Revised Summary of Comments and Responses

Statewide Clean Water Act Section 303(d) List Portion of the 2020-2022 California Integrated Report

Finalized date:
February 16, 2022

STATE WATER RESOURCES CONTROL BOARD
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

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List of Abbreviations and Acronyms

Basin Plan:	Regional Water Quality Control Plan
CCLEAN:	Central Coast Long-term Environmental Assessment Network
CSCI:	California Stream Condition Index
DOC:	Dissolved Organic Carbon
DW:	Dry Weight
EC:	Electrical Conductivity
ELAP:	Environmental Laboratory Accreditation Program
IBI:	Index of Biological Integrity
ILRP:	Irrigated Lands Regulatory Program
IPI:	Index of Physical Habitat Integrity
IR:	Integrated Report
Listing Policy:	Water Quality Control Policy for Developing California's Section 303(d) List
LOE:	Line of Evidence
MDL:	Method Detection Limit
MS4:	Municipal Separate Storm Sewer System
PEC:	Probable Effective Concentration
PHG:	Public Health Goal
POC:	Particulate Organic Carbon
QA:	Quality Assurance
QAPP:	Quality Assurance Project Plan
QC:	Quality Control
Regional Water Board:	Regional Water Quality Control Board
RL:	Reporting Limits
SHELL:	Shellfish Harvesting Beneficial Use
SSO:	Site-specific Objective
State Water Board:	State Water Resources Control Board
SWAMP:	Surface Water Ambient Monitoring Program
TMDL:	Total Maximum Daily Load
WQP:	Water Quality Portal
U.S. EPA:	United States Environmental Protection Agency

1. Introduction

The State Water Resources Control Board ("State Water Board") received 46 written comments on the Draft 2020-2022 Clean Water Act Section 303(d) list of water quality limited segments portion of the 2020-2022 California Integrated Report ("2020-2022 Integrated Report"). The public comment period for the Staff Report and 303(d) list started on June 4, 2021 and closed at noon on July 16, 2021. The State Water Board received oral comments at a hearing on July 6, 2021. The State Water Board is administering the listing process for all waters assessed during the 2020-2022 listing cycle, in accordance with Section 6.2 of the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List ("Listing Policy").

This document contains responses to the comments submitted to the State Water Board on the Staff Report and 303(d) list. If appropriate, monitoring locations; waterbody segments; fact sheets that include lines of evidence ("LOEs") and decisions; listing recommendations; and the Staff Report were revised based on comments received.

Comment letters were assigned an identifying number (001 through 047). In order to respond to comments that are similar in nature or have components that span multiple Regional Water Boards, principal responses by category were developed. Principal responses are provided for the following categories: pyrethroids; benthic community effects; data and analysis transparency and readily available data; and Shellfish Harvesting ("SHELL") beneficial uses and objectives. Following the principal responses, a table provides a list of the commenter letters with the identifying numbers as well as responses to each individual comment. State Water Board staff did not edit any comments for spelling, grammar, or clarity. All writings in the comment field of these tables are the true and accurate representation of the comment provided to the State Water Board.

If a principal response is referenced in the "Response" column for a given comment in the RTC tables, the response to that comment is found within the identified principal response in Sections 2 through 5 of this document. Should a discrepancy be found in unique responses to comments, readers should defer to the principal responses.

2. Pyrethroids Principal Response

This principal response addresses comments, questions, and concerns raised by commenters regarding pyrethroid pesticides thresholds, methodologies, and other programs addressing pyrethroids management.

2.1 Selection and Use of Pyrethroids Threshold

Commenters asserted that the thresholds used to assess pyrethroids data for the Integrated Report in the Central Valley and San Diego regions are numeric triggers established to inform Sacramento River and San Joaquin River Basin monitoring requirements and were not intended as water quality objectives. They maintain that water quality objectives will be developed and informed by the Central Valley Regional Water Board's Pyrethroids Research Plan, and that it is inappropriate to list waterbodies for pyrethroids impairment until water quality objectives are developed.

Changes to listing recommendations were not made in response to these comments. The Listing Policy does not limit Water Board staff to only use water quality objectives to assess waterbody impairment. Section 6.1.3 of the Listing Policy states that where no numeric water quality objective is identified, *"Regional Water Boards and State Water Boards shall identify evaluation guidelines that represent standards attainment or beneficial use protection."* The Listing Policy's objective "*is to establish a standardized approach for developing California's section 303(d) list in order to achieve the overall goal of achieving water quality standards and maintaining beneficial uses in all of California's surface waters.*" (ibid, Section 1.) To achieve that overarching goal, the Listing Policy requires narrative water quality objectives to be evaluated using evaluation guidelines. The evaluation guidelines to be used must represent standards attainment or beneficial use protection. (ibid, Section 6.1.3.) "*The guidelines are not water quality objectives and shall only be used for the purpose of developing the section 303(d) list*." (ibid)

The pertinent narrative water quality objectives for pyrethroids contained in the Water Quality Control Plan for the Sacramento and San Joaquin River Basins are as follows:

"No individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses. Discharges shall not result in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses."

and,

"All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in, human, plant, animal, or aquatic life."

The pertinent narrative water quality objective for pyrethroids contained in the Water Quality Control Plan for the San Diego Basin is as follows:

"All waters shall be maintained free of toxic substances in concentrations that are toxic to, or produce detrimental physiological responses in, human, plant, animal, or aquatic life."

For the 2020-2022 Integrated Report, pyrethroids data from waterbodies in the Central Valley Region and the San Diego Region were assessed by interpreting the narrative water quality objective(s) using numeric thresholds taken from the Central Valley Water Quality Control Plan, as amended by Resolution R5-2017-0057, which includes numeric triggers and concentration goals for pyrethroid pesticides. Exceedances of these numeric triggers and concentration goals prompt the development of a management plan to address pyrethroid pesticides concentrations in the Sacramento and San Joaquin River basins. During the 2020-2022 303(d) listing assessment, data from waterbodies in the Central Valley Region and the San Diego Region were assessed against a pyrethroid pesticide's chronic concentration goal represented as a 4-day average as presented in the Central Valley Water Quality Control Plan. The Water Quality Control Plan also provides calculations to assess additive effects of pyrethroid pesticides.

Use of thresholds for pyrethroid pesticides is reasonable because the thresholds meet the criteria for an acceptable evaluation guideline of narrative water quality objectives per Section 6.1.3 of the Listing Policy. To use a water matrix evaluation guideline, Regional Water Boards or State Water Boards must demonstrate that the guideline is:

- *"Applicable to the beneficial use*
- *Protective of the beneficial use*
- *Linked to the pollutant under consideration*
- *Scientifically-based and peer reviewed*
- *Well described*
- *Identifies a range above which impact occur and below which no or few impacts are predicted."*

The pyrethroids thresholds used for the 2020-2022 Integrated Report, which are equivalent to numeric triggers and concentration goals outlined in the Central Valley Regional Water Quality Control Plan, are developed to be protective of both cold and warm freshwater habitat. These numeric triggers and concentration goals are relevant and linked to the pyrethroid pesticides under consideration in the 303(d) listing assessment as they apply to the six pyrethroid pesticides individually (bifenthrin, cyfluthrin, cypermethrin, esfenvalerate, lambda-cyhalothrin, and permethrin) and collectively (pyrethroids). The concentration goals are derived from the University of California Davis Methodology for Derivation of Pesticide Water Quality Criteria for the Protection of Aquatic Life (Tenbrook et al., 2010). Based on the UC Davis methodology, Central Valley Regional Water Board staff in conjunction with UC Davis

researchers developed six Water Quality Criteria Reports for the individual pyrethroid pesticides mentioned above. These Water Quality Criteria Reports are scientifically-based and were peer reviewed by external, independent reviewers. The reports and the Central Valley Water Quality Control Plan, as amended by Resolution R5-2017-0057, present well described thresholds for the six pyrethroid pesticides. These thresholds were developed to protect against adverse effects to sensitive species, species in the ecosystem, and threatened or endangered species.

The use of the pyrethroids thresholds to assess data for the Integrated Report does not determine compliance with any permit or waste discharge requirement provision; establish, revise, or refine any water quality objective or beneficial use; or translate narrative water quality objectives for the purposes of regulating point sources.

2.2 San Diego Region Threshold Applicability

Commenters stated that using pyrethroids thresholds adopted for Central Valley Region watersheds was inappropriate as these thresholds were not developed for San Diego Region waterbodies.

Changes to listing recommendations were not made in response to these comments. These criteria, as defined by the UC Davis Method, were developed to be protective of aquatic life in the Sacramento River and San Joaquin River; however, the Water Quality Criteria Reports upon which the thresholds are based note that these criteria would be appropriate for any freshwater ecosystem in North America so long as species more sensitive than those used in the analyses for developing the criteria are not likely to occur in those ecosystems. The application of Central Valley Regional Water Board criteria to San Diego Region waterbodies with similar habitat, sensitive species, and beneficial uses provides protective, well described thresholds for pyrethroids that are peer reviewed and scientifically based. If, in the future, species are identified in the San Diego Region that require more sensitive or conservative thresholds, those species-specific thresholds may be used for data reassessment.

2.3 Total and Dissolved Pyrethroids Data and Thresholds

Several commenters stated concern over the use of total pyrethroids water fraction data in the Central Coast, Central Valley, and San Diego Regions. These commenters noted that the methodologies cited to develop thresholds are expressed in terms of the freely dissolved pyrethroid water fraction and that it is inappropriate to compare data expressed as whole water or total fraction concentrations to thresholds expressed as dissolved fraction concentrations. Commenters also stated that if the freely dissolved pyrethroids fraction was not measured, it could or should be calculated from total pyrethroids data with particulate organic carbon (“POC”) and dissolved organic carbon (“DOC”) adjustments.

Central Coast Region Waterbodies

Changes to listing recommendations were not made in response to these comments. The thresholds used to assess pyrethroids data in Central Coast Region waterbodies were based on peer reviewed work completed by UC Davis researchers (Palumbo et al., 2010 and Fojut et al*.,* 2012). The 2010 UC Davis report, "Water Quality Criteria Report for Bifenthrin Phase III: Application of Pesticide Water Quality Criteria Methodology," (Palumbo, et al., 2010) stated [emphasis added], "*Whole water concentrations are also valid for criteria compliance assessment, and may be used at the discretion of environmental managers, although the bioavailable fraction may be overestimated with this method*," (pages 10-11). Additionally, the report stated, "*As a counterpoint, equilibrium partitioning would suggest that as organisms take up bifenthrin, more bifenthrin will desorb from particles, so the fraction absorbed to solids is likely not completely unavailable*," (page 10). "Aquatic Life Water Quality Criteria Derived via the UC Davis Method: II. Pyrethroid Insecticides" (Fojut et al., 2012) recommended using dissolved concentrations for pyrethroid pesticides; however, the use of the total fraction is valid, and the report stated that "*bound pyrethroids can continue to desorb into the water column for long periods of time because pyrethroids have long equilibration times*."

Comparing whole water or total fraction concentrations to the thresholds is a conservative approach to estimate the potential risk to aquatic life of exposure to pyrethroids. Using the total fraction to compare to thresholds accounts for direct water exposures from the freely dissolved fraction and the continued equilibrium partitioning of pyrethroids in water. Additionally, the comparison of total fraction pyrethroids data to the thresholds can also account for ingestion exposure pathways of pyrethroids sorbed to particles in water which could impact aquatic life (Fojut et al., 2012).

The use of an equation to convert whole water concentrations to freely dissolved concentrations is not necessary as whole water data are assessable, as described above. In accordance with Section 6.1.3 of the Listing Policy, the methods of assessment and evaluation criteria based on whole water samples are appropriate for these waterbodies.

Central Valley and San Diego Region Waterbodies

Changes to listing recommendations were not made in response to these comments. In the Central Valley Regional Water Quality Control Plan, thresholds for pyrethroids are from the UC Davis Criteria Reports (see response to principal response 2.1), which include equations to calculate freely dissolved fraction pyrethroids and additive concentration goal units of pyrethroid pesticides. The Central Valley Region Water Quality Control Plan states that [emphasis added], *"Freely dissolved pyrethroid concentrations may be used in the below formulas to determine the sum of acute and chronic additive concentration goal units (CGUs)"* (R5-2017-0057 Attachment 1, page 4). Therefore, use of the freely dissolved fraction is not required and environmental

managers may use the total fraction to determine the sum of the chronic additive concentration goal unit. As described above, comparing whole water or total fraction concentrations to the thresholds is a conservative approach to estimate the potential risk to aquatic life of exposure to pyrethroids.

It is further stated in the Water Quality Control Plan that freely dissolved data are required for compliance monitoring for dischargers to the waterbodies identified in the Pyrethroid Control Plan. This requirement to use the freely dissolved fraction is specific to discharge compliance monitoring in specific permits and does not apply to the assessment of waterbodies for 303(d) listing purposes. For 303(d) listing purposes, California is required to assemble and evaluate all existing and readily available water quality-related data and information, which includes whole water or total fraction pyrethroids data for the 2020-2022 Integrated Report.

2.4 Existing Central Valley Regional Water Board Program Addressing Impairment

Many commenters stated that the Central Valley Regional Water Board's Pyrethroid Pesticide Control Program already requires a pyrethroids management plan to reduce pyrethroids discharges should pyrethroids concentrations exceed the numeric triggers and that the plans are sufficient to address impairment. These commenters also expressed concern that the development of a TMDL would unnecessarily duplicate efforts or potentially result in conflicting management approaches and recommended that 21 waterbodies be assigned to Integrated Report Category 4b or 5alt for summed pyrethroids or an individual pyrethroid pesticide listing.

~~Changes to listing recommendations were not made in response to these comments.~~
Categorizing a waterbody as 4b or 5alt requires evidence of reasonable assurance that water quality standards will be attained in a reasonable period of time or of a plan to address the impairment. Depending on the sources contributing to the pyrethroids impairment of a waterbody and if the waterbody is part of a program or has an established plan that accounts for the management of all these sources (e.g., the irrigated lands regulatory program ["ILRP"]), an approved pyrethroids management plan may be adequate to categorize a waterbody in 4b or 5alt. Future categorization of pyrethroids-impaired waterbodies into Category 4b or 5alt shall be considered in future Integrated Report cycles as additional information is provided. The Water Board recognizes the value of non-TMDL programs to address impaired waterbodies and acknowledges that the development of a TMDL may be unnecessary or duplicative in certain cases.

Agricultural dischargers have a high degree of source control over pesticides because the dischargers are also the pesticide users. As such, pyrethroids-impaired waterbodies under the ILRP and with pyrethroids management practices instituted within a reasonable period of time could qualify for a listing category where the impairment is addressed by a program or plan other than a TMDL. The Staff Report for

the Sacramento River and San Joaquin River Basins for the Control of Pyrethroid Pesticide Discharges Water Quality Control Plan Amendment included a 4b demonstration for five agricultural waterbodies which was supported by the agricultural requirements in the basin plan amendment and the ILRP's waste discharge requirements. The five waterbody segments are Del Puerto Creek; Hospital Creek (San Joaquin and Stanislaus Counties); Ingram Creek (from confluence with Hospital Creek to Hwy 33 crossing); Ingram Creek (from confluence with San Joaquin River to confluence with Hospital Creek); and Mustang Creek (Merced County).

Additionally, Dry Creek (Tributary to Tuolumne River at Modesto, E. Stanislaus County) is recommended for placement in Category 4b for pyrethroids, bifenthrin, cyfluthrin, and cyhalothrin, lambda. Pyrethroids (both summed and individually) in Dry Creek are being addressed by the Central Valley Regional Water Board's ILRP, an enforceable regulatory program that is reasonably expected to result in attainment of the water quality standard within a reasonable, specified time. A management plan for pyrethroids in Dry Creek was developed in 2020 and is being implemented and monitoring is ongoing.

Urban storm water management entities (e.g., municipal separate storm sewer systems ["MS4s"]) do not have direct control of the multiple sources of pesticides that may be utilized throughout their service areas and released into their conveyance systems. There are control measures available to MS4s that are expected to reduce pesticide loads to the levels needed to attain water quality standards, but their effectiveness has not been demonstrated as they have been for agricultural dischargers. In addition, state law prohibits local public entities, such as MS4s, from regulating the sale or use of pesticide products, and thus they cannot directly limit the use of pyrethroids within their service area. MS4s may need a more flexible time schedule to attain water quality standards related to pyrethroids as they determine the most effective management practices to reduce pesticide concentrations. To qualify for a Category 4b or 5alt approach to address an impairment, evidence must demonstrate reasonable assurance that water quality standards will be attained within a reasonable time period, or there would need to be a plan in place to address the waterbody impairment.

2.5 Thresholds Exceed Best Available Technology

Some commenters stated that the pyrethroids thresholds used to assess pyrethroids data in San Diego Region waterbodies exceeded detection limits of local laboratories in Southern California and thereby exceeded best available technology.

Changes to listing recommendations were not made in response to these comments. Laboratories accredited by the Environmental Laboratory Accreditation Program ("ELAP") and able to measure concentrations of pyrethroids below threshold concentrations are present throughout California, including one located in Anaheim. The Listing Policy does not require samples to be assessed by a laboratory with pyrethroid accreditation located within the San Diego Region. Further, data from

laboratories with reporting limits that are greater than the threshold concentration are still useful because a pyrethroid pesticide detected by an analysis with reporting limits greater than the impairment threshold is still an exceedance.

3. Benthic Community Effects Principal Response

This principal response addresses comments, questions, and concerns raised by commenters regarding the use of the California Stream Condition Index ("CSCI") for assessing benthic community effects data or bioassessment data and the use of a CSCI threshold of 0.79.

3.1 Use of CSCI Threshold Prior to Establishing Objectives

Several commenters were concerned that the use of the CSCI threshold of 0.79 for Integrated Report assessments was premature to the State Water Board's adoption of water quality objectives, criteria, process, or policy to assess benthic community effects. The State Water Board is considering including the CSCI as a scoring tool in the statewide Biostimulatory and Biological Integrity standards project. The State Water Board is also considering approving the San Diego Regional Water Board's Basin Plan Amendment to add a biological water quality objective for perennial and seasonal streams that is set at a CSCI score of 0.79 (Resolution No. R9-2020-0234). Commenters were concerned use of the CSCI threshold of 0.79 in the 2020-2022 Integrated Report is untimely due to the development and adoption of these items, and its use would result in statewide inconsistency and inappropriate listings.

Changes to listing recommendations were not made in response to these comments. As stated in Section 2.1, the Listing Policy does not limit the assessment of data to only numeric water quality objectives. Instead, Section 6.1.3 of the Listing Policy states that narrative water quality objectives shall be evaluated using evaluation guidelines. The CSCI score of 0.79 is the numeric threshold used to assess bioassessment data to determine attainment of narrative water quality objectives, typically the Toxicity Water Quality Objective, in accordance with Section 6.1.3 and Section 6.1.5.8 of the Listing Policy. See Section 3.2 for additional discussion on the appropriateness of the CSCI threshold.

Should a water quality control plan be amended to include a numeric water quality objective, process, or policy for the CSCI or benthic community parameters, the new metric will be used to assess data in subsequent Integrated Report cycles. This will ensure consistent and appropriate 303(d) listings. Furthermore, both the San Diego Basin Plan Amendment and the latest staff conceptual approach for the statewide standards project include the same CSCI score of 0.79 that was used to assess benthic community impacts for the 2020-2022 Integrated Report.

3.2 Use of CSCI Scores and Selection of the CSCI 0.79 Threshold

Several commenters requested clarification on selecting the CSCI score threshold of less than 0.79 to indicate the waterbody's condition is either likely altered or very likely

altered and, therefore, the conclusion that an aquatic life beneficial use is not being supported. Commenters were concerned that the threshold may not indicate impairment.

Changes to listing recommendations were not made in response to these comments. The threshold of 0.79 was used as an evaluation guideline for beneficial use attainment and was selected in conformance with Sections 3.9 and 6.1.5.8 of the Listing Policy. Section 3.9 allows the use of reference site or sites to compare degradation in biological populations and/or communities. Section 6.1.5.8 requires a method of selecting reference sites and applying them to develop an Index of Biological Integrity, which has been done and validated by the CSCI threshold study authored by Mazor et al. (2016).

Additionally, any waterbody listed for benthic community effects must also have at least one other 303(d) pollutant listing identified for that waterbody for aquatic life water quality impairments, such as a chemical concentration, temperature, dissolved oxygen, or trash. This additional line of evidence indicating impairment is in accordance with the Listing Policy's requirement in Section 6.1.5.8 to evaluate physical habitat data and other water quality data, when available, to support conclusions about the status of the water segment when evaluating bioassessment data. Association of benthic community effects with water or sediment concentrations of pollutants is necessary to show that the population or community changes observed are potentially caused by pollutants.

3.2.1 Use of CSCI Scores

The CSCI is a biological scoring tool that helps translate multiple taxa and species indices about benthic macroinvertebrates identified in a stream into an overall measure of stream health (Mazor et al., 2016). Living organisms integrate the effects of multiple stressors, such as chemicals, sedimentation, nutrient enrichment and riparian disturbance, over both space and time. The CSCI score indicates whether, and to what degree, the ecology of a stream is altered from a healthy state as indicated by the aquatic insect larvae and other macroinvertebrates living in, on, or near the bottom, or benthic zone, of a wadeable stream or river.

More specifically, the CSCI score is a measure of how well a site's observed condition matches its predicted, or expected, healthy condition. Expected values for a set of ecological measures are predicted using statistical models developed from reference sites, which are healthy stream reaches that set a benchmark of ecological conditions when human disturbance in the upstream watershed is absent or minimal. Predictions are based on natural environmental variables (i.e., site elevation, catchment or watershed size, climate and geology) resulting in a site-specific prediction for each site; greater deviations from this expectation indicate a greater likelihood of degradation relative to reference conditions. The CSCI is made up of two types of indices: (1) observed to expected ("O/E"), which measures taxonomic completeness which is the proportion of expected native macroinvertebrate species that are observed at a site, and (2) multi-metric index ("MMI") that measures macroinvertebrate ecological structure (e.g., diversity) and function (e.g., nutrient cycling).

The O/E index is created through predictive modeling where taxa that are expected at a monitoring and assessment site are predicted by modeling relationships between macroinvertebrate taxonomic composition and natural environmental variables at reference sites. Benthic community condition at a site is then measured as the number of expected benthic macroinvertebrate taxa ("E") compared to the number that are actually observed ("O"), and degradation is measured as the loss of expected native taxa.

The MMI combines six measures of the benthic macroinvertebrates assemblage, or "metrics", into a single measure of biological condition. Each of the metrics represent different aspects of assemblage composition, or the various species living within the benthic aquatic ecosystem. They were chosen based on their ability to differentiate between reference and high-activity/disturbance sites and by their lack of bias among Perennial Streams Assessment regions (i.e., the metrics performed consistently across different ecoregions in California). Finally, all of the six metrics are "decreasers" as their values all decrease as human disturbance increases. That is, higher values indicate better conditions for all six metrics. A brief description of the six MMI metrics and their relevance to biological conditions are listed below:

1. **Percent Clinger Taxa** - percent of species present that are clingers. Clingers are a category of benthic macroinvertebrates based on their 'clinging' behavior and broadly include several different types of aquatic species such as stoneflies, dragonflies, and others. They typically require fast-flowing water and coarse streambed material to cling to, so they are very sensitive to hydromodification and altered sediment regimes.
2. **Percent Coleoptera Taxa** - percent of species present that are Coleoptera (i.e., beetles). Beetles are a diverse group of insects that includes both sensitive and pollution-tolerant species. More species (especially sensitive species, like riffle beetles) tend to be found in streams with better water quality.
3. **Taxonomic Richness** - or species richness, is the total count of different species present and represents aquatic biodiversity. Biodiversity is critical to maintaining stability in aquatic ecosystems, including the various ecosystem services provided (e.g., clean water, food, recreation, climate change resilience).
4. **Percent EPT Taxa** - percent of species present that are mayflies (Ephemeroptera), stoneflies (Plecoptera), or caddisflies (Trichoptera). EPT are sensitive to environmental stress/disturbance and are used as bioindicators of condition. Most EPT species breath through sensitive gills that can absorb contaminants. High percentage of EPT indicates low environmental stress/disturbance and vice versa.
5. **Shredder Taxa Richness** - count, or number, of different shredder species present. 'Shredders' are a category of aquatic macroinvertebrate functional feeding groups (e.g., shredders, collectors, grazers, and predators). Shredders are responsible for processing leaf litter and help to make dissolved organic matter available, which is a primary food source

for aquatic food webs. They require intact riparian corridors to provide their food.

6. **Percent Intolerant Individuals** - percent of individuals with high pollution-sensitivity ratings. Many benthic macroinvertebrate species have been assigned pollution-sensitivity ratings based on studies of their life-histories, observations at polluted and clean sites, and lab-based experiments.

3.2.2 Selection of the 0.79 Threshold

The CSCI threshold is described in Mazor et al. (2016), which was independently peer reviewed. CSCI scores range from 0 (highly degraded) to greater than 1 (equivalent to reference). The 0.79 threshold is based on the selection of the 10th percentile of the distribution of benthic macroinvertebrate community composition scores from 473 references sites across California.

Reference sites were located in healthy stream reaches that set a benchmark of ecological conditions as human disturbance in the stream watershed was absent or minimal. These reference sites were calibrated to have a mean value of 1. Based on a calibration of reference sites, 0.79 represents the 10^{th} percentile of reference waterbody scores. Waterbodies with CSCI scores below 0.79 indicate the waterbody's condition is likely altered and, therefore, the benthic macroinvertebrate community that is part of several aquatic life beneficial uses is not being supported. In addition, analysis of statewide CSCI results identified sites below the 10th percentile threshold of 0.79 as being in poor condition (Rehn, 2016).

The CSCI relies on quantile regressions to evaluate biological responses to stress gradients. Most biological response measures, including the CSCI, show wedge-shaped relationships with stress gradients. At high levels of a stressor (e.g., high chloride concentration), CSCI scores are low. At low levels of a stressor, CSCI scores may be high, but can be low due to unidentified factors (e.g., presence of an unmeasured contaminant, or habitat degradation). In these situations, traditional linear regression underestimates the strength of the relationship between biological responses and stressors because it only attempts to predict the average response value. In contrast, quantile regression can focus on the "top" of the wedge by predicting a high-value quantile (e.g., the 90th percentile) which better estimates biological responses in most of the population to stressors.

Section 6.1.3 of the Listing Policy states that "narrative water quality objectives shall be evaluated using evaluation guidelines" and provides guidance for selection of numeric evaluation guidelines. The requirements specify that the evaluation guidelines must be applicable and protective of the beneficial use, linked to the pollutant under consideration, scientifically-based and peer reviewed, well described, and identify a range above which impacts occur and below which no or few impacts are predicted. The CSCI threshold of 0.79 as described by Mazor et al. (2016) meets the Listing Policy requirements and so are appropriate to use as evaluation guidelines to interpret the

narrative objective, typical the Toxicity Water Quality Objective, for determination of impairment.

In developing the Listing Policy, the Water Board prepared the Functional Equivalent Document to serve as an environmental review equivalent to a California Environmental Quality Act document with alternatives, options, recommendations, and an analysis of environmental impacts of the Listing Policy (SWRCB, 2004). The Functional Equivalent Document supports the use of the CSCI threshold, as stated in the recommended approach for determining degradation of biological populations or communities. The CSCI score and threshold are based on a modeled extrapolation of expected biology at a site based on reference conditions that are minimally impacted by anthropogenic activities. The recommended approach in Issue 5G Degradation of Biological Populations or Communities, Bioassessment Guidelines of the Functional Equivalent Document states:

> *A reference condition, an empirical model of expectations that may include knowledge of historical conditions, or a model extrapolated from ecological principles can be derived from reference sites. A reference site may be natural, minimally impaired (somewhat natural), or best available (altered system). Actual sites that represent best attainable conditions of a water body should be used.*

3.3 Use of CSCI 0.79 Threshold for Central Valley Floor Waterbodies

Many commenters were concerned about using the CSCI threshold of 0.79 when assessing benthic community data from waterbodies located on the floor of California's Central Valley. Commenters expressed concern that the threshold is not sufficiently supported because there is only one reference stream located in the Central Valley ecological region. Commenters state that the reference is located in the Sierra Nevada foothills and is not representative of the types of streams assessed for benthic community effects listings for waterbodies on the Central Valley floor. The five waterbodies with benthic community effects listing recommendations located on the Central Valley floor are shown in Table 3-1.

Table 3-1: Five 2020-2022 IR Benthic Community Effects Listing Recommendations located on the Central Valley Floor

Waterbody Name	Decision ID	CSCI Scores
Marsh Creek (Marsh Creek Reservoir to San Joaquin River; partly in Delta Waterways, western portion)	131504	0.51, 0.30, 0.36, 0.35, 0.30, 0.35
Laguna Creek (Sacramento County)	131805	0.44, 0.20, 0.43
Elder Creek (Sacramento County)	131804	0.33, 0.28, 0.27, 0.39

Morrison Creek	131507	0.51, 0.62, 0.49
Lone Tree Creek	131508	0.65, 0.48

Changes to listing recommendations were not made in response to these comments. Even without a reference site located in the Central Valley floor, use of the CSCI threshold of 0.79 and its pool of reference sites is appropriate for assessing benthic community data for the five Central Valley floor waterbodies for the following reasons.

1. There are reference sites throughout California that have similar benthic macroinvertebrate community conditions (i.e., benthic macroinvertebrate taxonomic assemblages) as the five waterbodies.
2. There are references sites throughout California that have similar environmental settings (annual mean air temperature, annual precipitation, elevation, and watershed area) as the five waterbodies.
3. The CSCI is sensitive to disturbance in sites throughout the Central Valley floor, which show poorer CSCI scores as expected when development increases and when conductivity increases.
4. The CSCI threshold of 0.79 is attainable in non-reference Central Valley floor waterbodies as evidenced by seven Central Valley floor rivers and creeks with scores at or above the 0.79 threshold. CSCI scores in these seven waterbodies that attained the threshold range from 0.79 to 1.13.

In addition, the five Central Valley floor waterbodies are also impaired by pesticides and aquatic toxicity, providing evidence that pollutants which impact benthic macroinvertebrates are present at levels that exceed water quality standards.

While the evidence supports the use of the CSCI threshold of 0.79 and impairment for benthic community effects in the five Central Valley floor waterbodies, an additional evaluation was conducted to consider an alternative CSCI threshold more specific to Central Valley floor waterbodies. The alternative threshold is 0.77. Even if this threshold was used, CSCI scores from the five waterbodies would exceed the threshold with enough frequency to be recommended to be listed as impaired.

Please see the following subsections for additional detail.

3.3.1 Reference Sites with Similar Benthic Macroinvertebrate Communities

Reference sites are found in California that have similar benthic macroinvertebrate assemblages as the five Central Valley floor waterbodies that are recommended to be listed as impaired. Reference site influence was assessed for one site on each of the five Central Valley floor waterbodies with two approaches:

- O/E Weight – A model was used to predict the likelihood of group membership (reference sites that have similar biological composition) based on taxonomic assemblage.

    - The maps show the probability that the waterbody site is a member of that reference site's group.
- MMI Metric Proximity – A random forest model was used to predict the frequency that the waterbody site is in the same "node" or taxonomic assemblage as a reference site.

The weight for O/E and the proximity for the six MMI metrics were then synthesized and mapped. The following series of graphics (Figure 3-1 through Figure 3-5) show the influence of reference sites throughout California to each of the five Central Valley floor waterbodies in terms of the O/E index and the six MMI metrics that compose the CSCI score.

A description of the color scheme is below:

- The pink box represents the site location.
- The other dots on the map are the 473 reference sites used to develop the CSCI.
- The relative influence of a reference site to the valley floor site is displayed by a yellow (greater influence) to blue gradient (less influence). A white dot represents a site with no reference site influence.
    - For example, reference streams in the San Francisco Bay Area and Central Coast have a similar count of total species present (i.e., Taxonomic Richness) as Marsh Creek. The maps indicate that there are reference sites throughout California that have similar benthic macroinvertebrate communities as the five Central Valley floor waterbodies.

Figure 3-1: Maps Showing Relative Reference Influence Measure for CSCI Metrics (six MMI and O/E) at Marsh Creek (Marsh Creek Reservoir to San Joaquin River; partly in Delta Waterways, western portion)

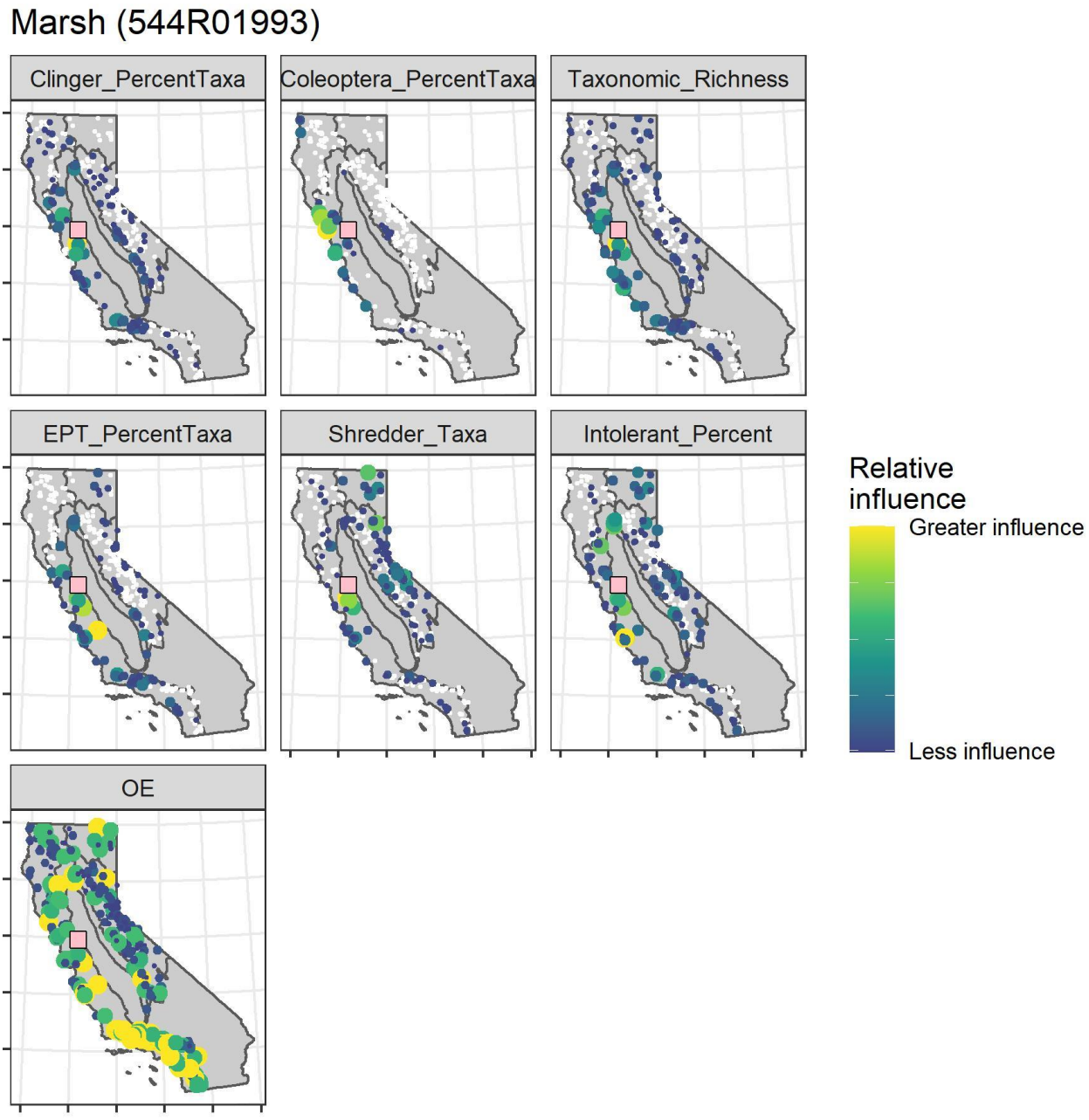


Figure 3-2: Maps Showing Relative Reference Influence Measure for CSCI Metrics (six MMI and O/E) at Laguna Creek (Sacramento County)

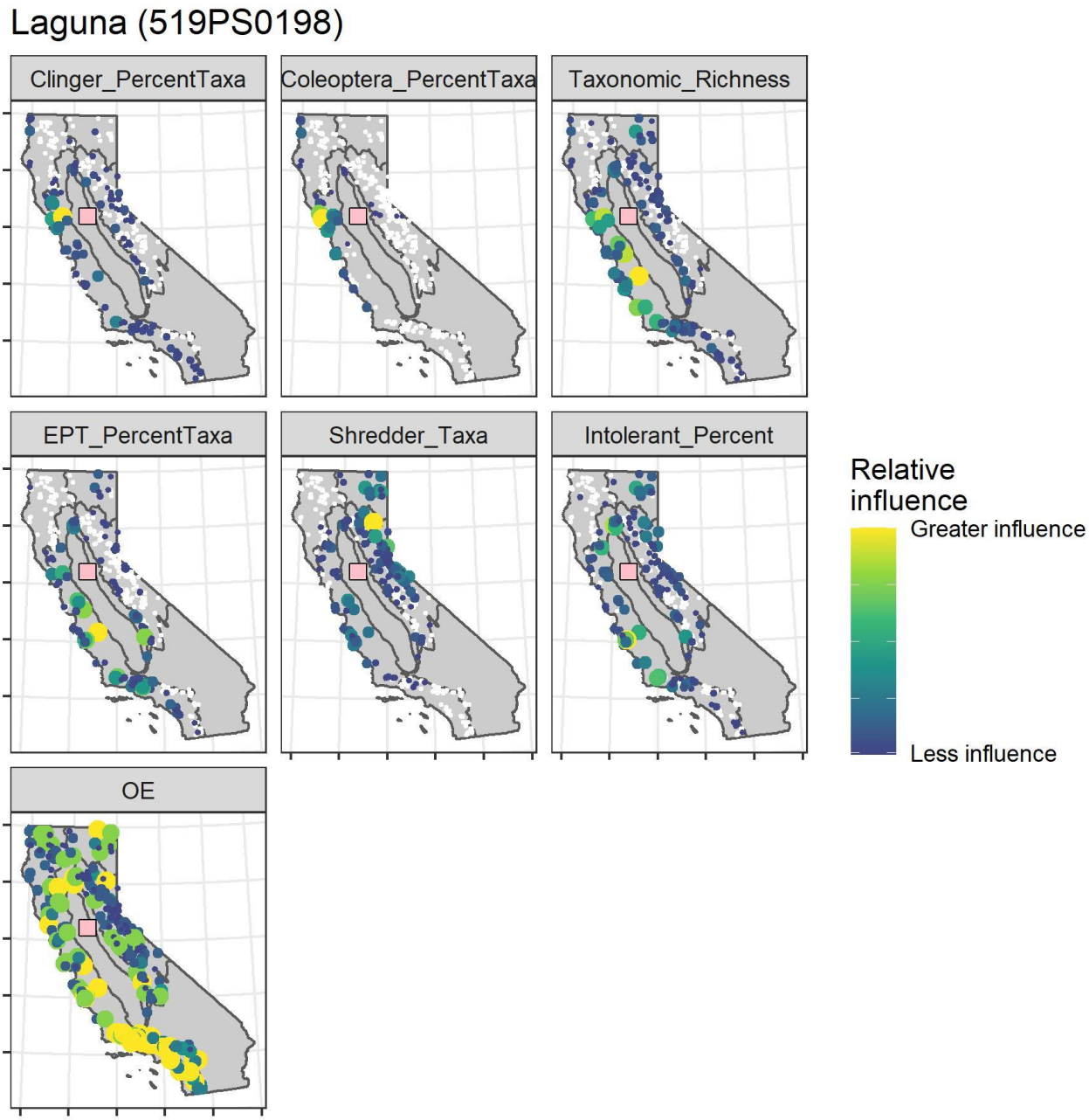


Figure 3-3: Maps Showing Relative Reference Influence Measure for CSCI Metrics (six MMI and O/E) at Elder Creek (Sacramento County)

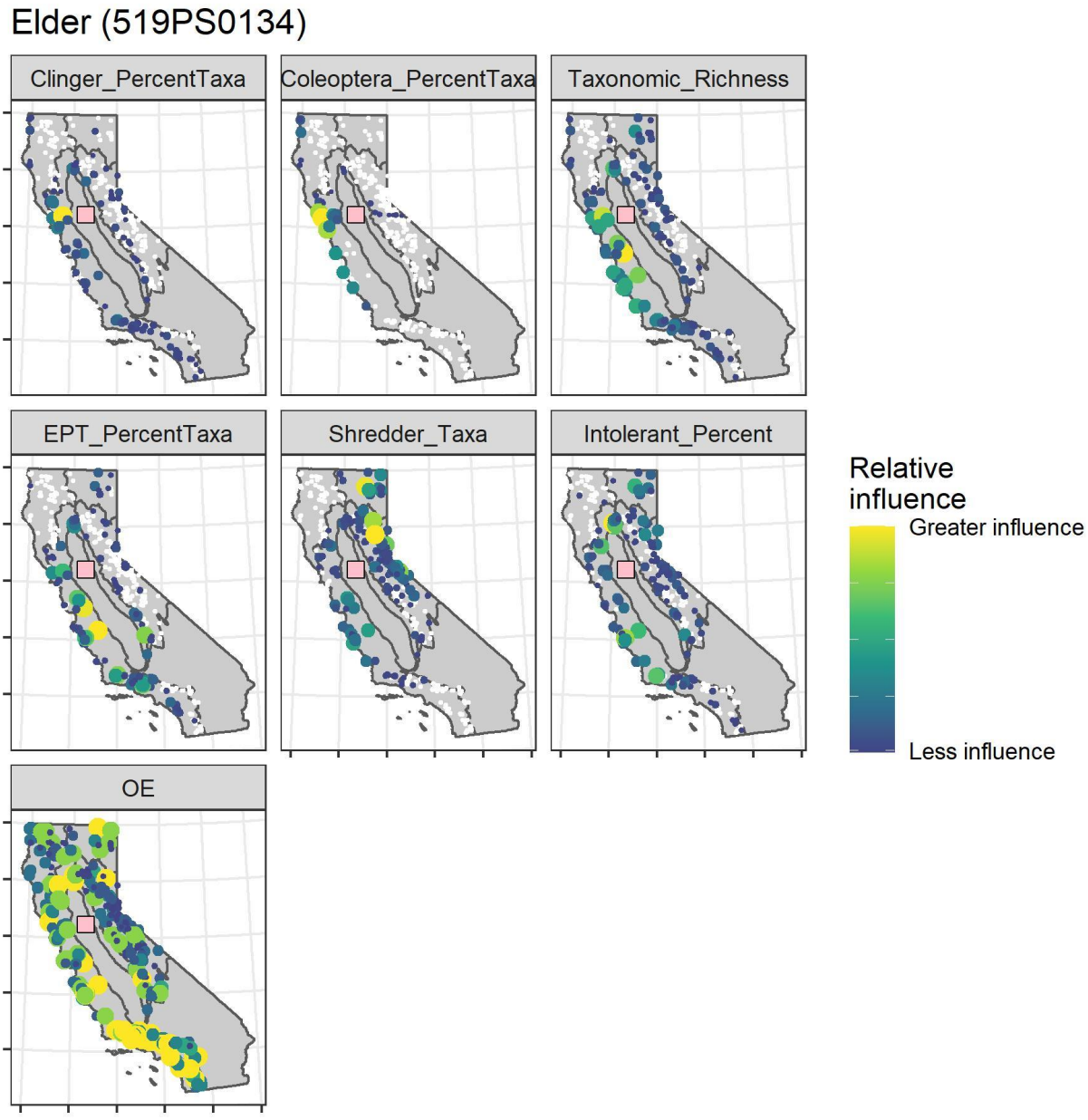


Figure 3-4: Maps Showing Relative Reference Influence Measure for CSCI Metrics (six MMI and O/E) at Morrison Creek

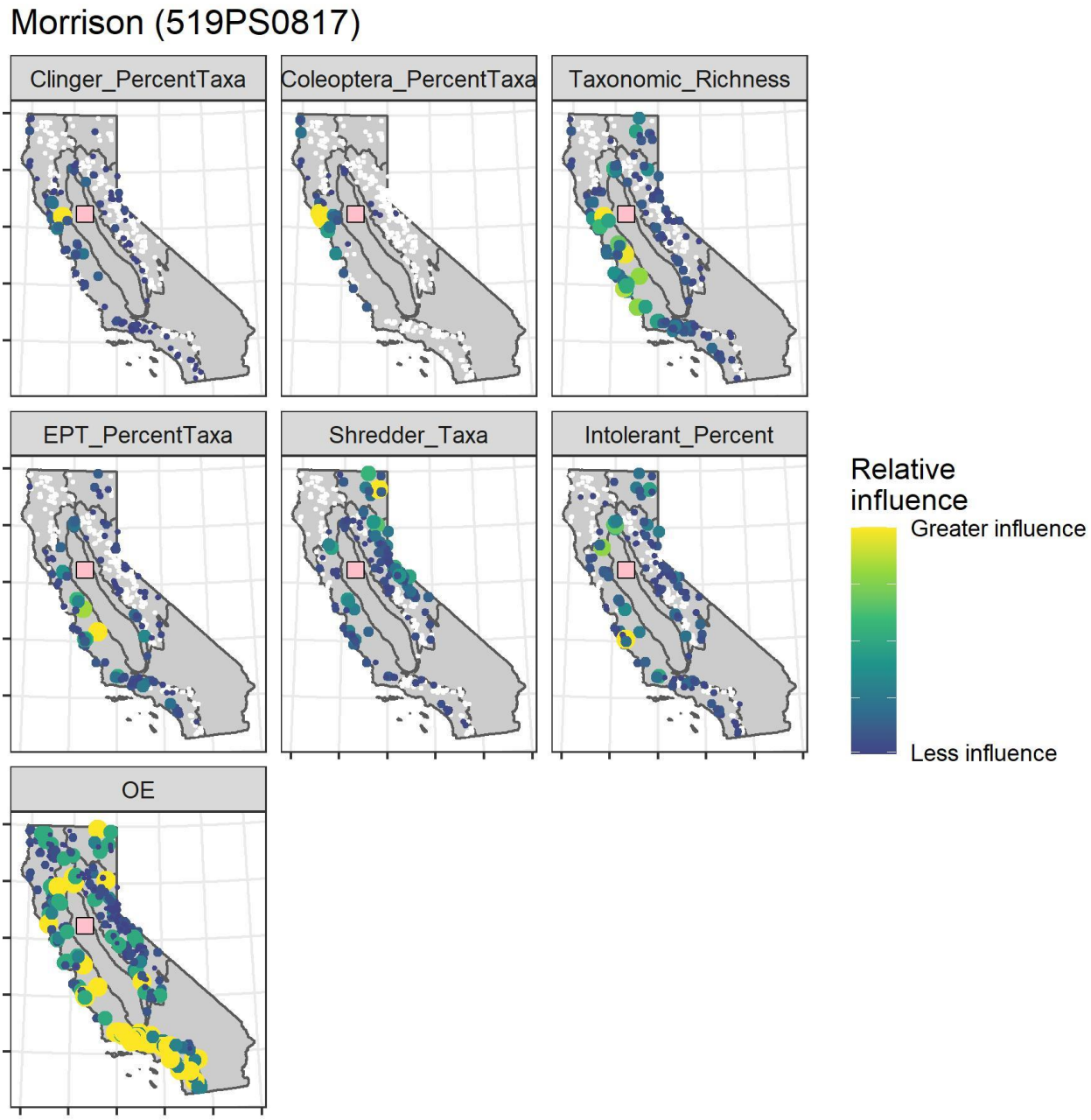
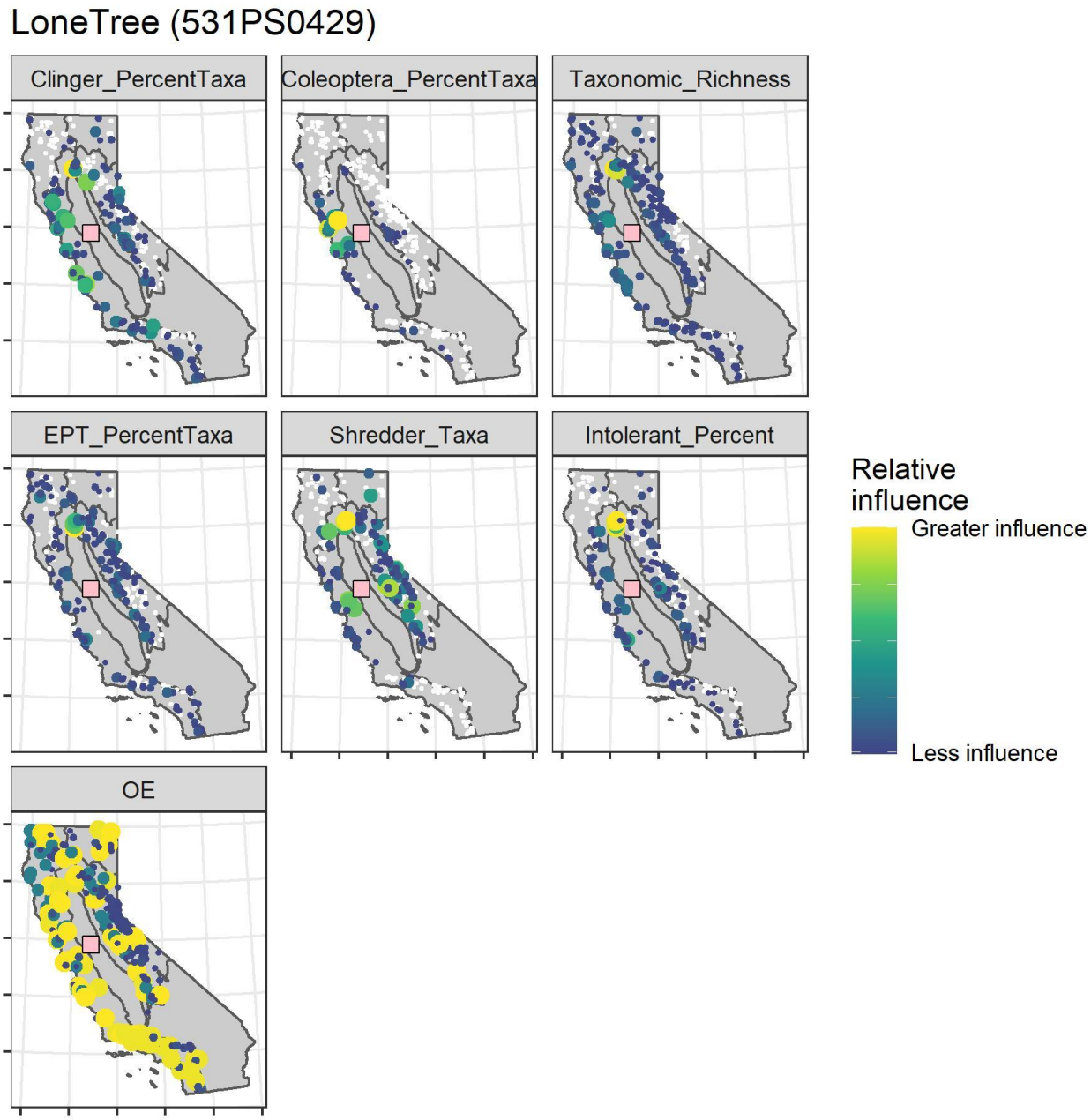


Figure 3-5: Maps Showing Relative Reference Influence Measure for CSCI Metrics (six MMI and O/E) at Lone Tree Creek



3.3.2 Reference Sites with Similar Environmental Settings

References sites are found in California that have similar key environmental settings as the five Central Valley floor waterbodies in Table 3-1. The key environmental settings are watershed area, annual precipitation, mean annual air temperature, and site elevation. These four variables strongly influence the composition of benthic macroinvertebrate communities and typically carry the greatest weight in influencing

modeled expected conditions. Among the seven statistical models used to calculate CSCI scores, these variables are available in all sites.

Reference site influence was assessed by using statistical models to predict expected values of seven different aspects of the biological community based on the environmental settings at these reference sites. Therefore, reference sites that are environmentally similar to an assessed site (e.g., similar elevation, climatic conditions, geology, and watershed area) will have a large influence on setting the expectations. Reference sites from dissimilar environmental settings have little influence, or none at all. This influence can be quantified as the frequency each reference site is selected by the statistical model as an environmental match for the assessed site. Although influential reference sites may be geographically close to the assessed site, they are often located in different parts of the state that have similar environments. Thus, a score for a site on the Central Valley floor may be more influenced by reference sites in the hot, dry South Coast than by reference sites in adjacent parts of the cool, wet Sierra Nevada.

The following series of graphics (Figures 3-6 through Figure 3-10) show the influence of reference sites throughout California to each of the five Central Valley floor waterbodies in terms of annual mean air temperature, annual precipitation, elevation, and watershed area. These are key environmental settings with a high degree of influence on expected benthic community composition. Other environmental variables used to calculate CSCI scores include, but not presented in the figures below, elevation range, average bulk soil density, and average soil erodibility factor for catchment morphology (including stream gradient), geology, and climate considerations.

A description of the color scheme is below:

- The red dotted line represents the environmental setting (mean annual air temperature, annual precipitation, elevation, and watershed area) at the site location.
- The relative influence of a reference site to the Central Valley floor site location is displayed by a yellow (greater influence) to blue (less influence) gradient. Sites with greater influence (yellow dots) are closer to the red dotted line and thus have similar environmental settings.

For example, the Marsh Creek site air temperature graph shows that there is one site (one yellow dot) with the greatest influence to Marsh Creek, several sites (the green dots) with greater influence, and many other sites (the blue-green and blue dots) with less influence. There are several reference sites in California with similar environmental settings as the five Central Valley floor waterbodies.

Figure 3-6: A 4-Panel Plot Highlighting Reference Site Relative Influence with Key Environmental Gradients for Marsh Creek (Marsh Creek Reservoir to San Joaquin River; partly in Delta Waterways, western portion)

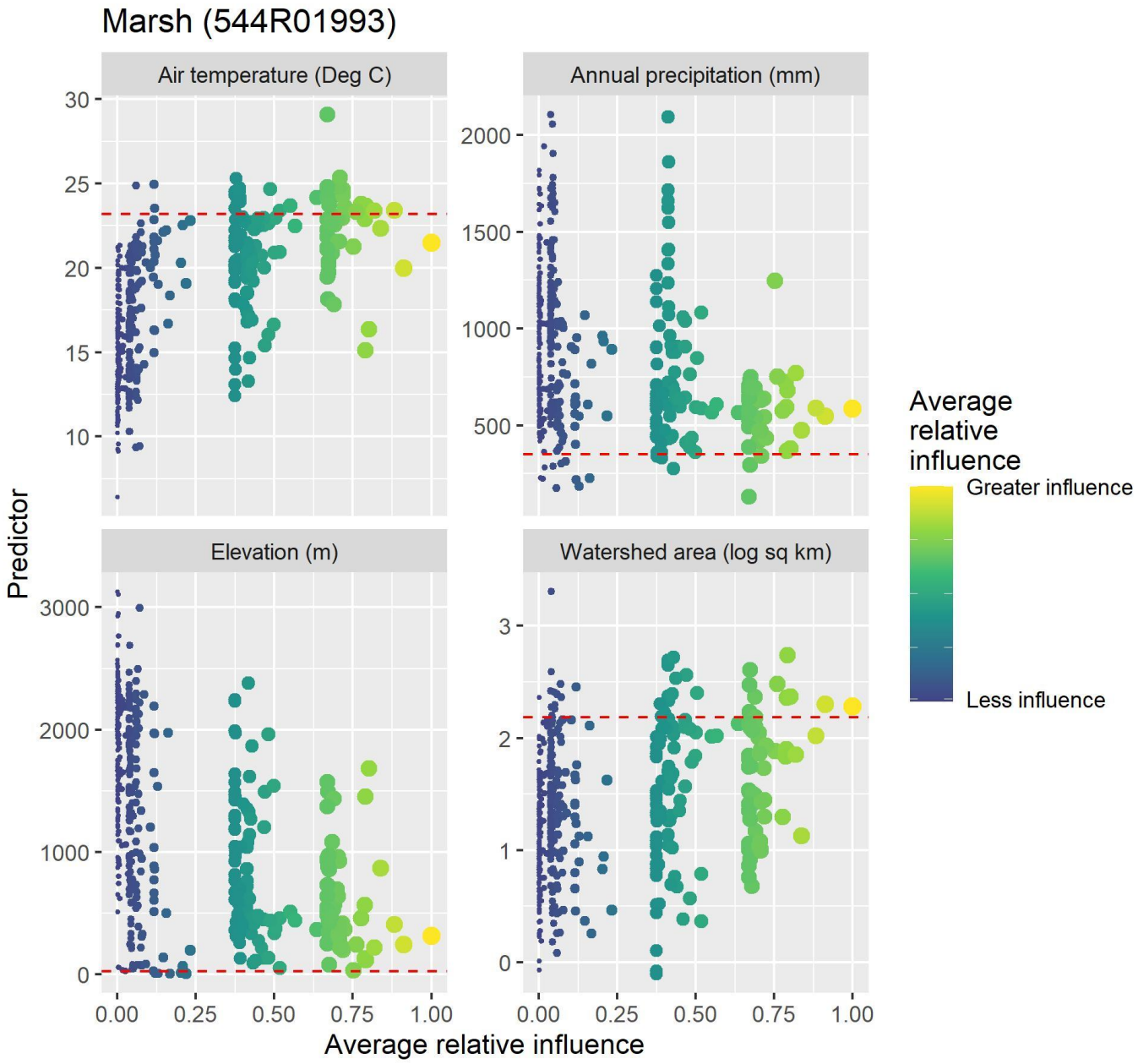


Figure 3-7: A 4-Panel Plot Highlighting Reference Site Relative Influence with Key Environmental Gradients for Laguna Creek (Sacramento County)

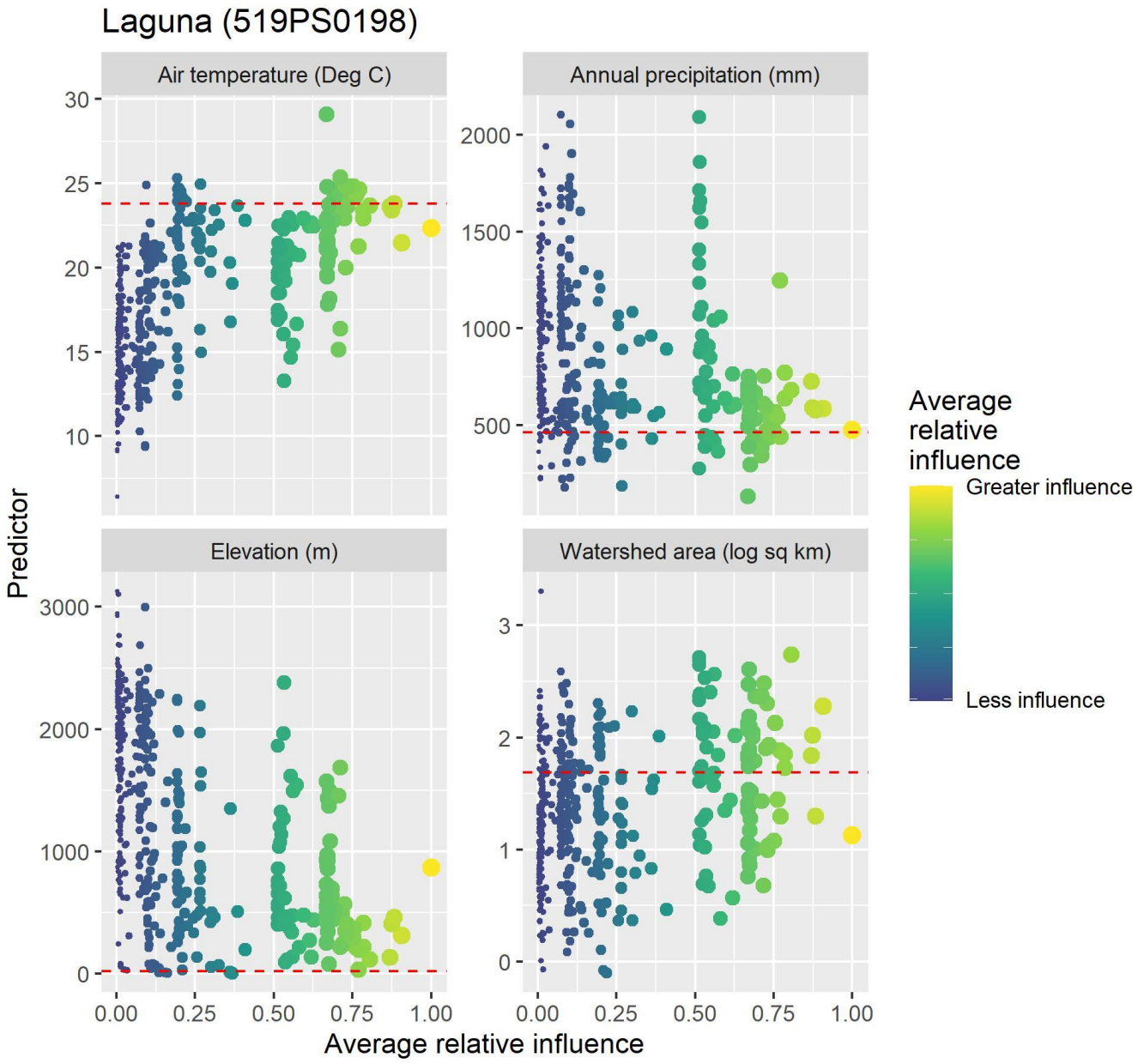


Figure 3-8: A 4-Panel Plot Highlighting Reference Site Relative Influence with Key Environmental Gradients for Elder Creek (Sacramento County)

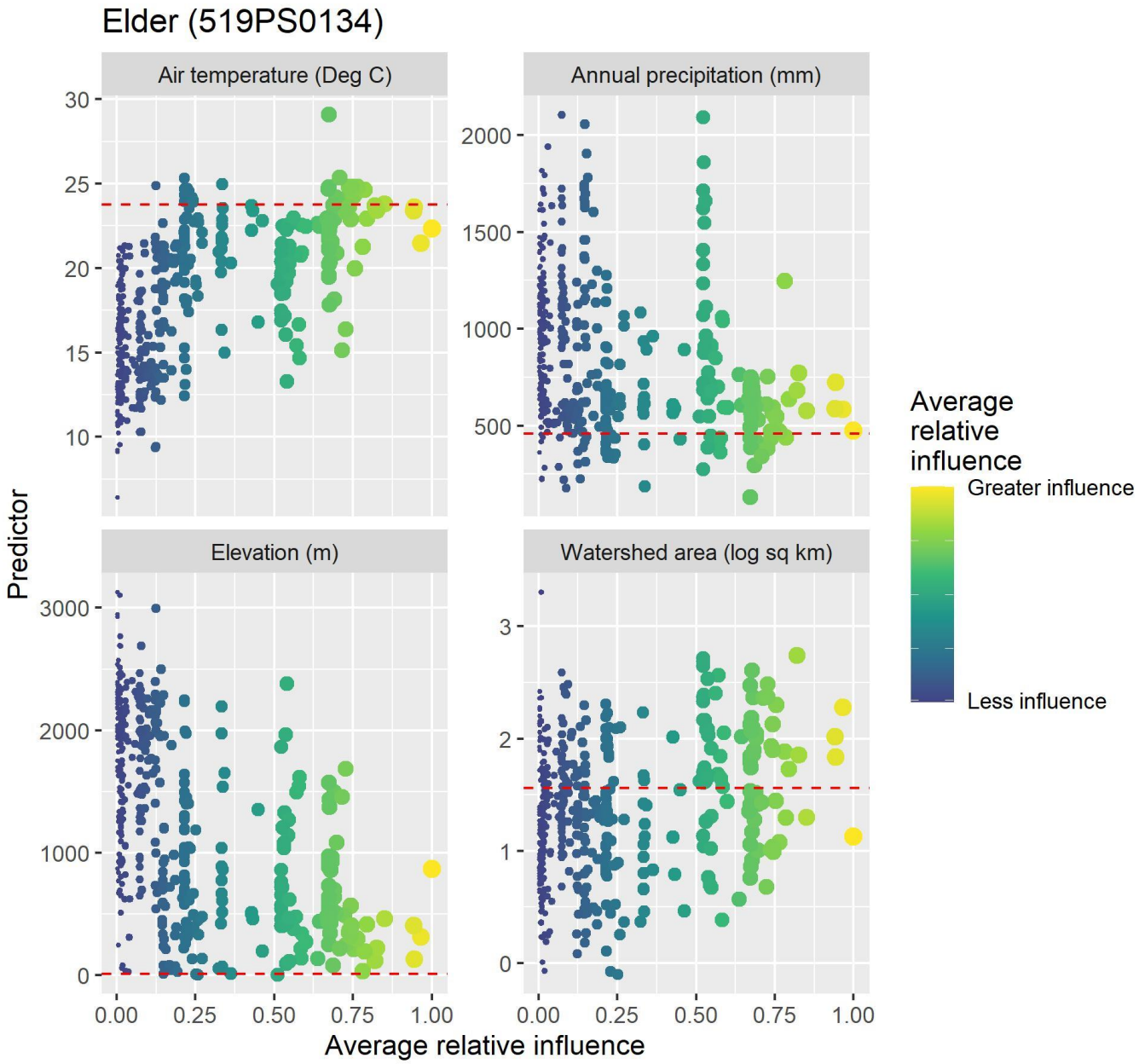


Figure 3-9: A 4-Panel Plot Highlighting Reference Site Relative Influence with Key Environmental Gradients for Morrison Creek

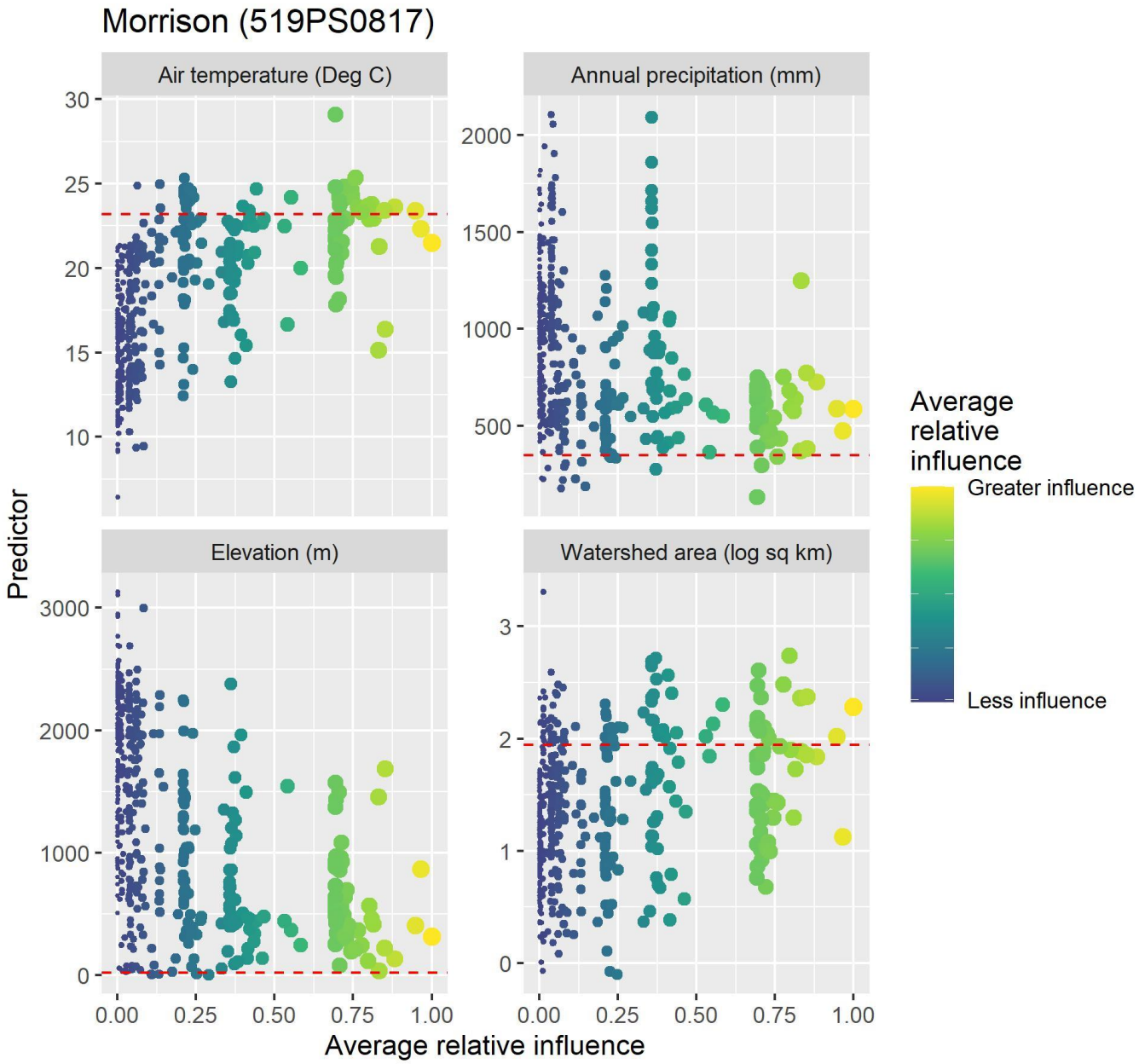
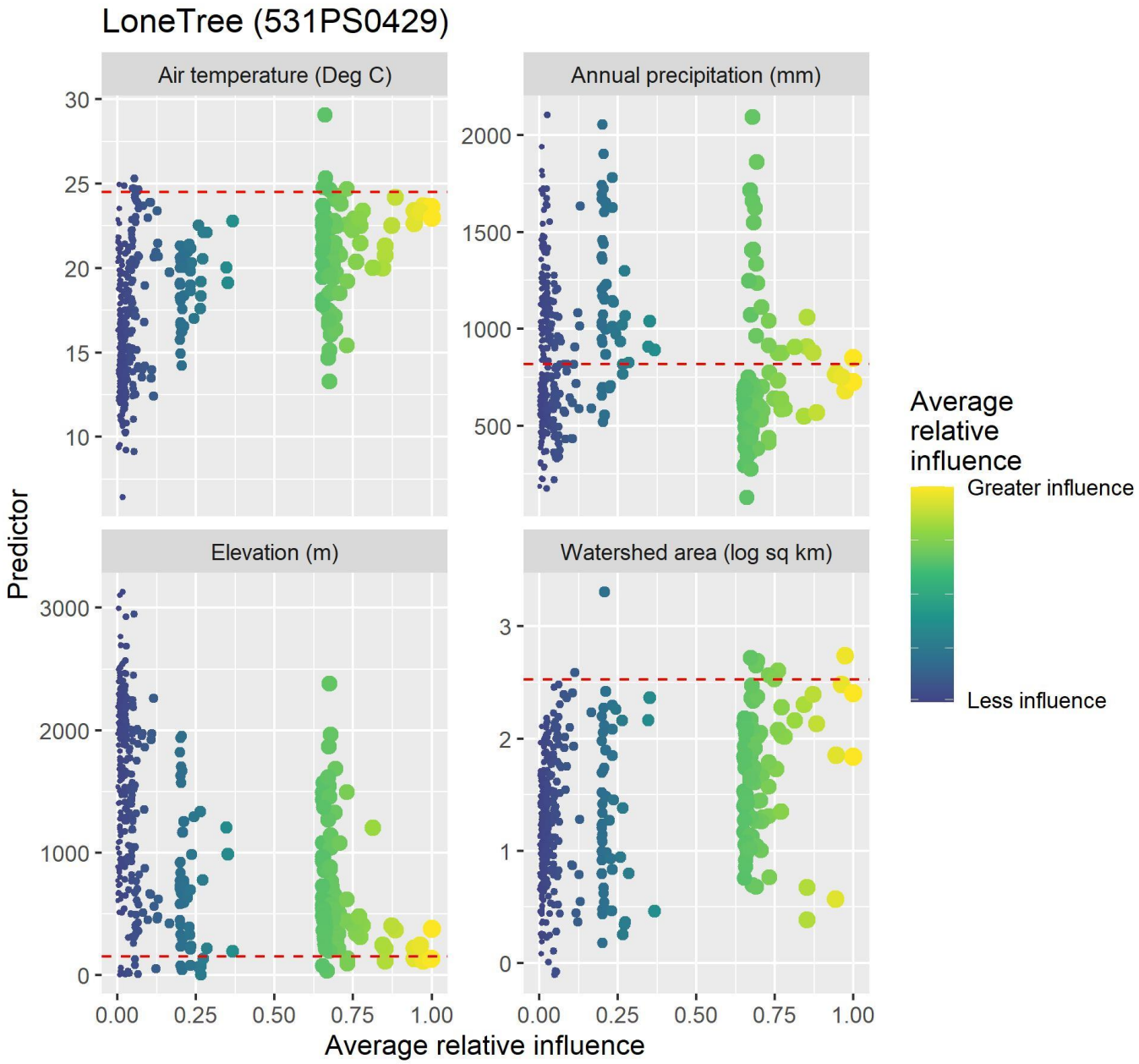


Figure 3-10: A 4-Panel Plot Highlighting Reference Site Relative Influence with Key Environmental Gradients for Lone Tree Creek



3.3.3 The CSCI Score is Sensitive to Disturbance in Central Valley Floor Waterbodies

The CSCI is appropriate to use for Central Valley floor sites in part because it is sensitive to disturbance. Sites throughout the Central Valley floor show poorer CSCI scores as expected when development and conductivity increases. This sensitivity indicates that the CSCI still functions a relative measure of benthic community health in the Central Valley floor streams.

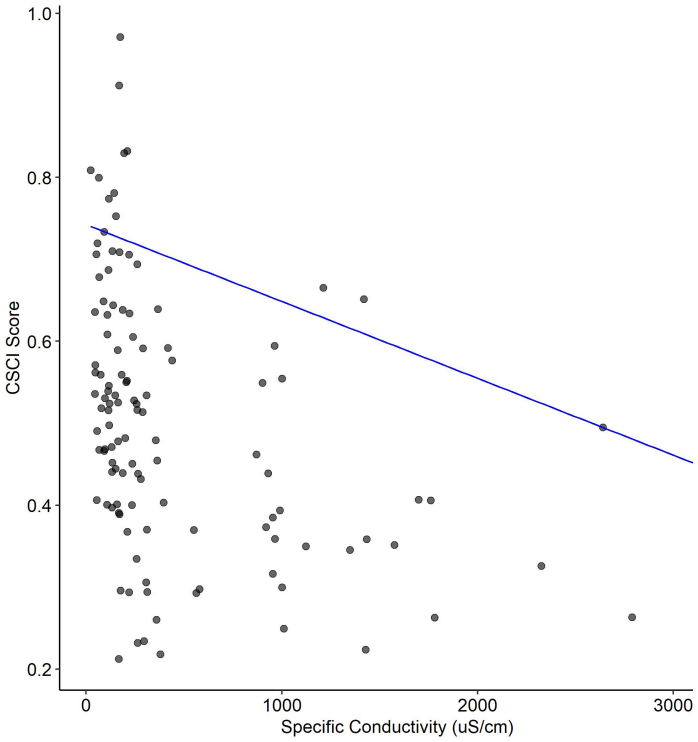
Figure 3-11 shows that CSCI scores decline as percent development and conductivity increase. The dots are Central Valley floor sites compiled during the development and performance evaluation of the CSCI (Mazor et al., 2016). These waterbodies are not reference waterbodies in that they do not meet the criteria to be in a minimal anthropogenically disturbed watershed.

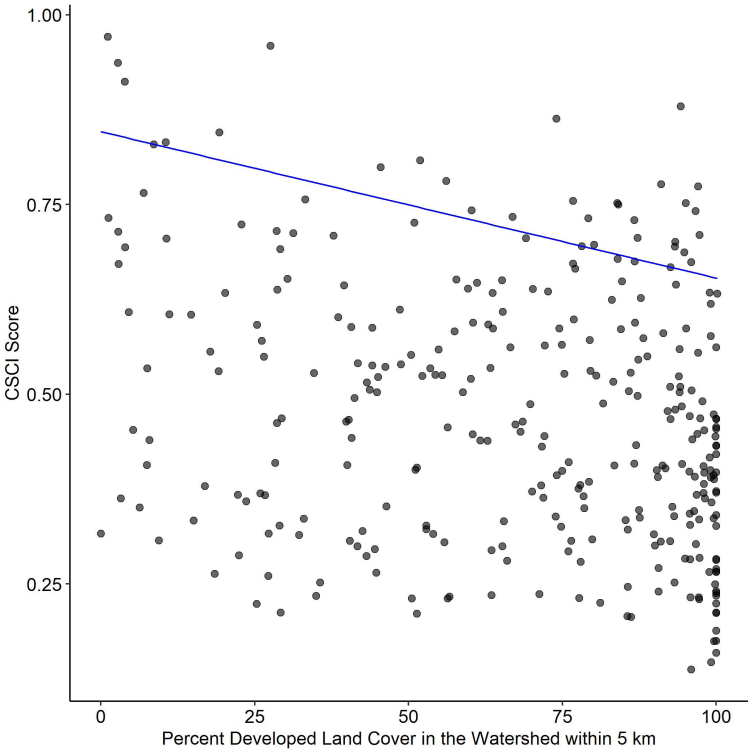
In Figure 3-11, the blue line represents a regression of the 90th percentile between CSCI scores and specific conductivity and percent development. This means that it predicts the 90th percentile of CSCI scores under different levels of specific conductivity and different amounts of land development. Thus, it represents a high-end estimate of likely scores under increasing levels of stress. This negative relationship demonstrates that declines in CSCI scores reflect declines in stream health.

Additionally, Figure 3-11 confirms the design and performance of the CSCI in reflecting biological conditions statewide as described by Mazor et al. (2016):

> *Each site is benchmarked against appropriate biological expectations anchored by a large and consistently defined reference data set, and deviations from these expectations reflect site condition in a consistent way across environmental settings. Thus, the index can be used to evaluate the condition of nearly all perennial streams in California, despite the region's considerable environmental and biological complexity. Three elements of the design process contributed to the utility of this index in an environmentally complex region: a robust reference data set, predictive modeling, and the combination of multiple endpoints into a single index.*

Figure 3-11: Response of the CSCI to Stressors of (1) Percent Developed Land Cover in the Watershed within 5km and (2) Specific Conductivity.





3.3.4 The CSCI 0.79 Threshold is Attainable in Central Valley Floor Waterbodies

Seven Central Valley floor sites have attained the 0.79 threshold in Integrated Report CalWQA records, as listed in Table 3-2. One waterbody, Butte Creek, is an example of a modified channel that has attained the 0.79 threshold. Additionally, the 0.79 threshold was met for Byrd Slough above Hwy 180 (Fresno County) and Middle Fork Consumnes River (El Dorado County), both of which drain areas of agricultural land uses. Though there are instances where a waterbody's CSCI score fell below the 0.79 threshold, these waterbodies consistently met or exceeded the threshold and show the threshold is an attainable metric for waterbodies in the Central Valley floor.

Table 3-2: Central Valley Floor Waterbodies that have CSCI Scores that Attained the 0.79 Threshold.

Waterbody Name	Decision ID	CSCI Scores
Mill Creek (Tehama County)	131488	1.10, 1.09, 0.82
Deer Creek (Tehama County)	131487	0.97, 1.11, 1.13, 1.13, 0.91, 0.74
Tuolumne River, Lower (Don Pedro Reservoir to San Joaquin River)	131824	0.83
Byrd Slough above Hwy 180 (Fresno County)	131720	0.81
Middle Fork Consumnes River (El Dorado County)	131773	0.99, 1.10, 1.03
Pine Creek (Butte and Tehama County)	131483	0.84
Butte Creek (Butte County)	131531	0.69, 1.01, 0.93, 0.85, 0.96, 0.79, 0.43, 1.03, 0.89, 0.97

3.3.5 Associated Pollutant Impairment

As described above, any waterbody listing for benthic community effects must also have at least one other 303(d) pollutant listing for that waterbody for aquatic life water quality impairments. Tables 3-3 to 3-7 lists the associated pollutants, number of LOEs, exceedances, and samples for the five waterbodies located on the Central Valley floor that are recommended to be listed as impaired. The pollutants represent pesticides, toxicity, and dissolved oxygen. These are all associated with the degradation of aquatic life, providing evidence that pollutants which impact benthic macroinvertebrates are present in the five waterbodies at levels that exceed water quality standards.

