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TECHNICAL STAFF REPORT & SUBSTITUTE ENVIRONMENTAL DOCUMENTATION

AMENDMENTS TO THE WATER QUALITY CONTROL PLAN FOR THE
LAHONTAN REGION

TO REMOVE THE FECAL BACTERIA WATER QUALITY OBJECTIVES

State Clearinghouse Number XXXXX

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March 2023

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1. Introduction

This staff report and Substitute Environmental Documentation (SED) provides the technical background and basis for a Basin Plan amendment (BPA) to the [Water Quality Control Plan for the Lahontan Region](#) (Basin Plan) bacteria water quality objectives (WQOs). The BPA includes revisions to the bacteria water quality objectives and several editorial changes to the text of the Basin Plan. The amendment includes the removal of fecal coliform fecal indicator bacteria (FIB) and its associated numeric and narrative WQOs. Editorial changes include the insertion of language referencing a set of fecal bacteria WQOs that are effective statewide and were established by the State Water Resources Control Board (State Board), revisions to text related to terminology about the bacteria objectives contained in Chapter 3 and Chapter 5 of the Basin Plan, and appropriate changes to title pages, tables of contents, appendices, page numbers, table and figure numbers, footnote numbers, and headers and footers.

The Lahontan Regional Water Quality Control Board (Water Board) is the state agency responsible for water quality protection in California watersheds east of the Sierra Nevada Crest from the Modoc Plateau in the north to the Mojave Desert in the south. The Water Board is one of nine Water Quality Control Boards throughout California that function as part of the State Water Resources Control Board (State Water Board) system within the California Environmental Protection Agency. The Water Board implements both the federal Clean Water Act (CWA) and the Porter-Cologne Water Quality Control Act. Water quality standards and control measures for waters of the Lahontan Region are contained in the Basin Plan.

Section 303 of the federal CWA defines water quality standards as the designated uses of a waterbody and the water quality criteria applied to protect those uses. Under the Porter-Cologne Water Quality Control Act (CA Water Code § 13000 et seq.), beneficial uses and water quality objectives (WQOs) to protect those beneficial uses are established for all surface waters, wetlands, and ground waters of the State.

The Water Board's Basin Plan contains two WQOs under the 'Bacteria, coliform' headings of [Chapter 3 \(Water Quality Objectives\)](#) and [Chapter 5 \(Water Quality Standards and Control Measures for the Lake Tahoe Basin\)](#). The Basin Plan also includes a numeric fecal coliform objective for the Susanville hydrologic unit. The WQOs in each chapter use fecal coliform as the FIB. The WQOs of Chapter 3 are applicable to all Lahontan Region surface waters regardless of beneficial use; the WQOs of Chapter 5 are applicable to all surface waters of the Lake Tahoe Basin regardless of beneficial use.

Fecal coliforms are no longer a recommended FIB to determine if potentially harmful fecal material may be present in surface waters ([United States Environmental Protection Agency \(U.S. EPA\), 1986, 2012](#)). Instead, *Escherichia Coli* (*E. coli*) and Enterococci FIB are recommended as indicators of this type of waste in freshwater surface waters (*Ibid*, 1986, 2012).

In 2018, the State Water Board adopted [Resolution No. 2018-0038](#), which established [Part 3 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries \(ISWEBE\) – Bacteria Provisions and a Water Quality Standards Variance Policy \(Bacteria Provisions\)](#). The *Bacteria Provisions* include *E. coli* and Enterococci FIB WQOs for the Water Contact Recreation (REC-1) beneficial use. These WQOs apply to all surface waters in California designated with the REC-1 use, including the Lahontan Region, and superseded numeric water quality objectives for bacteria for the REC-1 beneficial use that were contained in Basin Plans prior to February 4, 2019.

To be consistent with U.S. EPA FIB recommendations, the proposed amendment removes the fecal coliform indicator and associated narrative and numeric WQOs from the ‘Bacteria, coliform’ heading in Chapters 3 and 5 of the Basin Plan, and the fecal coliform WQO for the Susanville Hydrologic Unit. The proposed amendment makes additional editorial changes to the ‘Bacteria, coliform’ headings and subsequent language, including inserting language referencing the State Water Board *Bacteria Provisions*, which already apply to Lahontan Region surface waters. Detailed information pertaining to the *Bacteria Provisions*, including the [Staff Report and SED](#) for that project, can be found at the [State Water Board website](#). Editorial changes associated with this BPA were made to improve the readability and clarity of the Lahontan Region Basin Plan.

This staff report and SED provide supporting information and justification for the BPA that would remove the fecal coliform WQO and the narrative fecal bacteria objectives and make editorial changes to summarize the *Bacteria Provisions* WQOs in the Basin Plan. The staff report includes a discussion on the need for the BPA, technical information to support the BPA, and considerations in accordance with the California Water Code and California Environmental Quality Act (CEQA). The Staff Report also provides a record of the process used to develop the BPA, including the environmental review, the public participation process, and scientific peer review.

The Water Board’s planning process has been certified by the Secretary for Resources under Section 21080.5 of CEQA as “functionally equivalent” to the preparation of an Environmental Impact Report (EIR). This certification allows the Water Board to prepare an SED rather than a negative declaration or EIR for BPAs. Therefore, the Staff Report includes the SED for compliance with CEQA, and a separate CEQA document will not be prepared. The Staff Report includes the Water Board’s Substitute Environmental Documentation (SED) required to satisfy the provisions of the CEQA, pursuant to Public Resources Code sections 21080.5 and 21159, CEQA Guidelines sections 1520 through 15253, and the Water Board’s Regulations for Implementation of the California Environmental Quality Act of 1970, California Code of Regulations (Cal. Code of Regs), title 23, sections 3720 through 3781. The document must contain a brief description of the project, an identification of any significant or potentially significant adverse environmental impacts of the proposed project, an analysis of reasonable alternatives to the project and mitigation measures to avoid or reduce any significant or potentially significant adverse environmental impacts, and an environmental analysis of the reasonably foreseeable methods of compliance, and must be circulated for a public review period.

2. Statement of Necessity for a Basin Plan Amendment

The [Basin Plan](#) contains fecal coliform WQOs that are generally applicable to all surface waters in the Lahontan Region. Fecal coliforms are no longer a recommended FIB to show water quality is compromised by fecal material ([U.S. EPA, 2012](#)). Instead, U.S. EPA recommends *E. coli* and Enterococci FIB to detect fecal pollution in surface waters and indicate when recent, harmful fecal pollution may be present (*Ibid*, 2012).

As further described in this Staff Report, a BPA is necessary to remove the fecal coliform FIB WQOs from the Basin Plan to reflect U.S. EPA recommendations on fecal indicators. Fecal coliforms have been faulted because of the non-fecal sources of at least one member of this group, *Klebsiella*, which have been observed in effluents of several industrial processes and in the absence of fecal contamination (U.S. EPA, 1986). The fecal coliform WQOs are located in [Chapter 3 \(Water Quality Objectives\)](#) and [Chapter 5 \(Water Quality Standards and Control Measures for the Lake Tahoe Basin\)](#). The U.S. EPA recommended criteria for FIB are to protect the contact recreation beneficial use (REC-1). The statewide Bacteria Provisions are WQOs consistent with the U.S. EPA recommended criteria and apply to surface waters within the Lahontan Region.

The BPA also removes the narrative water quality objective for coliform organisms from Chapters 3 and 5 of the Basin Plan. The narrative prohibits concentrations of coliform organisms attributable to anthropogenic sources of waste. The narrative water quality objective is not explicitly connected to the protection of a beneficial use and is applicable to all surface waters in the Lahontan Region. Except for five waterbodies, all surface waters in the Lahontan Region are designated for the REC-1 use. The U.S. EPA - recommended coliform organisms (*E. coli* and Enterococci) for the protection of a specific (REC-1) beneficial use are already incorporated into the statewide numeric bacteria water quality objectives. The statewide numeric bacteria water quality objective relies on specific FIB that are more closely associated with the presence of pathogens in water than the broader “coliform organisms.” Therefore, a narrative water quality objective is unnecessary as the existing *E. coli* objective provides protection of beneficial uses in surface waters designated REC-1.

Additionally, the narrative is being removed because its implementation is problematic and impractical due to the requirement to attribute FIB with anthropogenic sources of wastes (e.g. human or livestock). If the source isn't obvious from field observations, then a lab analysis would be required. In bacteria monitoring, determining sources using lab analysis is expensive and tedious. For a typical numeric bacteria objective water quality objective, a source lab analysis would only be conducted if the sample demonstrates elevated FIB concentrations that impair a beneficial use. If the FIB is elevated, then staff can prepare the rest of the water sample for lab analysis by microbial source tracking (MST) method or other modern diagnostic approach. In contrast, the narrative water quality objective does not allow the concentration of coliform organisms attributable to any anthropogenic sources, regardless of whether some level of concentrations would still protect the beneficial use. This means that when the source of the concentrations is not apparent from field observations, a source lab analysis might need to be conducted

regardless of the level of FIB concentrations. To obligate a source analysis, per the existing narrative WQO, is both problematic and not warranted for purposes of the Water Board's mission when a beneficial use is not being threatened nor impaired. As a result, the narrative water quality objective has not been used historically by the Water Board in impairment determinations. It has also not been used by permit writers in establishing monitoring or permit requirements to ensure the protection of a specific beneficial use. Additionally, the presence of multiple bacteria water quality objectives conflicts with the project goal of consistency and predictability for permit writers, enforcement program, and the regulated public (dischargers).

2.1 Scope and summary of the Basin Plan Amendment

This amendment removes the fecal coliform WQO collocated in Basin Plan Chapter 3-4 and 3-6, and Chapter 5.1-6. The amendment removes the narrative FIB WQO in Chapter 3-4 and Chapter 5.1-6. The amendment adds language to Chapter 3-4 and Chapter 5.1-6 from State Board Resolution No. 2018-0038 *Bacteria Provisions* for *E. coli* and Enterococci FIB WQOs. The amendment changes language related to implementation of bacteria objectives in Chapter 3-16 and Chapter 5.1-12. The amendment also removes references to fecal coliforms for Chapter 4.9-19.

Additionally, the BPA includes editorial changes to both Chapters 3 and 5 of the Basin Plan pertaining to the statewide REC-1 bacteria provisions. Editorial changes are also made to the 'Bacteria, Coliform' headings found in Chapters 3 and 5. Further language is added that describes the methodology for determining adherence to the WQO.

A full explanation of the changes to the Basin Plan are found in [Section 5](#) of this report. The full textualization for the BPA is included as the draft Fecal Bacteria Water Quality Objectives Basin Plan Amendment developed for this project, available on the Lahontan Water Boards' [Basin Planning webpage](#).

3. Regulatory Overview

The Lahontan Water Board is the primary California state agency responsible for setting and enforcing water quality standards in the [Lahontan Region](#). Water quality standards and a program of implementation for surface waters and groundwaters of the Lahontan Region are identified in the Basin Plan. Amendments to the Basin Plan, including amendments adopting new or revising existing water quality standards for surface waters, are subject to a public process with multiple opportunities for public comment. Basin Plan amendments become effective for state law and non-CWA implementation purposes after adoption by resolution by the Water Board, approval by the State Water Board, and approval by the California Office of Administrative Law (OAL). Basin Plan Amendments become effective for CWA implementation purposes after adoption by the Water Board, approval by the State Water Board, approval by OAL and approval by the U.S. EPA, Region IX.

Water quality standards generally consist of three components: designated uses for each water body or segment, water quality criteria to protect the designated uses, and

an antidegradation policy (40 C.F.R. §131.6; 40 C.F.R. §131.13). In general, “uses” refer to what a water body is or potentially may be used for (40 C.F.R. § 131.3(f)), with examples as diverse as use as wildlife and riparian habitat, use of water for industrial production, agricultural supply, or use for recreation due to activities such as fishing and swimming in waterbodies (40 C.F.R. 131.10(a)).

Most, if not all, waterbodies have multiple uses. “Existing uses” are “those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards” (40 C.F.R. § 131.3(e)). “‘Designated uses’ are those uses specified in water quality standards for each water body or segment whether or not they are being attained” (40 C.F.R. § 131(f)). “Water quality criteria” are “expressed as constituent concentrations, levels, or narrative statements, representing a quality of water that supports a particular use” (40 C.F.R. § 131.3(b)). The Federal Antidegradation policy provides three levels (tiers) of water quality protection to maintain and protect existing water uses, high quality waters, and outstanding national resource waters (40 C.F.R. § 131.12.).

The Porter-Cologne Water Quality Control Act (Wat. Code § 13000 et seq.) is the principal law governing water quality in California. California law designates the State Water Board and the nine Regional Water Boards as the principle state agencies for enforcing federal and state water pollution law. (Wat. Code, §§ 13140, 13160, 13225, 13240.). The Porter-Cologne Water Quality Control Act establishes a comprehensive statutory program to protect the quality and “beneficial uses” (or “designated uses” under federal parlance) of waters of the state. Beneficial uses include, but are not limited to, “domestic, municipal, agricultural, and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.” (Wat. Code, § 13050, subd.(f)). Water Quality Objectives are “the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area.” (Wat. Code, § 13050, subd.(h)).

Chapter 2 of the Basin Plan identifies the Beneficial Uses and designates beneficial uses to water bodies in the Lahontan Region. Chapter 3 of the Basin Plan identifies the water quality objectives that apply to waters of the State within the Lahontan Region. Chapter 5 identifies the water quality standards and control measures for the Lake Tahoe Basin.

