

***Pathways to Resilience: Managing
Water in the Tahoe Basin***

**A Regional Focus of the 2025
Countywide Plenary for Water**

October 23, 2025

Agenda

9:30 AM	Registration and Coffee
10:00 AM	Welcome
10:15 AM	Small Group Activity
10:35 AM	Panel Discussion: Planning Approaches to Integrating Water and Land Use
11:15 AM	Regional Tetrachloroethylene (PCE) Contamination Update
11:35 AM	Lunch
12:10 PM	Water Resource-Related Challenges Mapping Exercise
1:10 PM	Preparing for the Water Blueprint: Identifying Potential Solutions to Shared Challenges
1:40 PM	Report-outs
1:55 PM	Closing Remarks
2:00 PM	Adjourn





Plenary Welcome

REBECCA GUO

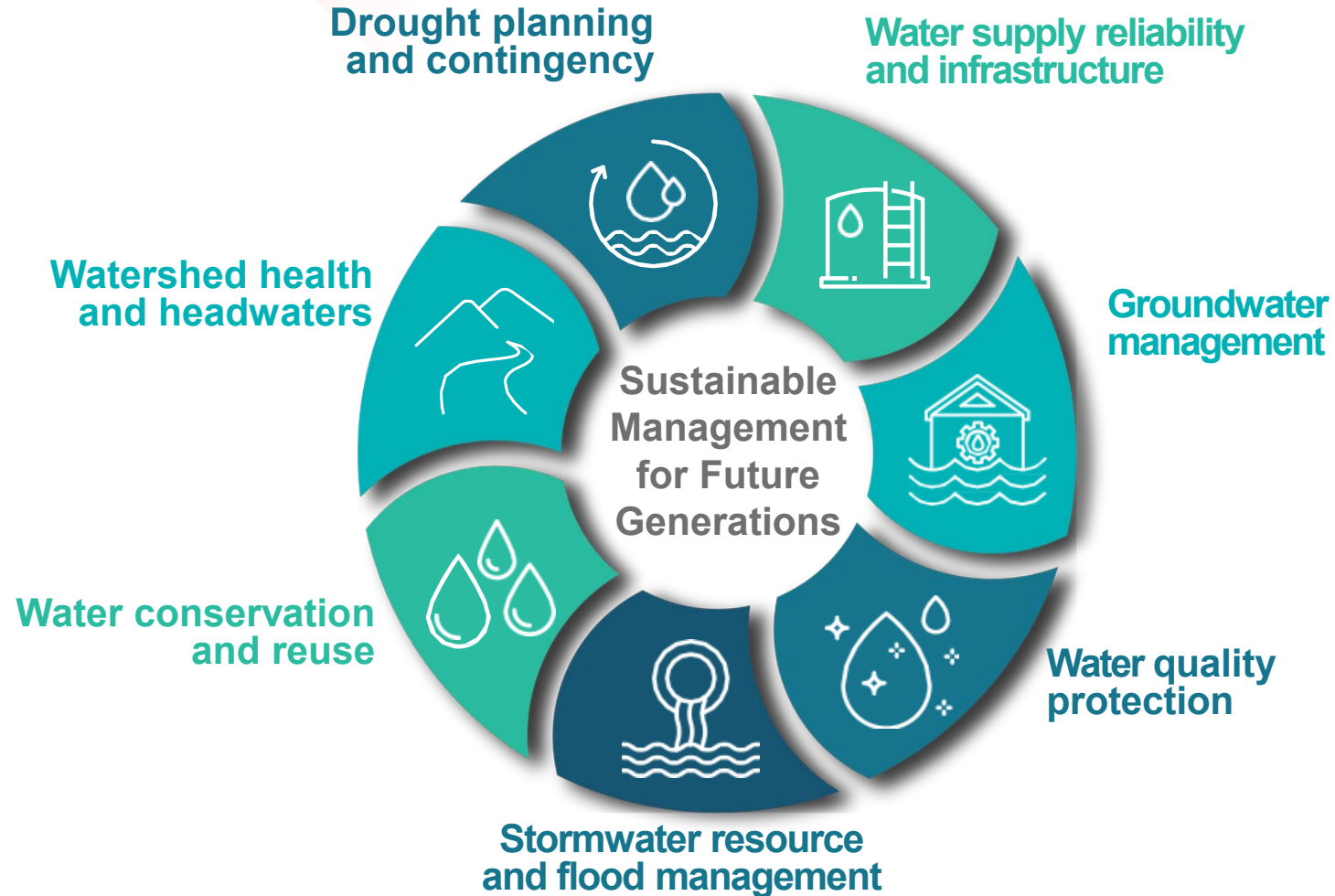
General Manager

El Dorado Water Agency

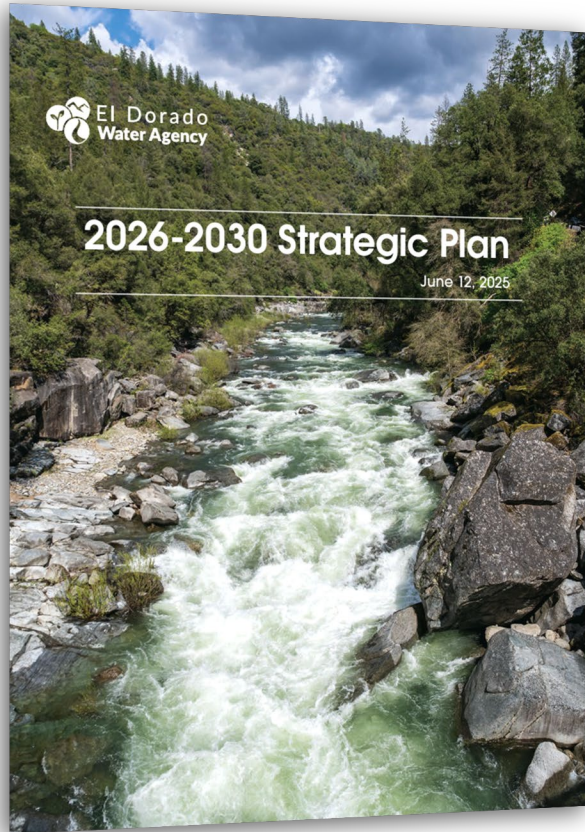


El Dorado Water Agency

Countywide Integrated Water Resource Management

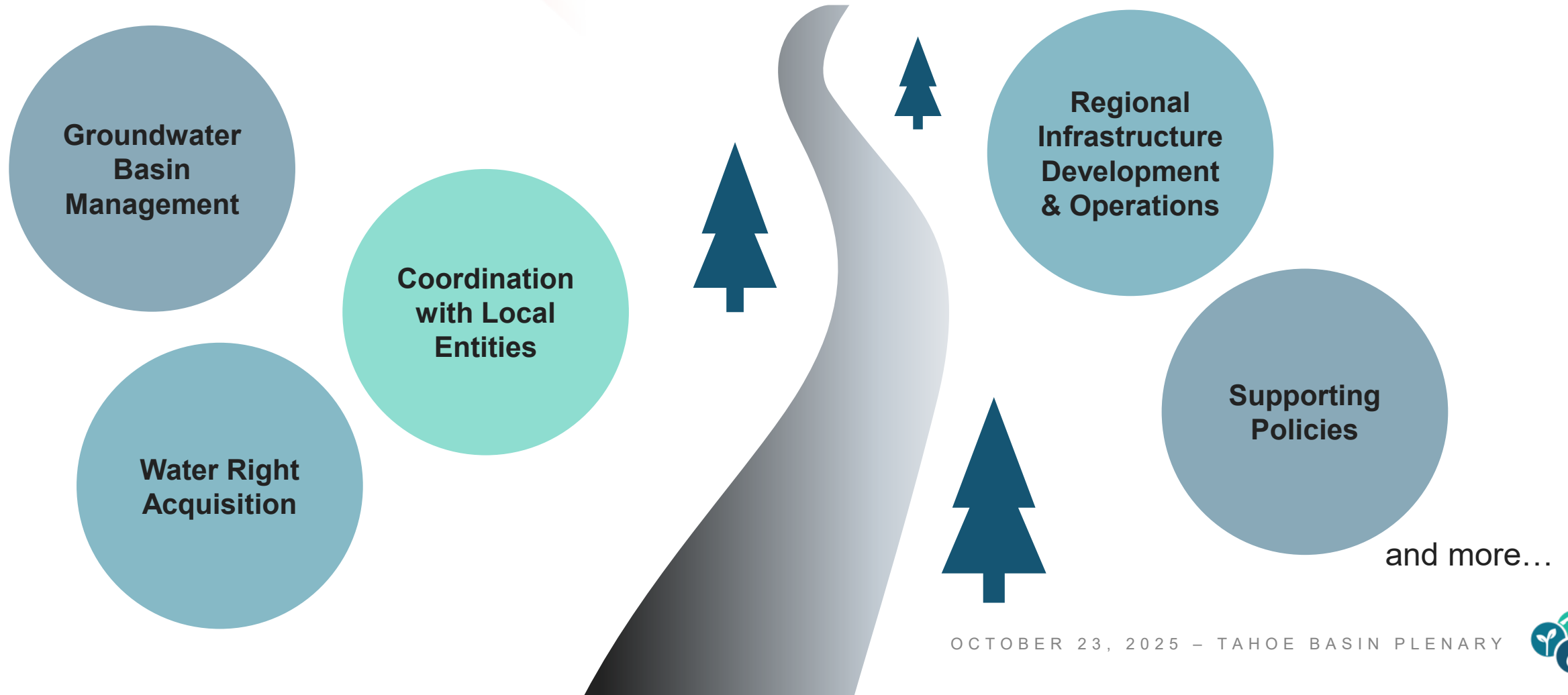


2026-2030 Strategic Plan



2026-2030 Strategic Plan Objective 2c:

Develop a long-term Tahoe Basin water blueprint and implementation roadmap





Small Group Activity

After getting settled...

- **Introduce** yourselves to your table, and in the next few minutes, share:
- *What is something your agency is doing that's going well related to sustainable water management? What could we be doing more of in the Tahoe Basin?*

In about 10 minutes, we'll ask a few **volunteers** to share your successes and recommendations!