Table 3-3: Pollutants Associated with Marsh Creek (Marsh Creek Reservoir to San Joaquin River; partly in Delta Waterways, western portion)

Decision ID	Listed Pollutants	Number of LOEs	Number of Exceedances	Number of Samples
117542	Bifenthrin	12	7	7
117545	Cyfluthrin	11	7	9
117547	Cyhalothrin, Lambda	11	6 (20 of 22 exhibited sediment toxicity)	9
130362	Permethrin	11	3 (11 of 22 exhibited sediment toxicity)	11
117540	Pyrethroids	6	9 (11 of 13 exhibited sediment toxicity)	10
117538	Toxicity	9	4	4

Table 3-4: Pollutants Associated with Laguna Creek (Sacramento County)

Decision ID	Listed Pollutants	Number of LOEs	Number of Exceedances	Number of Samples
120972	Toxicity	4	2 (3 of 9 exhibited sediment toxicity)	9

Table 3-5: Pollutants Associated with Elder Creek (Sacramento County)

Decision ID	Listed Pollutants	Number of LOEs	Number of Exceedances	Number of Samples
91906	Chlorpyrifos	3	5	40
77690	Diazinon	2	4	37
74062	Pyrethroids	1	3	3
72982	Toxicity	2	3	3

Table 3-6: Pollutants Associated with Morrison Creek

Decision ID	Listed Pollutants	Number of LOEs	Number of Exceedances	Number of Samples
68495	Diazinon	4	8	83
73524	Pyrethroids	3	4	6
72847	Toxicity	2	4	6

Table 3-7: Pollutants Associated with Lone Tree Creek

Decision ID	Listed Pollutants	Number of LOEs	Number of Exceedances	Number of Samples
116522	Chlorpyrifos	5	5	13
116525	Diuron	7	10	47
122542	Oxygen, Dissolved	31	132	399
73698	Toxicity	5	10	48

3.3.6 Alternative CSCI Threshold More Specific to Central Valley Floor Waterbodies

The evidence supports the use of the CSCI threshold of 0.79 and impairment for benthic community effects for the five waterbodies in the Central Valley floor. However, an additional evaluation was conducted to consider an alternative CSCI threshold more specific to Central Valley floor sites. The alternative CSCI threshold was calculated as the 10th percentile of CSCI scores from reference sites with the most similar environmental settings as the five valley floor waterbodies (see principal response 3.3.2). Specifically, the CSCI scores were taken from those sites identified with yellow dots in Figure 3-6 through Figure 3-10. The alternative threshold is 0.77. Even if this threshold was used, CSCI scores from the five waterbodies would exceed the threshold with enough frequency to be recommended to be listed as impaired. The CSCI scores from the five waterbodies range from 0.20 to 0.65.

4. Data and Analysis Transparency, and Readily Available Data Principal Response

This principal response addresses comments regarding data and analysis transparency and comments regarding assessing all readily available data submitted.

Commenters raised concerns about the lack of transparency associated with the Integrated Report process. Specifically, commenters asserted that data providers should be notified if data are evaluated and deemed inadequate for assessment before the draft Integrated Report is released to the public. Commenters expressed that the underlying rationale for data omission could be rectified by consulting with data submitters prior to the release of the draft Integrated Report and by omitting data, the Water Boards are not considering all readily available data and information.

In addition, commenters communicated that quantitative analyses and methodologies reported in Waterbody Fact Sheets and raw excel spreadsheets were incomprehensible and difficult to replicate. Therefore, the Water Boards should clarify the underlying quantitative analyses associated with the Integrated Report to enhance informational transparency, coherence, and comprehension. Finally, commenters expressed concern about using older, non-representative data in listing recommendations when newer data are available.

4.1 Readily Available Data Requirements

Commenters raised concerns about the omission of data from the Integrated Report. Specifically, commenters asserted that omitting data from consideration violates the Water Boards' responsibility to consider all readily available data and information.

Section 6.1.1 of the Listing Policy requires the Regional Water Boards and State Water Board (collectively, "Water Boards") to solicit all readily available data and information. Section 6.1.1 also defines "all readily available data and information" as data and information that can be submitted to the California Environmental Data Exchange Network ("CEDEN"), unless CEDEN cannot accept the data type. Data types incompatible with CEDEN submission can be submitted directly to the State Water Board following a procedure established during the data solicitation process. In developing the 2020-2022 Integrated Report, all readily available data submitted per the requirements of the May 7, 2019 Revised Data Solicitation Notice were assembled and evaluated. Readily available data were assembled and evaluated to ascertain adequacy for water quality assessments per the Listing Policy. Data deemed ineligible for water quality assessments were not considered for the Integrated Report.

Data were evaluated and some data were deemed inadequate for assessment if they were not submitted to CEDEN or an acceptable format per the Listing Policy or did not meet quality assurance requirements. Regional Water Board staff reviewed data sets that were deemed inadequate for assessment, and in some instances, worked with data providers to remedy errors or provide missing information so data could be assessed.

4.2 Data Not Used for Assessments

Commenters raised concerns about the lack of data transparency associated with the Integrated Report process. Specifically, commenters raised concerns about data not being used for assessments in the 2020-2022 Integrated Report, including data from the Central Coast Long-term Environmental Assessment Network ("CCLEAN") and the Water Quality Portal ("WQP") database. Further, commenters asserted that data providers should be notified if data are evaluated and deemed inadequate for assessment before the draft Integrated Report is released to the public. Finally, commenters suggested consulting with data providers to rectify data concerns before the release of the Integrated Report.

Several years of CCLEAN's data in CEDEN were not included in the data assessed for the 2020-2022 Integrated Report due to missing metadata (i.e., longitude, latitude,

datum of site locations, minimum detection limits (“MDL”), reporting limits (“RL”), and unconventional reporting matrices (e.g., “Extract_samplewater”)). State Water Board staff are working to improve informational transparency related to acceptable data types and required metadata. Additionally, the Central Coast Regional Water Board and CCLEAN staff determined that the metadata exist. Water Board staff plan to assess CCLEAN data in the 2024 assessment cycle as an off-cycle, high priority data assessment.

Data submitted through the WQP database for waterbodies in the Central Coast did not meet quality assurance requirements; therefore, data were evaluated but not used for water quality assessments. Specifically, the data had significant errors that precluded using these data to determine standards attainment. These errors included inconsistent data reporting between the United States Geological Survey database and the information reported in the WQP; exclusion of non-detect results due to missing units, reporting limits, and other required fields reporting metrics expressed as true zeros not in compliance with the Listing Policy; inconsistent analyte naming conventions; improper laboratory documentation; improper documentation that obstructed automated LOE development; and incorrect unit reporting. See Section 4.1.9 of the Staff Report for additional information.

For data or information to be used as a primary Line of Evidence (“LOE”) to support a 303(d) listing or delisting recommendation, data and information must meet the minimum quality assurance requirements as outlined in Section 6.1.2 (Administration of the Listing Process) and Section 6.1.4 (Data Quality Assessment Process) of the Listing Policy. Data and information that does not meet Listing Policy data quality requirements may be used for ancillary LOEs to make a situation-specific weight of evidence listing recommendation per Sections 3.11 or 4.11 of the Listing Policy.

The Water Boards apply an automated data quality estimator tool to screen out data that does not meet data quality requirements. Data may be screened out if it is missing or has inaccurate location information (latitude, longitude, and datum); data results that are less than the quantitation limit when the quantitation limit is greater than the water quality standard, objective, criterion or threshold; data flagged by a laboratory as rejected during quality control (“QC”) review; data from a quality control sample (laboratory duplicate, blank); and sample types that were not water quality-related data.

Additionally, all data must be associated with an approved Quality Assurance Project Plan (“QAPP”) to ensure reliable, scientifically sound data are used to make determinations for water quality standards attainment. A QAPP describes the necessary Quality Assurance (“QA”), QC and other technical activities that must be implemented to ensure that the results of the work performed satisfy the stated performance criteria. Only data supported by an approved QAPP or exempt from the QAPP requirement (i.e., SWAMP) per the Listing Policy were used as primary LOEs to support a 303(d) listing or delisting recommendation. Data not supported by an

approved QAPP may be considered an ancillary LOE. As described in the notice of solicitation, data providers should submit QAPPs using the Integrated Report Document Upload Portal for data that is intended to be considered as a primary LOE in the Integrated Report.

Section 6.1.4 of the Listing Policy tasks Regional Water Board staff with ensuring the adequacy of QAPP documentation. During the QAPP review process, Regional Water Board staff verify the following information:

- Objectives of the study, project, or monitoring program
- Descriptions of monitoring locations
- Monitoring schedule and frequency
- Methods used for sample collection and handling
- Field and laboratory measurement and analysis
- Data management, review and validation, and recordkeeping (including proper chain of custody) procedures
- Quality assurance and quality control requirements
- Sample collection dates for which the QAPP equivalent documentation is applicable
- Description of final data storage location (i.e., CEDEN, non-CEDEN)
- A statement certifying the adequacy of the QAPP (plus name of person certifying the document)
- The QAPP covers the date range of submitted data
- Analytes in data are referred to in the QAPP

In many instances, the commenters' data and information submitted or referenced did not meet the requirements of Sections 6.1.2 or 6.1.4 of the Listing Policy. Therefore, the data could not be used as a primary line of evidence to support a 303(d)-impairment recommendation for the 2020-2022 Integrated Report.

Data providers have the opportunity to see how their data are used or if data were not used when the draft IR is released for public review and comment. However, data providers are encouraged to contact staff at the State or Regional Water Boards to inquire about their data and request consultation on how to rectify data quality issues. Nevertheless, the State Water Board appreciates the comments received and recognizes that current systems are outdated. Staff is working to improve informational transparency. For example, the State Water Board is working to improve the presentation of Integrated Report data requirements on the CEDEN data submission webpage before the 2026 data solicitation period. These updates will help to articulate to data providers the data requirements for QAPPs pursuant to Section 6.1.4 of the Listing Policy, longitude and latitude reporting requirements, and specifications for formatting. In addition, the State Water Board is working to modernize data analysis tools and aim to provide better transparency with the 2024 Integrated Report.

Stakeholders may contact State Water Board staff to request detailed information about data used in specific Decision IDs by sending an email to: wqassessment@waterboards.ca.gov.

Moreover, the Water Boards recognize there may be additional opportunities to improve data transparency. Therefore, Water Board staff have consulted with data providers during the data evaluation process so that they may review data screened and deemed inadequate for water quality assessment prior to assessments for the 2024 Integrated Report cycle, in part, based on comments received during the 2020-2022 Integrated Report public comment period.

4.3 Quantitative Analyses and Methodologies

Commenters communicated that quantitative analyses and methodologies reported in Waterbody Fact Sheets and raw excel spreadsheets were incomprehensible and difficult to replicate. Therefore, the Water Boards should clarify the underlying quantitative analyses associated with the Integrated Report to enhance informational transparency, coherence, and comprehension. Finally, commenters expressed concern about using older, non-representative data in listing recommendations when newer data are available.

Commenters can review data submitted, the number of exceedances for each waterbody-pollutant combination, water quality objectives or criteria used, and the thresholds applied in LOEs and listing recommendations for each Waterbody, which are included in Waterbody Fact Sheets (Appendix B of the 2020-2022 Integrated Report). LOEs include data and information that are compared to applicable thresholds to determine the beneficial use support rating for each unique combination of a Waterbody, pollutant, matrix, fraction, beneficial use, and threshold. LOEs also include details on data spatial representation, data temporal representation, environmental conditions, and quality assurance information. All individual LOEs for a Waterbody are then aggregated into Waterbody-pollutant combinations and a listing recommendation was developed that describes the overall beneficial support rating and recommendation to list, not list, delist, or not delist for that Waterbody pollutant combination. Each listing recommendation is an evaluation, as required by the Listing Policy, to determine whether a Waterbody-pollutant combination is impaired and suitable for placement on the 303(d) list. Section 3 of the Listing Policy describes the factors used to add waters to the 303(d) list (“listing factors”). Section 4 of the Listing Policy describes the factors used to remove waters from the 303(d) list (“delisting factors”) (see Staff Report Section 2.3). All objectives, criteria and thresholds used for 2020-2022 assessments are listed in the Waterbody Fact Sheets. Waterbody Fact Sheets are prepared in accordance with Section 6.1.2.2 of the Listing Policy which states that “when data and information are available, the Regional Water Board shall prepare a standardized fact sheet for each water and pollutant combination proposed for inclusion in or deletion from the section 303(d) list.”

While data and data analysis components are available in Waterbody Fact Sheets, the State Water Board recognizes the importance of improving clarity when presenting the Integrated Report for public review. Therefore, staff are refining tools and processes to improve transparency, data accessibility, and communicate details related to our assessment procedures in current and future Integrated Reports. For example, following U.S. EPA approval of the 2018 Integrated Report, State Water Board staff posted an Excel version of the Waterbody Fact Sheets on the website to allow viewers another way to view, navigate, and summarize Integrated Report assessment information. For the 2020-2022 Integrated Report, staff provided the Excel version of Waterbody Fact Sheets with the Proposed Final Staff Report (Appendix B1: Statewide Waterbody Fact Sheets – Excel Version). Additionally, staff developed an interactive map of the 2018 assessments. For the 2020-2022 Integrated Report, State Water Board staff offered a mapping visualization tool to display the contents of the Integrated Report in a user-friendly way during the public comment period.

The mapping visualization tool can be found on the webpage for the 2020-2022 Integrated Report (https://gispublic.waterboards.ca.gov/portal/home/item.html?id=32f238f9c3d642238e0b3a20262d1c17).

The State Water Board also recognizes the value of providing detailed information when communicating quantitative analyses and assessment methodologies used during the compilation of the Integrated Report to ensure replicable data analysis. Section 2.5 of the Staff Report provides narrative descriptions for assessment methodologies for pollutant types that are particularly complex, have new or changed methodologies, or are particularly significant (e.g., many listing or delisting recommendations are associated with the pollutant). Region-specific assessment methods or assessments using site-specific objectives are described in Section 4-7 of the Staff Report. Additional assessment methods are described in these responses to comments.

A more detailed description of quantitative analysis and methodologies for all pollutants could be beneficial. As part of State Water Board efforts to improve transparency related to the assessment procedures, staff are working to communicate the details of analysis methodologies more clearly.

4.4 Inclusion of Older Data

Several commenters expressed concern about including older, non-representative data in listing recommendations when newer data are available.

There is no express provision in the Listing Policy precluding the use of older data for assessment purposes, except in Section 6.1.5.3, which states that, if the implementation of a management practice(s) has resulted in a change in a water body segment, then only data collected since the change should be considered.

The Functional Equivalent Document for the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (Sept. 200) ("Listing Policy FED") provides the rationale for including older data in water quality assessments (pp. 240-241). For example, the indiscriminate application of data and information, regardless of age, gives the Water Boards the discretion to identify which data should be used in the section 303(d) list. Additionally, removing the temporal aspect of data inclusion ensures all readily available data are used for the Integrated Report. The Water Boards are aware that the inclusion of all data and information, regardless of age, may misrepresent water quality standards attainment, reflect the result of less precise laboratory analytical procedures, or over-represent older data in the decision-making process. However, there are several advantages to using older data in the Integrated Report, including:

- Older data may provide context for newer data, such as characterizing trends or checking for compliance with antidegradation provisions
- Older data can be used to represent current Waterbody conditions if conditions remain unchanged
- Older data may be useful in reevaluating previous listing recommendations if guidelines or numeric objectives are revised
- Provides Regional Water Board discretion for the inclusion of older data on a case-by-case basis

There are some instances where older data were not used to determine impairment. For example, data and information used prior to 2010 to inform bacteria impairment for waterbodies with the REC-1 beneficial use were retired and not used if newer data was available for assessment. Historical levels of indicator bacteria in the waterbody may be a poor indicator of current risks to human health, particularly when more recent data are available to sufficiently assess the water quality standard. See Section 2.5.1(A) of the 2020-2022 Integrated Report Staff Report for more information.

5. SHELL Beneficial Uses and Objectives Principal Response

This principal response addresses comments, questions, and concerns raised by commenters regarding the SHELL beneficial use and bacteria water quality objective.

In the 2020-2022 Integrated Report, bacteria data from waterbodies with the SHELL use were assessed in accordance with the statewide Shellfish Harvesting Standards, which consists of total coliform density water quality objectives, or SSOs, where applicable. The statewide bacteria objective applies to ocean waters. As described in the Ocean Plan, ocean waters are the territorial marine waters of the state as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons (SWRCB, 2019b). Refer to Section 2.5.2 of the Staff Report for more information on methodologies applied.

5.1 SHELL Objective Concerns

Commenters expressed concerns that the total coliform objective for SHELL is unattainable and not a predictive measurement of water quality and health. They assert that due to the State Water Board's acknowledgement of the potential unattainability of SHELL in Issue H of Final Staff Report and Work Plan for 2019 Review of the Ocean Plan ("2019 Ocean Plan Review"), proposed listings for SHELL should be deferred and waterbodies should be assessed upon the adoption of a new SHELL standard (SWRCB, 2019a).

In adherence with Listing Policy Section 2.1, waters shall be placed on the 303(d) List if it is determined, in accordance with the California Listing Factors, that the water quality standard is not obtained. The total coliform objectives constitute the current shellfish harvesting water quality standards and are used per Section 2.1 of the Listing Policy. Water quality objectives are the limit or level of a constituent or characteristic that is established for the reasonable protection of a beneficial use of the water or the prevention of a nuisance in a specific area [CWC Section 13050(h)]. Should the total coliform objectives be revised in the future, previously assessed data will be reassessed and compared to the new objectives.

The State Water Board identified the need to update the total coliform objective for the protection of the SHELL use as a high priority future project in Issue H of the 2019 Ocean Plan Review, citing comments that the objective is unattainable. In Issue H, two proposed project options are provided that may result in the revision of the current total coliform objective:

1. Consider revising the total coliform objective or developing a fecal coliform objective. Fecal coliform is a more appropriate indicator for shellfish harvesting than total coliform. In addition, establishing a fecal coliform objective would align the Ocean Plan with National Shellfish Sanitation Program's guidelines for commercial shellfish growing areas. If developed, a fecal coliform objective may replace the total coliform objective or be proposed concurrently with a revised total coliform objective.
2. Consider establishing bacterial objectives distinctive to recreational, commercial, and tribal shellfish harvesting.

In some instances, commenters noted waterbodies in the 2020-2022 Integrated Report Cycle are delisted for REC-1 attainment but are listed for SHELL. Commenters recommended deferring proposed listings for ocean waterbodies that have met REC-1 standards and reassess the waterbodies upon the adoption of a new SHELL standard. The waterbodies will remain listed until all pollutants for all beneficial uses attain standards. However, the State Water Board acknowledges the positive movement towards delisting and recommends in the 2020-2022 Integrated Report Resolution that should the beneficial uses or the water quality objective be revised in the future, previously assessed data will be reassessed with the new water quality objective in a

subsequent listing cycle. The Integrated Report is not the appropriate venue to revise uses or objectives. The appropriate venue is a quasi-legislative rulemaking action to amend the Ocean Plan. The State Water Board expects that any Ocean waterbody segment listed as impaired by indicator bacteria for the protection of shellfish harvesting would not be scheduled for TMDL development until after the State Water Board completes the planning project.

Additionally, the San Diego Regional Water Board is not prioritizing efforts, such as TMDL development, to address the SHELL total coliform impairments.

5.2 SHELL Objective Assessment Methodology

Several commenters pointed out that the methodology for assessing data using the SHELL objectives in the 2020-2022 Integrated Report was not consistent with the objectives as described in the 2019 Ocean Plan. Specifically, it was inappropriate to only assess data against the objective expressed as a median value unless a statistically sufficient number of median samples were not available, in which case the objective expressed as a 10 percent exceedance rate would also be used to assess data. The bacteria objectives for SHELL in the Ocean Plan is in two parts and both the median and 10 percent exceedance rate objectives should be used.

Assessments of bacteria for attainment of the SHELL objectives were revised so that data were assessed for both objectives in accordance with the Ocean Plan. Section 2.5.2 of the Staff Report was revised to describe the appropriate assessment method. Two decisions were revised, which changed listing recommendations for two waterbodies from “Delist” to “Do not Delist”.

5.3 SHELL Beneficial Use Concerns

Some commenters noted that the current beneficial use designation for SHELL may not be an appropriate indicator for recreational harvesting of shellfish as the use does not take into account the human health risks from viral pathogens in the water. Currently, the shellfish harvesting beneficial use encompasses both recreational and commercial harvesting.

Issue H in the 2019 Ocean Plan Review notes that the State Water Board is considering amending the Ocean Plan to separate the shellfish harvesting beneficial use into recreational shellfish harvesting and commercial shellfish harvesting beneficial uses. Since harvesting for recreational use is defined in part by the method of collection (i.e., by hand), this method of shellfish harvesting is typically near shore where the rate of ocean waters mixing is lower. In contrast, commercial shellfish harvesting is typically done by boat in deeper open water or bays where the rate of mixing is greater. This difference in rates of mixing impacts bacteria concentrations in the water; for example, higher rates of mixing in deeper waters dilute bacteria levels faster.

In a future project to amend the Ocean Plan, the State Water Board plans to assess alternative pathogen indicators to best account for risk to human health as related to shellfish harvesting and consumption, commercial, or sport purposes in addition to

separating the beneficial uses. Should the beneficial uses be revised in the future, previously assessed data will be reassessed and compared to the new objectives.

6. Principal Response References

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Worcester et al. 2010. Interpreting Narrative Objectives for Biostimulatory Substances for California Central Coast Waters. Central Coast Ambient Monitoring Program Technical Report.

Note: For a full list of References, please refer to the Staff Report.

Index of Commenters

Letter 1: Marily Woodhouse, Battle Creek Alliance Defiance Canyon Raptor Rescue

No.	Comment	Response
001.01	When we checked the data the report used, and contacted your staff, we found that all of our data had been filtered out. Our data details ongoing issues and must be used in the assessment in order to make an honest and fair determination of the impairment occurring. We will be submitting a more thorough comment that will include hydrologists' reports and maps, but we thought it best to request our data be included in your assessment as soon as possible.	See response to comment 002.01.

Letter 2: Marily Woodhouse, Battle Creek Alliance Defiance Canyon Raptor Rescue

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002.01	Your Integrated Report was released on June 4th, 2021. It did not recommend any of the Battle Creek watershed creeks for listing as impaired. When we checked the data the report used, and contacted your staff (Jennifer LaBay, Jay Simi), we found that all of our data had been filtered out. Our peer-reviewed and published data details ongoing issues and must be used in the assessment in order to make an honest and fair determination of the impairment occurring. There is a limited period for public comment. We were informed that the	Thank you for bringing this error to our attention. The 2020-2022 Integrated Report was revised to include the data from the Battle Creek watershed. Below are the waterbody Decisions IDs and associated listing recommendations that were added based on incorporation of the Battle Creek Alliance data. • Bailey Creek (Shasta County): ○ Decision ID 123665 for pH – “Do not List”

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	mistake will probably not be corrected before the end of the public comment period, which makes it difficult for us to provide complete comments. We request that the draft Integrated Report be corrected or the public comment period be extended until the draft is accurate.	○ Decision ID 123666 for temperature – "Do not List" • Canyon Creek (Shasta County) ○ Decision ID 132020 for pH – "Do not List" ○ Decision ID 132021 for temperature – "Do not List" • Digger Creek (Shasta and Tehama County): ○ Decision ID 123759 for pH – "Do not List" ○ Decision ID 123760 for temperature – "Do not List" • North Fork Battle Creek (Shasta County): ○ Decision ID 123683 for pH – "Do not List" • Rock Creek tributary to Bailey Creek (Shasta County) ○ Decision ID 123755 for pH – List ○ Decision ID 123756 for temperature – "Do not List" • South Fork Battle Creek (Tehama County): ○ Decision ID 123781 for pH – "List" ○ Decision ID 123782 for temperature – "Do not List" The data submitted for turbidity were evaluated; however, there is insufficient information available to compare the numeric data to the narrative turbidity water quality objective for waters in the Battle Creek watershed and therefore these data were not assessed nor used to make a listing recommendation. The turbidity water quality objective in the Water Quality Control Plan for the Central Valley Region ("Central Valley Basin Plan") states that "Waters shall be free of changes in turbidity that cause nuisance or adversely

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		affect beneficial uses" and that increases in turbidity attributable to controllable water quality factors shall not exceed a range of values based on natural turbidity levels. Staff conducted a literature review to evaluate the impacts of turbidity levels to Chinook salmon and steelhead trout, two salmonid species found in the Battle Creek watershed and known to be sensitive to turbid conditions. Literature reviews included studies conducted by the University of California, Davis (Henkle et al. 2016) (https://www.battle-creek.net/docs/monitoring/r5_bcw_ucd_jan2016.pdf); U.S. Fish and Wildlife Service (Muck et al. 2010) (https://www.fws.gov/wafwo/documents/2010FinalSedimentDoc.pdf); University of Washington (Bash et al. 2001) (https://www.wsdot.wa.gov/research/reports/fullreports/526.1.pdf), and Battle Creek Alliance (Lewis and Jack, 2014) (https://www.researchgate.net/publication/266674967). The studies did not agree upon an appropriate threshold for the protection of salmonids. Therefore, sufficient information is not available at this time to identify a numeric turbidity threshold that indicates an adverse effect on beneficial uses. Additionally, information is not available to determine if a controllable water quality factor contributed to an exceedance of natural turbidity levels. Staff intends to continue to research impacts to Battle Creek salmonids from turbidity in future Integrated Report cycles. When sufficient information is available, the data will be assessed.

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002.02	Our data is meant to provide answers to Battle Creek Alliance's water quality questions. It is also meant to be utilized by the SWRCB in their assessment of California's water bodies and by including it in the State's 303(d)/305(b) combined report.	See response to comment 002.01. Also, see principal response 4.2 for Data and Analysis Transparency, and Readily Available Data.
002.03	According to the Integrated Report draft, the logging company's (Sierra Pacific Industries or SPI) data was used for the analysis of stream segments in the Battle Creek watershed. As may be seen in Figure 12, the sites SPI collects data from are upstream of the primary land disturbance in the watershed. This is an important distinction to understand, particularly in light of the fact that our downstream data was not used in the analysis. The exclusive use of data which has only been collected in the least impacted areas of the watershed does not provide a substantive analysis of the impacts occurring downstream. Data which has been collected within and below the highly impacted land must be included in your analysis to understand the true impairments which are occurring.	See response to comment 002.01. Data from Battle Creek Alliance was evaluated but not used to make a listing recommendation in the 2020-2022 Integrated Report. In addition, the efforts set forth by the Battle Creek Alliance to gather and submit data for the Water Board's consideration is greatly appreciated. Staff at the Water Board's look forward to working with Battle Creek Alliance in the future to ensure all appropriate data is considered for Integrated Report purposes.
002.04	Our peer reviewed data which was submitted on time during the solicitation period needs to be included in the analysis for your Integrated Report. Our data and other reports demonstrate there is persistent impairment occurring in the vicinity of our sampling sites in the Battle Creek tributaries of south fork Battle Creek, Digger Creek, Rock Creek, Bailey Creek, and Canyon Creek.	See response to comment 002.01.

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	The degradation of these tributaries includes: • South fork Battle Creek: high temperature, high pH, channel changes, sediment/siltation • Digger Creek: high temperature, channel changes, sediment/siltation • Rock Creek: high temperature, channel changes, sediment/siltation • Bailey Creek: high temperature • Canyon Creek: high temperature, channel changes, sediment/siltation We request that these streams be recommended for 303 (d) listing in your report.	

Letter 3: Kaitlyn Kalua, California Coastkeeper Alliance

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003.01	To ensure the State Water Board meets its objectives to protect and restore waterways statewide, we respectfully request the State Water Board: I. Ensure the Use and Timely Submission of Current Data in the 2020-22 Integrated Report. • Eliminate Barriers to Public Submission of Water Quality Data. • End its Reliance on Stale Data.	See response to comments 003.06, 003.07, and 003.09. Additionally, see principal response 4.3 and 4.4 for Data and Analysis Transparency, and Readily Available Data.

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	• Require the Inclusion of All Regions in the Biennial Integrated Reports. • Ensure Timely Submission of the Integrated Report Submission to the EPA. • Update Region 9 Listing Recommendations for Buena Vista Creek, Los Penasquitos Lagoon, Otay River, and San Elijo Lagoon.	
003.02	II. Consider All Readily Available Data and Information, Including Flow Data, and List Waterways as "Impaired" Due to Hydromodification Where Supported by Such Data and Information. • Include the listing of hydrologically impaired waterways under Category 4C of the Integrated Report. • Update its Policy of "Single-Category" Listings, Given it Defies the Clean Water Act and EPA Guidance. • Not Rely on Unnecessary Formal Methodology to List Waterways as Hydrologically Impaired Under Category 4C. • Retract its Recommendation to Remove the Ballona Creek Wetlands from Category 4C. III. Update its Bacteria Delisting Recommendations Based on Current Data and Analysis as Required by the Listing Policy. IV. Address Agricultural Pesticide Impairments by Requiring TMDLs.	See response to comments 003.07, 003.10, 003.18, 003.23, 003.24, and 003.28.
003.03	Local California Waterkeepers appreciate the use and inclusion of citizen monitoring data in the Ambient Water	See principal response 4.1 and 4.4 for Data and Analysis Transparency, and Readily Available Data.

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	Quality Monitoring Program that resulted in listing and delisting of specific waterbody segments in the Draft Integrated Report. However, we remain concerned that across the state, there is a reliance on too old and too little data. While the public can play an important role in providing data, there are too many barriers to the data submission process, discouraging full public participation. This includes the exclusion of data and information not submitted through the California Environmental Data Exchange Network (CEDEN), or exclusion of data that fails to meet strict formatting and quality assurance requirements, such as the exclusion of all PDF submissions and the mandatory inclusion of a signed QAPP. The State Water Board also once again did not commit to collecting all readily available data and information, regardless of whether it is submitted by the public. To address this, we ask that the State Water Board expand the ability of the system to accommodate information in various formats.	
003.04	Further, the public experiences a lack of notice when data is excluded or disqualified for formatting errors that could be remedied, and provide needed information for the assessment of waterways in the Integrated Report. For example, a third-party uploading data to CEDEN may think the data has successfully been submitted, but will not learn until years later that the data was disqualified for flaws that could have been identified at the time it was uploaded to CEDEN. An updated and improved system is needed for collection of public data.	See principal response 4.2 for Data and Analysis Transparency, and Readily Available Data.
003.05	Second, the publicly available data and maps associated with the Integrated Report requires updating. For example, in	Thank you for bringing this our attention. The referenced mapping errors have been corrected and nitrogen data

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	Region 9 there are glaring gaps in data for the Otay River that require correction, and Lake San Marcos is labelled incorrectly. We urge the State Water Board to prioritize resources and support for Regional Water Boards to perform updates to the map and resolve longstanding data visualization issues.	submitted for Otay River have been assessed. See Decision ID 132051 for new LOEs created. The listing recommendation for the Otay River was revised from "Do not List" to "List." Also, see principal response 4.3 for Data and Analysis Transparency, and Readily Available Data.
003.06	The State Water Board Must End its Reliance on Stale Data. The value of the Integrated Report is entirely dependent on the quality and timeliness of its data. Unfortunately, the State Water Board continues to rely on stale, outdated data to make its listing determinations, resulting in recommendations that do not reflect the actual condition of California's waterways. As provided by a Memorandum issued by the federal Environmental Protection Agency regarding the 2022 Clean Water Act Section 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions: "Timely submittal of [Integrated Reports] and action on CWA Section 303(d) lists are critical to meet states' and EPA's responsibilities under the CWA and are central to demonstrating success in accomplishing state and EPA strategic goals for restoring and maintaining the nation's waters. Furthermore, timely submittal and action provide the public and other stakeholders with the most up-to-date information on the water quality condition of waters in each state."[1] By relying on stale data and lines of evidence that are often over a decade, sometimes over two decades, the State Water Board is unable to provide an accurate depiction of water quality throughout California. The State Water Board further	See principal response 4.4 for Data and Analysis Transparency, and Readily Available Data. Section 6.1 of the Listing Policy describes the process for evaluation of readily available data and information. Section 6.1.1 defines readily available data and information an as "data and information that can be submitted to the California Environmental Data Exchange Network (CEDEN) or its successor database, as directed in the notice of solicitation. If CEDEN is unable to accept a particular subset of data and information, the State Water Board or the Regional Water Board will accept that data and information if it meets the formatting and quality assurance requirements detailed in Section 6.1.4 of the Policy and the notice of solicitation for the current listing cycle." The Listing Policy states that the State and Regional Water Boards shall actively solicit all readily available data and information. Section 6.1.2.1 of the Listing Policy further explains that the State Water Board shall solicit data and information through a notice of solicitation. In the May 17, 2019 Revised Data Solicitation Notice for the 2020-2022 Integrated Report, the State Water Board identified the data solicitation period and cut-off date for the listing cycle. For each Integrated Report listing cycle,

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	fails to provide current data in the updated Integrated Report. In completing this year's integrated report, the Water Boards used data only from June 14, 2019 and earlier, forgoing several years of appropriate and necessary data.[2] The data used to compile the list is therefore incomplete and outdated and the report therefore inaccurately represents the current state of impaired waters statewide. This incompleteness is a violation of both the Clean Water Act and the Porter-Cologne Water Quality Control Act (Porter-Cologne), which require that the Water Boards utilize "all available data and information" in compiling the lists. (Additionally, we note that the State Water Board listing policy allows the State Water Board to effectively ignore all of the data in five of the nine regions when compiling the Integrated Report for eventual submission to EPA, as described in more details below.) To address this, we ask that the State Water Board accept data for a longer period of time. We suggest a data submission deadline of a maximum of six months before the submission date of the report. If the report is on time, that means a data submission deadline of no earlier than November 1 of odd-numbered years. If the Integrated Report is late, the data submission cutoff should correspond with the anticipated submission date of the report to ensure it reflects the most accurate and current data possible. Footnote 1: United States Environmental Protection Agency, Memorandum titled “Information Concerning 2022 Clean Water Act Section 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions” (March 31, 2021), https://www.epa.gov/sites/production/files/2021-04/documents/final_clean_ir_memo_and_cover_note_0331signed_0.pdf	millions of water quality data records are submitted for assessment and for each cycle, the quantity increases. Data submitted outside the data cutoff period will be considered in a subsequent Integrated Report cycle. As a practical matter, a data cut-off date is a necessary step that provides staff with the time to assemble, evaluate, and assess data and provide the public time to consider and comment on proposed listing recommendations, in conformance with Listing Policy requirements. After the public review and comment period, the State Water Board must formally adopt the 303(d) portion of the Integrated Report prior to submitting it to the U.S. EPA. Accepting data up to six months before submission would jeopardize both the accuracy and transparency of the Integrated Report assessments. The data solicitation cut-off date is consistent with U.S. EPA Memorandum: Information Concerning 2022 Clean Water Act Section 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions. The Memo states that to ensure timely completion of the Integrated Report a data solicitation cut-off date helps determine which data and information will be used in preparation of the 2020-2022 Integrated Report and which data and information would be considered in preparing subsequent Integrated Reports. The State Water Board recognizes that producing timely and complete Integrated Reports is important. The State Water Board is currently working on several fronts to improve the process to administer the requirements of the

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	Footnote 2: 2020–2022 California Integrated Report for Clean Water Act Sections 303(d) and 305(b), pp. 14 (2021).	Listing Policy. This includes upgrading existing data assessment tools, conducting multiple Integrated Report cycles concurrently, and streamlining the public process.
003.07	The State Water Board Must Require the Inclusion of All Regions in the Biennial Integrated Reports. The Clean Water Act and Porter-Cologne requires California to identify all bodies of water for which technologically-based effluent limitations (TBELs) are insufficient to maintain water quality standards, which the 2020-2022 Integrated Report will fail to do, because it only includes four of California's nine Water Board regions. The 2020-2022 Integrated Report also violated the California policy itself in that six regions were up for reevaluation and only three of those six were evaluated (plus one off-year region). Though the State Water Board allowed other regions to submit data, by not requiring the submission, the reports remain incomplete in violation of both federal and state statutes. This current process is insufficient and unlawful, as it does not require inclusion of all regions in the biennial reports. To address this, we ask that the State Water Board end the "three cycle" listing approach such that the Integrated Report is fully updated every two years.[3] Footnote 3: We note that the State Water Board did not even follow its own three cycle approach with the 2020-2022 report where it evaluated one off-cycle region and failed to evaluate three on-cycle regions.	The U.S. EPA affords states' discretion in implementing a rotating basin strategy provided that states solicit all readily available data and information for all waters within their jurisdiction. In this approach, states assemble and assess data for water quality standards attainment for a subset of the state's jurisdictional waters. The rotating basin strategy retains the manageability and feasibility of region-wide water quality assessments and timely submissions of the Integrated Report. Conducting water quality assessments on a region-specific level provides technical staff with the time to conduct a thorough assessment of the data ensuring high-quality, transparent assessments are used to inform the Integrated Report. Due to the factors mentioned above, California has opted to use the rotating basin strategy to administer the listing process. This strategy is consistent with U.S. EPA Memorandum: Guidance for 2004 Assessment, listing and Reporting Requirements Pursuant to Sections 303(d) and 305(b) of the Clean Water Act; TMDL -01-03. It should be noted that U.S. EPA has been approving California's 303(d) lists based on the listing cycle approach. U.S. EPA regulations require states to "assemble and evaluate all existing and readily available water quality-related data and information to develop the [303(d) lists]." (40 CFR § 130.7(b)(5)) Section 130.7(b)(6)(iii) continues to explain, however, that a state is not required to use all such data and information where the state provides a

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		rationale for excluding such data. Section 6.1.1 of the Listing Policy also requires the Water Boards to actively solicit all readily available data and information. Section 6.1.1 defines "all readily available data and information" as data and information that can be submitted into the California Environmental Data Exchange Network ("CEDEN") or its successor database, as directed in the notice of solicitation. Accordingly, to administer the listing process, the Water Boards must review data and information submitted to CEDEN or its successor database. Data that cannot be submitted to CEDEN can be submitted to the Water Boards per the instructions provided in the Data Solicitation Notice. In developing the 2020-2022 Integrated Report, all readily available data submitted per the Revised May 7, 2019 Data Solicitation Notice requirements were assembled and considered. Finally, the commenter is familiar with the decision issued by the Sacramento Superior Court, in the legal action in which three of the Keepers are parties (Case No. 34-2017-80002726). The settlement agreement for that case specifically recognized that the State Water Board would be using the three-region approach for both the 2020-2022 and 2024 cycles.
003.08	The State Water Board Must Ensure Timely Submission of the Integrated Report to the EPA. The Clean Water Act and Porter-Cologne Act, which incorporates the requirements of the Clean Water Act, mandate completion of 303(d) and 305(b) reports every two years by April 1 of even-numbered years. We are encouraged to see that the California State Water Board is nearing	Comment noted. The Water Boards have devoted unprecedented resources in furtherance of meeting the April 1, 2022 deadline for the 2020-2022 Integrated Report.

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	compliance with future Integrated Report deadlines as in accordance with the Earth Law Center et. al. v. State Water Resources Control Board ruling on the matter.	

003.09	E. The State Water Board Must Update Region 9 Listing Recommendations for Buena Vista Creek, Los Penasquitos Lagoon, Otay River, and San Elijo Lagoon.
	
	Finally, the following waterbodies in Region 9 failed to reflect the most current data, resulting in inaccurate non-listing in the Draft Integrated Report.
	
	• Buena Vista Creek. While the Draft Integrated Report added several pollutants, it nonetheless failed to properly include Nitrate (dissolved). Data provided by San Diego Coastkeeper showed 48 of 135 samples for Nitrate (dissolved) were over the water quality objective of 1.0 mg/L, demonstrating impairment.
	• Los Penasquitos Lagoon. The Draft Integrated Report failed to include Phosphorus and bacteria, using Enterococcus as the indicator for bacteria impairment. Data provided by San Diego Coastkeeper, however, showed that 50 of 167 samples exceed the water quality objective of 0.1 mg/L for Phosphorus, and 76 of 109 samples exceed the new standard for Enterococcus.
	• Otay River. The Draft Integrated Report failed to properly include Nitrate (dissolved) for the Otay River. Data provided by San Diego Coastkeeper, however, showed 80 of 136 samples for Nitrate (dissolved) were over the water quality objective of 1.0 mg/L, demonstrating impairment.
		Nitrate and phosphorus data were assessed for all waterbodies mentioned. Below are listing recommendations that were revised based on incorporation of the San Diego Coastkeeper Alliance data.
		
		• Buena Vista Creek:
		  ○ Decision ID 132038 for nitrogen – “List”
		• Otay River:
		  ○ Decision ID 132051 for nitrogen – “List”
		• San Elijo Lagoon:
		  ○ Decision ID #132052 for phosphorus – “List”
		
		The following waterbody listing recommendations were not revised:
		
		• Los Penasquitos Lagoon – phosphorus data for station LPQ-10 are all below the method detection limit (MDL), and therefore, were not counted as exceedances per Listing Policy Section 6.1.5.5.
		• Los Penasquitos Lagoon – bacteria data for station LPQ-10, located at the lagoon mouth, lacked corresponding geographic datum information and therefore were unable to be mapped and were not used to make listing recommendations. If datum information is submitted, the enterococcus data will be assessed during a future cycle.

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	• San Elijo Lagoon. The Draft Integrated Report failed to include Phosphorus. Data provided by San Diego Coastkeeper, however, showed that 47 of 86 samples for Phosphorus (dissolved) exceeded the water quality objective of 0.1 mg/L.	Bacteria data for station LPQ-20 appear in Decision ID 127879 (Carmel Valley Creek), and data for stations LPQ-30 and LPQ-40 appear in Decision ID 127888 (Los Penasquitos Creek). *E. coli* data were used to assess bacteria water quality in these freshwater stations.
003.10	The State Water Board Must Consider All Readily Available Data and Information, Including Flow Data, and List Waterways as "Impaired" Due to Hydromodification Where Supported by Such Data and Information. The federal Clean Water Act, as implemented into state law by the Porter-Cologne Water Quality Act (Porter-Cologne), requires listing all sources of impairment—including hydrologically-impaired waterways, such as those with low flows. Aside from being required, such listings are good public policy: Why would a state limit the amount of information it releases on impaired waters, information that could help it make better decisions about how to prioritize its resources? Many other states already correctly list hydrologically impaired waters, and so should California (Attachment 1 is a report from Earth Law Center on this subject).[4] In California, hydrologically-impaired waterways should be listed under Category 4C, which is reserved for waterways that are "impaired due to pollution not caused by a pollutant."[5] Footnote 4: For a full legal analysis and description of state practices, see Earth Law Center, "Flow-Impairment Toolkit: Impairment Listings for Low-Flow Waterways under the Clean Water Act" (attachment 1).	Changes to listing recommendations were not made in response to this comment. The commenter is familiar with the decision issued by the Sacramento Superior Court, in the legal action in which three of the Keepers are parties (Case No. 34-2017-80002726), which unequivocally concludes that neither federal or state law requires the State Water Board to include hydrologically impaired waterways in its CWA Section 303(d) list or evaluate data supporting potential hydrological CWA Section 303(d) impairments listings. The court similarly concluded that the State Water Board also has no mandatory duty to characterize hydromodifications in its CWA Section 305(b) report. Further, the settlement agreement in this case explicitly states that "petitioners, on their own behalf and on behalf of their officers and directors, agree not to sue the State Water Board for claims of failure to include hydrologically impaired waterways in the State Water Board's 303(d) lists or 305(b) reports and evaluate data supporting such potential hydrological impairments for the life of the agreement." Section 303(d) of the CWA requires that each state, after establishing its water quality standards, compile a list of waters, referred to as "the Section 303(d) list," that do not

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	Footnote 5: See e.g., U.S. Environmental Protection Agency, "Information Concerning 2016 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions," p. 15 (Aug. 13, 2015).	meet those standards. (33 U.S.C. § 1313(d).) For each water on the Section 303(d) list, the State Water Board must establish total maximum daily loads of certain "pollutants" that the water can sustain without exceeding water quality standards. (33 U.S.C. § 1313(d)(1)(C); see 33 U.S.C. § 1362(6) (defining "pollutant").) In creating its Section 303(d) list, the State Water Board is required to "assemble and evaluate all existing and readily available water quality-related data and information." (40 C.F.R. § 130.7(b)(5).) The relevant data and information include the state's "CWA Section 305(b) report." (Id. § 130.7(b)(5)(i).) The regulations implementing the CWA further provide that the state "shall include a priority ranking for all listed water quality-limited segments still requiring TMDLs," and "shall identify the pollutants causing or expected to cause violations of the applicable water quality standards." (40 CFR § 130.7(b)(4).) The state then must "establish TMDLs for the water quality limited segments identified" in the list, and submit the "list of waters, pollutants causing impairment, and the priority ranking" to the U.S. EPA for approval. (40 CFR § 130.7(c)(1), (d)(1).) The Section 305(b) report is a water quality assessment report regarding all navigable waters within the state that each state must submit to the U.S. EPA pursuant to CWA § 305(b). (33 U.S.C. § 1315(b).) The U.S. EPA compiles, analyzes, and transmits these § 305(b) reports to Congress. (Id. § 1315(b)(2).) In the above-noted superior court case, the court concluded: "Construed in context, the language of the Clean Water Act plainly requires listing only [water quality limited

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		segments] that require a TMDL which, as described above, defines the maximum amount (or "load") of a pollutant that can be discharged into the water. Identifying waters impaired due to hydrological modifications, such as excessive water diversions, simply is not the purpose of the 303(d) list. "The State's Listing Policy implements the listing requirements of Section 303(d) of the Clean Water Act and is consistent with the requirements of the Clean Water Act, U.S. EPA regulations, and the U.S. EPA's guidance. Although some of the California Listing Factors are broadly worded, the expressly-stated purpose of the Listing Policy is to identify "water quality limited segments" where the "water quality standard is not attained; the standards nonattainment is due to toxicity, a pollutant, or pollutants; and remediation of the standards attainment problem requires one or more TMDLs." "Petitioners claim that the 305(b) report is 'broader' than the 303(d) list, but Petitioners have failed to identify any duty for states to describe low flow or hydrological conditions as part of their Integrated Report. At most, the U.S. EPA guidance requires the state to classify segments into 'one or more' of the reporting categories and provides that segments impaired due to lack of adequate flow or stream channelization 'may' be placed in Category 4c. "Moreover, even if Petitioners are correct that the State's obligation under Section 305(b) is broader than Section 303(d), the 305(b) report has much less significance. Section 305(b) merely imposes a reporting requirement. The 305(b) report is not subject to U.S. EPA's review, and

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		the 305(b) report compels no subsequent regulatory action." (Final Ruling on State Water Board's Demurrer to Third Amended Petition, Dec. 8, 2018.) It follows that identifying hydrological impairments, which are "pollution" impairments and not "pollutant" impairments, is beyond the scope of the State Water Board's May 20, 2021 Revised Notice of Opportunity for Public Comment, which only pertains to "pollutant" impairments proposed to be included in the statewide 2020-2022 CWA Section 303(d) list. Although the comments concerning pollution assessments are beyond the scope of the notice, the following responses to each comment provide additional rationale. While other states may rely on other strategies for placing waterbody-pollutant combinations into Category 4c, the State Water Board uses an approach and methodology for Integrated Report assessments that is transparent and empirically justified such that it could be uniformly employed by all of the Regional Water Boards. Furthermore, state law recognizes the connection between flow and water quality. The Legislature specifically identified its intention to "combine the water rights and water pollution and water quality functions of state government to provide for consideration of water pollution and water quality, and availability of unappropriated water whenever applications for appropriation of water are granted or waste discharge requirements or water quality objectives are established" when it created the State Water Board. (Wat. Code, § 174.) The State Water Board has broad authority to consider water quality and pollution when it makes water

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		allocation determinations. (Wat. Code, §1258.) The State Water Board has significant experience both setting and implementing flow criteria through water right actions, including its Bay-Delta Program and its Policy for Maintaining Instream Flows in Northern California Coastal Streams. The State Water Board also has experience setting flow requirements as part of its responsibility to certify that the operation of hydropower facilities subject to Federal Power Act licensing meet water quality standards. The State Water Board has previously recognized that its major rivers are over-allocated and adversely impacted by flow alterations (see, for example, Strategic Plan Update 2008-2012, State Water Resources Control Board, September 2, 2008, p.10). However, the extent of the impact on instream beneficial uses of a stream (such as salmonids) depends on the unique circumstances of each situation and requires knowledge of other factors impacting the physical and biological integrity of the watercourse, including physical impediments to fish passage (dams and culverts, in addition to natural impediments such as waterfalls and landslides), sediment recruitment, the source of the water accreting to the stream (is it cool groundwater or is it warm runoff from open lands), the location and physical effect of diversions relative to habitat, and other factors that affect pollution. Pursuant to the above-cited state law, the State Water Board is expressly required to consider water quality and pollution when making water rights determinations. Neither federal or state law requires the State Water Board to consider water flow requirements or impairments

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		when developing the Integrated Report. The federal statutory directives pursuant to CWA 303(d) and 305(b) require states to report on the water quality necessary to provide for fish, wildlife, recreational opportunities, and other beneficial uses. In fulfilling its reporting obligations pursuant to CWA 303(d) and 305(b), the federal statutes do not expressly require the states to consider flow, pollution, or allocation of water rights, when reporting on standards attainment. Similar to the requirements applicable to a state developing its 303(d) list of impaired waters, placing waters in Category 4c should be done in accordance with a description of the method used for Category 4c placements, the data and information used, and the rationale to support the recommendation. The State Water Board has not established such a methodology. Without a defined methodology for assessing non-pollutant related pollution, the Water Board does not have a consistent and transparent approach to analyzing the extent to which flow-related alterations cause or impact water quality standards. The recommendations made by the State and Regional Water Boards must be based on a methodology that provides all stakeholders with the opportunity to understand exactly how assessment recommendations are made. Listing recommendations must be supported by documentation that explains the analytical approaches used to infer true segment conditions. [See U.S. EPA's 2006 Guidance for Assessment and Listing, p. 29 (explaining what constitutes an assessment methodology and U.S. EPA's review of a state's methodology for consistency with the CWA and a state's water quality standards).]

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		The State Water Board, in coordination with partner agencies, is undertaking various efforts related to the establishment of instream flows for California rivers and streams. In December 2017, the State Water Board adopted the Cannabis Cultivation Policy, which establishes forbearance periods and instream flow requirements for the diversion and use of water for cannabis cultivation. The 2018 Bay-Delta Plan update established flow objectives in the Lower San Joaquin River, which may be implemented through voluntary agreements or other processes in the absence of an approved voluntary agreement. Future updates to the Bay-Delta Plan are focused on flow and water project operations for the Sacramento River, tributaries, and the Delta, which may also include voluntary agreements. Additionally, the State Water Board and the Department of Fish and Wildlife are developing instream flow criteria to support critical habitat for anadromous fish in the South Fork Eel River, Mark West Creek, and Ventura River. State Water Board staff is also working with partner agencies on the California Environmental Flows Framework ("framework") that will help to provide a consistent approach and tools to develop ecological flow criteria for a variety of stream types. Flow criteria developed using the framework and tools may be used as the basis for establishment of flow objectives. The framework was used for the Los Angeles River Flows project. The result of this project is a decision support tool that the Water Boards and stakeholders can use to work together to evaluate different flow scenarios in the

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		LA River and to develop flow management targets to protect specific species, habitats, and beneficial uses. As waterbody-specific flow targets, recommendations and objectives are established, staff will evaluate using them to support Category 4c placements in the 305(b) report.
003.11	Some other states list hydrologically impaired waterways under Category 5 for convenience, and this is also a reasonable approach if California chooses to do so. (See Attachment 2 for examples of both approaches in a variety of states.) Furthermore, Federal regulations state that States must evaluate "all existing and readily available information" in developing their 303(d) lists and prioritizations.[7] Readily available data includes flow data as well as the 305(b) report itself.[8] However, the draft Staff Report seemingly failed to consider data specific to potential hydrological impairments. Significant amounts of readily available data exists that supports the hydrological impairment of numerous California water segments, including the three "on cycle" regions for the 2020-2022 Integrated Report, and this data been completely ignored. Hundreds of water quality impairments already included in California's 2020-2022 303(d) list reference low-flow, hydromodification, or flow alteration/regulation/modification as a "source" for a range of pollutants, such as sedimentation, nutrients, benthic community effects, and temperature.[9] However, the State Water Board's biennial report fails to list low-flow or hydromodification as an independent source of	See response to comments 003.07 and 003.10.

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	impairment, even if it is the actual cause as supported by readily available data and information. Based on legal and public policy justifications such as those discussed in this letter, we ask that the State Water Board to begin the practice of listing appropriate hydrologically impaired waterways. We recommend that the State Water Board begin with those waterways that are undeniably impaired due to hydromodification based on readily available data and information.[10] To assist, below we have included some basic information about waterways evaluated in the 2020-2022 Integrated report. Typically, in conflict with the listing requirements of the CWA that calls for reevaluation of all waters every two years, California evaluates the nine regions by producing an Integrated Report on three regions every six years. Footnote 7: 40 CFR § 130.7(b)(5). Footnote 8: See Thomas v. Jackson, 581 F.3d 658, 661 (citing 40 C.F.R. § 130.7(b)(5)(i)). Footnote 9: State Water Resources Control Board, 2020-2022 California Integrated Report, Appendix A (303(d) List of Impaired Waters). Footnote 10: The State Water Board must consider information submitted by the public. 40 C.F.R. § 130.7(b)(5)(iii) (“At a minimum "all existing and readily available water quality-related data and information" includes but is not limited to all of the existing and readily available data and information about the following categories of waters: Waters for which water quality problems have been reported by local, state, or federal agencies; members of the public; or	

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	academic institutions."). The State Water Board may not legally impose date restrictions on what data is available.	
003.12	In accordance with the California Listing Policy, the 2020-2022 report cycle should have also evaluated the San Francisco, Los Angeles, and Santa Ana regions given that they were last evaluated in the 2014-2016 cycle. However, in violation of their own policy, the California report evaluated one off-cycle region and only evaluated 3 out of the 6 waterways up for reevaluation: the Central Coast Region, the Central Valley Region, and the San Diego Region, as well as the Colorado River Basin. With regards to the evaluated regions, we suggest the below waterways be listed under 4C, and we urge the State Water Board to conduct a comprehensive analysis of all hydrologically impaired waterways in the future beginning with the 2024 Integrated Report. The State Water Board must include the proper, timely identification of all hydrologically impaired waterways in the final Integrated Report, as required by the Clean Water Act. Such information is critical to setting appropriate plans and priorities that will help reverse significant declines in aquatic species.	See response to comments 003.07 and 003.10.
003.13	Central Coast Region: Many Central Coast waterways are severely impaired in their flows to the point that there are no reasonable arguments against their 303(d) listing for altered flow under the 4C Category. These hydrologically impaired waterways include, at minimum, the Salinas River, Carmel River, San Clemente Creek, Big Sur River, and the Santa Maria River.[11] Despite the data stating otherwise, the State	See response to comment 003.10.

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	Water Board has continued to pursue its policy of excluding all Category 4C waterways regardless of strength of support for a listing. The State Water Board must consider all readily available data and information potentially supporting the hydrological impairment of the Salinas River, Carmel River, San Clemente Creek, Big Sur River, and the Santa Maria River, amongst other waterways. Waterways must then be listed as impaired due to hydromodification under Category 4C or 5 where supported by such readily available data and information. Footnote 11: See e.g., Earth Law Center, Comment Letter—303(d) List Portion of the 2014 and 2016 California Integrated Report (July 10, 2017), pp. 16–20, Attachment A (Central Coast: Fish Declines Associated with Hydrologic Impairments in Select Waters), https://bit.ly/2xle9CB.	
003.14	Central Valley Region: Readily available data supports the listing of, at minimum, the San Joaquin River, inflow to the Delta; and the San Francisco Bay-Delta, outflow to the Suisun Bay and San Francisco Bay as flow-impaired.[12] These waterways have experienced significant flow impairments due to water diversion and projects within the region.[13] As a result of these modifications populations of fish and aquatic species have plummeted.[14] As even the State Water Board itself found, "current flows are insufficient to protect public trust resources."[15] The State Water Board must consider all readily available data and information potentially supporting the hydrological impairment of the San Joaquin River and the San Francisco Bay Deltas. Waterways must then be listed as impaired due	See response to comment 003.10.

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	to hydromodification under Category 4C or 5 where supported by such readily available data and information. Footnote 12: See e.g., Earth Law Center, Comment Letter—303(d) List Portion of the 2014 and 2016 California Integrated Report (July 10, 2017), pp. 21–27, Attachment A (Central Valley: Declines in Fish and other Aquatic Species Associated with Hydrologic Impairments in the Delta and other Central Valley Waters), https://bit.ly/2xle9CB. Footnote 13: Id. at pp. 21. Footnote 14: Id. Footnote 15: SWRCB, "Final Report on Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem" (Aug. 3, 2010) (Delta Flow Report), p. 2; at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/final_rpt.shtml.	
003.15	San Diego Region: In 2016, the San Diego Regional Water Board identified over 30 waterways that are suffering from hydrological impairment which requires their listing as 4C or category 5 waterways.[16] These 30 waterways were properly identified in the Region 9's Integrated Report[17] but were later overruled by the State Water Board. Most or all of these waterways continue to be impaired due to hydromodification, as supported by readily available data and information. The State Water Board must consider all readily available data and information supporting the hydrological impairment of the San Diego Region identified in Region 9's integrated	See response to comment 003.10.

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	report, and other waterways. Waterways must then be listed as impaired due to hydromodification under Category 4C or 5 where supported by readily available data and information. Footnote 16: See e.g., Earth Law Center, Comment Letter—303(d) List Portion of the 2014 and 2016 California Integrated Report (July 10, 2017), pp. 1, https://bit.ly/2xle9CB. Footnote 17: See, Clean Water Act Sections 305(b) and 303(d) Integrated Report for the San Diego Region, San Diego Regional Water Quality Control Board, at https://www.waterboards.ca.gov/sandiego/water_issues/programs/303d_list/docs/IR_RB_StaffReport_R9_07-11-16_Clean.pdf.	
003.16	Colorado River Basin Region: In an off-cycle evaluation, the 2020-2022 Integrated Report on this region failed to identify hydrologically impaired waterways. The Colorado River is perhaps the most obvious example of a hydrologically impaired waterway in the United States. At one time, the Colorado River, the world's seventh-longest river, carried water from the Rocky Mountains 1,500 miles south into the Gulf of California. This is no longer the case. The Colorado River now regularly falls about 50 miles short of even reaching the sea because all of its water is diverted for irrigation and domestic uses.[18] Low flows suffered by the Colorado River are going to worsen as climate change is expected to decrease the river's flow up to 20 percent in the next 30 or so years. Dams constructed on the Colorado River also have huge ecological repercussions: Natural habitats have been destroyed, unnatural flow regimes have been created, sediments have become trapped that are essential to the creation of certain riparian habitats, and water	See response to comment 003.10.

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	temperatures have been altered, all of which devastates native fish populations.[19] The Colorado River clearly and unequivocable suffers from hydrological impairment. The State Water Board must consider all readily available data and information potentially supporting the hydrological impairment of the Colorado River and other waterways in the Colorado River Region. Waterways must then be listed as impaired due to hydromodification under Category 4C or 5 where supported by such readily available data and information. Footnote 18: Sarah Zielinski, The Colorado River Runs Dry, SMITHSONIAN INSTITUTION (Oct. 2010), www.smithsonianmag.com/science-nature/the-colorado-river-runs-dry-61427169/. Footnote 19: Kurt Repanshek, Report Raises Concerns Over How Colorado River Basin Dams Impact National Parks, NATIONAL PARKS TRAVELER (May 1, 2011), www.nationalparkstraveler.org/2011/05/report-raises-concerns-over-how-colorado-river-basin-dams-impact-national-parks8019.	
003.17	The State Water Board must include the proper, timely identification of all hydrologically impaired waterways in the final Integrated Report, as required by the Clean Water Act. Such information is critical to setting appropriate plans and priorities that will help reverse significant declines in aquatic species.	See response to comments 003.06 and 003.10.

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003.18	The State Water Board's Must Update its Policy of "Single-Category" Listings, Given it Defies the Clean Water Act and EPA Guidance. Waterways can be listed in multiple listing categories, including both Category 4C and 5. However, in the 2020-2022 Integrated Report, the State Water Board continued to limit the listing of waterbodies by placing them into only "one of five" condition categories.[20] This approach, which has been maintained by the State Water Board since at least the 2012 Integrated Report,[21] is simply incorrect. Consistent with the requirements of sections 303(d) and 305(b) of the Clean Water Act, the U.S. EPA has been quite clear that water bodies can be placed into multiple categories based on impairment, and in fact must be in order to provide the best available information to U.S. EPA and Congress. Footnote 20: 2020-2022 California Integrated Report For Clean Water Act Sections 303(d) and 305(b), pp. 12-13 (2021). Footnote 21: See Final Comment Summary and Responses, Proposed Clean Water Act Section 303(d) List of Water Quality Limited Segments (303(d) List) Portion of the 2012 California Integrated Report, p. 56 (2012), https://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/2012_integrated_rpt_fnl.pdf ("A water body cannot be placed in Category 4C when it is already listed for several other pollutants").	U.S. EPA addressed the placement of waterbody segments into more than one category in their memorandum titled Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act. The document provides the following guidance (pg. 50), "States have the option to place segments into more than one of the five categories when appropriate." Consistent with U.S. EPA guidance, the Water Boards opted to place waterbodies into one category only for the Integrated Report and assessment tools utilized by the Water Boards for the Integrated Report were designed to place waterbody segments into one of the five Integrated Report Condition Categories. However, the Water Boards recognize that there are advantages to placing waterbody segments into more than one category, which would provide the ability to report at a finer detail when some standards are attained and others are not, and the ability to report where waterbodies are impacted by both pollutants and by pollution. The Water Boards have undertaken an effort to improve and modernize the Integrated Report assessment tools with the goal of revising the approach in future Integrated Report cycles. Placing waterbody segments into more than one category is one of the improvements that will be considered.

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003.19	Accordingly, flow impairments should be reflected in Category 4C whether or not there is a pollutant present. Otherwise, the state is conflating the Section 303(d) and 305(b) reports rather than combining them, ignoring its Section 305(b) responsibilities in the process.[23] Footnote 23: 33 U.S.C. §§ 1315(b), 1313(d); 40 C.F.R. §§ 130.7, 130.8.	See response to comment 003.10.
003.20	The 2020-2022 Integrated Report does not meet these mandates.	See response to comment 003.10.
003.21	The State Water Board Does Not Need a Formal Methodology to List Waterways as Hydrologically Impaired Under Category 4C. For the past seven years, the State Water Board failed to take any significant action to develop a methodology for Category 4c waterways, even after this group has shared sample methodologies from other states (see, e.g., Attachment 2). Most, if not all, of the states that identify hydrologic (including flow) impairments make those listing decisions based on best professional judgment and the information before them. Flow standards are not required to be developed first. Even the State Water Board has stated that flow listings could be done "based on staff's professional judgment as well as the evidence submitted by the data," and that they "would likely be mostly narrative . . . unless there are specific numeric targets for flow in place."[28] In other words, the state itself has recognized that flow criteria are not necessary for flow impairment listings.	See response to comment 003.10.

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	Footnote 28: Email from Nicholas Martorano, SWRCB to SWRCB/RWRCB staff (July 22, 2013) (available upon request).	
003.22	Finally, if the State Water Board actually believes that it needs a methodology to list pollution impairments under Category 4C, it should have developed one. Yet it has not even started to develop such a methodology despite arguing that it is necessary since at least the 2012 Integrated Report.[30] Earth Law Center has provided the State Water Board with detailed information about how other states list waterways as hydrologically impaired, which should be sufficient for the listing of at least the clearest instances of impairment due to hydromodification. We ask the State Water Board to fulfill its listing obligations under the Clean Water Act by recognizing and listing hydrologically impaired waterways. Footnote 30: See Final Comment Summary and Responses, Proposed Clean Water Act Section 303(d) List of Water Quality Limited Segments (303(d) List) Portion of the 2012 California Integrated Report (2012), https://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/2012_integrated_rpt_fnl.pdf.	See response to comment 003.10.
003.23	The State Water Board Must Retract its Recommendation to Remove the Ballona Creek Wetlands from Category 4C. Lastly, within the Draft 2020-2022 Integrated Report, the State Water Board announced the removal of one of the only Category 4C waters, bringing the total from four protected	Changes to listing recommendations were not made in response to this comment. The recategorization of the Ballona Creek Wetlands from condition category 4c to category 4a is not a new recommendation for the 2020-2022 Integrated Report.

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	waterways down to three.[31] We object to the removal of the Ballona Creek Wetlands from protection under 303(d). The Ballona Creek Wetlands were previously listed under Category 4C due to hydromodification and the Los Angeles Regional Water Quality Control Board recommended that for the 2020-2022 cycle the wetlands be moved to Category 4a; instead, the State Water Board delisted the waterbody altogether. Footnote 31: 2020–2022 California Integrated Report, Table 9-1: Count of Waterbodies in 305(b) Integrated Report Condition Categories—Streams and Rivers, pg 81 https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/2020_2022_integrated_report/draft2020_ 2022_ir_staffreport.pdf.	The decision to reverse the original listing was included in the 2016 Integrated Report and approved by the U.S. EPA on April 6, 2018. The original listing for Ballona Creek Wetlands for hydromodification as described in Decision ID 100011 was flawed because hydromodification is not a pollutant but rather falls under the definition of pollution. Because the original basis for the recommendation cannot be determined and no new information has become available, the listing for hydromodification was removed from the Clean Water Act Section 303(d) List. See the response to comment 003.10 for additional justification for not placing a waterbody for hydromodification on the 303(d) list. However, the Ballona Creek Wetlands Sediment and Invasive Exotic Vegetation TMDL was approved by the U.S. EPA on March 26, 2012, and the resulting actions are expected to address the impacts related to pollution. Therefore, the waterbody as a whole was placed within Category 4a. Additionally, the Ballona Creek Wetlands are still listed under Category 5 for Exotic Vegetation, Habitat Alterations, Reduced Tidal Flushing and Trash. Finally, there are 4 waterbodies listed under Category 4c as shown in Staff Report tables 9-1 and 9-2 and Appendix C4c: Category 4c Waterbody Segments.

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003.24	The State Water Board Must Update its Bacteria Delisting Recommendations Based on Current Data and Analysis as Required by the Listing Policy.	Changes to listing recommendations were not made in response to this comment. State Water Board staff used the most readily available data when evaluating water bodies for the 2020-2022 Integrated Report. The State Water Board acknowledges that the historical levels of indicator bacteria in the waterbody may be a poor indicator of current risks to human health, particularly when more recent data are available to sufficiently assess the water quality standard. Historical indicator bacteria data collected prior to 2010 were evaluated pursuant to these considerations and were not used to assess water quality standards attainment when more recent data were sufficient to make a listing recommendation. However, when new data are not available, State Water Board staff evaluated the available historical data in order to make a recommendation. Also, see principal response 4.4 for Data and Analysis Transparency, and Readily Available Data.
003.25	[U]pon the adoption of the Ocean Plan Amendment, the California Ocean Plan would contain two water quality objectives for ocean waters: enterococci (based on U.S. EPA's 2012 Recreational Criteria) and fecal coliform (established in 2005). While these objectives supersede the fecal coliform freshwater water quality objective for water contact recreation, delisting these waterbodies is not de facto. Lines of evidence must be considered to assess the pollutant and non-contact	Section 4 of the Listing Policy allows the State Water Board to delist a waterbody "if objectives or standards have been revised and the site or water meets water quality standards." The water contact recreation ("REC-1") threshold in the Water Quality Control Plan for Ocean Waters ("Ocean Plan") for total coliform was eliminated as part of the 2019 Amendment. All past REC-1 lines of evidence based solely on total coliform were retired. Listing recommendations for ocean waters were based on

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	recreation use, and evidence must be provided that demonstrates that water quality objectives are not exceeded for fecal coliform.	the updated objective for enterococci and the objective for fecal coliform.
003.26	Delisting waterbodies without sufficient data or proper analysis provides the public with a false depiction of the perceived health and quality of California's waterbodies.	See principal response 4.4 for Data and Analysis Transparency, and Readily Available Data.
003.27	The Draft Integrated Report proposes to delist 145 waterbodies pursuant the new bacteria objectives, however, the analysis conducted to delist a number of the proposed waterbodies is inadequate. The Listing Policy is clear that where objectives or standards have been revised, "[t]he listing of a segment shall be reevaluated if the water quality standard has been changed."[36] The data accompanying a number of the delisting recommendations for bacteria, however, fail to demonstrate that these water bodies were adequately reevaluated with up-to-date data or otherwise fail to accurately depict the current condition of the waterway, despite the recognition that historic data may not give an accurate depiction of water quality and the risk posed to human health in the Staff Report for the Draft Integrated Report. For example, Alamo Creek in Region 3 is recommended to be delisted for fecal coliform, yet relies entirely on data that was collected between thirteen and twenty-one years ago to determine whether the waterbody is in compliance with the water quality objective for non-contact recreation. We urge that all potential delisting recommendations for bacteria be based on data collected in 2010 or later, given that data	Changes to listing recommendations were not made in response to this comment. Alamo Creek is recommended for delisting due to a change in water quality standards. Section 4 of the Listing Policy allows the State Water Board to delist a waterbody "if objectives or standards have been revised and the site or water meets water quality standards." The State Water Board's Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California ("ISWEBE Plan") contains two bacteria water quality objectives applicable to the water contact recreation ("REC-1") beneficial use which were adopted in 2019: where the salinity level of a waterbody is equal to or less than 1 part per thousand 95 percent or more of the time, the *E. coli* bacteria objective applies; and where the salinity level of a waterbody is greater than 1 part per thousand 95 percent or more of the time, the enterococci bacteria objective applies. These objectives superseded the previous fecal coliform water quality objective for water contact recreation. Consequently, the fecal coliform objective for water contact recreation is no longer applicable to Alamo Creek and those lines of evidence were removed.

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	collected prior to 2010 is not adequate to assess whether the site or waters actually attained water quality standards. Footnote 36: Listing Policy at p. 11.	However, the non-contact recreation ("REC-2") water quality objective from the Central Coast Region's Basin Plan remains applicable. The Water Quality Control Plan for the Central Coastal Basin defines the REC-2 water quality objective as "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 2000/100 mL, nor shall more than ten percent of samples collected during any 30-day period exceed 4000/100 mL." State Water Board staff assessed two lines of evidence for fecal coliform and the REC-2 beneficial use. Data collected from prior to 2010 for Alamo Creek were assessed. New data were not available for this waterbody. Therefore, staff evaluated the most readily available data when assessing the REC-2 beneficial use. In the absence of post-2010 data, data prior to 2010 is assessed to make a recommendation as discussed in the response to comment 003.24. Additionally, this waterbody is recommended for placement in Category 4a as "Being Addressed" in accordance with Section 2.2 of the Listing Policy. The Santa Maria River Watershed Fecal Indicator Bacteria TMDL approved by the Regional Water Quality Board and U.S. EPA in 2013 is expected to result in attainment of water quality standards.
003.28	Requested Language 2.5 Pollutant Assessment Methods	Changes to listing recommendations were not made in response to this comment nor were revisions made to the Staff Report. See response to comment 003.24.

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	2.5.1 Bacteria A. Data Reassessments for REC-1 Waters (p. 28) Therefore, historic indicator bacteria data collected prior to 2010, ~~were evaluated pursuant to these considerations and~~ were not used to assess water quality standards attainment ~~when more recent data were sufficient to make a listing recommendation.~~	Also, see principal response 4.4 for Data and Analysis Transparency, and Readily Available Data.
003.29	Meanwhile, the delisting analysis conducted for some waterbodies in the Draft Integrated Report was erroneous. The Listing Policy requires that a minimum of 26 samples be conducted to determine whether a water segment may be removed from the 303(d) list, pursuant Table 4.2. Alisal Creek in Region 3, however, is recommended to be delisted based solely on six samples – three of which demonstrated an exceedance of the water quality objective for non-contact recreation – which is insufficient to determine if a beneficial use is supported. The State Water Board erroneously relied on the sample size required for listing a waterbody under Table 3.2 of the Listing Policy, rather than conducting the proper delisting analysis as required under section 4 of the Listing Policy. Similarly, delisting recommendations in Region 9 relied on a listing analysis under section 3 of the Listing Policy, rather than conducting the requisite delisting analysis under section 4 of the Listing Policy. For example, the staff recommendation to delist Mission Bay Shoreline at Sail Bay for Indicator Bacteria relies on seven samples for Enterococci, rather than	Changes to listing recommendations were not made in response to this comment. Alisal Creek is recommended for delisting due to a change in water quality standards. The non-contact recreation ("REC-2") beneficial use was not used to support delisting because the sample size was found to be insufficient to determine the applicable support rating. Section 4 of the Listing Policy allows the State Water Board to delist a waterbody "if objectives or standards have been revised and the site or water meets water quality standards." The State Water Board's Bacteria Provisions water quality control plan amendment contains two bacteria water quality objectives applicable to the water contact recreation ("REC-1") beneficial use, which were adopted in 2019: where the salinity level of a waterbody is equal to or less than 1 part per thousand 95 percent or more of the time, the *E. coli* bacteria objective applies; and where the salinity level of a waterbody is greater than 1 part per thousand 95 percent or more of the time, the enterococci bacteria objective applies.

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	the requisite 26 samples to support a delisting recommendation.[38] These are only a sample of the erroneous analysis used to reach the staff recommendation that various waterbody segments be delisted for bacteria. We urge the State Water Board to ensure a proper and accurate delisting analysis be conducted, using (1) data collected within the last 10 years; and (2) the proper binomial sample size to delist, rather than the binomial sample size to list a waterbody. Otherwise, the Water Boards cannot sufficiently recommend that a waterbody be delisted, without demonstrating that site or waterbody meets water quality standards. Footnote 38: Listing Policy at p .15 (Table 4.2 "TABLE 4.2: MAXIMUM NUMBER OF MEASURED EXCEEDANCES ALLOWED TO REMOVE A WATER SEGMENT FROM THE SECTION 303(D) LIST FOR CONVENTIONAL OR OTHER POLLUTANTS").	These objectives superseded the previous fecal coliform water quality objective for REC-1. Consequently, the fecal coliform objective for REC-1 is no longer applicable to Alisal Creek and those lines of evidence ("LOEs") were removed. However, the REC-2 water quality objective from the Central Coast Region's Basin Plan remains applicable. Staff assessed one LOE where three of the six samples exceeded the REC-2 water quality objective for fecal coliform. The previous listing for fecal coliform in Alisal Creek was based on the now removed REC-1 LOEs. Therefore, assessment of fecal coliform data for REC-2 was conducted as though Alisal Creek was not impaired for bacteria, and the listing factors of Section 3.2 of the Listing Policy were applied. In other words, fecal coliform data were assessed to determine if Alisal Creek should be "listed" or "not listed" for REC-2. Table 3.2 in the Listing Policy requires a minimum sample size of five with a minimum exceedance count of five. With a sample size of six and an exceedance count of three, Alisal Creek does not fulfill the minimum exceedance requirements for listing. The final use rating for REC-2 (non-contact recreation) is listed as "insufficient information." Water Board staff concluded that the waterbody should not be placed on the 303(d) list. In accordance with Section 4.2 of the Listing Policy, there is sufficient justification to delist this waterbody because a TMDL has been completed and approved by the Central Coast Regional Water Quality Control Board and the U.S. EPA, which has resulted in attainment of the standard.

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		Mission Bay Shoreline, at Sail Bay is recommended for delisting due to a change in water quality standards. The State Water Board's ISWEBE Plan contains two bacteria water quality objectives applicable to the REC-1 beneficial use. Because the salinity level of this waterbody is greater than 1 part per thousand more than 5 percent of the time, the enterococci bacteria objective applies. State Water Board staff evaluated the most recent post-2010 data available to make a recommendation for Mission Bay Shoreline, at Sail Bay. Staff assessed one line of evidence where one of seven samples exceeded the geomean threshold for enterococcus. In the 2018 listing cycle, this waterbody-pollutant combination was delisted from the 303(d) list. For the 2020-2022 listing cycle, enterococci data were assessed using Section 3.3 of the Listing Policy, which references use of the listing Table 3.2. The final use rating for REC-1 is listed as "Fully Supporting." Water Board staff concluded that the waterbody should not be placed on the 303(d) list for the 2020-2022 listing cycle because applicable water quality standards for the pollutant are not being exceeded.
003.30	Additionally, the Draft Integrated Report provides incorrect rationale for certain delistings. For example, various shoreline segments in Region 9 were delisted for bacteria due to "change in assessment."[39] However, upon reviewing the lines of evidence, and speaking with Region 9 staff, these segments were delisted due to "water quality attainment." The rationale for delisting should accurately reflect the change due to "water quality attainment," only if the proper	Changes to listing recommendations were not made in response to this comment. The commenter did not provide the specific listing recommendations they referred to as having incorrect rationale. If the commenter provides that information, Water Board staff can assess the reason for delisting those waterbodies and update accordingly.

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	analysis and sample size threshold is used pursuant section 4 of the Listing Policy. Footnote 39: 2020–2022 California Integrated Report for Clean Water Act Sections 303(d) and 305(b), p. 72 (2021).	For information on the Water Board's bacteria assessment methods, see the Draft Staff Report Section 2.5.1. Additionally, see principal response 4 for Data and Analysis Transparency, and Readily Available Data.
003.31	Finally, as permittees implement the new bacteria requirements, the State and Regional Water Boards need to ensure that MS4 permittees are sampling for the correct indicator bacteria using the proper method of analysis to inform compliance with water quality objectives and to inform future iterations of the Integrated Report.	This comment is outside the scope of comments to be accepted on the Draft 2020-2022 303(d) list and Draft Staff Report. However, the comment is noted and the Water Boards continue to work across the Integrated Report, standards/basin planning, and permitting programs to ensure consistency as appropriate and to ensure receiving water data collected by permittees are used for Integrated Report assessments where possible.
003.32	We support the Water Boards appropriate approach to list waterbodies degraded by agricultural pesticides in the Draft Integrated Report by requiring that the impairment be addressed by Total Maximum Daly Loads (TMDLs) already in place or that TMDLs be developed for newly listed waterbodies.	Comment noted.
003.33	In cases where the listed pollutant is already covered by an established TMDL for a given waterbody, developing a unique TMDL may not provide as substantial value, and as such may not require the development of a new TMDL. On the other hand, where an existing TMDL does not cover the new 303(d) listing, the Water Boards must not rely entirely on regional Irrigated Lands Regulatory Programs (ILRPs) to achieve water quality standards. Rather, TMDLs must be developed	Waterbodies that are identified as impaired are addressed in accordance with Resolution 2005-0050, the Water Quality Control Policy for Addressing Impaired Waters: Regulatory Structure and Options (Impaired Waters Policy). This can include the use of a traditional TMDL if warranted. But there are other options, too. In some cases, the Regional Board may include specific requirements for its ILRP dischargers in non-TMDL rulemakings (see, e.g., the Central Valley Regional Water

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	to support ILRP programs. Indeed, regional ILRPs are designed to work alongside TMDLs, not to replace them.[40] Ongoing TMDL development for impaired surface waters degraded by agricultural pesticide use will provide significant value to regional ILRP programs, which are "iterative" by design.[41] Footnote 40: R5-2012-0116-09 Waste Discharge Requirements General Order for Growers within the Eastern San Joaquin River Watershed that are Members of a Third-Party Group (February 2020 revision), at p. 12, ¶ 39 ("Other water quality efforts conducted pursuant to state and federal law directly or indirectly serve to reduce waste discharges from irrigated lands to waters of the state. Those efforts will continue and will be supported by implementation of this Order."). Footnote 41: See Order WQ 2018-0002 In the Matter of Review of Waste Discharge Requirements General Order No. R5-2012-0116 for Growers Within the Eastern San Joaquin River Watershed that are Members of the Third-Party Group. at p. 29.	Board's Pyrethroid discharge control program, Resolution R5-2017-0057). Otherwise, the Central Valley Regional Water Board has determined that its ILRP waste discharge requirements will be the vehicle for implementing current and future TMDLs for agricultural dischargers. For example, the Eastern San Joaquin River Watershed ILRP waste discharge requirements contain the following statement: "The Central Valley Regional Water Board is currently developing a pesticide TMDL and organochlorine pesticide TMDL, among others in development. This Order will implement these and other future TMDLs to the extent there are established requirements that pertain to irrigated agriculture, as well as the following approved TMDLs: San Joaquin River Deep Water Ship Channel dissolved oxygen; San Joaquin River salt, boron, selenium, diazinon, and chlorpyrifos." (R5-2012-0016-10, Finding 44.)
003.34	Consequently, we urge that listings for agricultural pesticides be moved from the "being addressed by action other than TMDL" list to the "TMDL required" list to best support ongoing implementation of ILRP programs, as an important step to maintain consistency with its intent and mandate of ILRP programs – such as Region Five's specific order, including new listings for pyrethroids in Dry Creek[42] and bifenthrin for Duck Slough.[43]	Changes to listing recommendations were not made in response to this comment. See principal response 2.4 and response to individual comment 003.33.