Regional Water Boards are required to establish water quality control plans (Basin Plans) for all areas within their Regions (Wat. Code, §13240), and must establish water quality objectives in Basin Plans that will ensure the reasonable protection of beneficial uses and the prevention of nuisance (Wat. Code § 13241).

4. Existing Conditions/Environmental Setting

The Lahontan Region is defined in terms of drainage basins by Section 13200(h) of the Porter-Cologne Act. The Region is approximately 570 miles long and has a total area of 32,792 square miles.

The Lahontan Region includes the highest (Mount Whitney) and lowest (Death Valley) points in the contiguous United States, and the topography of the remainder of the Region is diverse. The Region includes the eastern slopes of the Warner Mountains and the Sierra Nevada, the northern slopes of the San Bernardino and San Gabriel Mountains, the southern slopes of the Tehachapi Mountains, and all or part of other ranges including the White, Providence, and Granite Mountains and the western slopes of the New York and Ivanpah Mountains. Topographic depressions include the Madeline Plains, Surprise, Honey Lake, Bridgeport, Owens, Antelope, and Victor Valleys.

The geology and soils of the Lahontan Region have been shaped by a variety of processes and are correspondingly diverse. Parent materials in the northern mountains are granitic or volcanic; evidence of glacial action is widespread. Soils in the desert valleys of the Region are derived from alluvium. Severe seismic activity has occurred in the past; the Owens Valley earthquake of 1872 formed a 20-foot fault scarp, and earthquakes in the Mammoth area have recently damaged sewer lines. Volcanic activity has occurred recently (in geologic time) in the Mono Lake area, and the presence of geothermal springs throughout the Lahontan Region indicates that it could occur in the future. Economically valuable minerals, including gold, silver, copper, sulfur, tungsten, borax, and rare earth metals, have been or are being mined at various locations within the Region.

The Lahontan Region also has a variety of climates. The Region is generally in a rain shadow; however, precipitation amounts can be high (up to 70 inches) at higher elevations. Most precipitation in the mountainous areas falls as snow. Desert areas receive relatively little annual precipitation (less than 2 inches in some locations,) but this can be concentrated and lead to flash flooding. Recorded temperature extremes in the Lahontan Region range from -45 degrees Fahrenheit at Boca in the Truckee River watershed to 134 degrees Fahrenheit in Death Valley.

The varied topography, soils, and microclimates of the Lahontan Region support a corresponding variety of plant and animal communities. Vegetation ranges from sagebrush and creosote bush scrub in the desert areas to pinyon-juniper and mixed conifer forest at higher elevations. Subalpine and alpine “cushion plant” communities occur on the highest peaks. Wetland and riparian plant communities, including marshes, meadows, “sphagnum” bogs, riparian deciduous forest, and desert washes, are particularly important for wildlife, given the general scarcity of water in the Region.

The existence of “ecological islands,” because of topography, glaciation, and climatic changes, has led to the evolution of species, subspecies, and genetic strains of plants and animals in the Lahontan Region which are found nowhere else. Particularly notable

are fish such as the Eagle Lake trout, Lahontan and Paiute cutthroat trout, Mojave chub, and several kinds of desert pupfish.

The Lahontan Region is rich in cultural resources (archaeological and historic sites). These range from remnants of Native American irrigation systems to Comstock mining era ghost towns such as Bodie, and 1920s resort homes at Lake Tahoe and Scotty's Castle at Death Valley.

Much of the Lahontan Region is in public ownership, with land use controlled by agencies such as the U.S. Forest Service, National Park Service, and Bureau of Land Management, various branches of the military, the California State Department of Parks and Recreation, and the City of Los Angeles Department of Water and Power. While the permanent resident population of the Region is low in relation to that of more urbanized Regions, most of it is concentrated in high density communities in the South Lahontan Basin. In addition, millions of visitors use the Lahontan Region for recreation each year. Rapid population growth has occurred recently and is expected to continue in the Victor and Antelope Valleys and within commuting distance of Reno, Nevada. Principal communities of the North Lahontan Basin include Susanville, Truckee, Tahoe City, South Lake Tahoe, Markleeville, and Bridgeport. The South Lahontan Basin includes the communities of Mammoth Lakes, Bishop, Ridgecrest, Mojave, Adelanto, Palmdale, Lancaster, Victorville, and Barstow.

Recreational and scenic attractions of the Lahontan Region include Eagle Lake, Lake Tahoe, Mono Lake, Mammoth Lakes, Death Valley, and portions of many wilderness areas. Segments of the East Fork Carson and West Walker Rivers are included in the State Wild and Scenic River system. Both developed (e.g., camping, skiing, day use) and undeveloped (e.g., hiking, fishing) recreation are important components of the Region's economy.

In addition to tourism, other major sectors of the economy are resource extraction (mining, energy production, and silviculture), agriculture (mostly livestock grazing), and defense-related activities. There is relatively little manufacturing industry in the Region in comparison to major urban areas of the state.

In preparation of the California Integrated Report – Clean Water Act (CWA) Section 303(d) List of Impaired Waters and CWA Section 305(b) Surface Water Quality Assessment (Integrated Report), data and information were collected from Lahontan Region surface waters. The [Lahontan Regional Water Quality Control Board Clean Water Act Sections 305\(b\) And 303\(d\) 2018 Integrated Report for the Lahontan Region Staff Report](#) summarized the assessment processes and the methods used in the integrated report cycle. The Staff Report indicates that headwater streams flowing eastward from the Sierra Nevada Crest typically have low concentrations of indicator bacteria detectable in water quality samples, although these concentrations usually increase as the waterbodies flow downgradient into the lower elevation portions of the region. Waterbodies in lower elevation areas are typically subject to greater impacts from anthropogenic activities and from natural sources, and these waters also receive proportionally more recreational activity when compared to headwater sites. At

headwater sites with little or no regular anthropogenic disturbance the available FIB data indicates that Lahontan waters are of exceptional quality, by far attaining the statewide WQOs for the REC-1 beneficial use.

Fecal bacteria water quality in most of the Regions' surface waters can be described as excellent, meaning little FIB is usually detected during routine monitoring. Most headwaters portions of the Region have not been developed for residential or industrial use, and because much of the surface water in the Region comes from snowmelt, Lahontan Region waters are of excellent quality. In areas where industrial agriculture (such as livestock grazing), urbanization, and certain forms of recreation occur, fecal bacteria is more likely to occur and be detected, especially during warmer months of the year when grazing and recreation uses are at their peak. The Water Board continues to work with stakeholders to address fecal waste issues in watersheds.

5. Proposed Revisions to the Basin Plan/Project Description

A full copy of the revisions to the Basin Plan are included in the Fecal Bacteria Water Quality Objectives Basin Plan Amendments developed for this project, available on the Lahontan Water Boards' [Basin Planning webpage](#). This section explains the content of the BPA, including Sections 5.1 through 5.6 which explain the changes to each part of the Basin Plan, and Section 5.7 which provides a summary of different implementation components associated with the REC-1 FIB WQOs of the *Bacteria Provisions*. The *Bacteria Provisions* should be consulted in their entirety for all details related to the REC-1 FIB WQOs.

5.1 Changes to the '*Bacteria, Coliform*' objectives in Chapter 3, page 4

The subheading '*Bacteria, Coliform*' found on page 4 is changed to '*Fecal Indicator Bacteria*'.

5.2 Removal of the narrative coliform WQO and numeric fecal coliform WQO from Basin Plan Chapter 3.

This BPA removes the narrative coliform WQO from Chapter 3, page 4 of the Basin Plan:

Waters shall not contain concentrations of coliform organisms attributable to anthropogenic sources, including human and livestock wastes.

All language related to fecal coliforms is removed from Chapter 3 of the Basin Plan. Fecal coliforms are not recommended as an accurate FIB for the presence of fecal waste of surface waters (U.S. EPA, 1986, 2012). This BPA removes all fecal coliform language found in Basin Plan Chapter 3, page 4:

The fecal coliform concentration during any 30-day period shall not exceed a log mean of 20/100 ml, nor shall more than 10 percent of all samples collected during any 30-day period exceed 40/100 ml. The log mean shall ideally be

based on a minimum of not less than five samples collected as evenly spaced as practicable during any 30-day period. However, a log mean concentration exceeding 20/100 ml for any 30-day period shall indicate violation of this objective even if fewer than five samples were collected.

Language referencing the *Bacteria Provisions*, which established *E. coli* and Enterococci WQO's for the REC-1 beneficial use in all California surface waters and which are already effective in the Lahontan Region, will be added to the Basin Plan. These additions are described in [Sections 5.3](#).

5.2.1 Removal of fecal coliform WQO from the Susanville Hydrologic Unit

This BPA also removes all fecal coliform language (including the subheading) found on Chapter 3, page 6, relating to specific objectives for the Susanville Hydrologic Unit:

Bacteria, Fecal Coliform

The fecal coliform concentration based on a minimum of not less than five samples for any 30- day period, shall not exceed a log mean of 20/100 ml, nor shall more than 10 percent of total samples during any 30-day period exceed 75/100 ml.

No new language related to FIB WQOs will be added for the Susanville Hydrologic Unit. All waters in the Susanville Hydrologic Unit are designated the REC-1 beneficial use and thus the statewide *E. coli* and Enterococci WQOs already apply to these waters. Additions to Chapter 3 of *E. coli* and Enterococci FIB WQOs for REC-1 waters

Under the new '*Fecal Indicator Bacteria*' heading the following text is inserted:

Surface waters designated for Water Contact Recreation (REC-1):

The State Water Resources Control Board (State Water Board) established two bacteria water quality objectives applicable to all surface waters with the REC-1 beneficial use, depending on the salinity level, and an implementation plan in 'Part 3 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California — Bacteria Provisions and a Water Quality Standards Variance Policy' (Bacteria Provisions)' adopted with State Water Board Resolution No. 2018-0038. The Bacteria Provisions should be consulted in their entirety for a complete accounting of the water quality objectives and associated implementation provisions. The water quality objectives are summarized below.

Escherichia Coli (E. coli)

*The bacteria water quality objective for all waters where the salinity is equal to or less than 1 part per thousand (ppt) 95 percent or more of the time during the calendar year is: a six-week rolling geometric mean (GM) of *E. coli* not to exceed 100 colony forming units (cfu) per 100 milliliters (mL), calculated*

weekly, and a Statistical Threshold Value (STV) of 320 cfu/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner.

United States Environmental Protection Agency (U.S. EPA) recommends using U.S. EPA Method 1603 or other equivalent method to measure culturable E. coli.

Enterococci

The bacteria water quality objective for all waters where the salinity is greater than 1 ppt more than 5 percent of the time during the calendar year is: a six-week rolling geometric mean of enterococci not to exceed 30 cfu/100 mL, calculated weekly, with a STV of 110 cfu/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner.

U.S. EPA recommends using U.S. EPA Method 1600 or other equivalent method to measure culturable enterococci.

Table 3 - 0. REC-1 Bacteria Water Quality Objectives

Applicable Waters	Objective Elements	Estimated Illness Rate (NGI): 32 per 1,000 water contact recreators Magnitude (cfu/100 mL)	
		GM	STV
<i>All waters where the salinity is equal to or less than 1 ppt 95 percent or more of the time</i>	<i>E. coli</i>	100	320
<i>All waters where the salinity is greater than 1 ppt more than 5 percent of the time</i>	<i>Enterococci</i>	30	110

Table notes:

1. *The waterbody GM shall not be greater than the applicable GM magnitude in any six-week interval, calculated weekly. The applicable STV shall not be exceeded by more than 10 percent of the samples collected in a CALENDAR MONTH, calculated in a static manner.*
2. *NGI = National Epidemiological and Environmental Assessment of Recreational Water gastrointestinal illness rate*
3. *GM = geometric mean*
4. *STV = statistical threshold value*
5. *cfu = colony forming units*
6. *ppt = parts per thousand*
7. *ml = milliliters*

The WQO language and WQO table is copied from the *Bacteria Provisions*. The WQOs already apply to Lahontan Region surface waters. This part of the amendment is an editorial (i.e., non-substantive) change.

- 5.3 Removal of text related to 'log mean' and changes to 'bacterial analysis' text, and addition of definitions for 'geometric mean' and 'statistical threshold value' from Chapter 3-16

The heading:

'References to "Means" (e.g., annual mean, log mean, mean of monthly means), "Medians" and "90th Percentile Values"'

is changed to remove references to 'log mean.' 'Log mean' is replaced with 'geomean,' and the text 'and Statistical Threshold Values' is inserted at the end of the sentence.

The following additional text on page 3-16 column one is also removed:

A logarithmic or "log mean" (used in determining compliance with bacteria objectives) is calculated by converting each data point into its log, then calculating the mean of these values, then taking the anti-log of this log transformed average.

This text pertaining to geometric means is inserted in place of the deleted text:

A geometric mean or "geomean" (used in determining compliance with bacteria objectives) is a type of mean that indicates the central tendency or typical value of a set of numbers by using the product of their values (as opposed to the arithmetic mean which uses their sum). The geometric mean is defined as the n th root of the product of n numbers. The formula is expressed as: $GM = \sqrt[n]{(x_1)(x_2)(x_3) \dots (x_n)}$, where x is the sample value and n is the number of samples taken.

At the end of the “References to “Means” (e.g., annual mean, geomean, mean of monthly means), “Medians” and “90th Percentile Values,” and Statistical Threshold Values’ paragraph, the following definition for statistical threshold values is inserted:

A statistical threshold value (STV) for the fecal indicator bacteria water quality objectives is a set value that approximates the 90th percentile of the water quality distribution of a bacterial population.

