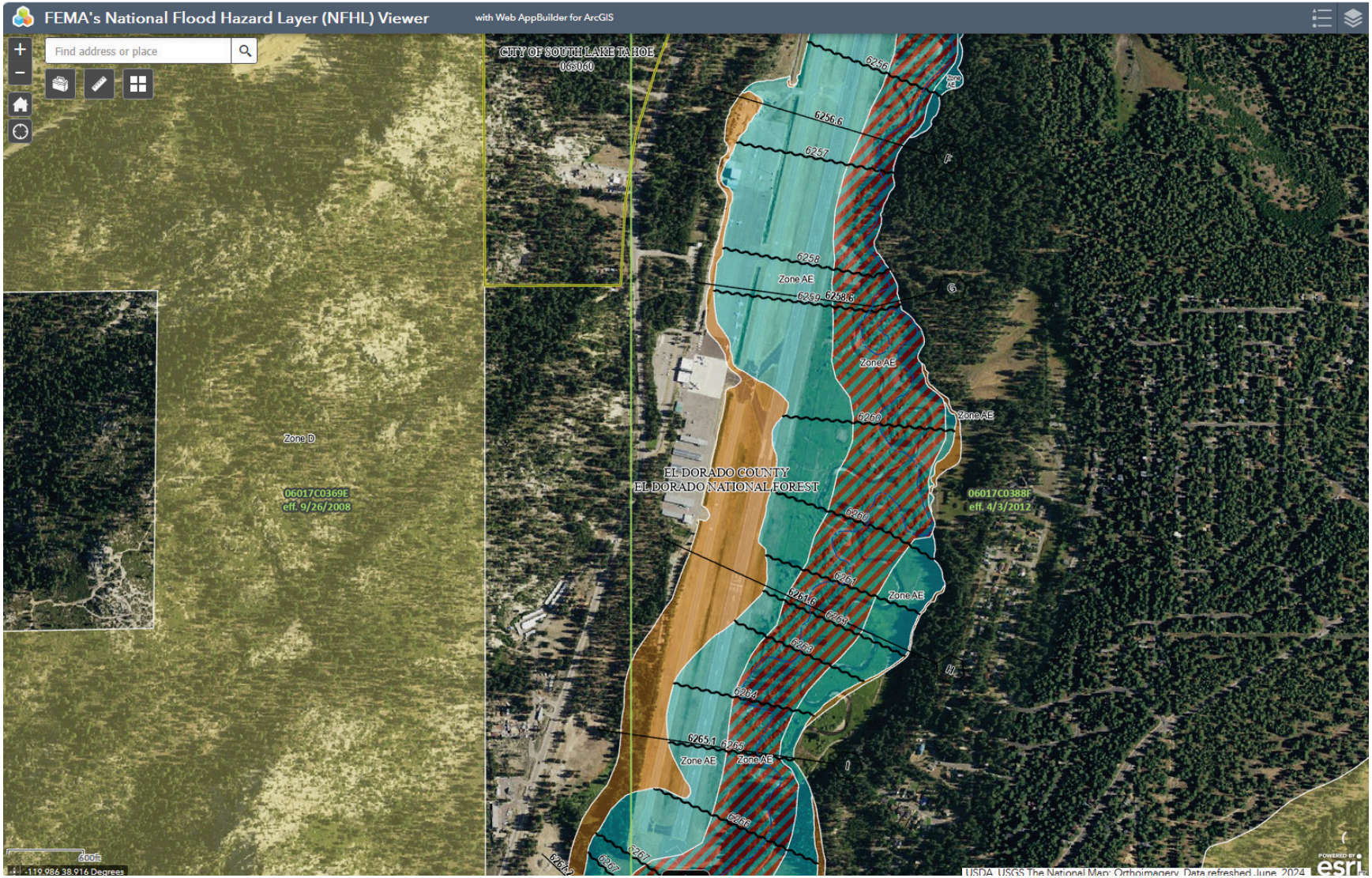
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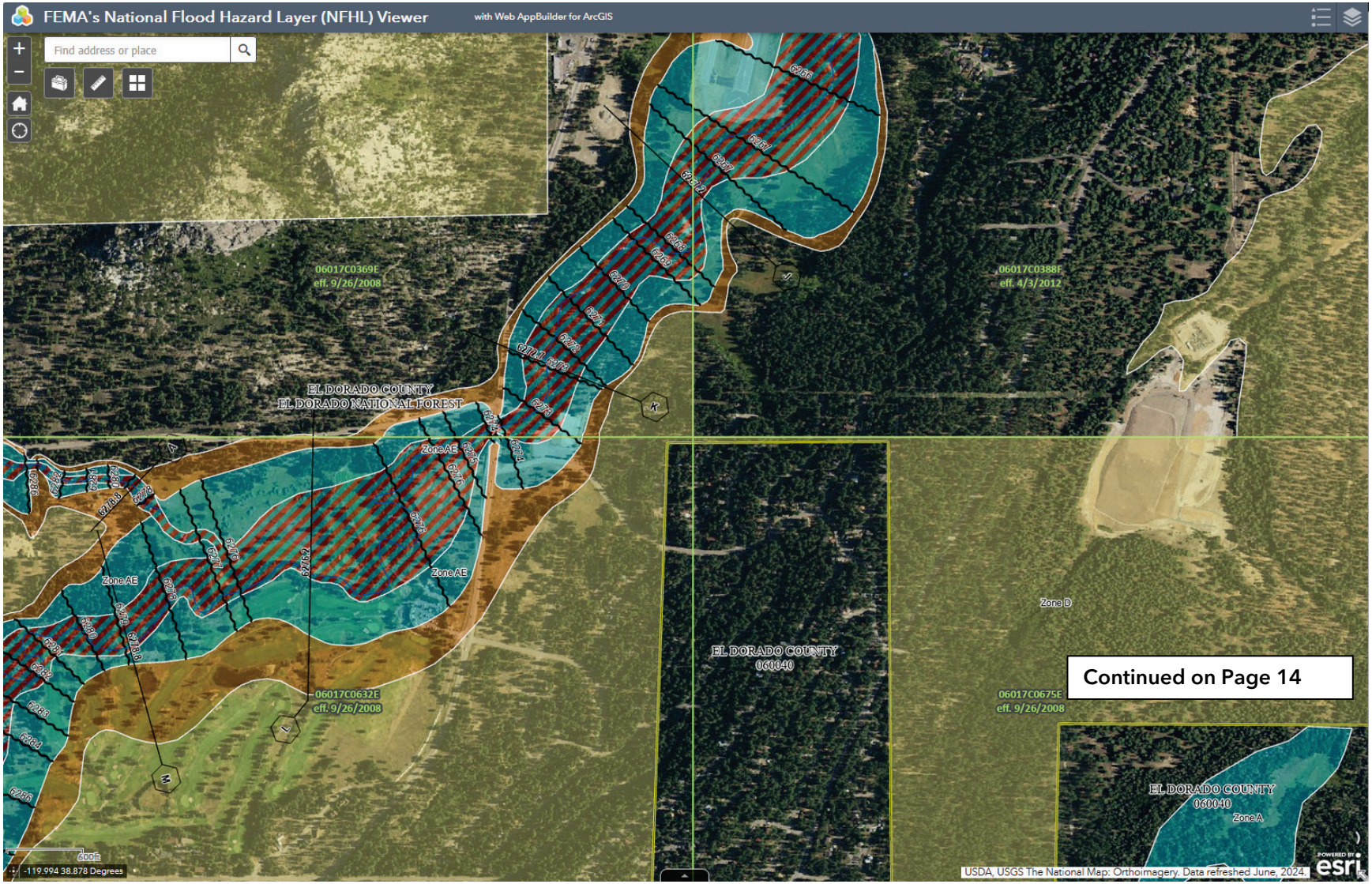
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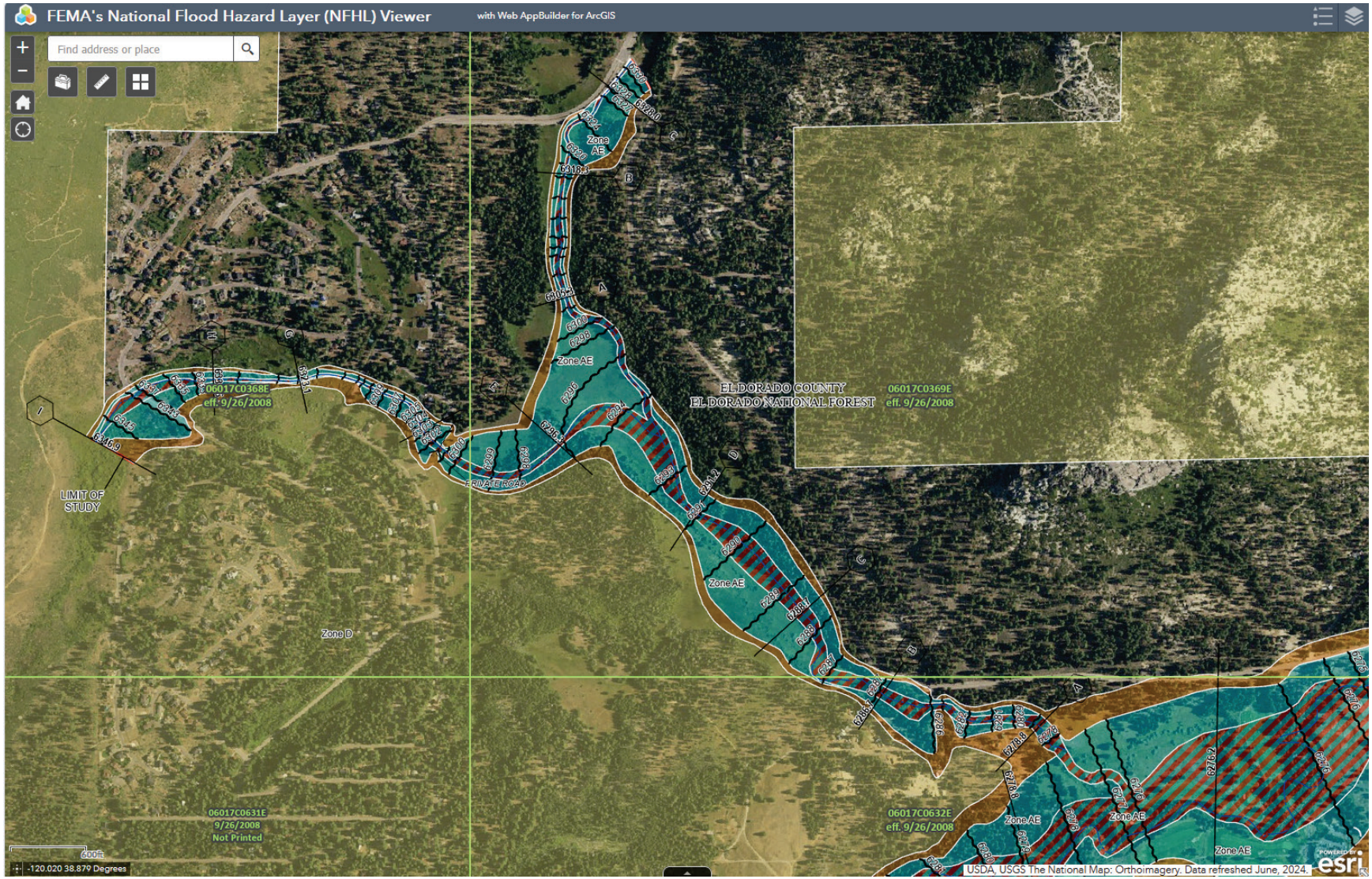
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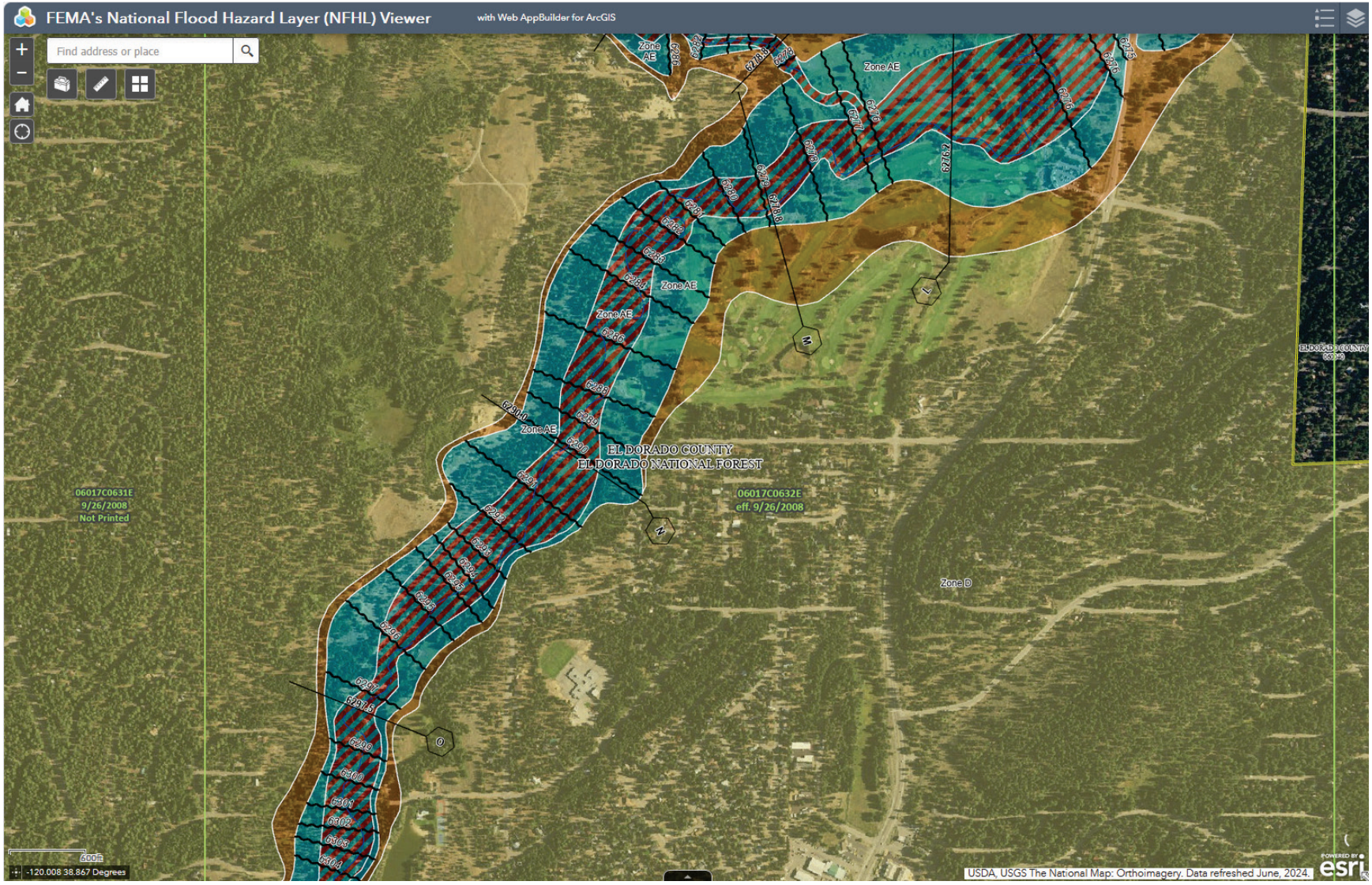