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	Footnote 42: Draft Integrated Report, Region 5, Decision 118198. Footnote 43: Draft Integrated Report, Region 5, Decision 118605.	
003.35	In sum, we urge the State Water Board to ensure current data is used to update the Integrated Report and make listing and delisting recommendations statewide on a biannual basis in order to accurately reflect actual water quality conditions statewide.	See principal response 4.4 for Data and Analysis Transparency, and Readily Available Data.
003.36	We further urge the State Water Board to follow the lead of the numerous other arid states, other regions, and the U.S. EPA directives in identifying flow- and otherwise hydrologically- impaired waters in the Integrated Report where supported by readily available data.	See response to comment 003.10.
003.37	We also ask that the State Water Board ensure that all delisting recommendations for bacteria be based on current data, collected within the past 10 years, and the analysis for potential delistings be done in accordance with the sampling requirements of section 4 the Listing Policy.	Changes to listing recommendations were not made in response to this comment. See response to comment 003.24 for more information on relevant data. Also, see principal response 4.4 for Data and Analysis Transparency, and Readily Available Data. The delist recommendations that the commenter refers to are supported by Section 4 of the Listing Policy, which states that “If objectives or standards have been revised and the site or water meets water quality standards, the water segment shall be removed from the Section 303(d)

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		list. The listing of a segment shall be reevaluated if the water quality standard has been changed." For inland surface waters, enclosed bays, estuaries, and lagoons, this is the first Integrated Report cycle for which fecal coliform is no longer considered a valid statewide water quality objective nor used as an indicator for assessing support of the REC-1 beneficial use. For, fecal coliform LOEs from prior cycles were not transferred to the 2020-2022 cycle. Additionally, past assessments did not distinguish between inland freshwater and inland saline water. All inland saline water assessments included all indicator bacteria data available (i.e., total coliform, fecal coliform, *E. coli*, enterococci), gave equal preference to geometric mean and statistical threshold value and used water quality thresholds from various references. The updated bacteria objectives in the ISWEBE Plan, adopted in 2019, supersede most other water quality objectives associated with the REC-1 use. For ocean waters, the REC-1 threshold for total coliform was eliminated as part of the 2019 updated bacteria objectives. As a result, no new total coliform data were assessed for REC-1 in ocean waters. All past REC-1 LOEs based solely on total coliform were retired. Listing recommendations were based on the updated objective for enterococci and the objective for fecal coliform. Delist recommendations were made pursuant to Section 4.3 of the Listing Policy. Section 3.3 was applied if the waterbody had not previously been listed.

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003.38	Finally, we encourage all listings for agricultural pesticides be addressed by TMDLs, where an applicable TMDL applies.	Comment noted. Additionally, see response to comments 003.33 and 003.34.

Letter 4: Roberta Firoved, California Rice

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004.01	The California Rice Commission (CRC) appreciates the opportunity to provide comments on the Draft 2020-2022 California Integrated Report (Clean Water Act Section 303(d) List and 305(b) Report) (hereafter referred to collectively as the "Draft Integrated Report"). Specifically, we provide comments on the listing for propanil at Butte Slough based on data from the Rice Pesticides Monitoring program and request that Butte Slough be de-listed for propanil.	See response to comment 004.02.
004.02	CRC disagrees with the Draft Integrated Report, which indicates that Butte Slough should not be de-listed for propanil. In summary, the Fact Sheet for Decision Identification 116404 states that 4 of 36 samples exceed applicable evaluation guidelines. However, upon closer review of the information, it appears that two different evaluation guidelines were used and applied to the data in question. For the 2007 through 2009 data, an evaluation guideline of .5 ug/L was used while for the 2011 through 2016 data an evaluation guideline of 9.1 ug/L was used, which is the chronic value to protect fish from the U.S. EPA as a benchmark. The data should all be evaluated against the U.S EPA benchmark of 9.1 ug/L. When the data is evaluated	The data from 2007 through 2009 has been reassessed according to the aquatic life benchmark for propanil of 9.1 ug/L. Upon reassessment, the listing recommendation for Decision ID 116404 has been revised from "Do not Delist" to "Delist".

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	accordingly, there is only 1 data point that exceeds the U.S. EPA benchmark, which qualifies Butte Slough for being delisted for propanil. Thus, Butte Slough should be de-listed for propanil.	
004.03	At the very least, the category for this listing should be changed to category 4b because another regulatory program is reasonably expected to result in attainment of the water quality standard. In fact, the CRC's efforts through its Rice Pesticide program and irrigated lands program have already addressed the issue as noted above.	See response to comment 004.02. Since the waterbody is no longer listed as impaired, placing the waterbody into Category 4b is not necessary.

Letter 5: Richard McHenry, California Sportfishing Protection Alliance

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005.01	There does not appear to be any information in the report that unsampled waterbodies have been identified and included in category 2. To the contrary, Appendix C2: Category 2 Waterbody Segments, contains a list of "pollutant assessed" and concludes that: "water quality information that is insufficient to determine an appropriate decision recommendation…" Appendix C2 contains a list of "pollutant(s) assessed" for each of the category 2 listed waterbodies. There are no category 2 "unsampled" waterbodies listed in Appendix C2.	See response to comment 005.02.
005.02	Any surface water that has not been sampled would appear to be included in category 2, hence there is insufficient information. The list of Category 2 waterbodies is not	Section 6.1.1 of the Listing Policy requires the Water Boards to solicit all readily available data and information. In developing the 2020-2022 Integrated Report, all readily

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	complete without listing “unsampled” waterbodies. It also seems impossible to the overall condition of aquatic resources as required by the CWA 305(b) without a complete assessment of waterbodies that have not been sampled.	available data submitted per the requirements of the May 7, 2019 Revised Data Solicitation Notice were assembled and evaluated. The Water Board’s process for waterbody categorization differs from that of the U.S. EPA and does not currently align with U.S. EPA guidance. The Water Board is considering options to revise the state’s categorization scheme in the future. Currently, category 2 is based on the assessment of all available data collected in that waterbody and that waterbody’s ability to support beneficial use(s). The State Water Board cannot currently categorize waterbodies for which samples have not been collected because the data systems used to map waterbodies for the Integrated Report do not currently have the capability to map and categorize waterbodies that have not received data submissions. Due to the benefits of mapping all waterbodies with or without data and reporting comprehensively where there are unknowns due to lack of data, efforts are underway to improve the mapping of waterbodies in future cycles. In order to report on waterbody segments for which no data are readily available, all waterbody segments in the state will need to be incorporated into the existing waterbody segments map maintained for the Integrated Report. For example, an estimated 50 percent of streams have not been mapped as Integrated Report waterbodies because no readily available data are available for assessment in those segments. Newly mapped waterbody segments will need to be named and indexed consistently with the current Integrated Report waterbodies map to ensure the resulting LOEs and

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		decisions will meet Listing Policy spatial representativeness requirements and accurately reflect the extent of waterbody standards attainment or non-attainment. In the 2020-2022 Integrated Report cycle, staff did evaluate approximately 3,246 waterbodies and developed lines of evidence for approximately 53,187 waterbody-pollutant combinations.
005.03	Many of the listed water bodies have been sampled for a minimum number of constituents, not all relevant regulated constituents. The list of water bodies in Category 2 should be expanded to include all water bodies that do not have comprehensive sampling for all relevant impairing pollutants.	See response to comment 005.02.
005.04	As is cited in the above paragraph, discharge limitations have been removed from NPDES permits based on the fact that the receiving water in not listed as impaired on the 303d list. The missing information is that the receiving stream may have never been sampled for the subject constituent. For a specific example, this language was used to relax limitations for nitrate, BOD and TSS, none of which had been quantified in the receiving stream and an Antidegradation analysis had not been completed. Inclusion of unsampled or incompletely sampled streams in Category No. 2 would prevent currently allowed backsliding in NPDES permits.	The more appropriate venue to comment upon discharge limitations is during the development or revision of a waste discharge permit. The 303(d) list is not a rulemaking process and there is no direct regulatory effect. The listing of a waterbody-pollutant combination as impaired results in the development of a TMDL or alternative for the listed waterbody-pollutant combination. The TMDL, alternative restoration program, or subsequent permit are the forum for considering sources and requirements. Additionally, the inclusion of a waterbody in Category 2 would not necessarily prevent a Water Board from issuing a permit without effluent or receiving water limitations. The fact that a waterbody is not listed does not necessary mean that the waterbody has assimilative capacity for a

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		pollutant in the area of the discharge. The converse is also true. The Water Boards have the discretion to determine permit requirements, including limitations, based on the information associated with the discharge and the receiving waterbody beyond the Integrated Report. Also, see response to comment 005.02.
005.05	In assessing the overall quality of water in California, the public could relate to miles and acres of impaired waters much more than just the total number of waterbodies in each category. For example; stating that the Feather River, Middle Fork Sierra Valley to Lake Oroville (80.5 miles, 303 list apx_a_303d (2)) is of much greater significance that stating that one more water body is added as impaired for unknown toxicity. Both sets of data are presented, however the data in miles and acres is in the appendices and would have to be calculated by the reader. Presenting the data in relatable terms provides greater transparency from the regulatory agency responsible for protection of California's water quality.	Comment noted. See principal response 4.3 for information on the draft mapping visualization tool for the 2020-2022 Integrated Report.
005.06	The Integrated Report states that: "Data collection locations deemed not representative of ambient conditions (e.g., storm drain outfalls, effluent discharge, etc.) were not further considered." The term ambient may be misleading in this instance; many waterbodies in California receive storm, industrial and municipal wastewater discharges. For example, in the Central Valley, dozens of wastewater/stormwater discharges ultimately flow downstream to the Sacramento River. The percent of wastewater/stormwater in the Sacramento River has not been	The Staff Report was revised to clarify that data collection locations deemed to be effluent discharges (i.e., storm drain outfalls, wastewater effluent discharge, etc.) were not further considered nor used to make listing recommendations.

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	calculated. At what point is the Sacramento River water considered "ambient"? What criteria were used to determine that "ambient" conditions are being met in sampled waterbodies for 303d assessment?	
005.07	Many NPDES permits contain mixing zones for individual constituents based solely on modeling. CSPA has requested on numerous occasions that the NPDES permits contain instream sampling to confirm the basis of modeling for mixing zones. Sampling for individual constituents has not been included in NPDES permits to confirm that the mixing zones meet the projected modeling "safe" concentrations. Sampling within a mixing zone for wastewater or stormwater could contain important and relevant information in determining the causes of impairment.	Mixing zones and monitoring requirements in NPDES permits are beyond the scope of the State Water Board's May 20, 2021 Revised Notice of Opportunity for Public Comment, which only pertains to "pollutant" impairments proposed to be included in the 2020-2022 California 303(d) list. The more appropriate venue for these comments is during the development or revision of a waste discharge permit, TMDL, or alternative program of implementation. The listing of a waterbody-pollutant combination as impaired results in the development of a TMDL or alternative for the listed waterbody-pollutant combination. The TMDL, alternative restoration program, or subsequent permit are the forum for considering sources and requirements.
005.08	On April 21, 2020, EPA and the Department of the Army (Army) published the Navigable Waters Protection Rule in the Federal Register to finalize a revised definition of "waters of the United States" under the Clean Water Act. The rule became effective on June 22, 2020, and is currently being implemented by EPA and the Army across the country. Under the final rule, four categories of waters are federally regulated: • The territorial seas and traditional navigable waters, • Perennial and intermittent tributaries to those waters,	On August 30, 2021, the U.S. District Court for the District of Arizona in *Pascua Yaqui Tribe v. U.S. Environmental Protection Agency* vacated the Navigable Waters Protection Rule ("NWPR"). Therefore, the previous WOTUS jurisdictional definitions of the NWPR no longer apply. U.S. EPA has announced plans to adopt a new definition of WOTUS in the future; thus, a detailed investigation to assess WOTUS designation is not warranted at this time. Additionally, the inclusion of a waterbody in this Integrated Report does not preclude the Water Boards

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	• Certain lakes, ponds, and impoundments, and • Wetlands adjacent to jurisdictional waters The final rule also details 12 categories of exclusions, features that are not "waters of the United States," such as features that only contain water in direct response to rainfall (e.g., ephemeral features); groundwater; many ditches; prior converted cropland; and waste treatment systems. The final rule clarifies elements related to the scope of federal Clean Water Act jurisdiction, including: • Providing clarity and consistency by removing the proposed separate categories for jurisdictional ditches and impoundments. • Refining the proposed definition of "typical year," which provides important regional and temporal flexibility and ensures jurisdiction is being accurately determined in times that are not too wet and not too dry. • Defining "adjacent wetlands" as wetlands that are meaningfully connected to other jurisdictional waters, for example, by directly abutting or having regular surface water communication with jurisdictional waters. The proposed 303(d) list and associated California Integrated Report should be amended accordingly.	from deciding in the future that the waterbody does not qualify as a WOTUS. If it is determined that a waterbody is not classified as a WOTUS, the data from that waterbody will not be used to make listing recommendations in subsequent Integrated Report cycles.
005.09	It is assumed that the management practices under the ILRP were deemed unacceptable for control of the newly listed metals.	Changes to listing recommendations were not made in response to this comment. See response to individual comment 003.33.

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005.10	(Staff Report) Page 63 - 6.1.3. Specific Conductivity Assessments for MUN - The comment fails to discuss the beneficial uses of irrigated agriculture and industrial process and service supply. The impacts to the beneficial uses of irrigated agriculture and industrial supply are well documented for specific conductivity. • AGR: For EC, Ayers R.S. and D.W. Westcott, Water Quality for Agriculture, Food and Agriculture Organization of the United Nations – Irrigation and Drainage Paper No. 29, Rev. 1, Rome (1985), levels above 700 mhos/cm will reduce crop yield for sensitive plants. The State Water Resources Control Board's Irrigation with Reclaimed Municipal Waste (July 1984) and McKee and Wolf (1971 Water Quality Criteria), state that waters with TDS above 2,100 mg/l are unsuitable for any irrigation under most conditions. • IND: McKee and Wolf (1971 Water Quality Criteria) lists the limiting TDS concentrations for numerous industrial uses in mg/l; boiler feed water 50-3000, brewing 500-1000, canning 850, general food processing 850 and paper manufacturing 80-500. Beneficial uses other than MUN should be included in the assessment of specific conductivity (EC) impacts. Many industries have installed reverse osmosis (RO) systems as the supply water quality was unacceptable for their processes. This is a clear indication the designated beneficial use is not protected, yet is not 303d listed.	When assessing data for the Integrated Report, the most restrictive or protective threshold is used to ensure all beneficial uses of the waterbody are protected. For example, the threshold for specific conductivity (also called electrical conductivity) for MUN is 900 µS/cm, which is more restrictive than 3,000 µS/cm for the protection of AGR. If MUN is not being protected, then AGR is not protected as well. For total dissolved solids, the threshold for the protection of the MUN beneficial use is 500 mg/L (some site-specific objectives ("SSOs") are set to 250 mg/L). For protection of the AGR beneficial use, the threshold ranges from 500 mg/L to 2,000 mg/L, depending on the Regional Water Board Basin Plan and their SSOs. For protection of the IND beneficial use, the threshold is 500 mg/L, the same as the MUN-protective threshold. Specific conductivity and total dissolved solids can impair other beneficial uses. However, data are assessed to determine impairment of the most restrictive beneficial use (as seen in our Water Quality Goals, https://www.waterboards.ca.gov/water_issues/programs/water_quality_goals/docs/wq_goals_text.pdf) to ensure protection of all beneficial uses.

Letter 6: Karen Cowan, California Stormwater Quality Association

No.	Comment	Response
006.01	COMMENT #1: ENSURE THAT ALL LISTED WATERBODIES ARE WATERS OF THE UNITED STATES (WOTUS) SUBJECT TO THE CLEAN WATER ACT. There are several instances where man-made flood channels or other features (portions of the storm drain system) were listed as newly impaired waterbodies. The listing of these features as impaired waters pursuant to Section 303(d) of the Clean Water Act (CWA) is inappropriate. Notably, as a municipal separate storm sewer system (MS4), the CWA presumptive uses (fishable/swimmable) do not apply, and these channels have no designated beneficial uses, and no applicable water quality objectives within the corresponding Basin Plans. Further, the Staff Report and Fact Sheets for such listings do not contain sufficient basis upon which jurisdiction under the CWA can be substantiated. These channels are not navigable waters as defined by applicable federal regulations (Title 40 of the Code of Federal Regulations at Part 120.2) and should not be classified as tributaries to navigable waters subject to CWA jurisdiction.	See response to comment 005.08 for why the WOTUS definitions in the Navigable Waters Protection Rule no longer apply, and a detailed analysis of the WOTUS status of many waters is not warranted at this time. An MS4 is defined in the federal regulations as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains), owned or operated by a permittee, and designed or used for collecting or conveying runoff. Natural drainages and urban streams are frequently modified and used by municipalities to collect and convey runoff away from development within their jurisdiction. The Water Boards consider many altered natural drainages that are used to convey runoff to be both part of the MS4 and as receiving waters. (See, e.g., Natural Resources Defense Council, Inc. v. County of Los Angeles (9th Cir. 2013) 725 F.3d 1194, 1200, fn. 12.) As described in responses to comments below, Water Board staff did review the identified waterbodies to determine whether it was appropriate to conclude that the waterbody was clearly not a receiving water, such that it also could not be a WOTUS.
006.02	For similar reasons, man-made flood control channels also cannot be deemed a “tributary” to WOTUS, for purposes of CWA jurisdiction.	See response to comment 006.01.

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006.03	Examples of problematic listings include the following: • Unnamed Tributary to Alder Creek (Sacramento County) - Bifenthrin (Decision ID 120667), Fipronil (Decision ID 120663), Fipronil Sulfone (Decision ID 120675), Imidacloprid (Decision ID 120665), and Pyrethroids (Decision ID 120662) - The unnamed tributary is an MS4 structure used to convey residential drainage along a greenbelt prior to draining to stormwater detention ponds upstream of Alder Creek. As such, these sampling locations are part of the MS4 and its associated treatment features. • Pleasant Grove Creek, Unnamed Northern Tributary (from Greywood Circle to Confluence with Pleasant Grove Creek) (multiple Decision IDs) – Samples were collected at three monitoring sites in Dugan Park (Blue Oaks neighborhood, North Roseville), including at least one storm drain. As such, these sampling locations are part of the MS4 and its associated treatment features. • Pleasant Grove Creek, Unnamed Northern Tributary (From Mt Tamalpais Dr to Confluence with Pleasant Grove Creek) (multiple Decision IDs) - The data used to support the multiple, proposed, new listing decisions for this unnamed tributary were collected mainly at City of Roseville storm drain sites which are part of the MS4 and its associated treatment features. • Pleasant Grove Creek, South Branch, Unnamed Southeastern Trib (From East of Sierra View Country Club to Confluence with Pleasant Grove Creek) (multiple Decision IDs) – The data used to support this	See response to comments 005.08, 006.01, and 015.02. Water Board staff reviewed the waterbodies referenced by the commenter and identified two stormwater outfall sites, PGC010 and PGC021. Effluent data are not subject to 303(d) assessments; therefore, Water Board staff removed all stormwater outfalls from consideration and re-evaluated the previous listing recommendations to create new listing recommendations. For the remaining stations associated with the waterbodies referenced, the commenter does not provide sufficient information for the State Water Board to determine with certainty that the waterbodies in question do not qualify as a WOTUS. Water Board staff assessed the remaining readily available data. State Water Board staff reviewed Decision IDs 120667, 120663, 120675, 120665, and 120662, and were unable to determine with certainty that Unnamed Tributary to Alder Creek (Sacramento County) does not qualify as a WOTUS. Therefore, changes were not made to 2020-2022 Integrated Report listing recommendations for Unnamed Tributary to Alder Creek (Sacramento County). State Water Board staff used three stations (PGC010, PGC015, and PGC09) to conduct water quality

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	decision were collected on the grounds of the Sierra View Country Club in the Diamond Oaks neighborhood of Roseville, which is part of the MS4 and its associated treatment features.	assessments for Pleasant Grove Creek, Unnamed Northern Tributary (from Greywood Circle to Confluence with Pleasant Grove Creek). PGC010 is a storm drain outfall. Therefore, State Water Board staff removed all data associated with PGC010 and re-evaluated the remaining data for water quality impairments. Data were available from six stations (PGC019, PGC3, PGC8, PGC25, PGC021, and PGC022) for Pleasant Grove Creek, Unnamed Northern Tributary (from Mt Tamalpais Dr to Confluence with Pleasant Grove Creek). PG0C21 is a storm drain outfall. Therefore, data associated with PGC021 were removed. Data were available from station PGC22 for Pleasant Grove Creek, South Branch, unnamed southeastern tributary (from east of Sierra View Country Club to confluence with Pleasant Grove Cr, South Branch). Water Board staff were unable to determine with certainty that PGC22 is not located in a WOTUS. Details regarding the removal of stormwater outfall sites are available in Appendix U: List of Central Valley Regional Water Board Revised Decisions Associated with Stormwater Outfall Sites in the Proposed Final Staff Report. Appendix U details the deleted LOEs IDs identified by Water Boards staff as stormwater outfall sites and associated decisions and revised listing recommendations. Additionally, Appendix U illustrates the following information:

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		• 2018 Integrated Report cycle listing recommendation • 2020-2022 Integrated Report draft listing recommendation • 2020-2022 Integrated Report revised listing recommendation
006.04	Although we understand these processes, we are requesting that the State Water Board proactively confirm the jurisdiction of waterbodies that are identified by MS4s are part of the storm drain system prior to finalizing the list to ensure that the list is as accurate as possible. CASQA Recommendation: • Ensure that all proposed new waterbodies in the 303(d) List are subject to the CWA and are not portions of the MS4 or agricultural drains/channels. • Confirm the jurisdiction of the waterbodies/locations listed within this comment and modify the list as needed.	See response to comments 005.08 and 006.01.
006.05	For several listings in the Central Valley Region and the San Diego Region, Fact Sheets cite the use of the California Stream Condition Index (CSCI) as the basis for a listing and state “Sites with scores below 0.79 are considered to have exceeded the water quality objective for the aquatic life beneficial use.” These listings are being proposed despite the fact that there is not an established water quality criteria, process or policy to assess benthic community effects throughout the state.	See principal response 3.1 regarding use of the CSCI threshold prior to having a CSCI water quality objective.

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006.06	Additionally, other scientific tools and studies, such as the Algae Stream Condition Index and Bio Integrity Prediction Models, are being developed and there is no direction as to how these tools should be used, if at all, for listing purposes. As a result, there is concern that the proposed listings are premature as they are in advance of policy development, scientific tools, and data interpretation. Specifically, listing water bodies based on the CSCI in the absence of statewide guidance (which is currently under development) will likely result in statewide inconsistency and inappropriate listings. There is also concern about the use of the CSCI within the Central Valley region since there are not an adequate number of reference streams within the Central Valley (to date there is only one reference site that has been established). Thus, the CSCI should not be used as a way to interpret a narrative objective within the Central Valley region at this time. Examples include the following: • Elder Creek (Sacramento County) – Benthic Community Effects (Decision ID 131804); LOE 232159 (one sampling event in 2010) & 232238 (one sampling event in 2017) & 232129 (one sampling event in 2008) & 232174 (one sampling event in 2010). • Laguna Creek (Sacramento County) – Benthic Community Effects (Decision ID 131805); LOE 232143 (one sampling event in 2009) & LOE 232158 (one sampling event in 2010) & LOE 232145 (one sampling event in 2010). • Morrison Creek – Benthic Community Effects (Decision ID 131507); LOE 232206 (one sampling event in 2014) & LOE 232224 (two sampling events in 2016).	Algae data were not assessed for the 2020-2022 Integrated Report and therefore the Algae Stream Condition Index was not applied. See principal response 3.1 regarding use of the CSCI threshold prior to having a CSCI water quality objective. Additionally, see principal response 3.3 regarding the use of the CSCI threshold of 0.79 for Elder Creek, Laguna Creek, and Morrison Creek, which are all located on the floor of the Central Valley. Aliso Creek, Salt Creek (Orange County), San Juan Creek, and Segunda Deshecha waterbodies are located in the San Diego Region. There are many reference sites applicable to the coastal ecological conditions that set appropriate biological expectations for these waterbodies. For more information on how ecological measures are predicted, see principal response 3.2 regarding use of CSCI scores, the selection of the CSCI 0.79 threshold that is based on the 10th percentile of reference sites, and the link to exceedances of pollutants.

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	• Aliso Creek – Benthic Community Effects (Decision ID 125926); LOE 215682 (one sampling event in 2016), LOE 215692 (one sampling event in 2011), LOE 215693 (one sampling event in 2013) & LOE 215681 (one sampling event in 2012). • Salt Creek (Orange County) – Benthic Community Effects (Decision ID 126458) • San Juan Creek – Benthic Community Effects (Decision ID 126462); LOE 80743 (samples collected from 2006-2009), LOE 215841 (one sampling event in 2010), LOE 215839 (one sampling event in 2017), LOE 215633 (one sampling event in 2012), LOE 215840 (one sampling event in 2010), LOE 215634 (one sampling event in 2012) • Segunda Deshecha Creek – Benthic Community Effects (Decision ID 126469); LOE 215880 (one sampling event in 2015) CASQA Recommendation: Do not approve any new benthic community effects listings until the State Water Board has adopted the Biostimulatory Substances Objective and Program to Implement Biological Integrity and identified a process or policy to assess benthic community effects.	
006.07	In the San Diego Region, there are numerous water bodies that have been listed as not attaining a SHEL beneficial use based on a range of one or more problematic criteria: • Use of a water quality objective from the Ocean Plan for SHEL that has been recognized by the State Water	Changes to listing recommendations were not made in response to this comment. See principal response 5 for SHELL Beneficial Uses and Objectives. Additionally, see Section 2.5.2 of the 2020-2022 Integrated Report Staff Report for a revised description of the methodology used to assess attainment of the SHELL objective.

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	Board as outdated (Ocean Plan Triennial Review, December 2019 – Issue H); • Waterbodies are listed even though there are no current or historical functional commercial shellfish fisheries; • Waterbodies are listed even though the recreational shellfish fishery is very limited to non-existent because of limited populations or limited habitat for edible bivalve shellfish; • Waterbodies that are listed even though they are designated Marine Protected Areas (MPA) under state legislation or there are local ordinances in place that do not allow for shellfish harvesting; and / or • The methodology used to assess attainment of the current (but outdated) water quality objective is inconsistent with the methodology described in the Staff Report. Decision IDs impacted include: 127935, 127947, 127957, 127961, 127982, 69555, 76063, 127911, 76517, 127929, 127933, 127939, 127946, 127949, 127981, 127950, 127937 (refer to the County of Orange comment letter, submitted separately, for additional information). CASQA Recommendation: Do not approve any new FIB-based listings for a SHEL beneficial use until the Ocean Plan objective has been updated and the waterbodies have been assessed to determine applicability of the beneficial use (especially for MPAs and/or areas that are subject to local ordinances prohibiting shellfish harvesting).	

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006.08	[T]rigger values were developed to consider the bioavailable fraction associated with particulate organic carbon (POC) and dissolved organic carbon (DOC). All comparisons to triggers must therefore consider the POC and DOC adjustments or otherwise use an approved method to measure filtered pyrethroid concentrations. Examples of listings where one or both of these issues occur include the following: • All new listings / Decision IDs in the Central Coast region used total instead of dissolved concentrations. • Murrieta Creek – Benthic Community Effects (Decision ID 126449); LOE 146333 for Pyrethroids – the Evaluation Guideline Reference is the Central Valley BPA for the Pyrethroid Control Program in addition, it is noted that freely dissolved and total concentrations were used for the analysis. • Murrieta Creek – Pyrethroids (Decision ID 111389); LOE 146333 - the Evaluation Guideline Reference is the Central Valley BPA for the Pyrethroid Control Program in addition, it is noted that freely dissolved and total concentrations were used for the analysis. • San Juan Creek – Bifenthrin (Decision ID 111196); LOE 227741 & LOE 227723 & LOE 140722 & LOE 140621 & LOE 140575 & LOE 140676 & LOE 140524 & LOE 140604 - the Evaluation Guideline Reference is the Central Valley BPA for the Pyrethroid Control Program in addition, it is noted that freely dissolved and total concentrations were used for the analysis. • San Juan Creek – Pyrethroids (Decision ID 111194); LOE 146126 & LOE 146129 & LOE 227998 & LOE 228013 & LOE 146146 & LOE 146299 & LOE 146231 & LOE 146197 - the Evaluation Guideline Reference is	Changes to listing recommendations were not made in response to this comment. See principal response 2.3 for pyrethroids regarding discussion on use of total pyrethroid pesticide concentration data and thresholds for listing recommendations. For pyrethroid pesticide assessments in the Central Valley Region or the San Diego Region, if the freely dissolved concentrations of pyrethroid pesticides were reported or could be calculated, then dissolved concentration values were used. In the absence of freely dissolved concentrations, total concentrations were used. The freely dissolved fraction was calculated using the following equation: $$C_{dissolved} = \frac{C_{total}}{1 + (K_{OC} \times [POC]) + (K_{DOC} \times [DOC])}$$ Where: $C_{dissolved}$ = concentration of a an individual pyrethroid pesticide that is in the freely dissolved phase (ng/L), C_{total} = total concentration of an individual pyrethroid pesticide in water (ng/L), K_{OC} = organic carbon-water partition coefficient for the individual pyrethroid pesticide (L/kg) (See

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	the Central Valley BPA for the Pyrethroid Control Program in addition, it is noted that freely dissolved and total concentrations were used for the analysis.
	• Arcade Creek – Bifentrhin (Decision ID 116035); LOE 186542 - it is noted that freely dissolved and total concentrations were used for the analysis.
	• Arcade Creek – Permethrin (Decision ID 130337); LOE 192957 & 193034 - it is noted that freely dissolved and total concentrations were used for the analysis.
	
	While we understand that the Listing Policy allows significant discretion in assessment, the 303(d) list is utilized in regulatory and permitting actions and therefore has more implications than potential future TMDL development. There is additional discretion in which Category the pollutant-water body combination is placed. Specifically, Category 3 is to be utilized where there is not enough information to determine beneficial use support but there is information that indicates that beneficial uses may be threatened. As the assessment for pyrethroids is based upon a value that requires additional monitoring, not as a determination of impairment, placing any proposed listings in Category 3 (as opposed to Category 5) is more appropriate.
	CASQA Recommendation:
	
	• All proposed listings should be recalculated using the POC and DOC adjustments
	
	• Any listings where the recalculation exceeds the trigger value should be placed on Category 3 for further assessment
		Table IV-Z of R5-2017-0057 for partition coefficients),
		
		[POC] = concentration of particulate organic carbon in the water sample (kg/L), which can be calculated as [POC]=[TOC]-[DOC]. [TOC] represents the concentration of total organic carbon in the water sample (kg/L),
		
		K_{DOC} = dissolved organic carbon-water partition coefficient (L/kg) (See Table IV-Z of R5-2017-0057 for partition coefficients),
		
		[DOC] = concentration of dissolved organic carbon in the sample (kg/L).
		
		Staff reviewed the data references for the LOEs in this comment to confirm pyrethroid pesticide water sample fraction. The following list provides details on the sample fraction for each LOE:
		
		• Murrieta Creek- Benthic Community Effects (Decision ID 126449) and Pyrethroids (Decision ID 111389): LOE 146333
		  ○ Used calculated freely dissolved fraction.
		• San Juan Creek – Bifenthrin (Decision ID 111196): LOEs 227741, 227723, 140722, 140524, 140621, 140676, 140575, 140604 (San Juan Creek - Bifenthrin)
		  ○ Used total fraction since total organic carbon was not available.

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		• San Juan Creek - Pyrethroids (Decision ID 111194): LOEs 146126, 146129, 227998, 228013, 146146, 146299, 146231, 146197
		  ○ Used total fraction since total organic carbon was not available.
		• Arcade Creek – Bifenthrin (Decision ID 116035): LOE 186542
		  ○ Used total fraction since total organic carbon and dissolved organic carbon were not available.
		• Arcade Creek – Permethrin (Decision ID 130337): LOEs 192957 and 193034
		  ○ Used total fraction since total organic carbon and dissolved organic carbon were not available.
		
		Regarding the commenter's concerns for future implications from a 303(d) listing, the 303(d) list is not a rulemaking process and there is no direct regulatory effect. The Integrated Report provides an assessment of surface water data and the 303(d) list identifies waterbodies for which water quality does not attain standards. The listing of a waterbody-pollutant combination as impaired results in the development of a TMDL or alternative for the listed waterbody-pollutant combination. The TMDL, alternative restoration program, or subsequent permit are the forums for considering sources, requirements, and other implications of a listing.
		
		Please see principal response 2.1 regarding use of thresholds for pyrethroids to assess data and recommend a listing, including a listing in Category 5.

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006.09	For several listings, Fact Sheets cite the use of an EPA Office of Pesticide Programs (OPP) Aquatic Life Benchmark as the basis for a listing.	See response to comment 006.10.
006.10	The OPP benchmarks are not appropriate for use as an interpretation of a narrative water quality objective to determine impairments. Rather, they are appropriate to determine the need for further investigation. As such, and as detailed under the comment for pyrethroids, Category 3 is the more appropriate category. Examples include the following: • Arcade Creek – Fipronil Sulfone (Decision ID 116045); LOE 201658 – the Evaluation Guideline Reference is to the OPP Aquatic Life Benchmarks (it should be noted that the link provided in the Fact Sheet does not work). This listing is solely based on the OPP benchmark. • Sacramento River (Sacramento City Marina to Suisun Marsh Wetlands) – Fipronil (Decision ID 121085); LOE 201574 & 189659 & 201603 – the Evaluation Guideline Reference to the OPP Aquatic Life Benchmarks (it should be noted that the link provided in the Fact Sheet does not work). This listing is solely based on the OPP benchmark. • Salt Creek (Orange County) - Benthic Community Effects (Decision ID 126458) and Imidacloprid (Decision ID 115475) – Imidicloprid LOE 184869 the Evaluation Guideline Reference to the OPP Aquatic Life Benchmarks (it should be noted that the link provided in the Fact Sheet does not work). This listing should not be based on the OPP benchmark.	Changes to listing recommendations were not made in response to this comment. Section 6.1.3 of the Listing Policy states that “narrative water quality objectives shall be evaluated using evaluation guidelines” and provides guidance for selection of numeric evaluation guidelines. The requirements specify that the evaluation guidelines must be applicable and protective of the beneficial use, linked to the pollutant under consideration, scientifically-based and peer reviewed, well described, and identify a range above which impacts occur and below which no or few impacts are predicted. The Office of Pesticide Programs aquatic life benchmarks meet the Listing Policy guidance and so are appropriate to use as evaluation guidelines to interpret the narrative objective for determination of impairment. Placement in Category 3 occurs when there is insufficient data and/or information to make a beneficial use support determination, but the information indicates beneficial uses may be threatened. The waterbodies listed in this comment have appropriate evaluation guidelines and sufficient evidence to indicate impairment of the waterbodies.

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	• Coachella Valley Storm Water Channel- Disulfoton (Decision ID 103616); LOE 128889 the Evaluation Guideline Reference is to the OPP Aquatic Life Benchmark (it should be noted that the link provided in the Fact Sheet does not work). This listing is solely based on the OPP benchmark. CASQA Recommendation: All proposed listings should be placed on Category 3 for further assessment.	
006.11	[T]here are instances where datasets that were readily available within the designated timeframe for the applicable listing cycle are not assessed. Examples include the following: • Pacific Ocean Shoreline, Lower San Juan HAS, 1000 feet south of outfall – Indicator Bacteria (Decision ID 86378) – Data from beach watch program is readily available, but was not assessed. • Pacific Ocean Shoreline, Lower San Juan HAS, at North Doheny State Park Campground – Indicator Bacteria (Decision ID 76803) – Data from beach watch program is readily available, but was not assessed. • Pacific Ocean Shoreline, Lower San Juan HAS, at South Doheny State Park Campground – Indicator Bacteria (Decision ID 77710) – Data from beach watch program is readily available, but was not assessed. • Pacific Ocean Shoreline, San Clemente HA, at San Clemente City Beach at Pier – Indicator Bacteria (Decision ID 76306) – Data from beach watch program is readily available, but was not assessed.	Below are waterbody Decision IDs and associated Indicator Bacteria listing recommendations based on incorporation of Beach Watch data: • Pacific Ocean Shoreline, Lower San Juan HSA, at North Doheny State Park Campground (Decision ID 132168) – "Do not Delist" • Pacific Ocean Shoreline, Lower San Juan HSA, at South Doheny State Park Campground (Decision ID 132163) – "Do not Delist" • Pacific Ocean Shoreline, San Clemente HA, at San Clemente City Beach at Pier (Decision ID 132164) – "Do not Delist" Further investigation will be done during a future cycle to determine why data for "Pacific Ocean Shoreline, Lower San Juan HSA, 1000 feet south of outfall" were omitted from the 2020-2022 Integrated Report assessments. If data were incorrectly excluded, these data will be flagged for inclusion in a future cycle. Also, see principal

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	By not including all data that is readily available, the 303(d) list may mischaracterize water quality conditions in local receiving water bodies. CASQA Recommendation: • Ensure that all "readily available data" within the designated timeframe for the applicable listing cycle are included in analyses for the proposed listings. • Readily available data should not only be defined as data entered into CEDEN. Broaden the definition in the Listing Policy (section 6.1.1) to include any data that has been submitted to the State or Regional Water Boards to include NPDES and TMDL monitoring data.	response 4.1 for Data and Analysis Transparency, and Readily Available Data. The Listing Policy will not be changed in response to this comment. Section 6.1.1 of the Listing Policy defines "readily available data" as data and information that can be submitted to the California Environmental Data Exchange Network ("CEDEN"). NPDES and TMDL monitoring data may be submitted to CEDEN in conformance with Listing Policy Sections 6.1.2 and 6.1.4, and as specified in the data solicitation notice, for future Integrated Report listing cycles.
006.12	COMMENT #4: PROVIDE DOCUMENTATION OF HOW DATA ANALYSES WERE PERFORMED IN SUPPORTING DOCUMENTS AS OPPOSED TO PRESENTING RAW DATA SPREADSHEETS In order to be fully transparent and allow for an efficient public review of the new listings and delistings, all of the specific data that was used and the corresponding data analysis methodology should be fully and clearly documented within the Fact Sheets. Section 6.1.2.2 of the Listing Policy describes what must be included in the Fact Sheets, which specifically includes "Data evaluation as required by sections 3 or 4 of this Policy" (see Item M, page 19 of the Listing Policy). However, none of the Fact Sheets include the data calculations. Qualitative descriptions of the assessments do not comply with the Listing Policy requirements. Quantitative	See principal response 4.3 for Data and Analysis Transparency, and Readily Available Data.

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	calculations are needed in order to evaluate, and replicate, the proposed listings.	
006.13	In addition, there is no supplemental information or analysis provided when data was transformed by calculating a Water Effect Ratio, total to dissolved transformation, or other simple unit conversions. Thus, the reviewer is left sorting large amounts of data and spending excessive amounts of time to try to understand and replicate the analysis that was conducted by State Water Board or Regional Water Board staff. Since the assessment was completed in order to determine impairment, the actual calculations need to be provided as a part of the supporting Fact Sheet. In order to allow for a full and consistent review of the work that was completed as a part of the listing process, the Fact Sheets need to identify (at a minimum) what analysis was conducted and how it was conducted, the specific data was used, and what assumptions or deviations were made for the analysis (e.g., use of total data instead of dissolved).	See principal response 4.3 for Data and Analysis Transparency, and Readily Available Data.
006.14	We respectfully disagree that the information provided is consistent with the Listing Policy, specifically Section 6.1.2.2 (item M). While we understand that addressing this comment would likely occur in a future listing cycle, consistent with the Response to Comments from the 2014-2016 303(d) List of Impaired Waters, we hereby request the specific quantitative analysis (including the specific data, calculation / assessment methodology, and any data translations or modifications) for all Decision IDs included within this letter. Providing the	See principal response 4.3 for Data and Analysis Transparency, and Readily Available Data. Also see response to comments 006.03, 006.06, 006.07. 006.08, 006.10, and 006.11.

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	quantitative analysis is important to ensure a public review of all proposed listing decisions. CASQA Recommendation: • Fully document and provide for review the specific data and assessment methodology and resulting calculations used to support a listing decision in the Fact Sheets (e.g., show the work to allow for public review and replication). • Absent the first recommendation, provide the specific quantitative analysis (including the specific data, calculation / assessment methodology, and any data translations or modifications) for all Decision ID's included within this comment letter.	
006.15	COMMENT #5: CONSIDER COMPLETENESS AND QUALITY OF THE DATA SET, INCLUDING TEMPORAL AND SPATIAL COVERAGE. Data sets should be evaluated to ensure they are complete and provide both temporal and spatial coverage of the waterbody consistent with Section 6.1.5 of the Listing Policy.	See principal response 4 for Data and Analysis Transparency, and Readily Available Data.
006.16	The State and Regional Water Boards should make every effort to avoid listing waterbodies with old data that are less likely to be representative of the waterbody. Where more recent data exists, the newer data should be given a higher weight than the older data. Consideration should also be given to whether older data are still applicable, especially where measurement techniques and detection methods may	Changes to listing recommendations were not made in response to this comment. See principal response 4.3 for Data and Analysis Transparency, and Readily Available Data. In regard to Temecula Creek, the commenter provides no supporting documentation or evidence that the monitoring

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	have improved (e.g., in cases where historic sediment toxicity listings are now known to be caused by a particular pesticide). Proposing new listings with data over a decade old may result in significant resources being used to address pollutants that are no longer problematic. There are multiple instances where new listings were proposed that lacked spatial and/or temporal justification. Examples include the following: • Temecula Creek – Phosphorus (Decision ID 111431) listing – (spatial representation). The phosphorus listing references multiple monitoring stations that are all located within Lower Temecula Creek; however, the entire creek segment (upper and lower) is listed. The stations that are in the lower extent of the Creek are not representative of the full 32-mile segment of Temecula Creek. Thus, this impairment listing should be limited to the section of creek where the exceedances occurred. • Murrieta Creek – Copper (Decision ID 111361) listing – (spatial and temporal representation). The decision to not delist from the 303(d) list refers to nine lines of evidence, with the key line of evidence for not delisting based on four of 39 samples exceeding the water quality threshold in water for the WARM beneficial use. However, these samples were collected at one location on Murrieta Creek 15-17 years ago. However, LOE 141965 notes that 0-of 30 samples collected between 2012 and 2018 exceeded the WQO. Thus, this pollutant/waterbody combination should be delisted. CASQA Recommendation:	stations in the lower portion of Temecula Creek are not representative of the upper portion of Temecula Creek. Furthermore, since monitoring occurred at the bottom of the watershed, the entire upstream section of Temecula Creek is tributary to the sampled and documented impaired location. Should new sampling data be available for other portions of Temecula Creek, that data will be used to assess if Temecula Creek should be split into sections. In regard to Murrieta Creek, the listing recommendation "Do not Delist" is based on assessing copper data using the copper water quality objective to protect the WARM beneficial use, with four exceedances in 39 samples. The most recent 30 out of the 39 samples do not exceed the objective. However, for toxicants such as copper, the number of exceedances to delist for 39 samples must be three or fewer per Listing Policy Table 4.1. When additional samples are collected, they may be submitted for assessment. Alternatively, data and information may be submitted to consider delisting based on a trend of improving water quality standards attainment in accordance with Section 4.10 of the Listing Policy.

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	• Ensure data used to support new listings is temporally and spatially representative of the waterbody segment that is listed. Modify the listings identified above, as needed. • Ensure that older data (especially data older than a decade) are not given the same weight as more recent data. • Exclude data that are no longer representative of the waterbody.	
006.17	COMMENT #6: CORRECT ERRORS WITHIN THE PROPOSED 303(D) LIST AND RENOTICE THE UPDATED LISTINGS The review of the Draft Integrated Report has resulted in the identification of several errors that need to be corrected and renoticed, as needed, based on the resolution of the error. Examples of the errors include the following (note that this list is not exhaustive): Incorrect monitoring location and dataset used for a proposed new listing on a waterbody • Delta Waterways (Stockton Ship Channel) – Aluminum (Decision ID 121646) and Boron (Decision ID 121635) listings - The samples that were used for both the aluminum and boron listing decisions are from one monitoring site (CALWR_WQX-A0442050). However, in the “ref4948” dataset, the coordinates listed for this monitoring site (40.0429, -122.1003) are for Mill Creek in Tehama County, north of Chico.	Water Board staff confirm that there were errors in the station mapping described below. Staff reassigned the monitoring station(s) to the correct waterbody, made modifications to the lines of evidence, and revised listing recommendations for waterbodies identified in this comment. Details regarding the revisions made to correct mapping errors are in Appendix R: List of Central Valley Water Board Station Location Revisions to Correct Mapping Error and Listing Recommendation Updates and Section 2.7.1 of the Proposed Final Staff Report. For the Central Valley Regional Water Board, Water Board staff confirmed an error in station mapping that impacted 953 decisions,147 stations, and 2,772 LOEs. Removing the inaccurately mapped LOEs from the improper waterbody resulted in three new “List” recommendations for Decision IDs 122645, 123781, 122761. Additionally, removing the inaccurately mapped LOEs from the improper waterbody resulted in the revision of 13 listing recommendations. The following Decisions IDs were revised from “List” to ‘Do not List:”

	• Middle River (in Delta Waterways, southern portion) – Aluminum (Decision ID 122776) - The samples that were used for this listing decision are from one monitoring site (CALWR_WQX-A1400901). However, in the "ref4948" dataset, the coordinates listed for this monitoring site (41.4163278, -120.544475) are for a waterbody in Modoc County. • Old River (San Joaquin River to Delta-Mendota Canal; in Delta Waterways, southern portion) - Chlorodibromomethane (Decision ID 126571), Chloroform (Decision ID 122757), Dichlorobromomethane (Decision ID 126572), Total Trihalomethane (TTHM) (Decision ID 122762) The samples that were used for this listing decision are identified as being from one monitoring site (CALWR_WQX-B9D81281401). However, in the "ref4948" dataset, the coordinates listed for this monitoring site (38.2133583, -121.66855833) are for the Sacramento River near Elkhorn Slough. • Paradise Cut (in Delta Waterways, southern portion) – Total Dissolved Solids (Decision ID 123341) The samples that were used for this listing decision are identified as being from two monitoring sites (CALWR_WQX-A0425000 and CALWR_WQX-B9D74811247). However, in the "ref4948" dataset, the coordinates listed for monitoring site CALWR_WQX-A0425000 (39.7268, -121.8625) are for Big Chico Creek in Chico, CA. • Tom Paine Slough (in Delta Waterways, southern portion) – Aluminum (Decision ID 123023) - The samples that were used for this listing decision are from one monitoring site (CALWR_WQX-A1210000). However, in the "ref4948" dataset, the coordinates listed for this monitoring site (41.4821, -120.5388) are for North Fork Pit River in Alturas, CA.	121771, 121883, 122170, 122485, 122486, 122922, 123132, 123134, 123144, 123148, 123772, 124108, and 124298. The removal of inaccurately mapped LOEs unaltered the remaining listing recommendations. Assigning LOEs to the correct waterbody resulted in 37 new listing recommendations for Decisions IDs 121737, 121743, 121756, 122104, 122106, 122117, 122645, 123271, 123781, 132093, 132104, 132125, 132128, 132130, 132131, 132132, 132133, 132134, 132136, 132137, 132139, 132140, 132145, 132146, 132152, 123321, 132104, 132120, 123265, 122451, 123285, 132092, 132109, 132093, 123267, 123252, and 123273 Additionally, the listing recommendation for Decision ID 122922 was revised from "List" to "Do not List." The rectification of mismapped sites unaltered the remaining listing recommendations. The error in station mapping is solely associated with data submitted through the Water Quality Exchange database and does not implicate data submitted to the California Environmental Data Exchange Network ("CEDEN"), and therefore does not substantially impact the Water Boards assessment of data for the Integrated Report. For the remaining 774 listing recommendations, State Water Board staff are committed to wholly remedying the error in station mapping during the 2024 Integrated Report cycle. See Section 2.7 of the Staff Report for more information. Details of LOE and listing recommendations revised for the Central Valley Regional Water Board waterbodies are described below and are available in Appendix R: List of Central Valley Regional Water Board Station Location Revisions to Correct Mapping Error and Listing

	• San Joaquin River (Friant Dam to Mendota Pool) – Aluminum (Decision ID 122830, LOE 199284 & 199228), Arsenic (Decision ID 122812, LOE 199552 & 199972 & 199550 & 199547), Boron (Decision ID 122813, LOE 200309) – Several of the LOEs reference data from a monitoring location CALWR_WQX-A0452050. However, within the data set, the coordinates listed for this location (40.1082, -122.1108) are for a location several hundred miles north of the referenced site. • Pacific Ocean Shoreline, Aliso Point HSA, at Aliso Beach - north (Decision ID 127911) – Data from station S11 is incorrectly linked to this waterbody. The correct station for Aliso Beach - north is S10. • Pacific Ocean Shoreline, Aliso Point HSA, at Aliso Beach - south (Decision ID 127929) – Data from station S9 is incorrectly linked to this waterbody. The correct station for Aliso Beach - south is S8. • Pacific Ocean Shoreline, Dana Point HSA, at Dana Point Harbor at guest dock (Decision ID 127933) – Data from three stations (BDP13, BDP14, BDP17) are incorrectly linked to this waterbody. The correct station for Dana Point Harbor at guest dock is MDP11. • Pacific Ocean Shoreline, Dana Point HSA, at Dana Point Harbor at patrol dock (Decision ID 127935) – Data from five stations (BDP07, BDP08, BDP16, MDP18, DSB5U) are incorrectly linked to this waterbody. The correct station for Dana Point Harbor at patrol dock is MDP10. • Pacific Ocean Shoreline, Lower San Juan HSA, at surf zone outfall at Doheny State Beach (Decision ID 127964) – Data from two stations (C-1, C-2) are incorrectly linked to this waterbody. The correct station for surf zone outfall at Doheny State Beach is S-0.	Recommendation Updates in the Proposed Final Staff Report. • Delta Waterways (Stockton Ship Channel): The monitoring station – CALWR_WQX-A0442050 has been reassigned to the correct waterbody – WBID: CAR5094203120020508115919, Mill Creek (Tehama County). The LOEs and listing recommendations associated with the incorrect monitoring location were removed. • Middle River (in Delta Waterways, southern portion): The monitoring station – CALWR_WQX-A1400901 has been reassigned to the correct waterbody – CAR5265208020080909194359, Pit River, South Fork. The LOEs and listing recommendations associated with the incorrect monitoring location were removed. • Old River (San Joaquin River to Delta-Mendota Canal; in Delta Waterways, southern portion): The monitoring station – CALWR_WQX-B9D81281401 has been reassigned to the correct waterbody – CAR5100000020080821102031, Cache Slough (in Delta Waterways, northern and northwestern portions). The LOEs and listing recommendations associated with the incorrect monitoring location were removed. • Paradise Cut (in Delta Waterways, southern portion): The monitoring station – CALWR_WQX-A0425000 has been reassigned to the correct waterbody – CAR5204000020020610133629, Big Chico Creek (Butte and Tehama Counties). The LOEs from monitoring station – CALWR_WQX-A0425000 were removed but the listing recommendation will remain the same. Of the 10 samples collected for LOE 206803 (from

	CASQA Recommendation: • Remove the listings for the Decision IDs and LOEs referenced within the comment. • Conduct a full review of all monitoring locations used for the listing decisions to ensure that they are located on the designated waterbody. If a new monitoring location and corresponding dataset is identified – the proposed listing should be renoticed for a 30-day public review of the dataset and analysis prior to adoption of the 2020-2022 Integrated Report.	monitoring location CALWR_WQX-B9D74811247), 5 exceeded the threshold and this meets the requirements to list per Section 3.2 of the Listing Policy. • Tom Paine Slough (in Delta Waterways, southern portion): The monitoring station – CALWR_WQXA1210000 has been reassigned to the correct waterbody – CAR526520162008090919395 9, Pit River, North Fork. The LOEs and listing recommendations associated with the incorrect monitoring location were removed. • San Joaquin River (Friant Dam to Mendota Pool): The monitoring station – CALWR_WQX-A0452050, has been reassigned to the correct waterbody – CAR5453001020050602140817, San Joaquin River (Friant Dam to Mendota Pool). The LOEs and listing recommendations associated with the incorrect monitoring location were removed. For the San Diego Regional Water Board, Water Board staff confirmed an error in station mapping that impacted 12 stations and one listing recommendation. The rectification of mismapped sites did not affect the remaining listing recommendations, and some will be corrected during a future cycle. Details of LOE and listing recommendations revised for the San Diego Regional Water Board waterbodies are as follows: • Pacific Ocean Shoreline, Aliso Point HSA, at Aliso Beach - north (Decision ID 127911) – Mapping adjustments will be made during a future cycle to create a new waterbody and move Station S11 to “Pacific Ocean Shoreline, Aliso HSA, Laguna

		Beach - Treasure Island." Currently, the listing recommendation for Pacific Ocean Shoreline, Aliso Point HSA, at Aliso Beach - north is based only on S10 data (LOEs with S11 data were marked "insufficient information" and not used in the listing recommendation). The outcome did not change. Pacific Ocean Shoreline, Aliso Point HSA, at Aliso Beach - north remains "List" based on SHELL. • Pacific Ocean Shoreline, Aliso Point HSA, at Aliso Beach - south (Decision ID 127929) – LOEs 219934, 219884, 219888, 220030, 219767, and 220018 were removed, and the listing recommendation was deleted since there were no new data assessed. It will be a carry-over recommendation from past cycles. The data in the LOEs removed have been assigned to "Pacific Ocean Shoreline, Aliso HSA, at Aliso Beach – middle." o New Decision ID 132057 was created for "Pacific Ocean Shoreline, Aliso HSA, at Aliso Beach – middle" and it contains the following revised LOEs (created for Station S9 data): 233423, 233428, 233452, 233453, 233454 and 233455. The listing recommendation is "Do not Delist." • Pacific Ocean Shoreline, Dana Point HSA, at Dana Point Harbor at guest dock (Decision ID 127933) was revised by removing LOEs for BDP13 and BDP14, which are Baby Beach sampling stations. They are now included in Decision ID 127931 (See comment 025.21 for specific details). The LOEs for MDP11 and BDP17 remain in Decision ID 127933 since they are both located at Guest Dock. Remapping and reassignment of stations in Dana Point Harbor can be further investigated during a

		future cycle. Decision ID 127931 remains "Do not Delist" and 127933 remains "List." • Pacific Ocean Shoreline, Dana Point HSA, at Dana Point Harbor at patrol dock (Decision ID 127935) was revised by removing LOEs for stations BDP07 and DSB5U (LOEs 219873, 219961, 219821, 219838, 219902, 219826 and 219827). The coordinates provided for BDP07 (33.4595, -117.6905) do not match where this station looks to be located on the OC Beach info map. DSB5u represents a creek-ocean interface and not the harbor. The remaining stations are included in the listing recommendation at this time. Remapping and reassignment of stations in Dana Point Harbor can be further investigated during a future cycle with input from the data providers. Decision ID 127935 remains "Do not Delist." • Pacific Ocean Shoreline, Lower San Juan HSA, at surf zone outfall at Doheny State Beach (Decision ID 127964) was revised to only include LOEs with data from Station S-0. LOEs 219861, 219860, 219983, 219953, 2198505, 220109, 219929 and 219759 were removed. The listing recommendation outcome did not change and remains "Do not Delist" due to 155 exceedances out of 408 enterococcus samples. o Decision ID 132058 was created for San Juan Creek (mouth) (C-1 data). A new recommendation was not created for San Juan Creek since new *E. coli* data were not provided. The listing recommendation will not change from the 2018 303(d) list. The revisions made to correct the mapping errors do not require another public review and written public comment period. The June 4 to July 16, 2021 public comment

		period for the 2020-2022 303(d) list, plus the opportunity to comment orally to the Board on revisions to the draft 303(d) list resulting from the previous public comments, satisfy the public comment requirements of Section 6.2 of the Listing Policy and 40 CFR Part 25. These revisions are logical outgrowths of the public comments received.
006.18	COMMENT #7: REGIONAL WATER BOARD STAFF SHOULD CONDUCT THE DATA ANALYSIS AND / OR CONDUCT THE FINAL QA / QC OF THE LISTINGS PRIOR TO THE RELEASE OF THE DRAFT LIST CASQA understands that State Water Board staff have primary responsibility for the listing cycle data compilation and analysis performed for the Draft Integrated Report. Based on the types of issues that are identified within this comment letter, CASQA strongly recommends that, instead, the Regional Water Board staff have primary responsibility or, at a minimum, provide final oversight and review of the proposed listings. Regional Water Board staff are significantly more familiar with the applicable water quality objectives, water effect ratios and other special studies, local waterbodies and ongoing implementation programs occurring at the regional level than State Water Board staff. As such, Regional Water Board staff would be better able to conduct the data analysis and avoid many of the errors detailed in this letter. Further, Regional Water Board staff are more likely to have developed relationships with local stakeholders and can consult with them when there are issues with the data analysis versus making assumptions or decisions that can result in incorrect listings. We understand from the Response to Comments that State and Regional Water Boards coordinate on all assessments and that Regional Water Boards are given the opportunity to	Regional Water Board and State Water Board closely coordinate on many components of the Integrated Report process, including mapping, data evaluation, and data assessments. For the 2020-2022 Integrated Report, Regional Water Board staff took the lead role in assessing data for most of the waterbodies in their respective regions and reviewed the draft 303(d) list prior to its release for public comment. As discussed in principal response 4.2 for Data and Analysis Transparency, and Readily Available Data, Regional Water Board staff verified information associated with ensuring the adequacy of QAPP documentation.

	review all Lines of Evidence developed by State Water Board prior to completing all decision recommendations. It was further noted that in future cycles, the Regional Water Boards would have primary responsibility for Fact Sheet preparation and that the State Water Board would continue to act in a supporting role. However, it is unclear if, in fact, for the 2020-2022 listing cycle, the Regional Water Boards had primary responsibility for the analyses and factsheet preparation. CASQA Recommendation: Regional Water Board staff should conduct the data analyses OR coordinate with the State Water Board to provide final oversight and QA/QC prior to the public release of any draft 303(d) listings.	

Letter 7: Emily Jeffers, Center for Biological Diversity

No.	Comment	Response
007.01	The draft report does not include any ocean segments as impaired due to ocean acidification (either by violations of the pH criteria, or any other parameter, narrative or numeric, that would be used to measure ocean acidification), nor does the draft report list any waterbodies as impaired due to microplastic pollution. As detailed in our attached comments, both ocean acidification and plastic pollution impair California's ocean and estuarine waters.	For the 2020-2022 Integrated Report cycle, State Water Board staff evaluated the ocean acidification and microplastic data and information submitted by the Center for Biological Diversity ("CBD") for consideration as part of the 2018 Integrated Report and as part of the 2020-2022 Integrated Report. Submissions were received on May 2, 2017, and June 14, 2019. There are data quality concerns with the ocean acidification data submitted and the data were not able to be used per Section 6.1.2 (Administration of the Listing Process) and Section 6.1.4 (Data Quality Assessment Process) of the Listing Policy. Measurements of ocean acidification were provided in pH and aragonite saturation

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		data. The pH data submitted contains a disclaimer that the data were from a real-time data feed that was not post-processed nor checked for errors; the data also lacked quality assurance documentation. Aragonite saturation data included errors in dates, depth measurements, and aragonite saturation levels. For further information on pH and aragonite saturation, see response to comment 007.14 and 007.13, respectively. In addition, microplastic data submitted by the Center for Biological Diversity prior to the 2020-2022 data cutoff deadline were evaluated but not used to make listing recommendations. Internal evaluation of microplastic data quality per Section 6.1.2 and 6.1.4 of the Listing Policy revealed data quality concerns, such as the lack of defined size ranges, incomplete sample processing and storage information, missing laboratory experimental information (i.e., negative controls, field blanks, clean air conditions, and positive controls), insufficient polymer ID reporting, and the absence of a statement certifying the adequacy of the QAPP. The microplastic study by Sutton et al. (2019) may meet equivalent quality assurance requirements per the Listing Policy. However, the study was submitted after the data solicitation cut-off date (June 14, 2019) for the 2020-2022 Integrated Report; therefore, data from the study were not assessed. Given that the study by Sutton et al. (2019) may meet quality assurance requirements per the Listing Policy, the Water Boards will re-evaluate the study's microplastic data and determine whether the data are suitable for assessment in the 2024 Integrated Report.

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		Defined cut-off data dates are necessary for timely submission of the Integrated Report and consistent with U.S. EPA's 2004 guidance for Assessment, Listing, and Reporting Requirements Pursuant to Sections 303(d) and 305(b) of the Clean Water Act. Additionally, data cut-offs provide technical staff with the time to conduct a thorough assessment of the data and provides the public and stakeholders time to consider and comment upon proposed listing recommendations in conformance with Listing Policy guidelines. See response to comment 003.06 for additional discussion of the use of a data cut-off date.
007.02	The State Water Board must evaluate all sources of water quality data. 33 U.S.C. § 1313(d). The State Board may not wait before the state adopts a criteria specific to microplastics or ocean acidification before it acts. It must consider all readily available data on the impacts of microplastics and ocean acidification on the State of California's waters in its water quality assessment and consider the attainment status of all of California's relevant water quality standards.	Ocean acidification and microplastics data timely submitted by the Center for Biological Diversity were evaluated and considered. Please see response to comment 007.01 for why the data were not used to make a listing recommendation. Data are first assembled, then evaluated to ensure they meet the requirements of Section 6.1.1 (Definition of Readily Available Data and Information) and Section 6.1.4 (Data Quality Assessment Process) of the Listing Policy. The data and information are then assessed in conformance with Sections 3 (California Listing factors) and 4 (California delisting Factors) of the Listing Policy, respectively. If the results of the assessment show that water quality does not meet the applicable water quality standard for a pollutant, the water segment is recommended for listing on the 303(d) list as impaired.
007.03	There are several existing narrative water quality standards that can be used to gauge if waters with microplastic pollution	Comment noted.

No.	Comment	Response
	or affected by ocean acidification are impaired. Our previous comments are attached to this letter; by submitting this data we hope to inform the State Water Board and the public on the prevalence of microplastic pollution and ocean acidification and the urgent need for the state to address these threats in California's waters.	Although ocean acidification and microplastic data were not used to make listing recommendations due to the limitations described in the response to comment 007.01, Water Board staff considered narrative water quality standards and potential numeric thresholds for assessing data for both parameters. The information provided furthered staff's evaluation. During the evaluation process, it was found that aragonite saturation could be a more assessable indicator as it does not rely on natural source background. Further analysis of pH can be found below in response to comment 007.14. Additionally, see response to comment 007.15 for more information on microplastics.
007.04	This letter outlines the threats posed by these pollutants, both of which increasingly impair California's coastal and estuarine waters. We also request that the Boards develop standards related to trash, as such standards do not exist and beach clean-ups demonstrate the threat trash poses to California's coastal waters.	Comment noted. The Water Boards are an active participant in the Trash Workgroup of the California Water Quality Monitoring Council, which is developing standard methods to assess trash pollution to evaluate the effectiveness of Trash Policy Implementation.
007.05	[T]he State and Regional Water Quality Control Boards must develop objective, science-based OA water quality standards and list as threatened or impaired waters that do not meet those standards.	Comment noted. Additionally, see response to comments 007.03 and 007.18.
007.06	Given the grave threat posed by OA, California must analyze relevant data and information to determine whether state waters affected by OA meet pertinent beneficial uses,	See response to comments 007.01 and 007.18.

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	numeric and narrative standards, and antidegradation standards. If not, the State should list such waters as threatened or impaired. To facilitate such listings, the State and Regional Water Resources Control Boards should develop OA-specific water quality objectives.	
007.07	We appreciate that the State Water Board has begun this standard development process in partnership with other organizations assessing and modeling OA in state waters. (See id., responses to comments 20.001, 20.054-20.056). We would like to be notified of opportunities for public participation in this rulemaking process.	Comment noted. Additionally, the State Water Board appreciates the support for standard development. To ensure that you are notified of any public participation opportunities, please ensure that you are signed up to receive email notifications for the California Ocean Plan at the State Water Resources Control Board's webpage for public participation (https://www.waterboards.ca.gov/resources/email_subscriptions/swrcb_subscribe.html).
007.08	Ocean acidification already is impacting California's coastal, bay, and estuarine waters and its negative effects will only grow more severe with business-as-usual greenhouse gas emission scenarios. The Center thus urges the State and Regional Water Resources Control Boards to analyze readily available data to identify and list OA-impaired marine waters under section 303(d) of the Clean Water Act.	Comment noted. Additionally, see responses to comment 007.01 on the assessment of ocean acidification data for the 2020-2022 Integrated Report and comment 007.02 on readily available data and data submissions.
007.09	California should integrate OA data into the state's evaluation of water quality objective attainment.	Comment noted. See response to comments 007.01 and 007.18.
007.10	Controlling local stressors will provide affected species and ecosystems with the ability to better withstand expected future increases in ocean acidity. Given that certain California	Comment noted. See response to comments 007.01 and 007.18.

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	coastal waters already fail to meet water quality objectives associated with OA (e.g., pH), we request that the State and Regional Water Resources Control Boards utilize their authority under the Clean Water Act to address ocean acidification before it further degrades and impairs state waters, marine ecosystems, and human communities.	
007.11	Several existing approaches can be leveraged to reduce ocean acidification, including mitigation of local stressors as well as reduction of local and state CO2 emissions that contribute acidification at the global scale.	Comment noted. The listing of a waterbody-pollutant combination as impaired results in the development of a TMDL or alternative for the listed waterbody-pollutant combination. The TMDL, alternative restoration program, or subsequent permit are the forum for considering sources and control options.
007.12	By utilizing Clean Water Act authority to its fullest extent, the California State Water Resources Control Board and its Regional Boards can help mitigate the ocean acidification problem; improve the health of coastal ecosystems and communities; and provide marine organisms with better capacity to withstand ocean acidification while society works toward CO2 emissions reductions.	Comment noted. See response to comment 007.01.
007.13	Support for using aragonite saturation as one such indicator is provided in the following paragraphs. As discussed in the Center's comments for previous Integrated Reports,[10] pteropods are appropriate indicators for OA water quality objectives. (Center 2017; Bednaršek et al. 2019; Center 2019). Pteropod shell dissolution indicates that water quality is not meeting standards including designated	The State Water Board acknowledges the information from Nina Bednaršek and the Southern California Coastal Research Project. Although ocean acidification data were not used to make listing recommendations due to data quality limitations as described in the response to comment 007.01, Water Board staff used the papers identified by the commenter as references when

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	uses for marine habitat, degradation of biological communities, and maintenance of high water quality. A 2019 paper by Bednaršek et al. describes potential numeric OA thresholds based on aragonite saturation states (Ωar) known to induce sublethal and lethal effects to pteropods. (Bednaršek et al. 2019.) Specifically, the authors identify aragonite saturation states from 1.5-0.9 as the range leading from early warning to lethal impacts.11 (Id.) Such thresholds were deemed conservative, as they do not integrate the effects of cumulative stressors. (Id.) The Center offers the Bednaršek et al. (2019) paper and the thresholds and discussion contained therein (which includes application of the thresholds to a numerical ocean simulation model from the southern California Current System) for the State and Regional Water Resources Control Boards to consider and use in their development of OA-specific water quality objectives. Footnote 10: Those comments and all cited references are incorporated herein.	evaluating aragonite saturation data submitted by the Center for Biological Diversity ("CBD"). The State Water Board is actively engaging with internal and external agencies, including participants from Oregon and Washington, to continue to evaluate impacts to marine life at varying levels of aragonite saturation while also considering how much data is needed to characterize ocean conditions in terms of time and space.
007.14	The California Ocean Plan provides that marine "pH shall not be changed at any time more than 0.2 units from that which occurs naturally." (California Ocean Plan 2012.) To effectively implement this criterion, California first must determine the naturally occurring pH range for each water body. We assume that a "naturally occurring" pH range is one uninfluenced by industrial-era anthropogenic CO2 emissions (i.e., emissions contributed since the start of the industrial revolution in ~1760-1800).[12] We request that the Boards explain how this standard is implemented in practice across state waters.	For the 2020-2022 Integrated Report, the State Water Board evaluated a mathematical model described by the Center for Biological Diversity ("CBD") in their May 3, 2017 submission letter to identify a natural source background number for pH at the submitted waterbody sites. With that number, the State Water Board would be able to determine if waterbodies are impaired by following the 2019 Ocean Plan objective of exceeding the 0.2 units from that which occurs naturally. The methodology used to develop the model to estimate natural pH values and for comparison of current pH data underwent peer review;

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	Footnote 12: The pre-industrial atmospheric CO_2 concentration as ~ 280 ppm.	however, the actual pH model that was developed has not undergone review and does not meet the requirements for use as an evaluation guideline as stated in Section 6.1.3 of the Listing Policy. No information, such as a peer reviewed scientific journal article describing the specific model, was provided. Additionally, the pH data submitted contains a disclaimer that the data were from a real-time data feed that was not post-processed nor checked for errors. The pH data does not meet the data quality requirements in Section 6.1.4 of the Listing Policy. Please see response to comment 007.01 for additional information on data quality limitations. Although pH data were not used to make a listing recommendation for the 2020-2022 Integrated Report and no LOEs were developed due to the constraints described above, staff further evaluated pH data against the natural range of pH conditions estimated by CBD's methodology. Should the Listing Policy's binomial distribution assessment process be used, it appears the submitted pH data would not be indicative of impairment for ocean acidification.
007.15	We must find ways to stem the tide of plastic pollution. We appreciate that microplastic pollution is being investigated through the Recycled Water and Drinking Water Programs. (See SWRCB 2020, response to comment 20.001). We also acknowledge the State Water Board is monitoring microplastics as a constituent of emerging concern and	Comment noted. Please see response to comment 007.01. The Clean Water Act ("CWA") aims to "*prevent, reduce, and eliminate pollution in the nation's waters in order to restore and maintain the chemical, physical, and*

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	developed a working definition of microplastics. (See SWRCB 2020, response to comment 20.001). Utilization of the Clean Water Act and California legislation (e.g., Porter-Cologne Act and Assembly Bill 258) to their fullest extent would help provide additional means of curbing microplastic pollution.	*biological integrity of the Nation's waters*." The deposition of pre-production resin pellets, plastic microbeads, and secondary microplastics (the disintegration of larger plastic items into microplastics) threaten the biological, physical, and chemical integrity of California's surface waters. Therefore, the Water Boards recognize the exigency to curb microplastic pollution. The State Water Board and the Regional Water Boards prescribe waste discharge requirements for the discharge of waste in accordance with the federal Clean Water Act's national pollutant discharge elimination system (NPDES) permit program and the Porter-Cologne Water Quality Control Act's waste discharge permit program, as applicable. In addition, the Porter-Cologne Water Quality Control Act authorizes the State Water Board or a Regional Water Board to issue cleanup and abatement orders. On January 1, 2008, the state legislature enacted Assembly Bill 258 (AB 258), codified in California Water Code section 13367, entitled "Preproduction Plastic Debris Program." AB 258 required the State Water Board and the Regional Water Boards to implement a program for the control of discharges of pre-production plastics from point and nonpoint sources, including waste discharge, monitoring, and reporting requirements that, at a minimum, target facilities that handle pre-production and nonpoint sources involved in the transfer of pre-production plastic, and the implementation of specific best management practices for the control of discharges of pre-production plastic. In 2018, the California Legislature passed Senate Bill 1422 requiring the State Water Board to adopt a definition

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		of microplastics in drinking water by July 1, 2021. Specifically, the bill mandates the State Water Board to formulate a standardized methodology for microplastic testing and reporting; and to publicly disclose microplastic research findings. In response to Senate Bill 1422, in conjunction with Senate Bill 1263, which requires the adoption of a Statewide Microplastics Strategy to protect coastal waters, the State Water Board is collaborating with the Ocean Protection Council and the Southern California Coastal Water Research Program to systematize methods for monitoring microplastics in drinking water, surface water, sediment, and fish tissue. Additionally, scientific experts are convening to discuss the adverse health effects of microplastics in humans and aquatic ecosystems. Additionally, the Ocean Plan triennial review ranked microplastics and microfibers as a high priority for a future project or rule-making action (See Issue U). An amendment to the Ocean Plan may include developing monitoring methods, monitoring requirements, or adding water quality objectives and implementation provisions. Microplastic pollution is also being investigated through the Recycled Water and the Drinking Water programs. A recent development is the definition of microplastics, which was adopted by the State Water Board on April 7, 2019. The State Water Board is actively updating monitoring programs for constituents of emerging concern (“CECs”), including microplastics. For more information, see the SWAMP Constituents of Emerging Concern website:

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		https://www.waterboards.ca.gov/water_issues/programs/swamp/cec_aquatic/ For more information, please visit the State Water Board's Division of Drinking Water Program's resources page (https://www.waterboards.ca.gov/drinking_water/programs/). .
007.16	The Board's rationale that impairment or nuisance caused by trash is merely "subjective" would theoretically allow a beach to become a landfill and still allow adjacent waters to avoid an impairment designation. We encourage the Boards to develop an appropriate, scientifically-based, objective standard for trash that would indicate impairment. (See id., response to comment 20.001, noting that the Water Boards are participating in a working group developing such standards.)	See response to comment 007.04.
007.17	Finally, we urge the Boards to develop standards related to trash.	See response to comment 007.04.
007.18	The Center urges the State and Regional Water Resources Control Boards to analyze the extent to which ocean acidification impairs water bodies in California. OA is emerging as a major water quality issue with implications for marine species, ecosystems, and the human communities reliant upon them. The sooner California takes action to address OA and other local stressors through its authority under federal and state law, the better able the state will be able to avoid devastating consequences on coastal, estuarine, and bay ecosystems.	The Water Boards are engaged in the following efforts to address the issues of ocean acidification in California's marine waters. Ocean acidification, hypoxia and climate change impacts were identified as the fifth highest priority for future projects and rule-making actions as part of the 2019 Review of the Water Quality Control Plan for Ocean Waters of California ("Ocean Plan Review").

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		The State Water Board may consider amending the Ocean Plan to address ocean acidification and hypoxia (see Ocean Plan Review, Issue F). In preparation for a potential Ocean Plan amendment, the State Water Board is working with the Ocean Protection Council, the Ocean Science Trust, the Southern California Coastal Water Research Project, and others to better understand questions associated with ocean acidification and hypoxia. This includes development of indicators and thresholds to evaluate ocean acidification. This joint effort also includes assessing sources of ocean acidification and hypoxia, particularly in the Southern California Bight, using a three-dimensional numerical ocean model that assesses atmospheric data, ocean current circulation patterns, and biogeochemical elemental cycling. This model has been developed and calibrated. Over the next two to three years, it will be used to run scenarios to better understand source contributions, including storm water runoff and wastewater discharge sources. The results are expected to inform future standards actions or regulatory requirements, or both.

Letter 8: John Buckley, Central Sierra Environmental Resource Center

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008.01	Of the millions of recreational visitors who visit the Stanislaus National Forest each year, many have no clue that water in forest streams may be contaminated. There are no signs	Comment noted. Moreover, the Water Boards recognize there may be additional opportunities to improve data transparency. The State Water Board has released a

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	posted that warn of water contamination at ANY of the streams including those listed. The water quality violations documented over multiple years of testing show that human health and safety are not being adequately protected by USFS BMP's or management. To date, corrective management actions have not taken place.	draft interactive map of the proposed 303(d) list of impaired waters for the 2020-2022 Integrated Report (https://gispublic.waterboards.ca.gov/portal/home/item.html?id=32f238f9c3d642238e0b3a20262d1c17). To submit water quality data, see the State Water Board's website for our data submittal process (https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/data_solicitation.html). Additionally, here is a direct link to the Integrated Report Upload Portal (https://public2.waterboards.ca.gov/IRPORTAL/). The status of water quality violations and the implementation of best management practices on national forest lands are beyond the scope of the comments the State Water Board will receive for its consideration of the Clean Water Act 303(d) list. However, the commenter is encouraged to work with the Central Valley Regional Water Board to address the concerns.
008.02	Based on years of protocol-consistent water sampling results and no change in management for the various sources of contamination that affect each of these streams, CSERC supports the continuation of the current listings of Rose Creek, Niagara Creek, Bell Creek, Bull Meadow Creek, Curtis Creek, Lower Stanislaus River, Sullivan Creek, Turnback Creek, Twain Harte Creek, Twain Harte Lake, and Woods Creek as 303(d) listed streams. For the streams that are located within the Stanislaus National Forest (Rose Creek, Niagara Creek, Bell Creek, and Bull Meadow Creek), there is continued exposure each year to cattle waste due to the months-long presence of livestock	Comment noted.

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	along the stream corridors and at meadows along those streams. For Curtis Creek, Sullivan Creek, Turnback Creek, Twain Harte Creek, Twain Harte Lake, and Woods Creek, the continued non-point source run-off into those water bodies and their proximity to roads, parking lots, etc. create continued exposure to pollutants.	
008.03	In addition to our Center providing support for the specific listings noted above, we also encourage the State Water Board to plan corrective actions as soon as feasible for a number of streams with potential for health effects for area residents and downstream water users. Twain Harte Creek, Twain Harte Lake, and Sullivan Creek are located within close proximity to residential areas where children and pets may frequently contact or potentially ingest contaminated water. Those streams may be appropriate for the development of a plan for corrective actions after higher priority streams have had their corrective plans implemented.	Comment Noted. The commenter is encouraged to work with the Central Valley Regional Water Board to address the concerns regarding potential impacts associated with these waterbodies. For clarification, the Water Board recommends that Twain Harte Creek (Decision ID 127013) remain on the Integrated Report 303(d) list due to indicator bacteria, creating a “Do not Delist” from 303(d) list (TMDL required list) impairment recommendation. Concentrations reported in Decision ID 127013 did not support Water Contact Recreation, the beneficial use designation for Twain Harte Creek, and exceeded the Water Quality Objective/Criterion for Indicator Bacteria. Conversely, for indicator bacteria in Twain Harte Lake and Sullivan Creek, the Water Board recommends both waterbodies not be listed as impaired on the 303(d) list (TMDL required list). Additionally, the Water Board recommends Twain Harte Lake be placed on the 303(d) list as impaired for pH. As detailed in the 2020-2022 Staff Report and the Listing Policy, impairments are dependent on data assessments that determine whether a waterbody-pollutant combination is impaired and suitable for placement on the 303(d) list. However, a 303(d) listing is not a prerequisite

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		for TMDL development, permits, nor other pollutant control actions. Please see response to comment 040.02 for more information.