On page 3-16, column 2, the following text from the paragraph ‘bacterial analyses’ is removed:

For bacterial analyses, sample dilutions should be performed so the range of values extends from 2 to 16,000. The detection method used for each analysis shall be reported with the results of the analysis. Detection methods used for coliforms (total and fecal) shall be those presented in Standard Methods for the Examination of Water and Wastewater (American Public Health Association et al. 1998), or any alternative method determined by the Regional Board to be appropriate.

The following text is inserted to page 3-16, column 2:

For bacterial analyses, the detection method used for each analysis shall be reported with the results of each analysis. Detection methods used for fecal indicator bacteria (FIB) shall be those presented in Standard Methods for the Examination of Water and Wastewater (American Public Health Association et al.), or any alternative method determined by the Regional Board to be appropriate.

5.4 Removal of fecal coliform WQO and changes to Basin Plan Chapter 5.1

Basin Plan Chapter 5 provides WQOs for the Lake Tahoe Basin. This BPA removes the fecal coliform indicator and associated WQOs from Chapter 5 – 6 because these FIB are not recommended to indicate the presence of fecal waste of surface waters (U.S. EPA, 1986, 2012). This BPA also makes changes to the ‘*Bacteria, Coliform*’ heading and removes the associated narrative objective contained in Chapter 5, making the WQO for Chapter 5 consistent with the rest of the Region and the State.

The ‘*Bacteria, Coliform*’ heading is changed to ‘*Fecal Indicator Bacteria*’.

These changes are the same as those made to Chapter 3. Explanation for the changes is found in [Section 5.1](#).

The following text pertaining to fecal coliforms is removed:

Waters shall not contain concentrations of coliform organisms attributable to anthropogenic sources, including human and livestock wastes.

The fecal coliform concentration during any 30-day period shall not exceed a log mean of 20/100 ml, nor shall more than 10 percent of all samples collected during any 30-day period exceed 40/100 ml. The log mean shall ideally be based on a minimum of not less than five samples collected as evenly spaced as practicable during any 30-day period. However, a log mean concentration exceeding 20/100 ml for any 30- day period shall indicate violation of this objective even if fewer than five samples were collected.

In place of the removed text, the following text is inserted:

Surface waters designated for Water Contact Recreation (REC-1):

The State Water Resources Control Board (State Water Board) established two bacteria water quality objectives applicable to all surface waters with the REC-1 beneficial use, depending on the salinity level, and an implementation plan in 'Part 3 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California — Bacteria Provisions and a Water Quality Standards Variance Policy' (Bacteria Provisions)' adopted with State Water Board Resolution No. 2018-0038. The Bacteria Provisions should be consulted in their entirety for a complete accounting of the water quality objectives and associated implementation provisions. The water quality objectives are summarized below.

Escherichia Coli (E. coli)

The bacteria water quality objective for all waters where the salinity is equal to or less than 1 part per thousand (ppt) 95 percent or more of the time during the calendar year is: a six-week rolling geometric mean (GM) of E. coli not to exceed 100 colony forming units (cfu) per 100 milliliters (mL), calculated weekly, and a Statistical Threshold Value (STV) of 320 cfu/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner.

United States Environmental Protection Agency (U.S. EPA) recommends using U.S. EPA Method 1603 or other equivalent method to measure culturable E. coli.

Enterococci

The bacteria water quality objective for all waters where the salinity is greater than 1 ppt more than 5 percent] of the time during the calendar year is: a six-week rolling geometric mean of enterococci not to exceed 30 cfu/100 mL, calculated weekly, with a STV of 110 cfu/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner.

U.S. EPA recommends using U.S. EPA Method 1600 or other equivalent method to measure culturable enterococci.

Table 5 - 0. REC-1 Bacteria Water Quality Objectives

Applicable Waters	Objective Elements	Estimated Illness Rate (NGI): 32 per 1,000 water contact recreators Magnitude (cfu/100 ml)	
	<i>Indicator</i>	<i>GM</i>	<i>STV</i>
<i>All waters where the salinity is equal to or less than 1 ppt 95 percent or more of the time</i>	<i>E. coli</i>	100	320
<i>All waters where the salinity is greater than 1 ppt more than 5 percent of the time</i>	<i>Enterococci</i>	30	110

Table notes:

1. The waterbody GM shall not be greater than the applicable GM magnitude in any six-week interval, calculated weekly. The applicable STV shall not be exceeded by more than 10 percent of the samples collected in a CALENDAR MONTH, calculated in a static manner.
2. NGI = National Epidemiological and Environmental Assessment of Recreational Water gastrointestinal illness rate
3. GM = geometric mean
4. STV = statistical threshold value
5. cfu = colony forming units
6. ppt = parts per thousand
7. ml = milliliters

The WQO language and WQO table is copied from the *Bacteria Provisions*. The WQOs already apply to Lahontan Region surface waters. This part of the amendment is an editorial (i.e., non substantive) change.

5.5.1 Removal of text related to ‘log mean,’ changes to ‘bacterial analysis’ text and addition of definitions for ‘geometric mean’ and ‘statistical threshold value’ from Chapter 5.1-12

The heading:

‘References to “Means” (e.g., annual mean, log mean, mean of monthly means), “Medians” and “90th Percentile Values”’

is changed to remove references to ‘log mean.’ ‘Log mean’ is replaced with ‘geomean,’ and the text ‘and Statistical Threshold Values’ is inserted at the end of the sentence.

The following additional text on page 5.1-12 column one, the following text is removed:

A logarithmic or “log mean” (used in determining compliance with bacteria objectives) is calculated by converting each data point into its log, then calculating the mean of these values, then taking the anti-log of this log transformed average.

The following text pertaining to geometric means is inserted in place of the deleted text:

A geometric mean or “geomean” (used in determining compliance with bacteria objectives) is a type of mean that indicates the central tendency or typical value of a set of numbers by using the product of their values (as opposed to the arithmetic mean which uses their sum). The geometric mean is defined as the n th root of the product of n numbers. The formula is expressed as: $GM = \sqrt[n]{(x_1)(x_2)(x_3) \dots (x_n)}$, where x is the sample value and n is the number of samples taken.

At the end of the “References to “Means” (e.g., annual mean, geomean, mean of monthly means), “Medians” and “90th Percentile Values,” and Statistical Threshold Values’ paragraph, the following definition for statistical threshold values is inserted:

A statistical threshold value (STV) for the fecal indicator bacteria water quality objectives is a set value that approximates the 90th percentile of the water quality distribution of a bacterial population.

On page 5.1-12, column 2, the paragraph ‘bacterial analyses’ is deleted:

For bacterial analyses, sample dilutions should be performed so the range of values extends from 2 to 16,000. The detection method used for each analysis shall be reported with the results of the analysis. Detection methods used for coliforms (total and fecal) shall be those presented in Standard Methods for the Examination of Water and Wastewater (American Public Health Association et al. 1998), or any alternative method determined by the Regional Board to be appropriate.

The following text is inserted to page 5-12, column 2:

For bacterial analyses, the detection method used for each analysis shall be reported with the results of each analysis. Detection methods used for fecal indicator bacteria (FIB) shall be those presented in Standard Methods for the Examination of Water and Wastewater, 23rd edition (American Public Health Association et al. 2018), or any alternative method determined by the Regional Board to be appropriate.

5.5 Removing references to fecal coliform from Basin Plan Chapter 4.9

Basin Plan Chapter 4.9-19 column 2 contains two references to fecal coliform bacteria [*emphasis added for report purposes*]:

Rangeland streams can show increased coliform bacterial levels with fecal coliform levels tending to increase as intensity of livestock use increases. Fecal coliform serves as indicators that pathogens could exist and flourish.

References to coliform bacteria and fecal coliforms are removed, and terminology related to fecal indicator bacteria is inserted instead. These changes are made in

keeping with the overarching changes to the Basin Plan made with this amendment. Further changes to the text of this section are made to improve readability:

Rangeland streams may be impacted by fecal bacteria, demonstrated by increased fecal indicator bacteria levels as intensity of livestock use increases. Fecal indicator bacteria are indicators that pathogens may be present in a surface water.

5.6 Summary of implementation provisions for REC-1 WQOs

The Statewide *Bacteria Provisions* contain implementation provisions, both for geometric means and STVs, and for a “reference system/antidegradation approach” that apply to Basin Plan amendments and Total Maximum Daily Loads (TMDLs). The implementation provisions are not specific requirements to implement the fecal bacteria water quality objectives. Rather, they are implementation options that Regional Water Boards may utilize to effectively implement the fecal bacteria water quality objectives and they may be applied at the discretion of a Regional Board. All details regarding implementation of WQOs for the REC-1 beneficial use can be found in the [Bacteria Provisions and Water Quality Standards Variance Policy \(Bacteria Provisions\)](#). This staff report and the BPA does not change the *Bacteria Provisions*, and the following summary is included for informational purposes only:

- **Geometric means:** The geometric mean values for *E. coli* and Enterococci shall preferably be a six-week rolling geometric mean calculated from weekly sampling. However, because of the large geography of the Lahontan Region and finite staff resources to sample surface waters on a weekly basis, a geometric mean may be calculated from three samples spread over a six-week period. This approach also supports the data collection by other agencies, private entities, and non-profits, which may also be challenged by the large geography of the Lahontan Region and limited resources. Should less than three samples be available in a six-week period, the STV shall be applied on a per-sample basis to determine compliance with the WQO.
- **Total Maximum Daily Load (TMDL) or other Basin Plan amendments:** The Regional Board may implement the geometric mean or statistical threshold values in fresh or saline waters by using a ‘reference system/antidegradation approach’ or ‘natural sources exclusion approach’.
- **A reference system implementation procedure:** This procedure is defined as an area and associated monitoring point that is not impacted by human activities that potentially affect fecal bacteria densities in the receiving waterbody. These approaches recognize that there are natural sources of fecal bacteria, which may cause or contribute to exceedances of the water quality objectives for FIB.
- **A natural sources exclusion implementation procedure:** After all anthropogenic sources of fecal bacteria have been controlled such that they do not cause or contribute to an exceedance of the single sample objectives and natural sources have been identified and quantified, a certain frequency of exceedance of the REC-1 WQOs shall be permitted based on natural sources.

The 'natural sources exclusion' approach may be used if an appropriate reference system cannot be identified due to unique characteristics of the target waterbody. These approaches are consistent with the State Antidegradation Policy (State Board Resolution No. 68-16) and with federal antidegradation requirements (40 CFR 131.12).

- **High flow and seasonal suspensions of the REC-1 beneficial use:** The Water Board may consider a high flow or seasonal suspension of the REC-1 use depending on site specific conditions. Implementation of use suspensions are detailed in the *Bacteria Provisions*.

6. Basis for Amendment

Removal of fecal coliform FIB

Fecal coliform FIB and associated WQOs are removed from the Basin Plan because:

1. Fecal coliform FIB is not a suitable indicator of recent fecal pollution in surface waters because one or more members of this FIB group may originate from nonfecal sources (U.S. EPA 1986, 2012). U.S. EPA strongly recommends that States cease to use fecal coliforms as FIB (*Ibid*, 1986, 2012). Because fecal coliforms may originate from nonfecal sources, the presence of fecal coliforms in a surface water sample is not a direct indicator that recent and potentially harmful fecal pollution may also be present in that surface water. In place of fecal coliforms, U.S. EPA recommends *E. coli* or Enterococci FIB for public health-related water quality monitoring (U.S. EPA, 1986, 2012).

The numeric threshold associated with the fecal coliform WQO is based on research performed in the 1940s and 1950s by the National Technical Advisory Committee (NTAC), a precursor organization to U.S. EPA (U.S. EPA 1986). More recent epidemiological studies performed by U.S. EPA (1986, 2012) have shown a stronger relationship between the presence of *E. coli* or Enterococci FIB in surface waters and adverse health effects in water contact recreators. U.S. EPA has developed numeric thresholds associated with these FIB and the potential risks to public health. *E. coli* and Enterococci numeric thresholds were published by U.S. EPA in the 1986 Ambient Water Quality Criteria and 2012 Recreational Water Quality Criteria. U.S. EPA recommends that State and Tribes use the *E. coli* or Enterococci criteria to determine if potentially harmful fecal pollution is present in surface waters (U.S. EPA, 2012). While changing a water quality objective from 20 fecal coliforms to 30 Enterococci or 100 *E. coli* may cause alarm to some, the differences between the numeric thresholds is not directly comparable and should not be the basis for determining a perceived level of water quality protection between the different objectives. Using the example of freshwater surface water assessment, applying the *E. coli* objective instead of the fecal coliform objective to determine attainment of the REC-1 beneficial use does not mean the Water Board is allowing more fecal contamination of that surface water, rather it means that the Water Board is using a nationally recognized water quality criteria which is backed by epidemiological studies linking the presence of *E. coli* FIB to health risks in

water contact recreators. Continued application of the fecal coliform objective constitutes a continuation of outmoded science using a numeric threshold calculated via “an abundance of caution” rather than via a public health risk-assessment (U.S. EPA, 2012). Continued application of the fecal coliform WQO likely leads to misleading water quality assessments.