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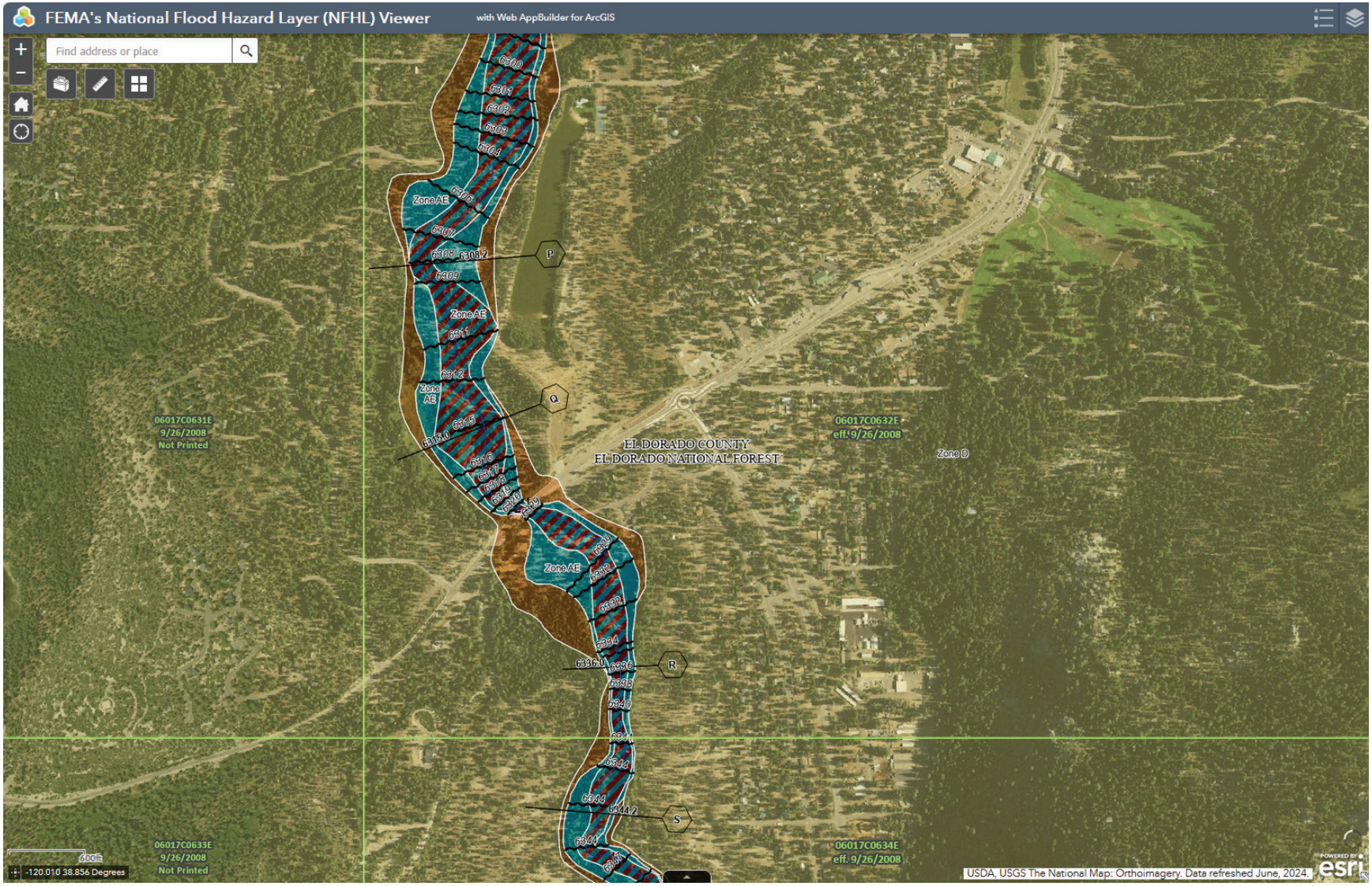
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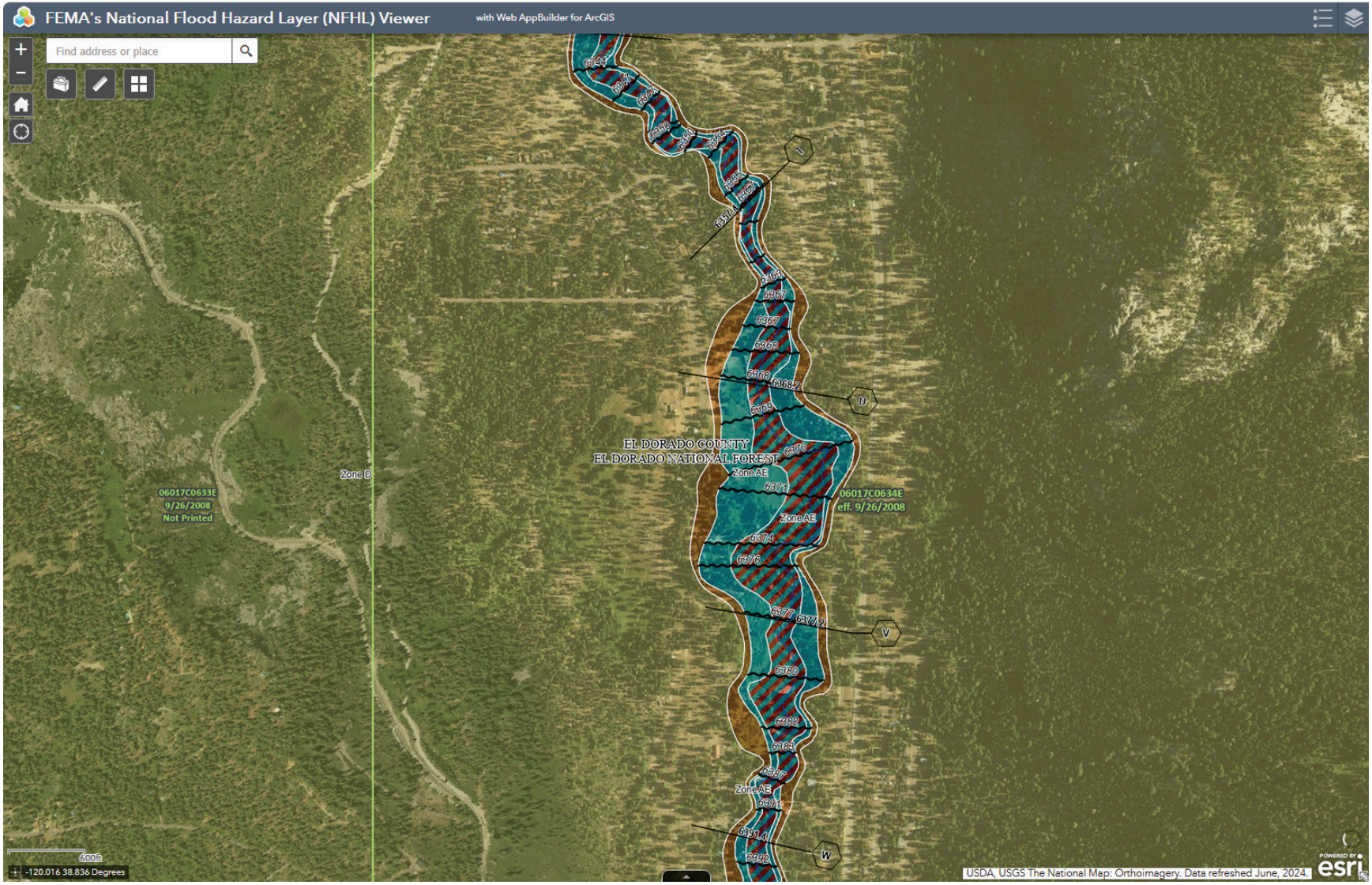
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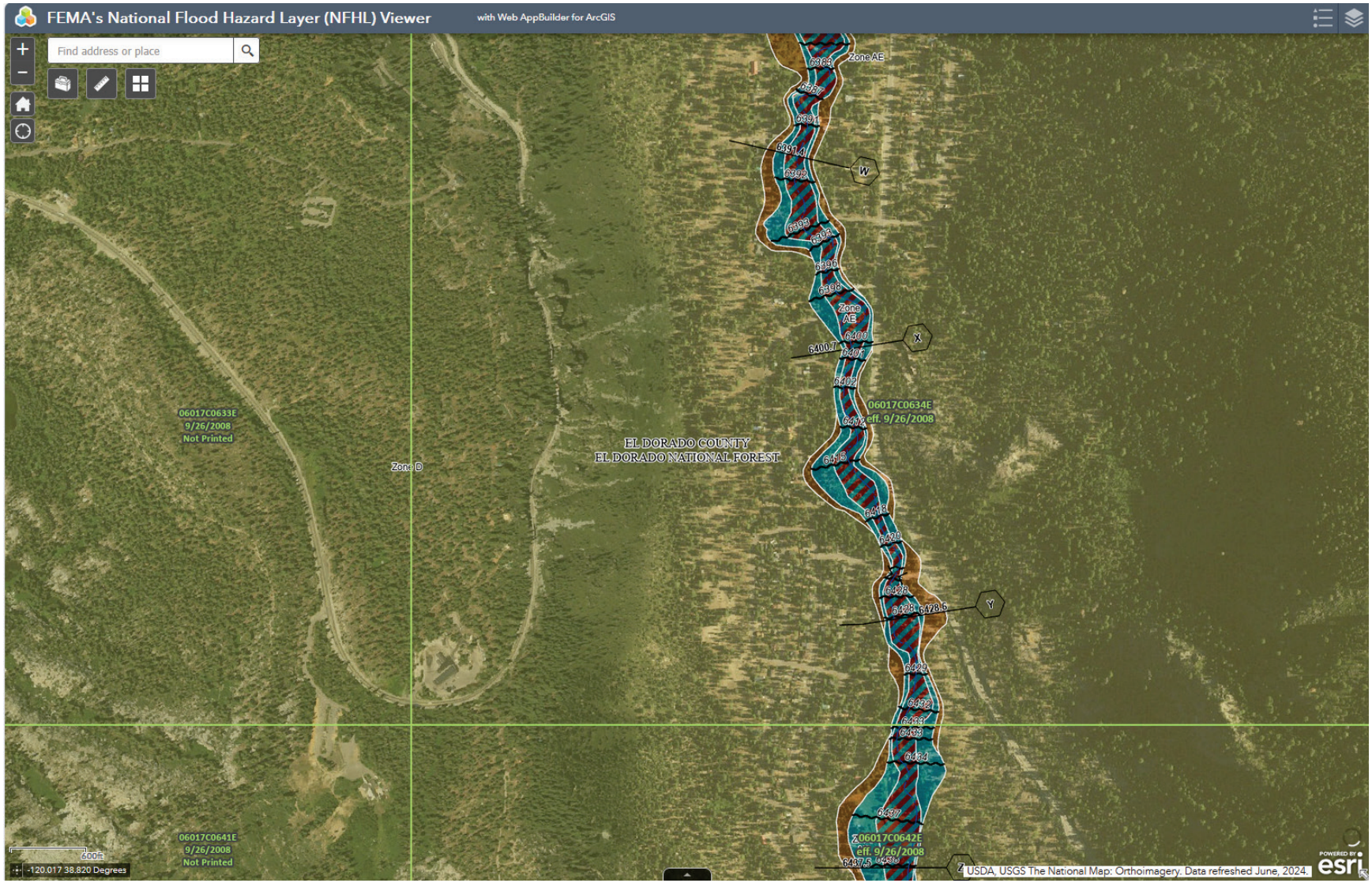
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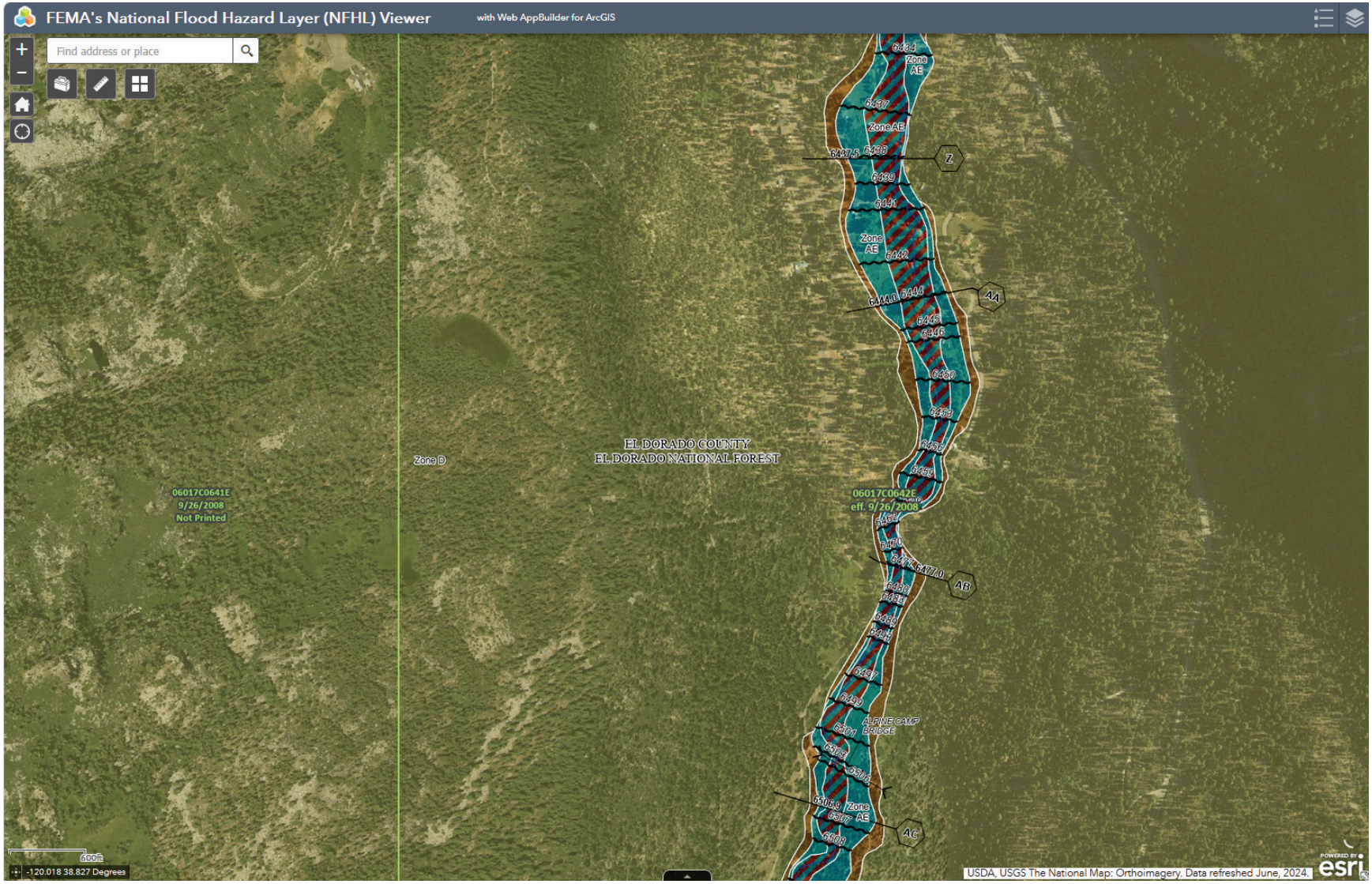