Panel Discussion: Planning Approaches to Integrating Water and Land Use

THEA GRAYBILL

Planning Manager

***County of El Dorado, Planning and Building
Department – Long Range Planning Unit***

ALYSSA BETTINGER

Senior Planner

Tahoe Regional Planning Agency

REBECCA GUO

General Manager

El Dorado Water Agency



Land Use Regulation & Stormwater Management in Lake Tahoe



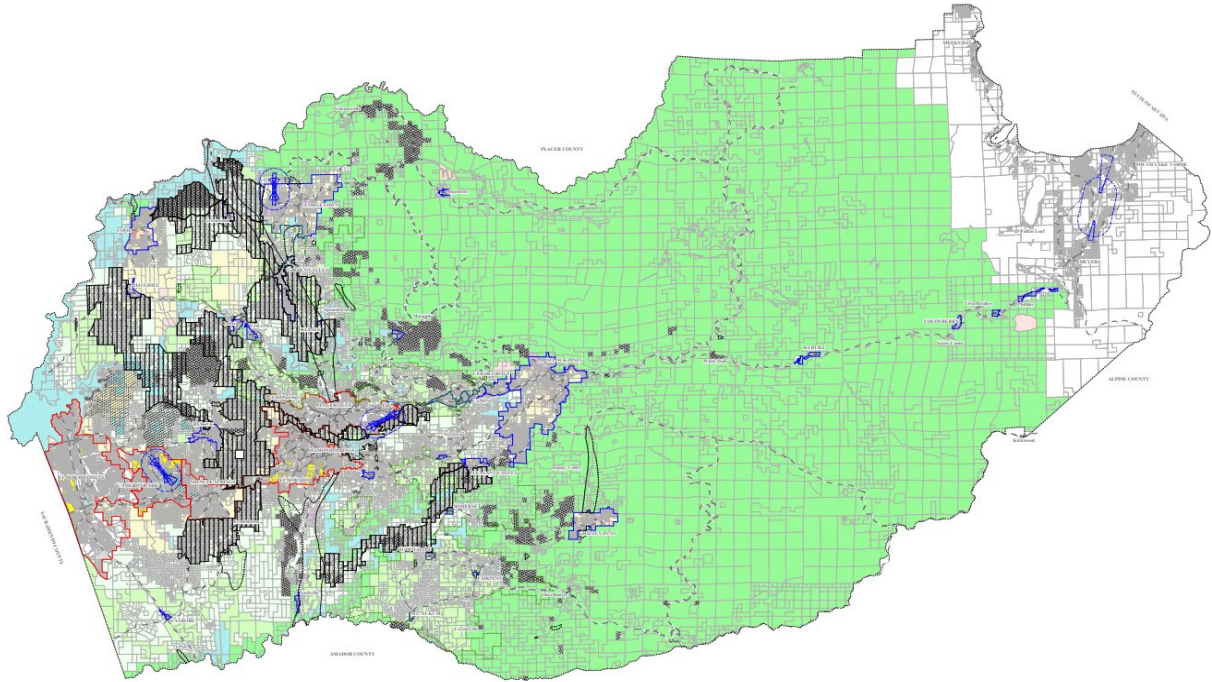
- Growth was largely unregulated in 1960, leading to the formation of TRPA
- Stormwater infrastructure not put in place during original development
- Areas that are best for natural filtration in the basin also happened to be desirable for development

A scenic view of a lake with a sandy beach, rocky shore, and forested mountains in the background. The water is clear and blue, reflecting the sky. The beach is sandy and has some people and umbrellas. The shore is rocky and has some trees. The mountains in the background are covered in forest and have some snow on top.

Today's Land Use Regulation & Stormwater Management

- Work with local jurisdictions to meet TMDL standards
- Current regulations focus on parcel-level runoff through a combination of coverage limitations and best management practices
- Future goals delegate more land use control to local jurisdictions and focus on expanding area-wide stormwater infrastructure

RELEVANT PLANNING TOOLS IN TAHOE BASIN

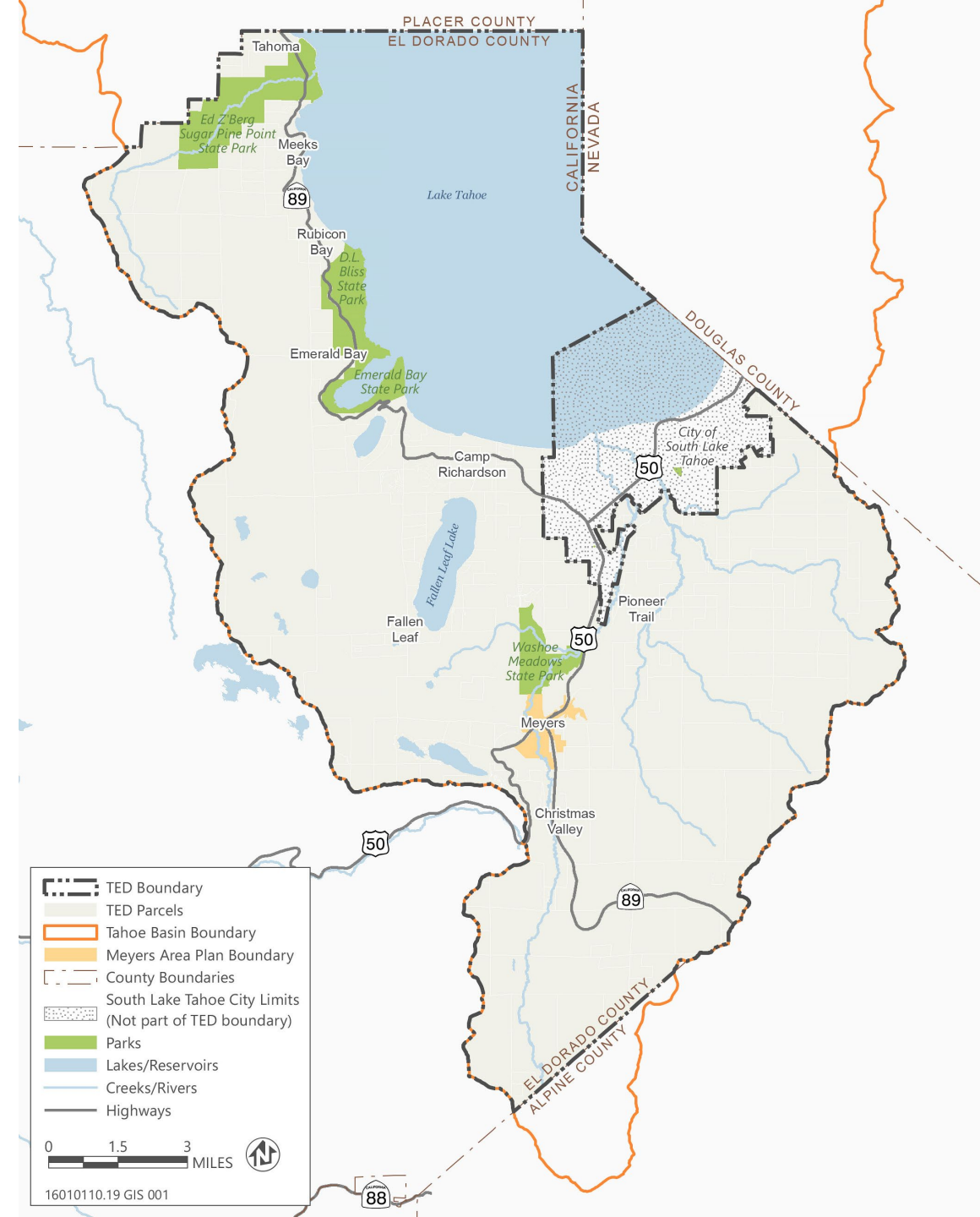


- County General Plan
- County Zoning Ordinance
- Lake Tahoe Regional Plan
- TRPA Plan Area Statements
- TRPA & County MOU

WHAT IS TED?

IT'S THE **TAHOE EL DORADO AREA PLAN!**

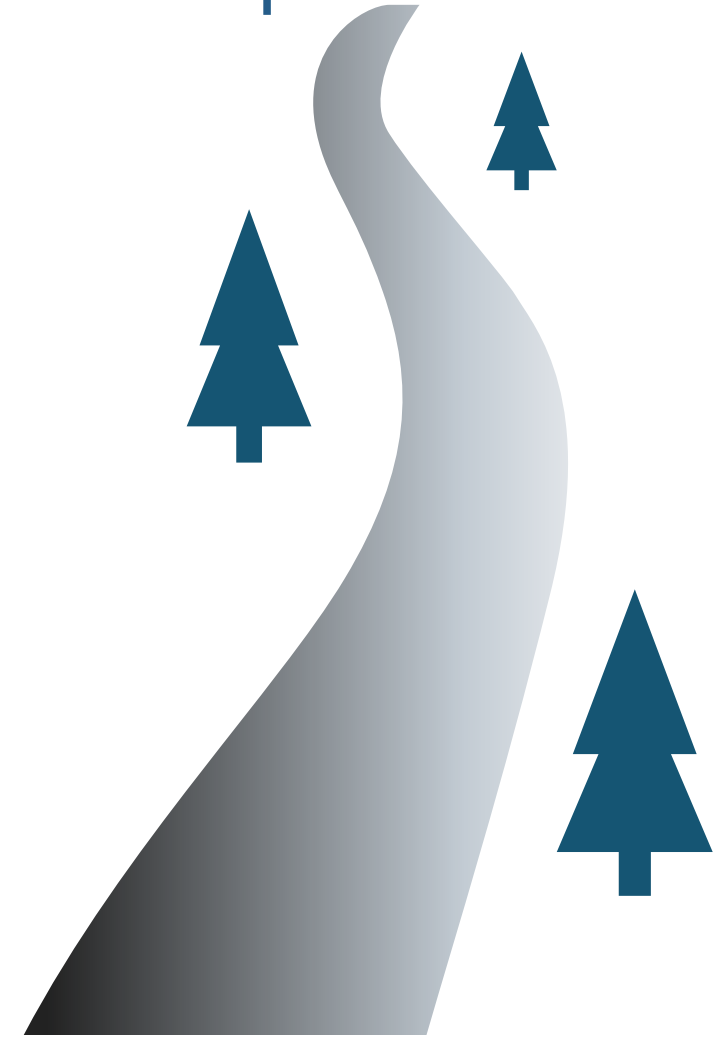
- One Area Plan for the unincorporated area of El Dorado County in the Tahoe Basin
- Will regulate land use for the entire plan area (except for state and federal land)
- Will have local policies for transportation, recreation, housing, environmental protection, and safety
- Will integrate the Meyers Area Plan



Tahoe Blueprint and Implementation Roadmap

Provide prioritized strategic actions that advance water management in the Tahoe Basin of El Dorado County

- Be consistent with and support the realization of land use vision
- Follow integrated water resources management approach
- Identify what we would like to accomplish together
- Promote collaboration and mutual respect of individual's role and responsibilities



Water Resiliency for Small Water Systems

El Dorado County Drought and Water Shortage Resilience Plan (CDRP)

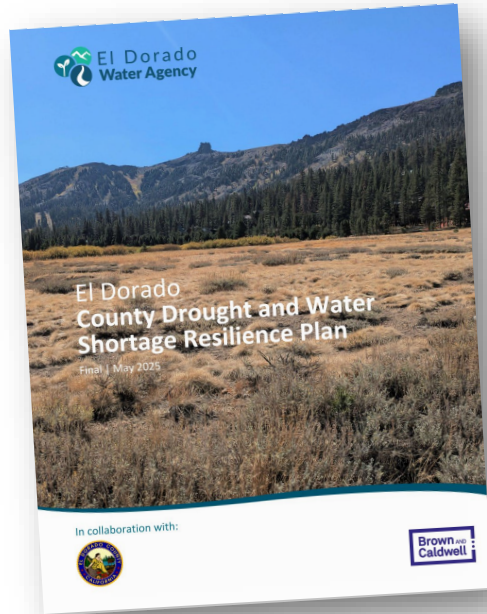
- Finalized in May 2025
- Includes all small water systems and domestic wells in the county