The project modernizes the Basin Plan to reflect the fact that fecal coliforms are now understood to originate from at least one or more nonfecal sources and their detection in a surface water cannot be attributed to fecal pollution with confidence. In addition, the 20 fecal coliform threshold was developed using “an abundance of caution” in the 1960’s by calculating the fifth percentile of a public health signal translated from total coliform organisms. Fecal coliforms are now understood to be problematic because they may not be fecal in origin. By comparison, *E. coli* and Enterococci offer a more reliable link to the presence of fecal pathogens. Multiple epidemiological surveys have found a health effect between the presence of *E. coli* and Enterococci in surface waters and illness in water contact recreators (U.S. EPA 1986, 2012). The numeric thresholds associated with each FIB are based off a U.S. EPA-led public health risk-assessment. U.S. EPA has determined an acceptable risk of level of 32 illnesses per one thousand exposures, or 0.032% risk of illness from incidental ingestion of surface waters attaining the *E. coli* or Enterococci WQOs.

2. Resolve 4 of State Water Board Resolution 2018-0038 encouraged the Lahontan Water Board to evaluate with input from relevant stakeholders the Region’s fecal coliform WQO. The Lahontan Board prioritized this evaluation during the 2018 Triennial Review, and the evaluation project was completed in May of 2021. The result of the evaluation project was a staff recommendation to remove the fecal coliform WQO for the reasons stated in this section of the Staff Report, and because of issues of clarity of regulation stemming from having two sets of WQOs for FIB applicable to Lahontan Region surface waters. Removing fecal coliform from the Basin Plan results in regulations which are easier to interpret for staff and stakeholders and which streamline the numeric regulations of the Lahontan Basin Plan with the rest of California using scientifically defensible criteria water quality criteria.

Changing ‘Bacteria, coliform’ heading to ‘Fecal Indicator Bacteria’

Changing the ‘Bacteria, coliform’ headings in Chapter 3 and Chapter 5 to ‘Fecal Indicator Bacteria’ is made so the Basin Plan reflects recent terminology pertaining to FIB water quality and water quality monitoring. ‘Bacteria, coliform’ is terminology related to fecal coliforms, while ‘Fecal Indicator Bacteria’ broadens the scope of potential water quality monitoring techniques used to determine if recent and potentially harmful fecal material is present in a surface water.

Removing the narrative WQO

The narrative focused on coliform organisms and relied on source analysis attributing any presence of coliform organisms to anthropogenic sources. Coliform organisms exist naturally in the environment and are not always detrimental to beneficial uses. The

narrative does not allow for the presence of coliform organisms at levels that do not affect beneficial uses. Additionally, focusing broadly on coliform organisms instead of *E. coli* and Enterococcus, the detection of which current science more strongly associates with the presence of pathogens, is an outdated approach to water quality protection. The narrative focus on particular sources (human and livestock) waste instead of the risk associated with particular FIB runs counter to the approach taken by the numeric criteria recommended by U.S. EPA and adopted by the State Board in the Bacteria Provisions, and which apply regionwide. Having multiple applicable water quality objectives for bacteria is not ideal for consistent interpretation and application in permits, enforcement, and water quality assessments by Water Board staff, dischargers and interested members of the public.

Insertion of language pertaining REC-1 WQOs

E. coli and Enterococci FIB WQOs are inserted into the Basin Plan in reference to the *Bacteria Provisions* that apply to all waters in California where the REC-1 use is designated, including in the Lahontan Region. The statewide WQOs are already effective and the language referencing those objectives are not creating a substantive change. Rather, language pertaining to those FIB WQOs is added to the Lahontan Basin Plan to clarify applicable regulations and inform the public of the established WQOs.

Editorial changes to other text related to fecal bacteria

Changes to text related to the implementation of the fecal bacteria objectives are made to Chapter 3-16 and Chapter 5.1-12. These changes include removing language pertaining to the definition of 'log means,' insertion of definitions for geometric means and statistical threshold values, and minor changes to the 'bacterial analyses' paragraph. These changes remove terms no longer needed because the fecal coliform indicator and associated WQOs are removed from the Basin Plan. The changes also align the definition of geometric means with that promulgated by State Board in their *Bacteria Provisions*.

Basin Plan Chapter 4.9-19 column 2 is changed to remove references to fecal coliforms, in favor of the term 'fecal indicator bacteria.' This and other minor changes to the text are made to align with the changes to Chapters 3 and 5 with this amendment.

7. California Water Code 13241

California Water Code section 13241 requires assessment of specific factors when adopting water quality objectives. These factors consist of:

- Past, present, and probable future beneficial uses of water.
- Environmental characteristics and water quality of the hydrographic unit under consideration.
- Water quality conditions could be reasonably attained through coordinated control of all factors affecting water quality.
- Economic considerations.
- The need for developing new housing.

- The need to develop and use recycled water.

This Basin Plan Amendment removes WQOs applicable to Lahontan Region waters and does not involve the adoption of water quality objectives. The Basin Plan Amendment does not alter the already established and effective statewide bacteria water quality objectives adopted by State Board. As part of the establishment of the State Water Board's bacteria objective, State Water Board conducted a 13241 analysis. The Lahontan Water Board is not required to conduct or repeat that analysis. Notwithstanding the above, a discussion of each factor is included below.

7.1 Past, present, and probable future beneficial uses of water

Basin Plan Chapter 2 defines beneficial uses for all waters of the Lahontan Region. The complete list of Lahontan Region beneficial uses can be viewed at the [Chapter 2 – Present and Potential Beneficial Uses webpage](https://www.waterboards.ca.gov/lahontan/water_issues/programs/basin_plan/docs/ch2_bu.pdf) (https://www.waterboards.ca.gov/lahontan/water_issues/programs/basin_plan/docs/ch2_bu.pdf). These beneficial uses adequately represent past, present and probable future uses.

Removing the fecal coliform fecal indicator bacteria (FIB), its associated numeric values, narrative, and WQOs from the Basin Plan will not lessen the protection of beneficial uses. The statewide REC-1 WQOs of the *Bacteria Provisions* are based on U.S. EPA 2012 Recreational Water Quality Criteria (RWQC), which were developed upon a public health risk-assessment and are set at a level to minimize risk of human illness associated with REC-1 uses. The U.S. EPA-led risk assessment found a correlation between the presence of *E. coli* and Enterococci in surface waters and incidence of illness in water contact recreators. U.S. EPA developed two risk thresholds for illness rates associated with REC-1 uses: 32 or 36 illnesses per one thousand recreators. The State Board *Bacteria Provisions*, which are based upon the RWQC, determined the more stringent illness rate of 32/1000 recreators to be appropriate for California surface waters. This illness rate equates to geometric means of 100 *E. coli* per 100 milliliters of sample water or 30 Enterococci per 100 milliliters of sample water. The *Bacteria Provisions* are already effective for Lahontan Region surface waters, and the Water Board's BPA does not change or otherwise alter the *Bacteria Provisions*.

Fecal coliforms and associated WQOs are removed from the Basin Plan because 1) fecal coliforms may originate from nonfecal sources, compromising their accuracy as an indicator of fecal pollution; and 2) the numeric thresholds of the WQO are not explicitly linked to a robust risk assessment and may not be indicative of adverse water quality impacts. The fecal coliform WQO is not associated with a specific beneficial use and the removal of this objective will not impact the Water Boards' ability to protect beneficial uses.

Surface waters not designated with the REC-1 Beneficial Use

The Basin Plan includes five surface waters where REC-1 uses do not apply, shown in Table 7.1. Four of the waterbodies are in the Antelope Hydrologic Unit (Lancaster Hydrologic Area), and the fifth waterbody, Opal Mountain Springs, is located in the

Mojave Hydrologic Unit (Harper Valley Hydrologic Subarea). Prior to 2009 the first four waterbodies were designated with the REC-1 beneficial use. With Resolution No. 2009-0018 the State Water Board approved an amendment to the Lahontan Region Basin Plan (R6T-2007-0036) which included the removal of the REC-1 beneficial use from those waters. This resolution also references a US Army Corps of Engineers determination that these waters are not “waters of the United States.”

Opal Mtn Springs is an isolated waterbody in the vicinity of Opal Mountain north of Barstow, and near the Black Mountain Wilderness Area administered by the Bureau of Land Management. The waterbody is designated with one beneficial use, Water Quality Enhancement (WQE). In November 2000 the Lahontan Water Board passed Resolution 6-00-66, which included designation of Opal Mtn Springs with a number of additional beneficial uses, including REC-1. However, with passage of State Board Resolution No.2002-0001, those designations were remanded by the State Water Board prior to submission to U.S. EPA for approval because no evidence was provided to justify the designations. No evidence has since been found to support the existence of recreational use or the ability to attain such uses. A visual search for a spring near Opal Mountain using the online USGS map application, [TNM Viewer](#), revealed a spring symbol approximately a quarter mile southeast of Opal Mountain. An aerial view, using Google Maps and the coordinates of the spring ([35.151880° N 117.176354° W](#)) appears to show a fenced area, approximately 50' by 50' with what appears to be a rectangular spring box at its center. In conclusion, the waterbody appears unable to support recreational beneficial uses. The waterbody is unlikely to be a water of the United States, though such a delineation has not been sought or confirmed.

REC- 1 is generally understood to be the beneficial use most sensitive to bacteria. Staff conducted a review and determined there are no beneficial uses that are otherwise susceptible to impairment from bacteria at the concentrations that may be expected from potential sources near the five waterbodies in Table 7.1.

Water sources for the first four waterbodies in Table 7.1 is effluent dominant, subject to regulation under California Code of Regulations (CCR), title 22 criteria. The Los Angeles County Sanitation District (LACSD) No. 14 Lancaster wastewater treatment plant (WDID No. 6B190107017) permit ([R6V-2022—0023](#)) includes discharge requirements consistent with title 22 which, for bacteria, are measured in total coliform. For Piute Ponds, the criteria include:

- 7-day median coliform for the last seven days
- Number of samples in a calendar month exceeding total coliform of 23 MPN
- Number of samples exceeding total coliform of 240 MPN

These minimum requirements are included in the LACSD permit and are for disinfected secondary -23 recycled water. All effluent discharged to Piute Ponds is, however, tertiary treated. These limitations protect the most sensitive beneficial use in Piute Ponds (the most sensitive use amongst all waters in Table 7.1) which is Noncontact Water Recreation (REC-2), including hunting. Access to these waters for REC-2 is

restricted by protocols imposed by the United States Air Force Edwards Air Force Base, on which they are located.

Table 7.1: Surface waters not designated REC-1 beneficial uses

<u>Hydrologic Unit Number</u>	<u>Waterbody name</u>	<u>Waterbody classification</u>	<u>Receiving water</u>
626.50	Amargosa creek below LA County Sanitation District Discharge	Ephemeral Stream	Piute ponds and wetlands
626.50	Piute Ponds	Ponds	Rosamond Dry Lake
626.50	Piute Ponds Wetlands	Wetlands	Rosamond Dry Lake
626.50	Rosamond Dry Lake	Playa Lake	Terminal Lake
628.42	Opal Mtn Springs (Harper Valley)	Springs	None listed

7.2 Environmental characteristics and water quality of the hydrographic unit under consideration

The hydrographic unit for this BPA is all surface waters contained in the Lahontan Region. The general environmental characteristics and existing water quality of the Lahontan Region are described in [Section 4](#).

7.3 Water quality conditions that could be reasonably attained through coordinated control of all factors affecting water quality.

A summary of recent Lahontan Region FIB water quality data is provided in the [2018 Integrated Report](#) Staff Report Section 2.1. The Integrated Report is the Water Board’s periodic assessment program satisfying CWA Sections 303 and 305. The report identifies surface waters which do not attain one or more beneficial uses and provides the recommendation to U.S. EPA to place such waters on the 303(d) List.

Headwater streams flowing eastward from the Sierra Nevada Crest typically have low concentrations of FIB in water quality samples, although occasionally FIB concentrations increase downgradient in the lower elevation portions of the region. Waterbodies in lower elevation areas are typically subject to greater impacts from anthropogenic activities and from natural sources, and these waters also receive proportionally more recreational activity when compared to headwater sites.

At headwater sites with little or no regular anthropogenic disturbance and few impacts from natural sources, the available FIB data indicates that Lahontan waters are of exceptional quality, by far attaining the statewide E. coli standard for the REC-1 beneficial use and typically attaining the fecal coliform WQO. Despite the regions’ excellent FIB water quality, the very restrictive fecal coliform WQO results in multiple

303(d) listings based on fecal coliform FIB. Such listings are problematic because 1) fecal coliforms may originate from nonfecal sources, meaning the presence of these fecal bacteria cannot be confidently attributed to the presence of fecal pollution, and 2) the fecal coliform WQO threshold is set at a level which has no bearing on impacts to beneficial uses.

Based on most recent water quality data, removing fecal coliform FIB and associated WQOs from the Basin Plan will result in the removal of thirty-five (35) surface waters from the 303(d) List because such surface waters were placed on the list based on exceedances of the fecal coliform WQO but met the REC-1 *E. coli* standard. Passage of this BPA will thus modernize the Lahontan Regions' 303(d) List to reflect nationally accepted water quality criteria for fecal pollution.

Nine (9) Lahontan Region surface waters are presently 303(d) Listed because the REC-1 use is not supported, as demonstrated by concentrations of *E. coli* FIB. These surface waters are shown in Table 7.2. Where fecal coliform data existed, these surface waters also exceeded that WQO. For those waters on the 303(d) list for indicator bacteria, the Water Board is required to determine the amount that FIB must be reduced to meet the applicable standards and eliminate beneficial use impairment. The Water Board has several tools at its disposal to achieve water quality improvements, including but not limited to TMDL programs of implementation, Waste Discharge Requirements (WDRs), conditional Waivers of WDRs, and collaborative water quality improvement plans (WQIPs).

