WR

Chapter 3
Water Resources

~~Public Review~~Revised Draft - ~~February~~Summer 2026

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WATER RESOURCES

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Introduction

Water is among Lake County's most precious and important natural resources. Every aspect of life in Lake County relies on precipitation and the county's various sources of surface water and groundwater. Clear Lake provides most of the county's water, while also providing important wildlife habitat and underpinning the local recreational economy. Ensuring that water resources are adequate to sustain beneficial uses, including tribal, residential, agricultural, and industrial uses, while maintaining a healthy watershed and lake ecosystem are crucial issues now and into the future.

The County recognizes the deep cultural, spiritual, and historical connection that local Tribal Nations have with Clear Lake (known traditionally as Xa'batin or Lupeyomi) and its surrounding watershed. Tribal communities have lived in relationship with these waters since time immemorial and continue to act as stewards of the lake and its tributaries. The Tribes actively monitor water quality, participate in management partnerships, and provide ~~Traditional~~ Tribal Ecological Knowledge to guide restoration and protection efforts. Coordination between Lake County and the Tribes supports shared goals for sustaining clean water, protecting cultural resources, and ensuring the health of the Clear Lake watershed for future generations.

The Water Resources Element provides information about water sources, water demand, and management of water supply and quality in Lake County. This element contains goals, policies, and actions designed to protect, sustain, and restore water resources, as well as adapt to drought and other related climate change impacts. Flooding and other climate change impacts are also addressed in the Health and Safety Element. Water and wastewater service and stormwater management are addressed in the Public Facilities and Services Elements for each planning area. Lake-based recreation and communities are addressed in the Planning Area elements.

Background Information

Water Sources

Surface Water

A watershed or drainage basin is an area of land that channels rainfall, snowmelt, and runoff into a common body of water. There are five major watersheds in Lake County: Upper Main Eel River in the north, Upper Cache Creek in central-western Lake County, Upper Putah Creek in the south, Middle Cache Creek in the southeast, and North Fork Cache Creek in central-eastern Lake County. The county's surface water resources are depicted in **Figure WR-1**.

Clear Lake provides the county's primary supply of surface

Clear Lake, for which the county is named, lies in the center of the county within the Upper Cache Creek watershed and is the county's primary source of water, supplying roughly 60 percent of local drinking water. It is the largest natural body of water wholly within California (since Lake Tahoe, which is larger, straddles the California-Nevada border), and is the oldest lake in North America and possibly the world. The lake is approximately 68 square miles at its surface and has capacity for more than 1 million acre feet (AF) of water storage. In addition to serving homes, businesses, and agricultural production, the lake supports extensive recreational activities and Tribal cultural uses and is home to a diverse population of fish and wildlife.

Most lake inflow is from Scotts Creek and Middle Creek, which enter the lake to the northwest via Rodman Slough. Other major tributaries include Adobe Creek, Kelsey Creek, Clover Creek, and Schindler Creek. Clear Lake drains to the east via Cache Creek and eventually to the Sacramento River. Water levels in Clear Lake are regulated by Cache Creek Dam, a human-made structure approximately five miles downstream from Clear Lake, and by the Grigsby Riffle, a naturally occurring geologic formation about three miles upstream from the dam. The Grigsby Riffle is a rock outcropping jutting out of the Lower Cache Creek streambed that acts as a bottleneck restricting the outflow from Clear Lake. Unlike other bodies of water, water levels in Clear Lake are typically measured by the unique "Rumsey Gage," initially coined by a cattle drive captain named DeWitt Clinton Rumsey in 1873. The Rumsey Gage is oriented to the point at which water levels in Clear Lake are just low enough that they cease to flow over the Grigsby Riffle. This point is known as Zero Rumsey. Water levels on the Rumsey Gage are measured in terms of feet above or below this point, e.g., 3 feet Rumsey or 6 feet Rumsey.

There are 17 water purveyors drawing from Clear Lake, serving roughly 44,000 people who live along its shore. Yolo County Flood Control and Water Conservation District (YCFCWCD) holds a majority of the appropriative water rights to Clear Lake, its tributaries, and Cache Creek, which drains into the lake. These appropriative water rights allow YCFCWCD to divert up to 150,000 acre-feet per year (AFY) from Clear Lake, when the lake is considered full (i.e., the level is at 7.56 feet on the Rumsey Gauge) on May 1 of any given year. If the lake is considered low (i.e., below 3.22 feet on the Rumsey Gauge) on May 1, no water can be withdrawn. These rights were established by the 1978 Solano Decree, updated in 1995, which also sets monthly maximum withdrawal limits. Most water purveyors using surface water in the county must enter into contracts with YCFCWCD to purchase Clear Lake surface water. For more information about water service providers, see the Public Facilities and Services Elements for each planning area.