El Dorado County Drought and Water Shortage Task Force

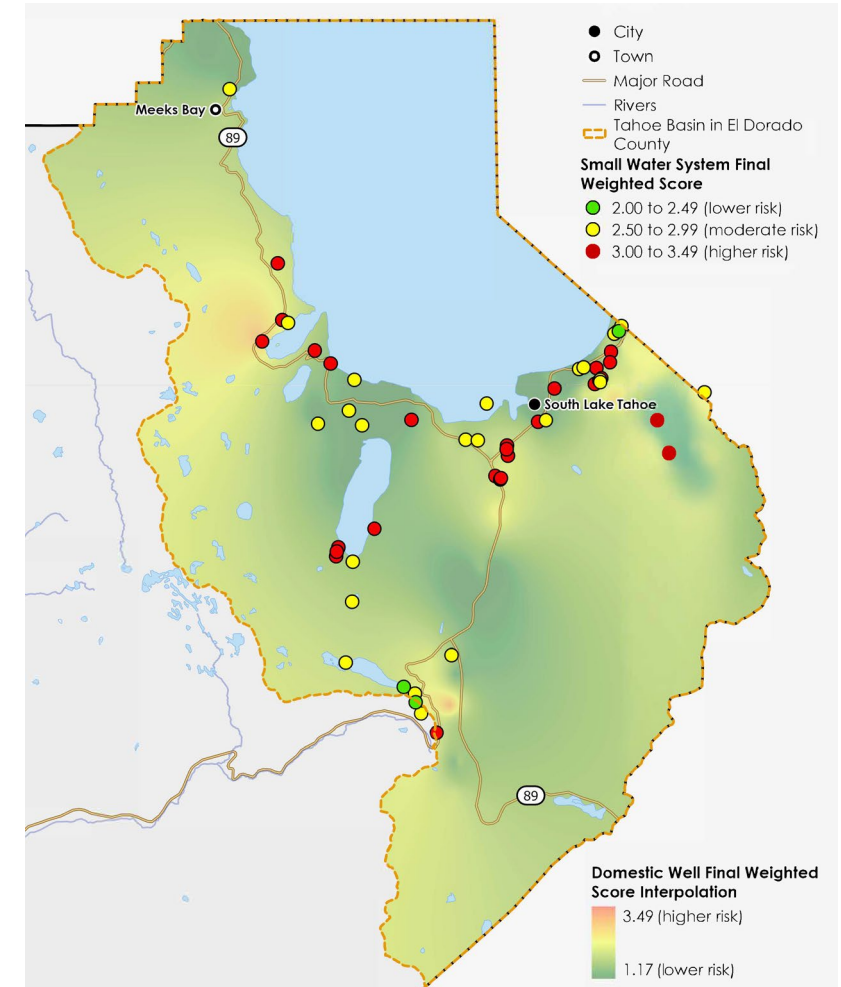
- Ongoing collaboration for monitoring and implementation

Tahoe Basin Findings – Two Examples

- 36 small water systems (80%) rely on a single source for water supply
- 12 small water systems are located in severely disadvantaged communities



Vulnerability Assessment Results





Panel Discussion: Planning Approaches to Integrating Water and Land Use

- How has interagency collaboration benefited your agency?
- As a land use planning authority, how can sustainable water resources management help you meet your agency's goals?
- As a water agency, what are ways that land use planning goals and policies help you meet your agency's goals?





Regional Tetrachloroethylene (PCE) Contamination Update

BRIAN GREY

Engineering Geologist

Lahontan Regional Water Quality Control Board, South Lake Tahoe Office



El Dorado Water Agency Fall Plenary October 23, 2025

Regional PCE Contamination Update

Brian Grey, PG
Lahontan Water Board

Regional PCE Contamination Update

Introduction

- What and Where is it?
- Environmental Screening Levels
- Who's Involved and Affected?

Lahontan Water Board

- Role and Authority

History

- Discovery
- Investigations

Regulatory Status

- Lake Tahoe Laundry Works
- Former Norma's Cleaners
- Big O Tires

Recent/Planned Activities

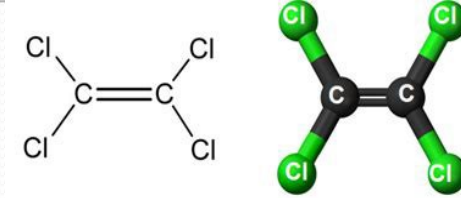
- Big O Tires
- Former Norma's Cleaners

Introduction

Tetrachloroethylene (PCE): What is It?

Historical Uses

Dry Cleaning, Metal Degreasing, Automotive Repair,
Carpet Spot Remover, Chemical Intermediate



Attribute	Industrial Value	Challenges
Volatile	Good for cleaning	Forms vapor plumes in soil
Stable under aerobic conditions	Easy to store	Persistent in aerobic groundwater systems
Slightly soluble	Remains as separate liquid	Small releases can contaminate large volumes
Density greater than water	Easy to separate	Sinks through water saturated media
Low viscosity	Easy to apply	Can move through porous media

Introduction

Environmental Screening Levels– Potential Exposure Pathways

Soil

- Residential, Commercial, Construction Worker
 - Cancer and Non-Cancer Risk
- Leaching to Groundwater
- Terrestrial Habitat, Gross Contamination, Odor Nuisance

Subslab/Soil Gas

- Residential, Commercial/Industrial
 - Cancer and Non-Cancer Risk
- Odor Nuisance

Indoor Air

- Residential, Commercial/Industrial
 - Cancer and Non-Cancer Risk

Groundwater

- Direct Exposure
 - MCL, Tapwater
- Vapor Intrusion
- Aquatic Habitat, Gross Contamination, Odor Nuisance



Introduction

Who's Involved and Affected?

1. Potential/Identified Responsible Parties
 - Lake Tahoe Laundry Works (Regional)
 - Former Norma's Cleaners (Site-specific)
 - Big O Tires (Site-specific)
2. State Regulatory Agencies
 - Lahontan Water Board
 - Division of Drinking Water
3. Local Government
 - City of South Lake Tahoe
 - El Dorado County
4. Water Purveyors
 - South Tahoe Public Utility District
 - Lukins Brothers Water Company
 - Tahoe Keys Water Company
5. Public
 - Residents and Property Owners
 - Rate Payers
6. Special Agencies
 - Groundwater Sustainability Agency



Lahontan Water Board

Role and Authority

Lahontan Water Board Mission Statement:

"To preserve, enhance, and restore the quality of California's water resources and drinking water for the protection of the environment, public health, and all beneficial uses, and to ensure proper water resource allocation and efficient use, for the benefit of present and future generations."

Primary Regulatory Framework and Tools

1. Laws

- California Water Code
 - Section 13267 (Investigation Directives)
 - Section 13304 (Cleanup and Abatement Orders)
 - Section 13307.5 (Public Participation)

2. Regulations

- Lahontan Basin Plan
- California Code of Regulations
 - Title 23, section 2550.4 (Cleanup to background)

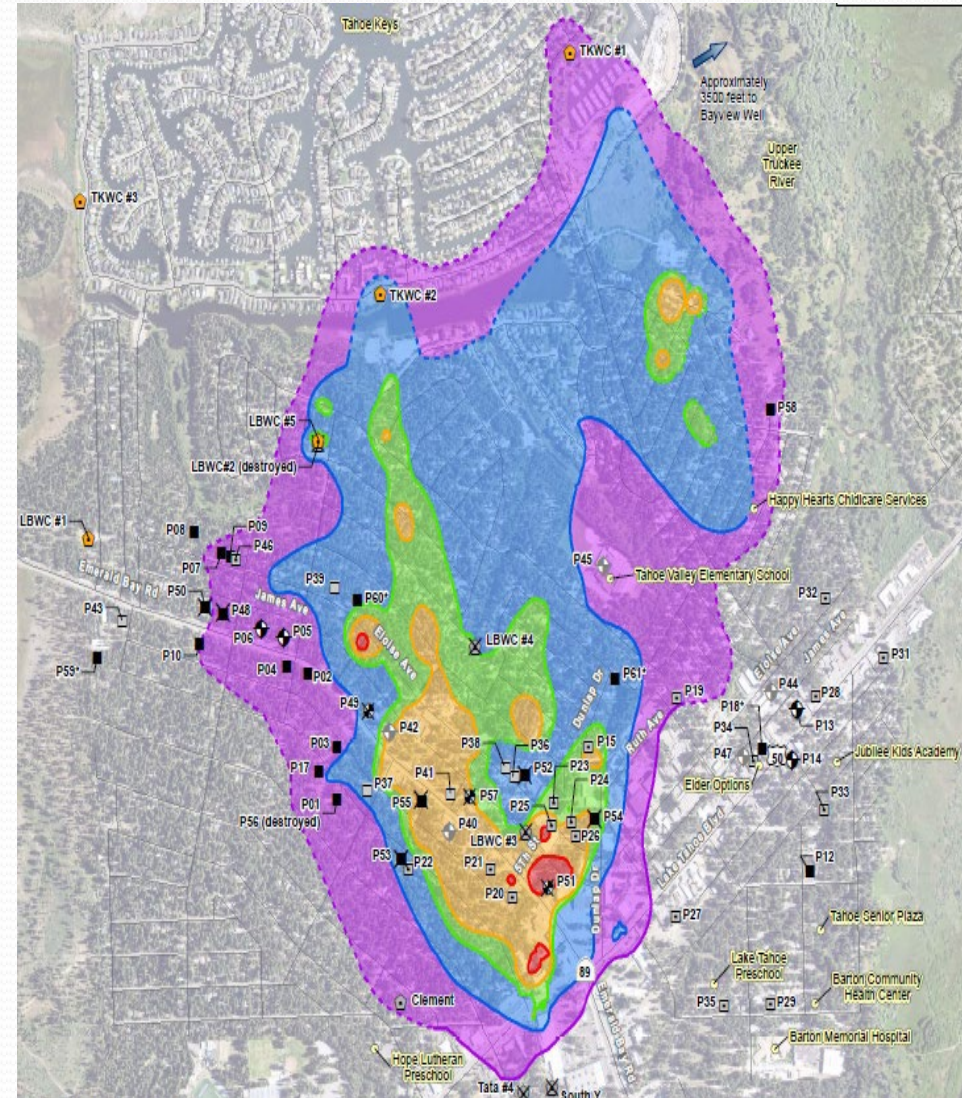
3. Policies

- Resolution 92-49 Cleanup and Abatement Procedures
- Resolution 68-16 Non-Degradation Policy

Timeline

Discovery and Municipal Well Impairment (above MCL):

- 1989** – LBWC #3 (destroyed 2011)
LBWC #4 (destroyed 2020)
STPUD Julie Well (wellhead treatment from 1992-1999; destroyed 2006)
- 1991** – STPUD Clement Well (wellhead treatment from 1992-1999; inactive since 1999)
- 2002** – TKWC Well #2 (wellhead treatment from ~2009 to present)
- 2014** – LBWC #2 (destroyed 2020)
LBWC #5 (removed from service between 2014-2021; wellhead treatment from 2021 to present)



History

Timeline (Investigation and Remediation; Pre 2014)

Regional Investigations (Cleanup and Abatement Account funded)

1992/93 - Soil Gas Survey

1995 - Sewer line sampling

1997/98 - Tahoe South Y PCE Investigation

- STPUD Clement Well pumping test

Site Specific Investigations (Responsible Party funded)

1999 - South Shore Motors, Shehadi Motors, Baker Automotive, South Lake Tahoe High School, Stage Bus, Tahoe Asphalt

2000 - TCI Cablevision, Bel Pac

2001 - Big O Tires, Hurzel Properties (aka Former Norma's Cleaners), Lakeside Napa