While developing these regulatory tools, the Water Board must consider a variety of factors to achieve a successful outcome. One of the first steps is to identify the sources contributing to the problem and the timing of those sources. For example, some surface waters are mainly threatened by high FIB concentrations during agricultural irrigation season. Other waterbodies may be threatened by FIB because of urban runoff or leaking septic systems. All controllable sources of FIB to surface waters must be identified and addressed in a coordinated effort so that water quality supporting beneficial uses may be reasonably achieved. After coordinated, sustained efforts have been made to reduce anthropogenic sources of fecal bacteria pollution in a specific surface water, should fecal bacteria continue to impact water quality, a natural sources exclusion approach may be pursued. Such an approach is described in the *Bacteria Provisions* and associated Staff Report and Substitute Environmental Document. Removing the fecal coliform fecal indicator bacteria (FIB), its associated numeric values, narrative, and WQOs from the Basin Plan will not limit the Water Board's ability to develop effective regulatory tools to address 303(d) listings for the REC-1 use.

Table 7.2 303(d) listed waterbodies for the REC-1 use

Waterbody Name	County	Integrated Report Decision ID
Bishop Creek Forks	Inyo	102037
East Walker River, above Bridgeport Reservoir	Mono	69501
Griff Creek	Placer	103204
Horton Creek	Inyo	103691
Hot Creek (Walker)	Mono	103703
Markleeville Creek	Alpine	102648
Owens River (Long HA)	Mono	102411
Pine Creek	Inyo	102348
Swauger Creek	Mono	76545

7.4 Economic considerations

Under the requirements of Water Code sections 13170 and 13241, subdivision (d), and the California Code of Regulations, title 23, section 3777, subdivisions (b)(4) and (c), the Water Board must consider economics when establishing water quality objectives. Consideration of economics is not a cost-benefit analysis and, particularly with respect to the analysis required by the certified regulatory program, the Water Board is not required to engage in speculation or conjecture and the consideration of economics should include consideration of potential costs of the reasonably foreseeable measures to comply with the amendment. As further discussed in [Section 11](#) of this Staff Report, no new or additional bacterial controls would need to be implemented to comply with this project, therefore compliance costs associated with technology changes or substantial operational changes or implementation of other bacteria controls would be zero. Based on review of the Lahontan Region 2018 Integrated Report (details provided in [Section 7.3](#)), nine surface waters (shown in Table 7.2) do not attain *E. coli* FIB WQOs for the protection of REC-1 uses. Further analyses of economic considerations associated with REC-1 WQOs are examined in the *Bacteria Provisions Staff Report*, which should be consulted for more information. This section of the Staff Report includes a discussion of economics associated with the BPA.

Economic considerations for wastewater permitting

Monitoring costs and treatment process costs for municipal wastewater discharges to fresh water are not likely to change due to the BPA. Where freshwater dischargers are regulated by water quality-based permit effluent limitations that are derived from the more stringent Title 22 recycled water criteria, dischargers will continue to measure effluent using indicators identified with the Title 22 recycled water criteria. Typical wastewater treatment practices and performances are more than adequate to achieve both the fecal coliform and REC-1 WQOs, which are designed for application to ambient surface waters.

An assessment of compliance methods and associated costs to comply with the *Bacteria Provisions* WQOs was performed by Abt Associates during development of the staff report for that project. Plants with limitations which arose from objectives based on U.S. EPA's 1976 or 1986 criteria, or more stringent Title 22 human health objectives, were assumed to possess baseline limitations at least as stringent as the objectives in the *Bacteria Provisions*. Compliance costs were assumed to be zero for these facilities since no technological changes or substantial operational changes would be necessary (*Staff Report of the Bacteria Provisions Staff Report*, page 144). There are no anticipated additional treatment requirements resulting from this BPA the *Bacteria Provision* WQOs and more stringent Title 22 objectives would continue to apply, and therefore compliance costs are zero.

No significant changes to monitoring costs are forecast for wastewater treatment facilities. Should there be facilities that are not already collecting *E. coli* or Enterococci FIB, these facilities may be required to do so in the future. Costs associated with these assays run at approximately \$50 (*Bacteria Provisions Staff Report*, 2018), which are similar to those costs incurred to sample fecal coliforms. No significant changes to monitoring costs are forecast for wastewater treatment facilities. For dischargers who currently monitor for both *E. coli* and fecal coliform, the BPA could result in cost savings associated with monitoring.

Economic considerations for drinking water systems

Monitoring costs and treatment process costs for drinking water systems are not likely to change due to the BPA. Drinking water suppliers are subject to the California Revised Total Coliform Rule (RTCR) which governs frequency of sampling as a function of number of connections served. The revisions include the new Coliform Treatment Technique requirement replacing the Total Coliform MCL, and a new *E. coli* MCL regulatory limit. The RTCR establishes a "find-and-fix" approach for investigating and correcting causes of coliform problems within water distribution systems.

In all cases, sampling is conducted to assess water quality against the *E. coli* MCL, with corrective action required for MCL violations. The *E. coli* MCL Goal, or MCLG is zero (0), and the MCL is based on the occurrence of a condition that includes routine and repeat samples (governed by the RTCR). Because the MCL supply level is less than the REC-1 objective, and because it is also effectively below the existing numeric water quality objective, no new reasonably foreseeable methods of compliance are needed for water suppliers to comply with regulations, existing treatment practices will not need to be changed, and no new monitoring costs or treatment process costs are anticipated.

Economic considerations for ambient water quality monitoring

There are no foreseeable additional economic impacts to ambient monitoring associated with this BPA. The Water Boards' Surface Water Ambient Monitoring Program (SWAMP) monitors FIB on an ongoing basis to ensure that water quality is suitable for water contact recreation.

Economic considerations for stormwater

Stormwater permits currently require the discharger to develop and implement best management practices to the maximum extent practicable (for municipal dischargers and discharges from the California Department of Transportation's facilities) using the best conventional pollutant control technology (for industrial and construction discharges). These requirements are not expected to change due to the BPA. Best management practices will continue to be required, and possible incremental costs will be relatively low. Therefore, compliance costs of this BPA are projected to be zero.

If there are dischargers not already collecting *E. coli* or Enterococci FIB, these dischargers may be required to do so in the future. Costs associated with these assays run at approximately \$50 (*Bacteria Provisions Staff Report*, 2018), which are similar to those costs incurred to sample fecal coliforms. No significant changes to monitoring costs are forecast for stormwater dischargers. For dischargers who currently monitor for both *E coli* and fecal coliform, the BPA could result in cost savings associated with monitoring.

Economic considerations for nonpoint source discharges

FIB sources in waterbodies can be nonpoint source in origin, such as from agricultural or urban runoff, including livestock grazing, residential-related sources from pet ownership, and dispersed camping. Control of FIB from nonpoint sources is not an element of this BPA. It is expected that nonpoint source discharge requirements under the BPA will be broadly similar to current requirements. Nonpoint source pollution control efforts typically rely upon discharger implementation of management practices to control pollution, including bacteria pollution.

Examples of best management practices to reduce FIB from agricultural nonpoint sources include installation of buffers and filter strips to protect surface waters from direct agricultural runoff, implementing irrigation water tailwater management strategies to reduce FIB loading to surface waters, implementing management controls for manure and manure storage areas, restricting direct livestock access to surface waters, and provision of off channel stockwater. These management practices will continue regardless of this BPA, and therefore there are no additional costs from new or additional bacteria controls associated with the BPA.

7.5 The need for developing new housing

The BPA does not restrict the development of housing in the Lahontan Region. Removing the fecal coliform objective and the narrative objective does not affect housing or any economic costs related to housing development. The amendment does not constrain the ability of wastewater treatment facilities to respond to population growth. Wastewater treatment facilities are already required to comply with effluent limitations more stringent than the numeric thresholds of the fecal coliform WQO and the *Bacteria Provisions*.

7.6 The need to develop and use recycled water

The BPA has no foreseeable impact on wastewater available for recycling or reclamation in the region.

8. Antidegradation

The State Water Board and U.S. EPA have adopted antidegradation policies intended to protect existing high-quality waters. Both the state and federal antidegradation policies require the high quality of these waters to be maintained unless otherwise provided by the policies. In 1968, the State Water Board adopted California's antidegradation policy by Resolution 68-16, "*Statement of Policy with Respect to Maintaining High Quality of Waters in California*" which applies to surface waters and groundwater whose quality meets or exceeds water quality objectives and establishes the intent to maintain high quality waters of the state to the maximum extent possible. Whenever existing water quality is better than the quality established in applicable policies or plans, Resolution 68-16 provides that the high water quality must be maintained unless it can be demonstrated that any change in water quality will (1) be consistent with the maximum benefit to the people of the state, (2) not unreasonably affect present and anticipated beneficial uses of such water, and (3) not result in water quality less than that prescribed in applicable water quality control policies or plans. Further, any activity that results in a discharge to high quality waters must use the best practicable treatment or control necessary to avoid a pollution or nuisance and to maintain the highest water quality consistent with the maximum benefit to the people of the state.

The federal antidegradation policy, established in 1975, applies to surface water, regardless of the quality of the water. (40 C.F.R. § 131.12.) Under the federal policy, "existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected." (40 C.F.R. § 131.12(a)(1).) In addition, where the quality of waters exceeds levels necessary to support the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality of water must be maintained and protected unless the state finds that (1) allowing lower quality is necessary to accommodate important economic or social development in the area in which the waters are located; (2) water quality is adequate to protect existing beneficial uses fully; and (3) the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control are achieved. (40 C.F.R. § 131.12(a)(2).) For high quality waters which constitute an Outstanding National Resource Water (ONRW), that water quality shall be maintained and protected (40 C.F.R. § 131.12(a)(3)). The State Water Board has interpreted Resolution 68-16 to incorporate the federal policy where the federal policy applies under federal law.

8.1 Antidegradation and the Basin Plan Amendment

The Basin Plan Amendment is not expected to lead to a reduction in water quality. There is no evidence to suggest that removal of the fecal coliform WQO will cause

degradation of Lahontan Region surface waters. Rather, the amendment ensures that applicable regulations protect beneficial uses fully.

The Basin Plan Amendments do not themselves authorize the degradation of any high-quality waters. Any degradation that would occur as an indirect result of the Basin Plan Amendment would occur when the State Board or Regional Board prescribes or modifies WDRs (including National Pollution Discharge Elimination Systems (NPDES) Permits), issues conditional waivers, or issues water quality certifications that authorize waste discharges to surface waters. Any changes to the allowable discharge that are not related to implementation of the Basin Plan Amendment (e.g., increase in authorized discharge amount) are beyond the scope of this project, and are not analyzed in this Staff Report. The Water Board is already obligated to determine on a permit-by-permit basis whether degradation would occur because of the permit, whether an antidegradation analysis is required, and if the permit is consistent with state and federal law (if applicable), including antidegradation policies, at the time of issuing, reissuing, renewing, or reopening a permit. The Water Board does not anticipate any degradation of water quality as an indirect result of the requirements being prescribed in WDRs or other orders.

Removing the narrative and fecal coliform objectives from Chapter 3 and Chapter 5 of the Basin Plan will improve clarity, reflect the latest scientific understanding on bacteria indicators, and remove an objective that is not directly connected to a beneficial use. Fecal coliforms may originate from one or more nonfecal sources and there is low confidence that their detection in a surface water is a good indicator of the presence of recent and harmful fecal pollution. Epidemiology has shown *E. coli* and Enterococci FIB to be better indicators that a surface water may manifest a public health risk because of fecal pollution contamination (U.S. EPA, 1986, 2012). It follows, then, that fecal coliform FIB is less effective at protecting public health when compared to *E. coli* or Enterococci FIB. It also follows that detecting fecal coliforms in a surface water may lead to false positive assessments of water quality, meaning that a surface water may be determined to be impaired by fecal pollution when in fact the fecal coliforms responsible for the determination originate from nonfecal sources. By removing the narrative and fecal coliform WQOs from the Basin Plan and regulating fecal pollution of surface waters through the statewide *Bacteria Provisions* WQOs, the Lahontan Water Board is applying nationally accepted FIB thresholds and improving the accuracy of FIB water quality assessments in Lahontan Region surface waters.

Because the BPA would remove the narrative and fecal coliform water quality objectives from the Basin Plan, the BPA may appear to authorize a lowering of water quality. The critical issue in determining whether a proposed action will lower surface water quality is not the level of treatment provided or whether a water quality objective is revised or removed, but whether a lowering of the receiving waters will be affected. The BPA is not expected to lead to a change in water quality that would degrade high quality waters.

The four waterbodies in the Antelope Hydrologic Unit that are not designated REC-1 are effluent dominated. Discharge sources in the area are subject to regulation under California Code of Regulations CCR), title 22 criteria. The Los Angeles County

Sanitation District (LACSD) No. 14 Lancaster wastewater treatment plant (WDID No. 6B190107017) permit ([R6V-2022—0023](#)) includes discharge requirements consistent with title 22 which, for bacteria, are measured in total coliform. Permit requirements are unlikely to change because of this BPA and would continue to protect the most sensitive beneficial use in (REC-2). In addition, access to these waters for REC-2 is restricted by protocols imposed by the United States Air Force Edwards Air Force Base, on which they are located. There are no other known sources of bacteria in the area. Opal Mountain Springs is only designated with the water quality enhancement beneficial use which is not a beneficial use requiring protection from bacteria sources and so no water quality degradation is expected.

In addition, the BPA is not revising or amending existing protections of the REC-1 use. State Board's bacteria water quality objectives for the protection of REC-1 apply to surface waters in the Lahontan Region. The Bacteria Provisions established updated water quality objectives based on the U.S. EPA's 2012 Recreational Water Quality Criteria which protect public health related to water-contact activities and reflect the latest scientific knowledge and external peer review. The BPA does not revise the State Board's *Bacteria Provisions*.