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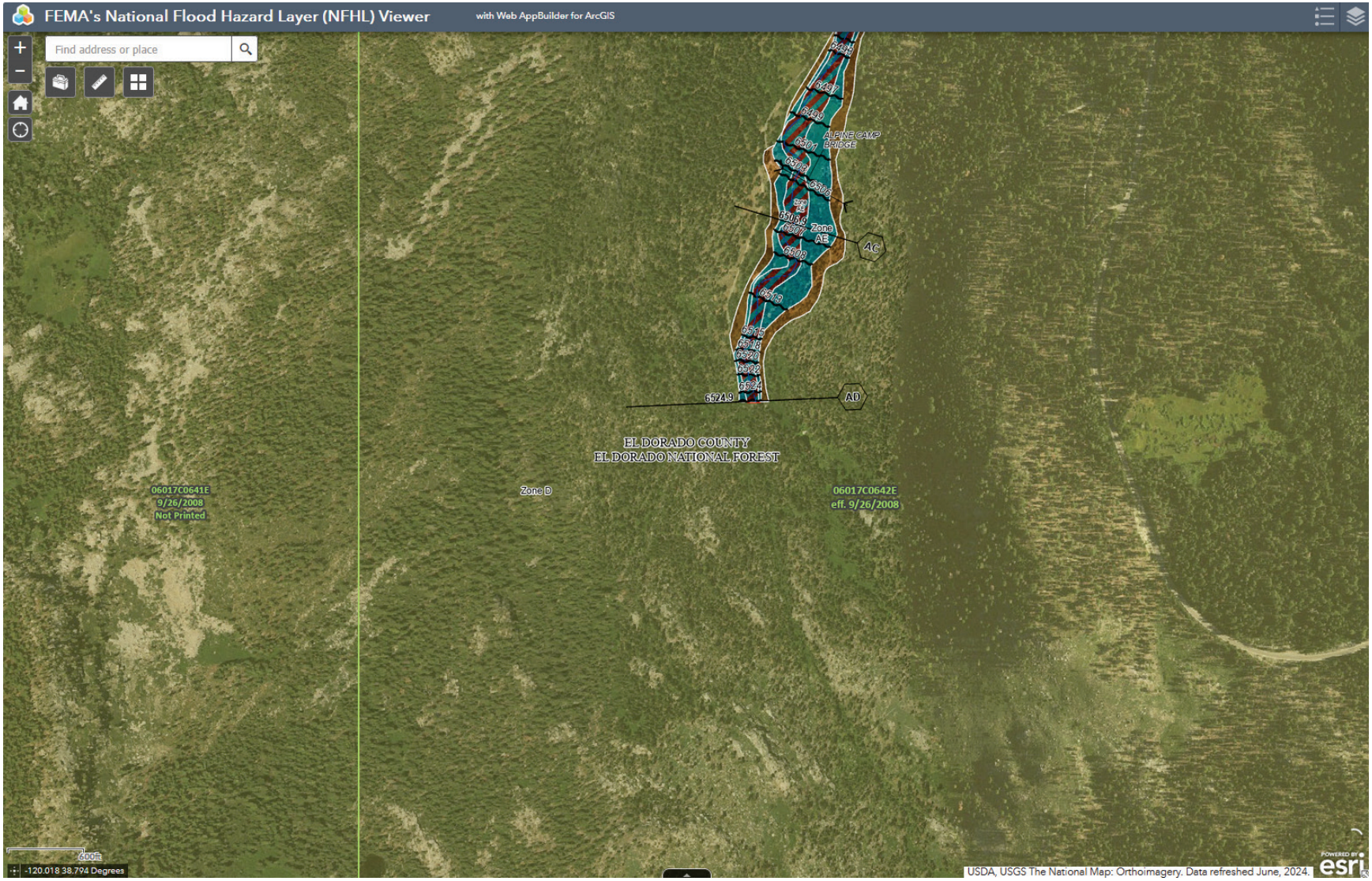
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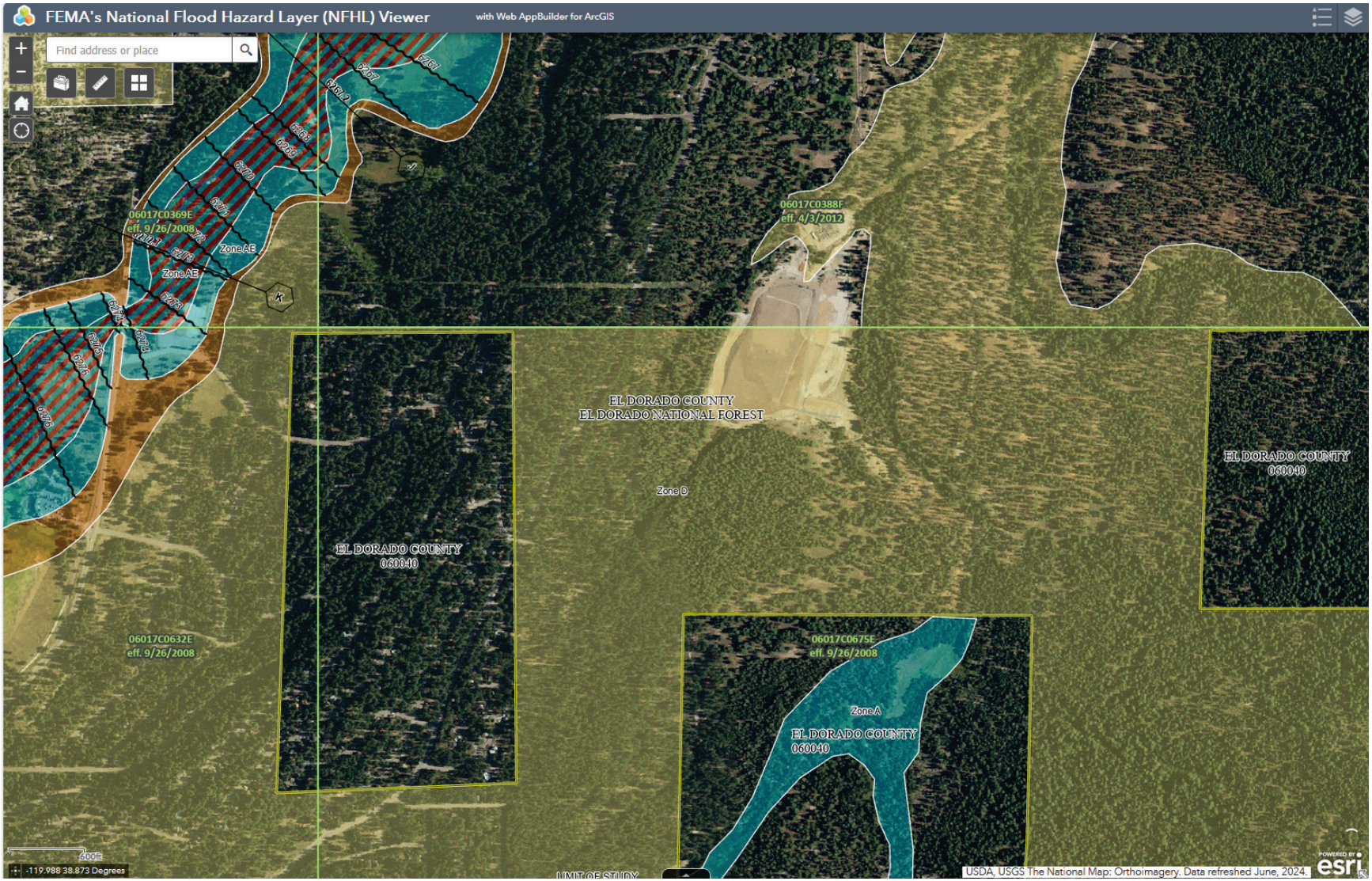
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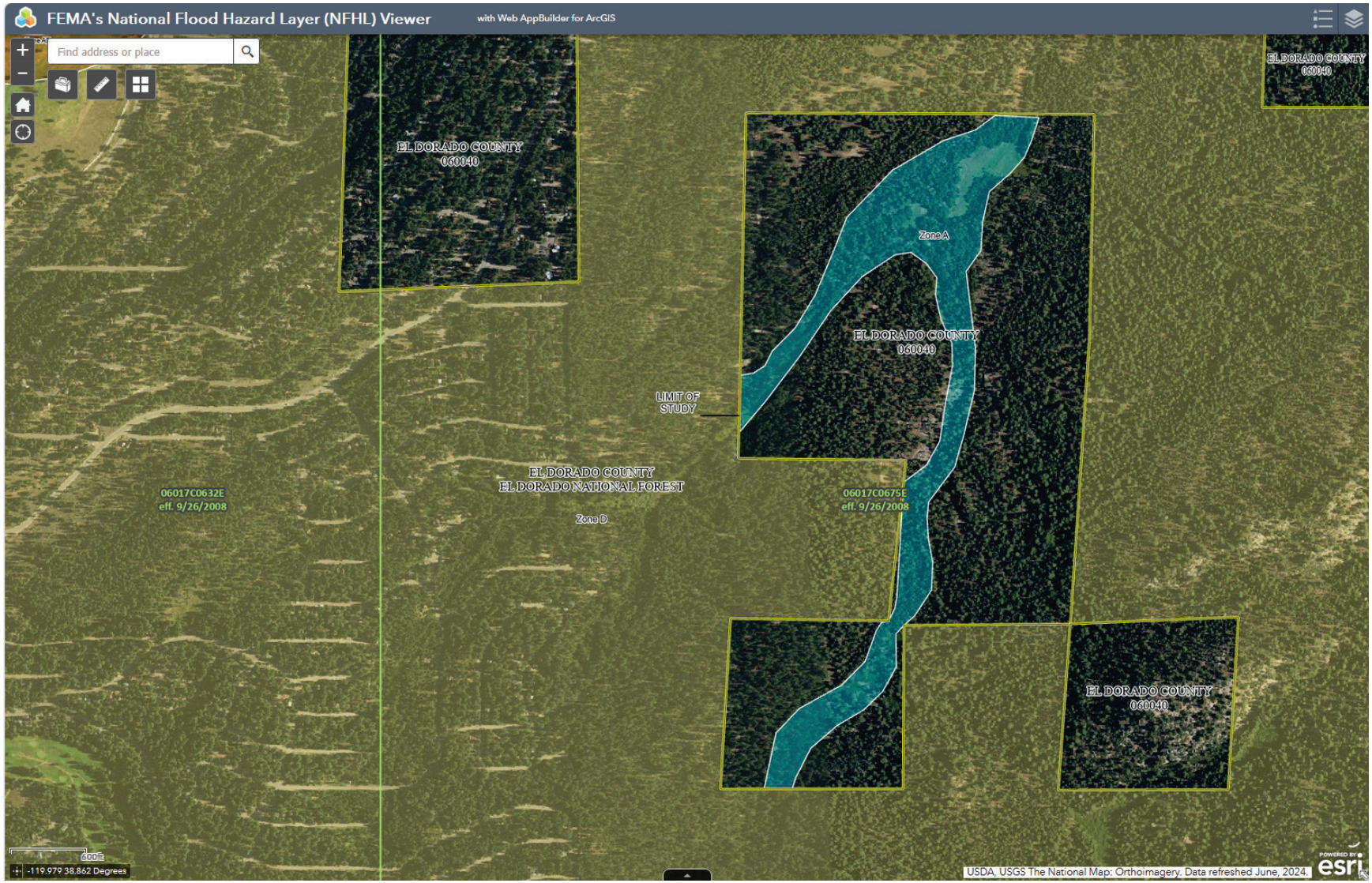
FEMA's National Flood Hazard Layer (NFHL) Viewer
with Web AppBuilder for ArcGIS