2003 - Lake Tahoe Laundry Works

- Multiple phases of investigation

Remediation (Site Specific)

2008 - Hurzel Properties (aka Former Norma's Cleaners): Excavation

- 368 cubic yards of soil disposed

2010 - Lake Tahoe Laundry Works: Soil Vapor Extraction/Air Sparge

- ~1,000 pounds of volatile organic compounds (VOCs) removed to date
- Pilot testing of chemical oxidation and groundwater extraction

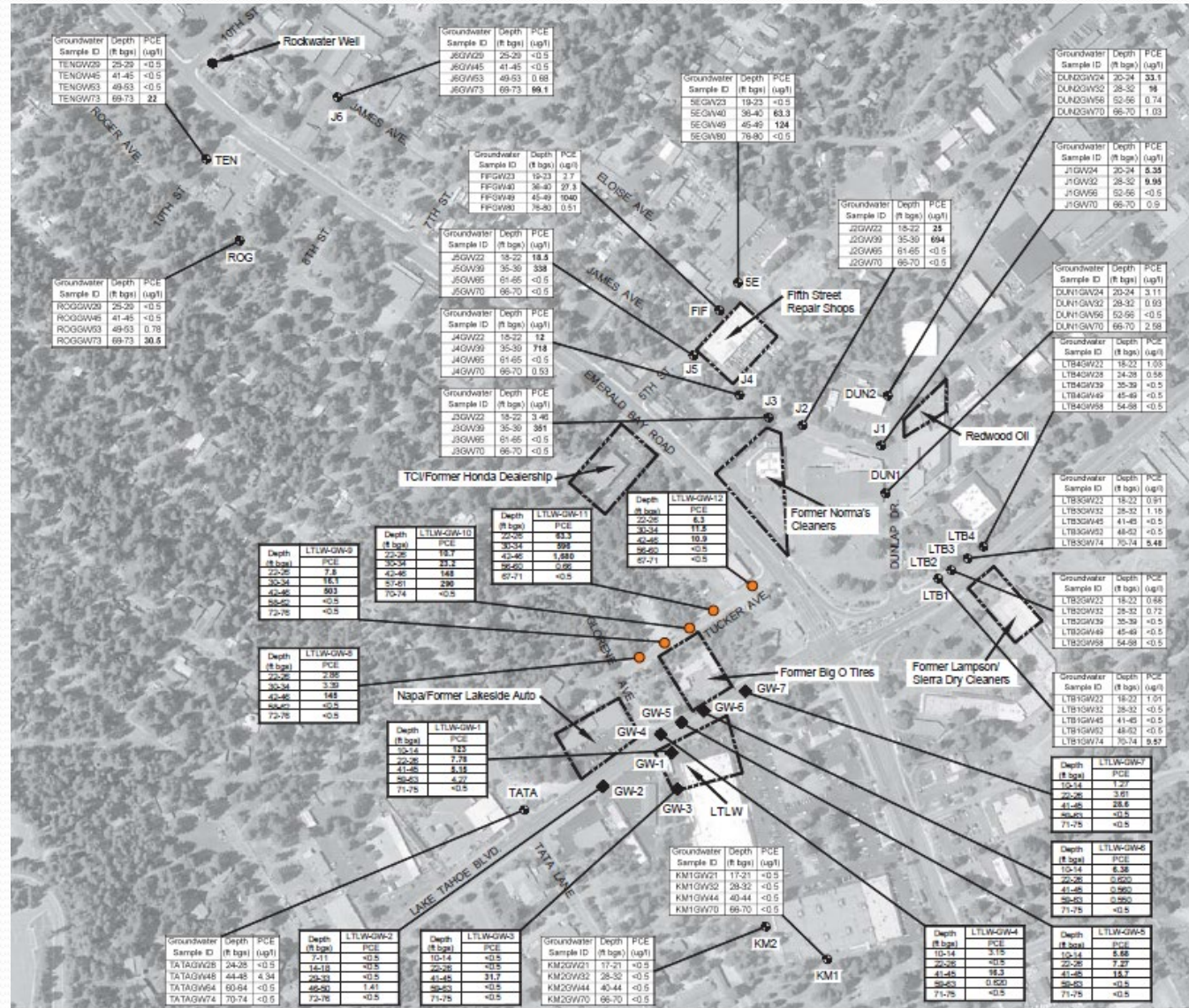
Timeline (Investigation; Post 2014)

Regional Investigations

2015	Private Well Sampling (10 wells, Lahontan Water Board)
2015	PCE Investigation (Cleanup and Abatement Account) ➤ 22 discrete depth groundwater locations (up to 40 feet bgs)
2016	Results of PCE Investigation (TKWC) ➤ Compilation of historical and current data
2016	Private Well Sampling (9 wells, Lahontan Water Board)
2016	South Y Extraction Well Suitability Investigation (STPUD) ➤ LBWC #4 evaluation
2016- 2020	Feasibility Study and Interim Remedial Action Plan (STPUD; Proposition 1) ➤ Stakeholder Advisory Group ➤ Aquifer pump testing ➤ Fate and transport modeling
2017	Off-Site Groundwater Investigation (Lake Tahoe Laundry Works) ➤ 19 discrete depth groundwater sample locations
2019-2023	South Y Area Groundwater PCE Contamination (SB445) ➤ 57 CPT borings (up to 100 feet bgs) and 22 Sonic borings (up to 300 feet bgs) ➤ Inventory development, soil gas sampling, sentry well installation, non-municipal well sampling, vertical conduit evaluation and destruction

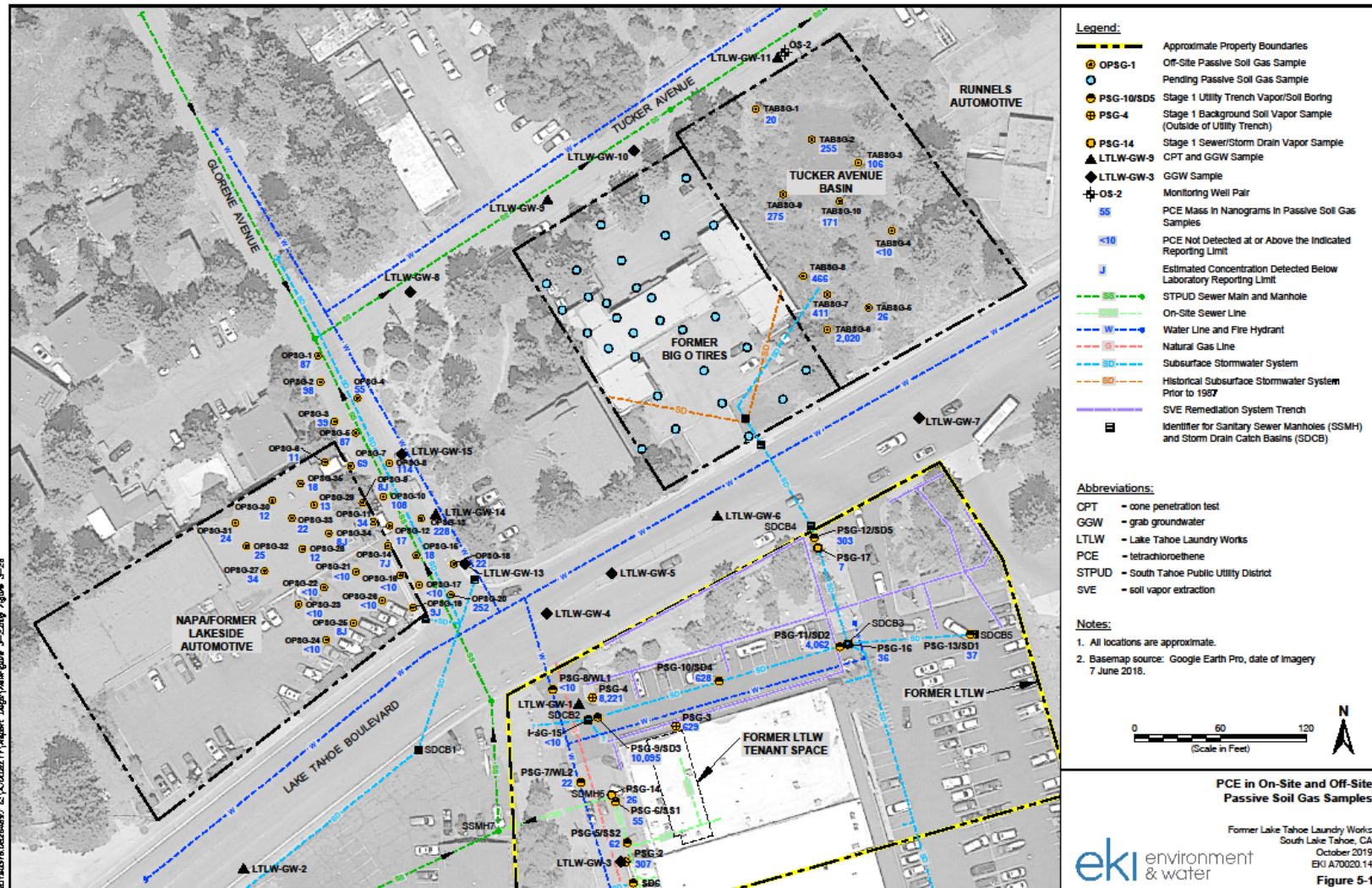
History

Lake Tahoe Laundry Works Step Out and Off-Site Investigations

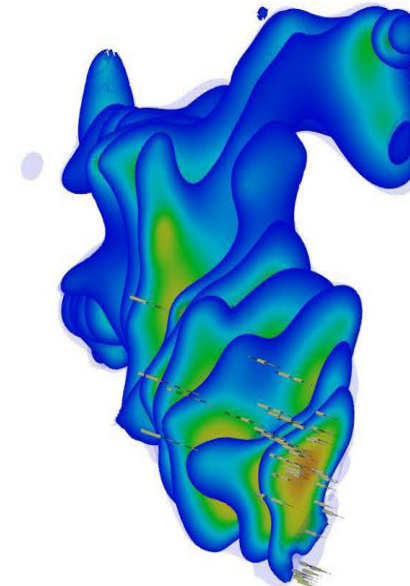
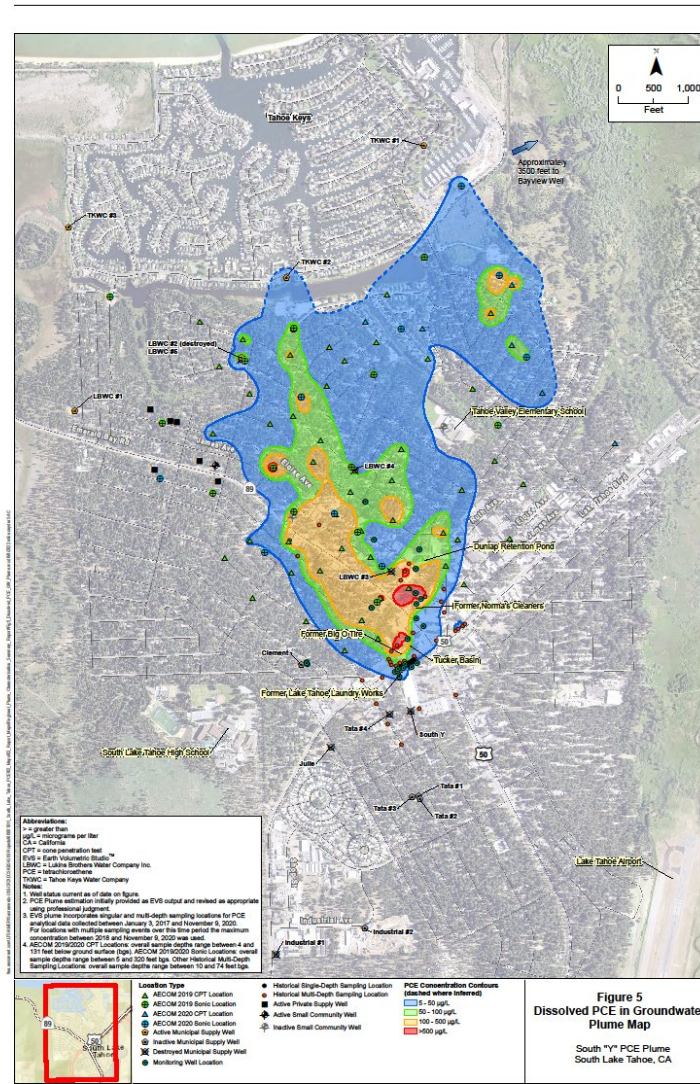