Letter 9: Debbie Webster, Central Valley Clean Water Association

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009.01	The draft Integrated Report proposes 1,240 new listings statewide, including 465 new listings in the Central Valley. When added to the existing listings, a total of 1,328 TMDLs will be required in our region alone.[1] Our preliminary review of the information supporting the listings revealed that many of the new proposed listings do not meet the regulatory threshold for inclusion on the Category 5 list. As highlighted below in our comments on specific pollutant listings, there are significant issues of accuracy, consistency, and validity for many of the listings. These include the use of non-regulatory thresholds and benchmarks, outdated or superseded criteria, and other inappropriate bases for determining that a water is impaired. Footnote 1: Legislation introduced in 2021 would require all TMDLs in the state to be completed by a relatively near term deadine. (AB 377-Rivas). The cost and scale of such an effort would be enormous.	Please see response to comments 009.07 - 009.17 for specific responses to the identified pollutant listing recommendations.
009.02	A number of the proposed new listings overlap or duplicate existing segment listings, which is not only a waste of	As stated in Section 1.1 of the Staff Report, listing waterbodies on a pollutant-by-pollutant basis is intended to provide clarity when more than one pollutant

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	resources, but could lead to conflict or uncertainty in required actions.	contributes to impairment in a waterbody. Additionally, listing waterbodies on a pollutant-by-pollutant basis provides the flexibility to delist a waterbody for a pollutant when standards are attained for that pollutant following implementation of a TMDL or other regulatory measures for a waterbody-pollutant combination.
009.03	Transparency and clarity are also real concerns. We appreciate the Fact Sheets, which are a useful tool, but in order to evaluate the listings, stakeholders need to have access to clearly presented data points that are the basis for the decision to list. There is a failure to "show the work" behind the listings – data values, sites, methodology, and so on. The Fact Sheets include conclusory statements that the listings are consistent with the Listing Policy, but it is not possible to confirm the accuracy of many of these statements with the available information.	See principal response 4.3 for Data and Analysis Transparency, and Readily Available Data.
009.04	In addition, we found several cases where the Fact Sheet links to data from a waterbody other than the one proposed for listing.	Please see response to comments 009.07 - 009.17 for specific responses to the identified pollutant listing recommendations.
009.05	Lastly, while a report such as this is necessarily the work of many, the draft suffers from an apparent lack of coordination and communication among State Water Board and Regional Board staff regarding applicable standards and interpretations of narrative objectives.	The Integrated Report is a collaborative process between the State and Regional Water Board staff with multiple layers of processes that takes about four years to complete. The State Water Board recognizes that it's important to standardize assessment procedures and uphold region-specific knowledge to maintain consistency, cross-agency collaboration, and utilize the

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		most appropriate objectives/standards/criterion for the Integrated Report.
009.06	The public has had limited time to review this lengthy report and the supporting documents. Having already spent many hours reviewing the report and supporting material, we believe that the draft report is far from a finished product. We urge the State Water Board to take a step back and engage with stakeholders to address these concerns and develop a revised version of the report that accurately reflects those waterbody segments impaired due to pollutant levels where a TMDL is needed.	See principal response 4.2 for Data and Analysis Transparency, and Readily Available Data.
009.07	Several water body segments are proposed for listing due to aluminum.[2] We have significant concerns with the assessment used to support the proposed listings. The Fact Sheets indicate that the listings are based on exceedances of a guideline value for protection of the COLD beneficial use – a 1988 USEPA aquatic life chronic criterion of 87 ug/l. These proposed listings rely on an outdated USEPA guideline value and ignore information developed to support NPDES permitting decisions in the Central Valley Water region in the past two decades. These site-specific studies have clearly demonstrated that the use of the guideline value of 87 ug/l for aluminum is inappropriate. Water Effect Ratio (WER) studies performed by a number of Central Valley POTWs have indicated that the appropriate aluminum concentration for protection of sensitive aquatic life in Central Valley waters is approximately two orders of magnitude higher than the 1988 USEPA chronic criterion. Based on this science, the Regional Board has discontinued use of the 87 ug/l value for	~~Changes to listing recommendations were not made in response to this comment. Elevated levels of aluminum can affect some species' ability to regulate ions and inhibit respiratory functions.~~ Aluminum data evaluated for attainment of aquatic life beneficial uses for the 2020-2022 Integrated Report were initially evaluated using the chronic 1988 U.S. EPA Recommended Aquatic Life Criterion for aluminum of 87 ug/L. In 2018, the U.S. EPA published an updated chronic Recommended Aquatic Life Criterion for aluminum (2018 criterion), which is expressed as a variable aluminum concentration based on pH, dissolved organic carbon, and total hardness values. For the 2020-2022 Integrated Report, sufficient pH, dissolved organic carbon, and total hardness data were not readily available to calculate the 2018 criterion. Because it was not possible to apply the 2018 criterion, the 1988 criterion was initially applied to evaluate aluminum data.

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	performance of reasonable potential analyses and for development of water quality-based effluent limits. For example, the permit for the City of Modesto, Water Quality Control Facility (Order R5-2017-0064) states: "[T]he preliminary results [from the Modesto Phase I WER study] confirm the conditions of the San Joaquin River are not similar to the U.S. EPA study conditions for the development of the recommended chronic criterion. The chronic criterion is overly stringent and is not appropriate to use to interpret the Basin Plan's narrative toxicity objective." (Emphasis added.) Additionally, in 2018, USEPA adopted new aluminum national aquatic life criteria, replacing the 1988 criteria. The new criteria recognize the importance of considering the pH, dissolved organic carbon, and total hardness of waters to which the criteria apply. These factors were inherently considered in the WER testing that has occurred in the Central Valley. Clearly these factors significantly reduce the toxicity of aluminum in Central Valley waters. Given that the proposed listings are based on an inapplicable advisory criterion, and are in conflict with the best science and inconsistent with adopted permits, we request that the proposed listings for aluminum in the Central Valley be removed. Footnote 2: Stockton Ship Channel, San Joaquin River below Stanislaus, Old River, Middle River, Clifton Court, California Aqueduct, Barker Slough, Toe Drain, Sacramento River below City marina.	Staff conducted a cursory review of pH, dissolved organic carbon, and hardness data collected from other sources to compare aluminum data to the 2018 criterion for three Central Valley waterbodies. The results of the cursory review indicate that aluminum concentrations appear to be well below the 2018 criterion, and the 1988 criterion may be overly protective. Therefore, aluminum listing recommendations for 65 waterbodies were revised from "List" to "Do not List." The aluminum listing decisions associated with aluminum data first submitted for the 2020-2022 California Integrated Report and evaluated for attainment of aquatic life beneficial uses will remain as identified in the 2018 California Integrated Report to afford adequate time to gather data and for staff and stakeholders to review any proposed changes. Aluminum data for the 2020-2022 Integrated Report will be re-evaluated during the 2024 Integrated Report cycle using the 2018 criterion should pH, dissolved organic carbon, and total hardness data be available. Below is a summary of the revised listing recommendations associated with the waterbodies identified by this comment: • Delta Waterways (Stockton Ship Channel): Decision ID 121646 and associated LOEs were deleted due to errors in station mapping. Please see response to comment 006.17 and Appendix R: List of Central Valley Regional Water Board Station Location Revisions to Correct Mapping Error and

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		Listing Recommendation Updates regarding the scope of the mapping error and the remedy. • San Joaquin River (Stanislaus River to Delta Boundary): No revision needed as the waterbody was not recommended as impaired for aluminum in the 2020-2022 Integrated Report. • Old River (San Joaquin River to Clifton Court Forebay; in Delta Waterways, central portion): Decision ID 125064 was revised from "List" to "Do not List". • Middle River (in Delta Waterways, central portion): Decision ID 125103 was revised from "List" to "Do not List". • Clifton Court (in Delta Waterways, export portion): Decision ID 125355 was revised from "List" to "Do not List". • California Aqueduct (Panoche Creek to Grapevine): Decision ID 125030 was revised from "List" to "Do not List". • Barker Slough (Solano County, in Delta Waterways, northwestern portion): Decision ID 123420 and associated LOEs were deleted due to errors in station mapping. Please see response to comment 006.17 and Appendix R: List of Central Valley Regional Water Board Station Location Revisions to Correct Mapping Error and Listing Recommendation Updates regarding the scope of the mapping error and the remedy. • Toe Drain (in Delta Waterways, northwestern portion): Decision ID 123148 remains "Do not List". Aluminum data for this waterbody were only assessed for attainment of the MUN beneficial use, not aquatic life beneficial uses.

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		• Sacramento River (Sacramento City Marina to Suisun Marsh Wetlands): Decision ID 132145 was revised from "List" to "Do not List". ~~The 2018 U.S. EPA criteria requires the presence of three water chemistry parameters – pH, total hardness, and dissolved organic carbon. Data submitted for the 2020-2022 Integrated Report did not include total hardness and dissolved organic carbon and therefore it was not possible to apply the 2018 criterion. However, the Water Boards recognize the updated criteria reflects the latest science and it may be appropriate to apply the updated criteria in future Integrated Reports. Therefore, the Water Boards will work to collect pH, total hardness, and dissolved organic carbon data to expand the use of the 2018 aluminum criteria in future cycles.~~ ~~Aluminum data assessed for the 2020-2022 Integrated Report lacked accompanying pH, total hardness, and dissolved organic carbon data. If pH, total hardness, and dissolved organic carbon data were not present, the 1988 U.S. EPA criterion were used. The 1988 criteria are set at levels protective of chronic and acute effects to aquatic life from aluminum in freshwaters with a pH of 6.5 to 9.0 and across all hardness and dissolved organic carbon ranges. Use of the 1988 criteria levels ensured aluminum data were assessed, even when supporting data were unavailable.~~
009.08	New pyrethroid listings are proposed for numerous Central Valley waters. We have concerns regarding the benchmarks used as the basis for the listings, as well as the unnecessary duplication and potential conflict that would result from	Section 6.1.3 of the Listing Policy states that "narrative water quality objectives shall be evaluated using evaluation guidelines" and provides guidance for selection of numeric evaluation guidelines. The requirements

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	requiring additional TMDLs to be developed when an existing TMDL and water quality control program are already in place for these pesticides in the Central Valley.	specify that the evaluation guidelines must be applicable and protective of the beneficial use, linked to the pollutant under consideration, scientifically-based and peer reviewed, well described, and identify a range above which impacts occur and below which no or few impacts are predicted. The Office of Pesticide Programs benchmarks meet the Listing Policy guidance and so are appropriate to use as evaluation guidelines to interpret the narrative objective for determination of impairment. See principal response 2.1 and 2.3 regarding the thresholds used to recommend pyrethroid impairment listings. Please see principal response 2.4 regarding use of existing Central Valley Regional Water Board programs to address pyrethroid impairments.
009.09	A water quality control program has been developed for pyrethroids in waters within the San Joaquin and Sacramento River basins. This control program includes TMDLs for certain previously listed pyrethroid pesticides. The Central Valley Pyrethroid control program includes trigger values that are expressly not to be used as water quality objectives until further evaluation and study are performed, including the Pyrethroid Research Plan and the outcomes from management programs developed in the control program. Moreover, the trigger values were developed to consider the bioavailable fraction associated with particulate organic carbon (POC) and dissolved organic carbon (DOC). All comparisons to triggers should consider the POC and DOC adjustments or otherwise use an approved method to measure filtered pyrethroid concentrations.	See principal response 2.1 regarding the selection and use of thresholds for assessing pyrethroid data and principal response 2.3 regarding use of POC and DOC adjustments.

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009.10	In light of the existing efforts already in place to address pyrethroids, we recommend that the newly proposed listings be categorized consistently as 4A (being addressed by an existing TMDL) or 4B (addressed by another water quality control program.)	Please see principal response 2.4 regarding use of existing Central Valley Regional Water Board programs to address pyrethroid impairments.
009.11	It is well understood that the lower Sacramento River reaches elevated temperatures in the summer and fall months when ambient air temperatures in the 90- to 100-degree range are commonplace. This natural, seasonal variation in air temperatures in the Central Valley plays a large role in the temperature conditions in the Sacramento River and is not a controllable factor. Releases of water from dams far upstream may have limited temporary effects on temperature, but these impacts do not influence this reach of the river. The effects of climate change can be expected to further exacerbate temperature concerns. Addressing temperature in the Sacramento River is a complex undertaking which cannot be accomplished using the TMDL model. TMDLs are designed to achieve objectives through control of defined sources of pollutants. River temperature is a function of climate, flows, shading, reservoir management, and other factors which are not discrete controllable pollutants. We recommend that this reach of the Lower Sacramento River be removed from the 303(d) list or listed as a Category 4C waterbody impaired by non-pollutant related causes.	The factors or sources that cause a waterbody to be impaired, be they natural or anthropogenic, are not identified during the development of a 303(d) list. The listing of a waterbody-pollutant combination as impaired results in the development of a TMDL or alternative for the listed waterbody-pollutant combination. The TMDL, alternative restoration program, or subsequent permit are the forum for considering sources and control options. Therefore, changes to listing recommendations were not made in response to this comment. A TMDL provides a framework for identifying and evaluating point and nonpoint pollutant source(s), natural sources, and a margin of safety to ensure standards are attained. Temperature TMDLs have identified both natural and anthropogenic sources and factors leading to impaired conditions. An example is the Klamath River TMDL (https://www.waterboards.ca.gov/water_issues/programs/tmdl/records/region_1/2012/ref3985.pdf), which also identifies control actions. The U.S. EPA has developed temperature TMDLs and the U.S. EPA supports the use of TMDLs for addressing heat impairment. For examples, see the Columbia and Lower Snake Rivers Temperature TMDL

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		(https://www.epa.gov/system/files/documents/2021-08/tmdl-columbia-snake-temperature-rtc-08132021.pdf) and the Navarro River TMDL for Sediment and Temperature (https://19january2017snapshot.epa.gov/www3/region9/water/tmdl/navarro/navarro.pdf). Additionally, heat, not temperature, is the pollutant, although temperature is the descriptive term used to describe and quantify the pollutant. While air temperature, water volume, and other factors influence water temperatures, direct solar radiation is the primary factor influencing water temperatures in the summer months.
009.12	With respect to other water bodies in the Central Valley, and consistent with the generally observed lack of consistency between listing decisions and the failure to explain the basis for proposed listings, the Integrated Report uses the 2003 USEPA Region 10 Guidance to interpret narrative objectives for temperature in some water bodies. This is the case for several reaches of the San Joaquin River from the Mendota Pool to the Stockton Ship Channel. For other water bodies, like the American River, the Integrated Report relies on Inland Fishes of California (Moyle 1976) to interpret the narrative objective and proposes not to list certain reaches for temperature. There is no explanation as to why the 2003 USEPA Region 10 Guidance is the appropriate source material, given that this Guidance was developed for streams in the Pacific Northwest, an area that is materially different in both climate and hydrology from the Central Valley. Further, there is no explanation as to why the 2003 USEPA Region 10 Guidance was used for some decisions, whereas an entirely	Changes to listing recommendations were not made in response to this comment. Two different thresholds were used to assess two different types of temperature data. Discrete or grab sample or data were assess using a maximum temperature threshold of 21°C based on research from Moyle (1976). Continuous or time-series data collected by an in-situ monitoring device at regular intervals (e.g., every 15 minutes) were assessed using a 7-day average of daily maximum (7DADM) temperature of 20°C recommended by the 2003 U.S EPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards (2003 U.S. EPA Temperature Guidance). The 21°C threshold for assessing grab sample data represents the upper limit of the optimal temperature range for rainbow trout for growth and completion of most life stages (Moyle 1976). Each grab sample temperature

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	different source material (Moyle 1976) was used for others. As with other decisions lacking consistency and explanation, we recommend that State Board and Regional Board staff reconsider their approach to listings due to temperature impairment for the San Joaquin River, especially considering the unsuitability of the TMDL process for temperature.	data point was compared to the threshold and the number of exceedances counted. For approximately 115 waterbodies, there were enough exceedances of the 21°C threshold to indicate that beneficial uses may be threatened. However, these waterbodies were not placed on the 303(d) list because the grab samples did not provide sufficient temporal and spatial representation to determine if temperature conditions adversely affected aquatic life beneficial uses throughout the entire water column or the length of time salmonids were expected to be present. If continuous water quality data were submitted, the 2003 U.S. EPA threshold was used due to having a larger sample size that allowed for a more robust statistical analysis utilizing the 7DADM to determine impairment. An assessment of whether the appropriate salmonid life stages present in the waterbody were being adversely affected was conducted by comparing the 7DADM data values to the 7DADM temperature thresholds of salmonid species identified in the 2003 U.S. EPA Temperature Guidance. Evidence from a number of studies within California support the use of the U.S. EPA water temperature criteria as a benchmark for evaluating and establishing protective standards for anadromous salmonids (Welsh et al. 2001; Hines and Ambrose n.d.; Deas et al. 2004; Sacramento River Temperature Task Group 2016; U.S. EPA 2011; North Coast Regional Water Board 2005). The 7DADM is recommended because it describes the maximum temperatures that fish are exposed to over weekly periods while protecting against acute effects,

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		such as migration blockage, and harmful or chronic effects, such as temperature effects on growth, disease, smoltification, and competition (U.S. EPA 2003). The 2003 U.S. EPA Temperature Guidance is the product of a collaborative process between states, tribes, and federal agencies to: (1) meet the biological requirements of native salmonid species for survival and recovery pursuant to the Endangered Species Act; (2) provide for the protection and propagation of salmonids under the Clean Water Act, and (3) meet the salmonid rebuilding needs of federal trust responsibilities with treaty tribes (U.S. EPA 2003). The 2003 U.S. EPA Temperature Guidance is based on a comprehensive review and synthesis of a large body of peer-reviewed studies and published papers, including temperature studies completed on Central Valley salmonids, and subsequent review by both an independent scientific panel and the public. The San Francisco Bay/Sacramento – San Joaquin Delta Estuary Plan utilizes the 7DADM numeric criteria to protect cold water salmonids. U.S. EPA believes that the Region 10 guidance and its associated Technical Issue Papers provide the most comprehensive compilation of research related to salmonid temperature requirements available. The studies compiled in the guidance and associated papers address the full geographic extent of salmonid populations including California. The recommended numeric criteria to protect cold water salmonids in the guidance were recommended for use by California's Department of Fish and Wildlife in their temperature data submittal and subsequent comments for

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		California's 2008-2010 303(d) list and were subsequently utilized by U.S. EPA to add water-quality limited segments to that list. The guidance's recommended numeric criteria has also been used by the National Marine Fisheries Service as thresholds when considering the suitability of expected water temperatures for Central Valley steelhead in the Stanislaus River under the proposed actions in their Biological and Conference Opinion on the Long-term Operations of the Central Valley and State Water Project (2009). According to Decision ID 122244 for the American River Lower (Nimbus Dam to confluence with Sacramento River), both the 2003 U.S. EPA Region 10 threshold and the Moyle 1976 threshold were used to determine impairment. Twelve LOEs were based on continuous monitoring data and the 2003 U.S. EPA Region 10 threshold and 53 LOEs were based on grab sample data and the Moyle 1976 threshold. Of the 10,209 samples, 4,976 exceeded the COLD threshold for the 7DADM which exceeds the allowable frequency listed in Table 3.2 of the Listing Policy. Of the 4,343 samples, 3,606 exceeded the SPWN threshold for the 7DADM, which exceeds the allowable frequency listed in Table 3.2 of the Listing Policy. Please see the quote below from the Water Quality Control Plan for the San Francisco Bay/Sacramento–San Joaquin Delta Estuary (Bay-Delta Plan) in response to the thermal adaptability of Central Valley salmonids: "The use of the U.S. EPA 2003 criteria for listing water temperature impaired water bodies in the San Joaquin River basin is scientifically justified. It has been

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		recognized that salmonid stocks do not tend to vary much in their life history thermal needs, regardless of their geographic location. There is not enough significant genetic variation among stocks or among species of salmonids to warrant geographically specific water temperature standards (US EPA 2001). Based upon reviewing a large volume of thermal tolerance literature, McCullough (1999) concluded that there appears to be little justification for assuming large genetic adaptation on a regional basis to temperature regimes…." Bay-Delta Plan: Master Response 3.1 Fish Protection pg. 45 https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/water_quality_control_planning/2018_sed/docs/mr3.1.pdf Additionally, see response to comment 009.11.
009.13	The draft report includes proposed listings for trihalomethanes (THMs) in the California Aqueduct, Clifton Court, and the Delta Mendota Canal. These listings are not consistent with the Listing Policy, as they are based not on actual measurements of THMs, but on the results of a THM Formation Potential (THMFP) test developed by the Department of Water Resources, which predicts THMs from other measurements. The use of an indirect method of estimating THMs is not an adequate basis for listings, which are to be based on available data for the waterbodies. Actual measurements of THMs using available analytical methods and appropriate detection limits (supported by QA/QC) should be the basis for any proposed 303(d) listings for THMs, using	Results from Trihalomethane Formation Potential tests should not be considered as part of the assessment of disinfection byproducts according to the primary Maximum Contaminant Levels and LOEs presenting these data were removed from the appropriate decisions. Decisions were revised to include only data from individual THM analyses. If no data were available, then decisions were deleted. These changes affected 84 decisions for the following constituents: Chloroform, Bromoform, Dibromochloromethane, Bromodichloromethane, and total Trihalomethane

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	adopted California Toxics Rule criteria as the threshold values. In the case of these waterbody segments, the available data for individual THM analysis is all non-detect. Therefore, the available data gathered through the proper testing for individual THMs contradicts rather than confirms the predicted THM levels derived from the THMFP testing. In light of the lack of any evidence of impairment of these waterbodies due to THMs, we request that these listings be removed.	("TTHM"). Of the 84 affected decisions, 77 were removed due to lack of appropriate data. Details of LOE and listing recommendations revised for the Central Valley Regional Water Board waterbodies are available in Appendix S: List of Central Valley Regional Water Board Revised Trihalomethane Decisions in the Proposed Final Staff Report.
009.14	The draft report includes proposed listings for Elder, Laguna, and Morrison Creeks for "benthic community effects." These listings are based on an inappropriate use of the California Stream Condition Index (CSCI) threshold of 0.79 that does not consider adequate Central Valley references. The study referenced as support for the lines of evidence (LOEs) based on CSCI thresholds "established 4 biological condition classes based on the distribution of CSCI scores at reference calibration sites." [3] The CSCI 0.79 threshold used in the LOEs for designating a stream reach as altered (impaired) was calibrated on only one Central Valley reference stream that is not on the valley floor or representative of the types of streams considered for these listings. The one site calibration was not validated against any additional sites: "Only 1 reference site was found in the Central Valley, so that region was combined with the Interior Chaparral (whose boundary was within 500 m of the site) for stratification purposes." The CSCI threshold of 0.79 is not sufficiently supported to be used as the justification for impairment until additional valley floor reference streams are identified. The CSCI benchmark is not an adopted water quality objective and has not been	See principal response 3.3 regarding the use of the CSCI threshold of 0.79 for waterbodies in the Central Valley floor. See principal response 3.1 regarding use of the CSCI threshold prior to having a CSCI water quality objective.

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	sufficiently calibrated and validated for Central Valley reference conditions with respect to channels and creeks that experience seasonal flows on the valley floor. As there are insufficient lines of evidence to support the proposed listings for benthic community effects, we request that the listings be removed. Footnote 3: Raphael D. Mazor, et. al. Bioassessment in complex environments: designing an index for consistent meaning in different settings. https://www.waterboards.ca.gov/waterissues/programs/tmdl/records/state board/2016/ref4296.pdf	
009.15	The lower Cosumnes River is proposed to be listed as impaired for nickel. According to the Fact Sheet, three out of eight data points indicate that Sediment Quality Guidelines (SQG) for nickel were exceeded. It is also stated that toxicity was observed in five of 17 Hyallela sediment toxicity tests performed in the period of 2001 to 2018. With regard to the SQG assessment, all exceedances occurred in the period from 2010 to 2018. During that period, none of the eight sediment toxicity (Hyalella) tests demonstrated toxicity. Therefore, no linkage between nickel concentrations in sediment and sediment toxicity has been demonstrated during tests performed over the same time period. We have significant concerns with the use of an SQG value derived in the 2000 paper by MacDonald, Ingersoll, and Berger. This value is not an appropriate basis for 303(d) listing or TMDL development. As noted in the 2000 paper,	Thank you for your comment. Decision ID 119276 for nickel on the Lower Cosumnes River was revised from a recommendation of "List" to "Do not List" because there is no evidence of sediment toxicity associated with the sediment chemistry samples that show elevated levels of nickel, and there is insufficient information to determine if the beneficial uses are not being met due to nickel. However, beneficial uses in the Cosumnes River, Lower (below Michigan Bar; partly in Delta Waterways, eastern portion) remain impaired due to toxicity. Additionally, multiple sediment samples exceed the threshold for nickel for the protection of aquatic life. The threshold for nickel in sediment relies on a probable effect concentration ("PEC") of 48.6 mg/kg (dry weight). This concentration is identified as a threshold above which sediments are likely to be toxic to sediment-dwelling creatures. While assessment under the authority of Clean Water Act Section 303(d) was not a stated

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	appropriate applications of SQG include: design of monitoring programs, interpretation of historical data, evaluation of the need for sediment quality assessments, and use in the conduct of remedial investigations and ecological risk assessments. Notably, the authors do not suggest use of SQG as the basis for 303(d) listing or formal impairment determinations. The authors stop short of recommending the use of SQG as water quality objectives under the CWA and note that uncertainties regarding the bioavailability of sediment-associated contaminants, interactions between contaminants, and ecological relevance are factors which have limited such usage. The use of the SQG value taken from the 2000 paper by MacDonald et al. as the basis for the proposed nickel listing is not adequately supported, is not consistent with its intended use, has not been publicly reviewed, and should not be utilized as an indicator of impairment to support 303(d) listing or TMDL development. In light of the lack of an appropriate basis for listing and the absence of any link between nickel concentrations in sediment and sediment toxicity, we request that the proposed listing for nickel be removed.	objective of the study, the PECs are established to be usable to "identify hot spots with respect to sediment contamination, determine the potential for and spatial extent of injury to sediment-dwelling organisms, evaluate the need for sediment remediation, and support the development of monitoring programs to further assess the extent of contamination and the effects of contaminated sediments on sediment-dwelling organisms." Therefore, the evaluation guideline selected for the assessment of nickel in sediment is appropriate and meets all the requirements of Section 6.1.3 of the Listing Policy
009.16	In reviewing the proposed 303(d) listings for TDS and Specific Conductance in the listed water bodies (Ulatis Creek, San Joaquin River, Toe Drain, Old River), the Fact Sheets indicate that threshold values used to assess the protection of the MUN use were 900 microsiemens per centimeter (µS/cm) for specific conductance and 500 mg/l for TDS concentration, based on the lower end of the range defined in the aesthetics-based SMCL for the salinity measurements. We question this approach on its face, since specific conductance in the range from 900 to 1600 µS/cm is deemed to be acceptable,	In November 2020, the Central Valley Salinity Long-Term Sustainability (CV-SALTS) Program Basin Plan Amendment was approved by U.S. EPA. The CV-SALTS Basin Plan Amendment included a revised chemical constituents objective, which included an annual averaging period for comparing data to Secondary MCLs. However, Water Board staff did not utilize the revised water quality objective in the 2020-2022 Integrated Report because the Basin Plan Amendment did not take effect until November 2020, after the data

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	whereas TDS concentrations in the range from 500 to 1000 mg/l are likewise deemed to be acceptable under the Safe Drinking Water Act (SDWA). Examination of the data set used in the proposed Ulatis Creek listing shows that none of the data points exceeds 1600 µS/cm, whereas one of 52 data points in the Old River segment exceeded 1600 µS/cm. Additionally, the use of single data points in lieu of longer-term averages is an inappropriate approach, inconsistent with compliance assessment methods used in the SDWA or CWA for parameters which are not human health-based. In the case of the Lower San Joaquin River and the Toe Drain, the MUN use is not a designated use, so the analysis based on SMCL values is inappropriate. As a result of the above, we request that the proposed listings for TDS and Specific Conductance in Ulatis Creek, Old River, the Toe Drain and Lower San Joaquin River be removed and that listings in any other water bodies be re-examined using appropriate SMCL ranges, averaging periods, and use designations.	solicitation cut-off date of June 14, 2019. As a result, most of the data analyses for the 2020-2022 Integrated Report were underway or complete. Data were not reassessed using the new chemical constituents objective for the 2020-2022 Integrated Report following receipt of comments due to limited time and the need to determine if it is reasonable or feasible to achieve the lower levels of the range of the Secondary MCL. Additionally, TDS data were evaluated but not used in the 2020-2022 Integrated Report, and no changes from the existing listing status are recommended. The TDS decisions for these waterbodies were revised to reflect that data were not used to make a listing recommendation for the 2020-2022 Integrated Report. The TDS and EC data will be assessed using the new objective during the 2024 Integrated Report as part of an early, off-cycle assessment. Please also refer to responses to comments 023.04 and 023.05 for information concerning the San Joaquin River (Merced River to Tuolumne River) and 003.06 for additional discussion of the use of a data cutoff date. Regarding the use designation for the Lower San Joaquin River and the Toe Drain, these waterbodies have not been de-designated for MUN; therefore, the analysis based on the Secondary MCL value is appropriate.

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009.17	A new 303(d) listing for manganese in Old River is proposed, using the Secondary MCL for manganese (0.050 mg/l) as the threshold value. Review of the dissolved data used in the listings show that three individual samples, with concentrations of 0.053, 0.053, and 0.051 mg/l, exceeded the SMCL, out of 30 samples tested in the period from August, 2013 to April, 2016. In reviewing the measured values for total manganese for the samples in question, it was observed that the dissolved to total ratio for these samples ranged from 0.78 to 0.93, which is unusually high and calls into question the dissolved measurement. Additionally, the use of individual data points (in lieu of long-term averages) to interpret compliance with an aesthetics-based SMCL for manganese is inconsistent with compliance assessment methodologies under either the SDWA or the CWA, where quarterly or annual averages are used. As a result, we request that the proposed listing for manganese in Old River be removed.	Changes to listing recommendations were not made is response to this comment. In evaluating manganese data for Old River (San Joaquin River to Clifton Court Forebay; in Delta Waterways, central portion), the measured values for dissolved manganese (the samples in question) passed laboratory quality assurance processes. The secondary MCL for manganese is explicitly incorporated by reference as part of the Chemical Constituents Water Quality Objective contained in the Water Quality Control Plan for the Sacramento and San Joaquin River Basins. The objective is expressed as a maximum concentration and quarterly or annual averages are not needed to assess data. With regards to data averaging, data were assessed according to Section 6.1.5.6 of the Listing Policy.

Letter 10. Paul Bedore, City of Brentwood

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010.01	Dissolved Oxygen (Decision ID 128469) A list of comments on LOEs for the proposed 303(d)-listing for dissolved oxygen (DO) in Marsh Creek is provided in Table 1. The decision and LOEs should be revised to address the following issues.	Thank you for your comment. Staff confirmed that the listing recommendation for Decision ID 128469 included duplicate (ancillary) LOEs. The ancillary LOEs listed in Table 1, below, have been removed. In addition, during evaluation of this comment, it was noted that some of the LOEs were incorrectly written for

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	• The decision indicates 15 of 49 samples exceed the water quality objective, but this sample count includes samples from 22 ancillary LOEs that do not meet QA/QC requirements of the 2015 Listing Policy (State Water Resources Control Board 2015). The ancillary LOEs should be omitted from the exceedance and sample count for the final decision. • There are numerous duplicate LOE entries in the decision (Table 1). • Of the seven LOEs referenced in the decision that are not "ancillary," none of the DO measurements in the references exceed the water quality objective of 5 mg/L (Table 1), with an exceedance constituting a DO measurement less than 5 mg/L. Upon correcting these issues, the information in the 2020-2022 Integrated Report administrative record does support 303(d)-listing Marsh Creek for dissolved oxygen at this time.	this listing recommendation. LOEs 224285, 224286, 224204, 224205, 224208, and 224209 were deleted and replaced with LOEs 233891, 233896, and 233895. Details of corrected and replaced LOEs for the Central Valley Regional Water Board waterbodies are available in Appendix T: List of Central Valley Regional Water Board Corrected Dissolved Oxygen SSO LOEs in the Proposed Final Staff Report. Upon removal of the ancillary LOEs and re-assessment, the recommendation for Marsh Creek (Marsh Creek Reservoir to San Joaquin River; partly in Delta Waterways, western portion) was revised from "List" to "Do not List."

Table 1. LOEs for Listing Decision ID 128469, Dissolved Oxygen in Marsh Creek (Marsh Creek Reservoir to San Joaquin River; partly in Delta Waterways, western portion), and comments from LOE review.

LOE ID	LOE Subgroup	No. Exceedances relative to No. Samples	Comment
22238	Pollutant-water	0 of 19	--
224287	Ancillary	0 of 1	Ancillary LOEs should not be used as basis for listing decision
224183	Ancillary	1 of 1	Ancillary LOEs should not be used as basis for listing decision. Repeat of LOE 224253. Data for station MC12 from 5/15/2018 (8.5 mg/L) does not exceed water quality objective.
224184	Ancillary	1 of 1	Ancillary LOEs should not be used as basis for listing decision
224204	Pollutant-water	0 of 1	--

LOE ID	LOE Subgroup	No. Exceedances relative to No. Samples	Comment
224205	Pollutant-water	1 of 1	This is a duplicate LOE to 224208 and should be removed. Data for station 544PS917 from 5/20/2019 (9.61 mg/L) does not exceed the water quality objective.
224206	Ancillary	1 of 1	Ancillary LOEs should not be used as basis for listing decision
224207	Ancillary	1 of 1	Ancillary LOEs should not be used as basis for listing decision
224208	Pollutant-water	0 of 1	This is a duplicate LOE to LOE 224205.
224209	Pollutant-water	0 of 2	--
224210	Ancillary	1 of 1	Ancillary LOEs should not be used as a basis for listing decision. Data for station 544R00281 from 5/15/2013 (10.01 mg/L) does not exceed water quality objective.
224228	Ancillary	0 of 1	Ancillary LOEs should not be used as a basis for listing decision.
224229	Ancillary	0 of 1	Ancillary LOEs should not be used as a basis for listing decision.
224230	Ancillary	0 of 1	Ancillary LOEs should not be used as a basis for listing decision.
224231	Ancillary	1 of 1	Data for station 544R01305 on 4/23/2015 (7.5 mg/L) does not exceed water quality objective.
224232	Ancillary	1 of 1	Data for station 544R01993 on 5/16/2018 (7.57 mg/L) does not exceed water quality objective.
224233	Ancillary	1 of 1	Data for station 544R01737 on 5/16/2018 (8.05 mg/L) does not exceed water quality objective.
224234	Ancillary	0 of 1	Ancillary LOEs should not be used as basis for listing decision.
224286	Pollutant-water	2 of 2	All data in the reference for station 541MERECY do not exceed the water quality objective.
224285	Pollutant-water	1 of 1	Data for station 544PS0725 on 4/16/2015 (11.36 mg/L) does not exceed the water quality objective.
224284	Ancillary	0 of 1	Ancillary LOEs should not be used as basis for listing decision.
224283	Ancillary	1 of 1	Ancillary LOEs should not be used as basis for listing decision. Data for station MC02 from 5/14/2018 (14 mg/L) does not exceed water quality objective.
224259	Ancillary	1 of 1	Ancillary LOEs should not be used as basis for listing decision. Data for station MC13 from 5/16/2018 (6.91 mg/L) does not exceed water quality objective.
224258	Ancillary	1 of 1	Ancillary LOEs should not be used as basis for listing decision.

LOE ID	LOE Subgroup	No. Exceedances relative to No. Samples	Comment
			Data for station MC01 from 5/14/2018 (6.43 mg/L) does not exceed water quality objective.
224257	Ancillary	0 of 1	Ancillary LOEs should not be used as basis for listing decision. Repeat of LOE 224258.
224255	Ancillary	0 of 1	Ancillary LOEs should not be used as basis for listing decision. Repeat of LOE 224283.
224256	Ancillary	0 of 1	Ancillary LOEs should not be used as basis for listing decision. Repeat of LOE 224184.

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010.02	Benthic Community Effects (Decision ID 131504) This comment pertains to the proposed decision to 303(d)-list Marsh Creek for Benthic Community Effects. Five LOEs (231897, 231896, 232321, 231899, 231898) were used to directly support this listing, consisting of data from Benthic Macroinvertebrate (BMI) surveys of Marsh Creek. Data from these BMI surveys was evaluated with the California Stream Condition Index (CSCI). The CSCI is a biological scoring tool that translates complex data about BMIs found living in a stream into an overall measure of stream health. The CSCI score is calculated by comparing the expected condition of the sample site based on BMI outcomes from a pool of references sites that are assumed to be minimally altered/impacted with actual (observed) results (Rehn 2015). Sites with scores below 0.79 are considered by this 303(d)-listing decision to have exceeded the narrative toxicity	The Staff Report was revised to add more information about the assessment of benthic community data. Please see Staff Report Section 2.5.6 for Benthic Community Effects. Additionally, please see principal response 3.

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	objective for the aquatic life beneficial use (All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life; Central Valley Regional Water Quality Control Board 2018). Although there are a range of CSCI values (0.79–0.63) that are purported to be associated with a “likely altered condition,” the listing decision indicates that 0.79 is the threshold to determine an exceedance of the water quality objective. No justification or State regulatory decision/guidance has been cited to support the specific use the upper range of this category (0.79) as opposed to the lower range (0.63), both of which apply to the “likely altered condition” category. The CSCI score for the five LOEs ranged from 0.30 to 0.51. These scores are below the 0.79 CSCI score used in the decision to indicate an exceedance of the narrative toxicity objective. However, the following issues are associated with applying the 0.79 CSCI threshold to Marsh Creek.	
010.03	First, a landscape context is required to describe how bioassessment data can support management decisions (Beck et al. 2019). Using the 0.79 CSCI threshold for Marsh Creek is questionable because the CSCI does not consider the effects that highly developed landscape features within this watershed can have on constraining the creeks biological integrity.	The landscape context is an integral component to understanding the causes of biological impairment and in identifying best management actions intended to address causes. Though there is no direct physical habitat element required to calculate the CSCI, human activity criteria are used in the CSCI. These human activities include land use, road density, and hydrologic alteration, which are used to select reference sites by evaluating

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		stress due to anthropogenic factors and to identify minimally disturbed (reference) sites. The CSCI is then used to determine if a waterbody is impaired by comparing the biological community to what is expected in an applicable reference condition. See principal response 3.2.2 regarding the selection of the 0.79 CSCI threshold and 3.3 regarding use of the threshold in the Central Valley.
010.04	Second, the 2015 Listing Policy (section 6.1.5.8) requires that the Water Boards evaluate available physical habitat data to support bioassessment-based conclusions for waterbodies such as Marsh Creek. Section 6.1.5.8 of the Listing Policy states: *"When evaluating biological data and information, the Regional Water Boards shall evaluate all readily available data and information and shall: […]* • *Evaluate bioassessment data from other sites, and compare to reference conditions. Evaluate physical habitat data and other water quality data, when available, to support conclusions about the status of the water segment."* This is key to using bioassessment data to interpret the narrative toxicity objective because the biological community in a particular waterbody can be significantly affected by physical habitat and not just toxic pollutants (Beck et al. 2019). In fact, the Central Valley Index of Biologic Integrity (IBI) report produced by the State Water Board communicates	Changes to listing recommendations were not made in response to this comment. Section 6.1.5.8 of the Listing Policy requires the evaluation of "physical habitat data and other water quality data, when available, to support conclusions about the status of the water segment." The State Water Board's Surface Water Ambient Monitoring Program ("SWAMP") developed an index of physical habitat integrity ("IPI") that uses the habitat data collected during bioassessment sampling (Rehn et al., 2018). The IPI is a multimetric index based on statistical models that used a large statewide reference data set to distinguish natural variability from anthropogenic stress. The models characterize physical habitat condition for streams in California and work across the diverse stream types found in California. Physical habitat data in the form of a calculated IPI for Marsh Creek were not readily available for the 2020-2022

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	the importance of characterizing physical habitat to objectively rate biological condition in a region with high urban and agricultural intensity (Rehn et al. 2008). The Marsh Creek watershed is highly urban downstream of Highway 4, where the bioassessments in the record were collected, and has agriculture land uses upstream of Highway 4. The State's bioassessment protocol requires that physical habitat be assessed when conducting bioassessments (Ode et al. 2016) and the bioassessments utilized to support the listing decision were conducted by the State's Surface Water Ambient Monitoring Program (SWAMP), yet the administrative record has not discussed the physical habitat data that is available from the bioassessments or evaluated bioassessment data in relation to it. Without evaluating the relationship between CSCI scores and physical habitat, the listing decision is incomplete. Hence, it is premature to conclude that low CSCI scores are evidence that water quality objectives are exceeded.	Integrated Report. Although physical habitat data for Marsh Creek are available in CEDEN, those data were not calculated into an index value and therefore not initially considered in the development of the Draft Integrated Report. In response to this comment, State Water Board staff calculated IPI scores for two sites on Marsh Creek. Staff also calculated IPI scores for six reference waterbodies with the greatest influence on the expected benthic community conditions of Marsh Creek. The IPI scores for the two sites at Marsh Creek and the six reference sites had IPI scores at or above 0.94, a likely healthy condition. This indicates that the physical habitat of Marsh Creek is not the primarily cause of the impaired biological conditions. See the table below for the IPI scores for two Marsh Creek sites and the six reference sites.

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Waterbody	Station Code	Sample Date	IPI
Marsh Creek ~0.3mi above Hwy 4	544PS0725	4/16/2015	0.94
Marsh Creek ~0.4mi below Balfour Rd.	544PS0917	5/20/2019	1.02
Coyote Creek ~1.4mi below Big Cyn.	205CYCBBC	6/28/2010	1.06
Coyote Creek ~1.4mi below Big Cyn.	205CYCBBC	5/16/2016	1.06
Arroyo Hondo Creek above Calaveras Reservoir	204AHOACR	6/2/2014	1.03
Arroyo Hondo Creek above Calaveras Reservoir	204AHOACR	4/27/2015	1.01
Arroyo Hondo Creek above Calaveras Reservoir	204AHOACR	4/26/2016	0.97
San Antonio River	309SARANF	8/26/2008	0.95
San Antonio River	309SARANF	6/11/2019	1.00
Laguna Creek	305LGCACR	7/16/2008	0.99
Laguna Creek	305LGCACR	5/28/2019	1.03
Deer Creek	504PS0227	8/12/2009	1.04

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		Physical habitat data does provide useful information for determining the cause of benthic community impairment. The listing of a waterbody-pollutant combination as impaired results in the development of a TMDL or alternative for the listed waterbody-pollutant combination. The TMDL, alternative restoration program, or subsequent permit is the better forum for considering sources and requirements. In accordance with Listing Policy Section 6.1.5.8, any waterbody listing for benthic community effects must also have at least one other 303(d) pollutant listing for that waterbody for aquatic life water quality impairments. For Marsh Creek, water quality data were evaluated for pollutants and Decision 131504 cites impairments for bifenthrin, cyfluthrin, lambda cyhalothrin, and permethrin. See Table 3-3 of Principle Response 3.3 for the number of exceedances and samples for each pollutant impacting aquatic life beneficial uses. The exceedances of these specific pollutants and the number of low CSCI scores provide evidence that the toxicity water quality objective is not attained and the benthic community has experienced detrimental physiological responses.
010.05	Third, the CSCI may not identify the biological community that can reasonably be expected given the flood control improvements that have changed the morphology of Marsh Creek during the past century. Flood control improvements occurring prior to 1978 straightened much of Marsh Creek to	Changes to listing recommendations were not made in response to this comment. See Staff Report section 2.5.6 and principal response 3.3 and regarding the selection of the 0.79 threshold and its application in the Central

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	enhance flood water conveyance and these improvements replaced the naturally occurring pools, gravel riffles, gentle bars, and steep cut-banks with a trapezoidal flood control channel with a flat bottom and uniformly sloped banks devoid of vegetation (Cain et al. 2003). Downstream of Highway 4, engineered grade control structures occur throughout the creek channel to maintain an even gradient for flood control. These structures create a series of pools throughout the creek channel. In totality, these modifications could constrain the biological assemblage of Marsh Creek, particularly downstream of Highway 4 and upstream of the Brentwood WWTP discharge, where all bioassessments were collected for LOEs in the decision's administrative record. Additionally, the local flood district also removes riparian vegetation along portions of the creek (Cain et al. 2003) which can deteriorate habitat conditions for BMI. Channel characteristics, vegetation maintenance activities, and local site physical habitat will affect the creek's biological integrity.	Valley. See response 010.04 for discussion on physical habitat impacts to CSCI scores. While physical channel factors, such as engineered concrete channels designed to provide flood control protection, often do impact CSCI scores and benthic communities, the data from Marsh Creek indicate that the benthic community impairment is caused by pollutants, including pesticides. Further, the Integrated Report is not the most appropriate venue to consider and balance the benefits of flood control protection and the impacts to channel morphology and benthic communities. The Listing Policy does not require a consideration of reasonableness and the 303(d) list does not have a direct regulatory effect. The listing of a waterbody-pollutant combination as impaired results in the development of a TMDL, alternative restoration plan for the listed waterbody-pollutant combination, or a change to a water quality objective in which reasonable is considered in accordance with Water Code section 13241.
010.06	To supplement any physical habitat data that may be available (index of physical integrity or IPI), the listing should also consider the Stream Classification and Priority Explorer (SCAPE) (Beck et al. 2019). The SCAPE tool provides an estimate of the CSCI score expected to occur considering physical alterations and habitat available in the waterbody that are associated with surrounding land uses. This is	The commenter's effort in identifying an additional tool to supplement benthic community effects listing recommendations for the Integrated Report is appreciated. However, this information was submitted after the 2020-2022 Integrated Report data solicitation cutoff date (June 14, 2019), so it was not considered in this cycle. The cited study (Beck et al., 2019) described

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	important because SCAPE can be used to identify where altered landscapes limit biological integrity and waterbodies not meeting expectations given their surrounding land uses. SCAPE scores for the Central Valley were identified from Google Earth ™ SCAPE files provided by a co-author of the SCAPE tool's academic publication, Beck et al. (2019) (J. Westfall personal communication to P. Bedore, July 1, 2021). At Dainty Avenue, the farthest upstream bioassessment station on Marsh Creek (Station 544R01737), SCAPE projects CSCI scores should range 0.29–0.81 (10th–90th percentile projections from the core SCAPE model). At Lone Tree Way, the farthest downstream bioassessment station in Marsh Creek (544R01993), SCAPE projects CSCI scores should range 0.31–0.65 (10th–90th percentile projections from the core SCAPE model). Hence, SCAPE's projected CSCI scores for Marsh Creek indicate that alterations to the creek associated with the surrounding type of land uses can be expected to constrain local BMI communities to CSCI values less than 0.79. Moreover, CSCI scores for Marsh Creek bioassessments (0.30–0.51) are in the range estimated for the creek by SCAPE (0.29–0.81).	the priority of the Stream Classification and Priority Explorer ("SCAPE") to identify and prioritize restoration sites. The Beck et al. paper states: *The predictive performance of quantile regression forests in bioassessment applications have also not been fully explored, such as understanding the accuracy of predictions or if the relative importance of predictors varies depending on the quantiles being predicted. Our approach suggests these models are promising and future work could focus on any of the above suggestions to better understand the utility of these tools.* After review, the State Water Board may consider using the SCAPE tool as additional information for waterbodies assessment, especially for placement under Category 1, which are waterbodies that exceed the CSCI threshold of 0.79, but do not have an associated pollutant to 303(d) list the waterbody as impaired. The tool could provide additional information of benthic macroinvertebrate conditions that are impacted by surrounding altered landscapes for the Category 1 waterbodies.
010.07	In summary, without evaluating the available physical habitat information for its relationship to the CSCI scores observed for Marsh Creek, as required by the 2015 Listing Policy, it is premature to conclude that CSCI scores less than 0.79 are evidence that toxic substances are present in Marsh Creek at	See response to comment 010.04.

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	concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.	
010.08	Lastly, the proposed benthic community effects listing decision has been associated with all other proposed or current 303(d) listings for Marsh Creek. The association between pyrethroids (and individual pyrethroids proposed for listing) and toxicity with benthic community effects is not fully supported without first identifying if the benthic community effects and prevalence of tolerant BMI species are explainable by physical habitat or channel morphology. Moreover, Marsh Creek is proposed for delisting of diazinon and the administrative record, upon correction, does not support 303(d)-listing DO at this time. Finally, mercury should not be associated with the benthic community decision because there are no LOEs for mercury cited in the decision and there is no indication that mercury in Marsh Creek is at concentrations that adversely affect the BMI community.	Listing Policy Section 3.9 details the requirements for identifying benthic community effects impairments. This includes associating a benthic community effects recommended listing with a listing due to "water or sediment concentrations of pollutants including but not limited to chemical concentrations, temperature, dissolved oxygen, and trash." This includes pollutant concentrations associated with aquatic life degradation, such as pyrethroids or toxicity. There is no requirement to first consider and exclude physical habitat or channel morphology as the cause of the impairment before listing. Further, a CSCI score reflects the combined impacts of both habitat and chemical stressors to the biological community. See principal response 3.2 regarding use of CSCI scores, the selection of the CSCI 0.79 threshold that is based on the 10th percentile of reference sites, and the link to exceedances of pollutants. The listing recommendation for Marsh Creek was revised to remove associations to diazinon, and mercury impairments to the benthic community impairment. Thank you for the comment.

No.	Comment	Response
010.09	Bifenthrin (Decision ID 117542), Cyfluthrin (Decision ID 117545), Lambda-cyhalothrin (Decision ID 117547), Permethrin (Decision ID 130362), Pyrethroids (117540) The data references for the pyrethroids bifenthrin (LOE 195872), cyfluthrin (LOE 196195) lambda-cyhalothrin (LOE 196200), permethrin (LOE 196933), and pyrethorids (LOE 197026) all pertain to sediment samples collected at station 541MERECY and rely upon the same data reference (Field, Habitat, Sediment, Toxicity data for the 2020/2022 integrated report in Region 5). Data from this reference is provided in Table 2. This data reference includes a number of comments on the laboratory's analytical batches (LabBatchComments column) for which these pyrethroids were tested. Although these comments are abbreviated notations, they appear to highlight a number of issues with the analytical method. The 2015 Listing Policy (section 6.1.4) identifies that "If any data quality objectives or requirements in the QAPP are not met, the reason for not meeting them and the potential impact on the overall assessment shall be documented." Since a number of analytical issues are highlighted in the "LabBatchComments" of the data reference for the pyrethroid measurements in question, the administrative record should more fully define what the issues consisted of and whether the issues caused measurement quality or data quality objectives to not be met. The data reference identifies the "DataQuality" code as "Passed QC" for most of the measurements, but there is insufficient information in the record to determine the scope of the issues identified in the	Changes to listing recommendations were not made in response to this comment. The data associated with this comment were collected by SWAMP, which is identified as a major monitoring program. Data from SWAMP are considered of adequate quality per Section 6.1.4 of the Listing Policy. Identification as a major monitoring program signifies that data are supported by a Quality Assurance Program Plan and a Quality Assurance Project Plan that meet the requirements of 40 CFR 31.45 and are acceptable for use in developing the section 303(d) list. Laboratory notations from the "ResQualCode" and "QACode" columns are used to inform the selection of data used for the assessment. Information in the "QACode" column informs data quality by describing any special conditions, situations or outliers that occurred prior to or during laboratory analysis to achieve the result. The information provided in the "ResQualCode" column informs specific details about the analytical result of the sample, such as if the analyte was detected but not quantifiable or if the result was a field estimation. The two columns, which were populated by the laboratory, identify significant issues with the sampling and analysis processes that may affect the reported result. Additionally, these two columns also inform the "DataQuality" column.

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	LabBatchComments column, whether these issues caused data quality objectives to not be met, and the potential impact of these issues on the overall assessment. Until the administrative record is supplemented with this information, it is not clear whether the data is of sufficient quality to be used to place Marsh Creek on the 303(d) list for pyrethroids (or individual pyrethroids). We assume measurements designated in the DataQuality column as "Extensive review needed" are not counted toward samples and exceedances used for the listing decisions, but this could also be clarified. However, data used to identify exceedances in the LOEs listed above should be reviewed to ensure that data and measurement quality objectives were achieved before the data is used to 303(d) list the waterbody segment.	Some analytical results identified as "Passed QC" in the "DataQuality" column were not assessed since the laboratory method was not sufficiently sensitive to detect sample pyrethroid concentrations. Analytical results that were identified as non-detects where the reporting limit was greater than the threshold were omitted from the assessment. Additionally, detections that were not quantifiable were omitted and not assessed. Analytical results identified as "Extensive review needed" in the "DataQuality" column were not assessed to reduce potential error. Data omitted and not assessed were not used to make listing or delisting recommendations for the 303(d) list. Please see principal response 4.2 for more information regarding data used for assessments.
010.10	Finally, the Central Valley Water Board has adopted a conditional prohibition on the discharge of pyrethroids that applies throughout the entire Central Valley region. The discharge prohibition became effective as part of the Central Valley Pyrethroid Control Program Basin Plan Amendment and Total Maximum Daily Load (TMDL) when it was approved by USEPA on April 22, 2019. The staff report for the Basin Plan Amendment states that this program and discharge prohibition is intended to address future impairments of Central Valley waterbodies from pyrethroids without the need to adopt a TMDL for each waterbody newly designated as impaired. As such, any newly proposed pyrethroid listings for Central Valley waterbodies, including Marsh Creek, should be	See principal response 2.4 regarding use of existing Central Valley Regional Water Board programs to address pyrethroid impairments.

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	categorized under Clean Water Act section 305(b) into category 4b since “Another regulatory program is reasonably expected to result in attainment of the water quality standard within a reasonable, specified time frame.”	

Letter 11: Tim Murphy, City of Carlsbad

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011.01	The City has four key areas of concern: 1. Use of Inappropriate Guidelines and Data for Pyrethroid Listings 2. Use of the California Stream Condition Index as a Basis for Benthic Community Effects Listings 3. Indicator Bacteria Listings that Rely on the Shellfish Harvesting Beneficial Use 4. Other Data Concerns	See response to comments 011.02 - 011.08.
011.02	Use of Inappropriate Guidelines and Data for Pyrethroid Listings In some cases, pollutants were assessed using numeric evaluation guidelines that are not water quality criteria adopted by USEPA, the State Water Resources Control Board (State Water Board), or the San Diego Regional Water Quality Control Board (San Diego Water Board) and which	See principal response 2.1 regarding the selection and use of thresholds for assessing pyrethroid data.

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	are otherwise not appropriate, per the Listing Policy, for use as numeric guidelines to interpret narrative objectives.	
011.03	*Inappropriate use of Trigger Values from the Pyrethroid Basin Plan Amendment (BPA) for the Central Valley Region* For several listings for pyrethroids (as a class of pollutants) and for individual pyrethroid compounds, lines of evidence (LOEs) supporting the Fact Sheets were developed by comparing sample data to screening values from a Basin Plan Amendment (BPA) from the Central Valley Region - Amendment to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Pyrethroid Pesticide Discharges[1] (Region 5 BPA). This BPA established a total maximum daily load (TMDL) and Conditional Prohibition specifically for the Sacramento River and San Joaquin River Basins. This BPA further established trigger values to indicate when a pyrethroid management and monitoring plan needs to be developed and implemented. The BPA states [emphasis added]: "The pyrethroid triggers are intended to be used to indicate when pyrethroid management plans need to be developed and management practices are to be implemented by the discharger. When the triggers are exceeded in monitoring or as part of a toxicity evaluation, the discharger may be required to initiate trend monitoring. These actions will provide information on achievability and costs to the Board to inform future evaluation of potential water quality objectives. The	See principal response 2.1 regarding the selection and use of thresholds for assessing pyrethroid data.

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	pyrethroid triggers are not for use as numeric water quality based effluent limitations or for reasonable potential analysis." Footnote 1: CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD.	
011.04	*Inappropriate use of USEPA Office of Pesticide Programs (OPP) Aquatic Life Benchmarks* For several listings, Fact Sheets cite the use of a USEPA Office of Pesticide Programs (OPP) Aquatic Life Benchmark as the basis for a listing. However, USEPA is clear that the OPP benchmarks have been developed as a screening tool that can be used for the following:[2] "Comparing a measured concentration of a pesticide in water with an aquatic life benchmark can be helpful in interpreting monitoring data and in identifying and prioritizing sites and pesticides that may require further investigation." The OPP benchmarks are not appropriate for use as an interpretation of a narrative water quality objective to determine impairments. Impairment listings should not be based solely on OPP benchmarks. The example from a Carlsbad Hydrologic Unit (CHU) water body where an OPP benchmark was used as a guideline is as follows: • LOE#142195 for Decision ID 111611 (List Aqua Hedionda Creek for Deltamethrin)	Changes to listing recommendations were not made in response to this comment. The Office of Pesticide Programs aquatic life benchmarks meet the requirements of Section 6.1.3 of the Listing Policy guidance and so are appropriate to use as evaluation guidelines to interpret the narrative toxicity objective for determination of impairment. Although U.S. EPA developed the benchmarks as a screening tool, the benchmarks meet evaluation guideline requirements of the Listing Policy as the benchmarks are applicable and protective of the beneficial use, linked to the pollutant under consideration, scientifically-based and peer reviewed, well described, and identify a range above which impacts occur and below which no or few impacts are predicted. The aquatic life benchmarks are based on toxicity studies reviewed by U.S. EPA as part of the pesticide registration or re-registration process. The benchmarks are not applied in the assessment as water quality objectives. Water quality objectives can only be established through a rulemaking process that establishes or amends a water quality control plan. The 303(d) list is not a rulemaking process and the evaluation guidelines used to assess beneficial use attainment for

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	Footnote 2: Aquatic Life Benchmarks and Ecological Risk Assessments for Registered Pesticides | US EPA	the 303(d) list are not water quality objectives. Additionally, listing of a waterbody does not result in a direct regulatory impact as the 303(d) list is for informational purposes.
011.05	*An Unreviewed Guideline was the Primary Basis for Decision ID 111585 (Do Not Delist Agua Hedionda Creek for Chlorpyrifos)* All seven of the exceedances used to support the listing were from LOE #72847 and were based on a chronic toxicity criterion of 0.014 ug/L from a non-peer-reviewed gray literature report (Siepmann and Finlayson 2000 – an administrative report from CA Department of Fish and Game (CDFG)). In contrast, LOEs #141436 and #77709, both of which relied on an EPA water quality guideline more than two orders of magnitude higher than the CDFG report value (2018 USEPA drinking water health advisory level of 2 ug/L) demonstrated no exceedances out of a total of 39 samples. Based on this information, the City requests that the delisting decision be re-evaluated.	Changes to listing recommendations were not made in response to this comment. Decision ID 111585 to "Do not Delist" for chlorpyrifos in Agua Hedionda Creek is based on the most sensitive beneficial use, which in this case is the protection of aquatic life (i.e. WARM). While data were also assessed for the less-sensitive MUN beneficial use (LOEs 77709 and 141436), the listing recommendation itself is based on the WARM beneficial use (LOEs 77708 and 219689 for water). Please note that the seven exceedances that support the "Do not Delist" recommendation for chlorpyrifos in Agua Hedionda Creek are from LOE 77708, not 72847. The chlorpyrifos threshold is from Siepmann and Finlayson 2000, as described in detail in the Central Valley Regional Water Quality Control Board's, "Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Diazinon and Chlorpyrifos Runoff into the Lower San Joaquin River, Appendix E. Criteria Calculations for Diazinon and Chlorpyrifos. Final Staff Report, October 2005" (https://www.waterboards.ca.gov/water_issues/programs/tmdl/records/state_board/2013/ref4093.pdf).

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		This Amendment was peer reviewed, adopted by the State Water Board, and approved by U.S. EPA. Its chlorpyrifos guideline, based on Siepmann and Finlayson 2000, is used for the protection of aquatic life throughout the state by all the California Water Board regions. The guideline is used for Integrated Report recommendations in accordance with Section 6.1.3 of the Listing Policy (Evaluation Guideline Selection Process).
011.06	*Data from the Total Fraction was Incorrectly Used to Support Pyrethroid Listings* Freely dissolved pyrethroid concentrations are the appropriate measure to be used within the formulas from the Region 5 BPA to determine the acute and chronic additive concentration goal units. These trigger values were developed to consider the bioavailable fraction associated with particulate organic carbon (POC) and dissolved organic carbon (DOC). All comparisons to triggers should consider the POC and DOC adjustments or otherwise use an approved method to measure filtered pyrethroid concentrations. However, data for the total fraction in water was used – potentially without adjustment – when dissolved fractions were not available to tally exceedances for the following listings in the CHU. Examples of decisions that should be reconsidered include: • Decision ID 111603 (List Agua Hedionda Creek for Pyrethroids)	Changes to listing recommendations were not made in response to this comment. See principal response 2.3 regarding use of total and dissolved fraction data.

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	• Decision ID 111565 (List Buena Vista Creek for Pyrethroids) • Decision ID 111604 (Do Not Delist Agua Hedionda Creek for Bifenthrin) • Decision ID 111566 (Do Not Delist Buena Vista Creek for Bifenthrin) • Decision ID 111605 (Do Not Delist Agua Hedionda Creek for Cypermethrin) • Decision ID 111567 (List Buena Vista Creek for Cypermethrin) • Decision ID 111585 (Do Not Delist Agua Hedionda Creek for Chlorpyrifos) • Decision ID 111610 (List Agua Hedionda Creek for Cyfluthrin) • Decision ID 111573 (List Buena Vista Creek for Cyfluthrin) • Decision ID 111612 (List Agua Hedionda Creek for lambda Cyhalothrin) • Decision ID 111611 (List Agua Hedionda Creek for Deltamethrin)	
011.07	*Poorly Documented or Unreviewed Guidelines were Used to Interpret Sediment Data for Pyrethroid Listings* Data evaluated for pyrethroids for water bodies in the CHU included sediment data, in total fraction. A variety of scientific articles are cited as sources of guidelines, but the actual values for the constituent-specific numeric guidelines resulting from those articles are not specific in the fact sheets in many	See principal response 4.3 Data Transparency and Readily Available Data. Changes to listing recommendations were not made in response to this comment. Decision IDs 111603 and 111565 remain “List” and Decision IDs 111604 and 111566 remain “Do not Delist.” However, both pyrethroid LOEs identified by the commenter were initially affected

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	cases and the methodology used to derive the guidelines is not well documented. Without this information, it is not feasible to evaluate the validity of the listing decisions. Examples are as follows:
	
	• LOE # 139147 for Decision ID 111603 (List Agua Hedionda Creek for Pyrethroids)
	• LOE #138773 for Decision ID 11565 (List Buena Vista Creek for Pyrethroids)
	Five separate scientific articles are cited in the LOE that presumably support values used to derive the summed toxic units for Bifenthrin, Cyfluthrin, Cypermethrin, Lambda-Cyhalothrin, and Permethrin. However, the fact sheet for the LOE does not reveal which citation was the source of the numeric guidelines for each of the constituents nor which values were used as guidelines. Without this information, it is not feasible to evaluate the validity of the listing decisions. Examples include:
	
	• LOE #135816 for Decision ID 111604 (Do Not Delist Agua Hedionda Creek for Bifenthrin)
	• LOE #135876 for Decision ID 111566 (Do Not Delist Buena Vista Creek for Bifenthrin)
	Two scientific articles are cited in the LOE (Amweg et al. (2005) and Amweg and Weston (2007)) that presumably provided candidate numeric guidelines for bifenthrin in sediment. The LOE guideline (LC50) of 0.43 µg/g was apparently derived as the geometric mean of literature LC50s. However, the stated procedure of using the geometric mean of multiple LC50s is not a peer-reviewed approach, and the LOEs do not reveal which of the numerous candidate LC50s
		by miscalculated organic carbon normalization of pyrethroids. See response to comment 011.08 for more details. In addition, Section 2.5.4.B(i) of the Staff Report was revised to include more information on the assessment method for pyrethroids in sediment. The LOEs were revised using corrected organic carbon normalization procedures as follows:
		
		• Agua Hedionda Creek (Pyrethroids): LOE 139147 was replaced by LOE 234544.
		  ○ LOE 234544 has one less sample than LOE 139147 due to quantitation revisions that indicated the laboratory method was not sensitive enough to detect pyrethroid concentrations at the evaluation guideline threshold. The number of exceedances remained the same (one exceedance).
		• Buena Vista Creek (Pyrethroids): LOE 138773 is replaced by LOE 234541.
		  ○ LOE 234544 has one more exceedance than LOE 138773 as a result of properly assessing the additive toxic units for this data set.
		
		After correcting for organic carbon normalization, proposed listing determinations were not changed.
		
		Regarding evaluation guidelines, the threshold for a pyrethroid pesticide in sediment is one tenth the LC50 for a pyrethroid pesticide and normalized by the percentage of organic carbon in the sediment sample. The LC50 for

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	in the research articles were included in the calculation. Without this information, it is not feasible to evaluate the validity of the listing decisions.	a pyrethroid pesticide listing determination is the geometric mean of LC50 values provided in peer reviewed studies (see list below for studies affiliated with the development of a pyrethroid pesticide threshold). The use of the geometric mean of LC50 values is supported by U.S. EPA guidance document PB85-227049 ("Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses"). This document identifies that the geometric mean, instead of the arithmetic mean, should be used to calculate a singular threshold as the distribution of results from toxicity tests are more likely to be lognormal than normal.
		
		The pyrethroid pesticide and associated LOE evaluation guidelines with values used to calculate the LC50 geometric mean for San Diego Region waterbodies are as follows:
		
		• Bifenthrin – 0.43 µg/g (LC50 geomean)
		  ○ Amweg et al., 2005. LC50 values – 0.57 µg/g, 0.63 µg/g, and 0.37 µg/g.
		  ○ Amweg and Weston, 2007. LC50 value – 0.26 µg/g.
		• Cyfluthrin – 1.1 µg/g (LC50 geomean)
		  ○ Amweg et al., 2005. LC50 values – 1.07 µg/g and 1.09 µg/g.
		• Lambda-cyhalothrin – 0.44 µg/g (LC50 geomean)
		  ○ Amweg et al., 2005. LC50 values – 0.43 µg/g and 0.46 µg/g.
		• Permethrin – 8.9 µg/g (LC50 geomean)

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		○ Amweg et al., 2005. LC50 values – 17.9 µg/g, 11.1 µg/g, and 3.51 µg/g. • Cypermethrin – 0.3 µg/g (LC50 geomean) ○ Maund et al., 2002. LC50 values – 0.36 µg/g, 0.6 µg/g, and 0.18 µg/g. • Deltamethrin – 0.79 µg/g (LC50 geomean) ○ Amweg et al., 2005. LC50 values – 0.87 µg/g and 0.71 µg/g. • Esfenvalerate – 1.5 µg/g (LC50 geomean) ○ Amweg et al., 2005. LC50 values – 1.59 µg/g, 1.76 µg/g, and 1.28 µg/g. • Fenpropathrin – 1 (LC50 geomean) ○ Ding et al., 2011. LC50 values – 2.2 µg/g, 1.4 µg/g, and 1.1 µg/g.
011.08	*Lack of Transparency Regarding Sediment Data Transformations* Sediment data for pyrethroids was presumably normalized by organic carbon percentage before comparison to numeric guidelines from scientific articles. However, the paired carbon/pyrethroid data, and the transformed sediment values are not provided in the excel data file linked to the LOEs. Without this information, it is not feasible to evaluate the validity of the listing decisions. Pertinent LOEs for CHU water bodies include: • LOE #139147 for Decision ID 111603 (List Agua Hedionda Creek for Pyrethroids)	See principal response 4.3 for Data and Analysis Transparency, and Readily Available Data. Sediment data for pyrethroids were normalized by organic carbon percentage before comparison to numeric guidelines. Organic carbon data used to normalize sediment data are available in the data reference associated with the LOEs identified in this comment. Methods used to calculate the normalized sediment pyrethroid concentration are available in the thresholds attached to LOEs. Water Board staff automated the process for normalizing sediment data for organic carbon percentage and the transformed sediment values are not available in excel format. Section 2.5.4.B(i) of the Staff

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	• LOE #138773 for Decision ID 11565 (List Buena Vista Creek for Pyrethroids) • LOE #135816 for Decision ID 111604 (Do Not Delist Agua Hedionda Creek for Bifenthrin) • LOE #135876 for Decision ID 111566 (Do Not Delist Buena Vista Creek for Bifenthrin) • LOE #136839 for Decision ID 111605 (Do Not Delist Agua Hedionda Creek for Cypermethrin) • LOE #136730 for Decision ID 111567 (List Buena Vista Creek for Cypermethrin)	Report was revised to include more information on the assessment method for pyrethroids in sediment. In responding to this comment, Water Board staff identified a systematic miscalculation related to normalizing some cypermethrin and permethrin sediment data for organic carbon. This resulted in instances of incorrect total sample count and exceedance count for some cypermethrin, permethrin, and pyrethroids sediment LOEs. Staff recalculated affected pyrethroid sediment chemistry toxic units and cypermethrin and permethrin sediment LOEs. Pertaining to the LOEs and listing recommendations in this comment, both pyrethroid LOEs and cypermethrin LOEs were affected. The LOEs were revised as follows using corrected organic carbon normalization procedures: • For pyrethroid LOEs (LOE ID 139147 and 138773) please see response to comment 011.07. • Agua Hedionda Creek (Cypermethrin): LOE ID 136839 is replaced by LOE ID 234543. ○ LOE ID 234543 has one fewer sample than LOE ID 136839 due to quantitation revisions that indicated the laboratory method was not sensitive enough to detect cypermethrin concentrations at the evaluation guideline threshold. The number of exceedances remained the same (zero exceedances). • Buena Vista Creek (Cypermethrin): LOE ID 136730 is replaced by LOE ID 234542.

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		○ LOE ID 234542 has one fewer sample than LOE ID 136730 due to quantitation revisions that indicated the laboratory method was not sensitive enough to detect cypermethrin concentrations at the evaluation guideline threshold. The number of exceedances remained the same (zero exceedances). After correcting for organic carbon normalization, proposed listing recommendations were not changed. Decision ID 111605 (Agua Hedionda Creek for Cypermethrin) remained "Do not delist from 303(d) list." Decision ID 111567 (List Buena Vista Creek for Cypermethrin) remained "List on 303(d) list."
011.09	Use of the California Stream Condition Index (CSCI) as a Basis for Benthic Community Effects Listings For several listings in the San Diego Regions, Fact Sheets cite the use of the CSCI as the basis for a listing, stating "Sites with scores below 0.79 are considered to have exceeded the water quality objective for the aquatic life beneficial use."[3] These listings are being proposed despite the fact that there is not an established water quality criterion for benthic community effects nor a process or policy to assess benthic community effects throughout the state. Further, there is no regulatory document within California that has declared that 0.79 is a bright line threshold that should be used to assess impairment. In fact, the State Water Board is in the process of developing a Biostimulatory Substances	Changes to listing recommendations were not made in response to this comment. See principal response 3.1 regarding use of the CSCI threshold prior to having a CSCI water quality objective. See principal response 3.2 regarding use of CSCI scores, the selection of the CSCI 0.79 threshold that is based on the 10th percentile of reference sites, and the link to exceedances of pollutants. Additionally, algae data were not assessed for the 2020-2022 Integrated Report and therefore the Algae Stream Condition Index was not applied.

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	Objective and Program to Implement Biological Integrity. This intensive effort includes participation from the regulatory, regulated, and scientific communities and is still underway. We recognize that although the San Diego Water Board has adopted a BPA to incorporate a water quality objective for biological condition, this BPA is still undergoing the formal approval process through the State Water Board and USEPA and is not yet effective. As a result, there is concern that listings based on these criteria are premature as they are in advance of policy development, scientific tools, and data interpretation. Specifically, listing water bodies based on the CSCI in the absence of statewide guidance (which is currently under development) will likely result in statewide inconsistency and inappropriate listings. Specific concerns include the following: • The State Water Board's Program for Biological Integrity is still working through significant policy and regulatory issues that would affect how biostimulatory and biological objectives would be implemented and interpreted. These decisions could result in a direct conflict with the processes currently contemplated and/or implemented within the San Diego Region based on the Stream Biological Objectives. • A framework for the interpretation of biological data/information needs to be better understood and adequately vetted. For example, there needs to be clear guidance on many issues, including but not limited to: How will data and information generated be used to list waterbodies as impaired and how are	

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	pollutants identified for lowered CSCI scores? How will water bodies that meet biological thresholds, but still have exceedances of individual pollutants be addressed? Will they still be considered impaired? Are biological thresholds and chemical constituent-based thresholds/objectives independently applicable? In addition, other scientific tools, and studies, such as the Algae Stream Condition Index (ASCI) and Bio Integrity Prediction Models, are being developed and there is no direction as to how these tools should be used, if at all, for listing purposes. • Selection of the 10th percentile of the reference dataset to define impairment is arbitrary and may not indicate impairment. It is important to recognize that the bottom 10% of sites in the reference dataset are still reference sites with limited human impact. CSCI scores were used as the only biological evidence for three listings for CHU water bodies and should be reconsidered: • Decision ID 125885 (Do Not Delist Agua Hedionda Creek for Benthic Community Effects) • Decision ID 125934 (List Buena Creek for Benthic Community Effects) • Decision ID 126327 (Do Not Delist Buena Vista Creek for Benthic Community Effects) Footnote 3: The value 0.79 is related to the 10th percentile of a statewide dataset of scores from reference sites.	

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011.10	The current shellfish harvesting standards and beneficial use in the Ocean Plan and in the Water Quality Control Plan for the San Diego Basin (San Diego Basin Plan) have been widely recognized as inappropriate.	Comment noted. See principal response 5 for SHELL Beneficial Uses and Objectives.
011.11	A local study (SCCWRP, May 2021) conducted in cooperation with the Santa Ana Regional Water Board in North Orange County also noted that the study did not find a relationship between fecal coliform levels[4] in the water (which the current SHELL Objective in Region 8 is based upon), and human viral pathogen detection in oyster tissues. The results of this study suggest that the health risk from viral pathogens in the Bay may be low under dry weather conditions, and the current water quality objective for SHELL may not be predictive of viral pathogens in oyster tissue. Alternative indicators that are more predictive of viral pathogen presence than fecal coliforms may need to be explored. Therefore, we recommend deferring proposed listings for ocean water bodies that have met REC-1 standards and assess the waterbodies upon the adoption of a new SHELL standard. One pertinent example for the San Diego Region is listing Decision ID 128081 (Do Not Delist Pacific Ocean Shoreline, San Luis Rey HU, at San Luis Rey River outlet for Indicator Bacteria). The fact sheet for this listing decision acknowledges that the REC-1 beneficial use is not impaired, based on the available data, but that data (for total coliform) justify listing for impairment of the SHELL beneficial use. This listing should be removed altogether.	Comment noted. Please also see principal response 5 for SHELL Beneficial Uses and Objectives.

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	Footnote 4: Fecal coliform SHELL standards examined in the study are derived from the total coliform standards by multiplying a ratio based on a study conducted at Ohio River. From the study, about 18 percent of the total coliforms were found to be fecal coliforms. (EPA, 1986)	
011.12	*Treatment of Toxicity Test Results as Selenium Exceedances* The fact sheet for Decision ID 111560 (Do Not Delist Buena Vista Creek for Selenium) states that 5/24 samples exceeded the applicable criterion. However, examination of the LOEs reveals that 2 of the 5 exceedances are not for selenium analyses, but for toxicity tests (LOE 73077). The listing should be reevaluated to determine if the creek is eligible for delisting when only selenium results are used.	The exceedance count for Decision ID 111560 has been changed to three exceedances out of 20 samples because, as the commenter noted, the count of five out of 24 incorrectly included two exceedances from LOE 73077 for water toxicity. With three exceedances, a minimum of 37 samples is needed to delist according to Table 4.1 of the Listing Policy. Decision ID 111560 therefore remains a "Do not Delist" until more data become available.
011.13	*The Excel Data File Linked to the San Diego Region LOEs is Missing Data Referenced as Evidence* Data for monitoring sites referenced in multiple LOEs was missing from Excel file (ref4900). A non-exhaustive list of decisions for CHU water bodies with missing data are as follows: • Decision ID 111629 (List Buena Creek for Sulfates) • Decision ID 111596 (Do Not Delist Agua Hedionda Creek for Phosphorus) • Decision ID 111627 (Do Not Delist Buena Creek for Phosphorus)	Decision ID 111629 – Data for LOEs 146716 and 146773 are found in ref4907. Decision ID 111596 – Data for LOE 7359 are found in ref2618, data for LOE 6704 are found in ref2549, and data for LOE 146052 are found in ref4900 (StationCode: AHC-MLS). Decision ID 111627 – Data for LOE 6540 are found in ref2618, data for LOEs 145684 and 145760 are found in ref4907.

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	• Decision ID 111591 (Do Not Delist Agua Hedionda Creek for Malathion)	Decision ID 111591 – Data for LOE 72882 are found in ref4013, and data for LOE 220973 are found in ref4900 (Station Code: AHC-MLS).

Letter 12. Marisa Soriano, City of Chula Vista

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012.01	DECISION IDs: 112134 Otay River/ Pyrethroids; 112135 Otay River/ Bifenthrin; 112142 Otay River/Cyfluthrin; 113992 Sweetwater River, Lower (below Sweetwater Reservoir)/ Pyrethroids; 113993 Sweetwater River, Lower (below Sweetwater Reservoir)/ Bifenthrin COMMENT: Numerous new listings for pyrethroids as a group and for individual pyrethroid pesticides are proposed in the San Diego Region, including Otay River and Sweetwater River, Lower (below Sweetwater Reservoir). Based on review of the decision summaries for these listings, they are based on applying regulatory criteria from the "Amendment to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Pyrethroid Pesticide Discharges." This reference appears to be referring to Central Valley Regional Water Quality Control Board Resolution No. R5-2017-0057 (Resolution). The Resolution established a total maximum daily load (TMDL) for 14 specific water body segments in the Central Valley Region that had already been found to have sediment toxicity linked to pyrethroids and general triggers for other water bodies. The	Changes in the listing recommendations were not made in response to this comment. See principal response 2.1 regarding the selection and use of thresholds for assessing pyrethroid data and principal response 2.2 regarding application of the threshold to waterbodies in the San Diego Region. Additionally, see response to comment 012.02 regarding toxicity in the Lower Sweetwater River, which is currently listed as impaired for toxicity.

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	staff report for the Resolution notes that the Central Valley Regional Board did not yet have enough information to establish water quality objectives for pyrethroids. The values in the Resolution were vetted through a public process that allowed for stakeholders in the Central Valley Region to have input on them before the Resolution was adopted. As noted in the staff report, there are a variety of different potential numeric standards that could be applied for the available portion of pyrethroids, and the parameters used to estimate the amount of total pyrethroids that are bioavailable can vary significantly based on site-specific factors. It is not necessarily the case that the options determined to be appropriate in the Central Valley Region would also be appropriate for the San Diego Region. The assessment methodology should be reviewed and adopted via a State Amendment or San Diego Basin Plan Amendment process. It is not appropriate to apply a set of relatively tentative goals from the Central Valley Region to the San Diego Region without giving San Diego Region stakeholders an opportunity for public input and without consideration of how differences between the San Diego Region and the Central Valley Region may result in different goals for the San Diego Region. Water bodies in the San Diego Region should not be added to the 303(d) List based on comparing monitoring data in the San Diego Region to the goals listed in the Resolution.	

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012.02	RECOMMENDATION: The pyrethroid pesticide water quality thresholds in the Resolution should not be used to list waterbodies as impaired at this time, as this policy should not be used to set new water quality objectives. Per Section 1 of the Listing Policy, "The Policy shall not be used to:…establish, revise, or refine any water quality objective or beneficial use; or translate narrative water quality objectives for the purposes of regulating point sources." In the event that the San Diego Water Board moves forward with applying the Central Valley Region criteria to San Diego Region water bodies, water bodies that do not show evidence of toxicity to Hyalella azteca should not be included on the 303(d) List for pyrethroids impairments, even if they have "exceedances" for pyrethroids based on the Central Valley Region standards. The administrative record for the Resolution notes that Hyalella azteca (H. azteca) is the toxicity test species most sensitive to pyrethroids. Several water bodies in the Central Valley Region had already been included on the 303(d) list for pyrethroids based on a history of sediment toxicity and high pyrethroid levels in the sediment. Many of the San Diego water bodies proposed to be added to the 303(d) List for pyrethroids as a group or for individual pyrethroids do not have a history of H. azteca toxicity. For example, the Lower Sweetwater River is proposed to be listed as impaired for pyrethroids (Decision ID 113992) and bifenthrin (Decision ID 113993). The San Diego MS4 Copermittees have completed H. azteca toxicity tests at the Sweetwater River Mass Loading Station, which is the same station where the pyrethroids data used to support the	Changes in the listing recommendations were not made in response to this comment. See principal response 2.1 regarding the selection and use of thresholds for assessing pyrethroid data. In addition, the commenter incorrectly implies that there must be a link between *H. azteca* water toxicity at a specific site and a listing for pyrethroids. This is not consistent with Listing Policy Section 3.6, which allows for listing based solely on water toxicity. Toxicity testing of organisms represents toxicity to a specific organism for a specific exposure time period under controlled conditions. A lack of observed toxicity for a species in testing may not be indicative of impacts to other species or reflective of in-stream site-specific conditions (e.g., temperature). In addition, some specific toxicity tests, such as the referenced *H. azteca* testing, may assess acute and not chronic exposures. While acute toxicity testing is important, it does not look for sublethal impacts to species from pollutants. The commenter uses the mass loading station for Sweetwater River as an example. The data assessed for this Integrated Report cycle documented toxicity at this station on the same dates that elevated levels of pyrethroids were observed. The current recommendation for this cycle for the Lower Sweetwater River for toxicity is "Do not Delist".