Groundwater Resources

As shown in **Figure WR-2**, there are 12 designated groundwater basins in Lake County. In addition to these groundwater basins, the Clear Lake Volcanics Groundwater Source Area is also an important water source for the southern region of Lake County. The California Department of Water Resources (DWR) defines water source areas as "rocks that are significant in terms of being a local groundwater source, but do not fit the typical category of a basin or subbasin;" the Clear Lake Volcanics Groundwater Source Area is not designated as a groundwater basin by DWR because it is a fractured groundwater aquifer. It spans southeast from the eastern border of the Big Valley Groundwater Basin to the southern edge of Clear Lake and covers portions of the county near the Cobb community and Hidden Valley Lake. There are more than 600 domestic wells, 135 irrigation wells, and 45 public water supply wells in the area of the Clear Lake Volcanics Groundwater Source Area.

The California **Sustainable Groundwater Management Act (SGMA)**, passed in 2014, set forth a statewide framework to protect groundwater resources over the long-term. For identified high- and medium-priority groundwater basins, SGMA requires local agencies to form groundwater sustainability agencies that are responsible for preparing and implementing groundwater sustainability plans to bring groundwater basins into sustainable yield and avoid undesirable results for groundwater users.

Big Valley Basin in the west central portion of the county is characterized as medium priority in accordance with the statewide Sustainable Groundwater Management Act classification system; this classification is based on consideration of several factors, including the number of wells that draw from the basin and the irrigated acreage overlying the basin, and triggers the requirement for a groundwater sustainability plan to ensure the basin is managed sustainably. The Groundwater Sustainability Plan for the Big Valley Basin was adopted in January 2022.

~~The California Department of Water Resources~~DWR estimates the gross storage capacity of the Big Valley Basin to be 105,000 AF and total water use to be approximately 12,950 AFY. DWR defines 'usable storage capacity' as the amount of groundwater of suitable quality that can be economically withdrawn from storage. Usable storage may be a fraction of gross storage. The estimated usable storage of the Big Valley Basin is 60,000 AF. Most of the water is used for agricultural purposes, with the remainder used by municipal and domestic water users. The remaining 11 groundwater basins are classified as 'very low priority' basins, so the requirement for a groundwater sustainability plan is not triggered.

Recharge in the Big Valley Basin outside of stream recharge and subsurface groundwater flow occurs primarily from deep percolation of rainfall and irrigation water. For all groundwater basins, recharge occurring from percolation can be impacted by land use practices, as changes to the land surface (such as paving or building) can reduce the amount of recharge, as can changes in irrigation practices. The primary factors that support recharge in the Big Valley Basin are the presence of water and subsurface conditions that are conducive to recharge. Thus, areas that are extensively irrigated and areas that are underlain by coarser-grained soils tend to have more recharge.

The Lake County Watershed Protection District's Groundwater Management Plan provides guidance to manage groundwater resources for all 12 groundwater basins in the county.