History

Lake Tahoe Laundry Works Passive Soil Gas Investigations

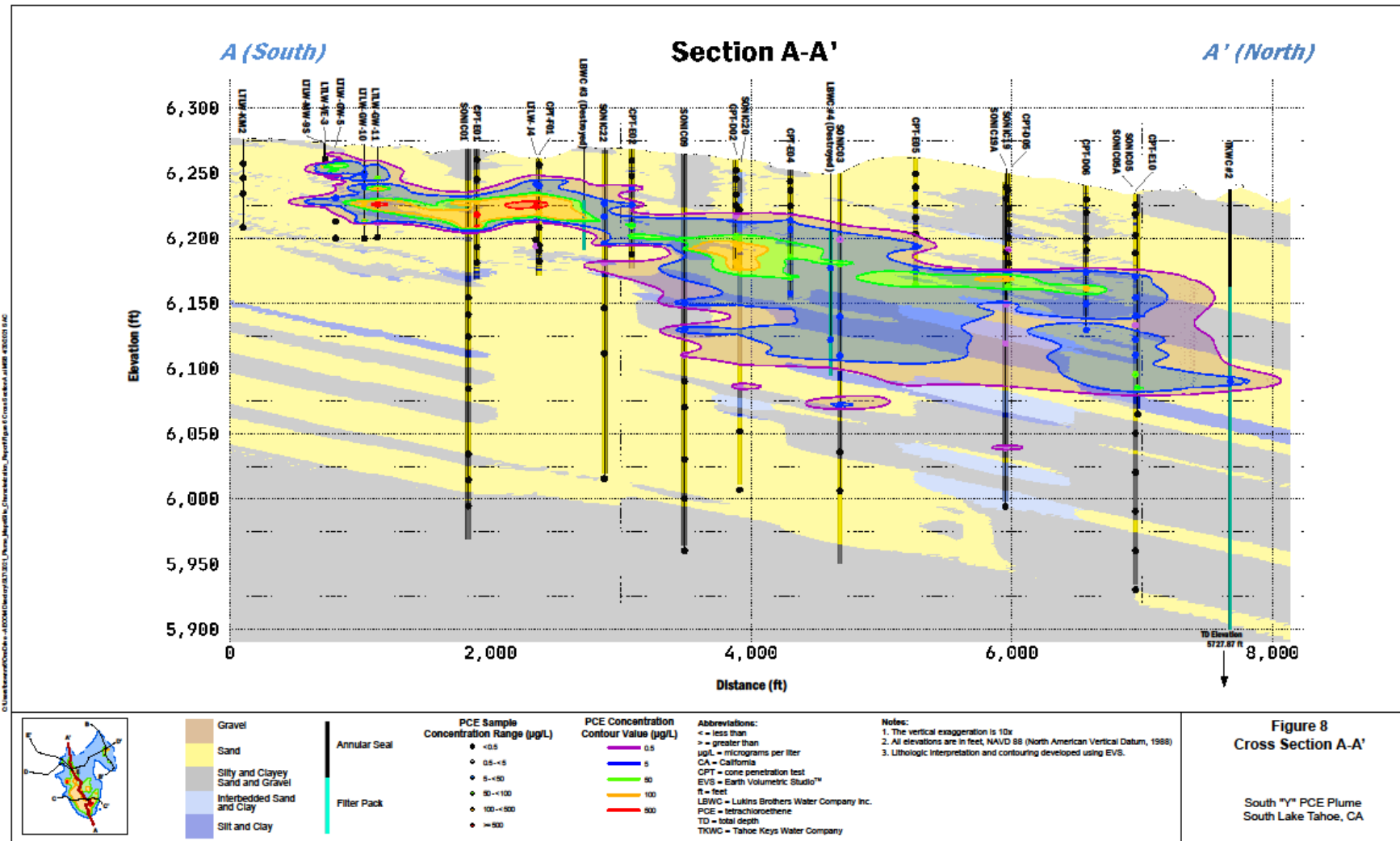


SCAP – Sample Locations and 3-D Visualization



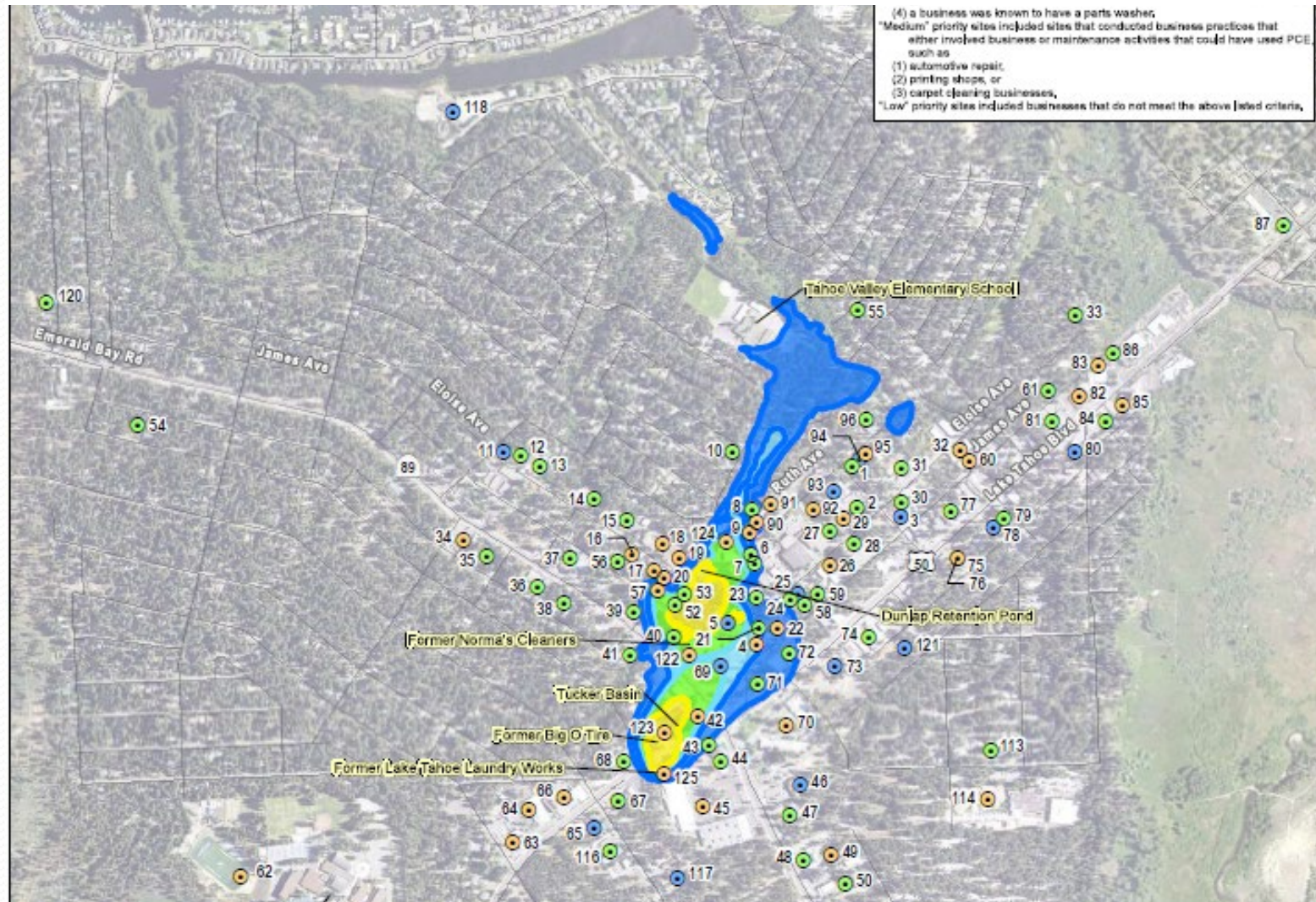
History

SCAP – Vertical Extent



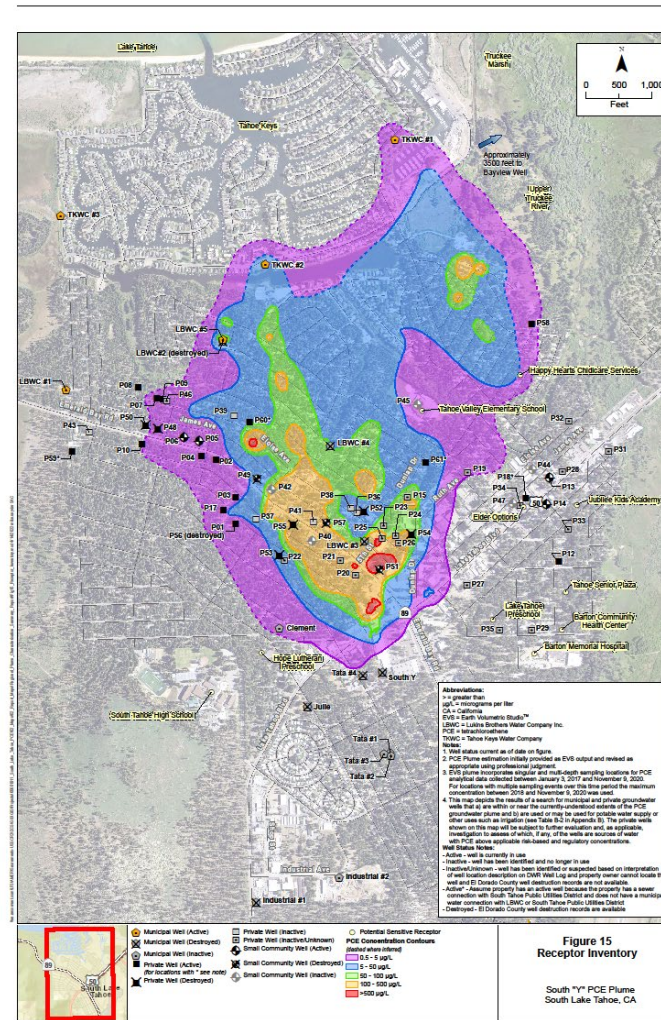
History

SCAP - Potential Sources Inventory



History

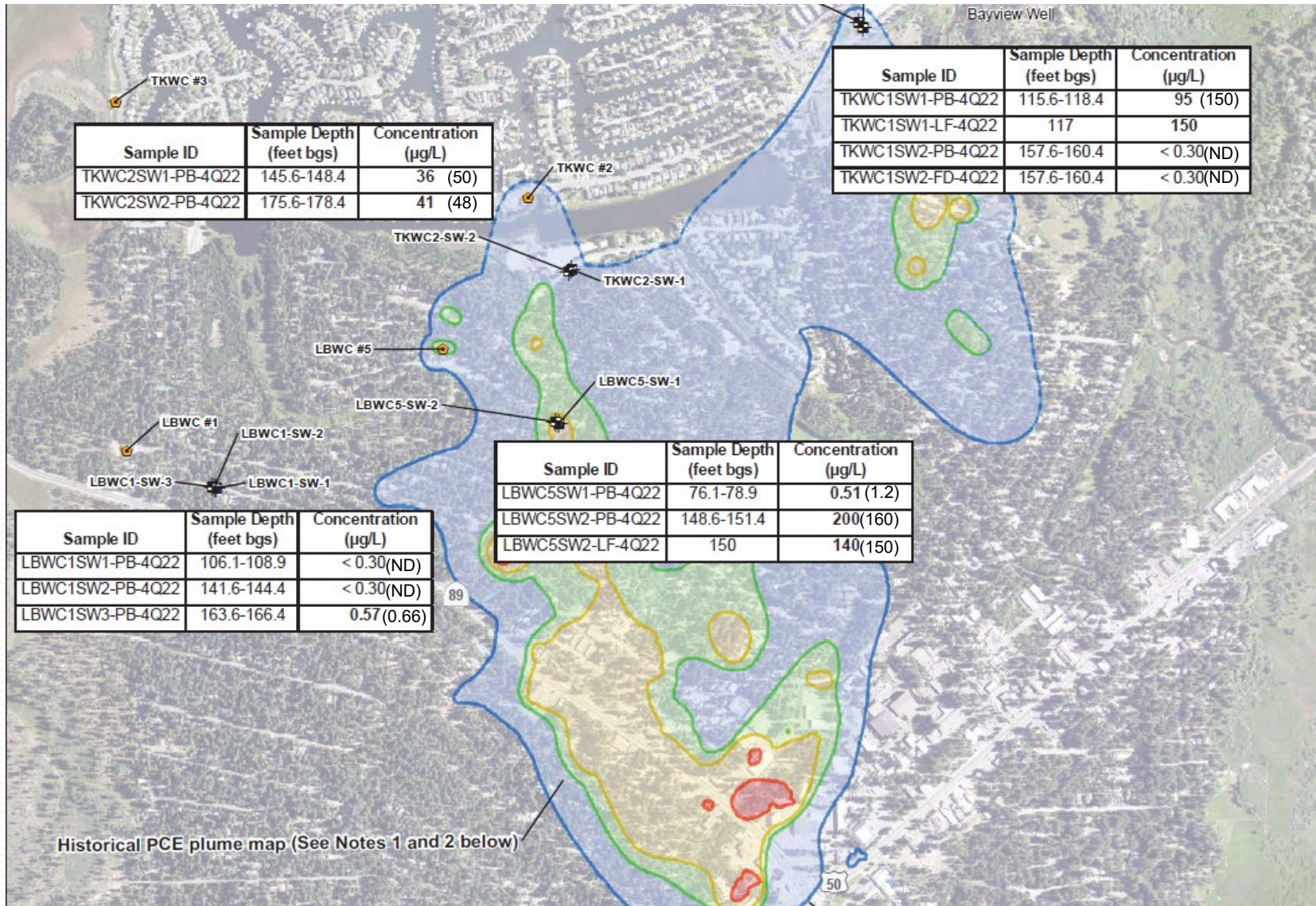
SCAP - Receptor Inventory



History

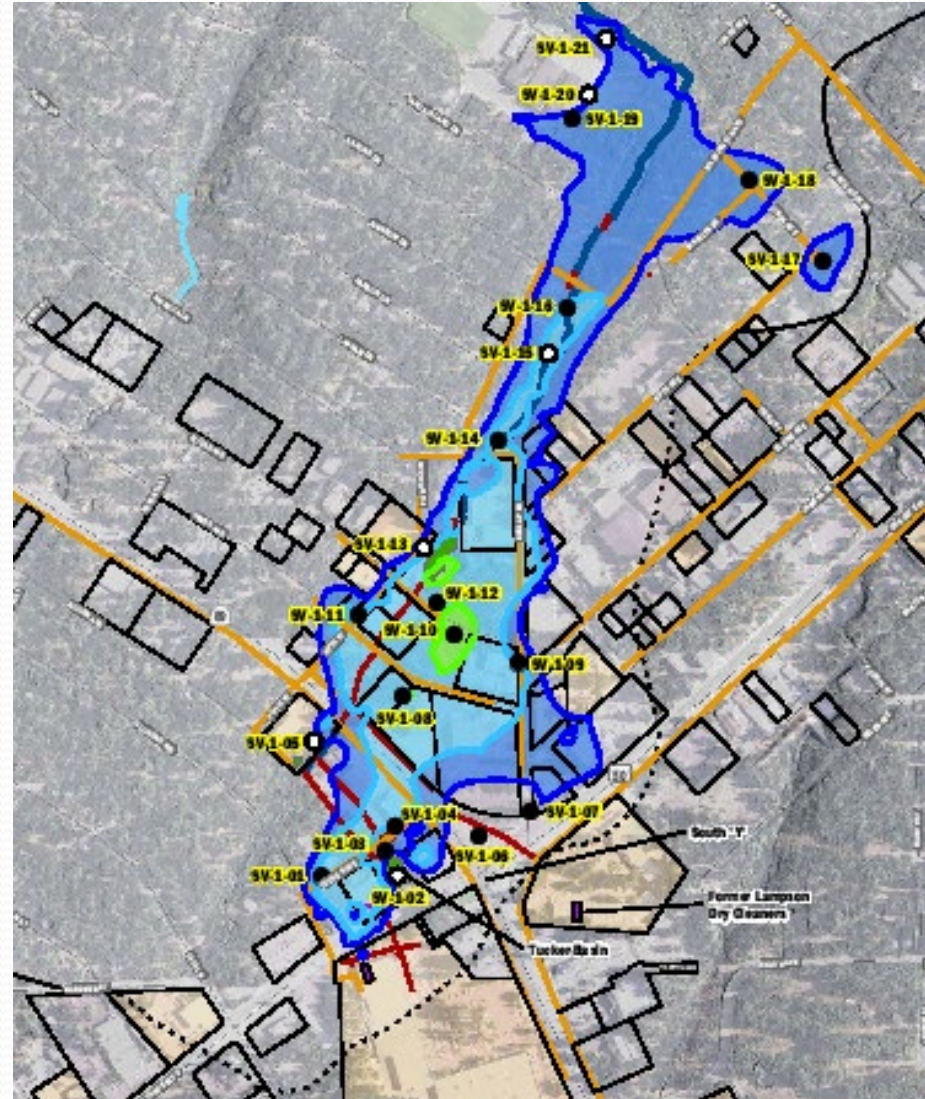