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	proposed listings was collected. None (0%) of the 31 H. azteca tests completed for this location, including tests using water collected at the same time as the two data points considered exceedances in the listing decision, showed a toxic response. This suggests that pyrethroids are not causing an impairment at this location. Therefore, listing the Lower Sweetwater River for pyrethroids as a group or for individual pyrethroids is not warranted and should be removed from the 2020-2022 303(d) List.	
012.03	DECISION ID 128027 – San Diego Bay/ Indicator Bacteria COMMENT: Three Lines of Evidence (LOEs) were used for this waterbody-pollutant combination. All 3 LOEs were taken from the same site, EH-90. Per Section 6.1.5.2 of the Listing Policy, "samples should be representative of the water body segment." One sampling site is not representative of the entire San Diego Bay, rather this decision should be applied to the applicable segment. RECOMMENDATION: This listing should be removed from the 2020-2022 303(d) List, as it is not consistent with Section 6.1.5.2 of the Listing Policy.	The EH-090 station for Crown Cove was incorrectly assigned to all of San Diego Bay due to a mapping error. This mapping error was fixed and the listing recommendation was revised to only apply to the Crown Cove location. Decision ID 128027 was replaced with Decision ID 132055, which is for "San Diego Bay Shoreline, at Silver Strand Beach (bayside)."
012.04	Telegraph Canyon Channel/ Selenium Delisting Data COMMENT: In February 2018, the City submitted Selenium data to CEDEN for delisting consideration. The samples were collected during the years 2011-2013. This data was not	See principal response 4.2 for Data and Analysis Transparency, and Readily Available Data. Changes to listing recommendations were not made in response to this comment. Staff searched the CEDEN

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	evaluated by the SWRCB as an LOE for the 2020-2022 303(d) listing process. Fifty-two out of 54 samples met the water quality objective for selenium. RECOMMENDATION: The City requests that these data be included in the 2020-2022 303(d) List data evaluation process. Based on this data, we recommend that Telegraph Canyon be de-listed for selenium as part of the 2020-2022 303(d) List, as this data supports de-listing based on the Listing Policy.	database and found 48 selenium samples that were collected during 2011-2013 from four stations under the project name, City of Chula Vista Selenium Study. However, these data were uploaded to CEDEN without latitude and longitude coordinates. All samples show the same place-holder coordinates regardless of station (33, -117). Data without accurate coordinates were not included in water quality assessments because without them, stations cannot be accurately mapped and associated with a waterbody or LOEs. If the City resubmits these data to CEDEN with corrected coordinates, these data can then go through the assessment process. The City of Chula Vista may correct the coordinates of their data by contacting CEDEN staff at ceden@waterboards.ca.gov. Note that the comment is relevant to Telegraph Canyon Creek, Decision ID 68370, and LOE 26152.

Letter 13: Clifford M. Maurer, City of Coronado

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013.01	The City shares a common interest with the State Water Resources Control Board (State Board) and the San Diego Regional Water Quality Control Board (San Diego Water Board), in ensuring the protection of San Diego Bay and	Comment noted.

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	Pacific Ocean beneficial uses. The City supports the State and San Diego Water Boards' efforts to identify and address water quality issues and we remain committed to working collaboratively with the State and San Diego Water Boards to fulfill our shared water quality goals. The City respectfully submits the following comments on the Draft Report as part of the public comment period.	
013.02	Decision ID 127923 the City requests a deferral of the proposed listing for the Pacific Ocean Shoreline, Coronado HA at Avenida del Sol water body segment with SHELL beneficial use until a new SHELL bacterial objective is promulgated.	Changes to listing recommendations were not made in response to this comment. See principal response 5 for SHELL Beneficial Uses and Objectives.
013.03	Decision ID 128027 the City requests a removal of proposed listing of San Diego Bay for Total Coliform bacteria since the data does not meet the spatial representation criteria as identified in the 2020-2022 California Integrated Report.	See response to comment 012.03 regarding remapping of the EH-090 station and new Decision ID 132055.
013.04	Decision ID 128028 the City requests that SHELL fish tissue is not used for any San Diego Bay and Ocean Shoreline listings since the water quality objective for SHELL beneficial use was deemed obsolete in the assessment.	Changes to listing recommendations were not made in response to this comment. See principal response 5 for SHELL Beneficial Uses and Objectives. In addition, for Decision ID 128028 for San Diego Bay, Glorietta Bay, total coliform data compared to the shellfish harvest water quality objective were not used to support the recommendation of “Do not List” due to insufficient total coliform information. The “Do not List” recommendation

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		is supported by an assessment of enterococcus data for the water contact recreation beneficial use.
013.05	Decision ID 127927 the City requests a revision to both Decisions 127927 and 76765 to meet the spatial representation criteria as identified in the 2020-2022 California Integrated Report.	Listing recommendations have been revised. See response to comment 013.17.
013.06	The City of Coronado is committed to supporting beach clean-up events and conducting monitoring and management programs that assists in achieving our agencies' shared goals of protecting beneficial uses and improving water quality along Coronado's shoreline including San Diego Bay. The City of Coronado greatly appreciates the State and Regional Boards' efforts and looks forward to continued collaboration.	Comment noted.
013.07	The City supports the high priority placed by the State Water Board on the revision of the SHELL total coliform water quality objective and subsequent amendment to the Ocean Plan.	Comment noted.
013.08	The statements in the Integrated Report regarding the unattainability of the SHELL water quality objective (see below) support a deferred assessment of the water quality data for the SHELL beneficial use. As a result, the City requests a deferral of the listing for water body segments with SHELL beneficial use. This request is in the best interest of all parties to minimize resources on the issue and to allow focus	See principal response 5 for SHELL Beneficial Uses and Objectives.

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	on other priorities until a new SHELL bacterial objective is promulgated.	
013.09	Subsequent to the Ocean Plan amendment to adopt the SHELL total coliform objective, the Integrated Report and 303(d) List preparation for the San Diego Region will take place no sooner than four-to-five years from now. This extended period will require an entirely new data set be used to meet the temporal criteria for the assessment. This further supports the City's request for a deferred listing of this and all 303(d) listings for SHELL beneficial use. For example, the data range from 2010-08-31 through 2019-06-11 used in the current decision will become obsolete since it will not meet the temporal criteria (less than 10 years) once the revised bacteria objective for SHELL is promulgated in the Ocean Plan.	See principal responses 4.4 for Data and Analysis Transparency, and Readily Available Data, and 5 for SHELL Beneficial Uses and Objectives. Additionally, if no new data are made readily available in a future cycle, State Water Board staff will assess the existing data to make a recommendation.
013.10	In future evaluations, the City requests a narrower temporal data span that is more representative of the latest conditions. It is suggested that it be kept to a five-to-six-year period instead of ten years, especially for segments that are monitored as frequently as beaches under the AB411 program, Beach Watch, and other programs.	State Water Board staff intends to use the readily available data that are representative of current water quality conditions when evaluating water bodies for the Integrated Report. The State Water Board acknowledges that the historical levels of indicator bacteria in the waterbody may be a poor indicator of current risks to human health, particularly when more recent data are available to sufficiently assess the water quality standard. Historical indicator bacteria data collected prior to 2010, were evaluated pursuant to these considerations and were not used to assess water quality standards

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		attainment when more recent data were sufficient to make a listing recommendation. Data providers submit their data almost two years before the State Water Board submits the Integrated Report to the U.S. EPA. Therefore, narrowing the data submission request to data collected in the previous five-to-six-year period may will result in data being excluded from assessment, diminishing the amount of data the State Water Board can assess. Also, see principal response 4.1 regarding readily available data requirements and principal response 4.4 regarding inclusion of old data.
013.11	The Regional Board conclusion states there is sufficient justification to place San Diego Bay on the 303(d) List for impairment of SHELL beneficial use. Similarly, to the listing evaluation for Decision ID 127923 above, as stated by the State Water Board and acknowledged by the San Diego Water Board the evaluation for SHELL beneficial use is based on a water quality objective for total coliform that is in need of revision. In addition, this decision applies to the entirety of San Diego Bay for SHELL beneficial use based on 14 Total Coliform samples collected at one station EH-090 at Crown Cove.	See response to comment 012.03 regarding remapping of the EH-090 station and new Decision ID 132055. Also, see principal response 5 for SHELL Beneficial Uses and Objectives.

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013.12	The City supports the high priority placed by the State Water Board on the revision of the SHELL total coliform water quality objective and subsequent amendment to the Ocean Plan.	Comment noted.
013.13	The statements in the Integrated Report regarding the unattainability of the SHELL water quality objective support a deferred assessment of the water quality data for the SHELL beneficial use (see Decision ID 127923 supporting information). As a result, the City requests a deferral of the listing for water body segments with SHELL beneficial use.	See principal response 5 for SHELL Beneficial Uses and Objectives.
013.14	The City requests that the listing for SHELL impairment for San Diego Bay for Total Coliform be removed from the 2020 Integrated Report since it does not meet the spatial representation with only one station for the entirety of San Diego Bay, a nearly 1,400 acre water body.	See response to comment 012.03 regarding remapping of the EH-090 station and new Decision ID 132055.
013.15	The state's water quality objective for SHELL beneficial use that has been deemed obsolete was used in the assessment. See additional information presented in Decision ID 127923. <u>Comments and Requested Actions:</u> The City supports the high priority placed by the State Water Board on the revision of the SHELL total coliform water quality objective and subsequent amendment to the Ocean Plan.	Comment noted. Please also see principal response 5 for SHELL Beneficial Uses and Objectives.

No.	Comment	Response
	The statements in the Integrated Report regarding the unattainability of the SHELL water quality objective support a deferred assessment of the water quality data for the SHELL beneficial use. As a result, the City requests a deferral of the listing for water body segments with SHELL beneficial use.	
013.16	REC-1 beneficial use impairment assessed previously used data from AB411 program when the NASNI/North Beach "C" station (EH-062) was actively monitored from 2004-2007 by the County of San Diego. It was removed from the AB411 program by the County of San Diego as part of the reprioritization of sites. Decision ID 127927 includes LOEs with data from stations EH-062 and EH-060 (Navy Fence/Ocean Blvd) that are approximately 0.64 miles apart (see Appendix 1). The data was used for evaluation of REC-1 and SHELL beneficial uses in one single Decision ID127927.	See response to comments 013.17 to 013.20.
013.17	The City is providing clarification regarding the station locations and labels and requests a notation in the two decisions ID 127927 and 76765 for future reference (see Appendix 1). 1. Station EH-062 is located at Naval Air Station North Island (NASNI) on federal property not accessible to the general public. Station EH-060 is located at the Navy Fence at Ocean Blvd near the Parker/Bandel pump station outfall and is part of North Beach (or Dog Beach) in Coronado.	The clarification regarding station locations is appreciated. The requested notations for Decision IDs 127927 and 76765 are not needed, as the water quality objective and assessment of data through the Integrated Report applies to waters on federal property regardless of direct public access restrictions. Data collected from EH-060 were removed from Decision ID 127927 by removing LOEs 220184 and 220222. Only new LOEs containing data from Station EH-062 (LOEs 220514 and 220345) were used to represent “Pacific Ocean Shoreline, Coronado HA, at NASNI Beach/North Beach C.” Decision ID 127927 remains “Do not List”.

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		The data from Station EH-060 were used in the listing recommendation for “Pacific Ocean Shoreline, Coronado HA, at Navy Fence/Ocean Blvd.” LOE 220184 was replaced with 233405. LOE 220222 was replaced with 233406. Decision ID 132054 now uses LOEs 233405 and 233406. Decision ID 132054 remains “Do not List”.
013.18	The City requests that Decision ID 127927, that uses data from the two stations, be separated into two decisions. The City requests that only LOEs with data from EH-060 from EH-062 remain in this decision. Please note that the distance between the two stations is 0.3 to 0.4 miles and believed to not meet the spatial representation criteria.	Decision ID 127927 was revised to only include LOEs 220514 and 220345. See response to comment 013.17.
013.19	Decision ID 76765 for Pacific Ocean Shoreline, Coronado HA, at Navy Fence/Ocean Blvd contains the LOEs for past evaluations of data from monitoring station EH-060 as defined by the County of San Diego Department of Environmental Health and the City of Coronado. The City recommends Decision ID 76765 as the appropriate fact sheet location for the LOEs currently included in Decision ID 127927 for sampling data from station EH-060 (e.g., LOEs 220312, 220184, 220355, 220222, 220279).	Decision ID 76765 has been revised and is now Decision ID 132054, which uses the corrected LOEs 233405 and 233406. See response to comment 013.17.
013.20	The City requests revisions to Decisions ID 127927 and 76765 to meet the spatial representation requirements.	Decisions ID 127927 and 76765 have been revised. See response to comment 013.17.

Letter 14: Lisa Zawaski, City of Dana Point

No.	Comment	Response
014.01	The City commends State and Regional Board staff for the tremendous amount of effort needed to prepare the Report. The City understands that State and Regional Board staff review an extensive amount of data to prepare this report and carefully review the information received. However, the City would like to point out a few issues that need further consideration by the State and Regional Board.	Comment noted.
014.02	The current SHELL standard in the ocean plan has been widely recognized as inappropriate and is under revision by the State Water Board.	Comment noted. Please also see principal response 5 for SHELL Beneficial Uses and Objectives.
014.03	As the City has made a lot of progress and has achieved success in meeting the Water Contact Recreational Beneficial Use (REC-1) targets for certain waterbodies through the implementation of management actions, it seems prudent to defer the listings for water bodies that have achieved REC-1 targets and reassess the SHELL beneficial use upon the adoption of a new SHELL target since the current one is flawed. This issue is of specific concern to Dana Point for the following waterbodies: • Pacific Ocean Shoreline, Dana Point HSA, at Dana Point Harbor at patrol dock (Decision ID 127935)	Comment noted. Please also see principal response 5 for SHELL Beneficial Uses and Objectives.

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	• Pacific Ocean Shoreline, Lower San Juan HSA, 5000 feet south of outfall (Decision ID 127961) • Pacific Ocean Shoreline, Dana Point HSA, at Dana Point Harbor, Indicator Bacteria (Decision ID 69555) • Pacific Ocean Shoreline, Dana Point HSA, at Dana Point Harbor at guest dock (Decision ID 127933) • Pacific Ocean Shoreline, Dana Point HSA, at Salt Creek Service Road (Decision ID 127939) • Pacific Ocean Shoreline, Dana Point HSA, at Dana Point Harbor at Baby Beach (Decision ID 127931) • Pacific Ocean Shoreline, Dana Point HSA, at Salt Creek Outlet at Monarch Beach (Decision ID 127937) • Pacific Ocean Shoreline, Lower San Juan HSA, 10000 feet south of outfall (Decision ID 127957)	
014.04	Additionally, there is inconsistency in terms of the analysis methodology of the SHELL target in the Integrated Staff Report. Section 2.5.2 of the Integrated Staff Report states ***"****Only the median value shall be applied based on a statistically sufficient number of samples, which is generally not less than five samples distributed over a 30-day period. However, if a statistically sufficient number of median samples is not available, then attainment of the water quality objective shall be determined based only on the SSM."* Many listings are listed based on the single sample maximum target when statistically sufficient number of samples are available. None of those listings have more than 10% of sample exceeding the SSM. We recommend clarifying the methodology and remove the listings as appropriate.	The commenter is correct in asserting that the methodology for SHELL standards in the Staff Report is inconsistent with the methodology in the 2019 Ocean Plan. The 2019 Ocean Plan states that the "median total coliform density shall not exceed 70 per 100 mL, and not more than 10 percent of the samples shall exceed 230 per 100mL." The 10 percent threshold is not a single sample maximum ("SSM") threshold and preference is not given to the median or 10 percent threshold, both must be met. The methodology for SHELL standards in Section 2.5.2 of the Staff Report were revised to reflect the 2019 Ocean Plan language.

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	• Pacific Ocean Shoreline, Dana Point HSA, at Dana Point Harbor at patrol dock (Decision ID 127935) • Pacific Ocean Shoreline, Lower San Juan HSA, 10000 feet south of outfall Decision ID 127957) • Pacific Ocean Shoreline, Lower San Juan HSA, 5000 feet south of outfall Decision ID 127961) • Pacific Ocean Shoreline, Dana Point HSA, at Dana Point Harbor, Indicator Bacteria (Decision ID 69555) • Pacific Ocean Shoreline, Dana Point HSA, at Dana Point Harbor at guest dock (Decision ID 127933) • Pacific Ocean Shoreline, Dana Point HSA, at Salt Creek Service Road Decision ID 127939) • Pacific Ocean Shoreline, Lower San Juan HSA, 10000 feet south of outfall (Decision ID 127957)	The listing recommendations identified in this comment were reassessed based on the language in the 2019 Ocean Plan. Changes to listing recommendations were not made in response to this comment and the reassessment. Additionally, please refer to principal response 5 for SHELL Beneficial Uses and Objectives.
014.05	The City disagrees with the methodology of applying non-regulatory based water quality objectives, in this case Aquatic Life Benchmarks, to the regulatory decision making process. The Benchmarks should be used as a reference tool for developing appropriate objectives, it is inappropriate to use the Benchmarks, prior to a statewide peer-review process, as water quality objectives themselves. This listing decision methodology, while applied to Imidacloprid for Salt Creek, has been informally applied for other current use pesticides without the supporting basin plan amendment that would make this a regulatory accepted procedure.	See response to comment 011.04.
014.06	Secondly, the City does not agree with approach of using a 4-day averaging period to assess pesticide concentration	The chronic criterion is the appropriate threshold for assessment of chronic impacts of a pollutant on aquatic

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	measurements collected on a single day and often separated from the prior or subsequent monitoring event by weeks or months. The imidacloprid data included in the Decision were collected on the following days: • May 4, 2015 • February 4, 2016 • May 19, 2016 • November 3, 2016 • August 7, 2016 • August 18, 2016 This decision to use this unconventional approach is tantamount, in the case of indicator bacteria for example, to using a 30-day geometric mean water quality objective to assess a single sample maximum concentration. The water quality objective and the corresponding concentration, averaged or single sample maximum, should be applied on a consistent and uniform basis. Please re-consider the Listing for Salt Creek (Orange County) for Imidacloprid (Decision ID 115475).	life. Chronic criteria are based on survival and growth of test organisms and provide a way to assess for long term impacts of pollutants on organisms. The criterion was not selected due to sampling regime but according to the level of protection provided for aquatic life. According to Section 6.1.5.6 of the Listing Policy, "If sufficient data are not available for the stated averaging period, the available data shall be used to represent the averaging period." The State Water Board specifically developed the 30-day geometric mean approach to assess attainment of bacteria water quality objectives, not imidacloprid.
014.07	Listing water bodies within the San Diego Region based on the draft Stream Biological Objectives' values and use of the CSCI is premature and may result in statewide inconsistency and inappropriate listings. Our concerns include the following: i. The State Water Board's Program for Biological Integrity is still working through significant policy and regulatory issues that would affect how biostimulatory and biological objectives would be implemented and	See principal response 3.1 regarding use of the CSCI threshold prior to having a CSCI water quality objective. See principal response 3.2 regarding use of CSCI scores, the selection of the CSCI 0.79 threshold that is based on the 10th percentile of reference sites, and the link to exceedances of pollutants.

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	interpreted. These decisions could result in a direct conflict with the processes currently contemplated and/or implemented within the San Diego Region based on the Stream Biological Objectives. ii. A framework for the interpretation of biological data/information needs to be better understood and adequately vetted. For example, there needs to be clear guidance on many issues, including but not limited to: How will data and information generated be used to list waterbodies as impaired and how pollutants are identified for lowered CSCI scores? How will water bodies that meet biological thresholds, but still have exceedances of individual pollutants be addressed? Will they still be considered impaired? Are biological thresholds and chemical constituent-based thresholds/objectives are independently applicable? iii. Selection of the 10th percentile of the reference dataset to indicate impairment is arbitrary and may not indicate impairment. It is important to recognize that the bottom 10% of sites in the reference dataset are still reference sites with limited human impact.	
014.08	Please clarify the methodology used for the analysis in the Draft Staff Report and re-consider the Listing for Salt Creek (Orange County) for Benthic Community Effect (Decision ID 126458).	The referenced listing recommendation was assessed in accordance with the Listing Policy Section 3.1 and 6.1.5.8. See also the principal response 3.2 regarding use of CSCI scores and the selection of the CSCI 0.79 threshold.

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014.09	Please also see comments submitted by the County of Orange.	Comments received by the County of Orange are responded to in Letter 25.

Letter 15: Tricia Wotan, City of Monterey

No.	Comment	Response
015.01	*Comment 1: Drainage name clarification - Revise from Hartnell Creek to Madison Canyon.* We wish to provide a reach name clarification for a drainage reach identified on the proposed 303(d) list in the City of Monterey. Currently, the proposed 303(d) listing is noted as 'Hartnell Creek (Monterey County)'. Its location is shown as mapped by the State in Figure 1 below. It's true that the larger watershed is the Hartnell Gulch Watershed. But the reach immediately upstream of the sampling location (next to the City Library, north fork of Hartnell Gulch) is 'Madison Canyon' along Madison Street in Monterey. Please see Attachment 1 Map Schematic and Attachment 2 Storm Drainage Maintenance Plan Sites 2, 3, and 5 (Upper and Lower Madison Canyon). The sampling location adjacent to the City Library is on the north fork of Hartnell 'Gulch'. The Gulch is the confluence point of Madison Canyon, the north fork of the Gulch, and Hartnell Creek Main Branch, which is the longest and south fork of the Gulch. The main branch alignment of Hartnell Creek starts at the Gulch and extends southward along	Central Coast Regional Water Board staff discussed this comment with the City of Monterey. The City provided additional historical records to document the basis for their proposed name change to “Hartnell Gulch West Fork (Monterey County),” instead of “Madison Canyon” as stated in their comment letter (email available upon request). Based on the documentation provided, the waterbody name was changed from “Hartnell Creek (Monterey County)” to “Hartnell Gulch West Fork (Monterey County)” as suggested and all associated listing recommendations have been revised to reflect this change.

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	Pacific Street and turns uphill toward Skyline Drive near Highways 68 & 1. Please see Attachments 1-4 to provide the Hartnell Creek Main Branch and Madison Canyon reach location clarifications. Attachment 1 (Attached to this letter) is a City GIS Portal map schematic of the Hartnell Gulch Watershed, providing clarification as to Madison Canyon (north fork of Gulch), Hartnell "Gulch", and Hartnell Creek (south fork of Gulch). Attachment 2 (submitted via FTP site from Shanta Keeling) is the City Planning Commission Resolution/Approval of the City's Storm Drainage Maintenance Plan and related Mitigated Neg. Dec. that identifies Upper and Lower Madison Canyon Maintenance Locations Sites No. 2 (Madison Canyon at Pebble), 3 (Culvert D03-H6 at Madison St}, and 5 (Lower Madison Canyon). Maintenance Site 36 is also on Madison Canyon, but was named for the prominent Veterans Drive curve intersect with the canyon at this location. Regrettably, we've also noticed in the recent SDMP WDR citywide map of sites, the 'Hartnell Creek' label was mistakenly turned westward (on the north fork) when it should have been aligned with the south fork of Hartnell Gulch, which could be part of the nomenclature confusion. Attachment 3 (Submitted via FTP site from Shanta Keeling) was a 1997 Hartnell Gulch. Watershed Analysis that identifies Hartnell Creek Main Branch 1 as the longest, southern main branch. Attachment 4 (Attached to this letter) was a 2001 CH2MHill Wastewater Pump Station Assessment that describes the	

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	Madison Canyon neighborhood in the vicinity of Pebble Street and Madison Street in Monterey. Admittedly even City consultant deliverables and partner agencies in our region regularly mistake/mislabel City drainages. To this end, we wish to provide the name clarifications now herein. Also, below is an excerpt from Attachment 3, 1997 Hartnell Gulch Drainage Study, pg. 4 speaking to the historic nature of these drainages. Accordingly, we are hoping the State values the locally-given names for our respective drainage ways - Hartnell Creek and Madison Canyon - both found within the Hartnell Gulch Watershed. Footnote: The Hartnell Gulch and other local creeks figure prominently in the history of early Monterey. They are visible in many of the early photographs and served as a source of fresh drinking water and crop irrigation for the first Spanish explorers and missionaries. Undoubtedly, they had served a similar purpose for Native Americans for eons prior. At present, they represent both an important element of the local drainage system (providing storm runoff and flood protection) as well as a key element in the overall natural ecosystem of the Monterey area. As such, they provide some of the least disturbed vegetation and wildlife communities in Monterey. In addition, they represent an important aesthetic component to the neighborhoods and individual homeowners.	
015.02	*Comment 2 - Requesting information as to when/how the original Majors Creek 303(d) reach listing was expanded upstream and downstream in the State mapping*	The extension of the Majors Creek listing took place during the 2014-2016 listing cycle. The extension “uphill” was to include the area upstream of sampling site 309-MAJOR-32.

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	We are curious to better understand when and/or how the expansion uphill and downhill of the originally mapped 303(d) listing for Majors Creek 303(d) occurred (as currently illustrated with the State). Approx. 10 years ago, the 303(d)-listed stretch was mapped as the one-mile open- channel reach; possibly there was a change made to this reach weren't aware of. Today, the State mapping shows uphill and downhill expansions of the originally listed reach. We are writing to share/comment that there exists no open-channel stream upstream or downstream of the original one-mile open-channel 303(d) segment mapped from Soledad Drive to El Dorado Street. Instead, there exist Caltrans and City MS4 infrastructure in these locations (not waterbodies). See Attachment 1, pages 2-3, Majors Creek mapping clarifications. The most recent mapping of the additional upstream segment is on Highway 1, which has road gutters that feed into Caltrans and City MS4 infrastructure that eventually outfall into the City at Soledad Drive next to Del Monte Shopping Center (the start of the open-channel drainage). Can MS4 features such as pipes and gutters be 303(d) listings? Your clarification would be helpful. • Similarly, the expanded mapping downstream of-El Dorado Street is aligned with underground MS4 pipes that convey flows from El Dorado Street to Mesa Road; there's no open creek or channel resource along this stretch. Is it common to list MS4 pipes/infrastructure as 303(d)-listed water bodies? Also, was there any sampling performed at some point downstream that would have caused the listed reach's expansion downstream into the pipes? We did not	Database constraints prevent staff from changing the extent of the waterbody during the 2020-2022 cycle. However, during the 2024 Listing Cycle, the headwaters of this waterbody will be modified to begin just east of the intersection of Munras Avenue and Soledad Dr. (just upstream of sampling site 309-MAJOR-32) and the downstream portion will end just past sampling site 309-MAJOR-31. Data from MS4 features such as pipes, gutters, and outfalls (e.g., storm drain or effluent) are not assessed for the Integrated Report. Staff encourage the commenter to continue to provide documentation identifying data as collected from MS4 features when data are submitted to CEDEN and in communications with the Water Board staff for the Integrated Report.

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	readily identify any data in the system. Your help to provide clarity on this item would be appreciated.	
015.03	*Comment 3 -Majors Creek name clarification as Don Dahvee Creek* Years ago, a creek in Monterey named Don Dahvee Creek (in Don Dahvee Greenbelt/Park, near Don Dahvee Lane) was erroneously named "Majors Creek (Monterey County)" on a 303(d) list. It was given the Majors Creek misnomer (likely due to the Major Sherman street name below the opencchannel drainage) long before the City was aware or involved, unfortunately. In an effort to keep communications clear with our regulators, the City has used the State-assigned name for that drainage, but would like to learn if the name may be corrected in the State 303(d) listing? Don Dahvee Creek is located within the Don Dahvee Greenbelt (City park area), and may be found on the City Parks listing here: https://monterey.org/Portals/0/Policies- Procedures/Recreation/Parks-and-Amenities.pdf This Park was dedicated to the City in 1940 by the private property owner and deed-restricted for greenbelt/open space use. Although Don Dahvee Creek is not in the Hartnell Gulch Watershed Analysis (Attachment 2), the study does mention the "nearby Don Dahvee Creek" on page 5.	Based on the documentation provided, the waterbody has been revised from “Majors Creek (Monterey County)” to “Don Dahvee Creek (Monterey County)” as suggested and all associated listing recommendations were revised to reflect this change.

Letter 16: Jose Lopez, City of National City

No.	Comment	Response
016.01	Remove the chlorpyrifos impairment for the Lower Sweetwater River (Decision ID 126838). Not all data was considered in the listing decision; considering all data demonstrates that the Listing Policy delisting criteria are met.	Changes in the listing recommendations were not made in response to this comment. See response to comment 016.05.
016.02	Remove the selenium impairment for Paradise Creek (Decision ID 78587). Not all data was considered in the listing decision; considering all data demonstrates that the Listing Policy delisting criteria are met.	Changes in the listing recommendations were not made in response to this comment. See response to comment 016.06.
016.03	Do not list the Lower Sweetwater River for pyrethroid pesticides as a group or the individual pyrethroid bifenthrin (Decision IDs 113992 and 113993, respectively). It is not appropriate to apply a standard for pyrethroids from the Central Valley to the San Diego Region. Additionally, the listings are proposed to address toxicity caused by pyrethroids, but historical monitoring data in the Lower Sweetwater River does not show evidence of toxicity.	Changes in the listing recommendations were not made in response to this comment. See principal response 2.1 regarding the selection and use of thresholds for assessing pyrethroid data, and individual response to comment 012.02 regarding toxicity in the Lower Sweetwater River, which is currently listed as impaired for toxicity.
016.04	Do not list all of San Diego Bay for indicator bacteria (Decision ID 128027). The line of evidence for this proposed listing is from only one site along the San Diego Bay Shoreline. At most, any new proposed listing should be limited to the shoreline segment represented by the monitoring site cited in the line of evidence.	See response to comment 012.03 regarding remapping of the EH-090 station and new Decision ID 132055.

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016.05	The three associated lines of evidence list 8, 14, and 10 samples, which totals to 32 rather than 24 as noted in the decision comment. • The numbers of samples in two of the lines of evidence do not appear to match the backup data. If all data in the data sets for the referenced lines of evidence were included, the results would meet the criteria for delisting presented in Table 4.1 of the Listing Policy. o LOE 77930: LOE description says it has 17 total samples, 14 of which are qualifying. Three (3) samples did not qualify (result was ND, but the MDL was higher than the WQO). The data set available online as a download from the listing description appears to show 19 samples, with 3 that don't qualify. This should mean there are 16 qualifying samples rather than 14. o LOE 219735: LOE description says it includes 10 samples and is based on data collected between 2011-09-13 and 2014-05-02. This data set appears to be Copermittee monitoring data reported in the San Diego Bay Transitional Monitoring and Assessment Report (TMAR). However, the TMAR also reported 4 additional samples in 2009 and 2010 that do not appear to have been considered. If the additional data were included the total would come to 14 samples. o If the numbers of samples in the evaluated lines of evidence were recorded as 8, 16, and 14 (instead of 8, 14, and 10), this would give a total of 38 samples with 3 exceedances. This is significant	Changes in listing recommendations were not made in response to this comment. The comment and response have several parts: Total Sample Count: The current total sample count of 24 is correct for Decision ID 126838 for chlorpyrifos in the Lower Sweetwater River. The listing recommendation is based on the Warm Freshwater Habitat ("WARM") beneficial use, so the total sample count is the sum of 14 (LOE 77930) and 10 (LOE 219735). The eight samples evaluated for the Municipal & Domestic ("MUN") beneficial use (LOE 78163) are correctly kept separate because a different threshold was used to assess data for attainment of the MUN beneficial use. LOE 77930: The current exceedance count of three out of 14 samples is correct for LOE 77930. There are 19 samples in the data set. Of these, 14 could be used in the assessment; five could not be used because the result was non-detect and the method detection limit or reporting limit was greater than the threshold. Although LOE 77930 specifies that three (of 17) samples could not be used when it should have specified five (of 19), the result is the same either way, and it remains that 14 samples were assessed. LOE 77930 is from a previous cycle and used in other past listing recommendations and cannot be directly edited at this time. LOE 219735: The current exceedance count of zero out of 10 samples has not been changed for LOE 219735. As the commenter correctly states, LOE 219735 is based on data collected between 2011 and 2014. Staff did not find the additional four samples from 2009 and 2010. If

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	because it would meet the criteria for being delisted that are presented in Table 4.1 of the Listing Policy. Also note that all 3 exceedances are from old sampling events (2002-2003), and chlorpyrifos has effectively been phased out in California since the samples were analyzed (https://cen.acs.org/environment/pesticides/Times-chlorpyrifos-food-US/99/web/2021/04).	the City can provide staff with additional detail or CEDEN search criteria, then these data may be considered during the next Integrated Report cycle. Currently, the addition of four samples would not be sufficient to change Decision ID 126838; when there are three exceedances, a minimum of 37 samples would be needed to meet Listing Policy Table 4.1 criteria for delisting. Exceedance dates: The commenter correctly states that the three exceedances are from 2002-2003. The chlorpyrifos phase out in California has been relatively recent. In late 2019, it was agreed to phase out nearly all uses of the chemical by the end of 2020. A few products that contain granular forms of chlorpyrifos can remain on the market. The Lower Sweetwater River will therefore be considered for delisting when the Table 4.1 criteria of the Listing Policy are met.
016.06	In 2014 as part of a special study (CEDEN project "CWA303d_ParadiseCreekSelenium_NationalCity") the City of National City analyzed 46 individual samples taken within Paradise Creek for selenium, and none of these samples exceeded the water quality standard. However, it appears the data were not considered in the decision. The results are present in CEDEN, and the project's QAPP is noted in the reference list (ref4678). If all samples were included, the total count would come to 4 exceedances for 50 samples, which would meet the delisting criteria for Selenium outlined in Table 4.1 of the Listing Policy. The City requests that the City of National City's data be considered and that, based on including that data, the	The listing recommendation for selenium in Paradise Creek (Decision ID 78587) was not changed in response to this comment. Staff searched the CEDEN database and found the data for 46 selenium samples that were collected during 2014 under the Parent Project name, CWA303d_NationalCity. It appears these data were not assessed because the datum for all five stations is missing (e.g., WGS84, NAD83). The datum is required so stations can be accurately mapped (Listing Policy, 6.1.2.1). It is requested that the City of National City correct the missing datum by contacting CEDEN staff at

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	selenium impairment for Paradise Creek is removed from the 303(d) list.	ceden@waterboards.ca.gov Please note that even with the inclusion of this data set, the total sample count would be insufficient to meet the delisting criteria in this assessment cycle. Decision ID 78587 is currently based on an exceedance count of four out of four samples (LOE 8496). With four exceedances, Table 4.1 of the Listing Policy indicates a minimum of 48 samples is needed to delist. The 2014 data set would not add enough samples to meet that threshold; some of the 46 samples would be averaged because stations were in close proximity and sampled on the same day, and this averaging would lower the overall sample count. See principal response 4.2 for Data and Analysis Transparency, and Readily Available Data.
016.07	This reference appears to be referring to Central Valley Regional Water Quality Control Board Resolution No. R5-2017-0057 (Resolution). The Resolution established a total maximum daily load (TMDL) for 14 specific water body segments in the Central Valley Region that had already been found to have sediment toxicity linked to pyrethroids and general triggers for other water bodies. The staff report for the Resolution notes that the Central Valley Regional Board did not yet have enough information to establish water quality objectives for pyrethroids.1 The values in the Resolution were vetted through a public process that allowed for stakeholders in the Central Valley Region to have input on them before the Resolution was adopted. As noted in the staff report, there are a variety of different potential numeric standards that could be applied for the available portion of pyrethroids, and the parameters used to estimate the amount of total	See principal response 2.1 regarding the selection and use of thresholds for assessing pyrethroid data, principal response 2.2 regarding application of the threshold to waterbodies in the San Diego Region, and individual response 012.02 regarding toxicity in the Lower Sweetwater River, which is currently listed as impaired for toxicity.

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	pyrethroids that are bioavailable can vary significantly based on site-specific factors. It is not necessarily the case that the options determined to be appropriate in the Central Valley Region would also be appropriate for the San Diego Region. The assessment methodology should be reviewed and adopted via a State Amendment or San Diego Basin Plan Amendment process. It is not appropriate to apply a set of relatively tentative goals from the Central Valley Region to the San Diego Region without giving San Diego Region stakeholders an opportunity for public input and without consideration of how differences between the San Diego Region and the Central Valley Region may result in different goals for the San Diego Region. Water bodies in the San Diego Region should not be added to the 303(d)-list based on comparing monitoring data in the San Diego Region to the goals listed in the Resolution. It is recommended that the pyrethroid pesticide water quality thresholds in the Resolution not be used to list waterbodies as impaired at this time, as this policy should not be used to set new water quality objectives according to page 1 of the Listing Policy. However, in the event that the San Diego Water Board still moves forward with applying the Central Valley Region criteria to San Diego Region water bodies, water bodies that do not show evidence of toxicity to Hyalella azteca should not be included on the 303(d) list for pyrethroids impairments, even if they have "exceedances" for pyrethroids based on the Central Valley Region standards. The administrative record for the Resolution notes that Hyalella azteca (H. azteca) is the toxicity test species most sensitive to pyrethroids. Several water bodies in the Central Valley Region had already been	

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	included on the 303(d) list for pyrethroids based on a history of sediment toxicity and high pyrethroid levels in the sediment. Many of the San Diego water bodies proposed to be added to the 303(d) list for pyrethroids as a group or for individual pyrethroids do not have a history of H. azteca toxicity. The San Diego MS4 Copermittees have completed H. azteca toxicity tests at the Sweetwater River Mass Loading Station, which is the same station where the pyrethroids data used to support the proposed listings was collected. None (0%) of the 31 H. azteca tests completed for this location, including tests using water collected at the same time as the two data points considered exceedances in the listing decision, showed a toxic response.2 This suggests that pyrethroids are not causing an impairment at this location; therefore, listing the Lower Sweetwater River for pyrethroids as a group or for individual pyrethroids is not warranted. Footnote 1: At this time the [Central Valley Regional] Board does not have enough information to complete the analysis required in the water code for the adoption of pyrethroid water quality objectives. More information is needed, especially on effectiveness of management practices in order to assess attainability of concentration goals and the costs of implementation that would be required to attain water quality objectives. Concentration goals are proposed to be established as numeric targets and allocations for TMDLs, and as triggers for the requirement of management practices in a conditional prohibition to move toward improved water quality while needed information is developed." Staff Report, page xiv. https://www.waterboards.ca.gov/centralvalley/water issues/	

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	Footnote 2: San Diego Copermittees, 2015. San Diego Bay Transitional Monitoring and Assessment Report- 2014-2015 Final. http://www.projectcleanwater.org/download/san-d	
016.08	Comment: The lines of evidence for this decision ID refer to monitoring at only one location, site EH-090. This site is located along the coast of Coronado Island, across San Diego Bay from the City of National City. Other 303(d) listings related to bacteria in San Diego Bay apply only to certain segments of shoreline along San Diego Bay, based on the location(s) where applicable monitoring data were collected. Also note that, as discussed in the Decision ID, the State Water Board has stated that existing shellfish water quality standards may not be appropriate. It is therefore not appropriate to list San Diego Bay for impairment of the shellfish beneficial use. Further the discussion for the proposed listing states that there are two (2) exceedances from seven (7) total data points for the recreational beneficial use water quality standard. This, by itself (i.e., without reference to the shellfish beneficial use and its water quality standard) is not sufficient data to list the segment per Table 3.2 of the Listing policy. It is not appropriate to list all of San Diego Bay for indicator bacteria based on data from only one site. While the City does not believe that any new impairment is warranted based on the data from site EH-090, if a new listing is nevertheless approved, the City requests the extent of the proposed impairment be limited to the shoreline segment represented by site EH-090 only.	See response to comment 012.03 regarding remapping of the EH-090 station and new Decision ID 132055. Additionally, see principal response 5 for SHELL Beneficial Uses and Objectives.

Letter 17: Melody Rocco, City of Poway

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017.01	The City of Poway objects to several proposed new listings for pyrethroid pesticides, as described in more detail below. Numerous new listings for pyrethroids as a group and for individual pyrethroid pesticides are proposed in the San Diego Region. Based on review of the decision summaries for these listings, they are based on applying regulatory criteria from the "Amendment to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Pyrethroid Pesticide Discharges." This reference appears to be referring to Central Valley Regional Water Quality Control Board Resolution No. RS-2017-0057 (Resolution). The Resolution established a total maximum daily load (TMDL) for 14 specific water body segments in the Central Valley Region that had already been found to have sediment toxicity linked to pyrethroids and general triggers for other water bodies. The staff report for the Resolution notes that the Central Valley Regional Board did not yet have enough information to establish water quality objectives for pyrethroids.[1] The values in the Resolution were vetted through a public process that allowed for stakeholders in the Central Valley Region to have input on them before the Resolution was adopted. As noted in the staff report, there are a variety of different potential numeric standards that could be applied for the available portion of pyrethroids, and the parameters used to estimate the amount of total pyrethroids that are bioavailable can vary significantly based on site-specific factors. It is not necessarily the case that the options	Changes to listing recommendations were not made in response to this comment. See principal response 2.1 regarding the selection and use of thresholds for assessing pyrethroid data, and principal response 2.2 regarding application of the threshold to waterbodies in the San Diego Region. In addition, the commenter incorrectly asserts that there must be a link between *H. azteca* water toxicity at a specific site and a listing for pyrethroids. First, this is not consistent with Listing Policy Section 3.6, which allows for listing based solely on water toxicity. Toxicity testing of organisms represents toxicity to a specific organism for a specific exposure time period under controlled conditions. A lack of observed toxicity for a species in testing may not be indicative of impacts to other species or reflective of in-stream site-specific conditions (e.g., temperature). Second, the referenced toxicity tests in the comment appear to all be for acute toxicity to *H. azteca*. Acute testing for this species looks at the percent survival over a short time duration. While acute toxicity testing is important, it does not look for sublethal impacts to species from pollutants. These chronic effects were specifically used in the development of the pyrethroid thresholds by the Central Valley Regional Water Board. While no linkage is required, additional details on the waterbodies is included below. Regarding Los Penasquitos Creek, sampling by the Surface Water Ambient Monitoring Program (SWAMP) for sediment found toxicity in 7 of 9 samples, including for *H.*

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	determined to be appropriate in the Central Valley Region would also be appropriate for the San Diego Region. The assessment methodology should be reviewed and adopted via a State Amendment or San Diego Basin Plan Amendment process. It is not appropriate to apply a set of relatively tentative goals from the Central Valley Region to the San Diego Region without giving San Diego Region stakeholders an opportunity for public input and without consideration of how differences between the San Diego Region and the Central Valley Region may result in different goals for the San Diego Region. Water bodies in the San Diego Region should not be added to the 303(d)-list based on comparing monitoring data in the San Diego Region to the goals listed in the Resolution. It is recommended that the pyrethroid pesticide water quality thresholds in the Resolution not be used to list waterbodies as impaired at this time, as this policy should not be used to set new water quality objectives according to page 1 of the Listing Policy. However, in the event that the San Diego Water Board still moves forward with applying the Central Valley Region criteria to San Diego Region water bodies, water bodies that do not show evidence of toxicity to Hyalel/a azteca (H. azteca) should not be included on the 303(d) list for pyrethroids impairments, even if they have "exceedances" for pyrethroids based on the Central Valley Region standards. The administrative record for the Resolution notes that H. azteca is the toxicity test species most sensitive to pyrethroids. Several water bodies in the Central Valley Region had already been included on the 303(d) list for pyrethroids based on a history of sediment toxicity and high	*azteca* chronic toxicity tests. The comment regarding a "mild" toxic response is unclear, as results from the sediment toxicity test found acute sediment toxicity rates of 20 and 30 percent, which represents a high level of mortality. Regarding Green Valley Creek, an error in mapping was found during the initial data assessment and toxicity data from 2016 were originally not assessed. As a result of assessing the 2016 data, Green Valley Creek Decision ID 130832 was added to the 2020-2022 303(d) List as a new listing recommendation as impaired for toxicity, in part due to toxicity tests that were toxic for *H. azteca*.

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	pyrethroid levels in the sediment. Many of the San Diego water bodies proposed to be added to the 303(d) list for pyrethroids as a group or for individual pyrethroids do not have a history of H. azteca toxicity. Often samples analyzed for pyrethroids and identified as "exceedances" per the Central Valley standard were also analyzed for H. azteca toxicity, and no toxic response was noted. This indicates that the standards developed for the Central Valley are not necessarily predictive of toxicity in the San Diego region and therefore should not be applied to the San Diego region, as discussed above in more detail. • Los Penasquitos Creek is proposed to be listed as impaired for pyrethroids (decision ID 111724), cypermethrin (decision ID 111727), cyfluthrin (decision ID 111733), cyhalothrin, lambda (decision ID 111735), and permethrin (decision ID 130377). The San Diego MS4 Copermittees have completed. H. azteca toxicity tests within Los Penasquitos Creek, at Site LPS-MLS, which is the same station where the pyrethroids data used to support the proposed listings was collected. None (0%) of the 35 H. azteca tests completed for this location showed a toxic response.2 Since Copermittee data does not identify H. azteca toxicity, even though some pyrethroids levels are higher than the Central Valley threshold, the Central Valley thresholds are not predictive of pyrethroids toxicity in the San Diego region. While some SWAMP toxicity data from Los Penasquitos Creek, specifically site 906LPLPC6, displays a mild toxic response, a direct link between the noted toxicity and pyrethroids was not established, and therefore listing Los Penasquitos Creek for	

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	pyrethroids as a group or for individual pyrethroids is not warranted. • Green Valley Creek is proposed to be listed as impaired for pyrethroids (decision ID 130832) and cyfluthrin (decision ID 130835). The San Diego MS4 Copermittees have completed H. azteca toxicity tests within Green Valley Creek, at Site SDC-TWAS-1, which is the same station where the pyrethroids data used to support the proposed listings was collected. One (1) exceedance was noted in 16 H. azteca toxicity tests. 3 1 of 16 is not enough to trigger a new listing per the State Listing Policy, therefore listing Green Valley Creek for pyrethroids as a group, or for individual pyrethroids, is not warranted. Footnote 1: At this time the [Central Valley Regional] Board does not have enough information to complete the analysis required in the water code for the adoption of pyrethroid water quality objectives. More information is needed, especially on effectiveness of management practices in order to assess attainability of concentration goals and the costs of implementation that would be required to attain water quality objectives. Concentration goals are proposed to be established as numeric targets and allocations for TMDLs, and as triggers for the requirement of management practices in a conditional prohibition to move toward improved water quality while needed information is developed." Staff Report, page xiv. https://www.waterboards.ca .gov /centralvalley/water issues/tmdl/central valley projects/central valley pesticides/pyrethroid tmdl bpa/2017 0608 pyrbpa staffrpt.pdf	

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	Footnote 2: San Diego Copermittees, 2015. Los Penasquitos {PEN) Transitional Monitoring and Assessment Report- 2014-2015 Final. http://www.projectcleanwater.org/download/los-penasquitos-pen-transitional-monitoring-and-assessment-program-report-tmar/ Footnote 3: San Diego Copermittees, 2015. San Dieguito {SDG} Transitional Monitoring and Assessment Report- 2014-2015 Final. http://www. projectclea nwater .org/page/3/?s=san+diegu ito	
017.02	The San Dieguito River is proposed to be listed as impaired for pyrethroids (decision ID 113342), cyhalothrin, lambda (decision ID 113353), and bifenthrin (decision ID 113344). Based on the lines of evidence included for the listing, it appears that the segments of the San Dieguito River above and below Lake Hodges, a major impoundment, are being considered together as one segment. This is not appropriate and does not follow the typical approach applied to rivers interrupted by impoundments. For example, the Sweetwater River in San Diego County is analyzed as three main segments (upper, middle, and lower), with a reservoir located between each of these segments. The San Dieguito River segments upstream and downstream of Lake Hodges should also be evaluated separately. o Segment above Lake Hodges. The only site located above Lake Hodges (SDC-TWAS-2) showed no toxic response to H. azteca for any of the eight (8) events for which toxicity testing was performed,[3] so the data does not support the conclusion that pyrethroids levels in this segment are causing toxicity.	Please see response to comment 017.01 regarding use of the thresholds and linking toxicity to pyrethroid concentrations. The comment regarding the splitting of San Dieguito River is appreciated. San Dieguito River was split this cycle with the intention of having the main lower river be split as separate from the portion above Hodges reservoir, which was remapped as “Santa Ysabel Creek below Sutherland Reservoir.” It appears that a portion of a tributary above Hodges reservoir was not removed during the split, and that the SDC-TWAS-2 station was incorrectly assigned to this tributary due to the inaccuracies of the NHD in this location. Due to staff time limitation, the correction of the split and reassignment of the data is not feasible at this time. The correction will be made during an upcoming cycle. However, the data for proposed listings were reviewed, and the removal of SDC-TWAS-2 data would result in a recommended change of “List” to “Do not List” for Cyhalothrin, Lambda. Thus, this listing recommendation

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	○ Segment below Lake Hodges. The San Diego MS4 Copermittees have completed H. azteca toxicity tests within the San Dieguito River downstream of Lake Hodges at site SDC-MLS, which is one of the sampling stations where the pyrethroids data used to support the proposed listings was collected. None (0%) of the 31 toxicity tests at SDC-MLS showed a toxic response.[3] Since Copermittee data does not identify H. azteca toxicity, even though some pyrethroids levels are higher than the Central Valley threshold, the Central Valley thresholds are not predictive of pyrethroids toxicity in the San Diego region. While some SWAMP toxicity data from the San Dieguito River, specifically from site 905SDSDQ9, displays a moderate toxic response, a direct link between the noted toxicity and pyrethroids was not established, and therefore listing the San Dieguito River for pyrethroids as a group or for individual pyrethroids, is not warranted. Footnote 3: San Diego Copermittees, 2015. San Dieguito {SDG} Transitional Monitoring and Assessment Report- 2014-2015 Final. http://www. projectclea nwater .org/page/3/?s=sa n+diegu ito	has been changed to "Do not List." No other changes to proposed listings would result at this time. Regarding the segment below Lake Hodges, this segment is listed as impaired for toxicity, with 14 of 23 samples exhibiting toxicity, including for *H. azteca*.

Letter 18: Todd Snyder, City of San Diego

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018.01	The City recognizes the increase in data available and commends the State Board on this needed effort. The City appreciates that the delisting evaluation submitted in 2017 was included in the analysis which led to a delisting of Chollas Creek for diazinon. However, in order to ensure that the	Comment noted.

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	listing decisions are based on the intent of the Listing Policy and available data to list a waterbody, the City recommends a few changes to the draft.	
018.02	The City recommends utilizing all available data in the California Environmental Data Exchange Network (CEDEN) during the upcoming integrated reporting efforts. The City expends significant resources collecting data to meet permit and total maximum daily load (TMDL) requirements and all available data should be considered to ensure the 303(d) list reflects the most up to date information. For example, Tecolote Creek is listed in the 20 Beaches and Creeks Bacteria TMDL which was adopted in the MS4 Permit in 2013. The City has conducted compliance monitoring and uploaded data to CEDEN on an annual basis. Based on the lines of evidence (LOE) for Tecolote Creek indicator bacteria listing, none of the Bacteria TMDL compliance data was included in the State Water Board's analysis. Specific examples of data omissions are included in the attached table.	The Water Board appreciates the City of San Diego's bacteria monitoring efforts. Please see response to comment 018.10 regarding the Tecolote Creek listing for indicator bacteria. Also, see principal response 4.2 for Data and Analysis Transparency, and Readily Available Data.
018.03	The City recommends that the Pyrethroid Pesticide Water Quality Thresholds in Table 6-1 should not be used to list waterbodies as impaired at this time. The Listing Policy should not be used to set new water quality objectives according to page 1 of the Listing Policy. The assessment methodology should be reviewed and adopted via a State Amendment or San Diego Basin Plan Amendment process.	See principal response 2.1 regarding the selection and use of thresholds for assessing pyrethroid data.

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018.04	Permittees should not be held responsible for meeting standards that exceed the best available technology. There are limited ELAP certified laboratories in southern California that can meet the lower detection limits needed to generate data comparable to the recommended Pyrethroid water quality thresholds because of the inability for all samples to be analyzed.	See principal response 2.5 regarding detection limits of southern Californian laboratories and the best available technology standards.
018.05	Additionally, the assessment of pyrethroid pesticides is considered biased because valid non-detect results were omitted from the analysis and the limitations related to the analytical methods lead to improper conclusions.	Data were not used for assessment purposes if minimum quality assurance and quality control requirements were not met. Non-detect results where the laboratory data reporting limit(s) were above the objective are not quantified with the level of certainty required by the Listing Policy Section 6.1.5.5 and were not included in assessments. No specific examples of lines of evidence or listing recommendations were provided by the commenter.
018.06	The City recommends that Chollas Creek not be listed for dissolved oxygen, total phosphorus, and total nitrogen. This listing did not adequately consider the temporal representation or critical condition in accordance with the Listing Policy. The San Diego Regional Board acknowledged that nutrients are more of a concern during ambient dry weather conditions rather than stormwater. Chollas Creek is an ephemeral creek and dry for majority of the summer months. The majority of the data is representative of storm events and the wet season and is not representative of the dry season when biostimulatory effects occur.	Changes to the listing recommendations for dissolved oxygen, total phosphorus, or total nitrogen in Chollas Creek were not made in response to this comment. The listing recommendations for these constituents were based on readily available data. The nitrogen recommendation, for example, is based on 221 samples taken at nine stations over a period of more than ten years. While there may be relatively fewer samples from dry weather conditions, the water quality objective as stated in the Basin Plan does not have a temporal component and applies to waters throughout the year.

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		Note: The City of San Diego's comment letter references "LOE for Decision ID 76929" but this appears to be in error – Decision ID 76929 is for Benthic Community Effects in Weaver Creek. The listing recommendations relevant to this comment are: 132047 Nitrogen 90/221 (11 LOEs) "List" 112082 Phosphorus 139/223 (10 LOEs) "Do not Delist" 112079 Oxygen, Dissolved 56/285 (13 LOEs) "List"
018.07	The City requests rationale as to why there are new listings in the Tijuana River for Ammonia, Total Nitrogen, and Dissolved Oxygen when the Tijuana River is already listed for those constituents listed on the California 2014 and 2016 combined 303(d) list.	These "new" listing recommendations are due to a name changes and other updates. Previous listing recommendations for "Ammonia as Nitrogen" were incorrectly named. The LOEs (7193 and 7380) in that recommendation are for unionized ammonia and have been included in the revised recommendation for "Ammonia (Unionized)," which is Decision ID 115522. The "Ammonia" recommendation (Decision ID 127820) includes only new "Ammonia as N" data in the corresponding LOEs. "Ammonia as N" is a name only to be used for LOEs not listing recommendations. The past listing recommendations for "Low Dissolved Oxygen" were incorrectly named. The new recommendation (Decision ID 112165) has the corrected name and includes older data plus more recent data.

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018.08	The City agrees that a more appropriate specific conductivity threshold for San Diego Region waterbodies should be established for future Integrated Report assessments and we look forward to supporting this effort.	Comment noted.
018.09	Recommendation: Do not list waterbodies in San Diego Region for pyrethroids using the Davis method of assessment. The proposed pyrethroid assessment method used has limitations related to the analytical methods. The Executive Summary (page xvi) and Section 8.3 (page 143) of the 2017 “Central Valley Pyrethroid Amendment”, upon which the current pyrethroid targets are based, state that commercial analytical methods that can reliably achieve adequate reporting limits based on the proposed pyrethroid numeric targets are not currently available. It goes on to state that “As analytical methods continue to be developed and improved, reporting limits for pyrethroids will more closely approach the proposed numeric triggers.” (Section 8.4, page 144). The current state of analytical chemistry labs, while showing some improvement, is in much same position as in 2017, with most commercial labs not achieving pyrethroid detection limits below the pyrethroids numeric targets. Additionally, the 2017 “Central Valley Pyrethroid Amendment” recognizes that while some labs have detection limits near the targets, these are based on “interference-free water” (i.e., clean lab water) and that it that should be noted that detection limits for ambient	Changes in listing recommendations were not made in response to this comment. See principal response 2.5 regarding detection limits of Californian laboratories and principal response 2.1 regarding the selection and use of thresholds for assessing pyrethroid data.

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	samples and wastewater effluents would likely be higher because those types of samples have more complex matrices. Recommendation: Do not list waterbodies in San Diego Region for pyrethroids using the Davis method of assessment.	
018.10	The LOE presented for indicator bacteria at Tecolote Creek includes data that is not current. For example, for fecal coliform in Tecolote Creek Decision ID 128038, 77 samples were referenced with sampling dates as far back as 2007. The temporal reference states that "samples were collected between September 2007 and March 2010. This referenced data set excludes all data collected as part of the 20 Beaches and Creeks Bacteria TMDL program from 2014 through present for indicator bacteria at Tecolote Creek. The City collects at least 32 dry weather samples upload to CEDEN on an annual basis and should be included as part of the LOE for this pollutant review. Recommendation: All available data should be considered to ensure the 303(d) list reflects the most up to date information in accordance with the 2020/2022 Integrated Report.	The historical levels of indicator bacteria in the waterbody may be a poor indicator of current risks to human health, particularly when more recent data are available to sufficiently assess the water quality standard. Historic indicator bacteria data collected prior to 2010, were evaluated pursuant to these considerations and were not used to assess water quality standards attainment when more recent data were sufficient to make a listing recommendation. The commenters assertion that we assessed data prior to 2010 for Tecolote Creek Decision ID 128038 is inaccurate. The data included in the final use rating for water contact recreation were collected after 2010. Two lines of evidence were assessed where 40 out of 55 samples exceed the geomean threshold for *E. coli.* The historical data referenced in the comment were not included in the final use rating for water contact recreation because more recent data were available. Also, see principal response 4.2 for Data Transparency and Readily Available Data.
018.11	The San Diego Regional Board acknowledged that nutrients are more of a concern during ambient dry weather conditions	See response to comment 018.06.

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	rather than stormwater. Chollas Creek is ephemeral creek and dry for majority of the summer months. Majority of the data is representative of storm events and wet season and not representative of dry season when biostimulatory effects would occur. Recommendation: The City recommends that Chollas Creek not be listed for dissolved oxygen, total phosphorus, and total nitrogen.	
018.12	The LOE states 40 samples in 2006 were the only available data. There is more recent data available. Chollas Creek was monitored for nutrients since the adoption of the 2013 permit and the data was submitted to CEDEN. Recommendation: All available data should be considered to ensure the 303(d) list reflects the most up to date information in accordance with the 2020/2022 Integrated Report.	First, for clarification, the City's letter (Attachment 1, row 5) refers to the "LOE for Decision ID 76929" for Total Nitrogen in Chollas Creek, but Decision ID 76929 is for Benthic Community Effects in Weaver Creek. The recommendation for Total Nitrogen in Chollas Creek is Decision ID 132047. Second, Decision ID 132047 for Total Nitrogen in Chollas Creek is based on all available data, which total 221 samples collected from 1994 through 2018. See principal response 4.2 for Data and Analysis Transparency, and Readily Available Data.

Letter 19: Reed Thornberry, City of San Marcos

No.	Comment	Response
019.01	The City supports comments relevant to our jurisdiction included in letters submitted by the California Stormwater Quality Association, City of San Diego, County of San Diego,	Comment noted.

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	and Riverside County Flood Control District, and would like to emphasize these specific comments on the draft Integrated Report:	
019.02	The City supports the County of San Diego's efforts to delist San Marcos Creek for selenium, as data collected in the creek support de-listing based on the Listing Policy. In May 2014, the County of San Diego submitted five comment letters related to the 2010 §303d listings for selenium in five creeks; the letters and data are referenced and included in the County of San Diego's comment letter for this decision. Additional data were collected by the County of San Diego for use in the de-listing evaluation and compared to the California Toxics Rule (CTR) Freshwater Criterion of 0.005 mg/L. In San Marcos Creek, 0 of 31 samples exceeded the criterion. Based on the age of the exceedances and significantly decreasing trend results this pollutant is not likely to exceed the criterion in the future.	Comment noted. See response to comment 026.11.
019.03	Pyrethroid Pesticide Water Quality Thresholds in Table 6-1 should not be used to list waterbodies as impaired at this time. Significant financial burdens will be imposed on cities given the limited ELAP certified laboratories in Southern California. Permittees should not be held responsible for meeting standards that exceed the best available technology. Furthermore, these pyrethroid pesticide water quality thresholds developed by UC Davis have not been adopted as a water quality standard by the San Diego Basin Plan. If this assessment methodology is to be used, it should be adopted through a State Amendment or the San Diego Basin Plan Amendment Process. Finally, the	See principal response 2.1 regarding the selection and use of thresholds for assessing pyrethroid data and principal response, principal response 2.2 regarding application of the threshold to waterbodies in the San Diego Region, and principal response 2.5 regarding detection limits of southern Californian laboratories. In addition, non-detect results where the laboratory data reporting limit(s) were above the objective are not quantified with the level of certainty required by the Listing Policy Section 6.1.5.5 and were not included in assessments.

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	assessment of pyrethroid pesticides is considered biased due to the fact that valid non-detect results were excluded from analysis.	

Letter 20: George Johnson, City of Santa Barbara

No.	Comment	Response
020.01	1) Arroyo Burro, List for Arsenic (Municipal Water Supply). This listing is based on two exceedances of drinking water standards from a total of 10 samples (LOE 110656). The City requests this listing be changed to Do Not List for the following reasons: a. With the lowest possible number of exceedances to qualify for a listing, the data should be extremely rigorous. However, there are several issues. i. The first exceedance does not have a QAPP associated with the sample. ii. The dataset is rife with laboratory comments denoting metals contamination, including two samples with arsenic detected in the method blank. iii. Sediment was detected in nearly every sample, and it is likely that some or all of the arsenic was associated with the sediment. b. The source of arsenic is unknown. Section 6.1.2.2 of the listing policy states that, "Potential source of pollutant (the source category should be identified as specifically as possible)." In this case, the source is almost certainly natural, which should preclude the listing. A review of USGS data from the area shows	Changes to listing recommendations were not made in response to this comment for Arroyo Burro Creek and arsenic (Decision ID 110656). Listing a waterbody based on two of 10 exceedances comports with the Listing Policy, Section 3.1, Table 3.1 for toxicants. a.i. Staff confirmed that the sample dated 6/19/2013 was collected in accordance with the state's Surface Water Ambient Monitoring Program QAPP. Although the data file (Reference 4793) shows "Not Recorded" in the "QAPPName" column, this sample was collected by the Central Coast Ambient Monitoring Program and the lack of a "QAPPName" is a spreadsheet error. a.ii. Staff confirmed that the two samples counted as exceedances (sample dates 9/18/2017 and 6/19/2013) did not have any contamination in the method blank samples. Central Coast Regional Water Board staff consulted with the lab who analyzed the data for these samples. The lab batches run for these two sampling events also met control measures for matrix spikes, laboratory duplicates and field duplicates. Laboratory comments denoting arsenic was detected in the method

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	background soil arsenic levels are within the 80th-90th percentile for the United States (https://pubs.usgs.gov/sir/2017/5118/index.html). c. Arroyo Burro Creek is not used for drinking water supply nor has it been since the Clean Water Act was passed. The Water Board would have the justification to remove the water supply beneficial use under two 40 CFR 131.10(g) factors (https://www.waterboards.ca.gov/academy/courses/wqstandards/materials/mod3/c abenuses.pdf): d. In the improbable event Arroyo Burro were to be used as drinking water in the future, arsenic is already highly regulated by the USEPA and the State Water Board. There is no risk that water from Arroyo Burro will be consumed without treatment (https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=60000E1E.txt).	blank and field blank were associated with two samples that did not exceed the threshold. a.iii. Staff reviewed instream turbidity measurements associated with each of the two samples counted as exceedances. Turbidity measured 3.9 NTU in the sample from 9/18/2017 and 1.6 NTU in the sample from 6/19/2013. These turbidity measurements are not indicative of elevated suspended sediment concentrations in the samples. b. The commenter is correct in citing Section 6.1.2.2. of the Listing Policy with respect to identifying potential sources of the pollutant. However, "potential sources" are only provided when there is documentation of a source analysis available. Otherwise, source identified would be premature and potentially incorrect. Please see the 2020-2022 Integrated Report Staff Report's last paragraph in Section 2.3.2 where it states the following: "Potential pollutant sources were only identified in listing recommendations when a specific source analysis has been performed as part of a TMDL or other regulatory process. Otherwise, the potential pollutant source is marked "Source Unknown" or "No Source Analysis Available." As no TMDL has been developed, nor is there a known source analysis project, staff entered, "No Source Analysis Available" for this proposed listing. Regarding natural sources: If water quality standards are not attained (as defined in the Listing Policy, Section 3), then the waterbody and pollutant combination is added to the 303(d) List. If the failure to attain water quality standards is due to the fact that the applicable standards are not appropriate due to natural conditions, an

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		appropriate regulatory response is to correct the standards (see California's Impaired Waters Policy; https://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/iw_policy.pdf) and reevaluate the impairment status of the waterbody. Where natural sources are expected to be the source, documentation that justify development of a site-specific objective that is protective of the designated uses can be provided for the administrative record. Please provide any such documentation to the Central Coast Regional Water Board for consideration during any Basin Plan Triennial Review to identify and prioritize an amendment to the Central Coast Basin Plan. Central Coast Regional Water Board staff shared this comment with TMDL and Basin Planning programs staff for their consideration during the TMDL annual work planning and prioritization process as well as the Basin Plan Triennial Review. c. Regarding designated beneficial uses, California's Impaired Water Policy states that if the failure to attain water quality standards is due to the fact that the applicable standards are not appropriate to natural conditions, an appropriate regulatory response is to correct the standards and reevaluate the impairment status of the waterbody. Revision of the designated beneficial uses requires a Use Attainability Analysis ("UAA") or similar documentation. Please provide any such documentation to the Central Coast Regional Water Board for consideration during any Basin Plan Triennial Review to identify and prioritize an amendment to the Central Coast Basin Plan.

No.	Comment	Response
		d. Comment noted.
020.02	2) Arroyo Burro, List for Lead (Municipal Water Supply). This listing is based on two exceedances of drinking water standards from a total of 10 samples. The City requests this listing be changed to Do Not List for the following reasons: a. With the lowest possible number of exceedances to qualify for a listing, the data should be extremely rigorous. However, there are several issues. i. The first exceedance does not have a QAPP associated with the sample. b. The dataset is rife with laboratory comments denoting metals contamination, including two samples with lead detected in the method blank. The second exceedance was flagged for numerous issues including matrix interference. c. The criterion used is the drinking water Public Health Goal, when the Maximum Contaminant Level would be more appropriate. All other Regional Boards that list waterbodies as impaired for lead under the water supply beneficial use (Regional Boards 1, 5,6,7,8, and 9) use the MCL as the evaluation guideline, with the exception of Regional Board 1, which uses 0.05 mg/L. From the Water Board (https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/MCLsan dPHGs.html): MCLs are adopted as regulations. They are health protective drinking water standards to be met by public water systems. MCLs take into account not only chemicals' health risks but also factors such as their detectability and treatability, as well as costs of treatment. Health & Safety Code §116365(a) requires a contaminant's MCL to be established at a level as	Decision ID 110665 (Arroyo Burro Creek and lead) was revised as follows: changed listing recommendation to "Do not List". Central Coast Regional Water Board staff revised the threshold used for lead and the municipal and domestic supply beneficial use. Staff replaced the Public Health Goal (PHG) of 0.2 µg/L (OEHHA 2009) with the Maximum Contaminant Level (MCL) of 15 µg/L (California Code of Regulations, Title 22). As the commenter states, this is consistent with most other regions in California. Using the MCL instead of the PHG results in a "Do not List" for Arroyo Burro Creek and lead. Additionally, see response to comment 020.01.b., regarding natural sources and comment 020.01.c regarding beneficial use designations. Documentation in support of this request should be submitted to the Central Coast Regional Water Board during a Basin Plan Triennial Review public comment period. Comment noted regarding drinking water and lead.

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	close to its PHG as is technologically and economically feasible, placing primary emphasis on the protection of public health. PHGs are established by the Office of Environmental Health Hazard Assessment (OEHHA). They are concentrations of drinking water contaminants that pose no significant health risk if consumed for a lifetime, based on current risk assessment principles, practices, and methods. OEHHA establishes PHGs pursuant to Health & Safety Code §116365(c) for contaminants with MCLs, and for those for which MCLs will be adopted. Arroyo Burro is not used as domestic or municipal supply and no individuals would be consuming this water source for a lifetime. The regulatory limit is more appropriate. Using the current regulatory criterion (MCL) of 15 ug/L, (https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents /mclreview/mcls_dlrs_phgs.pdf), there are no exceedances in the data set. d. The source of lead is unknown. Section 6.1.2.2 of the listing policy states that, "Potential source of pollutant (the source category should be identified as specifically as possible)." In this case, the source is almost certainly natural, which should preclude the listing. A review of USGS data from the area shows background soil lead levels are within the 70th-80th percentile for the United States (https://pubs.usgs.gov/sir/2017/5118/index.html). e. Arroyo Burro Creek is not used for drinking water supply nor has it been since the Clean Water Act was passed. The Water Board would have the justification to remove the water supply beneficial use under two 40	

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	CFR 131.10(g) factors (https://www.waterboards.ca.gov/academy/courses/wqstandards/materials/mod3/c abenuses.pdf): f. In the improbable event Arroyo Burro were to be used as drinking water in the future, lead is already highly regulated by the USEPA and the State Water Board. The listing could be revisited with the Public Health Goal as a potential guideline.	
020.03	3) Arroyo Burro, List for Nitrate (Warm Freshwater Habitat). This listing is based on twenty of the 148 nitrate samples and 25 of the 73 nitrate/nitrite samples exceeding the Central Coast Region's evaluation guideline for the protection of aquatic life uses. The City requests this listing be changed to Do Not List for the following reasons: a. The use of nitrate and nitrate/nitrite from the same sample essentially counts nitrate exceedances twice, because nitrate makes up >95% of the nitrate/nitrite. In every exceedance of nitrate/nitrite in file 4793, the exceedance was also counted for nitrate from the same sample. This can be seen most clearly in a data table of all exceedances in data set 4793, where orange rows signify nitrate/nitrite samples that were already marked on the same date as exceeding for nitrate. Red signifies an exceedance that went toward the listing. A scan of other lines of evidence in the fact sheet suggest this would be true for data files 3820 and 3830 as well. b. Data issues exist in at least 4793, as there are six negative numbers reported in the results for nitrate from Arroyo Burro at Cliff.	Changes to listing recommendations were not made in response to this comment for Arroyo Burro Creek and nitrate (Decision 115602). However, the listing recommendation was revised to reflect that only the spawning habitat beneficial use is impaired by dissolved oxygen. a. Staff acknowledge that in some cases the same sample is reported as both "nitrate" and as "nitrate + nitrite as N" and that this is essentially redundant for the reasons the commenter provided. However, using both "nitrate" and "nitrate + nitrite as N" from the same sample does not increase the likelihood that a waterbody will be listed. These sample and exceedance counts are calculated separately. For example, if there are 20 "nitrate" samples with two exceeding the water quality standard, and the same 20 samples are represented as "nitrate + nitrite as N" with two samples exceeding the water quality standard, either of these scenarios will justify a listing but they are not added together (i.e., not summed to have 40 samples and four exceedances). In the Arroyo Burro listing recommendation (Decision ID 115602), the exceedance frequency for "nitrate" samples and the exceedance frequency for "nitrate + nitrite as N"

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	c. The document cited for explaining the criterion of 1.0 mg/L suggests that the criterion should be applied to the average value. The average value for Arroyo Burro (dataset 4793) is 0.57 mg/L. d. Dissolved oxygen. There is inconsistency in the Decision ID for Nitrate and the Decision ID for dissolved oxygen (emphasis added): Dissolved Oxygen Fact Sheet: Nine lines of evidence are available in the administrative record to assess this pollutant. Twelve of the 234 samples exceed the water quality objective for warm freshwater habitat (Basin Plan), which supports this beneficial use. However, forty of 152 samples exceed the water quality objective for fish spawning (Basin Plan), which does not support this beneficial use. Nitrate Fact Sheet: To support this conclusion, and in accordance with section 3.11 of the Listing Policy, Water Board staff also evaluated dissolved oxygen data as supporting evidence of eutrophic conditions. This waterbody is on the 303(d) List due to low dissolved oxygen, specifically due to the high frequency of exceedances of the dissolved oxygen water quality objectives for Spawning Habitat and Warm Freshwater Habitat. e. Other signifiers of eutrophication have not been identified. Chlorophyll was reviewed in Decision 110658 and one out of 117 samples exceeded.	samples both exceed the allowable exceedance rate independently and therefore the waterbody will remain on the 303(d) List. b. Arroyo Burro Creek nitrate results that are reported as negative numbers in Reference 4793 are non-detect results. Historically, this was an acceptable CEDEN reporting procedure that is not used anymore. Regardless, the negative result does not indicate poor data quality. These non-detect results are counted as a sample, but not as an exceedance. c. The document cited (Reference 3085; https://www.waterboards.ca.gov/water_issues/programs/tmdl/records/region_3/2009/ref3085.pdf) does mention that the *average* nitrate concentration which predicts an unacceptable response in dissolved oxygen concentrations is 1.0 mg/L of Nitrate as N (Figure 4). However, the document does not assert that an average nitrate concentration should be used to determine the risk of an unacceptable biostimulatory response. Instead, the document recommends that lines of evidence should be developed based on exceedances of 1.0 mg/L nitrate as nitrogen (NO3-N) and assessed in the context of biostimulatory response data to protect aquatic life beneficial uses. The 1.0 mg/L threshold represents the 95th percentile of the reference data set used to develop the screening criterion (Worcester et al. 2010). Consequently, nitrate concentration data were not averaged prior to comparison to the threshold. d. The commenter is correct. Staff corrected Decision ID 115602 for nitrate and Arroyo Burro Creek to reflect that

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		only the spawning habitat beneficial use is impaired by dissolved oxygen. e. The commenter is correct. Dissolved oxygen is the only response indicator indicating of eutrophication. Dissolved oxygen is a sufficient indicator to infer that nitrate causes or contributes to an unacceptable biostimulatory response in Arroyo Burro Creek.
020.04	4) Arroyo Burro, List for Toxicity (Warm Freshwater Habitat). This listing is based on three exceedances from a total of eight samples. The City requests this listing be changed to Do Not List for the following reasons: a. One exceedance is listed as Significantly Greater than the control, which does not make sense for the given toxicity test. b. One exceedance is listed as exceeding the allowable hold time. c. The single remaining exceedance without issues would not be sufficient to list the impairment according to Table 3.1.	Changes to listing recommendations were not made in response to this comment to Decision ID 110675 (Arroyo Burro Creek and toxicity). Staff confirmed that the three samples were assigned the SL "SigEffectCode" (meaning the test effect was significantly lower than the control sample; in other words, the test organisms had a lower growth, reproduction, or survival rate than the control sample) and this is sufficient to justify the listing recommendation to add Arroyo Burro Creek to the 303(d) list for toxicity. Specifically, LOE 149001 shows two water samples are toxic (Reference 4793, sample dates 7/31/2014 and 5/20/2015) and LOE 23562 shows one water sample is toxic (Reference 2572, sample date 3/17/2002). In summary, the three water samples described above were toxic, assigned the SL "SigEffectCode", and counted as exceedances of the water quality objective. a. Staff reviewed the data and determined that a "SigEffectCode" of Significantly Greater (SG) was reported for the sample collected on 12/3/2001 (Reference 2572), which is not one of the exceedances counted in Decision ID 110675.

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		b. Staff reviewed the data and determined the comment "Holding Time exceeded by more than 30 days" was noted for a sediment sample collected on 3/26/2002 (Reference 2572). Sediment samples were not the basis for this listing.
020.05	5) Arroyo Burro, List for Urea (Freshwater Warm Habitat). This listing is based on two exceedances from a total of 82 samples. The City requests this listing be revised to Do Not List for the following reasons: a. The listing is not supported by Table3.1, as is stated in the Fact Sheet. According to Table 3.1, for 82 samples, seven exceedances are required to place a waterbody on the impaired list. b. There are issues with the data reporting. According to the Fact Sheet, there are 82 samples for Urea. Upon reviewing the linked data file, there are only 66 samples collected. Furthermore, one of the sample results is a negative number. c. The two exceedances seem very high compared to the data set. At least one is a statistical outlier using Grubbs test.	Central Coast Regional Water Board staff revised Decision ID 110655 (Arroyo Burro Creek and urea) as follows: changed listing recommendation to "Do not List". Commenter is correct that two of 82 samples does not meet the requirements of the Listing Policy in Section 3.1 to add a waterbody segment and pollutant combination to the 303(d) List. This recommendation was made in error. Consequently, Central Coast Regional Water Board staff revised Decision ID 110655 to "Do not List" for Arroyo Burro Creek and urea.
020.06	6) Arroyo Burro, List for Selenium (Freshwater Warm Habitat). This listing is based on two exceedances from a total of 10 samples. The City requests this listing be revised to Do Not List for the following reasons: a. The listing is based on the lowest allowable number of exceedances in Table 3.1.	Changes to listing recommendations were not made in response to this commenter for Arroyo Burro Creek and selenium (Decision ID 110672). a. Central Coast Regional Water Board staff evaluated Decision ID 110672 and determined the listing was based

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	b. Selenium toxicity is complicated due to chemical speciation, bioaccumulation, and biomagnification. The criteria for protecting aquatic life in California are currently in revision (https://www.epa.gov/wqs-tech/water-quality-standards-establishment-numeric-criterion-selenium-fresh-waters-california). It is expected that the new criteria will include tissue sampling and/or site-specific criteria, as described in the US EPA's fact sheet: The EPA is proposing a chronic criterion for California based on the EPA's current CWA 304(a) recommended criterion for selenium. The proposed selenium water quality criterion is comprised of criterion elements of fish tissue, bird tissue, and a performance-based approach for translating the bird and fish tissue elements into site-specific water column elements. The EPA is proposing selenium fish and bird tissue elements because they reflect biological uptake through diet, the predominant pathway for selenium toxicity, and because they are most predictive of the observed biological endpoint of concern, reproductive toxicity. Specifically, the EPA is proposing its recommended 2016 CWA section 304(a) selenium criterion for freshwater with the addition of a bird tissue criterion element and the replacement of the 304(a) selenium monthly average exposure water column criterion elements with a performance-based approach. The approach would be used by California to translate the tissue criterion elements into protective water column elements on a site-specific basis. This performance-based approach maximizes the flexibility for the State to develop water-column translations specifically tailored to each individual waterbody. Additionally, the performance-based	on 10 exceedances out of 10 samples, which Table 3.1 of the Listing Policy indicates is sufficient to list. b. If new criteria are adopted for selenium, the Water Boards will reassess data in future cycles using the new criteria. Currently, selenium listings are a lower priority for TMDL development and therefore will not be the subject of a TMDL project before the next time the Central Coast Regional Water Board conducts a complete update to the Integrated Report (scheduled for 2028). c. Please see response to comment 020.01.b., regarding natural sources. Documentation in support of this request should be submitted to the Central Coast Regional Water Board during a Basin Plan Triennial Review public comment period.