Find address or place
EL DORADO COUNTY
060040
Zone A
LIMIT OF
STUDY
EL DORADO COUNTY
EL DORADO NATIONAL FOREST
Zone D
06017C0632E
eff. 9/26/2008
06017C0675E
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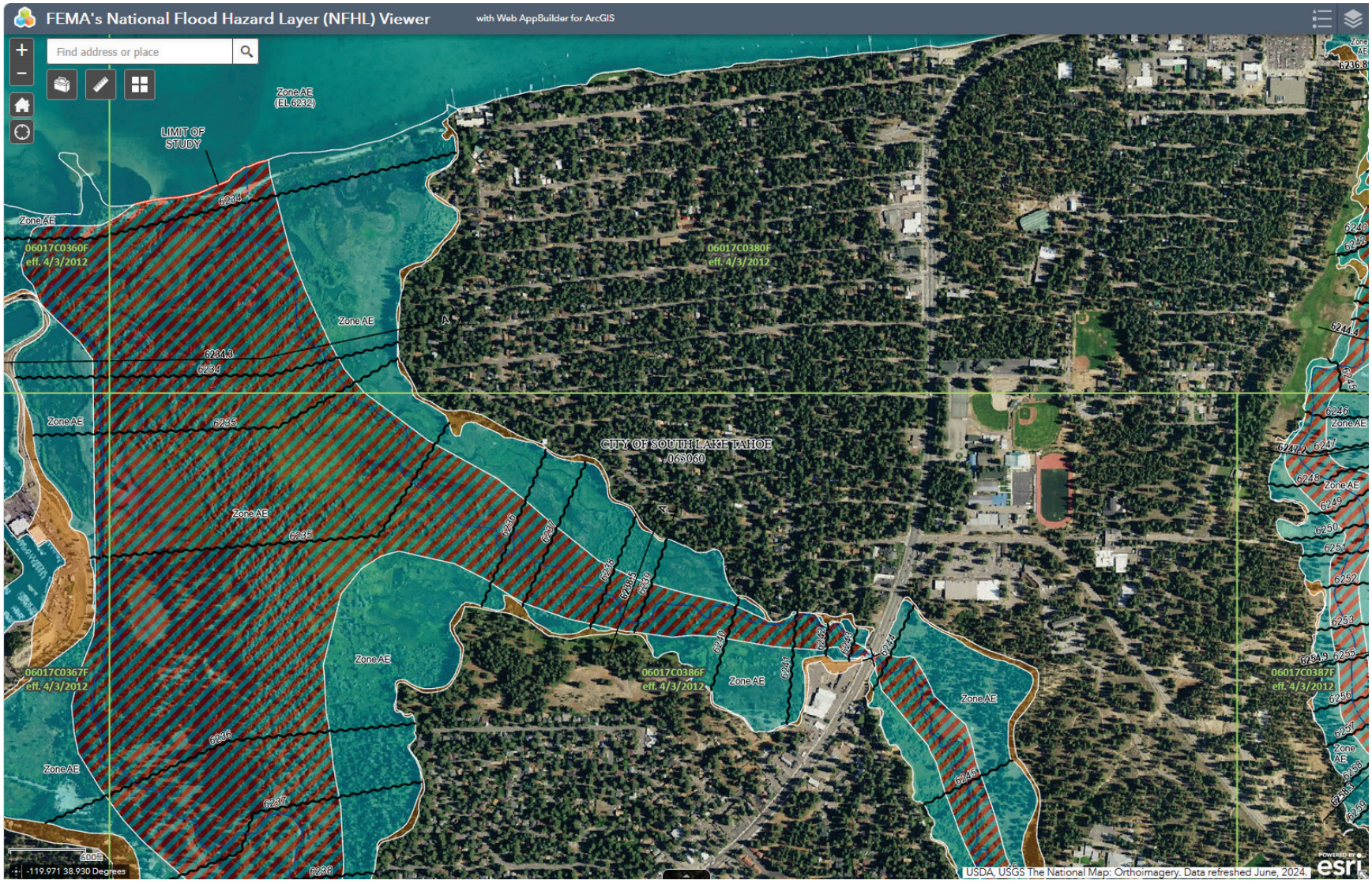
-119.979 38.862 Degrees
USDA, USGS The National Map: Orthoimagery. Data refreshed June, 2024.
esri