SCAP - Sentry Well Locations and Sampling Results

October 2022 (April 2023)



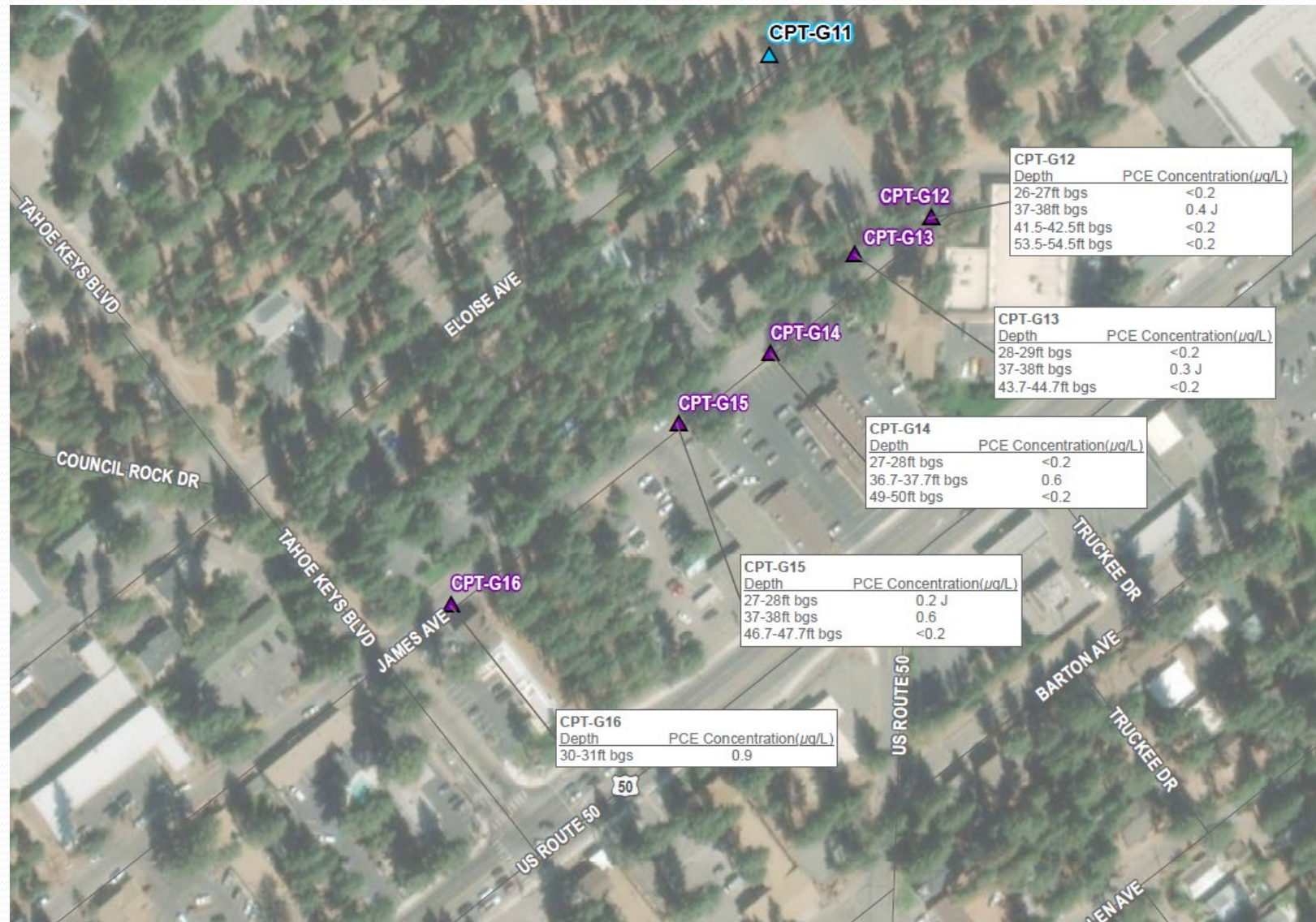
History

SCAP – Soil Gas Investigation



History

SCAP - Eastern Lobe Investigation



Regulatory Status

Lake Tahoe Laundry Works

2015 CAO R6T-2015-Proposed; never issued

- Connection to receptors uncertain

2017 R6T-2017-0022 issued May 17

- Required delineation of contamination originating from site
- First phases of work implemented; CAO requirements never completed