Figure WR-1 Surface Water Resources

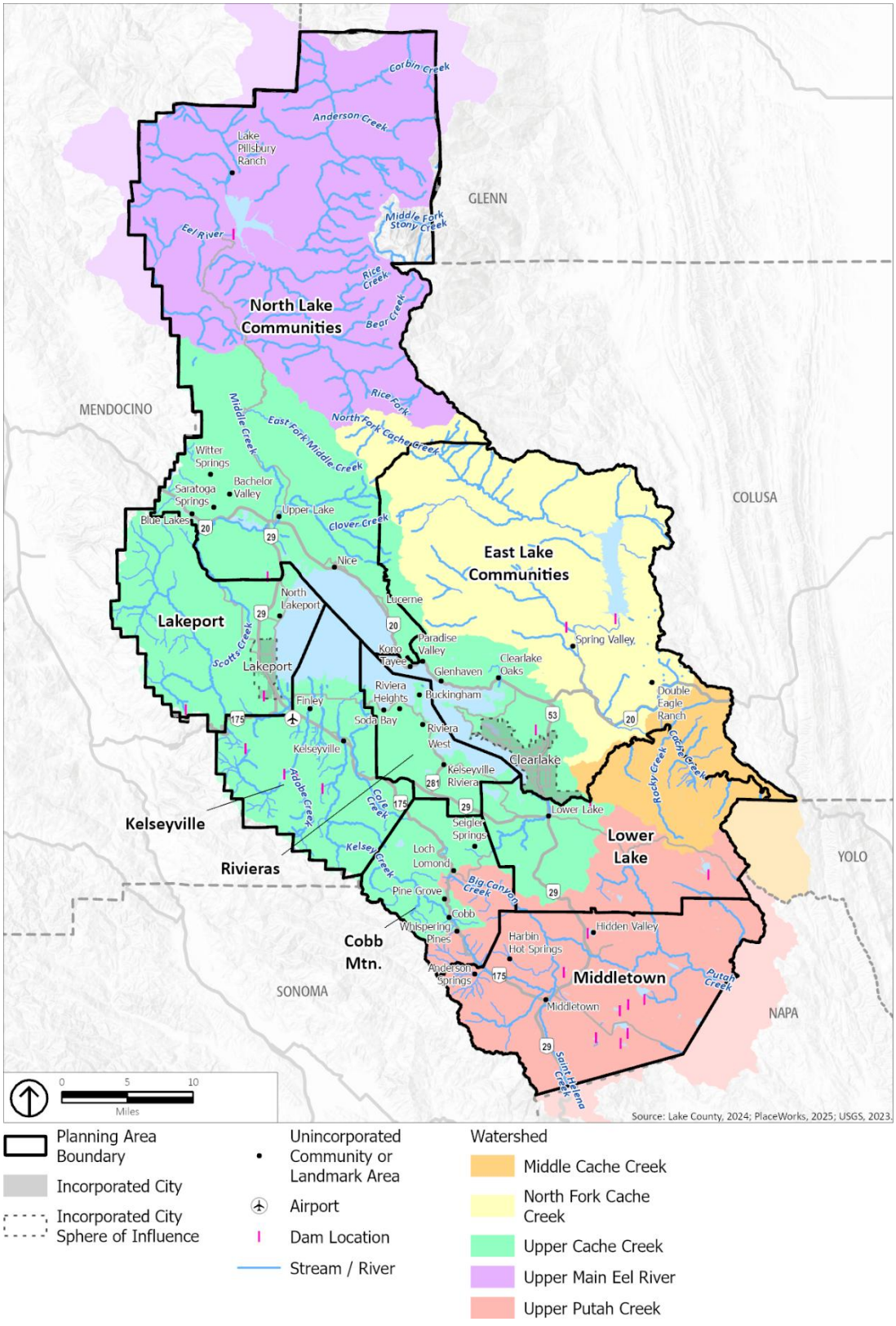

Figure WR-2 Groundwater Resources

Water Demand

Annual water demand from agricultural and domestic uses in Lake County is roughly 43,670 AFY. Agricultural water use accounts for approximately 82 percent of the county's water demand, while domestic uses, including residential and commercial water uses, account for the remaining 18 percent. In addition to agricultural and domestic water use, The Geysers uses water from Clear Lake for steam field recharge to maintain steam pressures; between 2020 and 2024, The Geysers used an annual average of 4,061 acre feet. Most of the water needed for steam field recharge is supplied by the Southeast Geysers Effluent Pipeline (the Pipeline) which uses treated wastewater to replenish underground steam and maintain energy production levels at The Geysers. Prior to the Pipeline, treated wastewater was discharged into Clear Lake; the Pipeline project has reduced the dependence on fresh water for steam recharge as well as the discharge of effluent into Clear Lake and thereby potential contamination. However, the Pipeline does not always supply sufficient water and The Geysers draws 'make up' water from Clear Lake, as allowed by an agreement with the Yolo County Flood Control District, which prohibits any water draws if Clear Lake water levels drop below 1.25 on the Rumsey gauge. Additional information on The Geysers and the county's geothermal resources are detailed in the Geothermal Resources Element.

Drought

A drought is when conditions are drier than normal for an extended period, making less water available for people and ecosystems. Droughts develop slowly over multi-year periods, making them difficult to quantify, predict, and prepare for, and they can have widespread environmental and economic impacts. The California Water Commission therefore recommends policies treating drought as a chronic phenomenon and not an occasional emergency, noting that "attention to drought should be consistent, not sporadic."[1] In Lake County, potential impacts include agricultural losses (particularly wine grapes and pears), increased well-drilling costs, decreased surface water quality, higher water costs affecting household finances and commercial profits, reduced wildlife habitat, and increased wildfire risk.

Lake County has experienced several significant drought periods over the past 50 years. Notable events include the 1976 to 1977 drought that resulted in major reductions of available water supplies and record low levels of the lake; the 2014 statewide drought emergency when the county reached "exceptional" drought levels; and the 2020 to 2021 period, which was the second-driest year on record statewide. During the 2021 drought, abnormally low water levels in Clear Lake necessitated the extension of several water intake pipes further into the lake to avoid the pipes being exposed to air. The abnormally low lake levels also caused the average water temperature to increase, which in turn caused harmful algae to proliferate, reducing drinking water quality and increasing costs for purveyors to treat Clear Lake water to drinking water standards. At least one water provider drawing from Clear Lake had to temporarily issue bottled water to consumers along with warnings against drinking tap water until algae levels returned to a safe threshold.

[1] California Water Commission, "Potential State Strategies for Protecting Communities and Fish and Wildlife in the Event of Drought," January 2024, p. 21; hereafter "State Drought Strategies"

Drought also affects groundwater resources. As groundwater reserves are drawn down and receive less replenishment from precipitation, aquifer levels drop, resulting in reduced well capacity or dry wells. Since 2020, 28 drinking water wells in the county were reported to have gone dry according to the statewide tracking and reporting system for dry wells, although actual numbers were likely significantly higher. Drought and over-extraction of groundwater can also affect streams, as much of their flow is supported by groundwater, especially during summer months. Drought can cause soil to compact and resist water absorption, potentially increasing flooding and erosion risks when rains return. Climate change is expected to result in more frequent and severe droughts across the state, with Lake County likely to experience more extreme variations in precipitation patterns.