Trout Creek


FEMA's National Flood Hazard Layer (NFHL) Viewer
with Web AppBuilder for ArcGIS
Find address or place
Zone AE
(EL 6232)
LIMIT OF
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eff. 4/3/2012
CITY OF SOUTH LAKE TAHOE
065060
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eff. 4/3/2012
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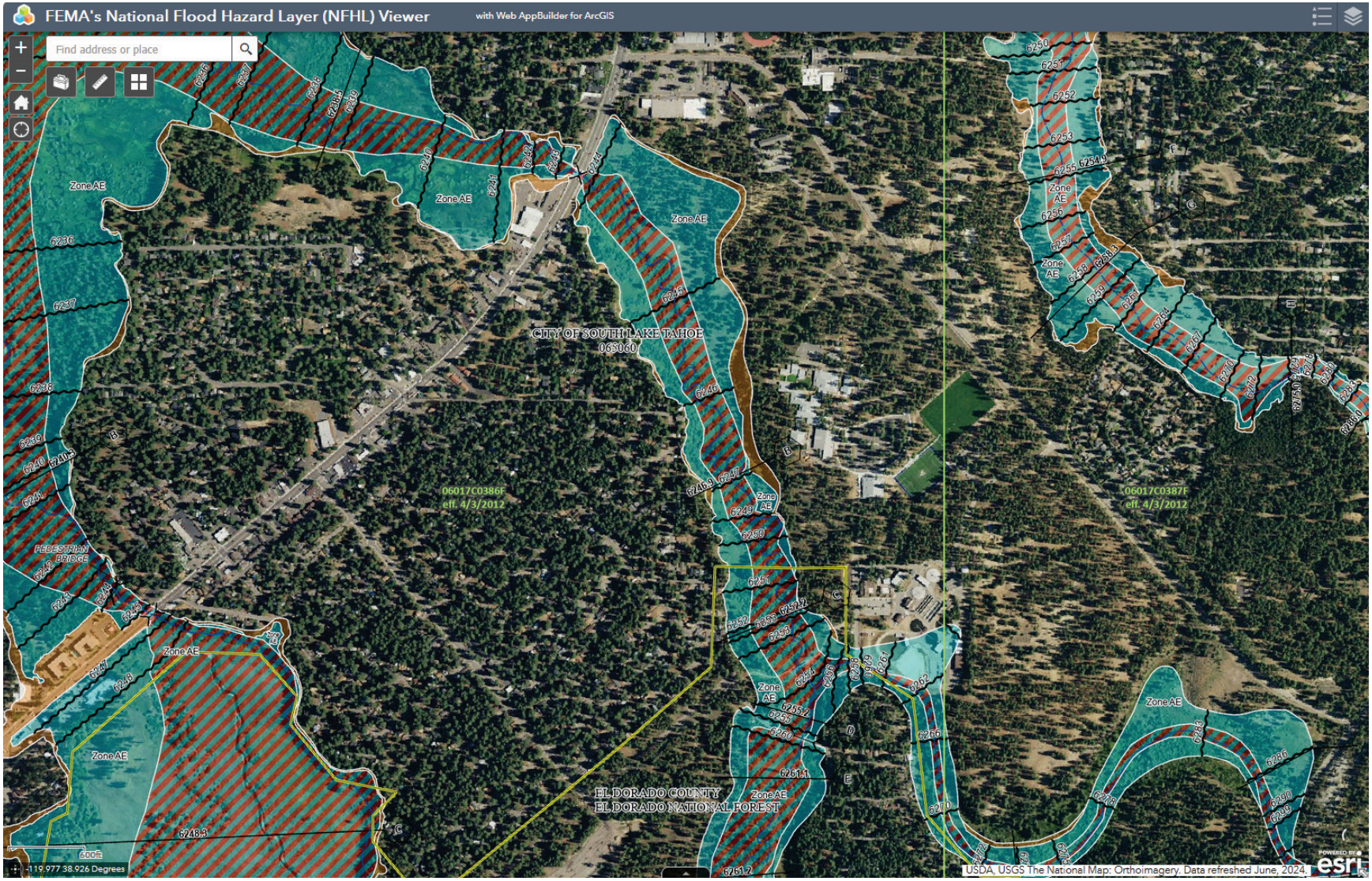
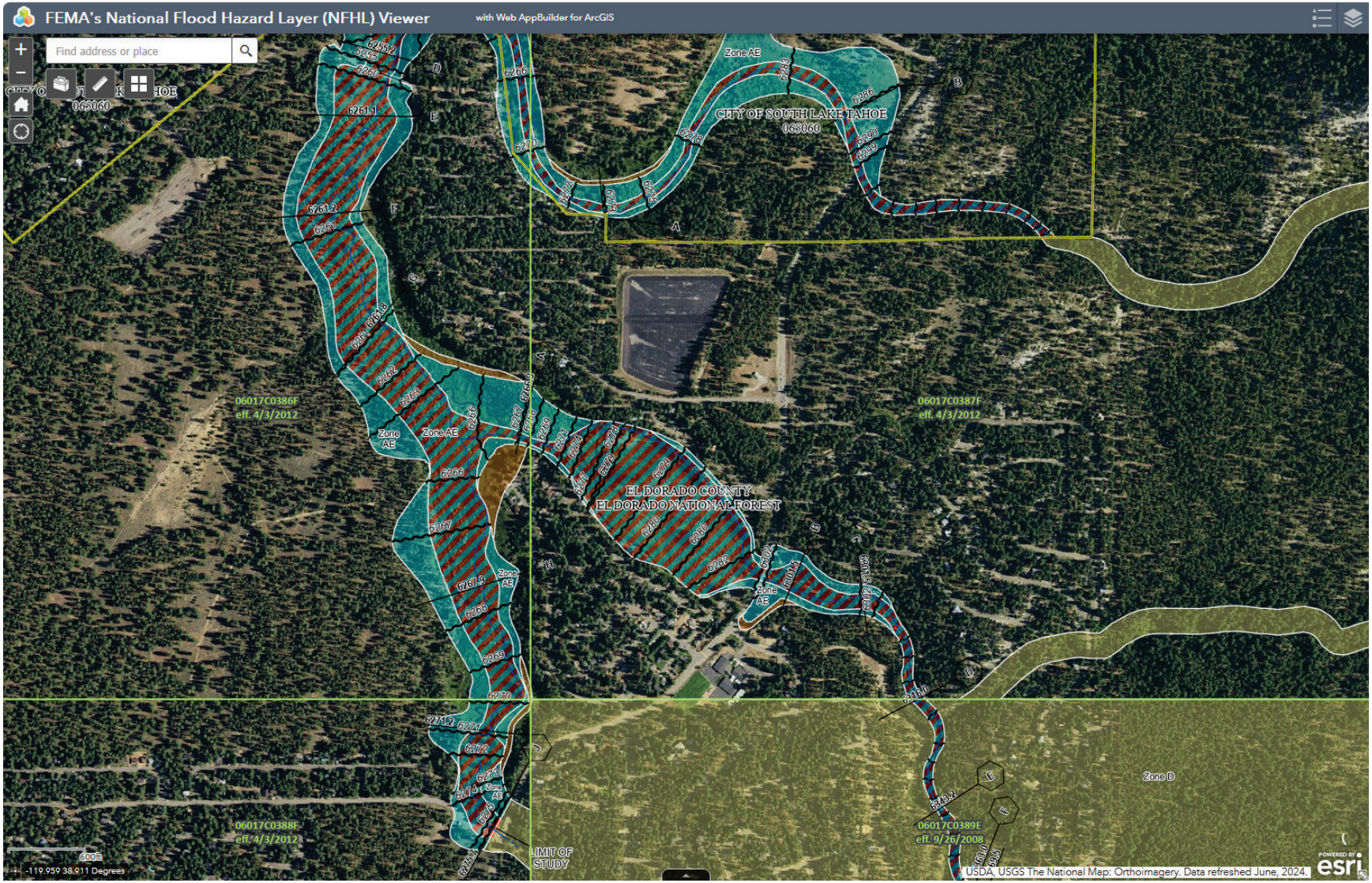
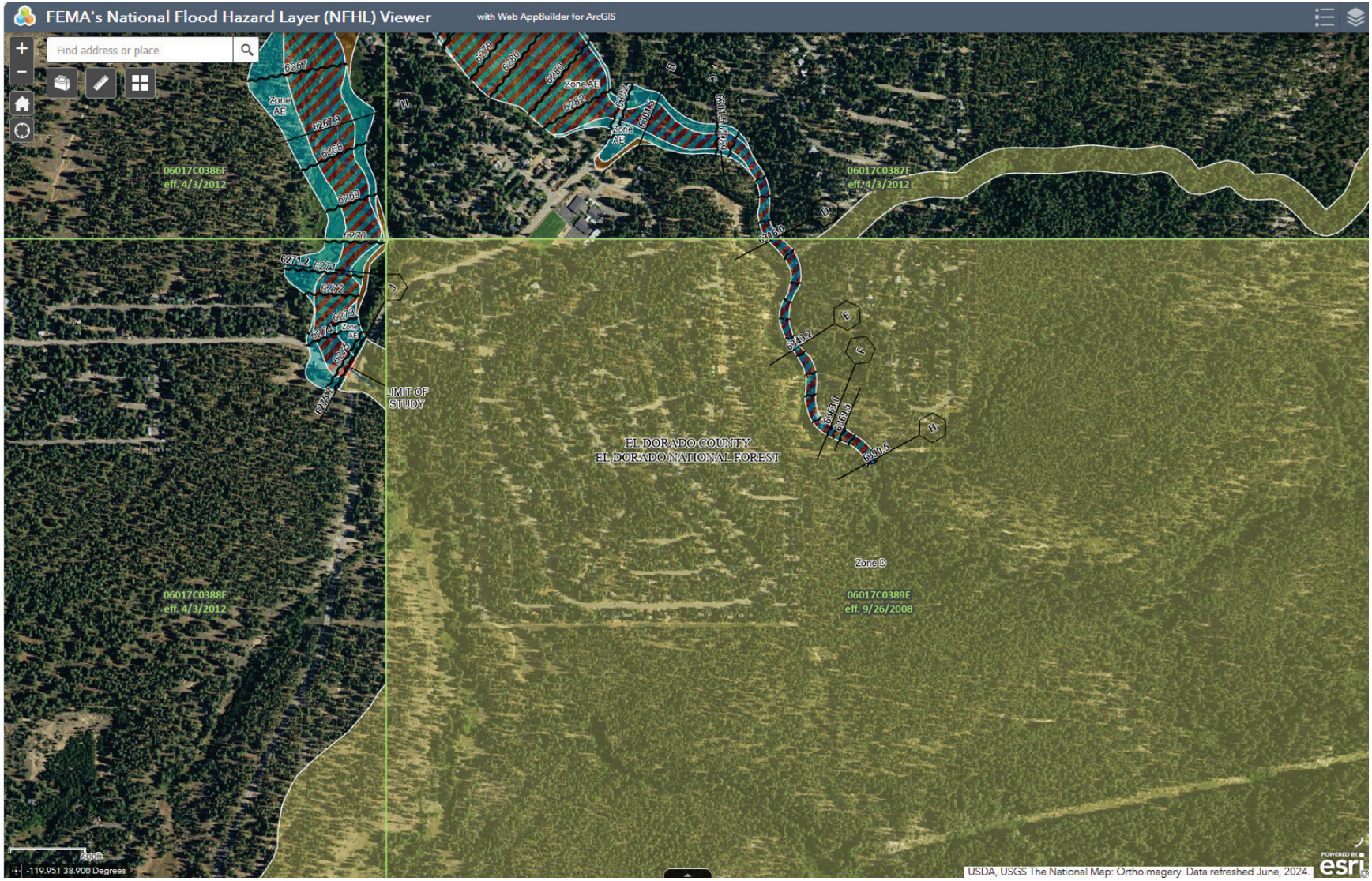
USDA, USGS The National Map: Orthoimagery. Data refreshed June, 2024.
esri