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	approach provides two methodologies for deriving site-specific water column criterion elements: the mechanistic modeling approach and the empirical bioaccumulation factor (BAF) approach. c. The source of selenium is unknown. Section 6.1.2.2 of the listing policy states that, "Potential source of pollutant (the source category should be identified as specifically as possible)." In this case, the source is almost certainly natural, which should preclude the listing. A review of USGS data from the area shows background soil selenium levels are within the 60th-70th percentile for the United States (https://pubs.usgs.gov/sir/2017/5118/index.html). Given the complicated upcoming criteria change, the scant data for listing, and likely natural source of selenium, the City respectfully requests that additional data be obtained prior to listing.	
020.07	7) Mission Creek, List for Aluminum (Commercial or recreational collection of fish, shellfish, or organisms). This listing is based on two exceedances from a total of seven samples. The City requests this listing be revised to Do Not List for the following reasons: a. The evaluation guideline and reference are from 2006 National Recommended Water Quality Criteria - Aquatic Life Criteria Table and have been superseded. Even if this guideline were retained for the decision, it does not appear to be used properly, as it depends on the free aluminum, which was not measured. Furthermore, the listing is for the beneficial use of commercial or recreational collection of fish, shellfish,	Central Coast Regional Water Board staff revised Decision ID 110764 (Mission Creek (Santa Barbara County) and aluminum) as follows: revised beneficial use associated with each LOE to correctly reflect the designated aquatic life beneficial use.~~; however, changes to the listing recommendation was not made in response to this comment.~~ a. Please see response to comment 009.07, with respect to the threshold being superseded. The threshold (U.S. EPA National Recommended Water Quality Criteria (2006)) is based on total recoverable metal in the water column (Reference 2523, footnotes I and L; https://www.waterboards.ca.gov/water_issues/programs/t

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	or organisms, but there is no associated criteria in the linked table, shown here:
	
	Alkalinity
	• CAS Number: --
	• Freshwater
	  ○ CCC (Fg/L): 20000 F
	• FR Cite/Source: Gold Book
	
	Alkalinity pH 6.5 - 9.0
	• CAS Number: 7429905
	• Freshwater
	  ○ CMC (Fg/L): 750 G, I
	  ○ CCC (Fg/L): 87 G, I, L
	• FR Cite/Source: 53FR33178
	
	b. The current aluminum guideline from the National Recommended Water Quality Criteria - Aquatic Life Criteria Table includes a bioavailability model that produces site-specific criteria based the aluminum value, pH, hardness, and dissolved organic carbon (DOC). The resulting criteria range from 0.63 - 3,200 µg/L depending on the water chemistry (https://www.epa.gov/sites/production/files/2018-12/documents/aluminum-criteria-final-factsheet.pdf)
	c. While the City has not been able to run the model due to lack of DOC values, it is expected that the sample-specific criteria for Mission Creek would be high due to extremely hard water. The City bases this prediction on prior experience with the Biotic Ligand Model to assess copper toxicity.
	d. The source of aluminum is unknown. Section 6.1.2.2 of the listing policy states that, "Potential source of
		mdl/records/state_board/2008/ref2523.pdf). Data collected (Reference 4793) report the total fraction of aluminum.
		
		The commenter is correct that the threshold was not properly applied to the correct beneficial use. The threshold was erroneously applied to the "commercial or recreational collection of fish, shellfish, or organisms" beneficial use regionwide. Central Coast Regional Water Board staff corrected this error and the threshold is now correctly applied to the aquatic habitat beneficial uses, which are cold and warm freshwater habitat.
		
		~~After correcting the beneficial use error, Central Coast Regional Water Board staff appropriately assessed aluminum data against narrative objectives to protect the aquatic life beneficial uses and used the 1988 U.S. EPA National Recommended Water Quality Criteria (which was also included without changes in the 2006 criteria) as the numeric evaluation guideline in accordance with Section 6.1.3 of the Listing Policy. This is consistent with other regions in the state that have also used this threshold to protect aquatic life beneficial uses.~~
		
		b. ~~Comment noted. Please refer to response to comment 009.07.~~ Decision ID 110764 was revised from "List" to "Do not List." Please see response to comment 009.07 regarding use of the U.S. EPA's 2018 Recommended Aquatic Life Criterion for aluminum.
		
		c. The commenter is correct, there are no dissolved organic carbon ("DOC") values for these samples. Therefore, without assuming a DOC for this waterbody, staff are unable to calculate a value of aluminum to

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	pollutant (the source category should be identified as specifically as possible)." In this case, the source is almost certainly natural, which should preclude the listing. A review of USGS data from the area shows background soil aluminum levels are within the 90th-100th percentile for the United States (https://pubs.usgs.gov/sir/2017/5118/index.html).	compare to these different criteria. Central Coast Regional Water Board staff has shared this comment with our ambient monitoring staff (Central Coast Ambient Monitoring Program or "CCAMP") for consideration in future sampling events. d. Please see response to comment 020.01.b., regarding natural sources. Documentation in support of this request should be submitted to the Central Coast Regional Water Board during a Basin Plan Triennial Review public comment period. Currently, aluminum listings are a lower priority for TMDL development and therefore will not be the subject of a TMDL project before the next time the Central Coast Regional Water Board conducts a complete update to the Integrated Report (scheduled for 2028).
020.08	8) Mission Creek, List for Chlordane (Warm Freshwater Habitat). This listing is based on two exceedances from a total of seven samples. The City requests this listing be revised to Do Not List for the following reasons: a. Line of evidence 151844 states there is a chlordane exceedance from the 4826 dataset, but even when cis and trans chlordane from the same sample is summed, none exceeds the evaluation guideline of 17.6 ng/g dw. b. Line of evidence 55177 says there is a chlordane exceedance, but the linked document (3917 dataset) shows only one sample from Mission Creek and the sum of cis and tran chlordane is 14.19 ng/g dw, which is below the evaluation guideline of 17.6 ng/g dw.	Changes to the listing recommendation were not made in response to this comment for Mission Creek and chlordane (Decision ID 110705). Section 2.5.4 in the 2020-2022 Integrated Report Staff Report was revised to clarify specific pollutants used to calculate total chlordane (and other summed pollutants). The commenter is correct that the listing for chlordane is based on two exceedances out of seven samples. a. The 4826 dataset (LOE 151844) shows one exceedance out of six. The exceedance was on 5/26/2015. The pollutant "chlordane" is treated as a "summing pollutant" and the pollutants are added together and compared to the threshold. Pollutants that

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	c. The fact sheet states that the exceedances are associated with sediment toxicity, yet there is no evidence provided to support the association. According to Section 3.6 of the listing policy: Association of pollutant concentrations with toxic or other biological effects should be determined by any one of the following, unless other guidelines apply: A. Sediment quality guidelines (satisfying the requirements of section 6.1.3) are exceeded using the binomial distribution as described in section 3.1. In addition, using rank correlation, the observed effects are correlated with measurements of chemical concentration in sediments. If these conditions are met, the pollutant shall be identified as "sediment pollutant(s)." B. For sediments, an evaluation of equilibrium partitioning or other type of toxicological response that identifies the pollutant that may cause the observed impact. Comparison to reference conditions within a watershed or ecoregion may be used to establish sediment impacts. C. Development of an evaluation (such as a toxicity identification evaluation) that identifies the pollutant that contributes to or caused the observed impact. d. Chlordane is no longer sold in the United States. Given the lack of data supporting exceedances and associated toxicity, chlordane should not be listed as a sediment pollutant causing a 303(d) impairment.	are summed to equal "chlordane" include: Chlordane; Nonachlor, cis-; Nonachlor, trans-; Chlordane, cis-; Chlordane, trans-; and Oxychlordane. For the sample collected on 5/26/2015, the sum of the above-named constituents is 22.63 ng/g dw ("dry weight"), which exceeds the threshold of 17.6 ug/kg dw. Staff notes that the specific constituents summed were not explicitly stated in either the listing recommendation or the Staff Report. As a result of these comments, language was added in the Staff Report to explain how summing pollutants are compared to thresholds (see Staff Report section 2.5.4). b. The 3917 dataset (LOE 55177) shows one exceedance out of one sample. The exceedance was on 6/10/2008. When all pollutants are summed, the result is 23.71 ng/g dw, which exceeds the threshold. c. Toxicity lines of evidence were associated with this Decision (LOEs 148692, 55175, and 55176 for the COLD freshwater beneficial use and LOEs 79222, 79221, and 148662 for the warm freshwater beneficial use). Mission Creek is on the 303(d) List for toxicity (Decision ID 110737). Toxicity is noted in both water (6 of 20 samples exceed) and sediment (4 of 9 samples exceed). Section 3.6 of the Listing Policy states that a waterbody segment "shall be listed if the observed toxicity is associated with a pollutant or pollutants." In this case, the sediment concentrations of chlordane are associated with the sediment toxicity impairment and this supports the listing recommendation for chlordane, in accordance with Section 3.6 of the Listing Policy.

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		d. Comment noted.
020.09	9) Mission Creek, List for Copper (Habitat). This listing is somewhat confusing and will be quoted: For the water matrix, a total of three of 60 samples exceed the water quality objective for the cold freshwater habitat beneficial use, 17 of 60 samples exceed the water quality objective for the estuarine habitat beneficial use, zero of 80 samples exceed the water quality objective for the municipal and domestic supply beneficial use and three of 60 samples exceed the water quality objective for the warm freshwater habitat beneficial use. For the sediment matrix, a total of zero of nine samples exceed the evaluation guideline for the cold freshwater habitat beneficial use and zero of eight samples exceed the evaluation guideline for the warm freshwater habitat beneficial use. This exceeds the allowable frequency listed in Table 4.1 of the Listing Policy. The City requests this listing be revised to Do Not List for the following reasons: a. Table 4.1 is for de-listing, not listing. Assuming that Table 3.1 was intended for use, only Estuarine Habitat has enough exceedances to qualify for a listing. b. The sample collection site is not estuarine. c. The evaluation guideline is based on sample collection in saltwater. The sample site contains freshwater. The evaluation guideline is for dissolved metals, but only total metals were reported. The dissolved fraction is hardness dependent, but no site- or sample-specific criteria are provided. The hardness among samples that exceeded is extremely high (typically ~700 mg/L), and the samples would likely not exceed for copper.	Decision ID 110709 (Mission Creek (Santa Barbara County) for copper was revised as follows: 1) the listing recommendation was updated from “List” to “Do not List,” and 2) staff revised the recommendation language to reference the correct section of the Listing Policy (Section 3.1). a. The commenter is correct that the language referring to Section 4.1 of the Listing Policy was in error. Staff corrected the language in Decision ID 110709 to reference Section 3.1 of the Listing Policy. Commenter is also correct that the estuarine habitat beneficial use is the only beneficial use that would qualify Mission Creek for a listing for copper. b. Currently, Mission Creek is designated with the estuarine habitat beneficial use in the Central Coast Basin Plan and there is no spatial limitation on that designation. The process to change or limit the spatial extent of a designated beneficial use, is described in the response to comment 020.01.c. Central Coast Regional Water Board staff identified this issue and our Basin Planning staff added this issue to our Basin Plan Triennial Review list. c. Commenter is correct that the threshold is for marine waters (saltwater) and was applied here because the waterbody is designated with the estuarine beneficial use. The Numeric Criteria for Priority Toxic Pollutants for the State of California (California Toxics Rule or “CTR”) states, “For waters in which the salinity is equal to or less

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	d. The current National Recommended Water Quality Criteria - Aquatic Life Criteria Table states that freshwater copper criteria are calculated using the Biotic Ligand Model, which requires simultaneous collection of several other analytes (https://www.epa.gov/wqs-tech/copper-biotic-ligand-model). Having done this, the City has not identified copper as a constituent of concern in Mission Creek. However, a newer version of the model may be available. The City requested the updated version from the US EPA in 2020 but has not received a reply. e. The source of copper is unknown. Section 6.1.2.2 of the listing policy states that, "Potential source of pollutant (the source category should be identified as specifically as possible)." In this case, the source is almost certainly natural, which should preclude the listing. A review of USGS data from the area shows background soil selenium levels are within the 90th-100th percentile for the United States (https://pubs.usgs.gov/sir/2017/5118/index.html).	than 1 part per thousand 95% or more of the time, the applicable criteria are the freshwater criteria." Consequently, and in accordance with the CTR, the criteria should not be applied to the portions of Mission Creek where the salinity is known to be less than 1 ppt 95% of the time. Staff confirmed that the salinity is below 1 part per thousand 95% of the time at the monitoring station 315MIS (where the copper samples were collected). Consequently, staff revised Decision ID 110709 from a "List" to a "Do not List" recommendation. Commenter is also correct that only total metals were reported in the dataset. However, prior to comparing data to the CTR criteria, the dissolved fraction was calculated for each result in accordance with the CTR equation that converts total metals to dissolved (see Table 2 to paragraph (b)(2) on page 31717 of CTR). Consequently, the lines of evidence show the fraction is "dissolved." Note that because this criterion is for marine waters (saltwater), hardness was not considered in the calculation performed by the automated tool ("ReLEP"). Staff acknowledge that the criteria/objective language state that there was a hardness dependent formula applied; however, this did not take place. d. The coastal regions in the State of California (Regions 1, 2, 3, 4, 8, 9) are currently using the CTR guidelines for evaluating copper. As to the Biotic Ligand Model, staff will evaluate these criteria for potential inclusion in future listing cycles. e. Please see response to comment 020.01.b., regarding natural sources. Documentation in support of this request should be submitted to the Central Coast Regional Water

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		Board during a Basin Plan Triennial Review public comment period. Also see response 020.09.b.
020.10	10) Mission Creek, List for Lead (Municipal Water Supply). This listing is based on seven exceedances of drinking water standards from a total of seven samples. The City requests this listing be changed to Do Not List for the following reasons: a. There are several issues with the dataset: i. Three samples do not have an associated QAPP. ii. The dataset is rife with laboratory comments denoting metals contamination, including lead detected in the blank for most exceedances. One exceedance was flagged for matrix interference. b. The criterion used is the drinking water Public Health Goal, when the Maximum Contaminant Level would be more appropriate. All other Regional Boards that list waterbodies as impaired for lead under the water supply beneficial use (Regional Boards 1, 5,6,7,8, and 9) use the MCL as the evaluation guideline, with the exception of Regional Board 1, which uses 0.05 mg/L. From the Water Board (https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/MCLsan dPHGs.html): MCLs are adopted as regulations. They are health protective drinking water standards to be met by public water systems. MCLs take into account not only chemicals' health risks but also factors such as their detectability and treatability, as well as costs of	Decision ID 110720 (Mission Creek and lead) was revised as follows: changed listing recommendation from “List” to “Do not List” as data were assessed against the MCL instead of the PHG. Please also see response to comment 020.02.

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	treatment. Health & Safety Code §116365(a) requires a contaminant's MCL to be established at a level as close to its PHG as is technologically and economically feasible, placing primary emphasis on the protection of public health. PHGs are established by the Office of Environmental Health Hazard Assessment (OEHHA). They are concentrations of drinking water contaminants that pose no significant health risk if consumed for a lifetime, based on current risk assessment principles, practices, and methods. OEHHA establishes PHGs pursuant to Health & Safety Code §116365(c) for contaminants with MCLs, and for those for which MCLs will be adopted. Mission Creek is not used as domestic or municipal supply and no individuals would be consuming this water source for a lifetime. The regulatory limit is more appropriate. Using the current regulatory criterion (MCL) of 15 ug/L, (https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents /mclreview/mcls_dlrs_phgs.pdf), there are no exceedances in the data set. c. The source of lead is unknown. Section 6.1.2.2 of the listing policy states that, "Potential source of pollutant (the source category should be identified as specifically as possible)." In this case, the source is almost certainly natural, which should preclude the listing. A review of USGS data from the area shows background soil lead levels are within the 70th-80th percentile for the United States (https://pubs.usgs.gov/sir/2017/5118/index.html).	

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	d. Mission Creek is not used for drinking water supply nor has it been since the Clean Water Act was passed. The Water Board would have the justification to remove the water supply beneficial use under two 40 CFR 131.10(g) factors (https://www.waterboards.ca.gov/academy/courses/wqstandards/materials/mod3/c abenuses.pdf): e. In the improbable event Mission Creek were to be used as drinking water in the future, lead is already highly regulated by the USEPA and the State Water Board. The listing could be revisited with the Public Health Goal as a potential guideline.	
020.11	11) Sycamore Creek, List for Boron (Agricultural Water Supply). This listing is based on three exceedances of drinking agricultural water supply standards from a total of 25 samples. The City requests this listing be changed to Do Not List for the following reasons: a. There are three lines of evidence in the decision (11311), two for dissolved boron and one for total boron. Two of the lines of evidence were summed to 23 samples with two exceedances, just meeting the Table 3.1 criterion for listing a waterbody. When the three total boron samples are added, the listing is no longer justified. There is no justification to separate the sample number by total and dissolved samples. The samples were all collected on different days, the water quality objective does not specify total or dissolved fractions, and other decisions have combined results for total and dissolved samples. b. The source of boron is unknown. Section 6.1.2.2 of the listing policy states that, “Potential source of	Decision ID 113111 (Sycamore Creek and boron) was revised as follows: changed listing recommendation from “List” to “Do not List”. a. The commenter is correct. The original listing for boron was based on two exceedances out of 23 samples for the dissolved fraction. Water Board staff reviewed the data associated with this listing recommendation and determined Reference 4807 contained data for both total and dissolved boron; however, the automated system created only a total boron LOE (159466). Water Board staff revised LOE 159466 to use the dissolved fraction of boron as reported in the dataset. When adding all the samples together from the three LOEs, two of 26 samples exceed the threshold for the dissolved fraction. This does not exceed the number needed to list a water segment per Table 3.1. Water Board staff revised Decision ID 113111 (Sycamore Creek and boron) to “Do not List”.

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	pollutant (the source category should be identified as specifically as possible)." In this case, the source is almost certainly natural, which should preclude the listing. A review of USGS data from the area shows background soil boron levels are above the 50th percentile for the United States (https://pubs.usgs.gov/pp/1270/pdf/PP1270_508.pdf). The source of boron is almost certainly natural. Sycamore Creek is not enriched for boron, as shown in the following plot of average boron values for the area 315 creeks (using data sets 4793 and 4807). c. It is difficult to conceive of an implementation activity that could reduce boron in stream flow. d. Sycamore Creek is not used for agricultural water supply.	b. See response to comment 020.01.b., regarding natural sources. Documentation in support of this request should be submitted to the Central Coast Regional Water Board during a Basin Plan Triennial Review public comment period. c. Comment noted. d. See response to comment 020.01.c., regarding beneficial use designations. Documentation in support of this request should be submitted to the Central Coast Regional Water Board during a Basin Plan Triennial Review public comment period.
020.12	12) Sycamore Creek, List for Copper (Estuarine Habitat). This listing is based on three of three samples exceeding the water quality objective for the estuarine habitat beneficial use. The City requests this listing be revised to Do Not List for the following reasons: a. The sample collection site is not estuarine and is freshwater. b. All other habitat beneficial uses did not exceed. c. The evaluation guideline provided in the decision is based on sample collection in saltwater. The evaluation guideline is for dissolved metals, but only total metals were reported. The dissolved fraction is hardness dependent, but no site- or sample-specific criteria are provided. The hardness among samples that exceeded is extremely high (typically ~360-939	Changes to listing the recommendation were not made in response to this comment for Sycamore Creek and copper (Decision ID 113113). a. Regarding estuarine habitat beneficial use designation, please see response to comments 020.01.c. and 020.09.b. Central Coast Regional Water Board staff has identified this issue and our Basin Planning staff added this issue to our Triennial Review list. b. The commenter is correct that other habitat beneficial uses did not exceed any of the copper thresholds. c. Although Sycamore Creek has the estuarine habitat beneficial use designated in our Basin Plan, the application of the CTR criteria are dependent on ambient salinity. The Sycamore Creek monitoring site 315SCC

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	mg/L, and the samples would likely not exceed calculated criteria. d. The current National Recommended Water Quality Criteria - Aquatic Life Criteria Table states that freshwater copper criteria are calculated using the Biotic Ligand Model, which requires simultaneous collection of several other analytes (https://www.epa.gov/wqs-tech/copper-biotic-ligand-model). Having done this, the City has not identified copper as a constituent of concern in Sycamore Creek. However, a newer version of the model may be available. The City requested the updated version from the US EPA in 2020 but has not received a reply. e. The source of copper is unknown. Section 6.1.2.2 of the listing policy states that, "Potential source of pollutant (the source category should be identified as specifically as possible)." In this case, the source is almost certainly natural, which should preclude the listing. A review of USGS data from the area shows background soil copper levels are within the 90th-100th percentile for the United States (https://pubs.usgs.gov/sir/2017/5118/index.html).	data show that the 95th percentile for salinity is 1.6 ppt (out of 33 samples collected between January 2001 – January 2009). The CTR states that when the salinity is between 1 and 10 parts per thousand 95% of the time, the applicable criteria are the more stringent of the freshwater or saltwater criteria (see CTR (131.36, (c)(3)(ii)). In this case, the saltwater criterion is more stringent and therefore appropriate for use to evaluate water quality standards attainment for Sycamore Creek. Also, please see response to comment 020.09.c., with respect to total metals and hardness. d. Please see response to comment 020.09.d. e. Please see response to comment 020.01.b., regarding natural sources. Documentation in support of this request should be submitted to the Central Coast Regional Water Board during a Basin Plan Triennial Review public comment period.
020.13	13) Sycamore Creek, List for Temperature (Estuarine Habitat). This listing is based on five of 30 samples exceed the evaluation guideline applied to protect the cold freshwater habitat beneficial use. The City requests this listing be revised to Do Not List for the following reasons: a. The decision is based on the very least number of exceedances in Table 4.1; it is not a robust listing. b. Only three samples were collected since 2008.	Decision ID 126225 (Sycamore Creek and water temperature) was revised as follows: changed listing recommendation from "List" to "Do not List". The proposed listing was based on the allowable number of exceedances in Table 3.2 of the Listing Policy and the COLD freshwater water habitat beneficial use. After further review, Central Coast Regional Water Board staff changed the listing recommendation to "Do not List" because no evidence is available that indicates steelhead

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	c. The listing does not include comparison to historic or natural temperature or fisheries data, nor does it evaluate temperature metrics reflective of sensitive species, as required by the Listing Policy:	trout were historically or currently are present in Sycamore Creek. See specific responses to each of the commenter's points below. a. This listing recommendation is based on five of 30 samples exceeding the threshold, and this exceeds the allowable exceedance frequency identified in Table 3.2 in the Listing Policy. b. The commenter is correct that only three samples have been collected since 2009. c. The commenter is correct that the listing recommendation language did not include a written comparison to historical or natural data. Section 6.1.5.9 of the Listing Policy states, "when 'historic' or 'natural' temperature data are not available, alternative approaches shall be employed to assess temperature impacts." The alternative approach used was based on comparing temperature data from coastal waterbodies with steelhead trout to temperature thresholds identified by Moyle (1976). The presence of steelhead trout in coastal waterbodies was based on "Steelhead/Rainbow Trout (*Oncorhynchus mykiss*) Resources South of the Golden Gate, California" (Becker, G.S and I.J Reining, October 2008). While Sycamore Creek is not explicitly listed in Becker et al. (2008), Mission Creek and Montecito Creek are identified as having a "definite run or population" of steelhead trout both historically and currently (page 298). Mission Creek is just west of Sycamore Creek and Montecito Creek is just east of Sycamore Creek.

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		Therefore, the original listing recommendation was based on an assumption that steelhead trout were also in neighboring Sycamore Creek historically. However, upon re-evaluation, Sycamore Creek is not explicitly stated in the Becker et al. (2008). In the absence of evidence that steelhead trout are present, the listing recommendation was revised to "Do not List". The listing recommendation language was revised to state, "this evaluation guideline is not relevant to this waterbody because according to the recent publication (Steelhead/Rainbow Trout (*Oncorhynchus mykiss*) Resources South of the Golden Gate, California (Becker, G.S and I.J Reining, October 2008)) there are no historic or current records of steelhead trout for this waterbody."
020.14	d. All Sycamore Creek samples were collected close to noon, when water temperature is elevated. In contrast, in Cieneguitas Creek, which you recommended for Delisting (126196), samples were collected at various times. All of the Cieneguitas Creek temperature exceedances were recorded between 11:27 am and 1:05 pm. e. Temperature exceedances are likely natural and reflective of air temperature (provided in the dataset).	d. The commenter is correct. Samples from Sycamore Creek were collected close to noon. The data were assessed using the threshold that represents the upper end of the range of tolerance for growth and completion of most steelhead trout life stages to evaluate grab sample data (21 degrees C from Moyle, 1976) in creeks where there is documentation of historical or current records of steelhead trout. However, as stated in response to comment 020.13, c, the listing recommendation was revised to "Do not List" for this waterbody as there are no current records of steelhead trout for this coastal stream. e. Please see response to comment 020.01.b., regarding natural sources. Documentation in support of this request should be submitted to the Central Coast Regional Water

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		Board during a Basin Plan Triennial Review public comment period.
020.15	14) Sycamore Creek, Sodium and Chloride Do Not Delist. The City requests a delisting for natural sources of sodium and chloride. In 2016, the City respectfully requested that the Board delist Sycamore Creek (Santa Barbara) for Sodium (Decision ID 37445) and Chloride (Decision ID 37034) under the reasoning that the sources are natural. The City has provided extensive evidence that high sodium and chloride levels in Sycamore Creek result from natural upwelling of high conductivity water that supplies base flow to Sycamore Creek. The City supplied this information in written form and discussed the results over the phone with the Regional Board in December 2013, at which time the City was told that if data shows the source is natural and from seeps, this could lead to a delisting. The City also supplied the written information and discussed the material with Dominic Roques in April 2014. At this meeting, it was confirmed that the City should not continue to address the Sycamore Creek listing in the 303(d) Monitoring Plan required by the Phase II General Permit because the source is likely natural.	Changes to the listing recommendation were not made in response to this comment for Sycamore Creek and sodium or chloride (Decision IDs 113116 and 113112, respectively). Central Coast Regional Water Board staff acknowledges that our staff has discussed this topic with City of Santa Barbara in the past and that the City provided data and documentation regarding salts and conductivity conditions in this watershed. Consequently, Central Coast Regional Water Board staff included a project on the Basin Plan Triennial Review priority list for 2021 to consider re-evaluating the agricultural supply beneficial use designation and to develop site specific objectives for salts in the South Coast Hydrologic Unit (Rincon Creek to Jalama Creek). Additional documentation is needed to justify change to standards for these and other Santa Barbara coastal watersheds. Please see response to comment 20.01.b., regarding natural sources. Documentation in support of this request should be submitted to the Central Coast Regional Water Board during a Basin Plan Triennial Review public comment period.
020.16	Finally, the City would like to request clarification on how the Water Board proceeds when it is suspected that the source of an impairment is natural. In particular, the City is interested in understanding low dissolved oxygen levels, as we are	In cases of naturally poor water quality, the Impaired Waters Guidance, (https://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/iw_policy.pdf), Section B, states that revising

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	concerned about the potential impact on aquatic biota. We have installed DO loggers in our upper watersheds and reference watersheds and have found low nighttime dissolved oxygen levels, suggesting that impairments for dissolved oxygen may be natural.	the standards may be the best way to address the impairment. For this situation, there are two options regarding a water quality standards change: 1) develop site specific objective based on an extensive evaluation of natural conditions; or 2) change the beneficial use designation (in this case agricultural supply) based on a Use Attainability Analysis or similar analysis. Please submit any such data or documentation to the Central Coast Regional Water Board during the Basin Plan Triennial Review. This ensures that the documentation is part of the administrative record. Central Coast Regional Water Board staff could then consider the timing and priority to proceed with a standard change action.

Letter 21: C. Mel Lytle, City of Stockton; Matthew Zidar, County of San Joaquin

No.	Comment	Response
021.01	We also want to specifically acknowledge our appreciation of staff's efforts in working with us for the delisting of the following pollutant/waterbody combinations: • Calaveras River, Lower (from Stockton Diverting Canal to the San Joaquin River; partly in Delta Waterways, eastern portion) – Diazinon (Decision ID 131344) and Chlorpyrifos (Decision ID 131376) • Mosher Slough (downstream of I-5; in Delta Waterways, ester portion) – Diazinon (Decision ID 131379) and Chlorpyrifos (Decision ID 131378) • Smith Canal (in Delta Waterways, eastern portion) – Organophosphate Pesticides (Decision ID 131380)	Comment noted.

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021.02	While it is important to identify, list and address waterbodies that are not attaining water quality standards, it is equally as important to identify and de-list waterbodies that are attaining water quality standards so that the status of the waterbodies is accurately reflected and we can focus our limited resources on the highest priority water quality issues.	Comment noted.
021.03	Delta Waterways (Stockton Ship Channel) – Aluminum (Decision ID 121646[2]) and Boron (Decision ID 121635[3]) listings. Incorrect Monitoring Location – The samples that were used for both the aluminum and boron listing decisions are from one monitoring site (CALWR_WQX-A0442050). However, in the "ref4948" dataset, the coordinates listed for this monitoring site (40.0429, -122.1003) are for Mill Creek in Tehama County, north of Chico. ***Recommendation:*** Remove this listing from the proposed 2020-2022 Integrated Report. If a different monitoring site and dataset should have been indicated within the Fact Sheets then additional time needs to be provided to allow for the review of the data that was used for the basis for the listing. Footnote 2: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/00139.shtml#121646 Footnote 3: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/00139.shtml#121635	The incorrect monitoring location identified by the commenter is confirmed. The monitoring station (CALWR_WQX-A0442050) was reassigned to the correct waterbody (WBID: CAR5094203120020508115919, Mill Creek (Tehama County)). As a result of the station reassignment, changes were made to LOEs and listing recommendations. These changes are provided in Appendix R: List of Central Valley Regional Water Board Station Location Revisions to Correct Mapping Error and Listing Recommendation Updates in the Proposed Final Staff Report. Also, please see response to comment 006.17 regarding the scope of the mapping error and the remedy.

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021.04	Incorrect Objective - The line of evidence (LOE) 199303 for cold freshwater habitat compares the data collected from one monitoring location (CALWR_WQX-A0442050- see comment 1a regarding this location) to the 1988 U.S. EPA ambient water quality chronic criterion of 87 µg/L. However, it has been demonstrated in several water effect ratio (WER) studies to be orders of magnitude overly protective and has not been used within recently adopted permits. **Recommendation:** To the extent that this is applicable (see comment 1a), a site-specific analysis should be conducted using a 2018 Aluminum NA WQC derived criteria based on the appropriate pH, DOC and total hardness values in ambient waters and adjusted as needed based on relevant WER studies.	See response to comment 009.07.
021.05	Duck Creek (San Joaquin County) – Lead (Decision ID 118528[7]) listing. Use of Detected not Qualified Data - There are several lines of evidence that are used to justify this listing - LOE IDs 62965 (0 of 6 exceedances), 19097 4 (2 of 12 exceedances), 190954 (0 of 11 exceedances), 190977 (0 of 9 exceedances). Of the 38 samples assessed for this listing, only two from LOE 190974 were identified as exceeding the applicable objective. However, the dissolved lead samples with exceedances in this LOE are "DNQ - Detected Not Quantified". It's inappropriate to rely on only DNQ samples as exceedances for a listing, as there is uncertainty in the accuracy of the results that are that close to the MDL. In addition, of the four lines of evidence, only one indicated that a listing may be appropriate (based on data that is almost 10 years old), whereas the others had no exceedances.	Changes to listing recommendations were not made in response to this comment. The listing recommendation for Duck Creek (San Joaquin County) be listed as impaired for lead is correct. Data collected by the San Joaquin County Delta Water Quality Coalition at site 531XDCAHF included results for both dissolved and whole water concentrations of lead. For days when only whole water concentrations were recorded, these results were converted to dissolved concentrations based in accordance with the provisions of the California Toxicity Rule. The sample results that exceeded the criteria for aquatic life protection were quantified and valid. The commenter is correct that Detected NOT Quantified (“DNQ”) samples cannot contribute to an exceedance. If

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	Recommendation: Remove this listing from the proposed 2020-2022 Integrated Report. Footnote 7: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/02057.shtml#118528	the objective is lower or equal to the reporting limit ("RL"), the sample is considered a quantitation discard and does not count toward sample and exceedance counts. Conversely, if the reporting limit is less than the objective, the result is multiplied by ½ the Method Detection Limit ("MDL") and considered a valid sample, as State Water Board staff can ascertain with certainty that the result is less than the objective (i.e., between 0 and the RL). Therefore, a DNQ sample may contribute to the sample count if the reporting limit is less than the objective. Although these data are older, there is no justification for excluding them from the assessment for the water body. In addition, lead is persistent in the environment. It may be appropriate to exclude older, transient pollutant data if they are no longer representative and more current data are available. Older data may no longer be representative of waterbody conditions due, for example, to improvements in source control through TMDL or management plan implementation. During future Integrated Report cycles, staff will consider all readily available data for this water body and revise the listing status as appropriate.
021.06	French Camp Slough (confluence of Littlejohns and Lone Tree Creeks to San Joaquin River, San Joaquin Co; partly in Delta Waterways, eastern portion) -Bifenthrin (Decision ID 116581[8]) and Pyrethroids (Decision ID 116576[9]). Multiple Listings for the Same Data -The data used in the LOE 186563 for the bifenthrin listing is the same data used in the pyrethroid listing, LOE 193163. Since all of the other pyrethroid constituents considered in this LOE are DNQ or	Changes to listing recommendations were not made in response to this comment. The Basin Plan amendment for the TMDL and Control Program for Pyrethroid Pesticides (R5-2017-0057) describes assessment procedures for individual pyrethroid pesticides (bifenthrin, cyfluthrin, cypermethrin, esfenvalerate, lambda-cyhalothrin, and permethrin) and also an approach to assess the additive impact of these pesticides when

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	ND, it is unclear why two listings are being generated from the same 4 data points. However, if more than one pyrethroid constituent (bifenthrin, cyfluthrin, cypermethrin, esfenvalerate, lambda-cyhalothrin, permethrin) contributes to the exceedance of the chronic concentration goal, then pyrethroids should be listed instead of the individual constituents. **Recommendation:** List either pyrethroids or bifenthrin, but not both if the same data set is used. Footnote 8: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/01245.shtml#116581 Footnote 9: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/01245.shtml#116576	present together in a waterbody (pyrethroids). The assessment procedures are both valid and appropriate.
021.07	French Camp Slough (confluence of Littlejohns and Lone Tree Creeks to San Joaquin River, San Joaquin Co; partly in Delta Waterways, eastern portion) -Bifenthrin (Decision ID 116581[8]) and Pyrethroids (Decision ID 116576[9]). Analysis Conducted -Without an understanding as to what specific data was used for this analysis and the details of the analysis (see comment #8), it is unclear if the pesticide data was assessed using the approach specified within the Pyrethroid Control Program. Recommendation: Identify the specific data used in the analyses and the actual analyses conducted for this listing decision.	Data used for the lines of evidence ("LOEs") to support Decision IDs 116581 and 116576 are available in the data references attached to the LOEs. Each LOE identifies date ranges for the samples used for the assessment and the total number of samples. Data records that were run through automated quality control ("QC") screening filters and those that passed the screening filters were further evaluated based on available QC metadata provided in the data records. Please see Section 5.1.4 of the Staff Report and the Central Valley Regional Water Quality Control Board Resolution No. RS-2017-0057 for details concerning the assessment process for pyrethroids. Please also see the Water Quality Criteria Report for Bifenthrin updated in 2015 by T. Fojut (Criteria Derivation (ca.gov)).

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	Footnote 8: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/01245.shtml#116581 Footnote 9: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/01245.shtml#116576	
021.08	French Camp Slough (confluence of Littlejohns and Lone Tree Creeks to San Joaquin River, San Joaquin Co; partly in Delta Waterways, eastern portion) -Bifenthrin (Decision ID 116581[8]) and Pyrethroids (Decision ID 116576[9]). Listing Decision -The listing decision that is identified for pyrethroids and bifenthrin in French Camp Slough is "List on the 303(d) List (TMDL required list)". However, in June 2017, the Central Valley Regional Water Quality Control Board adopted a Basin Plan Amendment for the Control of Pyrethroid Pesticide Discharges, which established pyrethroid concentration goals and a program of implementation for surface waters in the Sacramento and San Joaquin River watersheds of the Central Valley. The Staff Report for the Pyrethroid Control Program states [emphasis added] “Following the development of previous Basin Plan amendments to address the insecticides chlorpyrifos and diazinon, it was determined that a comprehensive Basin Plan amendment addressing multiple water bodies and multiple pesticides would likely be more cost effective and efficient than developing Basin Plan amendments and TMDLs for individual water bodies and individual compounds. Therefore, a comprehensive basin planning effort was initiated to address pyrethroids as a class	Changes to listing recommendations were not made in response to this comment. See principal response 2.4 regarding use of existing Central Valley Regional Water Board programs to address pyrethroid impairments.

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	of compounds throughout the Sacramento River and San Joaquin River basins[10]." Since there is already a comprehensive regional, regulatory program in place that explicitly addresses pyrethroid pesticides, any potential new listings (including the one for French Camp Slough) should be listed in a more representative category such as - Category 4B - Another regulatory program is expected to address the impairment; Category 5C - Being addressed by action other than a TMDL; or Category 5AL T - Being addressed by USEPA approved TMDL alternative. *Recommendation:* Any new listings for pyrethroids or pyrethroid constituents within the Sacramento and San Joaquin River watersheds should be listed in another, more representative category such as Category 48, Category 5C, or Category SALT. Footnote 8: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/01245.shtml#116581 Footnote 9: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/01245.shtml#116576 Footnote 10: Proposed Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Pyrethroid Pesticides Discharges, Final Staff Report. June 2017. Section 2, page 3.	
021.09	Middle River (in Delta Waterways, southern portion) - Aluminum (Decision ID 122776[11]). Incorrect Monitoring Location -The samples that were used for this listing decision	The incorrect monitoring location identified by the commenter is confirmed. The monitoring station (CALWR_WQX-A1400901) was reassigned to the correct

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	are from one monitoring site (CALWR_WQX-A1400901). However, in the "ref4948" dataset, the coordinates listed for this monitoring site (41.4163278, -120.544475) are for a waterbody in Modoc County. **Recommendation:** Remove this listing from the proposed 2020-2022 Integrated Report. If a different monitoring site and dataset should have been indicated within the Fact Sheets then additional time needs to be provided to allow for a review of the data that was used as the basis for this listing. Footnote 11: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/01303.shtml#122776	waterbody (WBID: CAR5265208020080909194359, Pit River, South Fork). As a result of the station reassignment, changes were made to LOEs and listing recommendations. These changes are provided in Appendix R: List of Central Valley Regional Water Board Station Location Revisions to Correct Mapping Error and Listing Recommendation Updates in the Proposed Final Staff Report. Also, please see response to comment 006.17 regarding the scope of the mapping error and the remedy.
021.10	Middle River (in Delta Waterways, southern portion) - Aluminum (Decision ID 122776[11]). b) Incorrect Objective (also see comment 1b above)-The LOE 122776 for cold freshwater habitat compares the data collected from one monitoring location (CALWR_WQX-A1400901 - see comment 3a regarding this location) to the 1988 U.S. EPA ambient water quality chronic criterion of 87 µg/L. However, it has been demonstrated in several NPDES permit water effect ratio studies to be orders of magnitude overly protective and has not been used in recently adopted NPDES permits. *Recommendation:* To the extent that this is applicable (see comment 4a), a site-specific analysis should be conducted using a 2018 Aluminum NA WQC derived criteria based on the appropriate pH, DOC and total hardness values in ambient waters and adjusted as needed based on relevant WER studies.	See response to comment 009.07.

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	Footnote 11: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/01303.shtml#122776	
021.11	Old River (San Joaquin River to Delta-Mendota Canal; in Delta Waterways, southern portion) - Chlorodibromomethane (Decision ID 126571[12]), Chloroform (Decision ID 122757[13]), Dichlorobromomethane (Decision ID 126572[14]), Total Trihalomethane (TTHM) (Decision ID 122762[15]) Incorrect Monitoring Location - The samples that were used for this listing decision are identified as being from one monitoring site (CALWR_WQX-B9D81281401). However, in the "ref4948" dataset, the coordinates listed for this monitoring site (38.2133583, -121.66855833) are for the Sacramento River near Elkhorn Slough. *Recommendation:* Remove this listing from the proposed 2020-2022 Integrated Report. If a different monitoring site and dataset should have been indicated within the Fact Sheets then additional time needs to be provided to allow for a review of the data that was used as the basis for this listing. Footnote 12: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/01302.shtml#126571 Footnote 13: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/01302.shtml#122757 Footnote 14: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/01302.shtml#126572	The incorrect monitoring location identified by the commenter is confirmed. The monitoring station (CALWR_WQX-B9D81281401) was reassigned to the correct waterbody (WBID: CAR5100000020080821102031, Cache Slough (in Delta Waterways, northern and northwestern portions)). As a result of the station reassignment, changes were made to LOEs and listing recommendations. These changes are provided in Appendix R: List of Central Valley Regional Water Board Station Location Revisions to Correct Mapping Error and Listing Recommendation Updates in the Proposed Final Staff Report. Also, please see response to comment 006.17 regarding the scope of the mapping error and the remedy.

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	Footnote 15: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/01302.shtml#122762	
021.12	Old River (San Joaquin River to Delta-Mendota Canal; in Delta Waterways, southern portion) - Chlorodibromomethane (Decision ID 126571[12]), Chloroform (Decision ID 122757[13]), Dichlorobromomethane (Decision ID 126572[14]), Total Trihalomethane (TTHM) (Decision ID 122762[15]). Analysis Conducted -Without an understanding as to what specific data was used for this analysis and the details of the analysis (see comment #8), it is unclear how these listing decisions were made. *Recommendation:* To the extent that this is still applicable (see comment 5a), Identify the specific data used in the analyses and the actual analyses conducted for this listing decision.Footnote 12: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/01302.shtml#126571 Footnote 13: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/01302.shtml#122757 Footnote 14: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/01302.shtml#126572 Footnote 15: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/01302.shtml#122762	Following reassessment of the data in response to this comment, lines of evidence utilizing results from a Trihalomethane Formation Potential test were removed. Decision IDs 126571, 122757, 126572, and 122762 were removed and the listing recommendation for Old River (San Joaquin River to Delta-Mendota Canal; in Delta Waterways, southern portion) was revised from “List” to “Do not List” for Chlorodibromomethane, Chloroform, Dichlorobromomethane, and Total Trihalomethanes (“TTHM”).
021.13	Paradise Cut (in Delta Waterways, southern portion) - Total Dissolved Solids (Decision ID 123341[16]) Incorrect Monitoring Location - The samples that were used for this listing decision	The incorrect monitoring location identified by the commenter is confirmed. The monitoring station (CALWR_WQX-A0425000) was reassigned to the correct

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	are identified as being from two monitoring sites (CALWR_WQX-A0425000 and CALWR_WQX-B9D74811247). However, in the "ref4948" dataset, the coordinates listed for monitoring site CALWR_WQX-A0425000 (39.7268, -121.8625) are for Big Chico Creek in Chico, CA. *Recommendation:* Remove the analyses that reference site CALWR_WQX-A0425000 from the Fact Sheet and as lines of evidence for the proposed listing. If a different monitoring site and dataset should have been indicated within the Fact Sheets then additional time needs to be provided to allow for a review of the data that was used as the basis for this listing. Footnote 16: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/02294.shtml#123341	waterbody (WBID: CAR5204000020020610133629, Big Chico Creek (Butte and Tehama Counties)). As a result of the station reassignment, LOE 206893 and LOE 206928 (associated with monitoring station CALWR_WQX-A0425000) were moved to the correct waterbody. The listing recommendation has not been changed due to LOE 206803 from monitoring station CALWR_WQX-B9D74811247. These changes are provided in Appendix R: List of Central Valley Regional Water Board Station Location Revisions to Correct Mapping Error and Listing Recommendation Updates in the Proposed Final Staff Report. Also, please see response to comment 006.17 regarding the scope of the mapping error and the remedy.
021.14	Tom Paine Slough (in Delta Waterways, southern portion) - Aluminum (Decision JD 123023[17]). Incorrect Monitoring Location - The samples that were used for this listing decision are from one monitoring site (CALWR_WQX-A1210000). However, in the "ref4948" dataset, the coordinates listed for this monitoring site (41.4821, - 120.5388) are for North Fork Pit River in Alturas, CA. *Recommendation:* Remove this listing from the proposed 2020-2022 Integrated Report. If a different monitoring site and dataset should have been indicated within the Fact Sheets then additional time needs to be provided to allow for a review of the data that was used as the basis for this listing.	The incorrect monitoring location identified by the commenter is confirmed. The monitoring station (CALWR_WQXA1210000) was reassigned to the correct waterbody (WBID: CAR5265201620080909193959, Pit River, North Fork). As a result of the station reassignment, changes were made to LOEs and listing recommendations. These changes are provided in Appendix R: List of Central Valley Regional Water Board Station Location Revisions to Correct Mapping Error and Listing Recommendation Updates in the Proposed Final Staff Report. Also, please see response to comment 006.17 regarding the scope of the mapping error and the remedy.

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	Footnote 17: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/02088.shtml#123023	
021.15	Tom Paine Slough (in Delta Waterways, southern portion) - Aluminum (Decision JD 123023[17]). Incorrect Objective (also see comment 1 b above) - The LOE 123023 for cold freshwater habitat compares the data collected from one monitoring location (CALWR_WQX-A1210000- see comment 6a regarding this location) to the 1988 U.S. EPA ambient water quality chronic criterion of 87 µg/L. However, it has been demonstrated in several NPDES permit water effect ratio studies to be orders of magnitude overly protective and has not been used in recently adopted NPDES permits. *Recommendation:* To the extent that this is applicable (see comment 7a), a site-specific analysis should be conducted using a 2018 Aluminum NA WQC derived criteria based on the appropriate pH, DOC and total hardness values in ambient waters and adjusted as needed based on relevant WER studies. Footnote 17: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/02088.shtml#123023	See response to comment 009.07.
021.16	Data and Analysis Transparency - In order to conduct a thorough review of the Draft 2020-2022 Integrated Report, it is critical to have a fully transparent process so that the public understands what specific data was used, what guidelines/water quality objectives were used, what analyses were conducted, and the conclusions of the analyses. While the waterbody fact sheets communicate much of this	See principal response 4.2 for Data and Analysis Transparency, and Readily Available Data.

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	information, the key elements that are missing for full transparency are the specific data used for the analysis (not just a reference to the type of data and a massive spreadsheet) and the actual analysis (showing the work). Without this level of detail in the waterbody fact sheets and/or the accompanying spreadsheets, each person reviewing the Draft Report is required to sift through thousands of lines of data attempting to recreate the analysis that was conducted by State Water Board or Regional Water Board staff. Since this is work that was completed in order to develop the Draft Report, the information should be provided as a part of the documentation so that the analysis is fully transparent and able to be reviewed by the public. *Recommendation:* Provide the specific data used in the analyses and the actual analyses conducted to allow for a full review of the Draft 2020-2022 Integrated Report.	

Letter 22: C. Mel Lytle, City of Stockton

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022.01	Decision ID 121646. Aluminum - Delta Waterways (Stockton Ship Channel). All Lines of Evidence (LOE) for this decision (LOEs 199396, 199113, and 199303) utilize data from a source identified as "STORET." The spatial representation for the entire Stockton Ship Channel is being represented with data from a single monitoring location (CALWR_WQX-A0442050). Data from one monitoring station is not sufficiently representative of the entire 14-mile length of the Stockton Ship Channel. Moreover, the monitoring location in question (CALWR_WQX-A0442050) refers to a location on	The incorrect monitoring location identified by the commenter is confirmed. The monitoring station (CALWR_WQX-A0442050) was reassigned to the correct waterbody (WBID: CAR5094203120020508115919, Mill Creek (Tehama County)). As a result of the station reassignment, changes were made to LOEs and listing recommendations. These changes are provided in Appendix R: List of Central Valley Regional Water Board Station Location Revisions to Correct Mapping Error and Listing Recommendation Updates in the Proposed Final

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	Mill Creek near Los Molinas, approximately 150 miles north of the Stockton Ship Channel. LOE 199303 is the basis for concluding that the Stockton Ship Channel should be 303(d)-listed for aluminum because, according to the LOE, 6 of 17 samples exceed the evaluation guideline for the cold aquatic life beneficial use (COLD). This LOE uses U.S. EPA's 1988 National Recommended Water Quality Criteria (NRWQC) for aluminum as the evaluation guideline to interpret the narrative chemical constituents objective in the Water Quality Control Plan for the Sacramento and San Joaquin River Basins (Basin Plan)-"Waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses." The 1988 NRWQC includes a 4-day average (chronic) criterion of 87 µg/L and a 1-hour average (acute) criterion of 750 µg/L, both expressed as total recoverable. LOE 199303 utilizes the 87 µg/L chronic criterion for the evaluation guideline.	Staff Report. Also, please see response to comment 006.17 regarding the scope of the mapping error and the remedy. In regards to aluminum, please see response to comment 009.07.
022.02	Moreover, U.S. EPA promulgated a revised NRWQC for aluminum in 2018 to specifically account for its bioavailability due to ambient pH, hardness, and dissolved organic carbon. This confirms the Central Valley Water Board's findings that site-specific factors that account for aluminum bioavailability should be considered when determining the aluminum thresholds applicable to the San Joaquin River. Hence, it is not appropriate to evaluate exceedances of the Basin Plan's narrative toxicity or chemical constituent objectives using the 1988 NRWQC for aluminum. This LOE should be re-evaluated accordingly.	Please see response to comment 009.07.

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022.03	Decision ID 124875. Aluminum - San Joaquin River (in Delta Waterways, Southern Portion). LOE 199511 for this decision also utilizes the 1988 NRWQC chronic criterion for aluminum of 87 µg/L. For the reasons provided in comments above on Decision ID 121646, the 1988 NRWQC for aluminum should not be used to evaluate protection of COLD with regards aluminum in the segment of the San Joaquin River located in the southern portion of the Delta. This decision and LOE should be re-evaluated accordingly.	Please see response to comment 009.07. Decision ID 124875 was revised from “List” to “Do not List”.
022.04	Decision ID 121635. Boron - Delta Waterways (Stockton Ship Channel). The sole LOE (200258) provided for this decision indicates 6 of 17 samples collected from monitoring station CALWR_WQX-A044205Q and tested for boron exceed the evaluation guideline of 700 µg/L. Data used to assess water quality were from the "STORET" database. However, the 17 samples in question were collected from Mill Creek near Los Molinas, 150 miles north of the Stockton Ship Channel. This decision and LOE that uses data from a location 150 miles from the location addressed should be re-evaluated accordingly.	The incorrect monitoring location identified by the commenter is confirmed. The monitoring station (CALWR_WQX-A0442050) was reassigned to the correct waterbody (WBID: CAR5094203120020508115919, Mill Creek (Tehama County)). As a result of the station reassignment, changes were made to LOEs and listing recommendations. These changes are provided in Appendix R: List of Central Valley Regional Water Board Station Location Revisions to Correct Mapping Error and Listing Recommendation Updates in the Proposed Final Staff Report. Also, please see response to comment 006.17, regarding the scope of the mapping error and the remedy.
022.05	Decision IDs - Various. San Joaquin River from Delta Waterways to Stockton Ship Channel. Several listing decisions pertain to a segment of the San Joaquin River that is not fully described and has not been identified as a waterbody in past Integrated Reports. This segment is identified as "San Joaquin River from Delta Waterways to Stockton Ship Channel." Segments of the San Joaquin River	Previous Integrated Report cycles included geographically broad assessments of the Sacramento - San Joaquin River Delta, known as subareas. Some waterbodies within these large subareas were remapped and separated into individual waterways to ensure data are grouped to a representative waterbody segment. In future Integrated Report cycles, waterways within the

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	are typically described as occurring from the upstream location to the downstream location (i.e., San Joaquin River [Stanislaus River to Delta Boundary]). The segment in question would be better described if the Delta region in which the river segment is located could be identified in the description (i.e., San Joaquin River [in Delta waterways, western portion]). Moreover, the San Joaquin River downstream of the Stockton Ship Channel has historically been evaluated as part of the Central and Western Delta regions, not as a waterbody separate from them. If the San Joaquin River in the Central and Western Delta regions will be assessed henceforth individually, then past LOEs based on data from the San Joaquin River should be removed from listing decisions (past and present) for the Central and Western Delta regions. The Central and Western Delta region listings (past and present) should also identify that the segment of the San Joaquin River in these regions is evaluated independently. Otherwise, this segment of the San Joaquin River will be subject to duplicative 303(d) listings for various pollutants, either now (e.g., toxicity) or in the future.	Delta will be remapped to the individual segments and the subareas will be removed. Past Delta LOEs will be reassessed from the subareas to the remapped waterbody based on the monitoring station location. In the interim, there will be some overlapping listings. For the 2020-2022 Integrated Report, data from sampling locations that remain grouped in the Delta subareas were not used to make new listing or delisting recommendations because that data may not be representative of the whole Delta subarea.
022.06	Decision ID 125107. Chloride - San Joaquin River from Delta Waterways to Stockton Ship Channel. LOE 200887 references a single monitoring sample from station CALWR_WQX-A0922000 (STORET data reference), which is located in Barker Slough, a waterbody in the northern portion of the Delta. Although the location of the San Joaquin River segment referenced in Decision ID 125107 is vague, data for Barker Slough are not applicable to it. LOE 200519 references chloride monitoring data in the "STORET" dataset from station CALWR_WQX-B9D80201431 on the San Joaquin River at Jersey Island. In this area of the Delta, the	The incorrect monitoring location identified by the commenter is confirmed. The monitoring station (CALWR_WQXA0922000) has been reassigned to the correct waterbody (WBID: CAR5100000020110922101705, Barker Slough (Solano County, in Delta Waterways, northwestern portion)). As a result of the station reassignment, changes were made to LOEs and listing recommendations. These changes are provided in Appendix R: List of Central Valley Regional Water Board Station Location Revisions to Correct Mapping Error and Listing Recommendation Updates in

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	municipal and industrial supply beneficial uses are protected using the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan) chloride objectives, which are not utilized by this LOE, but are referenced in Section 3.1.14.2 of the Basin Plan. The Bay-Delta Plan objectives vary by water year type and are evaluated at specific compliance locations. Hence, the secondary MCL is not the appropriate threshold to apply in the area that data for LOE 200519 was collected and seasonality must be considered when assessing impacts to municipal and industrial supply beneficial uses given the operational constraints of the State Water Project. The Bay-Delta Plan specifies compliance locations that protect the municipal drinking water intakes located within the Delta, so data collected at locations not specified in the Bay-Delta Plan are not necessarily representative of impairments to municipal and industrial beneficial uses at drinking water intakes. The Bay-Delta Plan also includes a program of implementation to achieve the chloride objectives in the Delta and cites agencies responsible to take actions to ensure compliance. As stated in the Bay-Delta Plan, the California Department of Water Resources (DWR) and the United States Bureau of Reclamation (USBR) are responsible for providing ambient monitoring data at the Bay-Delta Plan compliance locations for use in determining compliance with the Bay-Delta Plan objectives. The two chloride compliance locations nearest to the San Joaquin River at Jersey Island are located downstream at station 012 (San Joaquin River at Antioch Water Works Intake) and station CS (Contra Costa Canal at Pumping Plant #1). Data 012 and CS should be utilized in 303(d)-listing decision for chloride pertaining to the Western Delta. It is questionable whether chloride data collected at locations not specified in the Bay-Delta Plan can legally be	the Proposed Final Staff Report. Also, please see response to comment 006.17, regarding the scope of the mapping error and the remedy. Further, the commenter is correct that the only chloride water quality objectives that apply for the protection of MUN in the Bay-Delta are found in Table 1 of the Bay-Delta Water Quality Control Plan, and that they apply at the specified compliance locations. The listing recommendation for chloride for the San Joaquin River at Jersey Island was deleted. Staff will revise other assessments that incorrectly apply the secondary MCL for the protection of MUN in the Bay-Delta during the 2024 Integrated Report cycle.

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	used to evaluate compliance with the Bay-Delta Plan objectives. This decision should be re-evaluated in light of the fact that data collected at station CALWR_WQX-B9D80201431 is not representative of impacts to the beneficial use or exceedances of Bay-Delta Plan objectives.	
022.07	Decision IDs 125113, 124846, 121642. Temperature - San Joaquin River from Delta Waterways to Stockton Ship Channel, San Joaquin River (in Delta Waterways, southern portion), Delta Waterways (Stockton Ship Channel). The Decision IDs listed above conclude that the San Joaquin River segments are impaired due to the potential effects of temperature on the Migration of Aquatic Organisms (MIGR) beneficial use. The LOEs utilized as the basis for these decisions rely on continuous monitoring data collected by DWR and the evaluation guideline utilized is 20° threshold. The Decision IDs, LOEs, and evaluation guidelines are summarized below. • "A 7day average of daily maximum (7DADM) temperature of 20 degrees Celsius is recommended by the USEPA for waterbodies that are used almost exclusively for migration during the period of summer maximum temperatures to protect migrating juveniles and adults from lethal temperature 9USEPA, 2003). This evaluation guideline was applied to both the smolt 9March 15-June 15) and adult (September 1 – December 31) migration periods." o Decision ID: 121642 (Delta Waterways [Stockton Ship Channel]); LOE ID: 232815	Changes to listing recommendations were not made in response to this comment. See response to comment 009.12 regarding the thresholds used to assess temperature data associated with salmonid life cycles. Thresholds are set at a level necessary to protect the beneficial use rather than a level providing the bare minimum of survivable conditions. Additional continuous monitoring data were collected in the San Joaquin River since the 2014-2016 303(d) listing. In addition, the Water Board revised their temperature assessment policy to better align with state and U.S. EPA recommendations and perform a more robust statistical analysis using continuous monitoring data. In response to the 2014-2016 303(d) listing recommendation of the Delta Waterways (Stockton Ship Channel) waterbody, both the 7DADM threshold (20°C) and the lethal threshold (24°C) were used to evaluate attainment of MIGR beneficial use. For reference, Decision ID 55781, LOE 62704 (7DADM), and LOE 62703 (lethal) were used for the 2014-2016 303(d) listing recommendation. For the 2014-2016 cycle, the lethal temperature threshold for steelhead adult migration and holding and juvenile growth of 24°C was used to assess data from grab samples in

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	○ Decision ID: 124846 (San Joaquin River [in Delta Waterways, southern portion]); LOE IDs: 232795; 232794 ○ Decision ID: 125113 (San Joaquin River from Delta Waterways to Stockton Ship Channel); LOE IDs: 232789; 232788; 232790 • "Steelhead adults are migrating through the Bay Delta and into the San Joaquin River July through March, and juveniles migrate downstream and rear in the Delta November through July 9NMFS 2009). The lethal temperature threshold for Steelhead adult migration and holding and juvenile growth and rearing is 24 degrees Celsius (Carter, 2008)." There are several problems with the proposed 2020-2022 303(d) listing for temperature in the San Joaquin River that expands the 2014/16 303(d) listing, which was restricted to the ship channel, to in-Delta segments of the river downstream and upstream of the ship channel. First, the listing evaluates San Joaquin River temperatures relative to a 20°C threshold rather than the 24°C threshold used for the 2014/16 303(d) listing. Inadequate justification for this change in threshold temperature has been provided. The reference identified to justify the 20°C threshold is U.S.EPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards (EPA 91 0-B-03-002). The San Joaquin River reaches proposed for listing are not in U.S. EPA Region 1 0; rather, they are in U.S. EPA Region 9. Rivers in the Central Valley of California have very different seasonal temperature regimes than rivers in Region 10. Because rivers in the Central Valley of California have very different seasonal temperature regimes annually than rivers in U.S. EPA Region 10, the thermal tolerances of salmonids in the Central Valley of California have been shown to be	waterbodies where steelhead migration occurs. This threshold protects only against mortality and not any of the chronic or sub-lethal effects which the 7DADM threshold does protect. Because salmonids are a vulnerable fish species it is important to protect the overall health and size of the population. Therefore, the temperature threshold of 21°C was used to assess grab sample temperature data for all waterbodies for the 2020-2022 Integrated Report. The studies cited by the commenter to support claims of higher thermal tolerance for Central Valley salmonids actually recommend similar thresholds to the 7DADM threshold of 20°C or even lower. According to Boles (1988), the available data suggest that for adult Chinook salmon in the Sacramento River (Central Valley Chinook salmon), the maximum temperature for successful upstream migration should be less than 18.33°C. The paper goes on to state high temperatures can kill Chinook salmon directly by impairing metabolic function or indirectly by increasing the probability of disease, predation, or other secondary mortality factors. Boles (1988) was also used to recommend water temperature thresholds for all life stages of Chinook salmon in Central Valley streams for the Biological Assessment on the Continued Long-term Operations of the Central Valley Project and the State Water Project (2008). Specifically, the recommended thresholds are: • Migration adult – less than 18.33°C • Holding adult – less than 15.56°C

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	somewhat higher than salmonids in Region 10, with adults and juveniles able to tolerate temperatures well above 20°C for migration (Boles 1988, McCullough 1999, Myrick and Cech 2000, 2005).	• Spawning – 11.67 to 14.17°C • Egg incubation – less than 12.78°C • Juvenile rearing – 11.67 to 14.17°C • Smoltification – less than 17.78°C McCullough (1999) stated the optimal growth and survival of Chinook salmon is near 19°C, based on a study with realistic food availability levels found in nature. According to Myrick and Cech (2000), the optimal temperature for growth (specifically rainbow trout) lies between 14-19°C and as temperature increased above 19°C, both the Eagle Lake and Mt. Shasta strains that were studied consumed less food and grew less. Myrick and Cech (2005) found the optimal temperature for the growth rate of American River steelhead (from Nimbus Fish Hatchery) was 19°C, lower than the 7DADM threshold of 20°C. They did find the critical thermal maximum increased by 2.1°C (27.5 to 29.6°C) in fish acclimated to 19°C, however many studies have been conducted on the harmful effects of high temperature to salmonids and these high temperatures are not supportive for optimal growth and survivability for such an important species. Furthermore, studies on Central Valley Chinook salmon showed optimal temperature for growth is achieved at 17.0-20℃ (Myrick and Cech, 2004). This temperature range is comparable with studies done on two Pacific Northwest Chinook salmon strains by Clarke and Shelbourn (1985) and Brett et al. (1982), where the Big Qualicum River strain grew at 3.3% dry weight at 20.5°C

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		and the Nechako River strain grew at 3.2% dry weight at 18.9°C (Myrick and Cech, 2004). American River fall-run Chinook salmon achieved maximum growth at a constant temperature of 19°C under maximum ration and oxygen saturation levels (Myrick and Cech, 2001). The chronic lethal limit for Central Valley Chinook salmon and steelhead is approximately 25°C, yet both species begin to experience serious sub-lethal effects at temperature below their chronic lethal limit. In another study, Sacramento River fall-run Chinook salmon, fed at levels reported for juvenile salmonids in the field, survived and grew at temperatures up to 24°C. However, juveniles reared at 21-24°C experienced significantly decreased growth rates, impaired smoltification indices, and increased predation vulnerability compared with juveniles reared at 13 – 16°C (Marine and Cech, 2004). For further reading on the scientific basis for the 7DADM 20°C threshold, please see Scientific Basis Report in Support of New and Modified Requirements for Inflows from the Sacramento River and its Tributaries and Eastside Tributaries to the Delta, Delta Outflows, Cold Water Habitat, and Interior Delta Flows (State Water Board, 2017) (https://www.waterboards.ca.gov/water_issues/programs/peer_review/docs/scientific_basis_phase_ii/201710_bdphaseII_sciencereport.pdf) and Summary of Technical Literature Examining the Physiological Effects of Temperature on Salmonids (McCullough et al., 2001) (https://www.epa.gov/sites/default/files/2018-

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		01/documents/r10-water-quality-temperature-issue-paper5-2001.pdf).
022.08	Second, the proposed listing treats the San Joaquin River differently than other salmonid rivers in the Central Valley. Other Central Valley rivers that traverse the valley floor such as the lower Sacramento River and lower American River also do not remain below the 20°C threshold year-round. Nevertheless, large number of both Steelhead and Chinook Salmon adult and juvenile life stages immigrate and emigrate through these rivers annually.	The temperature thresholds used in the 2020-2022 Integrated Report reflect the current understanding of temperature effects on salmonid life cycles. Thresholds vary depending on the species present in a particular waterbody and the timing of key life cycle stages, such as migration and rearing. Additionally, temperature data from several reaches of the Sacramento are assessed using site-specific water quality objectives identified in the Central Valley Basin Plan. Please see response to comments 009.12 and 022.07 for more information.
022.09	Third, no consideration has been given to what temperatures are achievable in the proposed reaches of the San Joaquin River identified for listing. Rivers that flow through the Central Valley floor such as the San Joaquin River do not remain below 20°C during the summer and fall months of the year, and there are no controls on factors affecting river temperature that could be implemented to achieve this threshold temperature during the summer and fall months of the year for the previously proposed or newly proposed segments of the San Joaquin River. Consequently, if listed as proposed, no TMDL could be successful at achieving the 20°C threshold.	See response to comment 009.11.

Letter 23: David Huff, City of Turlock

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023.01	Monitoring Station: CALWR_WQX-B9C74701355 • Decision ID: 124900; Pollutant: Bromoform; LOE: 200216; Samples/Exceedances: 25/4 • Decision ID: 126582; Pollutant: Chlorodibromomethane; LOE: 218237; Samples/Exceedances: 25/24 • Decision ID: 124905; Pollutant: Chloroform; LOE: 200741; Samples/Exceedances: 25/22 • Decision ID: 124930; Pollutant: Total Trihalomethane (TTHM); LOE: 206614; Samples/Exceedances: 25/25 LOEs referenced above are for data from STORET, a compilation of monitoring data from the federal Water Quality Exchange (WQX) database. Data for the pollutants referenced in these LOEs was generated with an analytical method identified in the reference file as "5710 B ~ Trihalomethane Formation Potential." This analytical method is Standard Method 5710 B, titled "Formation ofTrihalomethanes and Other Disinfection Byproducts." The method does not measure the ambient concentrations oftrihalomethanes (THMs) and disinfection byproducts (DBPs) in the ambient sample as collected. Rather, the sample is subject to chlorine dosage at the analytical laboratory in order to generate these compounds in the sample and, thus, identify the potential for the constituents to be formed in the drinking water chlorine-disinfection process. Therefore, pollutant measurements produced with this method do not represent their concentrations in the waterbody and the LOEs referenced above should be removed from the listing decisions and the decisions re-evaluated.	See response to comment 009.13.

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	The monitoring station referenced above is only 1 of29 stations in the STORET/WQX data reference that contains results for the pollutants using Standard Method 5710 B. Although not all decisions proposed in the 2020-2022 303(d) list were checked, our spot-check identified these measurements are being used in other listing decisions. For example, these data are used to propose that Barker Slough be added to the 303(d) list and in an LOE for the San Joaquin River in the southern Delta portion. The State Board should review all LOEs for these pollutants and remove those that utilize data generated with Standard Method 5710 B from the affected listing decisions.	
023.02	Comment 2. Decision ID 117650. Linuron - San Joaquin River (Merced River to Tuolumne River). This comment pertains to LOE 221795 and the data reference cited in it. The data reference provided for LOE 221795 (Westside San Joaquin Water Quality Coalition, 2004-2009) does not identify the latitude and longitude for station 541XSCOAV. However, data available in CEDEN identifies this station as Salado Creek near Olive Avenue. It is not appropriate to use this data to evaluate the San Joaquin River. LOE 221795 identifies that there are two linuron exceedances. All linuron measurements in the data reference for station 54 IXSCOA V have the result qualifier "ND," indicating the results are non-detect. As such, the measurements should not be used for the listing decision according to the State Water Board's 2015 Listing Policy. LOE 191210 should be reviewed because it appears to be a duplicate of LOE 221795.	Thank you for the comment. Station 541XSCOAV was reassigned to Salado Creek. The erroneous LOE (221795) was removed from the recommendation. In addition, staff determined that the reporting limit was mistakenly omitted from the data and the data were not used. The listing recommendation for linuron for the San Joaquin River was revised from “List” to “Do not List.”
023.03	The entire data reference for LOE 221795 (Westside San Joaquin Water Quality Coalition, 2004-2009), which is used	See response to comment 023.02.

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	for other LOEs/Decisions of the proposed 303(d) list and draft Integrated Report, does not provide information necessary to fully review the analytical measurements-lab sample ID, lab batch ID, preparation date, digestion/extraction method, analytical method name, QA code, latitude/longitude of station, agency code, analysis date, etc. Without this information, it is not appropriate for listing decisions to rely upon the referenced dataset.	
023.04	Comment 3. Decision ID 129597. Specific Conductivity - San Joaquin River (Merced River to Tuolumne River). This decision reports that 459 of the 660 samples among the various supporting LOEs exceed the water quality objective to protect the municipal and domestic supply (MUN) beneficial use. All LOEs that evaluate impacts to MUN do so relative to the Secondary Maximum Contaminant Level (MCL), which is incorporated by reference to the Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin (Basin Plan; Fifth edition, revised May 2018 with approved amendments). The Central Valley Water Board's website identifies three amendments to the Basin Plan that were approved subsequent to the publication of the May 2018 Basin Plan, including the San Joaquin River Salt and Boron Basin Plan Amendment - Phase 2, which was adopted into the Basin Plan by the Central Valley Water Board in Resolution R5-2017-0062. The Phase 2 Salt and Boron Basin Plan Amendment includes site specific objectives for electrical conductivity (EC)/specific conductance to protect the MUN and agriculture supply (AGR) beneficial uses in the San Joaquin River from the Merced River to Vemalis. The staff report for this Basin Plan amendment indicates that the site-specific objective for EC applies in lieu of the	The U.S. EPA approved the Phase 2 San Joaquin River Salt and Boron Basin Plan Amendment, which included revised salinity water quality objectives and a Control Program for Salt and Boron Discharges into the Lower San Joaquin River, on December 17, 2018, and took effect in January 2020. However, Water Board staff did not utilize these revised water quality objectives in the 2020-2022 Integrated Report because the Basin Plan Amendment did not take effect until January 2020, after the data solicitation cut-off date of June 14, 2019. As a result, most of the data analyses for the 2020-2022 Integrated Report were underway or complete. Electrical Conductivity (“EC”) was not reassessed using the new objectives for the 2020-2022 Integrated Report following receipt of comments due to limited time and the complexity of the new objectives. The new conductivity objectives include a 30-day average value, an annual average value, and a value that applies during extended dry periods. Therefore, EC data for the San Joaquin River (Merced River to Tuolumne River) were evaluated but not used in the 2020-2022 Integrated Report, and no changes from

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	Secondary MCL for the protection of MUN. This site-specific EC objective is as follows: Electrical conductivity at 25 degrees Celsius shall not exceed 1,550 µSiem (as a 30-day running average), except during Extended Dry Periods, when concentrations shall not exceed 2,470 µSiem (as a 30-day running average) and 2,200 µSiem (as an annual average using at a minimum the previous four consecutive quarterly samples). It is now appropriate to use the site-specific EC objectives adopted into the Basin Plan by Resolution RS-2017-0062 rather than the secondary MCL to evaluate impacts to MUN in the San Joaquin River between the Merced River and Vernalis. This listing decision should be re-evaluated accordingly.	the existing "Do Not Delist from 303(d) list" status are recommended. Decision ID 129597 was revised to reflect that data were not used to make a listing recommendation for the 2020-2022 Integrated Report. The data will be assessed using the new objectives during the 2024 Integrated Report as part of an early, off-cycle assessment. Additionally, Decision ID 129597 was revised to change the listing category of the waterbody-pollutant combinations from "Do Not Delist from 303(d) list (TMDL required list)" to "Do Not Delist from 303(d) list (being addressed with USEPA approved TMDL)." This revision reflects the adoption of the Control Program for Salt and Boron Discharges into the Lower San Joaquin River, which includes a TMDL to address EC.
023.05	Comment 4. Decision ID 117667. Total Dissolved Solids - San Joaquin River (Merced River to Tuolumne River). This decision utilizes data for Total Dissolved Solids (TDS) to evaluate impacts from salinity to the MUN beneficial use in the San Joaquin River (Merced River to Tuolumne River). As discussed in Comment 3, the Basin Plan now includes the Phase 2 Salt and Boron Basin Plan Amendment. This amendment identifies that EC and TDS are aggregate measures of salt content in a waterbody and that it is appropriate to adopt site-specific objectives only for EC since the objective will protect MUN from both EC and TDS. Thus, it is similarly no longer appropriate to utilize the Secondary MCL for TDS to protect MUN. If the State Water Board wishes to evaluate impacts from MUN using TDS measurements in the administrative record, then it would be appropriate to convert TDS measurements to EC values (or vice versa) following	The Phase 2 San Joaquin River Salt and Boron Basin Plan Amendment, which included revised salinity water quality objectives and a Control Program for Salt and Boron Discharges into the Lower San Joaquin River, took effect in January 2020. The control program in the Basin Plan amendment includes an Electrical Conductivity-to-Total Dissolved Solids conversion ratio. However, the conversion ratio is to be applied to Publicly Owned Treatment Works (POTWs) when establishing water quality-based effluent limitations and the discharger cannot demonstrate a discharger-specific ratio. It is not appropriate to apply the conversion ratio to ambient water quality data during the IR assessment process because the correlation between EC and TDS may fluctuate in ambient waters. Therefore, TDS values were not converted to EC values. TDS data for the San Joaquin

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	the approach recommended in the Basin Plan amendment staff report Footnote 1: Central Valley Regional Water Quality Control Board. 2017. Proposed Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins to Establish Salinity Water Quality Objectives in the Lower San Joaquin River (Mouth of Merced to Verna/is) Final Staff Report. June.	River between the Merced River and the Tuolumne River were assessed using the Secondary MCL value per the Sacramento and San Joaquin River Basin Plan's chemical constituent water quality objective. However, the Water Board recognizes that the Central Valley Salinity Alternatives for Long-Term Sustainably (CV-SALTS) Basin Plan Amendment changed the chemical constituents water quality objective and how data should be compared to secondary MCLs. This Basin Plan Amendment was approved by the U.S. EPA in November 2020, after the 2020-2022 Integrated Report data solicitation cutoff date (June 14, 2019). As a result, most of the data analyses for the 2020-2022 Integrated Report were underway or complete. TDS data were not reassessed using the new chemical constituents objective for the 2020-2022 Integrated Report following receipt of comments due to limited time and the need to determine if it is reasonable or feasible to achieve the lower levels of the range of the Secondary MCL. Therefore, the TDS data were evaluated but not used in the 2020-2022 Integrated Report, and no changes from the existing "Do Not Delist" status are recommended. Decision ID 117667 was revised to reflect that data were not used to make a listing recommendation for the 2020-2022 Integrated Report. The data will be assessed using the new objectives during the 2024 Integrated Report as part of an early, off-cycle assessment.

Letter 24: Stephen Volker, Counsel of Conservation Groups

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024.01	Please include these comments in the public record on this matter.	Comment noted. These comments are included in the public record.
024.02	The salmon-doubling standard of the 2018 Bay-Delta Plan constitutes a water quality standard under the CWA with which the State Water Board section 303(d) list must be consistent. Yet the State Water Board's proposed Integrated Report make no effort to implement this water quality objective. As a consequence, the Integrated Report conflicts with the 2018 Bay-Delta Plan, and the beleaguered populations of chinook salmon will continue their rapid decline, leading potentially to their extinction.	Changes to listing recommendations were not made is response to this comment. According to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (page 34), D-1641 (Water Right Decision 1641, December 29, 1999; https://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/decisions/d1600_d1649/wrd1641_1999dec29.pdf) assigned responsibility to the U.S. Bureau of Reclamation and Department of Water Resources to comply with the river flow and operational objectives for fish and wildlife. These objectives help protect salmon migration through the Bay-Delta Estuary. D-1641 did not require separate actions to implement the narrative objective for salmon because the State Water Board expects that implementation of the numeric flow-dependent objectives and other non-flow measures will implement this objective. These objectives can be found in Section 4.1.2.4 of the San Francisco Bay Basin Water Quality Control Plan, 4.1.2.4 titled Riverine Flows, System Flushing, and Pollutant Loading. Furthermore, there are no numeric evaluation guidelines to apply for assessment of the salmon doubling narrative objective found in the Bay Delta Plan consistent with Section 6.1.3 of the Listing Policy.

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		Finally, the Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives (https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/water_quality_control_planning/2018_sed/docs/appx_c.pdf), states the following on page 3-5: "In addition to the SJR flow objectives, the 1995 Bay-Delta Plan (and subsequently the 2006 Bay-Delta Plan) includes a narrative objective for salmon protection that is consistent with the anadromous fish doubling goals of the CVPIA. Under the AFRP, State, Federal and local entities are continuing to implement programs within and outside the Delta geared towards achieving the CVPIA anadromous fish doubling goals. Specifically, implementation of the Bay-Delta Plan flow objectives is intended to contribute toward achieving the narrative objective." Please see response to comment 003.11 for an explanation why low flows will not be used as the basis for a listing recommendation in the Integrated Report.
024.03	Id. Rather than perpetuate this evasion of proper scientific methodology and analysis, this Board should recognize, consistent with these criticisms by CDFW and Professor Weston, that pyrethroid poisoning of our waterways is a significant cause of the ongoing ecological collapse of the Delta and its tributary rivers, and that ignoring the impact of 90 percent of the pyrethroids that are not "dissolved" is an evasion of the letter and spirit of the Clean Water Act.	See principal response 2.3 regarding use of total and dissolved fraction data for pyrethroids.

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024.04	For the foregoing reasons, the State, Water Board's proposed 2020-2022 California Integrated Report departs from the requirements of the Clean-Water Act, and should be rejected and revised in accordance with the foregoing comments. Thank you for considering our comments on this important matter.	Comment noted.

Letter 25: Grant Sharp, County of Orange Public Works

No.	Comment	Response
025.01	We recognize that it is a significant effort for the Regional Water Quality Control Boards and State Water Resources Control Board (State Water Board) staff to compile and analyze the large amount of water quality data during each listing cycle and prepare this assessment according to the State Water Board Listing Policy1. We also appreciate the delisting of the following pollutant/waterbody combinations: • Arroyo Trabuco Creek, Lower – Malathion (Decision ID 105544) • Arroyo Trabuco Creek, Upper – Benthic Community Effects (Decision ID 105540) and Malathion (Decision ID 105545) • Pacific Ocean Shoreline, Lower San Juan HAS, 7500 feet south of outfall – Indicator Bacteria (Decision ID 127962)	Comment noted.

No.	Comment	Response
025.02	Recommendation: Do not list for Fecal Indicator Bacteria (FIBs) solely based on Shellfish Harvesting ("SHELL") standards as described in the Ocean Plan. Applicable Decision IDs (17 listings): 127935, 127947, 127957, 127961, 127982, 69555, 76063, 127911, 76517, 127929, 127933, 127939, 127946, 127949, 127981, 127950, 127937 The current SHELL standard and beneficial use in the Ocean Plan has been widely recognized as inappropriate and in need of revision as a high priority project by the State Water Board pursuant to the Ocean Plan Triennial Review process Footnote 2: Issue H: Shellfish Harvesting Beneficial Uses and Water Quality Objectives. Final Staff Report and Work Plan for 2019 Review of the Water Quality Control Plan for Ocean Waters of California, December 3, 2019.	Please see principal response 5 for SHELL Beneficial Uses and Objectives.
025.03	A study conducted in north Orange County (Southern California Coastal Water Research Project, Draft dated April 2021) in cooperation with the Santa Ana Regional Water Quality Control Board in Newport Bay noted that they did not find a relationship between any of the (fecal) indicator levels (i.e. fecal coliform 3, E.coli, Enterococcus, male specific coliphage) in the water, which the current SHELL WQO (Water Quality Objective) is based upon, and human viral pathogen detection in oyster tissues... The results of this study suggest that the health risk from viral pathogens in the Bay may be low under dry weather conditions, and current WQO for SHELL may not be predictive of viral pathogens in oyster tissue. Alternative indicators that are more predictive of viral pathogen presence than fecal coliforms may need to be explored.	Comment noted. Please also see principal response 5 for SHELL Beneficial Uses and Objectives.