Water Resources Management

Lake County is involved in many ongoing efforts to protect and conserve its water resources. This section discusses organizations, programs, processes, and regulations influencing water quality and supply in the county.

County Activities

The Lake County Water Resources Department (LCWRD) and the Lake County Watershed Protection District (which is embedded in LCWRD) work to restore, conserve, and steward Lake County's watersheds. To address water supply reliability and water quality issues, the LCWRD developed a Groundwater Management Plan in 2006, providing guidance for the County and other water users to implement effective water resource management programs.

The Lake County Water Resources Department manages the Highland Springs reservoir near Lakeport.

The County is also actively involved in the Lake County Clean Water Program, a joint effort between the County and the Cities of Clearlake and Lakeport to reduce damage caused by polluted stormwater runoff and impacts of increased peak flows from development. The Lake County Clean Water Program developed and is responsible for implementing the inter-jurisdictional Stormwater Management Plan, which identifies target areas and priority projects to help prevent stormwater runoff from entering the county's waterways. The plan includes policies and regulations for new construction, an action plan for public outreach and awareness to residents and community members, programs to prevent illegal dumping, and a list of funding sources. In addition, Lake County has a Stormwater Management Ordinance that codifies regulations aimed at reducing pollutants in stormwater discharges and prohibiting non-stormwater discharges. See the Planning Area Public Facilities and Services Elements for goals, policies, and actions that address stormwater runoff.

In 2017, California Assembly Bill 707 established the Blue Ribbon Committee for the Rehabilitation of Clear Lake under the California Natural Resources Agency. This committee includes representatives from Tribal governments in the region, Lake County, the University of California at Davis, and the Central Valley

Regional Water Quality Control Board. The committee meets quarterly to review and discuss the latest available research and planning restoration programs, and provides an annual report to the California Governor's office and legislature. Continued government-to-government consultation and collaboration with Tribal governments are essential components of implementing the goals of AB 707 and sustaining the long-term health of Clear Lake.

Tribal Activities

Tribal Nations—including the Big Valley Band of Pomo Indians, Elem Indian Colony of the Sulphur Bank Rancheria of California, Habematolel Pomo of Upper Lake, Koi Nation of Northern California, Middletown Rancheria of Pomo Indians of California, Yoche Dehe Wintun Nation, Robinson Rancheria Band of Pomo Indians of California, Scotts Valley Band of Pomo Indians, and Mishewal Wappo—exercise sovereignty and maintain government-to-government relationships with Lake County and the State of California in all matters related to Clear Lake and its watershed..

Through their Environmental Protection Departments and Tribal Historic Preservation Officers (THPOs), the Tribal governments lead and collaborate on programs addressing cyanotoxin monitoring, habitat restoration, and cultural resource protection. The Big Valley Band of Pomo Indians, for example, operates a long-term cyanotoxin monitoring and public education program recognized by the U.S. Environmental Protection Agency and the California Water Board. The Big Valley Band of Pomo Indians is also leading multiple watershed restoration projects, like preparing an environmental review and design for removal of a fish passage barrier along Kelsey Creek, as well as various shoreline solid waste and invasive species removal projects. THPOs can review and consult on water-related projects to ensure protection of ancestral sites, traditional fishing areas, and culturally sensitive shorelines. Tribal government representatives also serve on the Blue Ribbon Committee for the Rehabilitation of Clear Lake and participate in regional working groups that integrate ~~Traditional~~ Tribal Ecological Knowledge (TEK) with contemporary science to support lake restoration, native species recovery, and climate resilience.

The area's Tribal governments are part of a broad coalition that includes the County, California Department of Fish and Wildlife, and other local and State agencies to address water quality issues in Clear Lake and its tributaries, including efforts to address issues related to the recent decline in a population of fish native to the Clear Lake watershed known as the Clear Lake hitch (*Lavinia exilicauda chi*), or *Chi* in the Pomo language family. Coordination between Lake County and Tribal governments support shared goals for sustaining clean water, protecting cultural resources, and ensuring the health of the Clear Lake watershed for future generations.

State Water Resources Control Board

The State Water Resources Control Board (SWRCB) regulates water quality in California to protect the environment and public health and to properly allocate water resources. One of the main ways that the SWRCB ensures that stormwater will not contain pollutants is through the National Pollutant Discharge Elimination System (NPDES) permit, which regulates stormwater discharges from three main sources: Municipal Separate Storm Sewer Systems (MS4), construction activities, and industrial activities. All three sources require different permits to regulate and enforce mitigation measures within specific physical

boundaries before stormwater is discharged. This prevents harmful pollutants from running off into surface waters, such as lakes, streams, and rivers.