FEMA's National Flood Hazard Layer (NFHL) Viewer
with Web AppBuilder for ArcGIS
Find address or place
Zone AE
CITY OF SOUTH LAKE TAHOE
065060
06017C0386F
eff. 4/3/2012
06017C0387F
eff. 4/3/2012
PEDESTRIAN BRIDGE
EL DORADO COUNTY
EL DORADO NATIONAL FOREST
-119.977 38.926 Degrees
USDA, USGS The National Map: Orthoimagery. Data refreshed June, 2024.
esri


FEMA's National Flood Hazard Layer (NFHL) Viewer
with Web AppBuilder for ArcGIS
Find address or place
CITY OF SOUTH LAKE TAHOE
065060
EL DORADO COUNTY
EL DORADO NATIONAL FOREST
06017C0386F
eff. 4/3/2012
06017C0387F
eff. 4/3/2012
06017C0388F
eff. 4/3/2012
06017C0389E
eff. 9/26/2008
Zone AE
Zone D
LIMIT OF STUDY
-119.959 38.911 Degrees
USDA, USGS The National Map: Orthoimagery. Data refreshed June, 2024.
esri


FEMA's National Flood Hazard Layer (NFHL) Viewer
with Web AppBuilder for ArcGIS
Find address or place
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eff. 4/3/2012
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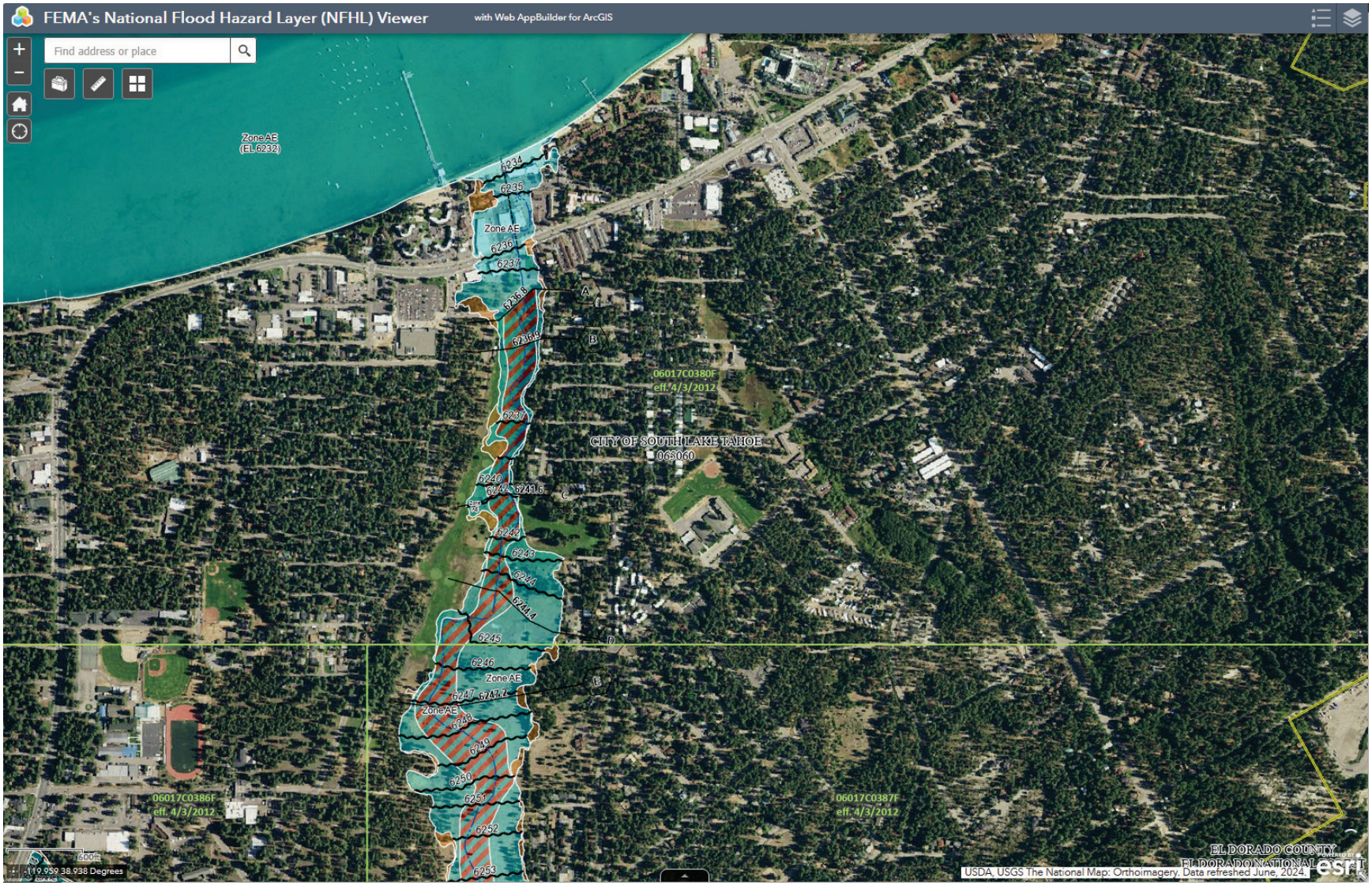
eff. 4/3/2012
06017C0388F
eff. 4/3/2012
06017C0389E
eff. 9/26/2008
Zone AE
Zone D
LIMIT OF STUDY
EL DORADO COUNTY
EL DORADO NATIONAL FOREST
-119.951 38.900 Degrees
USDA, USGS The National Map: Orthoimagery. Data refreshed June, 2024.
esri