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025.04	In addition, there are no current or historical commercial shellfish fisheries in south Orange County, and the recreational shellfish fishery is very limited to non-existent because of limited populations and habitat for edible bivalve shellfish or designated Marine Protected Areas (MPA) under state legislation (Decision IDs: 76063, 127911, 127946, 127949, 127950, 127947, 76517). Within MPAs, all shellfish harvesting activities are strictly prohibited under state law and local ordinance, including intertidal zones. The existence of SHELL beneficial use needs to be re-evaluated based on additional shellfish population surveys and these legal prohibitions.	Integrated Report assessments evaluate a waterbody's beneficial uses as designated in basin plans. A better forum for raising concerns about the SHELL beneficial use in south Orange County would be the triennial review of the Santa Ana River Basin Plan. The triennial review is the mechanism for setting priorities for projects to amend the Basin Plan, including beneficial use changes for waterbodies. Please also see principal response 5 for SHELL Beneficial Uses and Objectives.
025.05	Not delisting or re-listing water bodies that have already met the updated REC-1 standards but may or may not have met an inappropriate SHELL standard can result in additional monitoring obligations for municipal stormwater permittees. This type of monitoring would waste limited municipal resources and provide little environmental benefit especially given that it is recognized by the State Water Board that the SHELL standard should be revised and the SHELL beneficial use is limited by historically poor diversity of edible shellfish species, a lack of appropriate intertidal shellfish habitat, and legal restrictions.	Comment noted. The 303(d) list is not a rulemaking process and there is no direct regulatory effect. The listing of a waterbody-pollutant combination as impaired results in the development of a TMDL or alternative for the listed waterbody-pollutant combination. The TMDL, alternative restoration program, or subsequent permit are the forum for considering sources and requirements, including monitoring requirements for municipal stormwater permittees. Please also see principal response 5 for SHELL Beneficial Uses and Objectives.
025.06	Recommendation: Clarify the analytical methodology used in the Staff Report and correct (do not list) the following listings. Applicable Decision IDs (14 listings – a subset of the Decision IDs identified in Comment I): 127935, 127957, 127961,	See response to comment 025.07.

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	127982, 69555, 76063, 127911, 76517, 127929, 127933, 127939, 127946, 127949, 127981.	
025.07	The methodology used by State Water Board staff to assess the SHELL standards is inconsistent with the methodology specified in the Staff Report. Section 2.5.2 of the Staff Report states [emphasis added]: "The statewide bacteria objective for SHELL waters includes two thresholds, a 30-day median total coliform density ("median"), not to exceed 70 per 100mL, and a Single Sample Maximum (SSM) not to exceed 230 per 100mL. The SSM threshold is based on a 10 percent exceedance rate that is calculated for a 30-day period. Only the median value shall be applied based on a statistically sufficient number of samples, which is generally not less than five samples distributed over a 30-day period. However, if a statistically sufficient number of median samples is not available, then attainment of the water quality objective shall be determined based only on the SSM." However, the majority of the water bodies in Orange County were listed for SHELL solely based on the SSM threshold even when a statistically sufficient number of samples were available. This approach is also inconsistent with analyses conducted in other regions (e.g. Decision ID 78278 in Region 1). In fact, a review of the Fact Sheets and requisite data indicates that none of these water bodies except for Decision ID 69555 met the listing criteria based on the median threshold as summarized below: Pacific Ocean Shoreline, Aliso HAS, at Aliso Beach – north	The commenter is correct in asserting that the methodology for SHELL standards in the Staff Report is inconsistent with the methodology in the 2019 Ocean Plan. The 2019 Ocean Plan states that the "median total coliform density shall not exceed 70 per 100 mL, and not more than 10 percent of the samples shall exceed 230 per 100mL." The 10 percent threshold is not a single sample maximum ("SSM") threshold and preference is not given to the median or 10 percent threshold, both must be met. The methodology for SHELL standards in Section 2.5.2 of the Staff Report were revised to reflect the 2019 Ocean Plan language. The listing recommendations identified in this comment were reassessed based on the language in the 2019 Ocean Plan. No changes to listing recommendations resulted from the reassessment. Additionally, please refer to principal response 5 for SHELL Beneficial Uses and Objectives. Decision ID 127939 was based on the Enterococci exceedances of the water quality threshold not protecting the REC-1 beneficial use.

No.	Comment	Response
	• Decision ID: 127911 • Association Station(s): S10 • Applicable LOE for Median Threshold: 219771 • # of samples: 644 • # of exceedances: 8 • Delisting Threshold (listing Policy Table 4.2): 106 • County Recommendation: Do not list Pacific Ocean Shoreline, Dana Point HAS, at Aliso Beach – south • Decision ID: 127929 • Association Station(s): S8 • Applicable LOE for Median Threshold: 219868 • # of samples: 645 • # of exceedances: 5 • Delisting Threshold (listing Policy Table 4.2): 106 • County Recommendation: Do not list Pacific Ocean Shoreline, Dana Point HSA, at Dana Point Harbor at guest dock • Decision ID: 127933 • Association Station(s): MDP11 • Applicable LOE for Median Threshold: 219986 • # of samples: 358 • # of exceedances: 15 • Delisting Threshold (listing Policy Table 4.2): 59 • County Recommendation: Do not list Pacific Ocean Shoreline, Dana Point HSA, at Salt Creek Service Road • Decision ID: 127939 • Association Station(s): S2	

No.	Comment	Response
	• Applicable LOE for Median Threshold: 219909 • # of samples: 645 • # of exceedances: 46 • Delisting Threshold (listing Policy Table 4.2): 106 • County Recommendation: Do not list Pacific Ocean Shoreline, Laguna Beach HSA, at Bluebird Canyon • Decision ID: 127946 • Association Station(s): S15 • Applicable LOE for Median Threshold: 219780 • # of samples: 433 • # of exceedances: 28 • Delisting Threshold (listing Policy Table 4.2): 71 • County Recommendation: Do not list Pacific Ocean Shoreline, Laguna Beach HSA, at Laguna Hotel • Decision ID: 127949 • Association Station(s): S16 • Applicable LOE for Median Threshold: 219835 • # of samples: 433 • # of exceedances: 24 • Delisting Threshold (listing Policy Table 4.2): 71 • County Recommendation: Do not list Pacific Ocean Shoreline, San Clemente HA, at San Clemente City Beach, 450ft North of Pier • Decision ID: 127981 • Association Station(s): S-19 • Applicable LOE for Median Threshold: 219742 • # of samples: 546	

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	• # of exceedances: 30 • Delisting Threshold (listing Policy Table 4.2): 90 • County Recommendation: Delist Pacific Ocean Shoreline, Dana Point HSA, at Dana Point Harbor at patrol dock • Decision ID: 127935 • Association Station(s): MDP10 • Applicable LOE for Median Threshold: 220085 • # of samples: 362 • # of exceedances: 49 • Delisting Threshold (listing Policy Table 4.2): 59 • County Recommendation: Delist Pacific Ocean Shoreline, Lower San Juan HSA, 10000 feet south of outfall • Decision ID: 127957 • Association Station(s): S-13 • Applicable LOE for Median Threshold: 219943 • # of samples: 547 • # of exceedances: 28 • Delisting Threshold (listing Policy Table 4.2): 90 • County Recommendation: Delist Pacific Ocean Shoreline, Lower San Juan HSA, 5000 feet south of outfall • Decision ID: 127961 • Association Station(s): S-9 • Applicable LOE for Median Threshold: 220113 • # of samples: 544 • # of exceedances: 36 • Delisting Threshold (listing Policy Table 4.2): 90	

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	County Recommendation: Delist Pacific Ocean Shoreline, San Clemente HA, at San Clemente City Beach, North Beach • Decision ID: 127982 • Association Station(s): S-17 • Applicable LOE for Median Threshold: 220084 • # of samples: 544 • # of exceedances: 36 • Delisting Threshold (listing Policy Table 4.2): 90 County Recommendation: Delist Dana Point Harbor • Decision ID: 69555 • Association Station(s): BDP07; BDP08; BDP16; BDP17; MDP18 • Applicable LOE for Median Threshold: 219881; 220115; 219797; 219969; 127935 • # of samples: 351; 353; 359; 370 • # of exceedances: 36; 5; 29; 110; 29; 287 • Delisting Threshold (listing Policy Table 4.2): 58; 58; 59; 59; 61 • County Recommendation: Delist Pacific Ocean Shoreline, Aliso HSA, at Aliso Beach – middle • Decision ID: 76063 • Association Station(s): S9 • Applicable LOE for Median Threshold: 219888 • # of samples: 654 • # of exceedances: 69 • Delisting Threshold (listing Policy Table 4.2): 108	

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	• County Recommendation: Delist Pacific Ocean Shoreline, Aliso HSA, at Aliso Creek mouth • Decision ID: 76517 • Association Station(s): ACM1z • Applicable LOE for Median Threshold: Beach watch data is available but not assessed • # of samples: 285 • # of exceedances: 46 • Delisting Threshold (listing Policy Table 4.2): 47 • County Recommendation: Delist	
025.08	Recommendation: Clarify the methodology used for the analysis in the Staff Report and do not list the following waterbodies for benthic community effects. Applicable Decision IDs (4 listings): 125926, 126458, 126462, 126469.	Section 2.5.6 of the Staff Report was revised to provide a more detailed explanation of the methodology for assessing benthic community effects data. Please also see principal response 3.1 regarding use of the CSCI threshold prior to having a CSCI water quality objective
025.09	Listing water bodies within the San Diego Region based on the draft Stream Biological Objectives' values and use of the CSCI is premature and may result in statewide inconsistency and inappropriate listings. Our concerns include the following: i. The State Water Board's Program for Biological Integrity is still working through significant policy and regulatory issues that could affect how biostimulatory and biological objectives would be implemented and interpreted. These decisions could result in a direct conflict with the processes currently contemplated and/or implemented within	See principal response 3.1 regarding use of the CSCI threshold prior to having a CSCI water quality objective.

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	the San Diego Region based on the draft Stream Biological Objectives.	
025.10	ii. A framework for the interpretation of biological data/information needs to be better understood and adequately vetted. For example, there needs to be clear guidance on many issues, including but not limited to: How will data and information generated be used to list waterbodies as impaired and how pollutants are linked to lowered CSCI scores? How will water bodies that meet biological thresholds, but still have exceedances of individual pollutants be addressed? Will they still be considered impaired? Are biological thresholds and chemical constituent-based thresholds/objectives independently applicable?	See principal response 3.2 regarding use of CSCI scores, the selection of the CSCI 0.79 threshold that is based on the 10th percentile of reference sites, and the link to exceedances of pollutants.
025.11	iii. A CSCI score of 0.79 has been applied to many urban flood control channels. Other than water quality, many other factors such as heat island effect, engineered concrete channels, and/or disconnection from flood plains due to urban development can also lead to a lower CSCI score. The CSCI score is rarely, if ever, achieved in those engineered channels and may not be achievable given that tradeoffs between ecological health and flood protection may be unavoidable.	Scores below the CSCI threshold of 0.79 indicate the waterbody's condition is either likely altered or very likely altered and, therefore, the benthic macroinvertebrate community that is part of several aquatic life beneficial uses is not being supported. See principle response 3.2 for more information. While assessing data for the Integrated Report does involve assessing pollutants that might impact aquatic life, the purpose of that assessment is to determine if the benthic community listing is caused by a pollutant or by pollution so that the waterbody-pollutant pair can be appropriately categorized. Any further analysis of causes contributing to impaired benthic macroinvertebrate communities would be more appropriate in a separate,

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		subsequent action. If the failure to attain water quality standards is due to the fact that the applicable standard is not appropriate, revising the standard may be the best way to address the impairment. Additionally, while physical channel factors, such as engineered concrete channels designed to provide flood control protection, often do impact CSCI scores and benthic communities, the waterbodies recommended to be listed for the 2020-2022 Integrated Report are impacted at least in part by a pollutant. Any waterbody listed for benthic community effects has at least one other pollutant listing for that waterbody for a pollutant that impacts aquatic life, such as pesticides, metals, or aquatic toxicity.
025.12	iv. Selection of the 10th percentile of the reference dataset to indicate impairment is arbitrary and may not indicate impairment. It is important to recognize that the bottom 10% of sites in the reference dataset are still reference sites with limited human impact.	See principal response 3.2.1 regarding the selection of the CSCI 0.79 threshold.
025.13	Recommendation: Do not list the following pollutant/water body combinations based on guidelines instead of adopted water quality objectives. Applicable Decision IDs: 115475, 111196, 111194.	Please see responses to comments 025.14 and 025.15.
025.14	The link to the evaluation guideline [EPA Office of Pesticide Programs (OPP) benchmarks] of imidacloprid is not functional and is inconsistent with the actual guideline that was used in (UC Davis Water Quality Criteria) Decision ID 115475. According to the USEPA (2014) and reiterated in the UC Davis Water Quality Criteria, aquatic life benchmarks are not	LOE 184869 referenced the U.S. EPA Office of Pesticide Programs Aquatic Life Benchmarks and has been revised to reference the UC Davis Water Quality Criteria Report for Imidacloprid. The link to the aquatic life benchmarks is now functional.

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	calculated following the same methodology used to calculate water quality criteria. Water quality criteria can be used to set water quality standards under the Clean Water Act, but aquatic life benchmarks may not be used for this purpose.[4] The LOE should clarify the guideline used and defer listings that are based on aquatic life benchmarks. Footnote 4: https://www.waterboards.ca.gov/centralcoast/water_issues/programs/tmdl/docs/pesticide_criteria/imidacloprid_report_final_062519.pdf	Please see response to comment 011.04 for use of aquatic life benchmarks in the 2020-2022 Integrated Report.
025.15	Decision ID 111196 (Bifenthrin) and 111194 (Pyrethroids) for San Juan Creek are based on sediment chemistry data. Data are normalized by organic carbon percentage and compared to multiple evaluation guidelines. The evaluation guideline for bifenthrin is the geometric mean of median lethal concentrations (LC50) from Amweg et al. (2005) and Amweg and Weston (2007). While the references are provided as part of the factsheet, these pyrethroid pesticide guideline values for sediment are not adopted water quality standards in the San Diego Basin Plan. Further, the guidelines are not peer reviewed as a water quality objective and it is unclear if the literature values are comprehensive enough and suitable for the region. We request deferring the current listing until an appropriate water quality standard is established.	Changes to listing recommendations were not made in response to this comment. Please see response to comment 011.07 for discussion on the use of the geometric mean. Pyrethroid sediment chemistry LOEs associated with Decision ID 111194 (Pyrethroids) were not affected by the pyrethroids miscalculation due to improper organic carbon normalization (see response to comment 011.08 for more details). In addition, see principal response 2.1 regarding the selection and use of thresholds for assessing pyrethroid data and principal response 2.2 regarding applicability of pyrethroid pesticide thresholds to the San Diego Region waterbodies.
025.16	In addition, calculations of additive aquatic toxicity, or toxic units for pyrethroids, were based on concentrations of individual pesticides, including bifenthrin. In fact, based on a data evaluation, 4 out of 5 exceedances on toxic units are due to bifenthrin alone. If more than one pyrethroid constituent	See response to comment 021.06.

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	(bifenthrin, cyfluthrin, cypermethrin, esfenvalerate, lambda-cyhalothrin, permethrin) contributes to the exceedance, then pyrethroids should be listed instead of the individual constituents.	
025.17	We also request that the staff report acknowledge that the current use of pyrethroid pesticides is approved by and regulated under California Department of Pesticide Regulation (CDPR). Any restriction on the use of the pyrethroid pesticides in response to water quality concern should be initiated by CDPR in coordination with the State Water Board.	The Integrated Report is for assessment of the protection of beneficial uses and identification of impairment of those uses. The Integrated Report is not a regulatory action, and including information on the specific use and regulations for each pollutant is unnecessary and, as proposed, would cause confusion by suggesting that the State of California has approved the use of a pollutant to a level or in a manner causing impairment.
025.18	Recommendation: Multiple FIB listings for Pacific Ocean Shoreline sites are based on lines of evidence (LOEs) from sampling stations that are not associated with these water bodies. These data should not be used to evaluate these water bodies, and associated LOEs should be deleted. The affected listing decisions are summarized below: Pacific Ocean Shoreline, Aliso HSA, at Aliso Beach – north • Decision ID: 127911 • Incorrect Station(s) Assessed in the Fact Sheet: S11 (Aliso Beach - Treasure Island Sign) • Correct Station: S10 • County Recommendation: do not list Pacific Ocean Shoreline, Dana Point HSA, at Aliso Beach – south • Decision ID: 127929	Decision ID 127911: Mapping adjustments will be made during a future cycle to create a new waterbody and move Station S11 to “Pacific Ocean Shoreline, Aliso HSA, Laguna Beach - Treasure Island.” Currently, the listing recommendation is based only on S10 data (LOEs with S11 data marked “insufficient information” and not used in the recommendation). The outcome did not change. The recommendation remains to “List” the waterbody as impaired based on non-attainment of the SHELL beneficial use. Decision ID 127929 – LOEs 219934, 219884, 219888, 220030, 219767, 220018 were removed, and the listing recommendation was deleted since there was no new data assessed. The listing recommendation for Pacific Ocean Shoreline, Dana Point HSA, at Aliso Beach - south will remain unchanged from the current 2018 Integrated Report, which is not impaired. The data in the LOEs

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	• Incorrect Station(s) Assessed in the Fact Sheet: S9 (Aliso Beach – Middle, pertaining to decision ID 76063) • Correct Station: S8 • County Recommendation: do not list Pacific Ocean Shoreline, Dana Point HSA, at Dana Point Harbor at guest dock • Decision ID: 127933 • Incorrect Station(s) Assessed in the Fact Sheet: BDP13, BDP14, BDP17 (Dana Point Harbor – Baby Beach Buoy Line, Swim Area and Youth Dock) • Correct Station: MDP11 • County Recommendation: do not list Pacific Ocean Shoreline, Dana Point HSA, at Dana Point Harbor at patrol dock • Decision ID: 127935 • Incorrect Station(s) Assessed in the Fact Sheet: BDP07, BDP08, BDP16, MDP18 (Dana Point Harbor – Baby Beach Fuel Dock, Pier, Pilgrim Dock, and M Dock (East Basin)) DSB5u (Doheny State Beach - North Beach UP) • Correct Station: MDP10 • County Recommendation: delist Pacific Ocean Shoreline, Lower San Juan HSA, at surf zone outfall at Doheny State Beach • Decision ID: 127964 • Incorrect Station(s) Assessed in the Fact Sheet: C-1, C-2 (San Juan Creek Mouth and Upper San Juan Creek) • Correct Station: S-0 • County Recommendation: do not list	removed have been assigned to “Pacific Ocean Shoreline, Aliso HSA, at Aliso Beach – middle.” New Decision ID 132057 was created for “Pacific Ocean Shoreline, Aliso HSA, at Aliso Beach – middle” and contains the following revised LOEs (created for Station S9 data): 233423, 233428, 233452, 233453, 233454 and 233455. The listing recommendation for Pacific Ocean Shoreline, Aliso HSA, at Aliso Beach – middle is “Do not Delist”. Decision ID 127933 was revised by removing LOEs for BDP13 and BDP14, which are Baby Beach sampling stations. They are now included in Decision ID 127931 (See comment 025.21 for specific details). The LOEs for MDP11 and BDP17 remain in Decision ID 127933 since they are both located at Guest Dock. Remapping and reassignment of stations in Dana Point Harbor can be further investigated during a future cycle. The listing recommendation for Pacific Ocean Shoreline, Dana Point HSA, at Dana Point Harbor at patrol dock remains “List”. Decision ID 127935 was revised by removing LOEs for stations BDP07 and DSB5U (LOEs 219873, 219961, 219821, 219838, 219902, 219826 and 219827) since they are at outfalls and not surface waters to assess. The remaining stations are included in the recommendation at this time. Remapping and reassignment of stations in Dana Point Harbor can be further investigated during a future cycle. Decision ID 127964 was revised to only include LOEs with data from Station S-0. LOEs 219861, 219860, 219983, 219953, 219855, 220109, 219929 and 219759 were removed. The listing recommendation did

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		not change and remains “Do not Delist” due to 155/408 enterococci exceedances. ID 132058 was created for San Juan Creek (mouth) (C-1 data). A new listing recommendation was not created for San Juan Creek since new *E. coli* data were not provided.
025.19	Recommendation: Re-evaluate listings where additional data are available, but were not analyzed. Multiple listings were not re-evaluated or not thoroughly examined during this listing cycle. Examples include the following: 1) Additional data are available in the CEDEN database but not included in the assessment.	Specific responses regarding CEDEN data not used are found in response to comment 025.21. Additionally, see principal response 4.2 for Data and Analysis Transparency, and Readily Available Data.
025.20	2) The associated LOEs have been linked incorrectly to other listings mentioned in Comment V.	Specific responses regarding LOE linking are found in response to comment 025.21.
025.21	The REC-1 Bacteria Water Quality Objectives adopted in the 2019 California Ocean Plan and 2019 Inland Surface Waters, Enclosed Bays, and Estuaries (ISWEBE) Bacteria Provisions have either not been considered in listing decisions or used in conjunction with old objectives. These listings should be re-evaluated to accurately reflect the current water quality condition based on all available data submitted and current water quality objectives. The affected listing decisions are summarized below: Pacific Ocean Shoreline, Dana Point HSA, at Dana Point Harbor at Baby Beach • Decision ID: 127931	The comments regarding the stations with unassessed data are appreciated. Upon further investigation it appears multiple stations identified in the comment were not assessed due to incorrect mapping, linking data to the wrong waterbody, or another reason yet to be determined. Staff corrected mapping errors and revised the listing recommendations for waterbody-pollutant combinations that are recommended to be listed or delisted in the 2020-2022 Integrated Report to ensure the accuracy of those listing recommendations. Data associated with other waterbody-pollutant combinations (i.e., those which are not recommended to be listed or delisted) will be reviewed to ensure accurate mapping

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	• Pollutant: Indicator bacteria • Associated Stations: BDP12-BDP15 (Data from BDP13 and BPD14 are incorrectly linked to decision ID 127933) • County Recommendation: Do no delist Pacific Ocean Shoreline, Lower San Juan HSA, at North Beach Creek • Decision ID: 127963 • Pollutant: Indicator bacteria • Associated Stations: ODB02 (Historical station ID, no longer sampled) DSB5z (Current station ID) • County Recommendation: Do no delist Aliso Creek • Decision ID: 79858 • Pollutant: Indicator bacteria • Associated Stations: ACJ01/ CTPJ01 (E.coli samples were collected on a monthly basis and no exceedance for E.coli during dry weather based on review of CEDEN) • County Recommendation: Delist Pacific Ocean Shoreline, Aliso HSA, at Aliso Beach – middle • Decision ID: 76063 • Pollutant: Indicator bacteria • Associated Stations: S9 (Incorrectly linked related LOEs to decision ID 127929) • County Recommendation: Delist Pacific Ocean Shoreline, Lower San Juan HSA, 1000 feet south of outfall • Decision ID: 86378 • Pollutant: Indicator bacteria	and LOEs and listing recommendations will be revised as needed in a future Integrated Report cycle. The following provides information for specific listing recommendations. Decision ID 127931: Staff removed LOEs containing data from BDP13 and BDP14 from Decision ID 127933 (LOEs 219915, 219872, 220114, 219760, 219819, 219792, 219784, 219789, 219882, 220044, 220079, 219862). The data were added to Decision ID 127931 in newly created LOEs 233477 through 233488. The above changes did not result in a change of the listing recommendations. Decision ID 127931 remains “Do not Delist”, and 127933 remains “List”. Decision ID 127963: Decision ID 127963 has been updated to include data from Station DSB5Z. The LOEs used to make the “Do not Delist” listing recommendation are 219965 and 234348. These contain enterococci data collected within the past ten years from Stations ODB02 and DSB5Z and use criteria from the 2019 Ocean Plan. Decision ID 127963 remains “Do not Delist”. Decision ID 79858: The 303(d) listing for Decision ID 79858 is from a prior listing cycle. There was a mapping issue with Stations ACJ01 and CTPJ01. Consequently, some data from these stations were not assessed, and LOEs were not created during this cycle. Therefore, a new recommendation for Aliso Creek and indicator bacteria was not created for this listing cycle. In a future cycle, staff will investigate why the stations were not mapped and why the data were not assessed. Data from Stations ACJ01 and CTPJ01 will be

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	• Associated Stations: S-1 (Data from Beach Watch program is available but not assessed) • County Recommendation: Do not delist Pacific Ocean Shoreline, Lower San Juan HSA, at North Doheny State Park Campground • Decision ID: 76803 • Pollutant: Indicator bacteria • Associated Stations: DSB4z (Data from Beach Watch program is available but not assessed) • County Recommendation: Do not delist Pacific Ocean Shoreline, Lower San Juan HSA, at South Doheny State Park Campground • Decision ID: 77710 • Pollutant: Indicator bacteria • Associated Stations: DSB1z (Data from Beach Watch program is available but not assessed) • County Recommendation: Delist Pacific Ocean Shoreline, San Clemente HA, at San Clemente City Beach at Pier • Decision ID: 76306 • Pollutant: Indicator bacteria • Associated Stations: PIERz (Data from Beach Watch program is available but not assessed) • County Recommendation: Do not delist Prima Deshecha Creek • Decision ID: 82408 • Pollutant: Malathion • Associated Stations: PDCM01 (Data on CEDEN indicating 5 out of 32 samples exceed the criteria)	assessed in a future cycle if the data meet data quality requirements. Decision ID 79858 remains “Do not Delist”. Decision ID 76063: The 303(d) listing for Decision ID 76063 is from a prior listing cycle and remains “Do not Delist”. LOEs created for Station S9 were incorrectly linked to “Pacific Ocean Shoreline, Aliso HSA, as Aliso Beach – south" and thus incorrectly appeared in Decision ID 127929. LOEs for Station S9 now appear in Decision ID 132057 for “Pacific Ocean Shoreline, Aliso HSA, at Aliso Beach – middle” with a “Do not Delist” listing recommendation. Decision ID 86378: The 303(d) listing for Decision ID 86738 is from a prior listing cycle. In a future cycle, staff will investigate why data from Station S-1 were not mapped and assessed this cycle. The data will be assessed during a future cycle if the data meet data quality requirements. Decision ID 86378 remains as “List”. Decision ID 76803: The 303(d) listing for Decision ID 76803 is from a prior listing cycle. Data from Station DSB4z were assessed and appear in Decision ID 132168 (LOEs 234336 and 234274). The listing recommendation for “Pacific Ocean Shoreline, Lower San Juan HSA, at North Doheny State Park Campground” is “Do not Delist”. Decision ID 77710: The 303(d) listing for Decision ID 77710 is from a prior listing cycle. Data from Station DSB1Z were assessed and appear in Decision ID 132163 (LOEs 234349, 234187, 234306 and 234208). The listing recommendation for “Pacific Ocean Shoreline, Lower San

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	• County Recommendation: Delist	Juan HSA, at South Doheny State Park Campground" is "Do not Delist". Decision ID 76306: The 303(d) listing for Decision ID 76306 is from a prior listing cycle. Data from Station PIERz were assessed and appear in Decision ID 132164 (LOEs 234342 and 234229). The listing recommendation for "Pacific Ocean Shoreline, San Clemente HA, at San Clemente City Beach at Pier" is "Do not Delist". Decision ID 82408: The 303(d) listing for Decision ID 82408 was from a prior listing cycle. There was a mapping issue with PDCM01. In a future cycle, staff will investigate why the station was not mapped and why the data were not assessed. Data from Station PDCM01 will be evaluated and assessed during the 2024 Integrated Report cycle if the data meet data quality requirements. Decision ID 82408 remains as "List".
025.22	VII. Recommendation: Consolidate the following listings because multiple station IDs that represent the same water body are listed separately: Pacific Ocean Shoreline, Laguna Beach HSA, at Main Beach • Decision ID: 127950 • Associated Stations: MAINBCd, MAINBCz & MAINBCu (Current station ID) OLB00 (Historical station ID, no longer sampled) • County Recommendation: Do not list Pacific Ocean Shoreline, Laguna Beach HSA, at Broadway Creek	For Decision ID 127947 and127950: All of the LOEs from Decision ID 127947 are now assigned to "Pacific Ocean Shoreline, Laguna Beach HSA, at Main Beach" and appear in revised Decision ID 127950. The revised LOEs, used in the listing recommendation include: 233463 (replaces 220093), 233464 (replaces 220120), 233468 (replaces 219830), 233469 (replaces 219963), 233470 (replaces 220080), 233471 (replaces 219805), 233472 (replaces 220108) and 233473 (replaces 219782).

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	• Decision ID: 127947 • Associated Stations: MAINBCd, MAINBCz & MAINBCu (Current station ID) OLB00 (Historical station ID, no longer sampled) • County Recommendation: Do not list Pacific Ocean Shoreline, Lower San Juan HSA, at San Juan Creek • Decision ID: 77526 • Associated Stations: S-0 (The Surfzone outfall refers to San Juan Creek) SJC1 (This station ID refers to San Juan Creek (mouth), also see decision IDs: 69906, 95526, 95470, 95417, 95364) • County Recommendation: Do no delist Pacific Ocean Shoreline, Lower San Juan HSA, at surfzone outfall at Doheny State Beach • Decision ID: 127964 • Associated Stations: S-0 (The Surfzone outfall refers to San Juan Creek) SJC1 (This station ID refers to San Juan Creek (mouth), also see decision IDs: 69906, 95526, 95470, 95417, 95364) • County Recommendation: Do no delist Pacific Ocean Shoreline, San Clemente HA, at South Capistrano Beach at Beach Road • Decision ID: 77151 • Associated Stations: S-9 (Capistrano County Beach at 5000' South Outfall) CSBBR1d/u & CSBMP1d/u (Historical station ID, no longer sampled) • County Recommendation: Delist	The revised LOEs, not used in the listing recommendation are: 233460 (replaces 74907), 233461 (replaces 219889), 233462 (replaces 219796), 233465 (replaces 74908), 233466 (replaces 219842), 233467 (replaces 220060), 233474 (replaces 80844) and 233475 (replaces 74925). For Decision ID 77526: This impairment is from the 2016 Integrated Report. The listing will not change and remains “Do not Delist”. When new data are available for the impaired waterbody, it will be reassessed. For Decision ID 127964: The LOEs that were used to make this listing recommendation are 219812 and 220006, which contain data from S-0. Our records show that S-0 was submitted with the coordinates: 33.4616, -117.6826, which is why it was assigned to “Pacific Ocean Shoreline, Lower San Juan HSA, at surfzone outfall at Doheny State Beach” and very close to “San Juan Creek (mouth).” For Decision ID 77151, 76993 and 127961: The stations used in each of these listing recommendations are close (within 315 meters of each other), and the distinct water bodies they were used to represent in older Integrated Report cycles could be combined into a single water body, as they represent the same stretch of beach. Mapping adjustments may be made during a future cycle.

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	Pacific Ocean Shoreline, San Clemente HA, at South Capistrano County Beach • Decision ID: 76993 • Associated Stations: S-9 (Capistrano County Beach at 5000' South Outfall) CSBBR1d/u & CSBMP1d/u (Historical station ID, no longer sampled) • County Recommendation: Delist Pacific Ocean Shoreline, Lower San Juan HSA, 5000 feet south of outfall • Decision ID: 127961 • Associated Stations: S-9 (Capistrano County Beach at 5000' South Outfall) CSBBR1d/u & CSBMP1d/u (Historical station ID, no longer sampled) • County Recommendation: Delist	Currently, station S-9 is actively sampled and provides the recent data (within the past 10 years) to assess Indicator Bacteria, found in Decision ID 127961. It is mapped to "Pacific Ocean Shoreline, Lower San Juan HSA, 5000 feet south of outfall." For Decision ID 127961: This listing recommendation contains data from S-9, and the following LOEs were used to make that recommendation: 220010, 219756, 220113, 219785. These data resulted in a "Do not Delist". Therefore, Decision IDs 77151 and 76993 were not revised for the 2020-2022 Integrated Report.
025.23	Recommendation: Update the following Decision IDs as indicated below. • Decision ID 127351: include the toxicity LOEs as part of the total sample and exceedance count. The summary methodology is inconsistent with other similar nutrient listings. In addition, the provided datasets for LOEs 144067 and 144273 indicate station 12-352 is an ocean water body but the coordinates appear to be at the bottom of the watershed. The location should be clarified and LOEs should be removed, as appropriate.	The toxicity LOE was removed from the listing recommendation. In addition, LOEs 144067 and 144273 were removed from the recommendation and deleted. They were incorrectly written for Moro Canyon Creek, as Station 12-352 is an outfall and not a surface water to assess. However, the listing recommendation remains "List."
025.24	• Decision ID 111095: LOE 134589 incorrectly identified the matrix being sediment. Based on the LOE narratives, the matrix appears to be water, while the	Changes to the recommendation was not made in response to this comment. Decision ID 111095 and LOE 134589 were correctly written for sediment. Please see

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	provided data included both water and sediment toxicity data. A separate LOE for sediment should be created.	lines 136 and 159 in Data ref4895. The data are from sediment toxicity tests for *Hyalella azteca* growth and survival, and they were used in the LOE. The data file also contains water toxicity test results (line 162), but the QA Code indicates that holding time was exceeded. Since the water toxicity data exceeded the holding time the data were not used.
025.25	Decision ID 77285 and 87213: Total sample/exceedance counts are incorrect.	Changes to listing recommendations were not made in response to this comment. Decision IDs 77285 and 87213 were assessed during the 2010 Integrated Report. These listing recommendations were not re-assessed in the 2020-2022 Integrated Report as no new data were available. The referenced sample/exceedance counts are indeed incorrect and will be revised in a future Integrated Report as new data become available for assessment. Corrections to the sample/exceedance counts would not result in a changed listing status at this time as both recommendations would remain as impaired.

Letter 26: Todd Snyder, County of San Diego

No.	Comment	Response
026.01	Corrections to Lower Santa Margarita River and Lower San Luis Rey River §303(d) Listings Due to an error in the coordinates entered into the California Environmental Data Exchange Network (CEDEN) for mass loading station SLR-MLS, data collected at SLR-MLS on the	The identification of the incorrect coordinates for the sampling station are appreciated, and changes have been made as specified below to correct the assessments.

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	Lower San Luis Rey River were evaluated as lines of evidence (LOEs) for the Lower Santa Margarita River. Correction of this error will result in updates to the 2020-2022 §303(d) List, as summarized below. The data used in the re-evaluation are provided as Attachment A.	Note: This data uploading error applies to more recommendations than identified in the comments (approximately 49 total recommendations). Changes were made to ensure data for the correct waterbody are associated with the correct decision for all listing recommendations with “List” or “Delist” recommendations. The remaining data were removed from the Lower Santa Margarita River assessments and will be reassessed when data are corrected in CEDEN in a future listing cycle. The County of San Diego may correct the coordinates of their data by contacting CEDEN staff at ceden@waterboards.ca.gov.
026.02	Removal of SLR-MLS LOEs from Lower Santa Margarita River decisions Removal of bifenthrin (decision 111264) from the §303(d) List. LOEs 140490, 140721, 140586, 140570, 135563, and 135986 were based on data from SLR-MLS and should be removed as LOEs for decision 111264. The removal of these LOEs will leave only LOE 76472 and will result in removal of bifenthrin from the 2020-2022 §303(d) List.	The referenced LOEs were removed from Decision ID 111264 and reassigned to Decision ID 111498 as applicable, resulting in the removal of the ”List” recommendation for the Lower Santa Margarita River for bifenthrin. This does not result in a listing change for the Lower San Luis Rey River, which is currently 303(d) listed as impaired for bifenthrin.
026.03	Removal of iron (decision 111247) from the §303(d) List. LOEs 142837, 142971, 142751, 142767, 142859, and 142646 were based on data from SLR-MLS and should be removed as LOEs for decision 111247. The removal of these LOEs will result in removal of iron from the 2020-2022 §303(d) List.	The referenced LOEs were removed from Decision ID 111247 and reassigned to the lower San Luis Rey River as applicable, resulting in the recommended removal of the “List” recommendation for the Lower Santa Margarita River for iron.

No.	Comment	Response
		This results in a new “List” recommendation for the Lower San Luis Rey River for iron.
026.04	Removal of manganese (decision 111250) from the §303(d) List. LOEs 143280 and 143258 were based on data from SLR-MLS and should be removed as LOEs for decision 111250. The removal of these LOEs will result in removal of manganese from the 2020-2022 §303(d) List.	The referenced LOEs were removed from Decision ID 111250 and reassigned to the lower San Luis Rey River as applicable, resulting in the removal of the “List” recommendation for the Lower Santa Margarita River for manganese. This results in a new “List” recommendation for the Lower San Luis Rey River for manganese.
026.05	Removal of pyrethroids (decision 111263) from the §303(d) List. LOEs 146182, 139222, 138807, and 146110 were based on data from SLR-MLS and should be removed as LOEs for decision 111263. The removal of these LOEs will result in removal of pyrethroids from the 2020-2022 §303(d) List.	The referenced LOEs were removed from Decision ID 111263 for the Lower Santa Margarita River and reassigned to the lower San Luis Rey River, as applicable, resulting in the removal of the “List” recommendation for pyrethroids. There is no change to the “List” recommendation for the San Luis Rey River, lower (west of Interstate 15) which is recommended as impaired for pyrethroids (Decision ID 111496).
026.06	Removal of turbidity (decision 111260) from the §303(d) List. LOEs 147534, 147909, and 147971 were based on data from SLR-MLS and should be removed as LOEs for decision 111260. The removal of these LOEs will result in removal of turbidity from the 2020-2022 §303(d) List.	The referenced LOEs were removed from Decision ID 111263 and reassigned to the lower San Luis Rey River as applicable, resulting in the removal of the “List” recommendation for the Lower Santa Margarita River for turbidity.

No.	Comment	Response
		This does not result in a new recommended 303(d) impairment listing for the Lower San Luis Rey River for turbidity.
026.07	Addition of SLR-MLS LOEs to Lower San Luis Rey River decisions • Decision 128035 indicating the Lower San Luis Rey River is de-listed for indicator bacteria, is not affected. Decision 128035 was based on 15 of 101 E. coli results above the statistical threshold value (STV). The updated total will be 16 of 111 results above the STV, which meets the requirements for de-listing in Table 4.2 of the Listing Policy. • Addition of cyfluthrin (decision 111505) to the §303(d) List. This decision is on the Proposed 2020-2022 "Do Not List". • Addition of sulfates (decision 76476) to the §303(d) List. This decision was on the 2014/2016 "Do Not List".	1) The referenced indicator bacteria data were reassigned to the Lower San Luis Rey River. This did not result in any change in recommended listing status for either waterbody. 2) The referenced cyfluthrin data were reassigned to the Lower San Luis Rey River. This did not result in a listing recommendation. 3) The referenced sulfate data were not added to the Lower San Luis Rey River as there is insufficient information available to assess the sulfate data to determine beneficial use attainment due to the exception for the municipal ("MUN") beneficial use at this location.
026.08	Recommend removal of SLR-MLS LOEs from the Lower Santa Margarita River decisions, and addition of SLR-MLS LOEs to the Lower San Luis Rey River decisions, resulting in the changes summarized in the following bullets. • Recommend removal of bifenthrin, iron, manganese, pyrethroids, and turbidity from the 2020-2022 §303(d) List for the Lower Santa Margarita River based on removal of Lower San Luis Rey River LOEs. • Recommend addition of cyfluthrin and sulfates to the 2020-2022 §303(d) List for the Lower San Luis Rey	Please see response to comments 026.02, 026.03, 026.04, 026.05, 026.06, and 026.07 for additional details.

No.	Comment	Response
	River based on addition of Lower San Luis Rey River LOEs.	
026.09	Benthic Community Effects In the August 2016 comment letter for the Draft 2014/2016 §303(d) List, the County indicated that several LOEs used to list waterbodies for impairment due to benthic community effects did not meet the requirements for listing. LOEs were used in the listing assessment without consideration of seasonal requirements necessary to conduct the data analysis. For 303(d) listing for benthic community effects, the Draft Staff Report[1] requires that "associated pollutants" exceed water quality standards in addition to CSCI scores below the threshold. Benthic data are collected during dry weather from April 15 to July 15 and 4 weeks after the last storm event that may have caused streambed scouring; data used as LOEs for benthic effects impairment should be collected under the same conditions. Several additional listings for benthic community effects were added to the Draft 2020-2022 §303(d) List and included wet weather data LOEs. RECOMMENDATION: It is recommended that LOEs associated with wet weather data are removed from the Draft 2020-2022 §303(d) List for benthic community effects. Footnote 1: https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/2020_2022_integrated_report.html	Changes to listing recommendations were not made in response to this comment. Wet weather discharges of pollutants can impact benthic communities and it is appropriate to associated wet weather pollutant data with CSCI scores. As an example, persistent compounds, such as organochlorine pesticides, are typically hydrophobic and can remain within a system for an extended time period even when discharged during wet weather. Wet weather discharges of these pesticides can impact benthic macroinvertebrates throughout the year. In addition, many pollutants can be transported into streams during storm events, such as sediment from construction sites. The effects of fall and winter storms that occur outside the sampling period can result in habitat degradation in streams, as well as transport pollutants that can impact benthic macroinvertebrates throughout the year.
026.10	It is recommended that Enterococcus for impairment of REC-1 be removed from the Draft 2020-2022 §303(d) List for the	Changes to the listing recommendation were not made in response to this comment because Decision ID 128081

No.	Comment	Response
	Pacific Ocean Shoreline at the San Luis Rey River mouth, as data collected support de-listing based on California's Listing Policy. Decision 128081 should specify that the listing is for impairment for SHELL only.	already states that the Pacific Ocean Shoreline at the San Luis Rey River mouth is recommended for listing for impairment for SHELL and not REC-1. Enterococcus, fecal coliform, and *E. coli* data are all assessed as "Indicator Bacteria" pollutants for all applicable beneficial uses, including shellfish ("SHELL") and water contact recreation ("REC-1"). Decision ID 128081 already specifies that the listing is for impairment of the SHELL beneficial use only as follows: thirty-three of 376 samples exceeded the enterococci water quality threshold and zero of 257 samples exceeded the fecal coliform water quality threshold for the protection of REC-1, and this does not exceed the allowable frequency listed in table 3.2 of the Listing Policy. One hundred and thirty-two out of 524 exceed the SHELL threshold for total coliform and this does exceed the allowable frequency listed in Table 3.2 of the Listing Policy. Additionally, see principal response 5 for SHELL Beneficial Uses and Objectives.
026.11	Selenium In May 2014, the County of San Diego submitted five comment letters related to the 2010 §303(d) listings for selenium in five creeks. Additional data were collected by the County of San Diego for use in the de-listing evaluation and compared to the California Toxics Rule (CTR) Freshwater Criterion of 0.005 mg/L. The results are as follows: • Keys Creek: 0 of 28 samples exceeded the criterion	Changes to listing recommendations were not made in response to this comment. Staff manually searched CEDEN and found the selenium data indicated in the comment. However, data from all stations were uploaded to CEDEN without latitude and longitude coordinates. Those samples show the same place-holder coordinates regardless of station (33, -117). Accurate coordinates are essential to integrated report assessments because without them, stations cannot be mapped and associated with a waterbody or LOEs.

No.	Comment	Response
	• San Marcos Creek: 0 of 31 samples exceeded the criterion Escondido Creek: 0 of 32 samples exceeded the criterion • Los Coches Creek: 0 of 31 samples exceeded the criterion • Lower Sweetwater River: 0 of 31 samples exceeded the criterion The data used as the basis of the de-listing evaluations are included in each letter. The original letters were included as an attachment to the Draft 2014/2016 §303(d) List comment letter dated August 3, 2016. These data were not included as LOEs in the approved 2014/2016 §303(d) List. The State Water Board response to comment 5.03 on the Draft 2014/2016 §303(d) List stated "Data submitted after the August 30, 2010, deadline is not evaluated for the 2014/2016 listing cycle. These data (if submitted in CEDEN) will be included as high priority data in the next cycle." However, the data were not included as LOEs in the Draft 2020-2022 §303(d) List, and the decisions not to de-list are based on data from 15 or more years ago despite the availability of recent data with no exceedances. The letters are included as Attachment C to this comment letter, and WESTON confirmed these data are available in CEDEN. RECOMMENDATION: It is recommended that Keys Creek, San Marcos Creek, Escondido Creek, and Los Coches Creek be removed from the Draft 2020-2022 §303(d) List for selenium, as recent data collected in each creek support de-listing based on California's Listing Policy. Sweetwater River, Lower has already been identified for de-listing in the Draft 2020-2022 §303(d) List.	It is requested that the County of San Diego correct the coordinates of their data by contacting CEDEN staff at ceden@waterboards.ca.gov. With the additional data, the recommendations for Keys Creek (113461) and San Marcos Creek (105584) could potentially change from the current "Do not Delist" to "Delist." The recommendation for Lower Sweetwater (113986) would likely remain as "Delist". The recommendations for Escondido Creek (111661) and Los Coches Creek (113485) would likely remain "Do not Delist". For these latter two, the total number of samples would be insufficient to meet the delisting criteria in this assessment cycle because samples taken at the same station on the same day would be averaged, resulting in lower sample counts than those stated in the comment letter.

No.	Comment	Response
026.12	The Draft 2020/2022 §303(d) List includes several new listings for pyrethroid pesticides based on updated, lower numeric targets. These updated numeric targets should not be used to assess impairment for several reasons, including: • At this time commercial laboratories cannot reliably meet reporting limits below these updated numeric targets. Non-detect results for samples with reporting limits above the lower numeric targets could not be evaluated and were frequently excluded from the listing analysis. • The Draft Staff Report includes numeric targets updated during the development of the Amendment to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Pyrethroid Pesticide Discharges. However, this Amendment states "The pyrethroid triggers are not for use as numeric water quality based effluent limitations or for reasonable potential analysis." California's Listing Policy states that it "shall not be used to…establish, revise, or refine any water quality objective or beneficial use…"; the pyrethroid thresholds should be evaluated and adopted through a San Diego Basin Plan Amendment before they are used to assess impairment. • The decisions for pyrethroids in water state that total concentrations were used if freely dissolved concentrations were not reported or could not be calculated. However, this is not consistent with the methodology, which was developed based on freely dissolved concentrations.	See principal response 2.5 regarding detection limits of southern Californian laboratories, principal response 2.1 regarding the selection and use of thresholds for assessing pyrethroid data, and principal response 2.3 regarding use of total and dissolved fraction data. In addition, non-detect results where the laboratory data reporting limit(s) were above the objective are not quantified with the level of certainty required by the Listing Policy Section 6.1.5.5 and were not included in assessments.

Letter 27: Tracy Crane, El Dorado Irrigation District

No.	Comment	Response
027.01	Since the State Water Board's 303(d)-listing process also has the task of assessing the health of state waterbodies, the Water Boards should utilize the District's DO measurements to inform the 303(d)-listing decisions.	Thank you for the comment. In order to evaluate the El Dorado Irrigation District's DO data for assessment, please submit the data during the solicitation period or submit to CEDEN before the end of the solicitation period. Also, see principal response 4.2 for Data and Analysis Transparency, and Readily Available Data.
027.02	Comment 1. Data not from the waterbody segment. Data provided in LOE 208397 and 208371 for station 532ELD033 are from the segment of Carson Creek upstream of El Dorado Hills wastewater treatment plant (WWTP). Thus, these LOEs are not applicable to Decision ID 122568.	Thank you for your comment outlining the disconnect between the waterbody segment and the waterbody name on Carson Creek. To better describe the entire waterway segment, the waterbody name has been revised to "Carson Creek (from Serrano Parkway to Deer Creek)".
027.03	Comment 2. Clarify segment description for Deer Creek. Data provided in LOEs supporting the Deer Creek decision are from both Sacramento and El Dorado counties, while the decision's description is of "Deer Creek (Sacramento County)." The waterbody segment should clearly define the segment proposed for listing.	To clearly define the Deer Creek waterway segment, the waterbody name has been revised to "Deer Creek (El Dorado and Sacramento Counties)".
027.04	Comment 3. Data utilized for the decision are not temporally representative. Neither Carson Creek nor Deer Creek support self-sustaining populations of cold-water fish or invertebrates. The COLD beneficial use has been designated to these water bodies via the tributary rule, as they are tributary to the Cosumnes River	In response to the DO listing recommendation for Carson Creek (Decision ID 122568) – According to the Central Valley Regional Water Board's Basin Plan, the SPWN beneficial use protects spawning, reproduction, and/or early development. While it is unlikely spawning will take place during April through June, Carson Creek could potentially be used for early development by cold water

No.	Comment	Response
	which has a cold beneficial use designation. A Basin Plan amendment was made for Deer Creek to adopt site-specific objectives for temperature (see Central Valley Water Board Final Staff Report dated January 2003). In this staff report, biological and temperature data are compiled and used to interpret the "type and degree" of the COLD use that exists in the creek. Because the creek does not support year-round, self sustaining populations of cold water fish or invertebrates, the Staff Report clearly defines that the COLD use for Deer Creek is a seasonal, opportunistic use by Chinook Salmon and possibly Steelhead, that can opportunistically use Deer Creek for spawning and early life stage rearing, but only when temperature and flow conditions are conducive for such use, which does not occur in all years (see 2003 Temperature Staff Report, p. 3-15 through 3-17). Moreover, when both temperature and flow conditions are suitable for such opportunistic use of Deer Creek by Cosumnes River Chinook Salmon and Steelhead, such use would only occur December through March for spawning and only through April and possibly as late as May in wet years for juvenile rearing before high temperatures would cause any juvenile Chinook Salmon or Steelhead present to emigrate from the creek to seek colder water downstream. These same biological realities apply to Carson Creek, being tributary to Deer Creek. The State Water Board DO data collected and used for the proposed DO listing in these two waterbodies was collected only during April through June of 2015, which was a drought year. These data do not technically support the proposed listing for several reasons. First, no spawning of cold-water fish (i.e., Chinook Salmon or Steelhead) would ever occur during the period April through June. Chinook Salmon opportunistic spawning would occur in December and	fish species if spawning has taken place. As such, use of the SPWN beneficial use is appropriate. According to the Central Valley Regional Water Board's Basin Plan, the COLD beneficial use protects the entire cold water ecosystem including, but not limited to, aquatic habitats, vegetation, fish, or wildlife, including invertebrates. Salmonids are not the only species protected under the COLD beneficial use and use of the COLD beneficial use is appropriate. Additionally, in response to the DO listing recommendation for Deer Creek and Carson Creek (Decision IDs 122566 and 122568) – The commenter is correct that measurements taken in stagnant water are likely to be low in dissolved oxygen due to lack of aeration from non-flowing water. Such measurements likely are not representative of typical conditions. Section 6.1.5.2 of the Listing Policy states that samples should be representative of the waterbody segment. Therefore, the LOEs associated with those data (LOEs 207992 and 207980 for Decision ID 122566 and LOEs 208370 and 208395) were removed from the assessment. This resulted in an insufficient number of exceedances to list the waterbodies as impaired and the recommendations were revised from "List" to "Do not List" following the removal of the unrepresentative data.

No.	Comment	Response
	Steelhead spawning would occur December through March. Second, such opportunistic use of Deer Creek or Carson Creek by cold-water fishes from the Cosumnes River would not occur in a year like 2015, which was the fourth year of a prolonged drought. Third, any juvenile Chinook Salmon and Steelhead that were opportunistically spawned in these waterbodies would need to emigrate from these creeks by late April/early May even in a wet year, due to creek temperatures reaching levels that are too warm to support these cold-water species. Juveniles would emigrate from the creeks into the Cosumnes River, then into the Mokelurnne River and then into the Delta until finding suitable water temperatures for further rearing. Again, no rearing of cold-water fishes would occur in either creek in a drought year like 2015. For the reasons stated above, the DO data compiled by the SWB do not support the proposed listing of DO for Deer Creek or Carson Creek.	
027.05	The District's DO measurements in this creek are used by Central Valley Water Board staff to compare with the Basin Plan's 7 mg/L water quality objective, which is established as the DO surface water limitation in the NPDES permit. The District has produced data for the Water Boards to evaluate impacts to aquatic life beneficial uses from DO in Deer Creek and Carson Creek for over two decades. Since September 2010, measurements of DO in these creeks have been submitted to the State Water Board's CIWQS database, as directed by the District's Water Board-issued NPDES permits. The District requests that DO measurements in CIWQS from the receiving water locations on Carson Creek (RSW-001 , downstream of El Dorado Hills WWTP) and Deer Creek	California Integrated Water Quality System (“CIWQS”) data were not assessed because they were not made readily available for the 2020-2022 Integrated Report. All readily available data and information received before the 2020-2022 Integrated Report data solicitation cutoff date (June 14, 2019) were considered in the development of the 2020-2022 Integrated Report (Section 2.1 of the Staff Report). Section 6.1.1 of the Listing Policy defines “readily available data” as data and information that can be submitted to the California Environmental Data Exchange Network (“CEDEN”). CIWQS data are incompatible with Integrated Report data processing tools such as CEDEN. Additionally, CIWQS data do not satisfy

No.	Comment	Response
	(RSW-001 and RSW-002) be included as primary LOEs with the listing decisions for Deer Creek and Carson Creek. This data is available on the State Water Board's CIWQS database and is provided in an electronic spreadsheet attachment to the comment letter titled "CIWQS DO for Carson Creek and Deer Creek, 2010-2019."	the minimum quality assurance requirements as outlined in Section 6.1.4 of the Listing Policy because they are not accompanied by a Quality Assurance Project Plan ("QAPP") or a standardized Quality Assurance ("QA") overview and must be considered on a case-by-case basis to ensure the QA requirements are fulfilled. State Water Board staff are developing data processing tools to include high quality CIWQS data in future Integrated Report cycles. The submission of the clear spreadsheet of DO data for Carson Creek and Deer Creek from CIWQS is appreciated. The data were not incorporated in assessments for the 2020-2022 Integrated Report. After an initial evaluation of the data, staff determined that the data do not meet data quality requirements, which are outlined in Section 6.1.4 of the Listing Policy, due to unclear monitoring locations and sample collection timing. Further, incorporating these data in the 2020-2022 Integrated Report may create duplicative data sets for future integrated reports. However, given CIWQS data will be incorporated into the integrated report process, this data set will be further evaluated for quality and evaluated as a priority data set in the 2024 Integrated Report. Staff at the Central Valley Regional Water Board obtained a copy of the QAPP in preparation for the 2024 Integrated Report and expect to work with the commenter regarding unclear data quality information. (Note that Carson Creek and Deer Creek would otherwise be scheduled for re-assessment in the 2026 cycle as they are in the San Joaquin River Basin.)

No.	Comment	Response
		It is also important to note that the Central Valley Regional Water Board will conduct its own data evaluation process during the development of any new discharge permit or in the renewal or reconsideration of an existing permit. That evaluation should include all discharger-collected data, CIWQS data, Integrated Report data, and newer data in CEDEN submitted since the Integrated Report's data cut-off date. Also, see principal response 4.1 and 4.2 for Data and Analysis Transparency, and Readily Available Data.
027.06	Including the CIWQS data for Carson Creek would increase the number of measurements in the administrative record for the listing decision from 13 to 225. Including the CIWQS data for Deer Creek would increase the number of measurements in the administrative record for the listing decision from 19 to 665. Historical data from the Central Valley Water Board's archived Discharge Monitoring Reports for the District's WWTPs would provide over 10 additional years of DO measurements for these creeks that predate data reported to CIWQS. However, data in CIWQS is sufficient at this time given that it takes less than five (5) minutes to download this data electronically.	See response to comment 027.05.
027.07	The Central Valley Water Board identified that NPDES data submitted via the CIWQS system would be transmitted automatically to the State Water Board for 303(d)-listing evaluations subsequent to the 2014 Integrated Report.	See response to comment 027.05.

No.	Comment	Response
027.08	Accordingly, the District's NPDES data in CIWQS should have been transmitted directly to the State Water Board by the Central Valley Water Board for inclusion as LOEs for the 2020-2022 Integrated Report.	See response to comment 027.05.
027.09	The State Water Board clarified in its 2018 Integrated Report data solicitation[2] that it does not want NPDES data submitted into CEDEN, but rather NPDES data should be submitted into CIWQS for 303(d)-assessment purposes. The 2018 Integrated Report data solicitation states: *"Data that is generated as a requirement of a National Pollutant Discharge Elimination System (NPDES) permit should not be submitted into CEDEN in response to this solicitation. NPDES data should be submitted via the CIWQS/eSMR system and applicable data will be transferred into CED EN automatically. Only receiving water monitoring data collected at receiving water (R-1 and R-2) sample sites are applicable for assessment purposes."* This statement communicates the State Water Board's understanding that NPDES data in CIWQS is readily available and will be used for 303(d) assessments. No statement to the contrary was provided in the 2020-2022 Integrated Report data solicitation. Hence, the most recent direction to the public provided by the State Board specifically on the use of NPDES data for 303(d) assessment is that data from CIWQS will be transferred to a CEDEN-like format by the State Board without any additional action required of the public. Footnote 2: State Water Resources Control Board. 2016. *Notice of public Solicitation of Water Quality Data and*	The commenter cited the 2018 Integrated Report data solicitation notice rather than the 2020-2022 data solicitation notice. The revised data solicitation notice was released on May 7, 2019 and is applicable to the 2020-2022 Integrated Report. The 2020-2022 revised notice does not state that NPDES data would be automatically transferred to CEDEN for the 2020-2022 Integrated Report. Also, see response to comment 027.05.

No.	Comment	Response
	Information for 2018 California Integrated Report – Clean Water Action Sections 305(b) and 303(d). Letter to Interested Parties from K. Mogus, State Water Resources Control Board. November 3.	
027.10	The 2015 Listing Policy indicates that information available to the Water Boards need not be solicited if that information remains available for the 303(d) assessment. Specifically, the 2015 Listing Policy cites "Discharge Monitoring Reports," the very same NPDES reports that are uploaded to CIWQS at the requirement of the Water Boards, as data that can be utilized for the 303(d) assessment if those reports remain available to the Water Boards. NPDES data from Discharge Monitoring Reports uploaded to CIWQS were available to the State Water Board for the 2020-2022 303(d) assessment and could be used without soliciting the public for the data.	See response to comment 027.05.
027.11	The State Water Board considers it is not feasible to require that federal datasets be required to be uploaded to CEDEN and that the State Water Board would translate such datasets into a usable format for the 303(d) assessment. The 2020 Integrated Report data solicitation[3] noted the following: *"What if I have already submitted data to federal systems like U.S. EPA 's Water Quality Exchange?* *We recognize that federal, tribal, and other entities submit data directly to the U.S. EPA following the water quality exchange framework and it is not feasible to require that those datasets also be uploaded into CEDEN Consequently, Water Board staff will pull data directly from the National Water Quality Portal (https://www.waterqualitydata.us) which*	See response to comment 027.05.

No.	Comment	Response
	connects to the Water Quality Exchange as well as other federal databases and attempt to translate that data into a CEDEN compatible format for use in the Integrated Report process. Datasets will only be used for the California Integrated Report if they conform to the minimum data elements and quality requirements outlined in Enclosures 2 and 4." This excerpt from the solicitation notes the State Water Board considers it is not feasible to require entities that have submitted data to the National Water Quality Portal to also submit this data to CEDEN. Indeed, there are many LOEs in the 2020-2022 administrative record that incorporate data compiled by the State Water Board from the National Water Quality Portal. If this consideration is applicable to entities that have submitted data to the National Water Quality Portal, it should also be extended to the public and private agencies throughout California that submit their NPDES data to CIWQS at the requirement of the Water Boards. Footnote 3: State Water Resources Control Board. 2019. *Revised Notice of Public Solicitation of Water Quality Data and Information for the 2020 Integrated Report – Clean Water Act 305(b) Surface Water Quality Assessment and the 303(d) List of Impaired Waters. Letter from K. Mogus. May 2.*	
027.12	The State Water Board utilized Discharge Monitoring Reports during previous 303(d)-listing cycles that were not uploaded to CEDEN. For the 2014-2016 303(d) assessment, data was utilized from Discharge Monitoring Reports for the City of Stockton's Regional Wastewater Control Facility for compliance	The 2014-2016 Integrated Report data requirements are not comparable to the 2020-2022 Report due to changes in the Listing Policy. The Listing Policy was amended in 2015 to define all readily available data and information for the development of the 303(d) List as data and

No.	Comment	Response
	monitoring with the facility's NPDES permits, even though the data were not uploaded to CEDEN. For example, Decision ID 60793 (Nitrate, Delta Waterways [Stockton Ship Channel]) utilizes measurements of nitrate "*collected as part of a discharger self monitoring report for NPDES Permit# CA0079 l 38, WDR Orders# R5-2002-0083 and R5-2008-0l 54."* Other listing decisions for the Stockton Ship Channel also rely upon the NPDES monitoring data from the City's Discharge Monitoring Reports and most of the data used for these decisions was not available in CIWQS, but rather contained in spreadsheets available in the Water Board's files. The utility of NPDES data for the State Water Board 303(d) assessment is thus demonstrated in these past listings decisions and the barriers to its use are even lower now that it can be access within minutes from the CIWQS database.	information that can be submitted to CEDEN (Section 6.1.1). Also, see response to comment 027.05.
027.13	The District's DO measurements are generated with the QA/QC control required by the Water Boards and these procedures have been audited by Central Valley Water Board staff. Past and current NPDES permits issued to the District have consistently required that field measurements, including measurements of DO, be made under a Quality Assurance-Quality Control (QA/QC) program that conforms to USEP A guidelines or procedures approved by the Central Valley Water Board. *"In the event a certified laboratory is not available to the Discharger for any onsite field measurements such as pH, dissolved oxygen, turbidity, temperature, and residual chlorine, such analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-*	The State Water Board appreciates the District's monitoring efforts and their efforts to conform to QA/QC requirements. Also, see response to comment 027.05.

No.	Comment	Response
	Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program/or any onsite field measurements such as pH, dissolved oxygen, turbidity, temperature, and residual chlorine must be kept onsite in the treatment facility laboratory and shall be available for inspection by Central Valley Water Board staff The Discharger must demonstrate sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform these field measurements. The Quality Assurance-Quality Control Program must conform to US. EPA guidelines or to procedures approved by the Central Valley Water Board." (Central Valley Water Board, Order RS-2017-0085, attachment E, p. E-2) The District has made available their QA/QC program manual to Central Valley Water Board staff and implementation of the program is audited annually by Board staff during enforcement inspections. As with monitoring data for the City of Stockton cited in Rationale 5 (above), DO measurements made by the District on Carson Creek and Deer Creek are of sufficient quality to be utilized in the 303(d) assessment.	

Letter 28: S. Wayne Rosenbaum, Environmental Law Group, LLW

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028.01	These comments focus on two items identified in the 2020-2022 California Integrated Report (Clean Water Act Section 303(d) List and 305(b) Report). Specifically, the comments relate to the decision by the Regional Water Quality Control Board, Region 9 ("RWQCB"), and the subsequent recommendations by State Water Resource Control Board ("SWRCB") staff in at least one case[1] for the State Board to approve the following two decisions: • Decision ID 111651, listing Escondido Creek on the 303(d) List for iron; • Decision ID 111247, listing the Lower Santa Margarita River on the 303(d) List for iron; and • Decision ID 111660, listing Escondido Creek on the 303(d) List for phosphorus. For the reasons below, we do not believe there is substantial evidence[2] to support the decision to add these two water bodies to the 303(d) List for iron and phosphorus.[3] Footnote 1: As described in greater detail below, the State Board staff does not appear to have made a listing recommendation in the case of Decision ID 111247. Footnote 2: Findings made by the Regional Board must be supported by substantial evidence, which requires a "reasonable factual basis" in the record as a whole. (In the Matter of the Petition of Stinnes-Western Chemical Corp., Order No. 86-16 at pp. 6-7 (SWRCB 1986); Cal. Youth Authority v. State Personnel Bd. (2002) 104 Cal.App.4th 575, 586.) "'Substantial evidence' is relevant evidence that a	Changes to listing recommendations were not made in response to this comment. A summary of listing recommendations are as follows: Decision ID 111651 (Escondido Creek for iron) – This listing recommendation is based on the MUN beneficial use not being met based on total iron concentrations. Six of eight samples exceeded the secondary MCL. Decision ID 111247 (Lower Santa Margarita River for iron) - This listing recommendation has been deleted due to latitude and longitude errors in the data provided. The data were corrected and represent San Luis Rey River. The new Decision ID for the San Luis Rey River, Lower (west of Interstate 15) is 132056, which is based on LOE ID 233425 for the WARM beneficial use. Zero of six samples exceeded the threshold. Decision ID 111660 (Escondido Creek for phosphorus) - This listing recommendation is based on the COLD/WARM beneficial use not being met. Phosphorus concentrations in 135 of 422 samples exceed the water quality objective. Decision ID 114090 (Adobe Creek for iron) – This listing recommendation is based on the MUN beneficial use not being met based on total iron concentrations. Eleven of the 20 samples exceeded the secondary MCL. Decision ID 114767 (Rainbow Glen for iron) – This listing recommendation is based on the MUN beneficial use not

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	reasonable mind might accept as adequate to support a conclusion." (Cal. Youth Authority, supra, at pp. 584-585.) Footnote 3: While these comments focus on Decision ID 111651 and Decision ID 111247, we believe that Decision IDs 114090 (Adobe Creek), 114767 (Rainbow Glen), 111421 (Temecula Creek), and 114746 (Via Milpas) suffer from similar deficiencies and should be remanded to Regional Water Board Staff for further clarification and consideration.	being met based on total iron concentrations. Eight of the 34 samples exceeded the secondary MCL. Decision ID 111421 (Temecula Creek for iron) – This listing recommendation is based on the MUN beneficial use not being met based on total iron concentrations. Fourteen of the 30 samples exceeded the secondary MCL. Decision ID 114746 (Via Milpas for iron) – This listing recommendation is based on the MUN beneficial use not being met for total iron concentrations. Four of the eight samples exceeded the secondary MCL. The number of exceedances out of the number of samples is the primary evidence which supports these listing recommendations. The listing recommendations are made in accordance with the Listing Policy Section 3.1 – Numeric Water Quality Objectives and Criteria for Toxicants in Water, which provides that numeric water quality objectives for toxicant pollutants (in this case 0.3 mg/L for iron), including maximum contaminant levels where applicable, are exceeded when the number of exceedances supports rejection of the null hypothesis as presented in Table 3.1.
028.02	Decision ID 111651 – Decision to list Escondido Creek on the 303(d) List for iron. As a preliminary matter, it is difficult to identify the basis for the decision to list Escondido Creek on the 303(d) List for iron. The Draft Staff Report provides no specific discussion for this decision, but merely references that additional data is	Changes to listing recommendations were not made in response to this comment. The recommendation to list Escondido Creek for iron is due to the MUN beneficial use not being met based on total iron concentrations, found in three lines of evidence. All samples were analyzed for the dissolved and total fractions of iron. The dissolved fractions were used to assess aquatic life

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	available. (See Section 6.4.) Thus, the only information available to evaluate the decision is provided in Appendix B: Statewide Waterbody Fact Sheets. Unfortunately, the Fact Sheets do not provide sufficient information to support this decision. The Fact Sheet for Decision ID 111651 states, "Six lines of evidence are available in the administrative record to assess this pollutant." However, it is difficult to identify what these six lines of evidence are. Following the introductory section, the Fact Sheet lists 14 Line of Evidence "LOE" ID numbers: 73597, 142768, 143021, 143038, 142681, 142785, 142733, 142857, 142626, 142807, 142803, 142568, 142628, and 73598. Of these 14 LOEs, five are associated with the Municipal and Domestic Supply Beneficial Use ("MUNI") (LOEs 73597, 142681, 142785, 142568, and 142628); four are associated with Warm Freshwater Habitat Beneficial Use ("WARM") (LOE 142768, 142857, 142807, 142803); and five are associated with Cold Freshwater Habitat Beneficial Use ("COLD") (143021, 143038, 142733, 142626, and 73598). The LOEs rely on anywhere from 15 to 33 data points. The data relied on comes from eight separate dates: 1. Sample 1 collected on May 4, 2009 (analyzed for total iron); 2. Sample 2 collected on May 24, 2011 (analyzed for total and dissolved iron); 3. Sample 3 consisting of 2 – 6 samples collected on September 24, 2014 (analyzed for total and dissolved iron); 4. Sample 4 consisting of 2 – 8 samples collected on November 1, 2014 (analyzed for total and dissolved iron);	beneficial uses (WARM and COLD), as the threshold is based on the dissolved iron concentration. The total fractions were used to assess the MUN beneficial use, as the objective is based on the total concentration of iron. The justification to support these listing recommendations are as follows: The data used for the listing recommendation are found in LOE 73597 (1/1 exceedances), LOE 142681(5/6 exceedances) and LOE 142628 (0/1 exceedances). There are a total of 6 exceedances in 8 samples, collected at different stations and on different dates, from 2009 to 2015. The following provides additional detail. • LOE 73597 includes 1 sample, collected at Station 904S00537 on 5/4/2009, and analyzed for total iron. • LOE 142681 includes 6 samples, collected at Station ESC-MLS on 9/24/2014, 11/1/2014, 11/22/2014, 1/8/2015, 3/2/2015 and 5/6/2015, and analyzed for total iron. • LOE 142628 includes 1 sample, collected at Station 904S12185 on 5/24/2011, and analyzed for total iron. For September 24, 2014, the three samples in the data reference that have the collection time 4:09 include one "Grab" sample type and two "MS1" sample types. The "Grab" sample type is the water sample collected from Escondido Creek and is included in the sample count for determining listing status. The "MS1" sample type is a matrix spike, which is used for laboratory quality assurance and quality control. A known quantity of analyte is added to sample

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	5. Sample 5 consisting of 6 samples collected on November 22, 2014 (analyzed for total and dissolved iron); 6. Sample 6 consisting of 1 – 2 samples collected on January 8, 2015 (analyzed for total and dissolved iron); 7. Sample 7 consisting of 1 – 2 samples collected on March 2, 2015 (analyzed for total and dissolved iron); and 8. Sample 8 consisting of 2 – 6 samples collected on May 6, 2015 (analyzed for total and dissolved iron).[4] The Fact Sheet then states, "six of the eight samples exceed the water quality threshold for the MUNI. One of eight samples exceed the water quality threshold for the WARM/COLD." Is this two Lines of Evidence? Or is staff only relying on the six samples that exceed the water quality threshold for municipal beneficial use, and thus that is the six lines of evidence? Of the 14 LOEs provided, only five LOEs (73597, 14308, 142681, 142857, and 73598) state that the samples exceeded the beneficial use criteria, so is that five Lines of Evidence? Thus, as a preliminary matter, the public is not properly informed and cannot provide adequate comment if the Fact Sheet a) does not adequately identify the LOEs on which the decision relies, and b) does not adequately identify which data is relied upon. Further clarification regarding the Lines of Evidence and the data relied upon must be provided to demonstrate that substantial evidence supports listing Escondido Creek for iron on the 303(d) List. Moreover if, as Appendix K to the Draft Staff report implies, it is the intention of the RWQCB to establish an iron TMDL and incorporate it into the Basin Plan, the methodology that has been utilized to	water and analyzed to measure method performance and determine whether there are interferences caused by the specific sample matrix. These results are not counted in the samples used to determine listing status. The other MUN LOEs (142768 and 142803) contain dissolved iron concentration data, for the same dates and stations as in the newer total iron MUN LOEs. The dissolved data were not used to assess MUN as explained above. Escondido Creek was also assessed for the WARM and COLD beneficial uses based on LOEs #73598, #142733 and #142626. These LOEs contain dissolved fraction iron data. The dissolved fraction LOEs for WARM contain the same information as the LOEs for COLD, and therefore, only one set of LOEs were included in the listing recommendation to avoid double counting. Additionally, total fraction LOEs were available but not used for assessing the WARM and COLD beneficial because dissolved data were available for the same locations and dates. Three lines of evidence were used to assess MUN, and three lines of evidence were used to assess WARM and COLD. Therefore, the listing recommendation assessor chose to state that "Six lines of evidence are available in the administrative record to assess this pollutant." The commenter's point that it is difficult to understand the basis of a listing recommendation is appreciated as it provides this opportunity to describe the LOEs and iron

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	recommend a 303(d) listing does not comport with the requirements set forth in Chapter 1 of the Basin Plan for the adoption of such amendments. Footnote 4: Six dates reference a range of samples (i.e., 1 – 8 samples) because on each date, all samples were collected at the exact same time. For example, on September 24, 2014, there are three results for total iron and three results for dissolved iron, but all samples were collected at 4:09. Are these three samples (analyzed for total and dissolved iron), six separate samples, or are the results averaged for each date and only one result for total and dissolved values is considered because the samples were collected at the same time? Given this difficulty, for those LOEs that rely on the data from these six dates, it is unclear which data are relied on or how this data is synthesized. Another issue / possibility is that the six LOEs are as follows: two relating to Domestic supply (total iron and dissolved iron); two relating to cold freshwater use (total iron and dissolved iron); and two relating to warm freshwater use (total iron and dissolved iron). However, no water quality standard associated with these three beneficial uses have a standard based on dissolved iron, so it is unclear how or why dissolved iron is considered. Finally, it is noted that it was extremely difficult to locate and identify the data relied on. The "Field, Habitat, Sediment, Toxicity, Water data for the 2020/2022 integrated report in Region 9" was an extremely difficult document to use to find the supporting data. One page of the spreadsheet contained 55,000 lines of data. Finding the iron data applicable for Escondido Creek required a search of every line of data for the ESC-MILS sampling station, which was more than 2,200	data assessment process in more detail for Escondido Creek. Please see Principal Response 4.3 for a detailed discussion of the supporting information for the recommendations that is available to the public, and future efforts for additional public transparency. The public notice released on May 20, 2021, informed the public of recommended listings and delistings, including the detailed Fact Sheets for each recommendation. The Fact Sheets describe the evidence that supports the recommendations. The Water Boards are also required to respond to all comments received in writing before the State Water Board considers adopting the statewide 303(d) list at a public hearing (Section 6.2 of the Listing Policy). Therefore, the commenter is properly informed of recommended listings via the public notice released May 20, 2021 (https://www.waterboards.ca.gov/board_info/calendar/docs/2021/july/notice_2020-22integratedrpt.pdf) and the remainder of the listing process. In addition, stakeholders are encouraged to contact the appropriate Regional Water Quality Control Board, or staff at the State Water Board, to discuss any concerns with listing recommendations, assessment methodologies, or overall process. Additionally, for a description of the Integrated Report process, reference Section 2 of the Staff Report. *Appendix K – San Diego Regional Water Board – New Waterbody – Pollutant Combination Listings and Delistings* is a summary document that presents all recommended listings and delistings specific to the San Diego Region. Appendix K does not prioritize TMDL development for impaired waters and a listing on the

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	lines of data. Each of those lines then had to be reviewed for iron data and synthesized into its own chart. This level of effort demonstrates that the data is not presented in a manner that satisfies Environmental Justice concerns, which is intended to ensure that general members of the public can access and understand the information presented.	303(d) list is not an amendment to the Basin Plan. The San Diego Regional Water Board has not prioritized iron in Escondido Creek for TMDL development, and will evaluate the impairment in accordance with the Impaired Waters Policy. See response to comment 28.09 for additional discussion. The LOEs referenced in Footnote 4 used in the listing recommendations and the corresponding samples are as follows: LOE 73597 includes 1 sample, collected at Station 904S00537 on 5/4/2009, and analyzed for total iron. LOE142681 includes 6 samples, collected at Station ESC-MLS on 9/24/2014, 11/1/2014, 11/22/2014, 1/8/2015, 3/2/2015 and 5/6/2015, and analyzed for total iron. LOE 142628 includes 1 sample, collected at Station 904S12185 on 5/24/2011, and analyzed for total iron. For September 24, 2014, the three samples in the data reference that have the collection time 4:09 include one “Grab” sample type and two “MS1” sample types. The “Grab” sample type is the water sample collected from Escondido Creek and is included in the sample count for determining listing status. The “MS1” sample type is a matrix spike, which is used for laboratory quality assurance and quality control. A known quantity of analyte is added to sample water and analyzed to measure method performance and determine whether there are interferences caused by the specific sample

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		matrix. These results are not counted in the samples used to determine listing status. For concerns related to data accessibility, please see principal response 4.3 for Data Transparency and Readily Available Data.
028.03	Listing based on municipal use The first part of Decision ID 111651 states the following Regional Board Conclusion: "This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy."[5] The RWQCB Decision Recommendation then states, "After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should be placed on the section 303(d) List because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem." The first beneficial use for which Escondido Creek is evaluated is for a water quality criteria for MUNI (although Escondido Creek is currently not used for this purpose). The standard applied is the California Secondary MCL of .3 mg/L for iron. The basis for this standard is from the San Diego Basin Plan ("Basin Plan"), which in the 1970s identified many waterbodies for possible municipal use. As part of that effort, the Basin Plan says the following about iron: "Iron may be present in water due to natural origin, corrosion of metallic iron and its alloys by water in the presence of oxygen, and industrial waste discharges containing iron. Iron is undesirable in domestic water supplies because it causes	Changes to listing recommendations were not made in response to this comment. MUN is an existing designated beneficial use for Escondido Creek (See Table 2.2 in the Basin Plan). The Sources of Drinking Water Policy (State Water Board Resolution No. 88-63), established that all surface waters and ground waters are suitable or are potentially suitable for municipal or domestic supply, with limited exceptions. The water quality objective for iron applicable to Escondido Creek is provided on Page 3-27, in Table 3-2, and in Table 3-6 of the Basin Plan. (See, e.g. San Diego Water Board Counsel's letter to commenter dated August 6, 2021.) Changes to existing beneficial uses and water quality objectives in the Basin Plan require a Basin Plan Amendment. Therefore, a better forum for raising concerns about uses and objectives Escondido Creek is the triennial review of the San Diego Region Basin Plan. The triennial review is the mechanism for setting priorities for projects to amend the Basin Plan. The iron objective is used to protect the MUN beneficial use for human health. A separate threshold is used to assess attainment of the WARM/COLD aquatic life beneficial use in accordance with Section 6.1.3 of the Listing Policy.

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	unpleasant tastes, deposits on food during cooking, stains and discolors laundry and plumbing fixtures. The secondary drinking water standard for iron is 0.3 mg/l." Basin Plan, p. 3-25. Nothing in this paragraph identifies iron as causing harm to human health, aquatic life, or the environment. There is no other discussion of iron in the Basin Plan. Footnote 5: Section 3 of the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (the "Listing Policy") states that "Water segments shall be placed on the section 303(d) List if any of the following conditions are met." The Policy then states the following 11 criteria under which a water segment can be listed: 1) Numeric Water Quality Objectives and Criteria for Toxicants in Water; 2) Numeric Water Quality Objectives for Conventional or other Pollutants in Water; 3) Numerical Water Quality Objectives or Standards for Bacteria Where Recreational Uses Apply; 4) Health Advisories; 5) Bioaccumulation of Pollutants in Aquatic Life Tissue; 6) Water/Sediment Toxicity; 7) Nuisance; 8) Adverse Biological Response; 9) Degradation of Biological Populations and Communities; 10) Trends in Water Quality; and 11) Situation-Specific Weight of Evidence. The link in the Draft Staff Report for 2020-2022 Integrated Report for Clean Water Act Sections 303(d) and 305(b), dated June 4, 2021, provides a link to the Water Quality Control Policy adopted September 30, 2004, and amended February 3, 2015. If there is an updated version of this policy, it was not provided in the Draft Staff Report and was not located on the State Water Resources Control Board website.	Finally, the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List, dated March 27, 2015, is the controlling policy for the assessment program (https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2015/020315_8_amendment_clean_version.pdf). Section 3.1 – Numeric Water Quality Objectives and Criteria for Toxicants in Water provides that numeric water quality objectives for toxicant pollutants (in this case 0.3 mg/L for iron), including maximum contaminant levels where applicable, are exceeded when the number of exceedances supports rejection of the null hypothesis as presented in Table 3.1. Iron is defined as a toxicant in Section 7 for the Listing Policy. Also, see response to comment 028.14

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028.04	The RWQCB Conclusion for this decision states, "The pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy. The Section 3.1 criteria states, "Numeric water quality objectives for *toxic* pollutants, including maximum contaminant levels where applicable, *or* California/National Toxics Rule water quality criteria are exceeded as follows: Using the [data guidelines] Table 3.1." (Italics added.) First, iron has not been identified in the Basin Plan as a toxic pollutant. The only reference in the Basin Plan to iron deals with aesthetics not toxicity. Second, as written, the language in Section 3.1 only includes maximum contaminant levels if they are toxic pollutants. The language does not say, "Numeric water quality objectives for toxic pollutants <u>and</u> maximum contaminant levels" (underline added). The only reasonable reading of this language is that the only MCLs intended to be addressed by Section 3.1 are Primary MCLs. The only reference to iron in the Basin Plan is as a Secondary MCL. Iron is not identified in the Basin Plan as toxic. Thus, adding Escondido Creek to the 303(d) List because of exceedances of a non-toxic secondary MCL does not qualify for consideration under the criteria stated in Section 3.1.[6] Footnote 6: It is also unclear if the data relied upon in the Fact Sheet exceeds the standard set in the Basin Plan. The Fact Sheet says that the data satisfies the quality and quantity requirements of Sections 6.1.4 and 6.1.5 of the Listing Policy. However, Table 3-2 in the San Diego Basin Plan (which is the only basis for the application of the 0.3 mg/L municipal use standard for Escondido Creek) states, "Concentrations not to be exceeded more than 10% of the time during any one-year period." The data set includes one sample from 2009, one	Changes to listing recommendations were not made in response to this comment. Table 3.1 in the Listing Policy notes, "Application of the binomial test requires a minimum sample size of 16. The number of exceedances required using the binomial test at a sample size of 16 is extended to smaller sample sizes." Therefore, if two (or more) exceedances are found in fewer than 16 samples, it shall be listed. Iron is a metal and therefore defined as a toxicant in Section 7 for the Listing Policy. The Listing Policy (Section 7, page 27) states "TOXICANTS include priority pollutants, metals, chlorine, and nutrients." Please see response to comment 028.02 for additional details regarding the data relied upon in the Waterbody Fact Sheet. Also, see principal response 4 for Data and Analysis Transparency, and Readily Available Data. In regards to the statement regarding the time averaging over a one year period, insufficient information is available to show that the sample exceedances rate was only limited to 10 percent of the time during the one year period in which the respective samples were taken. As a result, the samples were assessed in accordance with Table 3.1 of the Listing Policy. Shall information be provided to show that the exceedances were less than 10 percent of the time during a one-year period, the data will be reassessed.