Central Valley Regional Water Quality Control Board

The Central Valley Regional Water Quality Control Board (CVRWQCB) is responsible for monitoring water quality in the Central Valley region, which includes Lake County. The CVRWQCB's adopted Basin Plan designates water quality objectives and strategies for achieving these objectives. The CVRWQCB administers the Small Phase II MS4 Permit for Lake County; issues NPDES permits for wastewater treatment plants, water recycling facilities, and industrial waste discharges; and issues cleanup abatement orders.

The water quality of Clear Lake must meet water quality standards for designated beneficial uses, which include municipal and domestic water supply, recreation (contact and non-contact), and warm freshwater habitat. Clear Lake was listed as an impaired waterway under the federal Clean Water Act Section 303(d) list in 1986 because it does not meet water quality standards due to elevated nutrient concentrations that exacerbate and feed harmful algal blooms. These nutrients, primarily an excess amount of phosphorus, are sediment-driven. Because of this impairment, the US Environmental Protection Agency placed a Total Maximum Daily Load (TMDL) on Clear Lake as a control program to focus on reducing nutrients entering Clear Lake for point and nonpoint sources to limit the loads of phosphorus entering Clear Lake.

CVRWQB is currently reviewing data for possible TMDL plans for reduction of lead, Microcystis, and dissolved oxygen in Clear Lake.

Drought events can contribute to instances of algae blooms in Clear Lake.

Key Issues

As development continues, the long-term adequacy of groundwater and surface water resources will be an ongoing concern. Adequacy of local water resources is impacted by a variety of factors, including surface water and groundwater levels, water quality, the rates of water usage and water recharge, conservation efforts, water needs of fish and wildlife, stormwater runoff, and changes in State and federal regulations. The occurrence of drought, as discussed previously, is also a chief concern impacting water supply. Fluctuating lake levels, erosion, and shoreline modification can also expose or damage ancestral sites, traditional fishing areas, and sacred places along the lake and tributaries. Similarly, continued degradation of riparian and wetland habitats threatens species of cultural and ecological importance, such as the Clear Lake hitch (Chi), Western pond turtle, and native tule beds traditionally used for construction, food, and ceremonies.

Another concern related to water quality is instances of harmful algal and cyanobacteria blooms in Clear Lake that can produce toxins and noxious odors that can cause harm to both humans and animals. In humans, coming into contact with cyanobacteria can cause a variety of symptoms including irritations to skin, eyes, and throat; symptoms of ingesting the algae include gastrointestinal upset and headaches. Some strains of cyanobacteria also produce liver and neurotoxins that make animals and humans very sick or can cause death. For local Tribal governments, cyanobacteria blooms pose risks to both tribal members who rely on traditional fishing, gathering, and ceremonial practices, as well as to wildlife that hold cultural importance. These blooms are typically seasonal and occur more frequently as water temperatures rise due to climate change. They are also more likely to occur in shallow areas with calm water. Phosphorus and nitrogen are the main nutrient sources that cyanobacterial cells use to fuel their metabolic processes; therefore, decreasing nutrient transport into Clear Lake may decrease the severity and duration of future blooms, which is why a Total Maximum Daily Load (TMDL) for nutrients was placed on Clear Lake in 1986 to require the reduction of sediment flows into the lake that contribute to harmful algal blooms.

Additionally, limited long-term monitoring data in some tributaries and groundwater basins constrain the ability to detect pollution sources and protect downstream Tribal Cultural Resources.

Goals, Policies, and Actions

Goal WR-1	Protected and enhanced quality and supply of Lake County's groundwater and surface water resources.

Policies

WR-1.1

Strengthen County-Tribal government coordination to protect water quality, cultural resources, and ecosystem health in Clear Lake and its watershed and promote joint stewardship and integration of ~~Traditional~~ Tribal Ecological Knowledge with modern water management and restoration practices.

WR-1.2

Prioritize protection of surface and groundwater quality and supply when considering land use changes and development projects.

WR-1.3

Coordinate reviews of development proposals and potential new regulations impacting water quality and/or supply with local water service providers.

WR-1.4

Review local groundwater management plans and consult with local water service agencies when considering the expansion of Community Growth Boundaries to ensure such expansions do not adversely affect water quality or supply.

WR-1.5

Continue to monitor surface and groundwater resources and enforce provisions of the National Pollution Discharge Elimination System (NPDES) program to control nonpoint source water pollution.

Point source pollution is characterized by a single, identifiable source, such as a factory, while **non-point source pollution** refers to pollution originating from multiple, dispersed sources, like agricultural runoff or urban stormwater, which is therefore more difficult to identify and control.

WR-1.6

Require the use of passive design techniques, such as vegetative filters, wetlands, and swales in open space settings, to control nonpoint source pollution and implement nonpoint source pollution control measures where feasible, including for roadway oils and greases.

WR-1.7 * [2]

Prior to project approval, coordinate review of proposed development projects with appropriate agencies to ensure potential impacts on surface water and groundwater quality are mitigated, including from water quality risks associated with soil erosion, pollutant discharge, floating debris, and runoff contamination. Require project applicants to include project features that improve water quality (e.g., vegetative filters, wetlands, and swales).