Bijou Creek


FEMA's National Flood Hazard Layer (NFHL) Viewer
with Web AppBuilder for ArcGIS
Find address or place
Zone AE
(EL 6232)
Zone AE
Zone AE
Zone AE
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eff. 4/3/2012
CITY OF SOUTH LAKE TAHOE
065060
06017C0386F
eff. 4/3/2012
06017C0387F
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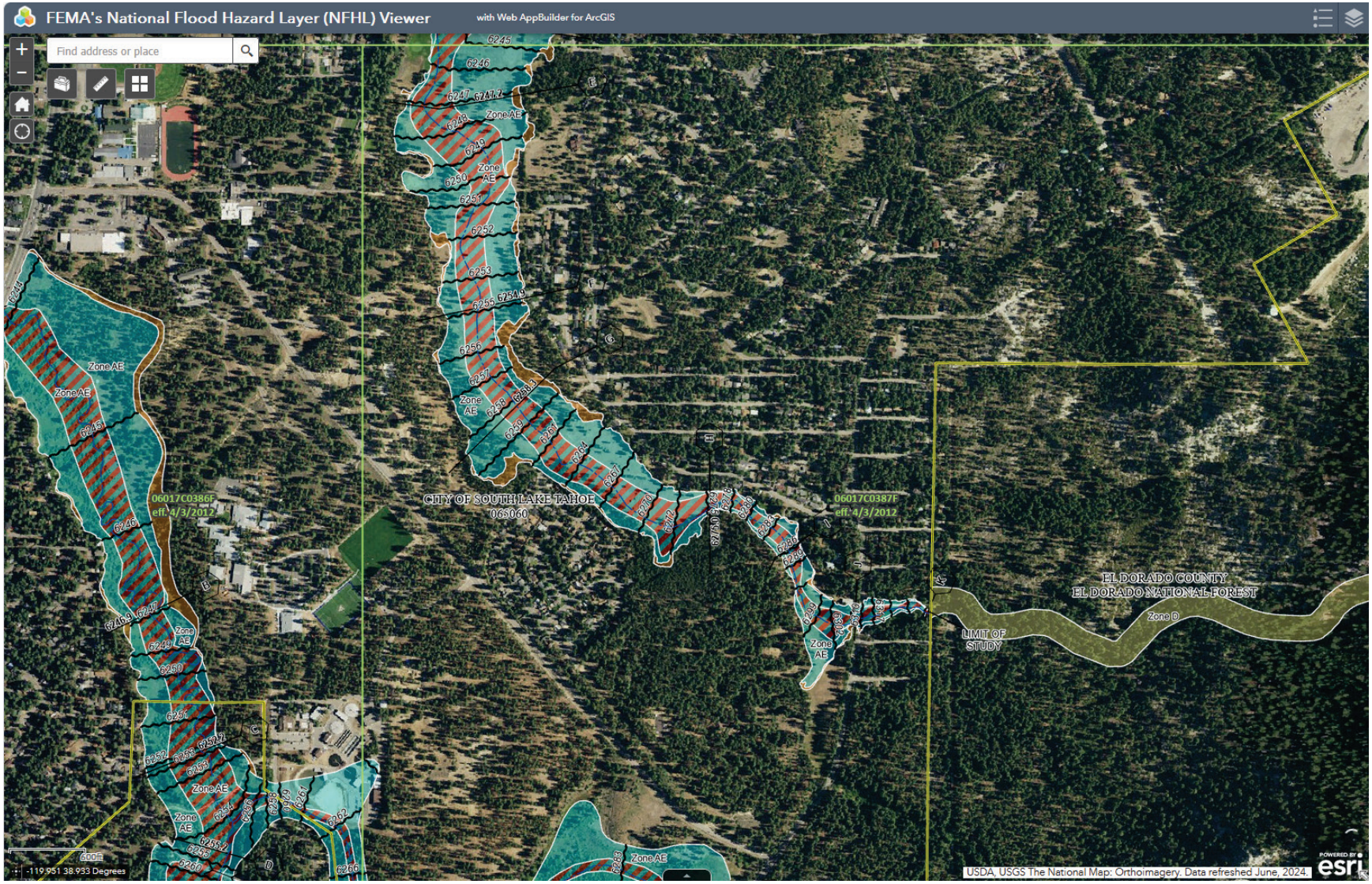
EL DORADO COUNTY
EL DORADO NATIONAL
USDA, USGS The National Map: Orthoimagery. Data refreshed June, 2024.
esri


FEMA's National Flood Hazard Layer (NFHL) Viewer
with Web AppBuilder for ArcGIS
Find address or place
Zone AE
CITY OF SOUTH LAKE TAHOE
065060
06017C0386F
eff. 4/3/2012
06017C0387F
eff. 4/3/2012
EL DORADO COUNTY
EL DORADO NATIONAL FOREST
Zone D
LIMIT OF STUDY
-119.951 38.933 Degrees
USDA, USGS The National Map: Orthoimagery. Data refreshed June, 2024.
esri

SEWER LINES IN ENVIRONMENTALLY SENSITIVE AREAS

South Tahoe Public Utility District (STPUD) and Tahoe City Public Utility District (TCPUD) provide regional sewage services in the Tahoe Basin. Concerns have been raised for sewer lines in environmentally sensitive areas, posting potential water quality risks and environmental degradation.

Lake Tahoe Wastewater Infrastructure Partnership

The 2003 Overflow/Release Reduction Evaluation recommended that a Basin-wide approach to a comprehensive capital improvement program be created for the replacement or rehabilitation of the sewer facilities located in the Lake Tahoe Basin. In response, the eight sewer districts operating in the Tahoe basin, together with the U.S. Army Corps of Engineers, formed the Wastewater Infrastructure Partnership (Partnership) to develop and implement tools and processes designed to support a programmatic approach to wastewater rehabilitation in the Lake Tahoe Basin. The eight districts operating wastewater infrastructure within the Lake Tahoe Basin include:

- South Tahoe Public Utility District (STPUD)
- Tahoe City Public Utility District (TCPUD)
- North Tahoe Public Utility District (NTPUD)
- Incline Village General Improvement District (IVGID)
- Douglas County Sewer Improvement District No.1 (DCSID)
- Kingsbury General Improvement District (KGID)
- Tahoe-Douglas District (TDD)
- Round Hill General Improvement District (RHGID)

References

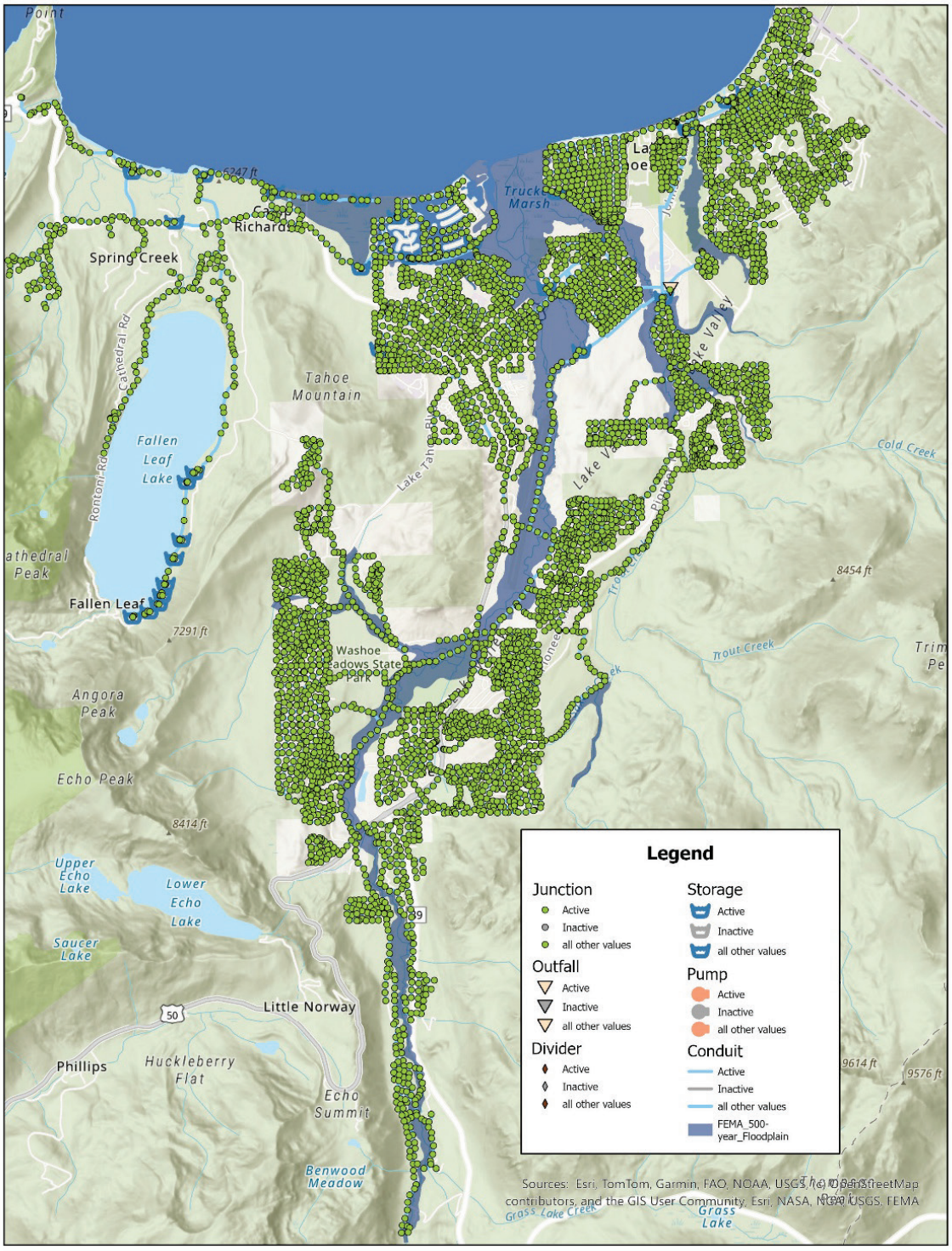
STPUD's 2020 Sewer System Management Plan

TCPUD's 2019 Risk-Based Sewer System Management Plan.