The BPA does not remove or revise existing regionwide prohibitions in the Lahontan Region. Regionwide prohibitions include but are not limited to: (1) The discharge of waste that causes violation of any narrative or numeric water quality objective contained in this Plan is prohibited; and (2) The discharge of untreated sewage, garbage, or other solid wastes into surface waters of the Region is prohibited. These prohibitions protect surface waters in the Region by limiting the discharge of fecal waste.

Therefore, in totality, no adverse changes in water quality are expected because of the BPA. The amendment will maintain and protect surface waters because the *Bacteria Provisions* reflects the latest science and risk levels. Existing water quality protections provided by Basin Plan prohibitions are not affected by this BPA and therefore no water quality changes are expected as a result. The critical issue in determining whether a proposed action will lower surface water quality is not the level of treatment provided or whether a water quality objective is revised, but whether a lowering of the receiving waters will be affected. As such, no degradation, either short- or long-term, to Lahontan Region waters, including the Regions' ONRWs, can foreseeably be attributed to the basin plan amendment. For further discussion on ONRWS, see section 8.2.

8.2 Outstanding National Resource Waters

The Lahontan Region contains both of California's Outstanding National Resource Waters (ONRWs), Lake Tahoe and Mono Lake. Lake Tahoe sits in both Placer and El Dorado counties and straddles the California-Nevada state line in the northern Sierra Nevada range. Mono Lake sits in the heart of Mono County in the Mono Basin at the foot of Tioga Pass and Conway Summit in Eastern California.

Lake Tahoe is renowned for its extraordinary water clarity, purity, and deep blue color. The Water Board recognizes Lake Tahoe as an ONRW both for its recreational and

ecological value. Mono Lake is a hypersaline waterbody which provides significant ecological value and supports species such as brine shrimp, alkali flies, California Gulls, and Eared Grebes. The Water Board recognizes Mono Lake as an ONRW because of its ecological value as a one-of-a-kind ecosystem.

ONRWs are afforded the highest level of protection through the antidegradation policy by requiring that the water quality be maintained and protected. States are given flexibility to permit limited activities that result in temporary and short-term changes in water quality. U.S EPA summarizes § 131.12 (a)(3) of the Antidegradation Policy in the Water Quality Standards Handbook: Second Edition, by stating, "States may allow some limited activities which result in temporary and short-term changes in water quality, but such changes in water quality should not impact existing uses or alter the essential character or special use that makes the water an ONRW."

As described in Section 8.1, this amendment to Lahontan Region fecal bacteria WQOs will not change water quality in ONRWs. Instead, the amendment modernizes the Lahontan Region Basin Plan to be consistent with U.S. EPA recommended recreational water quality criteria and State of California regulations for protection of the REC-1 beneficial use in both fresh-water and saline surface waters. Furthermore, the BPA does not remove existing protections in the ONRWs.

Waste discharge prohibitions applicable within the Lake Tahoe Hydrologic Unit are discussed in Chapter 5 of the Basin Plan. Regionwide prohibitions also apply in the Lake Tahoe Hydrologic Unit. The Water Board Basin Plan continues to prohibit the discharge of any waste or deleterious material to surface waters, stream environment zones, and to land below the high-water rim of Lake Tahoe, as detailed in Basin Plan Chapter 5.2. In addition, Water Code sections 13950 through 13952.1 include special water quality provisions for the Lake Tahoe Basin related to sewage disposal that function as waste discharge prohibitions.

Similarly, Basin Plan Chapter 4.1 includes specific prohibitions that apply to the watersheds surrounding Mono Lake. In particular, "[t]he discharge of waste to surface water, including sewage or sewage effluent, is prohibited in the following locations: Mill Creek and Lee Vining Creek watersheds (Figure 4.1-9)." Mill Creek and Lee Vining Creek are tributaries to Mono Lake, and existing prohibitions protect Mono Lake.

Overall water quality in Lake Tahoe and Mono Lake will be maintained regardless of changes to FIB WQOs applicable to these waterbodies through existing prohibitions and other regulatory mechanisms, and as further described in section 8.1 of this Staff Report. The Water Board administers regulatory oversight including but not limited to a combination of NPDES permits, waste discharge prohibitions and 401 permitting processes in the Lake Tahoe and Mono Basins. Removing the fecal coliform WQO from the Basin Plan in favor of the statewide *Bacteria Provisions* will improve the Water Board's ability to protect the recreational water user because *E. coli* and Enterococci FIB are more closely linked to the presence of potentially harmful fecal pollution in surface waters compared to fecal coliforms.

9. Human Right to Water

California Assembly Bill 685 (AB 685) declares that “every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes” (Wat. Cod, § 106.3, subd. (a)) and promotes the adoption of policies, regulations, and grant criteria pertinent to those uses of water (ibid., § 106.3, subd. (c)). State Water Board Resolution No. 2016-0010 adopts the human right to water as a core value, adopts the realization of the human right to water as a top priority for the Water Boards, and directs staff, when submitting a recommendation to the board pertinent to the human right to water, to describe how the right was considered. The WQOs of this Basin Plan amendment do not directly pertain to drinking water meaning any effects on the affordability or accessibility of safe clean drinking water would be indirect.

10. Tribal Consultation

Executive Order B-10-11 provides that it is the policy of the administration of the Governor of the State of California that every state agency encourages consultation and communication with California Indian Tribes and permit tribal governments to provide meaningful input in the development of regulations, rules, and policies that may affect tribes. In addition, California State Assembly Bill (AB) 52 (Gatto 2014) established a new category of resources in CEQA called Tribal Cultural Resources and a new consultation process with California Native American tribes (“AB 52 tribal consultation”). Consultation with a California Native American tribe that has requested such consultation may assist a lead agency in determining whether the project may adversely affect tribal cultural resources, and if so, how such effects may be avoided or mitigated. The Public Resources Code requires formal notice to California tribes of an opportunity to consult with the lead agency prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report if the tribe is traditionally and culturally affiliated with the geographic area of the proposed project. The requirements to consider tribal cultural resources and to consult with California tribes apply to CEQA projects for which the lead agency issues a notice of preparation or a notice of intent to adopt a negative declaration or mitigated negative declaration, or Environmental Impact Report (EIR) on or after July 1, 2015. The Water Board’s considers the AB 52 tribal consultation requirements in the Public Resources Code as also applying to an SED.

On August 4th, 2021, the Water Board notified Native American Tribes that requested to receive AB 52 notices of the opportunity to consult with the Water Board on Basin Plan amendment for FIB WQOs. The Board also extended this notification to Native American Tribes with ancestral lands in the Lahontan Region who had not requested review under AB52.

The Water Board received three responses from Tribes: The Shingle Springs Band of Miwok Indians, the San Manuel Band of Mission Indians, and the United Auburn Indian Community. None of the responses requested a consultation with project staff regarding the project, instead indicating the preference to not consult. The Water Board has received no requests for consultation on this amendment project from Tribes.

11. Reasonably Foreseeable Methods of Compliance

The SED for the proposed project is required to include an analysis of the reasonably foreseeable methods of compliance with the project. (Cal. Code Regs., tit. 23, § 3777;13 Publ. Res. Code § 21159). Existing water quality protections provided by Basin Plan prohibitions or other implementation sections of the Basin plan are not affected by this BPA. The Bacteria Provisions currently apply to almost all surface waters, regionwide. (For a discussion of the remaining waters, see Section 7 of this report.) As a result, the BPA will not lead to additional implementation efforts or the addition of new methods of compliance.

Bacteria controls are already being implemented in the Lahontan Region and would continue to be implemented irrespective of the Basin Plan Amendment. For example, traditional point sources such as wastewater treatment plants have NPDES permits that regulate their discharges, with effluent limits for bacteria. These sources mostly have more stringent freshwater bacteria effluent limits derived from the Title 22 recycled water criteria. The BPA does not alter that criterion. In addition, the *Bacteria Provision* WQOs would continue to apply.

Drinking water suppliers are subject to the California Revised Total Coliform Rule (RTCRC) which governs frequency of sampling as a function of number of connections served. In all cases, sampling is conducted to assess water quality against the E. coli Maximum Contaminant Level, with corrective action required for MCL violations. The E. coli MCL Goal, or MCLG is zero (0), and the MCL is based on the occurrence of a condition that includes routine and repeat samples (governed by the RTCRC). Because the MCL supply level is less than the REC-1 objective, and because it is also effectively below the existing numeric water quality objective, no new reasonably foreseeable method of compliance needed for water suppliers to comply with regulations; existing treatment practices will not need to be changed.

Storm water runoff is regulated through the Storm Water Program. Several strategies exist to reduce fecal bacteria loads in California's surface waters from stormwater. Combinations of measures are often necessary to reduce bacteria to levels that meet water quality objectives. These measures are categorized as structural BMPs and non-structural BMPs. Stormwater permits currently require the discharger to develop and implement best management practices to the maximum extent practicable (for municipal dischargers and discharges from the California Department of Transportation's facilities) or using the best conventional pollutant control technology (for industrial and construction discharges). These requirements are not expected to change due to the BPA and best management practices will continue to be required.

Bacteria controls for non-point source discharges would also remain unchanged. Agricultural producers implement grazing management plans with the goal of improving or maintaining water quality by minimizing direct loading of animal waste into surface waters. Nonpoint source pollution control efforts typically rely upon discharger implementation of management practices to control pollution, including fecal bacteria pollution. Examples best management practices (BMPs) to reduce FIB from agricultural

nonpoint sources include installation of buffers and filter strips to protect surface waters from direct agricultural runoff, implementing irrigation water tailwater management strategies to reduce FIB loading to surface waters, implementing management controls for manure and manure storage areas, restricting direct livestock access to surface waters, and provision of off channel stock water. These management practices will continue regardless of this BPA, and therefore there are no new or additional bacteria controls associated with the BPA.

As no new or additional bacterial controls would need to be implemented to comply with this project, there are no reasonably foreseeable methods of compliance with the project. Examples of existing methods of compliance are described in the *Bacteria Provisions Staff Report*, which is incorporated by reference into this SED.

12. Environmental Effects

Per the requirements of the State Water Board's certified regulatory program (Cal. Code Regs., tit. 23, section 3777, subds. (b)(2) - (b)(4).), the environmental analysis includes:

- An identification of any significant or potentially significant adverse environmental impacts of the project;
- An analysis of reasonable alternatives to the project and mitigation measures to avoid or reduce any significant or potentially significant adverse environmental impacts; and
- An environmental analysis of the reasonably foreseeable methods of compliance, including:
 - An identification of the reasonably foreseeable methods of compliance with the project;
 - An analysis of any reasonably foreseeable significant adverse environmental impacts associated with those methods of compliance;
 - An analysis of reasonably foreseeable alternative methods of compliance that would have less significant adverse environmental impacts; and
 - An analysis of reasonably foreseeable mitigation measures that would minimize any unavoidable significant adverse environmental impacts of the reasonably foreseeable methods of compliance.

As discussed in section 11, there are no reasonably foreseeable methods of compliance associated with the project. Regarding impacts that may arise from the project, the *Fecal Bacteria Water Quality Objectives Basin Plan Amendment* removes the existing fecal coliform bacteria numeric and narrative WQOs which apply regionwide and inserts language from the *Bacteria Provisions* related to REC-1 WQOs that already apply to surface waters in the Lahontan Region. This section of the Staff Report identifies and evaluates the potential environmental impacts that may arise from the project.

I. CEQA ENVIRONMENTAL CHECKLIST

The CEQA Environmental Checklist (Checklist) is a series of questions grouped by subject that identifies different types of potential environmental impacts that a project may cause. CEQA considers what are the existing conditions of the physical project site as a baseline. It then compares how much change will occur to the environment if the project is implemented. Based on the CEQA Guidelines, the impact severity is rated on a scale of four impact levels. The four levels are: potentially significant impact, less than significant with mitigation incorporated, less than significant impact, or no impact.

Pursuant to CCR, title 14, section 15064(d), a change which is speculative or unlikely to occur is not reasonably foreseeable and should not be considered in the environmental analysis. As such, this analysis is limited to the general effects associated with implementation of the statewide REC-1 bacteria provisions. The level of analysis is of a general nature and is commensurate with that level of detail.

The Basin Plan amendment removes outdated water quality objectives. It is expected to improve the protection of public health and the efficiency of that protection by reducing confusion and ambiguity caused by competing applicable water quality objectives. This project adds the statewide REC-1 Bacteria Provisions to the Lahontan Basin Plan. This addition is, in effect, editorial, as the Bacteria Provisions apply currently to the Lahontan Region waters, regionwide. This checklist is an environmental analysis of the removal of the outdated bacteria WQOs. An environmental analysis of the Bacteria Provisions was conducted as part of the Substitute Environmental Documentation in support of State Board adoption of the Bacteria Provisions. Because the existing WQOs are outdated, and as there are no new reasonably foreseeable methods of compliance that will result from this project (see section 11, above), the impacts from this project are analyzed to “No Impact.”

1. Aesthetics

The level of impacts to aesthetics are evaluated based on the following questions posed under impact description in the matrix below, except as provided in Public Resources Code section 21099. Will the project:

Fecal Bacteria Water Quality Objectives Basin Plan Amendment

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
A	Have a substantial adverse effect on a scenic vista?	No	No	No	Yes
B	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	No	No	No	Yes
C	In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	No	No	No	Yes
D	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	No	No	No	Yes

Discussion of Impact Assessment

This project requires no land alteration nor alteration of the landscape. There are no reasonably foreseeable methods of compliance, and so there will be no impacts from

compliance methods. Implementation of the Basin Plan amendment will have no impact on aesthetics.