WR-1.8

Enforce citations for illegal discharge.

WR-1.9

Require that development along Clear Lake and major tributaries minimizes the potential impact of land disturbance and erosion on water quality and the potential for pollution discharge from sewage disposal systems and other potential polluting sources.

WR-1.10

Require new and expanded industrial uses that may directly or indirectly discharge pollutants to surface waters or critical groundwater basins to incorporate appropriate wastewater discharge-reduction measures, including on-site treatment, to protect water quality. In addition, require such uses to monitor and report to the County on their compliance with discharge regulations.

WR-1.11 *

Require development projects to control erosion and sediment and protect water quality during construction and post-construction through application of the County's Grading Ordinance and Stormwater Management Ordinance as part of the project approval process.

[2] General Plan policies and actions marked with an asterisk (*) denote policies and actions that work to mitigate effects of cumulative development expected during the life of the General Plan, identified in the General Plan Environmental Impact Report (EIR).

WR-1.12

Encourage property owners served by eroding and poorly maintained private roads to form private road maintenance agreements that improve road quality and reduce erosion.

WR-1.13

Encourage older developments without adequate sewage and stormwater disposal systems to upgrade these systems to conform to current standards that support water quality.

WR-1.14

Support collection of water quality and flow information for the county's three major drainage systems: the Eel River, Putah Creek, and Cache Creek drainage systems, including by encouraging local interest parties to establish and fund gauging stations to monitor surface water flows.

Actions

WR-1.a

Partner with Tribal governments to develop and implement public education and restoration projects that promote water quality, habitat protection, and the use of ~~Traditional~~ Tribal Ecological Knowledge in watershed management.

WR-1.b *

Identify and implement additional development regulations and strategies to incorporate into land use practices, project siting, and design that protect the health of the county's watersheds, groundwater basins, and surface water drainage areas, including strategies or regulations to discourage or prohibit uses with the potential to discharge harmful pollutants, increase erosion, or otherwise degrade water quality.

WR-1.c

Amend the County Code of Ordinances to require site drainage information for all permit applications for new homes and substantial additions.

WR-1.d

Review and update construction site plan review procedures, where necessary, and provide training for site inspectors, plan review staff, and construction site operators on best water quality protection practices during and after construction.

WR-1.e

Educate developers on best management practices to protect surface water and groundwater quality, including erosion control, through the preapplication development review, use permit, subdivision, and permit plan review processes and ongoing inspections.

WR-1.f

Establish a program to reduce or eliminate illicit discharges into the stormwater conveyance system, including through inspections, education, and agency coordination.

WR-1.g *

Conduct a survey of the locations and densities of existing onsite wastewater treatment systems (OWTS) in the county and explore the need to establish a moratorium on new OWTSs in designated areas, especially in locations in close proximity to Clear Lake and other drinking water sources. Such a moratorium might allow for exceptions upon approval of Lake County Environmental Health Department.

WR-1.h *

Prior to the transfer of property on a site with an existing OWTS, a septic system inspection shall be required by a qualified professional to ensure that the OWTS is in good operating condition.

WR-1.i *

Develop a Master Drainage Plan detailing existing systems, identifying deficiencies, and outlining future infrastructure needed to control stormwater runoff, water quality, and potential flooding.

WR-1.j *

Evaluate the assessment of storm drain impact fees for new development to fund capital improvements to the storm drain system.

WR-1.k *

In areas where the existing storm drain infrastructure is inadequate and prone to cause flooding, require new development to demonstrate that the project would not result in a net increase in stormwater runoff from the site (i.e., post-construction runoff rates are equal to or less than pre-development runoff rates).

WR-1.l

Investigate the feasibility of preparing and adopting an adopt-a-drain program to improve stormwater quality and reduce pollution.

Goal WR-2	Groundwater resources that are managed to ensure a safe, sustainable, and economically viable groundwater supply.

Policies

WR-2.1

Manage groundwater resources to ensure sufficient supply to meet existing and future need and maintain and enhance the natural environment.

WR-2.2

Consult applicable Groundwater Sustainability Plans and local groundwater management agencies when making decisions that could impact groundwater resources.

WR-2.3

Manage stream channel systems and their watersheds to ensure critical groundwater recharge functions are maintained.

The Planning Areas' Public Facilities and Services Elements contain additional strategies supporting groundwater recharge where they address stormwater management.

WR-2.4

Prohibit new development that would create or significantly aggravate groundwater overdraft conditions, land subsidence, or other "undesirable results," as defined in Section 354.26 of the California Water Code.

WR-2.5

Limit the export of groundwater outside its originating basin through application of the County's ordinances and police powers.

WR-2.6

Consult and coordinate with Tribal governments on groundwater management, monitoring, and restoration projects to protect culturally significant sites, traditional water uses, and watershed health.

WR-2.7

Support studies that further the understanding of individual groundwater basins, source areas, and potential pollution sources, such as septic systems.