USFS's 2010 An Integrated Science Plan for the Lake Tahoe Basin: Conceptual Framework and Research Strategies (Chapter 4)

Sewer Facilities in Floodplain

High-flow events can place stress on sewer infrastructure and increase the potential for overflows. The following figure shows STPUD's sewer mains within the 500-year floodplain.

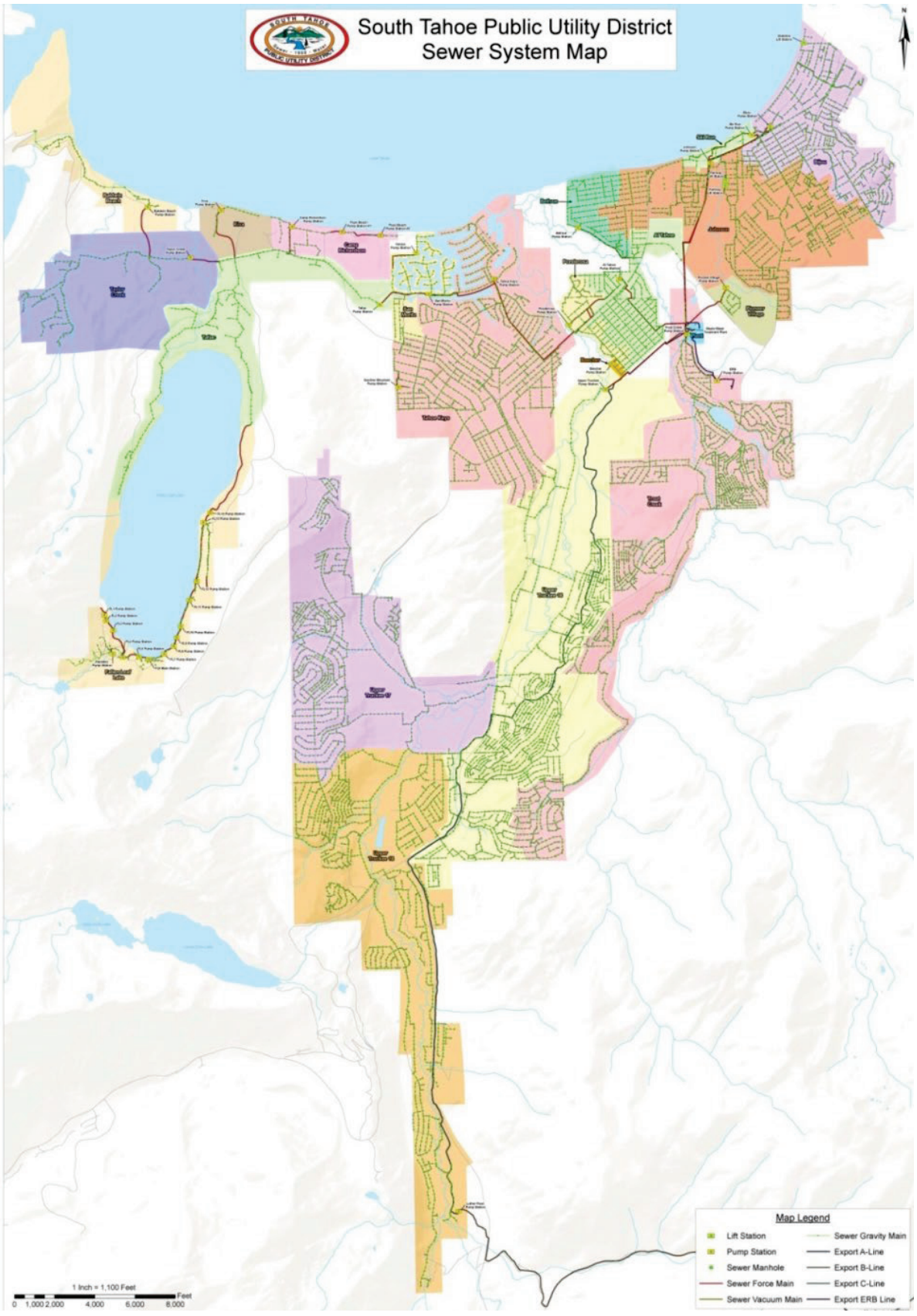


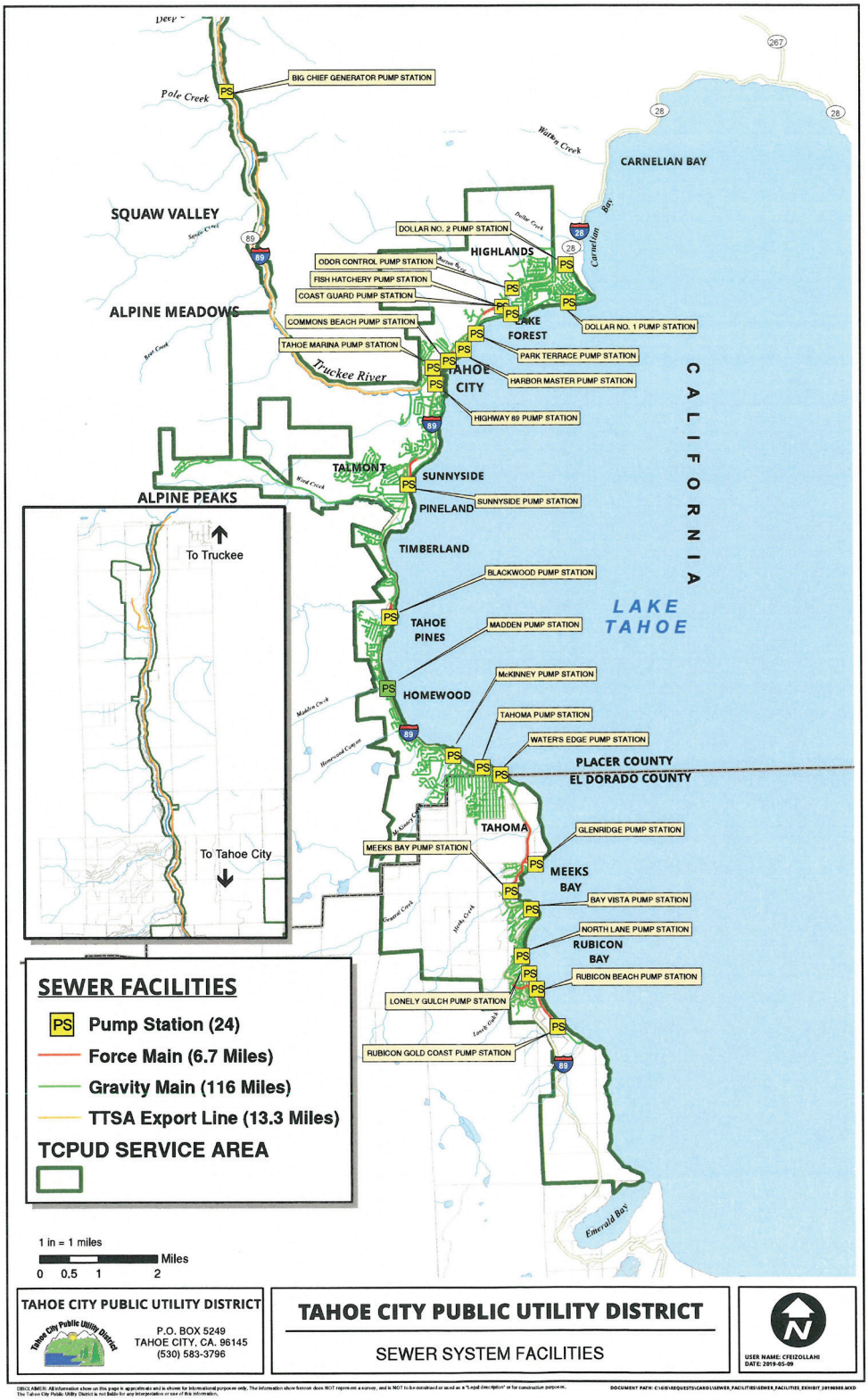
Challenges in Relocating Sewers from Environmentally Sensitive Areas

Mountainous terrain limits pipeline alignments for gravity flow. Relocation often requires additional pump stations, increasing energy costs. It is also important to recognize that a total avoidance is not possible.

Regional Sewer Services in the Tahoe Basin

STPUD and TCPUD are two regional sewer service providers in the Tahoe Basin. Their service areas are shown in the following pages.


South Tahoe Public Utility District
Sewer System Map
Map Legend
Lift Station
Pump Station
Sewer Manhole
Sewer Force Main
Sewer Vacuum Main
Sewer Gravity Main
Export A-Line
Export B-Line
Export C-Line
Export ERB Line
1 Inch = 1,100 Feet
0 1,000 2,000 4,000 6,000 8,000 Feet


BIG CHIEF GENERATOR PUMP STATION
Pole Creek
SQUAW VALLEY
ALPINE MEADOWS
ALPINE PEAKS
CARNELIAN BAY
DOLLAR NO. 2 PUMP STATION
HIGHLANDS
ODOR CONTROL PUMP STATION
FISH HATCHERY PUMP STATION
COAST GUARD PUMP STATION
COMMONS BEACH PUMP STATION
TAHOE MARINA PUMP STATION
Truckee River
LAKE FOREST
DOLLAR NO. 1 PUMP STATION
PARK TERRACE PUMP STATION
TAHOE CITY
HARBOR MASTER PUMP STATION
HIGHWAY 89 PUMP STATION
TALMONT
SUNNYSIDE
SUNNYSIDE PUMP STATION
PINELAND
TIMBERLAND
BLACKWOOD PUMP STATION
TAHOE PINES
MADDEN PUMP STATION
McKINNEY PUMP STATION
HOMEWOOD
TAHOMA PUMP STATION
WATER'S EDGE PUMP STATION
PLACER COUNTY
EL DORADO COUNTY
TAHOMA
GLENRIDGE PUMP STATION
MEEKS BAY PUMP STATION
MEEKS BAY
BAY VISTA PUMP STATION
NORTH LANE PUMP STATION
RUBICON BAY
RUBICON BEACH PUMP STATION
LONELY GULCH PUMP STATION
RUBICON GOLD COAST PUMP STATION
CALIFORNIA
LAKE TAHOE
Emerald Bay
To Truckee
To Tahoe City
SEWER FACILITIES
Pump Station (24)
Force Main (6.7 Miles)
Gravity Main (116 Miles)
TTSA Export Line (13.3 Miles)
TCPUD SERVICE AREA
1 in = 1 miles
Miles
0 0.5 1 2
TAHOE CITY PUBLIC UTILITY DISTRICT
P.O. BOX 5249
TAHOE CITY, CA. 96145
(530) 583-3796
TAHOE CITY PUBLIC UTILITY DISTRICT
SEWER SYSTEM FACILITIES