2. Agriculture and Forestry Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

The level of impacts to agriculture and forestry resources are evaluated based on the following questions posed under impact description in the matrix below as to whether the project will:

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
A	Convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	No	No	No	Yes
B	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	No	No	No	Yes

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No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
C	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	No	No	No	Yes
D	Result in the loss of forest land or conversion of forest land to non-forest use?	No	No	No	Yes
E	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	No	No	No	Yes

Discussion of Impact Assessment

Adoption of this Basin Plan amendment will not result in any changes to forested lands, nor farmlands, nor would it impact any conservation tools intended to preserve farmlands and forests as farmlands and forested lands. The Basin Plan amendment will not require an increase in the use of any structural BMPs to meet water quality standards. There are no reasonably foreseeable methods of compliance, and so there will be no impacts from compliance methods. Implementation of the Basin Plan amendment will have no impact on agricultural and forest resources.

3. Air Quality

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. The level of impacts to air quality are evaluated based on the following questions posed under impact description in the matrix below as to whether the project will:

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
A	Conflict with or obstruct implementation of the applicable air quality plan?	No	No	No	Yes
B	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality?	No	No	No	Yes
C	Expose sensitive receptors to substantial pollutant concentrations?	No	No	No	Yes
D	Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	No	No	No	Yes

Discussion of Impact Assessment

The Basin Plan amendment will not result in an increase in emissions, nor obstruct applicable air quality plans. The Basin Plan amendment is not expected to alter water quality sampling efforts, and so would not increase vehicle trips for such monitoring. There are no reasonably foreseeable methods of compliance, and so there will be no impacts from compliance methods. Implementation of the Basin Plan amendment will have no impact on air quality.

4. Biological Resources

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The level of impacts to biological resources are evaluated based on the following questions posed under impact description in the matrix below as to whether the project will:

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
A	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	No	No	No	Yes
B	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	No	No	No	Yes
C	Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	No	No	No	Yes

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No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
D	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	No	No	No	Yes
E	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	No	No	No	Yes
F	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	No	No	No	Yes

Discussion of Impact Assessment

Adoption of the Basin Plan amendment will not cause any change in the methods to comply with existing water quality objectives, nor will the removal itself of the existing water quality objectives result in an impact to local ordinances, conservation plans, wildlife migration, or otherwise modify habitat. Implementation of the Basin Plan amendment will have no impact on biological resources.

5. Cultural Resources

The level of impacts to cultural resources are evaluated based on the following questions posed under impact description in the matrix below as to whether the project will:

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
A	Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	No	No	No	Yes
B	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	No	No	No	Yes
C	Disturb any human remains, including those interred outside of formal cemeteries?	No	No	No	Yes

Discussion of Impact Assessment

The Basin Plan amendment poses no threat to cultural resources. There are no reasonably foreseeable methods of compliance, and so there will be no impacts from compliance methods. Implementation of the Basin Plan amendment will have no impact on cultural resources.

6. Energy

The level of impacts to energy are evaluated based on the following questions posed under impact description in the matrix below as to whether the project will:

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
A	Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	No	No	No	Yes
B	Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	No	No	No	Yes

Discussion of Impact Assessment

Adoption of the Basin Plan amendment will not affect Energy. There are no reasonably foreseeable methods of compliance, and so there will be no impacts from compliance methods. Implementation of the Basin Plan amendment will have no impact to Energy.

7. Geology and Soils

The level of impacts to geology and soils are evaluated based on the following questions posed under impact description in the matrix below as to whether the project will:

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No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
A	Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving rupture of known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	No	No	No	Yes
B	Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving strong seismic ground shaking?	No	No	No	Yes
C	Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving seismic-related ground failure, including liquefaction?	No	No	No	Yes
D	Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving landslides?	No	No	No	Yes
E	Result in substantial soil erosion or the loss of topsoil?	No	No	No	Yes

Fecal Bacteria Water Quality Objectives Basin Plan Amendment

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
F	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	No	No	No	Yes
G	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	No	No	No	Yes
H	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	No	No	No	Yes
I	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	No	No	No	Yes

Discussion of Impact Assessment

Adoption of the Bacteria Provisions will not require any physical changes to the landscape. There are no reasonably foreseeable methods of compliance, and so there will be no impacts from compliance methods. Implementation of the Basin Plan amendment will have no impact on cultural resources.

8. Greenhouse Gas Emissions

The level of impacts to greenhouse gas emissions are evaluated based on the following questions posed under impact description in the matrix below as to whether the project will:

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
A	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	No	No	No	Yes
B	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	No	No	No	Yes

Discussion of Impact Assessment

The Basin Plan amendment will not result in an increase in emissions, nor obstruct applicable plans, policies or regulations adopted to reduce emissions of greenhouse gasses. The Basin Plan amendment is not expected to alter water quality sampling efforts, and so would not increase vehicle trips for such monitoring. There are no reasonably foreseeable methods of compliance, and so there will be no impacts from compliance methods. Implementation of the Basin Plan amendment will have no impact on greenhouse gases.

9. Hazards and Hazardous Materials

The level of impacts to hazards and hazardous materials are evaluated based on the following questions posed under impact description in the matrix below as to whether the project will:

Fecal Bacteria Water Quality Objectives Basin Plan Amendment

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
A	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	No	No	No	Yes
B	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	No	No	No	Yes
C	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	No	No	No	Yes
D	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	No	No	No	Yes

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
E	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	No	No	No	Yes
F	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	No	No	No	Yes
G	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	No	No	No	Yes

Discussion of Impact Assessment

Implementation of the Basin Plan amendment would not involve generation, transport, use or disposal of hazardous waste. The Basin Plan amendment should bring no change to the physical environment related to hazards and hazardous materials, either directly or indirectly and would have no impact related to hazards, hazardous materials, or public health. Adoption of the amendment will not cause any change in the compliance methods that have been or will be implemented to address bacteria levels above either the existing or proposed criteria. Implementation of the Basin Plan amendment will have no impact on hazards and hazardous materials.

10. Hydrology and Water Quality

The level of impacts to hydrology and water quality are evaluated based on the following questions posed under impact description in the matrix below as to whether the project will:

Fecal Bacteria Water Quality Objectives Basin Plan Amendment

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
A	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	No	No	No	Yes
B	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	No	No	No	Yes
C	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in a substantial erosion or siltation on- or off-site?	No	No	No	Yes
D	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?	No	No	No	Yes

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No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
E	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	No	No	No	Yes
F	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?	No	No	No	Yes
G	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	No	No	No	Yes
H	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	No	No	No	Yes

Discussion of Impact Assessment

The Basin Plan amendment is intended to improve water quality and public health protection through improved identification of the presence, and subsequent removal, of pathogens in surface water. Adoption of the Basin Plan amendment will not cause any change in the compliance methods that have been or will be implemented to address bacteria levels above either the existing or proposed criteria. As discussed in section 8, water quality changes are unlikely to result from the BPA, which would provide a similar degree of protection for beneficial uses. The existing *Bacteria Provisions* reflect the latest science and risk levels. Existing water quality protections provided by Basin Plan prohibitions and other implementation sections of the Basin plan are not affected by this BPA. The BPA modernizes the Basin Plan to reflect the fact that fecal coliforms are now understood to originate from at least one or more nonfecal sources and their detection in a surface water cannot be attributed to fecal pollution with confidence. In addition, the 20 fecal coliform threshold was developed using “an abundance of caution” in the 1960’s. By comparison, *E. coli* and Enterococci FIB offer a more reliable link to the presence of pathogenic organisms originating from feces. Multiple epidemiological surveys have found a health effect between the presence of *E. coli* and Enterococci in surface waters and illness in recreators (U.S. EPA 1986, 2012). The numeric thresholds associated with each FIB are based off a public health risk assessment. U.S. EPA has determined an acceptable risk of level of 32 illnesses per one thousand exposures, or 0.032% risk of illness from incidental ingestion of surface waters attaining the *E. coli* or Enterococci WQOs. Removal of the bacteria water quality objectives will not result in an increase in bacteria concentrations that would correlate with an increase of pathogens. Management practices to control bacteria are expected to still be implemented and remain unchanged. Likewise, the project is not expected to lead to a physical change in the environment in the four waterbodies in the Antelope Hydrologic Unit that are not designated REC-1 because dischargers will still need to comply with title 22 permit requirements. No impacts to water quality are expected.

11. Land Use and Planning

The level of impacts to land use and planning are evaluated based on the following questions posed under impact description in the matrix below as to whether the project will:

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
A	Physically divide an established community?	No	No	No	Yes

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
B	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	No	No	No	Yes

Discussion of Impact Assessment

The Basin Plan amendment is a planning instrument and will not physically divide an established community. It will not conflict with land use plans, policies or regulations. There are no reasonably foreseeable methods of compliance, and so there will be no impacts from compliance methods. Implementation of the Basin Plan amendment will have no impact on land use and planning.

12. Mineral Resources

The level of impacts to mineral resources are evaluated based on the following questions posed under impact description in the matrix below as to whether the project will:

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
A	Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?	No	No	No	Yes

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
B	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	No	No	No	Yes

Discussion of Impact Assessment

The Basin Plan amendment will not affect the availability of minerals or mineral resource recovery sites. It will not impact plans or policies governing mineral access and there will be no physical changes to the landscape from the amendment. There are no reasonably foreseeable methods of compliance, and so there will be no impacts from compliance methods. Implementation of the Basin Plan amendment will have no impact on mineral resources.

13.Noise

The level of impacts to noise are evaluated based on the following questions posed under impact description in the matrix below as to whether the project will:

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
A	Generation a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	No	No	No	Yes

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
B	Generation of excessive groundborne vibration or groundborne noise levels?	No	No	No	Yes
C	For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	No	No	No	Yes

Discussion of Impact Assessment

Adoption of the Basin Plan amendment will not result in any additional noise impacts. There are no reasonably foreseeable methods of compliance, so there will be no noise indirect noise impacts from the Basin Plan amendment. Implementation of the Basin Plan amendment will have no impact on noise.

14. Population and Housing

The level of impacts to population and housing are evaluated based on the following questions posed under impact description in the matrix below as to whether the project will:

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No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
A	Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	No	No	No	Yes
B	Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	No	No	No	Yes

Discussion of Impact Assessment

Adoption of the Basin Plan amendment will not induce population growth or displace people. There are no reasonably foreseeable methods of compliance, and so there will be no impacts from compliance methods. Implementation of the Basin Plan amendment will have no impact on mineral resources.

15. Public Services

The level of impacts to public services are evaluated based on the following questions posed under impact description in the matrix below as to whether the project will result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
A	Fire protection?	No	No	No	Yes

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No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
B	Police protection?	No	No	No	Yes
C	Schools?	No	No	No	Yes
D	Parks?	No	No	No	Yes
E	Other public facilities?	No	No	No	Yes

Discussion of Impact Assessment

Adoption of the Basin Plan amendment will not result in any physical changes to the environment. There are no reasonably foreseeable methods of compliance, and so there will be no impacts from compliance methods. Implementation of the Basin Plan amendment will have no impact on public services.

16. Recreation

The level of impacts to recreation are evaluated based on the following questions posed under impact description in the matrix below as to whether the project will:

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
A	Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	No	No	No	Yes

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
B	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	No	No	No	Yes

Discussion of Impact Assessment

Adoption of the Basin Plan amendment will not result in an increase in the use of recreational facilities nor require expansion of existing nor construction of new recreational facilities. There are no reasonably foreseeable methods of compliance, and so there will be no impacts from compliance methods. Implementation of the Basin Plan amendment will have no impact on recreation.

17. Transportation

The level of impacts to transportation are evaluated based on the following questions posed under impact description in the matrix below as to whether the project will:

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
A	Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	No	No	No	Yes
B	Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	No	No	No	Yes

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
C	Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	No	No	No	Yes
D	Result in inadequate emergency access?	No	No	No	Yes

Discussion of Impact Assessment

Adoption of the Basin Plan amendment will not result in any physical changes to the environment or transportation infrastructure. There are no reasonably foreseeable methods of compliance, and so there will be no impacts from compliance methods. Implementation of the Basin Plan amendment will have no impact on transportation.

18. Tribal Cultural Resources

The level of impacts to tribal cultural resources are evaluated based on the following questions posed under impact description in the matrix below as to whether the project will cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
A	Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?	No	No	No	Yes
B	A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	No	No	No	Yes

Discussion of Impact Assessment

Adoption of the Basin Plan amendment will not result in any physical change or change to any cultural or historic status of a tribal cultural resource. There are no reasonably foreseeable methods of compliance, and so there will be no impacts from compliance methods. Implementation of the Basin Plan amendment will have no impact on tribal cultural resources.

19. Utilities and Service Systems

The level of impacts to utilities and service systems are evaluated based on the following questions posed under impact description in the matrix below as to whether the project will:

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No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
A	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	No	No	No	Yes
B	Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	No	No	No	Yes
C	Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	No	No	No	Yes
D	Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	No	No	No	Yes
E	Comply with federal, state, and local management and reduction statutes and	No	No	No	Yes

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No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
	regulations related to solid waste?				

Discussion of Impact Assessment

Adoption of the Basin Plan amendment will not result in any increase in wastewater management facilities, water supply, water treatment, or non-water related public services. There are no reasonably foreseeable methods of compliance, and so there will be no impacts from compliance methods. Implementation of the Basin Plan amendment will have no impact on utilities and service systems.