WR-2.8

Support and recognize groundwater management efforts by local public water agencies that have established programs, interested parties participation, and data monitoring that support the goals of this General Plan.

Actions

WR-2.a

Maintain and implement the Lake County Groundwater Management Plan to protect the groundwater resources in the county.

WR-2.b

Participate in the implementation and update of Groundwater Sustainability Plans to ensure the sustainability of water resources in the county.

WR-2.c

Evaluate and quantify long-term groundwater recharge capacity to sustain groundwater resources.

WR-2.d

Identify, inventory, and map groundwater recharge areas and adopt design standards for these areas to ensure continued recharge capabilities, such as clustered development patterns, density limits, impervious surface reductions, stormwater capture and recharge requirements, and water reclamation features, including greay water filtration processes.

WR-2.e

Update the County Code of Ordinances to include requirements for incorporating stormwater management strategies into project design and siting to support groundwater recharge.

WR-2.f

Develop, implement, and maintain a groundwater monitoring program that compiles data biannually on the behavior of groundwater source areas and basins, monitors sources of potential groundwater pollution, and supports stakeholder participation and partnerships. Collaborate with water service providers to incorporate applicable data collected through their water monitoring programs and work with local groundwater users to collect data on local well depths, yield, and water quality changes.

WR-2.g

Investigate requiring that hydrology reports ~~to~~ include groundwater testing conducted during summer and fall months.

~~WR-2.g~~WR-2.h

Assess the feasibility of installing and monitoring additional groundwater monitoring wells in high-demand areas or where data gaps exist.

~~WR-2.h~~WR-2.i

Establish a program to assess abandoned mines for their potential to pollute groundwater and remediate identified issues.

Goal WR-3 Healthy watersheds and sustainable water management.

Policies

WR-3.1

Preserve existing water supplies and pursue viable opportunities to tap into new water sources, including through careful management of groundwater and surface water resources, promotion of water conservation programs, and effective stewardship and expansion of the water supply facilities in the county.

WR-3.2

Continue to participate in all appropriate State, regional, local, and Tribal water resources planning efforts that protect and sustain Lake County's water resources.

WR-3.3

Continue to monitor State and federal activities impacting water resources and work with the County's elected representatives and advocacy organizations to support policy making that aligns with the best interests of the County.

WR-3.4

Coordinate with Lake County and Yolo County water management agencies and other relevant interested parties to explore opportunities for mutually beneficial water resource projects and collaborative water management strategies to increase water supply and ensure sustainable water management.

WR-3.5

Lead and support efforts to protect watershed health and sustainability and coordinate these activities with other agencies and programs where appropriate.

WR-3.6

Support implementation of the five-county Westside Sacramento Integrated Regional Water Management Plan for the Cache Creek and Putah Creek watersheds.

Actions

WR-3.a

Implement and maintain the Clear Lake Integrated Regional Water Management Plan.

WR-3.b

In coordination with Tribal governments and local public water agencies, develop a management plan for each watershed in the county using available monitoring data collected by public water agencies and other sources.

WR-3.c

Identify watersheds that drain into Clear Lake with high pollution levels and prioritize restoration efforts in the most impacted watersheds.

Goal WR-4	A sufficient and sustainable water supply that meets the current and future needs of all in the county.

Policies

WR-4.1

Collaborate with federal, State, regional, local, and Tribal agencies and interested parties to develop water management strategies for maintaining affordable water supplies, including for low-income households and agriculture users.

WR-4.2

Coordinate with Tribal governments to ensure water conservation, supply management, and restoration projects support traditional water uses, culturally significant sites, and ecosystem health.

The Agricultural Resources Element provides additional guidance to support the agricultural industry with water conservation and groundwater quality protection strategies.

WR-4.3

Encourage agricultural and forestry operators to participate in watershed management and restoration efforts.

WR-4.4

Promote water-efficient management practices in agriculture and forestry industries, including drip irrigation, forest thinning, and watershed restoration.

WR-4.5

Partner with State, regional, local, and Tribal agencies and interested parties to identify and implement methods to improve the efficient use of water resources for agricultural, municipal, and environmental purposes.

WR-4.6

Support innovative power generation processes and techniques that reduce demands on Clear Lake waters.

WR-4.7

Work with water districts to prepare for a reduced long-term water supply resulting from more frequent and severe drought events by implementing extensive water conservation measures and ensuring sustainable water supplies, including fire-suppression needs.

WR-4.8 *

Require that new development projects demonstrate there is sufficient water supply to meet the additional demand associated with the proposed project prior to project approval and, where there is not sufficient water, ensure potential impacts on water supply are mitigated through measures such as the installation of low-flow water fixtures, water conservation efforts, or the retrofit of existing uses to offset increased demand. Require new development to obtain a will-serve letter from the water purveyor within the service area prior to the issuance of construction permits to ensure that the water purveyor has the capacity to supply water to the project.