2020 El Dorado County Superior Court rulings on petitions

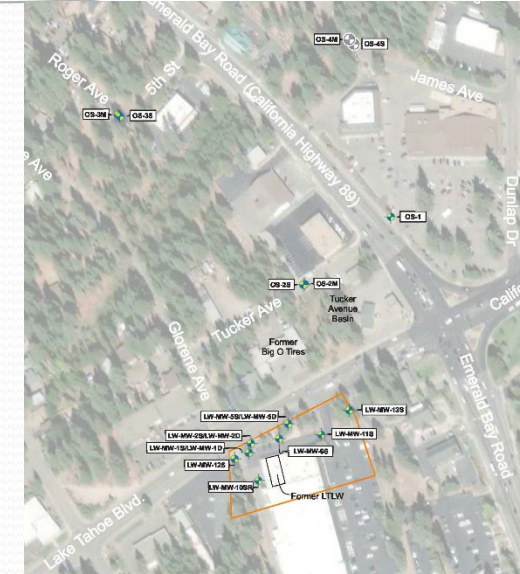
2022 R6T-2022-Proposed with request for comments issued June 16

- Used SCAP funded investigation results as basis; required regional plume cleanup
- Multiple comment period extensions granted; significant comments received

2023 Proposed Revisions to CAO R6T-2022-Proposed with Response to Comments issued August 17

2024 Notification of confidential settlement negotiations

- Periodic updates to Advisory Team provided by Prosecution Team and Responsible Parties
- October 2025 update - Advisory Team provided deadlines to present an information item in December 2025 or February 2026 which if not met will result in Revised CAO being agendized for Board consideration in 2026



Regulatory Status

Big O Tires and Former Norma's Cleaners

2019 Section 13267 Directive to Submit Technical Reports issued May 10

- Required work plan to address data gaps from previous investigations
- Passive soil gas investigation conducted (2020); identified potential releases
- Multiple notice of violations issued due to non-compliance to conduct additional phases of work

2021 Administrative Civil Liability Complaint investigation and meetings

2022 Cleanup and Abatement Order R6T-2022- Proposed issued on June 16

- Former Norma's Cleaners Site Cleanup Account Program (SCAP) application

2023 Response to comments provided March 1

2024 Former Norma's Cleaners SCAP kickoff meeting held on March 6

2025 CAO R6T-2025-0005 (Former Norma's Cleaners) and R6T-2025-006 (Big O Tires) issued on February 28

- Both require additional investigation of known and suspected release areas
- Big O Tires work plan to conduct additional soil, soil vapor, and groundwater sampling conditionally accepted on September 25
- SCAP work already implemented at Former Norma's Cleaners

Big O Tires Responsible Party Investigation



Former Norma's Cleaners SCAP Activities



- ## Soil Vapor Probe Installation And Sampling

- ## Indoor Air Sampling

- ## Soil and Groundwater Sampling

- PCE in soil below screening levels
- PCE in groundwater reported within shallow (~10-30' bgs) and middle zones (~30-50' bgs); order of magnitude higher in middle zone (hundreds)

Monitoring Well Installation with Bench Scale Study

- Six shallow zone, nine middle zone
- Column testing for EISB, ISCR, and ISCO

Field Investigation Report/Feasibility Study

(currently being developed)

Monitoring Program (ongoing)

Interim Remedial Measures (if needed)

What's Next?

Opportunities for Participation and Information

Regional PCE Contamination Cleanup Proposals

Lake Tahoe Laundry Works

- Stipulated Cleanup and Abatement Order; or
Revised Cleanup and Abatement Order R6T-2025-Proposed
- Possible Informational Item during December or February Lahontan Water Board meeting

Site Specific Cleanup Proposals

Big O Tires

- Investigation Results and Corrective Action recommendations

Former Norma's Cleaners

- Feasibility Study and Interim Corrective Action Plan recommendations

Groundwater Sustainability Agencies – Tahoe Valley South Subbasin

- Groundwater Management Plan updates
- Strategic Advisory Group

Additional Information

- Geotracker database
- South Tahoe Public Utility District website

Questions?





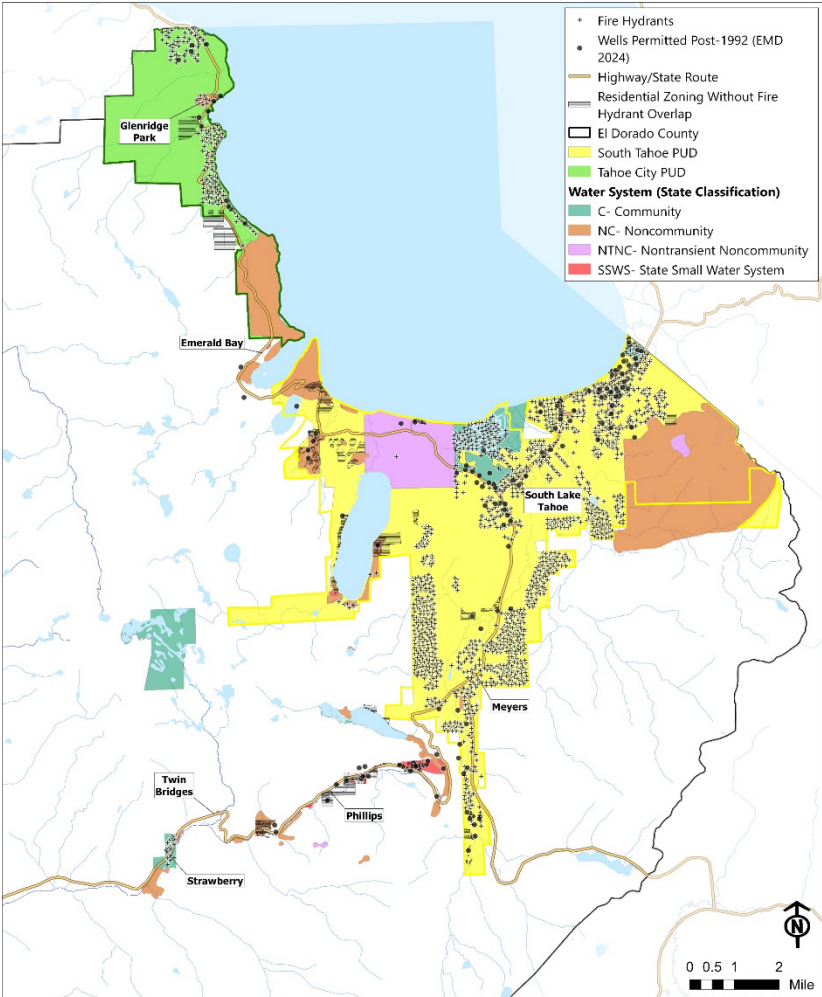
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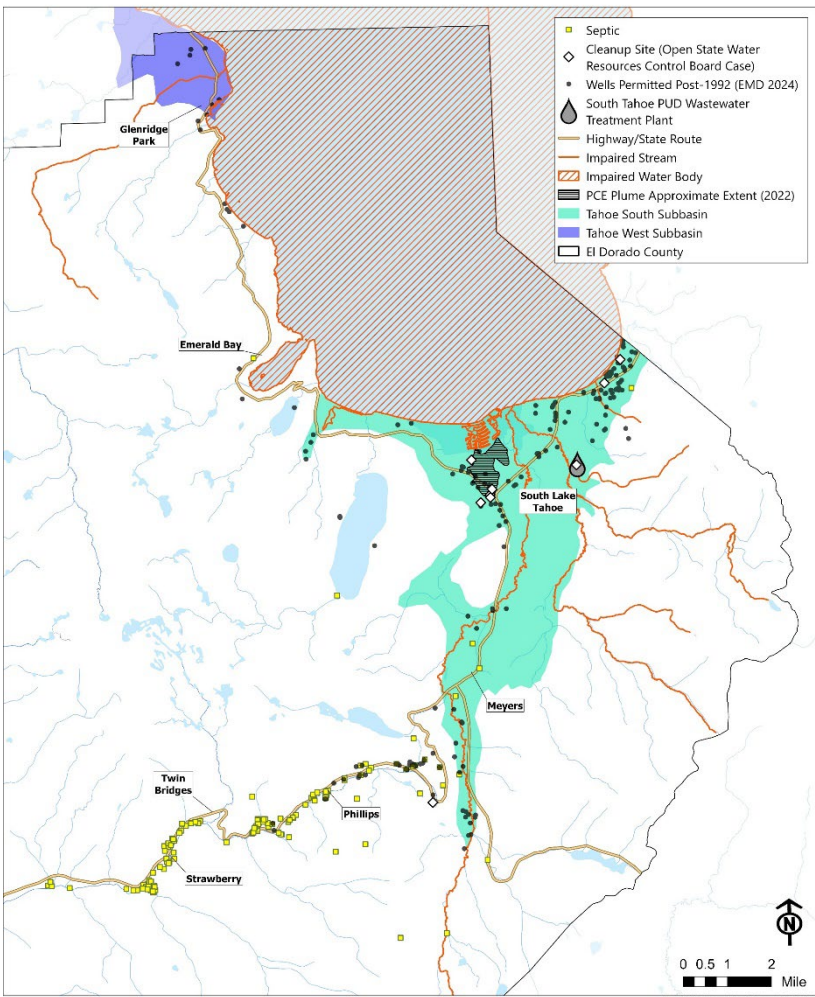
Water Resource-Related Challenges Mapping Exercise

Please join a breakout group table.
Don't worry about the topic – you'll have the chance to weigh in on each!