20. Wildfire

The level of impacts to wildfire are evaluated based on the following questions posed under impact description in the matrix below as to whether the project is located in or near state responsibility areas or lands classified as very high fire hazard severity zones will the project:

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
A	Substantially impair an adopted emergency response plan or emergency evacuation plan?	No	No	No	Yes
B	Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	No	No	No	Yes

No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
C	Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	No	No	No	Yes
D	Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	No	No	No	Yes

Discussion of Impact Assessment

Adoption of the Basin Plan amendment will not restrict emergency response nor will it physically alter the environment, so it will not increase risk in the landscape from wildfires or subsequent post-fire impacts. There are no reasonably foreseeable methods of compliance, and so there will be no impacts from compliance methods. Implementation of the Basin Plan amendment will have no impact on wildfires.

21. Mandatory Findings of Significance

The level of impacts to mandatory findings of significance are evaluated based on the following questions posed under impact description in the matrix below as to whether the project will:

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No.	Impact Description	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
A	Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	No	No	No	Yes
B	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)?	No	No	No	Yes
C	Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	No	No	No	Yes

Discussion of Impact Assessment

The overall effect of the Basin Plan amendment would be to increase the Water Board's ability to protect water quality accurately and consistently for protection of public health. Adoption of the Basin Plan amendment would not result in significant cumulatively considerable impacts. Adoption of the Basin Plan amendment would not, in any way, cause substantial adverse effects on human beings. There are no reasonably foreseeable methods of compliance, and so there will be no impacts from compliance methods. Implementation of the Basin Plan amendment will have no impact for mandatory findings of significance.

13. Alternatives

California Code of Regulation Title 23, Section 3777 states that any standard, rule, regulation, or plan proposed for board approval or adoption must be accompanied by a discussion of reasonable alternatives to the project and consideration of reasonably foreseeable methods of compliance that could feasibly avoid or substantially reduce any potentially significant adverse environmental impacts. As discussed in section 9 and section 10 of this Staff Report, no reasonably foreseeable methods of compliance from the project are expected, nor is the project expected to create an impact to the environment. Section 9 and Section 10 discuss the impacts associated with the continued implementation of methods of compliance. As no potentially significant effects were identified from the reasonably foreseeable methods of compliance or the project, the alternatives in this section are not those capable of avoiding or substantially lessening the significant environmental impacts of the project. This discussion is included for the purpose of informing decision makers and the public of any possible project alternatives. The Preferred Alternative (i.e., this Basin Plan Amendment), a No Action Alternative, and an alternative that removes the numeric fecal coliform WQO and replaces the narrative WQO (March 2022 Alternative) are discussed in this section. In preparation for this BPA, during 2020 and 2021 project staff evaluated fecal indicator bacteria WQOs applicable to the Lahontan Region. Details of this evaluation project were presented to the Water Board on January 13th, 2021 and May 13th, 2021. The evaluation included exploration of a suite of potential options for a BPA. Details on these options can be found in the [January 2021](#) and [May 2021](#) Board Packets.

13.1 Alternative 1: No Project

Under this alternative, the Basin Plan would not be amended to remove the fecal coliform objective, add language pertaining to the *Bacteria Provisions*, change the narrative water quality objective associated with fecal bacteria pollution for the protection of non-REC-1 waters, and remove language related to log means and bacterial analysis on from page 3-16.

The fecal coliform based numeric water quality objective would remain applicable to Lahontan Region surface waters, meaning the Basin Plan would remain inconsistent with U.S. EPA recommended FIB criteria. Multiple FIB WQOs would remain in place for surface waters, perpetuating clarity and consistency issues for water quality assessments, permit writing, and obfuscating clear and obvious regulations for stakeholders.

13.2 Alternative 2: Pursue Basin Plan Amendment as Proposed

Under this alternative, the Basin Plan would be amended as proposed in this Staff Report. As further described in this Staff Report, these amendments are made to modernize the Basin Plan by removing outmoded FIB WQOs (numeric and narrative) and inserting existing state and federal recommended FIB criteria. This action will streamline the Basin Plan with the *Bacteria Provisions* and thus incorporate fecal indicator bacteria WQOs which are already applicable to the Lahontan Region. Passage of these amendments will help support clear, concise FIB regulations for Lahontan Region surface waters in a manner that is consistent with state and federal partners.

13.3 Alternative 3: Remove numeric bacteria WQO and update narrative WQO (March 2023-proposed)

Under this alternative the Basin Plan would be updated by removing the numeric fecal coliform WQO, which is outdated, and incorporate the statewide Bacteria Provisions into the Basin Plan text. This alternative would replace the existing narrative coliform water quality objective with a revised narrative. Having a narrative could continue to make inconsistent the interpretation and application of the bacteria WQO for staff and the public.

14. Public Outreach

December 2019 through May 2021

In anticipation of public interest in this project, staff worked with the Office of Public Participation (OPP) to engage interested parties throughout the region. Public engagement began with a listserv-distributed survey in January 2020. The survey received almost 80 responses which helped staff draft a pre-COVID 19 pandemic outreach plan for the project comprised of a series of in-person meetings held throughout the region planned for March 2020.

Given the abrupt suspension of in-person meetings caused by the societal upheaval of the onset of the COVID-19 pandemic, in May 2020 staff sent out a second survey to gauge stakeholders ability to participate in the project given the COVID-19 pandemic. Staff received an overwhelming response that project work should continue. Based on this response, staff created a pre-recorded project presentation that was distributed to the Basin Planning listserv and posted online in July 2020. Two weeks later, staff hosted an online public workshop and question and answer session attended by nearly 40 participants. Project staff were joined in this effort by the generous participation of staff from OPP, the Office of Information Management and Analysis, and numerous Lahontan Water Board employees. Participants in the online workshop included private citizens, Water Board employees, and representatives from public agencies, interest groups, and two native American tribes. Details of all the public outreach efforts are included in the January 2021 Board Packet for the Bacteria Water Quality Objectives Evaluation Project available on the [Lahontan Region Basin Planning webpage](#).

In preparation for the May 2021 Board workshop, staff met with several project stakeholders to discuss possible options for a Basin Plan Amendment for fecal bacteria WQOs. Those meetings provided an opportunity for staff to answer questions about the evaluation project and hear from interested parties about what topics specific to fecal bacteria water quality objectives were important to them.

October 2021 CEQA Scoping

Public CEQA scoping for this project was announced on August 23rd, 2021. On October 14, 2021, staff held a public meeting to solicit public input regarding the scope of environmental analyses to be performed in preparation of the Basin Plan amendment. This meeting was prepared in accordance with CEQA and provided an opportunity for stakeholders and members of the public to ask staff process-related questions and provide verbal comments about the project. Written comments were solicited and encouraged, and the deadline for receipt of written comments was Friday, October 29th, 2021, at 5:00 p.m.

The scoping meeting was attended by eleven interested parties, several of whom asked staff process-related questions. During the meeting one email comment was received opposing the removal of fecal coliform WQO from the Basin Plan. This comment was read into the record. One comment letter in support of removing fecal coliform from the Basin Plan was received during the comment period. Staff considered the contents of all comments during preparation of the BPA and development of the SED and supporting staff report.

The CEQA scoping meeting was originally planned for September 2021. The meeting was postponed to October 2021 because of the emergency closure of the Water Boards' South Lake Tahoe office due to the Caldor Fire evacuations. Staff also extended the written comment period deadline because of the Caldor Fire.

The draft Fecal Bacteria Water Quality Objectives Basin Plan Amendment and this supporting Staff Report and SED were circulated for a 45-day public review with circulation of the Water Boards' March 2022 Board Meeting Agenda. The comment period closed in mid-April 2022. A workshop on the BPA occurred at the March 2022 Water Board meeting, during which staff presented the draft action, interested parties commented, and individual Board members asked questions and indicated anticipated support.

Staff received three comment letters from interested parties. Changes to the draft Basin Plan language and associated staff report (including environmental documentation) prompted these documents to be distributed for a second public review in March 2023 for 45 days. Responses to comments from the first public draft were during that public review period. Responses to comments and any changes to the draft documents will occur during Spring 2023. Final drafts of all project documents will be circulated for public review ahead of a June 2023 Water Board hearing to consider adoption of the proposed amendment.

15. Compliance with California Assembly Bill 2108 Requirements - Environmental Justice: Disadvantaged and Tribal Communities

California Assembly Bill 2108 (2021-2022 Reg. Sess.) *Water Policy: environmental justice: disadvantages and tribal communities* (AB 2108) amended the California Water Code (Water Code) sections 175 and 13201 and added sections 189.7 and 13149.2. Effective January 1, 2023, Water Code section 189.7 sets forth new requirements for the Water Boards to conduct equitable, culturally relevant outreach when considering proposed discharges of waste that may have disproportionate impacts on water quality in disadvantaged communities or tribal communities.

In relation to Water Code section 189.7, this BPA to the Basin Plan bacteria WQOs began prior to the enactment of AB 2108 and the requirements set forth in Water Code section 189.7. In accordance with Executive Order B-10-11, and California State Assembly Bill (AB) 52 (Gatto 2014), Water Board staff notified ten Native American Tribes on August 4th, 2021, that had requested to receive AB 52 notices of the opportunity to consult with the Water Board on the Basin Plan amendment for FIB WQOs. The Board also extended this notification to thirty Native American Tribes with ancestral lands in the Lahontan Region who had not requested review under AB52. In addition, there has been outreach to the general public requesting comments on the proposed BPA.

Water Code section 13149.2 requires the Water Boards to make findings on anticipated water quality impacts in disadvantages or tribal communities as a result of a permitted activity or facility, any environmental justice concerns within a Water Board's authority that are raised by interested persons regarding those water quality impacts, and available measures within the Water Board's authority to address those potential water quality impacts when adopting water quality control plans; policies for water quality control; regional or statewide waste discharge requirements (WDRs) or waivers; or certain individual WDRs or waivers.

The proposed BPA includes revisions to the bacteria WQOs and several editorial changes to the text of the Basin Plan. The amendment also includes the deletion of fecal coliform fecal indicator bacteria (FIB) and its associated numeric and narrative WQOs, and inclusion of the U.S. EPA recommended, and State Board adopted, coliform organisms (*E. coli* and Enterococci) FIB for the protection of a specific (REC-1) beneficial use. Focusing on these specific FIB provides greater protection because they are more closely associated with the presence of pathogens in water than the broader "coliform organisms," which includes naturally occurring organisms. Pursuant to Water Code section 13149.2, the Lahontan Water Board finds that there will be no anticipated water quality impacts in disadvantaged or tribal communities because of this BPA.

16. Peer Review

The California Health and Safety Code section 57004 requires external scientific peer review of the scientific basis for any rule proposed by any board, office or department within California Environmental Protection Agency (CalEPA). Scientific peer review is a mechanism for ensuring that regulatory decisions and initiatives are based on sound science. Scientific peer review also helps strengthen regulatory activities, establishes credibility with stakeholders and ensures that public resources are managed effectively.

The scientific and technical elements of this BPA rely on the previously peer reviewed U.S. EPA 2012 Recreational Water Quality Criteria. The BPA is also supported by the analyses and review contained in the State Water Board *Bacteria Provisions*. Because the scientific and technical elements that support this amendment have been previously reviewed, further scientific peer review is not necessary. Details of the peer review that supports this amendment are available via the *Bacteria Provisions* Staff Report Section 11 and via the U.S. EPA 2012 Recreational Water Quality Criteria documentation.

U.S EPA documents go through several rounds of peer review prior to publication, sometimes including specific aspects of U.S. EPA documents being published in peer reviewed journals. In the case of the U.S. EPA 2012 Recreational Water Quality Criteria, the process started with numerous expert workshops that helped to frame the scope and science that was needed for the new criteria. The U.S. EPA 2012 Recreational Water Quality Criteria was developed by an inter-agency workgroup (called the Action Development Process Workgroup) that met weekly for several years. The document went through multiple rounds of internal management review in many different U.S. EPA offices (Office of Science & Technology, Office of Research and Development, Office of General Council, Office of Wetlands Oceans and Watersheds, Office of Wastewater Management, Office of Science Policy, Office of Children's Health Protection, and all Regional offices) (State Water Board 2018 Staff Report, Bacteria Provisions).

Before the U.S. EPA 2012 Recreational Water Quality Criteria was published, it went through an external peer review which consisted of a panel of five external experts, and Public Comment. The peer review is available as the Meeting Report for *The Peer Review of U.S. EPA's Draft Recreational Water Quality Criteria (RWQC) document dated November 1, 2011* (U.S. EPA 2011).

The U.S. EPA 2012 Recreational Water Quality Criteria document was published November 26, 2012, after updates resulting from Peer Review and Public Comment, receiving additional rounds of management review from all U.S. EPA offices, and passing Final Agency Review.

17. List of Preparers

The Basin Plan amendments, technical staff report, and draft environmental document were prepared by Ed Hancock, Environmental Scientist, and Daniel Sussman, Senior Environmental Scientist, at the Water Board's South Lake Tahoe office.

The October 14, 2021 CEQA Scoping Meeting was prepared and presented by Mr. Hancock. A recording of the meeting is available at the [project webpage \(https://www.waterboards.ca.gov/lahtontan/water_issues/programs/basin_plan/#basin\)](https://www.waterboards.ca.gov/lahtontan/water_issues/programs/basin_plan/#basin).

The following additional Water Board staff provided management direction regarding the project, provided information used in preparation of the Basin Plan amendment and related documents, and reviewed preliminary drafts:

At the Water Board's South Lake Tahoe Office

- (1) Andrew Jensen
- (2) Daniel Sussman

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