WR-4.9

Continue to require new development to incorporate water conservation techniques in accordance with the California Green Building Code, as incorporated into the County Code of Ordinances, Chapter 5, Building Regulations, and encourage the use of additional strategies to conserve water that extends beyond requirements.

WR-4.10

Require native, drought-tolerant, and non-invasive landscaping in both private development and public spaces, in accordance with applicable State laws. Ensure that new landscaping does not exacerbate wildfire or flood risks and aligns with vegetation and stormwater management standards.

WR-4.11

Employ efficient water use strategies at County-owned buildings and as part of County operations to serve as a model for efficient water use.

WR-4.12

Encourage homeowners and businesses to retrofit existing buildings and properties with water-conserving fixtures and features, such as drought-tolerant landscaping, low-flow toilets, smart irrigation controllers, and rainwater collection systems, including by promoting rebate offerings or other incentives.

WR-4.13

Coordinate with water districts to continue to invest in programs that help residential and nonresidential customers save water and money by using the most efficient appliances and fixtures, fixing leaks, and practicing water-wise landscaping and indoor water consumption.

WR-4.14

Support public education programs that promote water conservation strategies and highlight the benefits of implementing conservation measures.

WR-4.15

Advocate for and coordinate with appropriate agencies to maintain water levels in local reservoirs that are appropriate for emergency fire response.

Actions

WR-4.a

Explore opportunities to expand the use of reclaimed wastewater (tertiary treated and secondary treated) for other reasonable and beneficial uses within the same watershed/water basin, such as groundwater recharge, irrigation of agricultural lands, irrigation of landscaped areas, geothermal recharge, and environmental restoration and enhancement projects without exporting water from one watershed to another.

WR-4.b

Develop and adopt a graywater ordinance to regulate reuse of wastewater from sinks, showers, and laundry for on-site non-potable water needs.

WR-4.c

Encourage the use of rainwater harvesting facilities, techniques, and improvements where appropriate, cost-effective, safe, and environmentally sustainable as a way to reduce urban runoff and conserve water resources.

WR-4.d

Retrofit County-owned landscapes to increase the amount of native, drought-resistant, and non-invasive plant landscaping.

WR-4.e

Develop and distribute educational materials on water-efficient agricultural and forest management practices, such as water-efficient irrigation systems and forest thinning.

WR-4.f

Partner with water districts to develop and implement educational programs to inform residents about techniques to conserve, maintain, and enhance water quality and supply, including information on the benefits of green infrastructure and nature-based solutions for drought resilience.

WR-4.g

Provide information about native, non-invasive, and drought-resistant plant species to community members and applicants for projects that will involve new or replacement landscaping.

Goal WR-5	Surface water resources that are kept clear of cyanobacteria, algal blooms, and aquatic invasive species.

Policies

WR-5.1

Work with the University of California (UC) Cooperative Extension and the Lake County Resource Conservation District to promote best management practices for agriculture to reduce impacts related to cyanobacteria and algal blooms, including cover cropping, riparian buffers, nutrient management plans, and erosion-control techniques.

WR-5.2

Support ecosystem restoration and nature-based solutions through interagency coordination to reduce nutrient loads, improve lake health, and guide long-term declines in cyanobacteria and algal blooms.

WR-5.3

Coordinate with Tribal governments, water districts, scientific partners, and State agencies to support ongoing water quality monitoring and early detection systems for cyanobacteria and toxins to improve public health and water quality management.

WR-5.4

Collaborate with Tribal governments to monitor and manage surface water quality, harmful algal blooms, cyanobacteria, and invasive species, including through public education and restoration programs, while protecting culturally significant aquatic and shoreline resources and supporting traditional uses of Clear Lake.

WR-5.5

Work with the agriculture community to reduce nutrient runoff into Clear Lake through best management practices that specifically limit nitrogen and phosphorus discharges and sediment run-off.

WR-5.6

Increase community awareness and engagement around the causes and impacts of harmful algal blooms, including engagement focused on short-term visitors to Lake County.

WR-5.7

Continue efforts to reduce the spread of hydrilla and other invasive species and to maintain and improve fish spawning beds in Clear Lake.

WR-5.8

Coordinate with resource management agencies, Tribal governments, and lake users to prevent the introduction and spread of aquatic invasive species in Clear Lake through monitoring, public education, and rapid response protocols.

WR-5.9

Promote the management of shoreline and watershed vegetation to reduce invasive species while protecting native plant communities that support Clear Lake's water quality and provide habitat for native species.

Actions

WR-5.a

Develop and implement effective response plans for cyanobacteria and harmful algal blooms through clear communication protocols and public safety measures, including public warnings for residents in English and Spanish ~~for residents~~, to protect public health, wildlife, and recreation opportunities.

WR-5.b

Develop incentive programs for landowners and farmers to adopt nutrient-reducing practices.

WR-5.c

Update the Stormwater Management and Grading Ordinances to incorporate green infrastructure to address sediment and nutrient runoff from urban development and residential landscaping into Clear Lake.

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