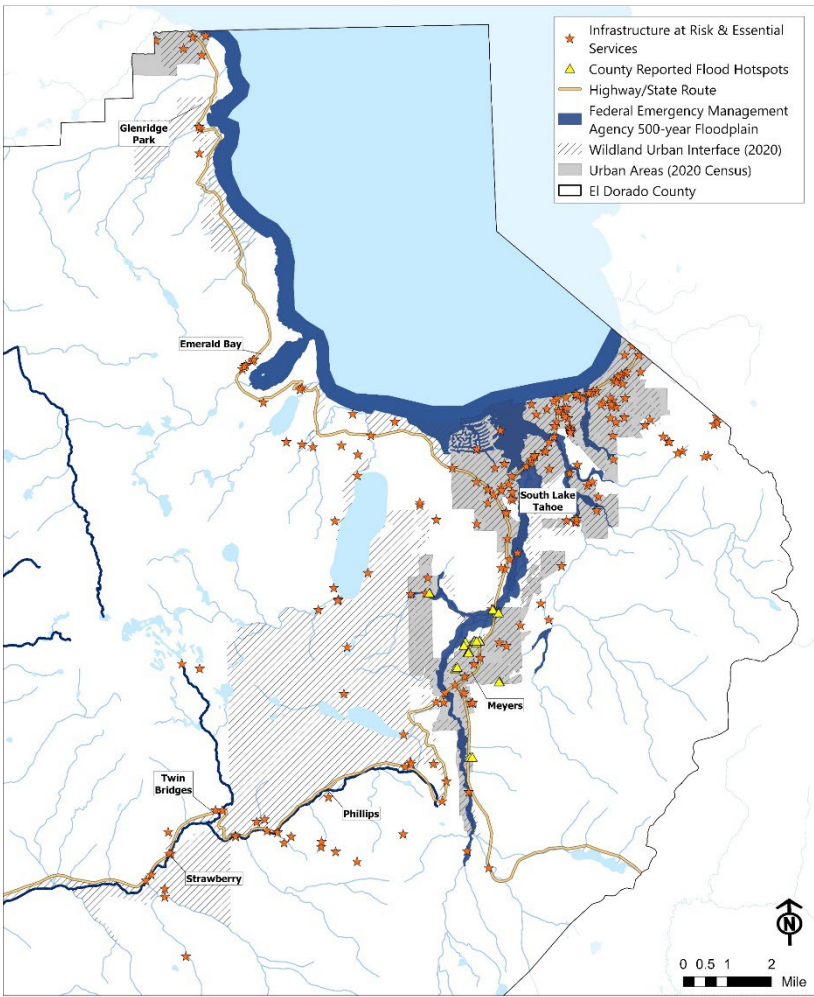
Water Supply



Water Quality



Public Safety



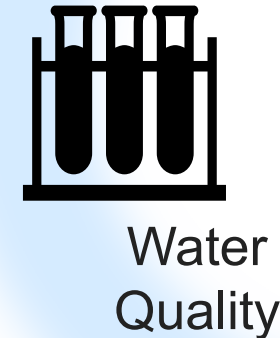
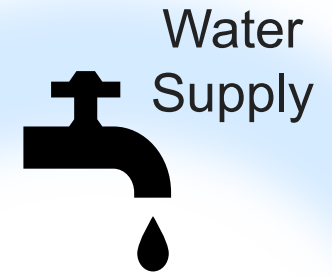
Water Resource-Related Challenges Mapping Exercise

Using the maps at each table, you'll have about 20 minutes to **identify areas in the Tahoe Basin** that have water supply, water quality, OR public safety challenges (depending on your table).

Focus on identifying:

- Where are there **hot spots or areas of concern**?
- **What do we know** about the issues in this area?
- **What don't we know** yet about this area (where might there be data gaps)?

Your group **facilitator will take notes**. After about 20 minutes, you'll **rotate to the next table**, review content the previous group generated, and add to it.

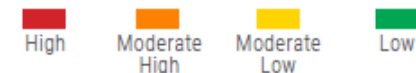


Water-Resource Related Challenges in the Tahoe Basin

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.

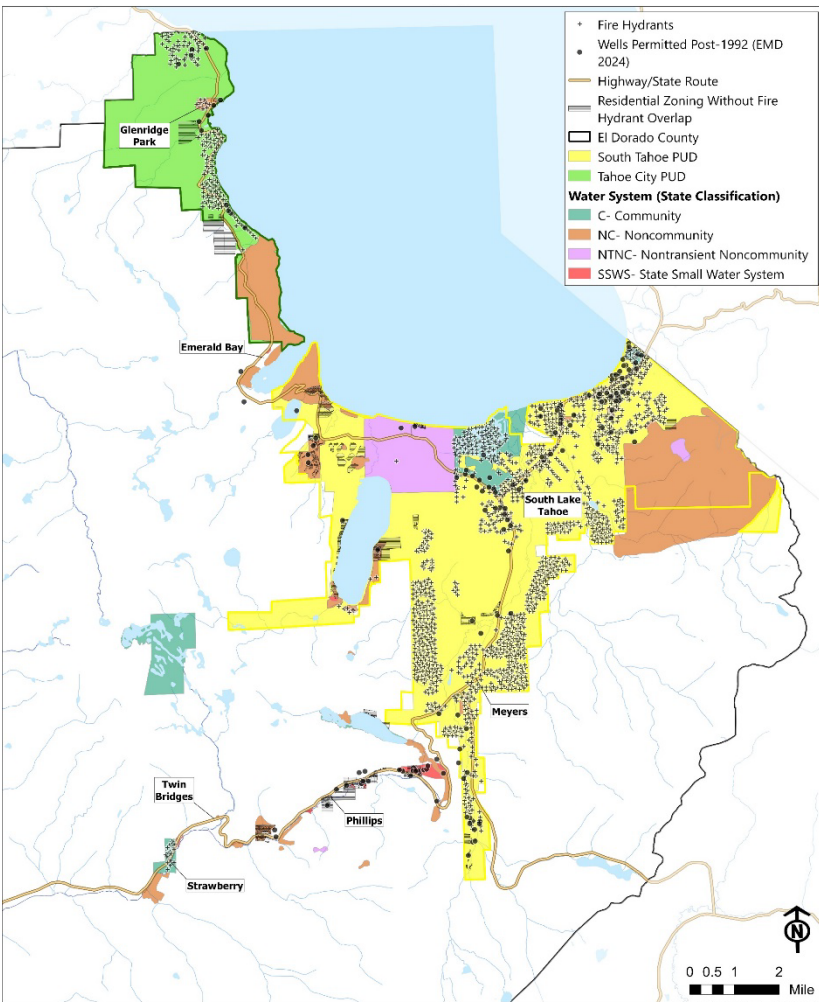
In your handout, you have a copy of this table from the 2024 Water Resource Development and Management Plan (WRDMP) to help prompt your thinking about water supply, water quality, and public safety challenges.

Level of Concern

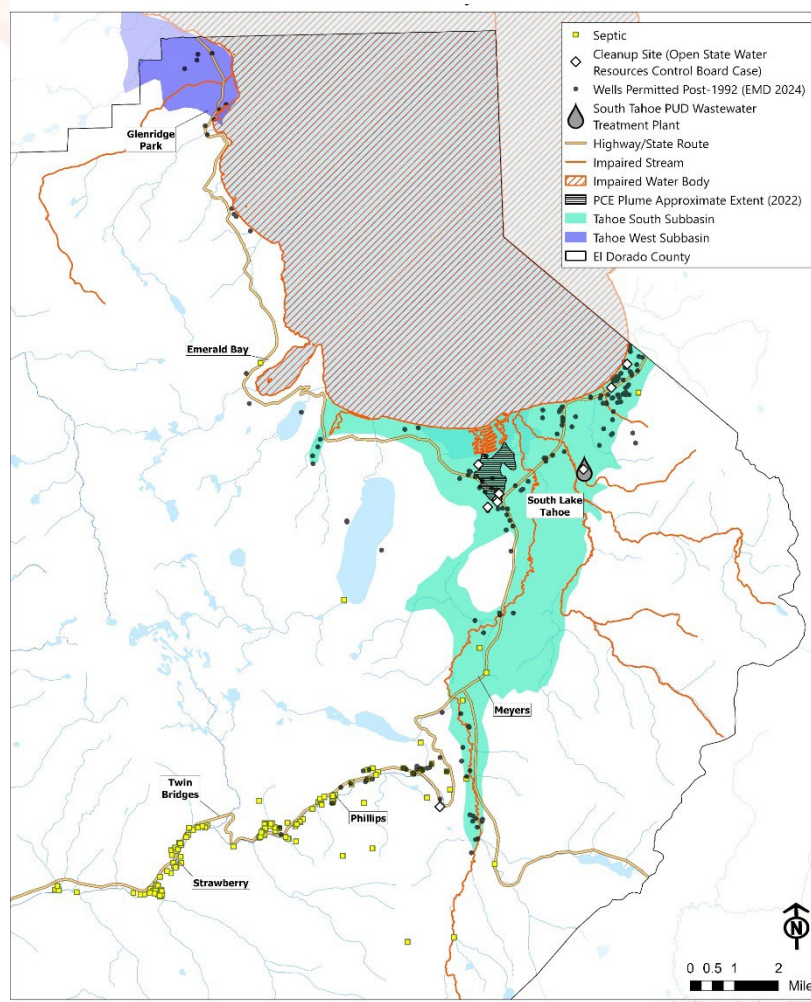


Water Resource-Related Challenges Mapping Exercise

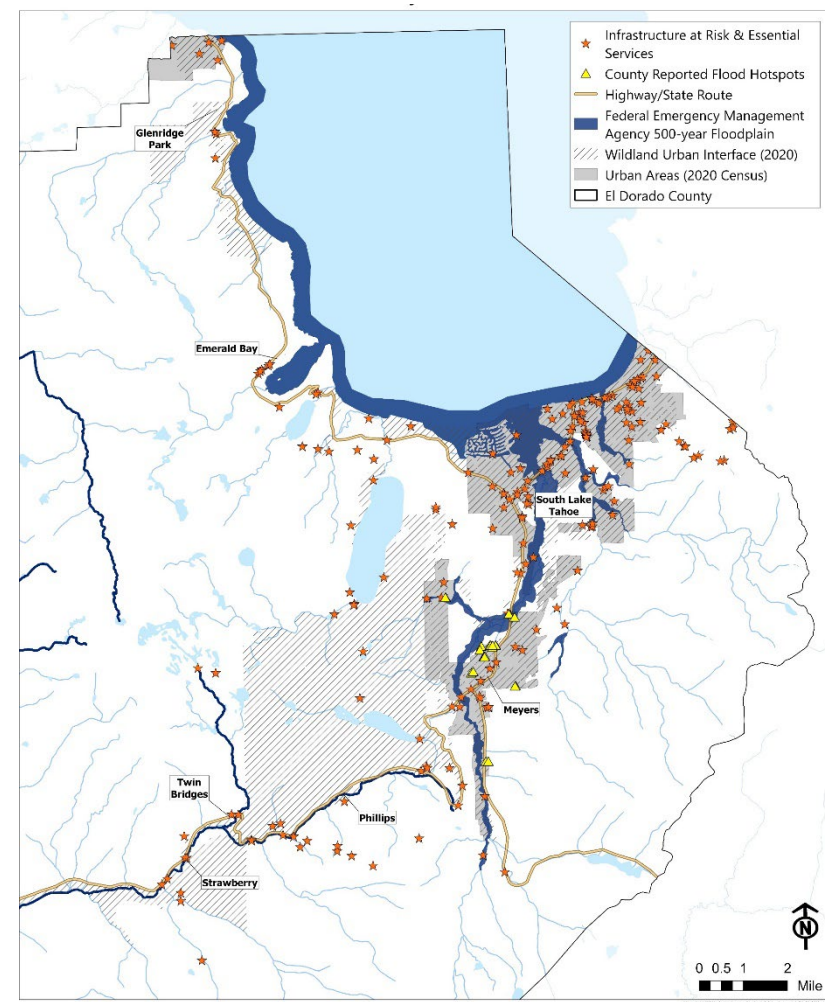
Water Supply



Water Quality



Public Safety





Preparing for the Water Blueprint: Identifying Potential Solutions to Shared Challenges

Now, you'll spend 30 minutes with **just one topic**. Please join the table for the topic you'd most like to brainstorm solutions for. If you notice a table has 7 or more individuals, please join another table.

- Based on the hot spots identified in the previous exercise, what's currently being done to address these issues?
- Where might there be there gaps in support?
- What type of assistance (e.g., technical assistance, planning support, legislative priorities, etc.) could help address these issues?





Report-Outs

Select one representative from your table to **summarize the top areas of concern and potential solutions** identified for your topic.





Closing Remarks

HANNAH ROMERO

*Water Resources Principal
El Dorado Water Agency*



Thank you!