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	sample from 2011, three sets of samples from 2014 and three sets of samples from 2015. Either the RWQCB staff or the SWRCB staff must make a finding whether application of Table 3.1 in the Listing Policy is appropriate given the specific exceedance metric stated in Table 3-2 in the Basin Plan. Furthermore, Table 3.1 in the Listing Policy states, "Application of the binomial test requires a minimum sample size of 16." The sample size relied on for this decision appears to be less than 16.	
028.05	Second, the criteria also applies to "California / National Toxics Rule water quality criteria." The "Water Quality Objective / Criterion" listed for LOEs 73597, 142681, 142785, 142568, and 142628 all state: "The California Secondary MCL for iron is 0.3 mg/L (Water Quality Control Plan for the San Diego Basin)." Then the "Objective / Criterion Reference" all provide a link called "Maximum Contaminant Levels for organic and inorganic chemicals. CCR Title 22"; the link then goes to the California Regulations Related to Drinking Water. Drinking Water standards do not fall under the "California / National Toxics Rule." That rule was promulgated by EPA to fill a gap in California water quality standards for priority toxic pollutants. Again, iron has not been identified in the Basin Plan as a toxic pollutant. It is only included for aesthetic reasons.	See response to comment 028.03 and 028.04.
028.06	The RWQCB Decision Recommendation asserts that the water body-pollutant combination should be placed on the section 303(d) List because "applicable water quality standards are exceeded and a pollutant contributes to or causes this problem." However, Section 3.1 does not apply to	Changes to listing recommendations were not made in response to this comment. In California, water quality standards consist of beneficial uses of water, water quality objectives, and anti-degradation policies. For iron in Escondido Creek, the applicable water quality standard

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	any “water quality standards”; it only applies to water quality objectives for toxic pollutants. Thus, to the extent the final decision relies on exceedances of the .3 mg/L standard stated in the Basin Plan, the decision does not provide substantial evidence that there has been an exceedance of a water quality objective for toxic pollutant as required by Section 3.1.	is the iron beneficial use and the iron water quality objective. Since iron is a toxicant per the Listing Policy as described in response to comment 028.04, Section 3.1 of the Listing Policy is the appropriate section of the Listing Policy to use to assess iron data. See response to comment 028.03 for additional information.
028.07	If staff asserts that exceedances of non-toxic MCLs are a reason to list a water body on the 303(d) List, even though that is contrary to the clear language in Section 3.1, this does not automatically apply to Secondary MCLs. The Secondary MCL adopted in the Basin Plan derives from EPA’s National Secondary Drinking Water Regulations that set non-mandatory water quality standards for various parameters, including iron. EPA does not enforce these secondary MCLs; they are merely established guidelines to assist public water systems in managing their drinking water for aesthetic considerations such as taste, color, and odor. California Code of Regulation Title 22 section 6449(a) provides, “The secondary MCLs shown in Tables 64449-A and 64449-B shall not be exceeded in the water supplied to the public by community water systems.” (Underline added.)[7] Footnote 7: We further note that the use of a secondary MCL for iron as a basis for establishing a water quality objective appears to unique to the San Diego Regional Water Quality Control Board basin plan. The RWQCB should be required to explain the basis for this unique application of a secondary MCL before the SWRCB concurs in any 303(d) listing in reliance of same.	Changes to listing recommendations were not made in response to this comment. See response to comment 028.03. Table 3-9 of the Water Quality Control Plan for the San Diego Region includes the secondary MCL for iron as a water quality objective. Additionally, basin plans in other regional water quality control boards in California also include water quality objectives set at levels consistent with Secondary MCLs. The Water Board is not required to explain the basis for an existing water quality objective during the development of the Integrated Report. The Integrated Report is not used to establish, revise, or refine any water quality objective or beneficial use. However, the use of Secondary MCLs are set at levels to prevent adverse tastes and odors in waters of the state and prevent nuisance conditions. Exceedances of Secondary MCLs may increase the cost of drinking water treatment or result in additional monitoring by water purveyors, which may impact ability to provide municipal water supply. Additionally, there is often uncertainty as to whether the ambient water is used for untreated, individual water supply systems that are separate from a community water system. In other words, treatment may not always be

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		available prior to use or in some circumstances treatment requirements may be waived.
028.08	This distinction is important. While certain water bodies were assigned beneficial uses in the 1970s, since that time several new permits have been adopted which incorporate both Basin Plan Water Quality Objectives and TMDLs. For example, the General Construction Storm Water Permit and the General Industrial General Storm Water Permit potentially incorporate water quality objectives stated in Basin Plans, and potentially associated TMDLs. The issue of whether the secondary MCL standard of .3 mg/L for iron should be applied to permittees under either the Industrial General Permit or the Construction General Permit located in the San Diego area is currently under consideration. To incorporate such a standard would require industrial and construction permittees to clean storm water to a drinking water standard set for aesthetic reasons, not for human health or aquatic life reasons.[8] Footnote 8: It should also be noted that listing these water segments as impaired based on the Secondary MCL for iron would create an underground zoning regulation effectively prohibiting any new business, including minority or women owned businesses, from opening a facility subject to the IGP in these water sheds pursuant to IGP VII.B. Such a result appears to conflict with the SWRCB's stated goals regarding Environmental Justice. "Environmental Justice principles call for the fair treatment and meaningful involvement of all people regardless of race, color, national origin or income, in the development, adoption, implementation, and enforcement of all environmental laws, regulations, and policies that affect	The more appropriate venue to comment upon the General Construction Storm Water Permit and the General Industrial Storm Water Permit is during the revision of those permits. The 303(d) list is not a rulemaking process and there is no direct regulatory effect nor does the 303(d) list create an underground zoning regulation. The listing of a waterbody-pollutant combination as impaired results in the development of a TMDL or alternative for the listed waterbody-pollutant combination. The TMDL, alternative restoration program, or subsequent permit are the forum for considering sources and requirements.

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	every community's natural surroundings, and the places people live, work, play, and learn." https://www.waterboards.ca.gov/water_issues/programs/outreach/education/justice.html	
028.09	Section 3 in the Listing Policy states that, "In developing the list, the state shall evaluate all existing readily available water quality-related data and information." Such information should include the impact setting a TMDL could have on other permits. We ask that Staff and the Board consider such information, and whether adding this TMDL will create conflicting standards for multiple permits. Furthermore, it is our opinion that the Secondary MCL for iron in the Basin Plan, which is not based on any finding that iron is toxic, does not qualify for consideration under criteria 3.1 of the Listing Policy and thus Escondido Creek should not be on the 303(d) List for iron based on this criteria.[9] Footnote 9: There is no indication in the Fact Sheet that any other criteria listed in Section 3.1 through Section 3.11 of the Listing Policy was considered in evaluating this iron.	The 303(d) list is not a regulatory action, nor does it automatically establish a TMDL. See response to comment 028.08. The Integrated Report identifies the waterbody as impaired using the assessment threshold. Waterbodies that are identified as impaired are addressed in accordance with Resolution 2005-0050, the Water Quality Control Policy for Addressing Impaired Waters: Regulatory Structure and Options (Impaired Waters Policy). This can include the use of a traditional TMDL if warranted. At this time the San Diego Regional Water Board has not prioritized the development of a TMDL for iron in Escondido Creek. See response to comment 028.03 and 028.04 regarding the use of the iron water quality objective.
028.10	Listing based on cold and warm freshwater use The introduction section in the Fact Sheet for Decision ID 111651 states that "One of eight samples exceed the water quality threshold for the WARM/COLD beneficial use." As discussed above, it is impossible to identify this set of eight samples, and the one sample which exceeded this alleged water quality threshold.	Changes to listing recommendations were not made in response to this comment. The recommendation to place Escondido Creek on the 303(d) list was based on the MUN beneficial use not the WARM/COLD beneficial uses. Please see response to comment 028.02 for more information.

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	Further, two LOEs state that some data exceeded the Cold Freshwater Habitat Beneficial Use Threshold: LOE 143038 and 73598. However, the Water Quality Criterion (LOE 73598) or the Evaluation Guideline (LOE 143038) relied upon for these two LOEs are incorrect.	However, the following corrections were made to LOEs in which iron data were assessed for attainment of WARM/COLD beneficial uses: LOE 73598 (1/1 exceedances) in Data Ref3812 – The incorrect threshold was used and LOE 73598 was replaced with LOE 233352. LOE 233352 describes 0/1 exceedances with the corrected threshold. No revisions were made to the use of LOE 142733 (0/1 exceedances) in Data Ref4895 and LOE 142626 (0/6 exceedances) in Data Ref4900. Finally, LOE 143038 was not used in the assessment since it contains total iron concentration data.
028.11	LOE 73598 lists the Water Quality Objective/Criterion as the Basin Plan, and states, "The Iron objective for the protection of aquatic life according to Table 3-2 for Escondido Creek within the Carlsbad Hydrologic Unit is 0.3 mg/L." However, nowhere in Table 3-2, nor anywhere else in the Basin Plan, is there a statement that the 0.3 mg/L objective for iron is "for the protection of aquatic life." This statement is factually incorrect. This LOE should be removed. LOE 143038 states the Evaluation Guideline for COLD as follows: "National Recommended Water Quality Criteria Continuous Concentrations are intended [to] protect aquatic organisms from chronic exposures (expressed as 4-day average concentration) in freshwater. The evaluation guidelines for iron is 1,000 ug/L to protect warm freshwater habitat." (Underline added.) However, LOE 143038 is evaluating data for cold freshwater habitat, not warm.	See the response to 028.14 for a description of the water quality objectives and thresholds used to assess iron data for Escondido Creek. Changes to listing recommendations were not made in response to this comment. The commenter is correct that the incorrect threshold was used to assess iron data for the attainment of the COLD beneficial uses. LOE 73598 was replaced with LOE 233352. LOE 233352 describes 0/1 exceedances with the corrected threshold. LOEs 143038 and 142857 were not used in the listing recommendation, as they contain total iron data (only the dissolved iron data were used to assess the WARM/COLD beneficial use). Please see response to comment 028.02 for more information above assessment of dissolved and total iron data.

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	Furthermore, the data relied upon contains data for six days. Of these six days, the data for three days shows that there were no exceedances 1,000 ug/L; only three non-consecutive days contained data above the 1,000 ug/L threshold. It is unclear how the data produced resulted in two exceedances of a 4-day average concentration. Similarly, only LOE 142857 indicated data exceedances for WARM. That LOE also references the Evaluation Guideline as: "National Recommended Water Quality Criteria Continuous Concentrations are intended [to] protect aquatic organisms from chronic exposures (expressed as 4-day average concentration) in freshwater. The evaluation guidelines for iron is 1,000 ug/L to protect warm freshwater habitat." Again however, the data relied upon contains data for six days. Of these six days, the data for three days shows that there were no exceedances 1,000 ug/L; only three non-consecutive days contained data above the 1,000 ug/L threshold. It is unclear how the data produced resulted in two exceedances of a 4-day average concentration. The sample set also appears to have less than 16 samples, which are required for Table 3.1 in the Listing Policy.	The only LOEs used to assess WARM/COLD are: LOE 142626, 233352 and 142733. These were found to support the WARM/COLD beneficial use. Additional LOEs were generated but not used. The additional LOEs allowed staff to track dissolved data and total fraction data in case different samples were analyzed for different fractions. In this instance, all samples were analyzed for both fractions and only one set of LOEs were therefore used to prevent double counting. The recommendation to place Escondido Creek on the 303(d) list for iron was based on nonattainment for the MUN beneficial use. See response to 028.04 for discussion of sample size.
028.12	The Guideline Reference for both cold and warm freshwater use is a link to the "National Recommended Water Quality Criteria. United States Environmental Protection Agency. Office of Water. Current as of 08/03/2016." That document states a threshold of 1,000 ug/L for iron. However, while this document may have been updated by EPA in 2016, the publication year for this standard is 1986. Since 1986, and even since 2016, significant information regarding the impacts of iron on aquatic life has developed.	The referenced report "Improving the EPA Multi-Sector General Permit for Industrial Stormwater Discharges" does discuss the use of iron criteria. However, it does not discuss the appropriateness of using the current chronic iron criteria in receiving waters. The discussion is regarding the appropriateness of using the chronic iron criteria as a benchmark for discharges of stormwater, and recommends an acute criterion be used as a stormwater discharge benchmark instead. The report states:

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	Specifically, to assist in updating the Multi-Sector General Industrial Stormwater Permit, in 2019 the National Academies of Sciences prepared a report called, "Improving the EPA Multi-Sector General Permit for Industrial Stormwater Discharges." After reviewing the available information, the committee found there is limited evidence showing acute effects in aquatic organisms from concentrations of 1.0 mg/L of iron in storm water and recommended that the benchmark for iron in the Multi-Sector General Permit be suspended. In 2020, when EPA updated the Multi-Sector General Permit for storm water discharge, it completely removed iron as a benchmark from that permit. Thus, it is inconsistent to assert that, on the one hand, EPA asserts that 1.0 mg/L is a threshold for iron to protect aquatic life, while on the other hand, EPA has embraced recent research finding that 1.0 mg/L is not a necessary standard for iron to protect aquatic organisms.	"Given the intermittent nature of stormwater exposures and the likelihood of dilution and attenuation within watersheds, organisms will be exposed to chemicals from stormwater discharges over short time frames. For stormwater benchmarks based on aquatic life criteria, the committee recommends the use of criteria designed to protect against short-term or intermittent exposures when they exist, which, to date, have generally been acute criteria." And: "The committee suggests that EPA reevaluate the aquatic toxicology literature for acute toxicity studies of iron and develop a benchmark for iron based on acute toxicity." The report recommends removal of the chronic iron benchmark from stormwater permits until an acute threshold is identified. The report does not attempt to assess the appropriateness or accuracy of the chronic threshold for the protection of receiving waters, nor suggest the chronic threshold be modified.
028.13	As noted above, Section 3 of the Listing Policy states, "In developing the [303(d)] list, the state shall evaluate all existing readily available water quality-related data and information." When reaching its decision, did RWQCB or SWRCB staff consider these new studies regarding impacts on aquatic organisms from iron, and the change in approach adopted by EPA? If yes, why did it disregard these findings? If no, the listings must be remanded to staff for further consideration.	See response to comment 028.12.

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028.14	Additionally, and perhaps more importantly, it is unclear which criteria was used to evaluate this beneficial use. The Regional Board conclusion stated that the pollutant was being considered for placement on the 303(d) List under section 3.1 of the Listing Policy. As noted above, this criteria applies to "Numeric water quality objectives for toxic pollutants . . . or California/National Toxics Rule water quality criteria . . . ." As discussed above, there is no numeric water quality objective for iron stated in the Basin Plan associated with the protection of aquatic life. Nor has the RWQCB announced any action to adopt such an objective in conformity with Chapter 1 of the Basin Plan. Moreover, a secondary MCL established for aesthetics does not meet the requirements set forth in Section 3.1 for toxic pollutants.	Changes to listing recommendations were not made in response to this comment. Escondido Creek iron data were assessed for the following: 1) MUN beneficial use attainment was assessed using the secondary drinking water quality standard for iron is provided on Page 3-27 and in Table 3-6 and Table 3-2 of the Basin Plan, which makes it a water quality objective. The water quality objective is the same as the Secondary California Maximum Contaminant Level for iron, which is 0.3 mg/L (Title 22 of the California Code of Regulations). Samples were analyzed for total iron concentration. 2) WARM/COLD beneficial use attainment was assessed using the National Recommended Water Quality Criteria Continuous Concentration, which is intended to protect aquatic organisms from chronic exposures (expressed as 4-day average concentration) in freshwater. The threshold is 1,000 ug/L (applies to both warm and cold freshwater habitat) and samples were analyzed for dissolved iron concentration. See responses to comments 028.02 and 028.03 for additional information.
028.15	It is noted that several LOEs state the following for the "Water Quality Objective / Criterion": "All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life." Based on this narrative language, RWQCB staff has then essentially incorporated a 1986 US EPA standard for iron for aquatic life into the Basin	The water quality objective used to assess toxic substances is the narrative objective in the Basin Plan which states, "All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator

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	Plan as a numeric limit. This is an improper rule making. Numeric water quality objectives cannot be incorporated into a Basin Plan through this process by circumventing the Basin Plan Amendment Process set forth in Chapter 1 of the Basin Plan.[10] The Regional Board has had ample opportunity to add a numeric limit for iron for the protection of aquatic life into the Basin Plan; it has not done so. Numeric limits should not be incorporated in this "behind the scenes" process, especially when the standard is 35 years old and new information regarding iron impacts on aquatic life is available. Other criteria are more applicable to this type of beneficial use (for example, Sections 3.5 or Section 3.8 of the Listing Policy), but do not appear to have been considered for this Decision. However, use of a US EPA standard, incorporated into the Basin Plan based on a narrative description is not appropriate for the application of Section 3.1 of the Listing Policy. Footnote 10: Pursuant to the Chapter 1 of the Basin Plan such an amendment would require, among other things: 1) advance notice of the plan amendment as required by California Water Code 13244; 2) CEQA notice of filing; 3) request for comments by interested persons prior to drafting of the amendment; and 4) a hearing notice specific enough to allow an effective opportunity for public participation. To the best of our knowledge none of these requirements have been complied with to incorporate a 1986 US EPA standard for iron for aquatic life into the Basin Plan as a numeric limit.	organisms, analysis of species diversity, population density, growth anomalies, bioassays of appropriate duration, or other appropriate methods as specific by the Regional Board (page 3-33)." Section 6.1.3 of the Listing Policy states that "narrative water quality objectives shall be evaluated using evaluation guidelines" and provides guidance for selection of numeric evaluation guidelines. The requirements specify that the evaluation guidelines must be applicable and protective of the beneficial use, linked to the pollutant under consideration, scientifically-based and peer reviewed, well described, and identify a range above which impacts occur and below which no or few impacts are predicted. In summary, U.S EPA's recommended evaluation guideline for iron meets the criteria for the Listing Policy (https://www.epa.gov/wqc/national-recommended-water-quality-criteria-aquatic-life-criteria-table). The evaluation guideline used for this assessment is to determine impairment and does not establish a water quality objective and does not require a Basin Plan amendment.
028.16	Moreover, it contravenes the State Board's Environmental Justice Commitment which states "The Regional and State Water Boards are committed to the equitable treatment of all Californians. We seek to meaningfully involve stakeholders	See principal response 4.3 and individual responses to comments 028.02 & 028.15.

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	and other interested parties in our decision-making processes and provide open and transparent opportunities for people to participate in public meetings, hearings, and workshops that may affect their environment and health." https://www.waterboards.ca.gov/water_issues/programs/outreach/education/justice.html [11] Footnote 11: Last accessed July 13, 2021	
028.17	In light of the incorrect factual information relied on by LOE 73598, the lack of information demonstrating that the data exceeded a 4-day average concentration of 1,000 ug/L, the failure to consider new information showing limited evidence of effects in aquatic organisms from iron concentrations at 1,000 ug/L, and the improper application of section 3.1 of the Listing Policy to evaluate this issue, there is no substantial evidence to support the decision to list Escondido Creek on the 303(d) List for iron based on alleged exceedances of a water quality criteria for warm or cold freshwater uses. The proposed listing must be remanded back to RWQCB staff for further consideration. In conclusion, for the reasons stated above, insufficient information is provided to properly evaluate this decision. Furthermore, based on the information provided, there is no substantial evidence that supports a decision that Escondido Creek should be added to the 303(d) list for iron based on Section 3.1 of the Listing Policy. This proposed listing should be remanded back to RWQCB staff to address the issues discussed herein.	Changes to listing recommendations were not made in response to this comment. The recommendation to list Escondido Creek for iron is due to the non-attainment of the MUN beneficial use and iron water quality objective based on total iron concentrations. Please see response to comments 028.02 and 028.14 regarding data assessed for attainment of the WARM/COLD beneficial uses, and response to comment 028.01 for application of Section 3.1 of the Listing Policy. The recommended listing will not be remanded to the San Diego Regional Water Board. In addition, please see Section 3 of the Staff Report which describes that the State Water Board is administering the listing process for all regions for the 2020-2022 Integrated Report.

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028.18	Decision ID 111247 – decision to list the Santa Margarita River (Lower) on the 303(d) List for iron. Similar to the discussion above, and in contravention of the State Board's policy n Environmental Justice,[12] it is difficult to identify the basis for the decision to list Santa Margarita River (Lower) on the 303(d) List for iron. The Draft Staff Report provides no specific discussion for this decision, but merely references that additional data is available. (See Section 6.4.) Thus, the only information available to evaluate the decision is provided in Appendix B: Statewide Waterbody Fact Sheets, but the Fact Sheets do not provide sufficient information to support this decision. Footnote 12: The Water Boards are sensitive to the changing diversity of our State's population and culture. We strive to include those who have been disproportionately impacted by pollution in decision-making processes through meaningful public outreach and engagement approaches and the development of multi-language, easy-to-consume informational materials. [Emphasis added.] https://www.waterboards.ca.gov/water_issues/programs/outreach/education/justice.html	Decision ID 111247 (Lower Santa Margarita River for iron) was deleted due to latitude and longitude errors in the data provided. The data were corrected and represent San Luis Rey River. The new Decision ID is 132056 for San Luis Rey River, Lower (west of Interstate 15), which is based on LOE 233425 for the WARM beneficial use. Zero of six samples exceeded the threshold. The listing recommendation is "Do not List". Please see principal response 4.3 regarding noticing and data transparency efforts associated with the Integrated Report. Also, see response to comment 028.02.
028.19	The Fact Sheet for Decision ID 111247 states, "Four lines of evidence are available in the administrative record to assess this pollutant." However, it is unclear what these four lines of evidence are as the Fact Sheet lists six LOE ID numbers: 142837, 142971, 142751, 142767, 142859, and 142646. Of these 6 LOEs, two are associated with the Muni (LOE 142971, 142767); two are associated with Warm Freshwater Habitat Beneficial Use (LOE 142859, 142646); and two are	The Water Boards use an automated system to develop LOEs for assessments and, as a result, some lines of evidence are generated that are not ultimately used in the listing recommendation. For example, if a pollutant has a threshold based on total fraction and both total and dissolved fraction data are available, then total fraction data is given preference and used. If only dissolved fraction data are available for the same threshold, then

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	associated with Cold Freshwater Habitat Beneficial Use (142837, 142751). The LOEs themselves rely on anywhere from 6 to 55 data points. The data relied on comes from six separate dates: 1. 7 – 14 samples collected on January 20, 2017 (analyzed for total and dissolved iron); 2. 5 – 10 samples collected on January 31, 2017 (analyzed for total and dissolved iron); 3. 3 – 7 samples collected on February 19, 2017 (analyzed for total and dissolved iron); 4. 4 – 8 samples collected on March 30, 2017 (analyzed for total and dissolved iron); 5. 5 – 10 samples collected on May 9, 2017 (analyzed for total and dissolved iron); and 6. 2 – 6 samples collected on May 31, 2017 (analyzed for total and dissolved iron).[13] The Fact Sheet then states, "Six of the six samples exceed the water quality threshold for MUNI. Zero of the six samples exceed the water quality threshold for WARM/COLD." Of the six LOEs provided, three have samples that exceeded the beneficial use criteria. Thus, the basis for establishing four lines of evidence is unclear. Footnote 13: All dates reference a range of samples (i.e., 2 – 6 samples) because on each date, all samples were collected at the exact same time. For example, on January 20, 2017, there are seven results for total iron and seven results for dissolved iron, but all samples were collected at 5:37. Are these seven separate samples or are the results averaged and only one result is considered because the samples were	the dissolved fraction data will be used in the assessment. All LOEs generated are presented in the Waterbody Fact Sheets rather than just the LOEs used for the assessment to allow for full transparency on data availability and assessment. Specific information on the referenced decisions are included below: Decision ID 111247 (Lower Santa Margarita River) - This decision was deleted due to latitude and longitude errors in the data provided. The data were corrected and represent San Luis Rey River. The new Decision ID is 132056 for San Luis Rey River, Lower (west of Interstate 15), which is based on LOE 233425 for the WARM beneficial use. Zero of six samples exceeded the threshold. The new listing recommendation is "Do not List". The data provided in the data reference (ref4900) includes total and dissolved concentrations for laboratory results that include analyses run on "Integrated" Sample Types and "MS1" Sample Types. "Integrated" samples are samples collected from the surface water and analyzed to determine beneficial use attainment. "MS1" Sample Types are matrix spikes used only for quality assurance and quality control purposes and not used to represent the waterbody's conditions. As per the Listing Policy, Section 6.1.5.6, samples collected less than 7 days apart shall be averaged, and considered a single sample for Integrated Report analyses. For example, the data reference includes five samples collected on January 31, 2017, at 7:20 for dissolved iron. Two are "MS1" Sample Type, and therefore, not used to assess San Luis Rey River. Three are "Integrated" Sample Type,

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	collected at the same time? Given this difficulty, it is unclear which data are relied on or how this data is synthesized. Additionally, as no water quality standard associated with any beneficial uses have a standard based on dissolved iron, is it unclear if or why dissolved iron is considered. It is again noted that in contravention of the procedure set forth in Chapter 1 of the Basin Plan and the State Board Environmental Justice policy, it was extremely difficult to locate and identify the data relied on. The "Field, Habitat, Sediment, Toxicity, Water data for the 2020/2022 integrated report in Region 9" was an extremely difficult document to use to find the supporting data. One page of the spreadsheet contained 55,000 lines of data. Finding the iron data applicable for the Santa Margarita River required a search of every line of data for the SLR-MILS sampling station, which was more than 2,700 lines of data. Each of those lines then had to be reviewed for iron data and synthesized into its own chart. This level of effort demonstrates that the data is not presented in a manner that satisfies Environmental Justice concerns, which is intended to ensure that general members of the public can access and understand the information presented. (It is noted that one cannot just search for "iron" as the names of the environmental consultants have the word "environmental" in them, which in turn has "iron", causing thousands of responses.)	which were averaged and counted as one sample. No total iron samples were used to assess San Luis Rey River. For footnote 13 – The samples provided in data reference (ref4900) for January 20, 2017, at 5:37 were submitted with incorrect latitude and longitude coordinates. They represent the lower San Luis Rey River and have been included in LOE 233425. Since San Luis Rey River does not have the MUN beneficial use, only the dissolved fraction of iron was considered to assess the WARM beneficial use. In regards to the number of samples, there are eight results in the data file for dissolved iron. Four are for Sample Type "MS1", which is a laboratory matrix spike for quality assurance and quality control purposes and not used to represent the San Luis Rey River in the decision. Four are for Sample Type "Integrated," which were collected from the San Luis Rey River and analyzed for dissolved iron concentrations. These results were averaged (as per Listing Policy, Section 6.1.5.6) and counted as a single sample in the analyses, as they were collected on the same day. The remainder of the iron data submitted (total fraction) were not used to assess the lower San Luis Rey River. These include six samples, four "MS1" and two "Integrated" sample types. Please see principal response 4.3 regarding noticing and data transparency efforts associated with the Integrated Report.

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028.20	The first part of Decision ID 111247 states the following Regional Board Conclusion: "This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy." The introduction section continues with the following Recommendation: "After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should be placed on the section 303(d) list because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem." Importantly however, the State Board does not make a Decision Recommendation.	See the response to comment 028.18.
028.21	As noted above, the Regional Board conclusion states that the "pollutant is being considered for placement on the 303(d) List under Section 3.1 of the Listing Policy." The Regional Board Decision Recommendation then states, "After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should be placed on the section 303(d) list because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem." The Section 3.1 criteria states, "Numeric water quality objectives for toxic pollutants, including maximum contaminant levels where applicable, or California/National Toxics Rule water quality criteria are exceeded as follows: Using the [data guidelines] Table 3.1." (Italics added.) As discussed above, the basis for the California Secondary MCL of 0.3 mg/L for iron in the Basin Plan (designated in the 1970s) was to address aesthetic concerns for potable water. Nothing in the Basin Plan identifies iron as causing harm to human health, aquatic life, or the environment. Nothing in the	For clarification on the application of the water quality objective for iron and MUN, see response to comments 28.02, 28.03, and 028.14. For clarification on data relied upon for Decision ID 111247, see response to comments 028.19.

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	Basin Plan identifies iron as toxic. Furthermore, this Secondary MCL is not listed as a contaminant of concern under California / National Toxics Rule. Therefore, this standard cannot be evaluated under Section 3.1 of the Listing Policy.[14] Footnote 14: It is also unclear if the data relied upon in the Fact Sheet exceeds the standard set in the Basin Plan. The Fact Sheet says that the data satisfies the quality and quantity requirements of Sections 6.1.4 and 6.1.5 of the Listing Policy. However, Table 3-2 in the San Diego Basin Plan (which is the only basis for the application of the 0.3 mg/L municipal use standard for Escondido Creek) states, "Concentrations not to be exceeded more than 10% of the time during any one-year period." The data set includes one sample from 2009, one sample from 2011, three sets of samples from 2014 and three sets of samples from 2015. Either the RWQCB staff or the SWRCB staff must make a finding whether application of Table 3.1 in the Listing Policy is appropriate given the specific exceedance metric stated in Table 3-2 in the Basin Plan. Furthermore, Table 3.1 in the Listing Policy states, "Application of the binomial test requires a minimum sample size of 16." The sample size relied on for this decision appears to be less than 16, but as the data used is unclear, this is also unknown.	
028.22	Furthermore, as also discussed above, if staff asserts that exceedances of non-toxic MCLs are a reason to list a water body on the 303(d) List, even though that is contrary to the clear language in Section 3.1, this does not automatically apply to Secondary MCLs. The Secondary MCL adopted in the Basin Plan derives from EPA's National Secondary Drinking Water Regulations that set non-mandatory water	For clarification on the application of the water quality objective for iron and MUN, see response to comments 28.02 - 028.14.

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	quality standards for various parameters, including iron. EPA does not enforce these secondary MCLs; they are merely established guidelines to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color, and odor. California Code of Regulation Title 22 section 6449(a) provides, "The secondary MCLs show in Tables 64449-A and 64449-B shall not be exceeded in the water supplied to the public by community water systems." (Underline added.)	
028.23	Again, this distinction is important. While these water bodies were assigned beneficial uses in the 1970s, since that time several new permits have been adopted which incorporate both Basin Plans and TMDLs. For example, the General Construction Storm Water Permit and the General Industrial General Storm Water Permit potentially incorporate water quality objectives stated in Basin Plans, and potentially associated TMDLs. The issue of whether the secondary MCL standard of .3 mg/L for iron should be applied to permittees under the Industrial General Permit located in the San Diego area is currently under consideration. To incorporate such a standard would require industrial permittees to clean storm water to a drinking water standard set for aesthetic reasons, nor for human health or aquatic life reasons. Section 3 in the Listing Policy states that, "In developing the list, the state shall evaluate all existing readily available water quality-related data and information." Such information should include the impact a 303(d) listing or ultimately setting a TMDL could have on other permits. We ask that Staff and the Board consider such information, and whether adding this listing will create conflicting standards for multiple permits. Furthermore, it is our opinion that the Secondary MCL for iron	For clarification on application to permits and TMDL prioritization, see response to comment 028.02 and 028.08 and 028.29. See response to comment 28.03 regarding the use of iron as a water quality objective.

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	in the Basin Plan, which is not based on any finding that iron is toxic, does not qualify for consideration under criteria 3.1 of the Listing Policy and thus the Santa Margarita River should not be on the 303(d) List for iron based on this criteria.[15] Footnote 15: There is no indication in the Fact Sheet that any other criteria listed in Section 3.1 through Section 3.11 of the Listing Policy was considered in evaluating this pollutant. This letter also does not address the data relating to cold or warm fresh habitat because the Fact Sheet does not indicate that data for this beneficial use was relied upon as a line of evidence for the recommendation. However, to the extent data for this beneficial use is relied upon for this decision, we incorporate the same comments as those for Escondido Creek.	
028.24	Decision ID 111660 – decision to list Escondido Creek on the 303(d) List for phosphorus. Many of the same difficulties referenced in the discussions above appear in valuating this Decision. First and foremost, it is impossible to identify and evaluate the data relied upon for this Decision. The Fact Sheet states that "Twenty-six lines of evidence are available in the administrative record to assess this pollutant. One hundred and thirty-five of the 422 samples exceed the threshold." Unlike the two decisions discussed above, there actually were 26 Lines of Evidence then listed in the Fact Sheet. However, at least 12 of these LOEs rely on multiple spreadsheets containing thousands of lines of data which need to be searched for multiple sample locations, from which the data must then be synthesized. This level of effort – to even identify the data relied upon for just one Decision –	Changes to listing recommendations were not made in response to this comment. The commenter references a standard for providing transparent and easy to consume information. The Water Boards strive to provide information in a meaningful and transparent manner, and all of the underlying data relied upon was made available to the public for review consistent with the Listing Policy. The public notice released on May 20, 2021, informed the public of recommended listings and delistings and the Water Boards are required to respond to all comments received in writing before the State Water Board shall consider adopting the statewide 303(d) list (Section 6.2 of the Listing Policy).

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	does not meet the standard of providing transparent and easy to consume information.[16] Footnote 16: The comments here should also be considered for the following waterbodies and Decisions: Adobe Creek (114100), Buena Vista Creek (111559), Campo Creek (113537), Carmel Valley Creek (1144821), Keys Creek (113460), Loma Alta Creek (111526), Los Penasquitos Creek (111715), Lusardi Creek (115024), Margarita Glen (114763), Murphy Canyon (114161), Otay River (112129), Rainbow Glen (114770), Rose Creek (111787), Sanya Ysabel Creek (113937), Shepherd Canyon Creek (114852), Soledad Canyon (111754), Sweetwater River (115396), Tijeras Canyon (114055), Tijuana River (114232), Unnamed Tributary to French Valley (114744), Via Milpas (114749), and Willow Glen (114756). We note that it took staff almost 40 hours to identify, review and evaluate data for the two Lines of Decision relating to iron discussed in this letter. The public was given six weeks to review this information and provide public comment. Given the inadequate manner in which the underlying data was provided, it was physically impossible to identify, review and evaluate the data for multiple pollutants at multiple locations in the time provided. The public should not be required to dedicate such time to even find the data on which the Board is relying to make such significant recommendations as these.	In addition, the phosphorus data came from CEDEN, which is available to the public to use regardless of the Integrated Report comment period duration. In reference to Decision ID 111660 and decisions referenced in footnote 16, see the following clarifications that provide the specific LOEs used to support the listing recommendations. Finally, staff at the State and Regional Water Boards appreciate and acknowledge the expertise and organization needed to assess water quality impairment, especially when there are multiple beneficial uses assessed for a single pollutant. Staff at the State and Regional Water Boards are committed to improving data transparency, and some of the efforts to do so are outlined in principal response 4.3for Data Transparency and Readily Available Data. Also, stakeholders are encouraged to contact the appropriate Regional Water Quality Control Board, or staff at the State Water Board, to discuss any concerns with listing recommendations, assessment methodologies, or overall process. Decision ID 111660 (Escondido Creek for phosphorus): This listing recommendation is based on the COLD/WARM beneficial use not being met. Phosphorus concentrations in 135 of 422 samples exceed the water quality objective. LOEs were generated for both WARM and COLD, which have the same objective, but only counted once. Decision ID 114100 (Adobe Creek for phosphorus): This listing recommendation is based on the COLD/WARM beneficial use not being met. Phosphorus concentrations

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		in 7 of 17 samples exceed the water quality objective. LOEs were generated for both WARM and COLD, which have the same objective, but only counted once. Decision ID 111559 (Buena Vista Creek for phosphorus): This listing recommendation is based on the WARM beneficial use not being met. All of the LOEs were used in the decision, and 35 of 133 samples exceed the water quality objective. Decision ID 113537 (Campo Creek for phosphorus): This listing recommendation is based on the COLD/WARM beneficial use not being met. Phosphorus concentrations in 9 of 9 samples exceed the water quality objective. LOEs were generated for both WARM and COLD, which have the same objective, but only counted once. Decision ID 114821 (Carmel Valley Creek for phosphorus): This listing recommendation is based on the WARM beneficial use not being met. All of the LOEs were used in the decision, and 85 of 90 samples exceed the water quality objective. Decision ID 113460 (Keys Creek for phosphorus): This listing recommendation is based on the WARM beneficial use not being met. All of the LOEs were used in the decision, and 2 of 6 samples exceed the water quality objective. Decision ID 111526 (Loma Alta Creek for phosphorus): This listing recommendation is based on the WARM beneficial use not being met. All of the LOEs were used in the decision, and 7 of 31 samples exceed the water quality objective.

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		Decision ID 111715 (Los Penasquitos Creek for phosphorus): This listing recommendation is based on the WARM beneficial use not being met. All of the LOEs were used in the decision, and 55 of 189 samples exceed the water quality objective. Decision 115024 (Lusardi Creek for phosphorus): This listing recommendation is based on the WARM beneficial use not being met. All of the LOEs were used in the decision, and 20 of 79 samples exceed the water quality objective. Decision ID 114763 (Margarita Glen for phosphorus): This listing recommendation is based on the COLD/WARM beneficial use not being met. Phosphorus concentrations in 11 of 18 samples exceed the water quality objective. LOEs were generated for both WARM and COLD, which have the same objective, but only counted once. Decision ID 114161 (Murphy Canyon for phosphorus): This listing recommendation is based on the WARM beneficial use not being met. All of the LOEs were used in the decision, and 3 of 3 samples exceed the water quality objective. Decision ID 112129 (Otay River for phosphorus): This listing recommendation is based on the WARM beneficial use not being met. All of the LOEs were used in the decision, and 32 of 131 samples exceed the water quality objective.

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		Decision ID 114770 (Rainbow Glen for phosphorus): This listing recommendation is based on the COLD/WARM beneficial use not being met. Phosphorus concentrations in 48 of 69 samples exceed the water quality objective. LOEs were generated for both WARM and COLD, which have the same objective, but only counted once. Decision ID 111787 (Rose Creek for phosphorus): This listing recommendation is based on the WARM beneficial use not being met. All of the LOEs were used in the decision, and 18 of 89 samples exceed the water quality objective. Decision ID 113937 (Santa Ysabel Creek (below Sutherland Reservoir) for phosphorus): This listing recommendation is based on the COLD/WARM beneficial use not being met. Phosphorus concentrations in 3 of 4 samples exceed the water quality objective. LOEs were generated for both WARM and COLD, which have the same objective, but only counted once. Decision ID 114852 (Shepherd Canyon East for phosphorus): This listing recommendation is based on the WARM beneficial use not being met. All of the LOEs were used in the decision, and 2 of 2 samples exceed the water quality objective. Decision ID 111754 (Soledad Canyon for phosphorus): This listing recommendation is based on the COLD/WARM beneficial use not being met. Phosphorus concentrations in 2 of 4 samples exceed the water quality objective. LOEs were generated for both WARM and

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		COLD, which have the same objective, but only counted once. Decision ID 115396 (Sweetwater River, Middle (between Sweetwater and Loveland Reservoirs) for phosphorus): This listing recommendation is based on the COLD/WARM beneficial use not being met. Phosphorus concentrations in 5 of 11 samples exceed the water quality objective. LOEs were generated for both WARM and COLD, which have the same objective, but only counted once. Decision ID 114055 (Tijeras Canyon for phosphorus): This listing recommendation is based on the COLD/WARM beneficial use not being met. Phosphorus concentrations in 2 of 3 samples exceed the water quality objective. LOEs were generated for both WARM and COLD, which have the same objective, but only counted once. Decision ID 114232 (Tijuana River, Upper (Cottonwood Creek confluence to 1st border crossing) for phosphorus): This listing recommendation is based on the WARM beneficial use not being met. All of the LOEs were used in the listing recommendation, and 2 of 2 samples exceed the water quality objective. Decision ID 114744 (Unnamed Tributary to French Valley for phosphorus): This listing recommendation is based on the WARM beneficial use not being met. All of the LOEs were used in the listing recommendation, and 3 of 3 samples exceed the water quality objective.

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		Decision ID 114749 (Via Milpas for phosphorus): This listing recommendation is based on the COLD/WARM beneficial use not being met. Phosphorus concentrations in 11 of 18 samples exceed the water quality objective. LOEs were generated for both WARM and COLD, which have the same objective, but only counted once. Decision ID 114756 (Willow Glen for phosphorus): This listing recommendation is based on the COLD/WARM beneficial use not being met. Phosphorus concentrations in 40 of 71 samples exceed the water quality objective. LOEs were generated for both WARM and COLD, which have the same objective, but only counted once.
028.25	Second, the Fact Sheet states that the Regional Board Recommendation is that, "After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should be placed on the section 303(d) list because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem." However, significantly, the State Board did not review the recommendation, and did not make its own recommendation to adopt this Decision.	The draft 2020-2022 Integrated Report was developed by staff at the State and Regional Water Boards. The Waterbody Fact Sheets, and all associated listing recommendations, are proposed for the State Water Board members to consider for adoption. See Section 3 of the Staff Report for additional information.
028.26	Third, the Fact Sheet says that "This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy." The introduction section continues with the following Recommendation: "After review of the available data and information, RWQCB staff concludes that the water body-pollutant combination should be placed on the section 303(d) list because applicable water	Changes to listing recommendations were not made in response to this comment. The Water Board interprets the 0.1 mg/L total phosphorus concentration as a numeric water quality objective that is separate from the narrative objective for Biostimulatory Substances (concentrations of nitrogen and phosphorus shall be below those which stimulate algae and emergent plant growth). (See, e.g.,

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	quality standards are exceeded and a pollutant contributes to or causes the problem." In the Water Quality Objective/Criterion section, all 26 LOEs state, "Concentrations of nitrogen and phosphorus, by themselves or in combination with other nutrients, shall be maintained at levels below those which stimulate algae and emergent plant growth. A desired goal in order to prevent plant nuisance in streams and other flowing waters appears to be 0.1 mg/L total P. Analogous threshold values have not been set for nitrogen compounds; however, natural ratios of nitrogen to phosphorus are to be determined by surveillance and monitoring and upheld. If data are lacking a ratio of N:P – 10:1, on a weight to weight basis shall be used (Water Quality Control Plan, San Diego Basin)." (Italics added.) This language appears on page 3-9 of the San Diego Basin Plan. Importantly, nothing in this language, nor any other language in the Basin Plan, states that phosphorus is toxic to humans or aquatic life. The language above provides a water quality goal, and that a goal to prevent a nuisance "appears to be" 0.1 mg/L total P. This language does not establish a water quality objective, nor does it make a finding that phosphorus is toxic. As noted above, the Fact Sheet says that "This pollutant is being considered for placement on the CWA section 303(d) List under section 3.1 of the Listing Policy." However, as also discussed above, Section 3.1 of the Listing Policy applies to, "Numeric water quality objectives for toxic pollutants, including maximum contaminant levels where applicable, or California/National Toxics Rule water quality criteria are exceeded as follows: Using the [data guidelines] Table 3.1." (Italics added.) A water quality goal established in a manner	finding no. 5 in San Diego Regional Water Board Resolution No. R9-2005-0036 and San Diego Regional Water Board Counsel's letter to commenter dated August 6, 2021.) This numeric water quality objective applies at any point in flowing waters and streams. The 0.025 mg/L numeric phosphorus objective applies to any point within a reservoir or other standing body, and the 0.05 mg/L numeric phosphorus objective applies in a stream where it enters a standing body. The objective goes on to state, "These values [including 0.1 mg/L total phosphorus] are not to be exceeded more than 10% of the time *unless studies of the specific water body in question clearly show that water quality objective changes are permissible and changes are approved by the Regional Board*. … [¶] Inland surface waters shall not contain biostimulatory substances in concentrations in excess of the *numerical objectives* in Table 3-2." The board has not approved any special studies for Escondido Creek. Thus, 0.1 mg/L total phosphorus is the controlling water quality standard for purposes of Section 3.1 of the Listing Policy. Any changes to the nitrogen to phosphorous ratio by the requesting party also require surveillance and monitoring to determine natural levels and must include a demonstration that the proposed concentrations will not cause eutrophication. Absent such studies, "a ratio of N:P = 10:1, on a weight to weight basis *shall* be used." This language is also included in the numerical objectives in Table 3-2. In this case (Escondido Creek), phosphorus and nitrogen are found in concentrations greater than the phosphorous

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	that appears to prevent a nuisance is not a statement that this pollutant (phosphorus) is a toxic pollutant. Nor does this goal fall under the California / National Toxics Rule. Thus, Section 3.1 of the Listing Policy cannot be used as the basis to make a finding that Escondido Creek, or any water body, should be added to the 303(d) List for phosphorus. Thus, the Basin Plan does not support the application of this criteria, and converting a water quality "desired goal" to a numeric water quality objective in this manner circumvents the process to create water quality objectives in the Basin Plan.[17] Footnote 17: We also note that even establishing a numeric water quality goal for phosphorus for the purpose of preventing plant growth nuisance is unique to the San Diego region and staff should provide further support for why such drastic limits are required in San Diego as opposed to the rest of the state. Additionally, the criteria relied on in the Fact Sheet says that, "natural ratios of nitrogen to phosphorus are to be determined by surveillance and monitoring and upheld." Has the RWQCB even attempted to identify what these natural ratios are before proceeding with the TMDL process? If yes, what is that information? If not, why not? The Basin Plan also states that, "These values are not to be exceeded more than 10% of the time unless studies of the specific water body in question clearly show that water quality objective changes are permissible and changes are approved by the Regional Board." Has there been a finding that the data exceeds this criteria, and have there been findings about whether the data for any of the specific water bodies subject to these TMDLs are permissible? If yes, what are the basis of those findings? If not, why have such findings not been made?	and nitrogen numeric objectives. There are no studies that document the natural ratio of nitrogen to phosphorous for Escondido Creek should deviate from the 10:1 ratio in the Basin Plan. Therefore, the numeric objective for nitrogen is set at 1.0 mg/L. The Listing Policy defines "toxicants" to include nutrients (See page 27 of the Listing Policy). Clean Water Act Section 303(d) requires the state to list waters that are not meeting water quality standards and develop TMDLs for any impairing pollutants, whether or not toxicity is present. These requirements apply to *all* water quality standards, including "numeric criteria, narrative criteria, waterbody uses, and antidegradation requirements." (40 CFR 130.7(b)(3).) The Board took the 10% exceedance factor into account, using the binomial tables, in determining whether the Listing Policy required the water quality limited segment to be listed. The water quality studies that are part of the TMDL process may lead to alternative numeric nutrient endpoints (NNEs) that would serve as the basis for developing TMDL numeric targets, load allocations and wasteload allocations. The waterbody would be eligible for de-listing if it meets the NNEs. The term "nuisance" as used in the Basin Plan generally means conditions that make the waterbody unsuitable for beneficial uses. (Wat. Code, §13050, subd. (m).) This is clear from the introductory language to the Biostimulatory Substances objectives: "Excessive growth of algae and/or other aquatic plants can degrade water quality. Algal blooms sometimes occur naturally; however, they are

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		often the result of waste discharges or nonpoint source pollutants. Algal blooms depress the dissolved oxygen content of water and can result in fish kills. Algal blooms can also lead to problems with taste, odors, color, and increased turbidity. Floating algal scum and algal mats are also an aesthetically unpleasant nuisance. This general condition is known as eutrophication." (Basin Plan, p. 3-9.) In addition, harmful algal blooms that are toxic to humans, animals, and aquatic life are increasingly prevalent due to drought and climate change. Section 303(d) requires a waterbody segment to be listed if it is not meeting applicable standards. If the TMDL process shows that the standard is unnecessarily stringent, the board has the option to modify the standard rather than adopt a TMDL. (Water Quality Control Policy for Addressing Impaired Waters, p. 3.). See response to comment 28.09 for a full discussion.
028.27	Fourth, Section 3 in the Listing Policy states that, "In developing the list, the state shall evaluate all existing readily available water quality-related data and information." Such information should include the impact a 303(d) listing or setting a TMDL could have on other permits. Has there been any consideration of what impact, if any, adding these water bodies to the 303(d) List for phosphorus will have on other permits such as the General Industrial Storm Water Permit? In the Introduction part of the Fact Sheet, the Fact Sheet states that the source of phosphorus is "unknown." Recent data collected by Industrial Permittees have found that levels of phosphorus at 0.1 mg/L are non-industrial and merely exist in the background environment. Given the very low proposed concentration for phosphorus (0.1 mg/L), the fact that Staff	See response to comment 028.26. Section 6.1.1 of the Listing Policy requires the Regional Water Boards and State Water Board (collectively, "Water Boards") to actively solicit all readily available data and information. Section 6.1.1 also defines "all readily available data and information" as data and information that can be submitted into the California Environmental Data Exchange Network (CEDEN) or its successor database, as directed in the notice of solicitation. Accordingly, to administer the listing process, the Water Boards are required to review data and information submitted to CEDEN or its successor database. Data that cannot be submitted to CEDEN can be submitted to

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	has not identified a source, and the fact that such concentrations of phosphorus could be natural, is it appropriate for such TMDLs to be applied to other permits? We ask that Staff and the Board consider such information, and whether adding this listing will create conflicting standards for multiple permits.	the Water Boards per the instructions provided in the Data Solicitation Notice. The impact a 303(d) listings could have on other permits does not constitute "readily available information or data" within the meaning of the Listing Policy that is being assessed and considered by the State Water Board as required by Sections 6.1.1 and 6.1.2 of the Listing Policy. The 303(d) list is not a rulemaking process and there is no direct regulatory effect. The listing of a waterbody-pollutant combination as impaired results in the development of a TMDL or alternative for the listed waterbody-pollutant combination. The TMDL, alternative restoration program, or subsequent permit are the forum for considering sources and requirements. See also response to comment 028.09 for more information on the San Diego Regional Water Board's TMDL prioritization.
028.28	Finally, as mentioned above, if these water bodies are added to the 303(d) List, has the RWQCB considered the impact such listings could have on business development and zoning? Areas available for industrial use in San Diego County quite limited. Just for phosphorus alone, Region 9 is suggesting that 23 water bodies be added to the 303(d) List. Once this occurs, under Section VII.B. of the IGP, it will be nearly impossible for anyone, including minority or women owned businesses, to open industrial facilities if they discharge to any of these 23 water bodies. Adding these water bodies to the 303(d) List will remove business opportunities, affecting not only individuals, but potentially the cities in which these water bodies exist. Has the RWQCB considered if some of these cities will even have industrial	See comment response 28.08.

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	areas left once all of these new 303(d) listings occur? If the RWQCB has not yet considered this impact, we ask that this matter be remanded so they can do so.	
028.29	The information provided in the Fact Sheet is inadequate to support any Decisions that either Escondido Creek or the Santa Margarita River should be added to the 303(d) List for iron or phosphorus. As a preliminary matter, the majority of data relied upon is unintelligible. It is impossible to identify which pieces of data were relied upon for which purpose in contravention of the State Board's Environmental Justice policy. Similarly, it is difficult, if not impossible, to understand the "Lines of Evidence" relied upon for either water body for iron as the supporting LOEs do not appear to match with the Conclusions and Recommendations. To assert that there is substantial evidence to support a finding that a water body should be added to the 303(d) List, the evidence should be clear and easy to understand. This is not the case in any of these circumstances.	See responses to comments 028.02, 028.03, 028.14, 028.18, and 028.24. Also, see principal response 4.3 for Data Transparency and Readily Available Data.
028.30	Furthermore, for both Escondido Creek and the Santa Margarita River, the criteria in Section 3.1 of the Listing Policy has been improperly applied. The California Secondary MCL of 0.3 mg/L for iron listed in the Basin Plan is included for aesthetic reasons only; there is no information in the Basin Plan that this value has been included based on any findings that iron is toxic or causes harm to humans or the environment. Thus, as this value is not based on a toxic pollutant or a California Toxics Rule, Section 3.1 of the Listing Policy does not apply. Similarly, with respect to phosphorus, a water quality "desired goal" that "appears to be" appropriate	See responses to comments 028.04 and 028.26.

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	to prevent a nuisance is not a finding that phosphorus is toxic, and Section 3.1 of the Listing Policy does not apply.	
028.31	Additionally, for the cold and freshwater habitat beneficial use, staff cannot adopt US EPA guidance as a numeric effluent value based on narrative language in the Basin Plan when the Basin Plan itself does not include a numeric limit for iron based on aquatic life. The same is true for the "desired goal" for phosphorus. Creation of a 303(d) listing by incorporating limits that are not in the underlying Basin Plan is improper.	The Water Board is not proposing to adopt U.S. EPA guidance as a numeric effluent value through the adoption of the 303(d) list. Please see responses to comments 028.11 and 028.14 regarding iron and response to comment 28.26 regarding phosphorous.
028.32	Finally, although the Listing Policy requires staff to consider all information, there is no indication that staff has considered the impacts of a 303(d) listing or of setting a TMDL on other permits, nor is there any consideration of recent studies which have found that there is no evidence of impacts to aquatic life from iron concentrations at 1.0 mg/L.	See response to comment 028.12 and 028.09.
028.33	The information is insufficient, and quite frankly, unintelligible. To the extent the Fact Sheet can be understood, there is no substantial evidence that either Escondido Creek or the Santa Margarita River should be added to the 303(d) List based on iron or phospohrus The listings for these, and potentially other water bodies (see footnotes 3 and 16) should be removed and remanded back to RWQCB staff for further review in compliance with the Listing Policy, the Basin Plan, and the Water Board's Environmental Justice policy, as underscored by the fact that the State Board itself declined to make a recommendation about two of the three Decisions discussed above.	See principal response 4.3 for Data Transparency and Readily Available Data.

Letter 29: Christina Yee, U.S. EPA Region 9

No.	Comment	Response
029.01	The Environmental Protection Agency (EPA) appreciates the opportunity to comment on California's 2020-22 Integrated Report. EPA Region 9 commends the State Board staff for listing eleven water bodies in and around the Delta as impaired for temperature. This is an important issue for salmonid migration and the overall health of Central Valley Fall Run Chinook and endangered salmonid populations (Central Valley Steelhead and Central Valley Winter Run Chinook).	Comment noted.
029.02	EPA notes that the state's draft list of impaired waters does not identify Suisun Bay and Carquinez Straight as impaired for temperature impairments. On April 6, 2018, as part of its review of the 2014-16 Integrated Report EPA provided California with water temperature data indicating these waters are impaired. As these data were provided before the assessment period and data solicitation cut-off for the Draft 2020-2022 Clean Water Act 303(d) list (List) of impaired waters, these temperature data are considered readily available therefore the State Board must evaluate and assess for impairments in the 2020/2022 list of impaired waters. Where EPA finds that a state has not reasonably listed all impaired waters as required, the CWA and its implementing regulations require EPA to add such impaired waters to those CWA 303(d) lists.	In its approval letter for California's 2014/2016 303(d) list, U.S. EPA referenced continuous temperature data in Carquinez Strait and Suisun Bay and stated that data may indicate temperature impairments (thermal barrier to salmonid migration). The Water Board evaluated the available temperature data and found the data to not be spatially representative of the waterbodies; therefore, the data do not constitute sufficient evidence to make a listing determination at this time. Section 6.1.5.2 of the Listing Policy states that data should be spatially representative of a water body to assess water quality to determine impairment. "Spatial Representation Samples should be representative of the water body segment. To the extent possible, samples should represent statistically or in a consistent targeted manner the segment of the water body."

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		Table 1 of U.S. EPA's April 6, 2018, letter lists the two San Francisco Bay monitoring stations associated with their analysis. U.S. EPA used data from a single station to represent Carquinez Strait (5,657 acres or 8.8 square miles) and a single station to represent Suisun Bay (25,335 acres or about 40 square miles). In waterbodies as large and spatially heterogeneous as Suisun Bay and Carquinez Strait, a single station does not adequately represent the spatial representation along the surface nor at depths in which salmonids are found. The Carquinez Strait sensor is located near the water surface at a monitoring location that is about 700 feet from shore in a section of Carquinez Strait that is approximately 1.2 miles across. Moreover, there is a deep channel running through Carquinez Strait for which this surface monitoring location is not be representative. While this monitoring location may provide spatially representative data for certain analytes (like suspended sediment) that are reasonably well mixed both vertically and laterally, temperature values vary across the channel and at depth due to density stratification and warming near the shoreline. The monitoring station in Suisun Bay is also poorly located to represent temperatures throughout Suisun Bay. The sensor is 60 meters from shore and also located at the surface. As with the Carquinez Strait sensor, the Mallard Island sensor in Suisun Bay is located very close to shore so the data do not represent temperatures in the deep channel further from shore. Indeed, the Quality Assurance Project Plan for the data collection effort acknowledges this lack of vertical

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		representativeness as justification to sample temperature with bottom sensors. Data from bottom sensors have not been submitted and are not readily available.
029.03	EPA appreciates our collaborative partnership with the California Waterboards to protect public health and the environment.	Comment noted.

Letter 30: Joseph Draper, Fresno Metropolitan Flood Control District

No.	Comment	Response
030.01	The District identified an error in one San Joaquin River (Friant Dam to Mendota Pool) site location specified in multiple "Decision IDs" and multiple lines of evidence (LOE). The proposed listings include three Decision IDs for aluminum, arsenic, and boron that reference multiple LOEs site data from monitoring location "CAL WR_ WQX-A0452050". The dataset referenced in the Decision ID ("WOX data for the 2020/2022 integrated report in Region 5.") specifies a site description for the San Joaquin River location as "ANTELOPE C NR MO NR RED BLUFF" with latitude and longitude coordinates of 40.1082 and -122.1108. The data used for the LOEs is actually from a site several hundred miles north of the referenced San Joaquin River reach. The data used for these LOEs is then not appropriate for the San Joaquin River and the District requests that the proposed listings shown in Table 1 be removed.	The incorrect monitoring location identified by the commenter is confirmed. The monitoring station (CALWR_WQX-A0452050) was reassigned to the correct waterbody (CAR5453001020050602140817, San Joaquin River (Friant Dam to Mendota Pool)). As a result of the station reassignment, changes were made to LOEs and listing recommendations. These changes are provided in Appendix R: List of Central Valley Regional Water Board Station Location Revisions to Correct Mapping Error and Listing Recommendation Updates in the Proposed Final Staff Report. Also, please see response to comment 006.17, regarding the scope of the mapping error and the remedy.

Letter 31: Lisa Wooninck, Monterey Bay National Marine Sanctuary

No.	Comment	Response
031.01	MBNMS requests that data generators be given earlier access to the list of waterbodies proposed to be included in the assessment to identify any erroneous omissions early in the process. This will ensure all available data is considered for analysis. By the time the 303d list is provided for public comment, as in the last two updates, it is too late for stakeholders to make any meaningful changes to the list.	See principal response 4.2 for Data and Analysis Transparency, and Readily Available Data.
031.02	We are requesting again that Central Coast Long-term Environmental Assessment Network (CCLEAN) data be included in analysis for this 303d list update. We had the same request in the 2018 update that CCLEAN data be included in the analysis. We asked that CCLEAN data be analyzed off-cycle, because at that time there was clearly sufficient data to list the Monterey Bay for Polychlorinated Biphenyls (PCBs). While we recognize and appreciate the tremendous effort the State and Regional Water Board staff have undertaken, we were disappointed to learn that the CCLEAN data were again not included in this assessment of impaired waterbodies. The explanation from Water Board staff included multiple reasons related to data availability in the California Environmental Data Exchange Network (CEDEN). CCLEAN has been monitoring water, sediment and mussel tissue for pollutants of concern in the Monterey Bay since 2000. CCLEAN fulfills a significant component of the subscribing agencies'[1] compliance to their National Pollutant Discharge Elimination System (NPDES) monitoring commitments, under the direction of the Water Board, with an emphasis on monitoring of receiving water. CCLEAN has a robust monitoring program with a rigorous quality assurance	See principal response 4.2 for Data and Analysis Transparency, and Readily Available Data. Additionally, the long-standing efforts by CCLEAN to monitor water, sediment, and mussel-tissue are appreciated.

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	program, documenting multiple years of exceedances of the Ocean Plan Water Quality Objectives for persistent organic pollutants (POPs). Many of these POPs have been banned from use in California for decades. Footnote 1: City of Santa Cruz, City of Watsonville, Dynegy Moss Landing Power Plant, Monterey One Water, and Carmel Area Wastewater District	
031.03	We suggest agencies and data generators be given an opportunity during the initial filtering of data to review and comment on the complete list of waterbodies to be analyzed. Data generators are most familiar with the data and would identify early in the process if there are any omissions. Waiting until the process is complete and a draft is out for public comment is too late to make any meaningful changes in the draft 303d list. It is important to have an opportunity early in the process to ensure critical data sets are not filtered out erroneously.	See principal response 4.2 for Data and Analysis Transparency, and Readily Available Data.
031.04	We request that you ensure the CCLEAN data is included in the next review cycle. The CCLEAN program is an extremely valuable and informative monitoring program occurring in MBNMS and the data should be used by resource managers. Central Coast Water Board staff have indicated that the CCLEAN data will be included in the next cycle of updates to the 303d list. This will be off-cycle for the Central Coast region. According to CCLEAN data, since 2012, PCBs have exceeded the CA Ocean Plan objective 100% of the time at both monitoring sites. Dieldrin, Chlordanes and DDTs have	See principal response 4.2 for Data and Analysis Transparency, and Readily Available Data.

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	also exceeded the CA Ocean Plan objectives multiple times since 2001, and satisfy the criteria for listing on the 303d list.	
031.05	Evidence suggests that the source of these persistent pollutants is from watersheds draining into Monterey Bay. While listing these constituents on the 303d list is not the only solution to the problem, bringing attention to the water quality impairments may accelerate actions to mitigate the sources. Of the contaminants listed above, all appear to be trending downward in concentrations except for PCBs.	Comment noted.
031.06	We support your efforts and we will continue working with Water Board staff to improve water quality on the Central Coast.	Comment noted.

Letter 32: Lexie Bell, Morro Bay National Estuary Program

No.	Comment	Response
032.01	In reviewing the 2020 to 2022 Integrated Report (IR), we became aware that Chorro Creek, San Luisito Creek, Pennington Creek, and San Bernardo Creek were proposed to be listed for pH, in part based on data submitted by the MBNEP. We are providing a comment letter to request that our pH data be removed from the IR analysis. Data quality is of great importance to us because this ensures that the data is useful to our program and our partners. As we work with our data over time, occasionally we discover issues with submitted data. In the case of our pH data, we determined that this data set was not of adequate quality for inclusion in	Decisions for Chorro Creek, Pennington Creek, and San Bernardo Creek for pH (Decision IDs 109066, 109018, and 109108) were changed from "List" to "Do not List" recommendations. The listing recommendation for San Luisito Creek no longer has data associated with it, and therefore no longer has a recommendation for pH. Water Board staff removed the pH data from the Integrated Report analysis, per the commenter's request. The four named waterbodies are now "Do not List" recommendations or, in the case of San Luisito Creek,

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	CEDEN, and we halted pH data collection. Due to an internal miscommunication, the request to remove this data for 2010 to 2018 was delayed, resulting in it being included in the IR analysis. We are already working with SWRCB staff to remove this remaining pH data from CEDEN. Although our pH data from 2002 to 2010 is not currently in CEDEN, it apparently came into the IR process during a previous listing cycle and is included in this IR. It is important to this process to have increased transparency on what data from previous listing cycles is included in order to avoid this issue for future IR analyses.	there is no longer a listing recommendation. Also, please see principal response 4.2 for Data and Analysis Transparency, and Readily Available Data.
032.02	Additionally, it has come to our attention that some of our bioassessment data was not pulled by the SWRCB for inclusion in the 2020 to 2022 IR. This data is expensive and time-consuming to collect and load to CEDEN, and thus it was disappointing to hear that some of it would not be this type of data was available in CEDEN from groups like ours. We hope this oversight is corrected for future IR cycles. This is another example where greater transparency on what data is included in the IR would improve the process.	Thank you for bringing this to our attention. LOEs and listing recommendations using the bioassessment data were added. The bioassessment data resulted in a “Do not List” recommendation for these waterbodies: Dairy Creek, Los Osos Creek (Los Osos to Los Osos Creek Estuary), Los Osos Creek (upstream of Los Osos), and Pennington Creek. The additional data supported a “Do not Delist” recommendation for Chorro Creek. Also, see principal response 4.2 for Data and Analysis Transparency, and Readily Available Data.

Letter 33: Nader Shareghi, Mountain House Community District

No.	Comment	Response
033.01	Comment 1. Various Decision IDs. Trihalomethane (THM) Compounds-Old River (San Joaquin River to Delta-Mendota Canal; in Delta Waterways, southern portion) This comment pertains to the Decision IDs and lines of evidence (LOEs) listed below for Old River (San Joaquin River to Delta-Mendota Canal; in Delta Waterways, southern portion).Monitoring Station: CALWR_WQX-B9D81281401Decision ID: 126571; Pollutant: Chlorodibromomethane; LOE: 218236, 218211; Samples/Exceedances: 29/30, 0/30 Decision ID: 122757; Pollutant: Chloroform; LOE: 200672, 200705; Samples/Exceedances: 0/30, 26/30 Decision ID: 126572; Pollutant: Dichlorobromomethane; LOE: 218198, 218199; Samples/Exceedances: 0/30, 29/30 Decision ID: 122762; Pollutant: Total Trihalomethane (TTHM); LOE: 206615; Samples/Exceedances: 28/30. There are several issues with the LOEs used to support the above Decision IDs. 1. The monitoring station is not located in Old River. 2. The data are not representative of actual concentrations for the pollutants. 3. Incorrect water quality objectives are being used.	See response to comments 033.02, 033.03, and 033.04.

No.	Comment	Response
033.02	Monitoring Station LOEs listed above are for data from STORET, a compilation of monitoring data from the federal Water Quality Exchange database. Station "CALWR_ WQX-B9D81281401" used in the above LOEs is identified as "Cache Slough nr. Ryer Island gaging station" in the database, and the database latitude and longitude for this station confirm this location. Cache Slough is located in the northern portion of the Sacramento-San Joaquin Delta (Delta), nowhere in the vicinity of Old River. Therefore, this monitoring station is not appropriate for assessing water quality impairments in Old River and the proposed listing decisions for the above THM compounds need to be re-evaluated by the State Water Resources Control Board.	The incorrect monitoring location identified by the commenter is confirmed. The monitoring station (CALWR_WQX-B9D81281401) was reassigned to the correct waterbody (CAR5100000020080821102031, Cache Slough (in Delta Waterways, northern and northwestern portions)). As a result of the station reassignment, changes were made to LOEs and listing recommendations. These changes are provided in Appendix R: List of Central Valley Regional Water Board Station Location Revisions to Correct Mapping Error and Listing Recommendation Updates in the Proposed Final Staff Report. Also, please see response to comment 006.17, regarding the scope of the mapping error and the remedy.
033.03	Data Not Representative Data for the above listed THM compounds referenced in the LOEs was generated with an analytical method identified in the database as "5710 B ~ Trihalomethane Formation Potential." This analytical method is Standard Method 5710 B, titled "Formation of Trihalomethanes and Other Disinfection Byproducts." The method does not measure THM concentrations in the ambient surface water sample as collected. Rather, the sample is subject to chlorine dosage at the analytical laboratory in order to generate these compounds in the sample and, thus, identify the potential for the THM compounds to be formed during the drinking water treatment chlorine-disinfection process. Therefore, THM compound measurements produced with this method do not represent their concentrations in the waterbody and should not be used to assess water quality impairments in Old River. On this basis, the proposed listing	See response to comment 009.13.

No.	Comment	Response
	decisions for the above THM compounds need to be re-evaluated by the State Water Resources Control Board.	
033.04	Water Quality Objectives LOEs 200705 (Chloroform) and 206615 (Total Trihalomethane [TTHM]) incorrectly apply the drinking water maximum contaminant level (MCL) of 80 micrograms per liter as an applicable water quality objective. The LOEs incorrectly state that this drinking water MCL is incorporated by reference into the Central Valley Regional Water Quality Control Board's Water Quality Control Plan for the Sacramento and San Joaquin River Basins, Fifth Edition, Revised May 2018 (Basin Plan). The "Chemical Constituents" objective in the Basin Plan incorporates by reference drinking water MCLs in Title 22 of the California Code of Regulations as follows: Tables 64431-A (Inorganic Chemicals) and 64431-B (Fluoride) of Section 64431, Table 64444- A (Organic Chemicals) of Section 64444, and Tables 64449-A (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits) and 64449-B (Secondary Maximum Contaminant Levels-Ranges) of Section 64449. Drinking water MCLs for TTHM are contained with Table 64533-A of Section 64533 of Title 22, which is not incorporated by reference in the Basin Plan "Chemical Constituents" objective. Therefore, the TTHM MCL should not be applied as a water quality objective and the proposed listing decisions for the above THM compounds need to be re-evaluated by the State Water Resources Control Board.	See response to comment 009.13. LOEs 200705 and 206615 were removed from the draft assessments for the 2020-2022 Integrated Report. See response to comment 9.13. The commenter is correct that Table 64533-A of Section 64533 of Title 22 was not among those incorporated by reference into the Water Quality Control Plan for the Sacramento and San Joaquin River Basins and was incorrectly identified as a water quality objective. However, the Section 6.1.3 of the Listing Policy allows for the interpretation of narrative water quality objectives with evaluation guidelines that are applicable to and protective of the identified beneficial use, scientifically based and peer reviewed, and identify a range above which impacts will occur. The primary Maximum Contaminant Levels contained in Table 64533-A meet all of the requirements of Section 6.1.3 of the Listing Policy and are therefore appropriate for use in assessments of disinfection byproducts. In the future these thresholds will be used to assess disinfection byproduct data but they will be correctly identified as evaluation guidelines used to interpret the narrative toxicity objective in the Basin Plan.
033.05	Comment 2. Decision ID 128482. Oxygen, Dissolved-Old River (San Joaquin River to Delta-Mendota Canal; in Delta Waterways, southern portion)	The dissolved oxygen data that drives this listing was collected at a single monitoring station on Old River and, as noted in the comment, is not representative of the full length of this waterbody segment. Decision ID 128482

No.	Comment	Response
	This comment pertains to the Decision ID and LOEs listed below for Old River (San Joaquin River to Delta-Mendota Canal; in Delta Waterways, southern portion). Monitoring Station: 544ORAWCC Decision ID: 128482; Pollutant: Oxygen, Dissolved; LOE: 224188, 224189, 224190, 224211; Samples/Exceedances: 15/20, 5/20, 5/20, 15/20 LOEs listed above are for data from the Central Valley Regional Water Quality Control Board's Irrigated Lands Regulatory Program. Monitoring station "544ORA WCC" used in the above LOEs is identified in the database as "Old River @ the West End of Clifton Court Rd." The associated latitude and longitude in the database place this monitoring station in the segment of Old River to the n01ih of Clifton Court Forebay, between Clifton Court Forebay and the San Joaquin River, in the central Delta. This monitoring station does not represent conditions within the segment of Old River between the San Joaquin River and the Delta-Mendota Canal, in the south Delta. Dissolved oxygen conditions in surface waters are site-specific and conditions in one waterbody segment cannot be used to characterize conditions in another segment, because ambient concentrations are a function of water temperature, presence of oxygen-demanding substances, and channel reaeration rates (which are dependent on channel velocity), among other factors. Therefore, the monitoring station for the above LOEs is not appropriate for assessing water quality impairments in Old River and the proposed listing decision for dissolved oxygen needs to be re-evaluated by the State Water Resources Control Board.	was revised to restrict the dissolved oxygen impairment to the portion of Old River north of the Delta Mendota Canal to Victoria Canal. The samples and exceedance count indicate that both the COLD and SPWN beneficial uses are not supported. Therefore, the listing is appropriate; however, as noted above, the listing is restricted to small portion of the waterbody segment. During staff's evaluation of this comment, it was noted that some of the LOEs were incorrectly written for Decision ID 128482. LOEs 224188, 224189, 224190, and 224211 were deleted and replaced with LOEs 233892 and 233893. Details of corrected and replaced LOEs for the Central Valley Regional Water Board waterbodies are available in Appendix T: List of Corrected Dissolved Oxygen SSO LOEs in the Proposed Final Staff Report.

Letter 34: Karen Holman, Port of San Diego

No.	Comment	Response
034.01	The District supports the State and Regional Boards' continued efforts to identify and address water quality issues within the Bay and remains committed to working collaboratively with the State and Regional Boards to fulfill our agencies' shared goals. To this end, the District respectfully submits the following comments on the Draft Report.	Comment noted.
034.02	1. Decision ID 128027 San Diego Bay-Indicator Bacteria should be listed as a specific waterbody segment, not as a proposed bay-wide listing. Currently, the proposed listing for Decision ID 128027 is proposed as a bay-wide listing, while the data analyzed only represents a single sampling station in San Diego Bay, the AB411 sampling location at Crown Cove, EH-090. All other listings for indicator bacteria in San Diego Bay are by waterbody segment, and associated data corresponds to single sampling locations. It is the District's understanding that a standard distance is applied when listing a shoreline impairment for indicator bacteria. As shown on the map in Attachment A, this distance is generally represented by an approximate 0.4-mile shoreline segment along a sampling point. The single sampling location (EH-090) that supports Decision ID 128027 is not representative of the 10,783 acres of water covered by this proposed bay-wide listing. Therefore, the District requests the proposed listing be revised as a waterbody segment listing with an approximate spatial representation similar to other listed segments and not the entirety of San Diego Bay.	The comment is appreciated. The EH-090 station for Crown Cove was incorrectly assigned to all of San Diego Bay. This mapping issue was fixed and the recommendation applies to the Crown Cove location. Decision ID 128027 was replaced with Decision ID 132055, which is for "San Diego Bay Shoreline, at Silver Strand Beach (bayside)."

No.	Comment	Response
034.03	2. Decision ID 128029 San Diego Bay Shoreline Chula Vista Marina and Decision ID 100464 San Diego Bay Shoreline Bayside Park (J Street) represent the same location and should be listed as a single Decision ID. Both Decision ID 128029 and Decision ID 100464 use source data from a single sampling location (the AB411 sampling location at Bayside Park/J Street, EH-120). The District requests the Regional Board list Decision ID 128029 and Decision ID 100464 as a single Decision ID that appropriately represents the single sampling location analyzed (EH-120).	The comment is appreciated. Decision ID 128029 was deleted and Station EH-120 was re-mapped to be associated with the waterbody called "San Diego Bay Shoreline, at Bayside Park (J Street)." The new corresponding LOEs are 233490-233493. The new Decision ID is 132059 with a listing recommendation of "Do not Delist".
034.04	3. The District strongly encourages the State Board to revise the existing shellfish harvesting total coliform objective prior to approving the proposed listings for SHELL. For waterbody segments listed for SHELL, the Fact Sheets submitted by Region 9 in Appendix B of the Draft Report state the following: *"On December 3, 2019, the State Water Board adopted the 2019 Triennial Review of the Ocean Plan and identified as a high priority a project to consider amending the Ocean Plan to review and revise the existing shellfish harvesting total coliform objective. The State Water Board recognized that the current total coliform water quality objective may be unattainable, as exceedances of the standard were found to be common in reference-quality areas. Following the update of the water quality objective, this waterbody will be reassessed and reprioritized for TMDL development, if needed."* The District supports the State Board's high priority project to revise existing shellfish harvesting objectives and encourages	Comment noted. Please also see principal response 5 for SHELL Beneficial Uses and Objectives.

No.	Comment	Response
	the State Board to update objectives prior to the adoption of the proposed SHELL listings in the Draft Report. The listing of a waterbody segment causes agencies such as the District to commit resources to management programs that address the impairment. As a result, Water Quality Improvement Plans must be updated, special studies are conducted to identify sources, and other costly programs are initiated. Given the costly expenditures required once a waterbody segment is listed, the District encourages the State Board to revise the existing shellfish harvesting total coliform objective prior to approving proposed listings for SHELL.	
034.05	Additionally, the Draft Report identifies that the proposed SHELL listings in Region 9 will be given low priority for TMDL development until the state standard is revised, with an estimated TMDL completion for 2033. Since the 2019 data cutoff for this listing cycle, the District has initiated several special studies evaluating Fecal Indicator Bacteria in San Diego Bay. The District remains committed to providing the Regional Board with the most up to date Fecal Indicator Bacteria data as it becomes available and recognizes such data will be valuable in assisting with future TMDL and/or listing decisions. The District also requests that newer data be utilized for such efforts as to appropriately reflect current conditions of the waterbody segments in question when decisions are made. The District looks forward to collaborating with the Regional and State Boards on these efforts.	Comment noted and the Water Board appreciates all the efforts to provide fecal indicator bacteria data. Please also see principal response 5 for SHELL Beneficial Uses and Objectives.

Letter 35: Theresa Dunham, Pyrethroid Working Group

No.	Comment	Response
035.01	The Draft Integrated Report includes some newly proposed pyrethroid listings based on total water concentrations that are compared to the proposed criteria (guideline) values. In some cases, total water concentrations measured from environmental samples containing organic material were compared with proposed criteria derived from laboratory toxicity data that were generated from clean laboratory water that represents the dissolved fraction. This is an inaccurate comparison. Total pyrethroid concentration values should be converted to the dissolved fraction (bioavailable phase) to be correctly compared with proposed criteria values. Specifically, the use of the dissolved fraction for pyrethroids is recommended on page 52 of the Draft Integrated Report. In general, the proportion of the dissolved water fraction from the total concentration of the various pyrethroids is very low.[1] This is not surprising since pyrethroids are hydrophobic and tend to sorb to suspended sediment in natural waters rather than remain in the dissolved phase.[2] Converting the total concentration to the dissolved fraction is necessary to accurately determine if a water body is impaired for a specific pyrethroid pesticide, or the presence of multiple pyrethroid pesticides. In cases where the dissolved fraction is not measured directly, equations can be used to convert the total pyrethroid water concentration for the various pyrethroids to the dissolved fraction. Footnote 1: Hladik, M. and K. M. Kuivila. 2009. Assessing the occurrence and distribution of pyrethroids in water and	See principal response 2.3 regarding use of total and dissolved fraction data for pyrethroids.

No.	Comment	Response
	suspended sediments. Journal of Agricultural and Food Chemistry. 57: 9079-9085. Footnote 2: Lee, S., J. Y. Gan and J. Kabashima. 2002. Recovery of synthetic pyrethroids in water samples during storage and extraction. Journal of Agricultural and Food Chemistry 50: 7194-7198.	
035.02	These equations have been adopted by the Central Valley Regional Water Quality Control Board and approved by the State Water Board in the Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin Basins for Control of Pyrethroid Discharges (Pyrethroid Basin Plan Amendment). Accordingly, these equations should be used to convert total pyrethroid water concentrations to the dissolved fraction for proper comparison to the proposed criteria/guideline.	See principal response 2.3 regarding use of total and dissolved fraction data for pyrethroids.
035.03	Identified here are the pyrethroid waterbody listings and associated LOEs that are incorrectly based on total water concentrations by pyrethroid (Table 1). All of these 15 incorrect pyrethroid decision IDs using the total concentration fraction are located in Region 3. The number of decision IDs by pyrethroid are as follows: 4 for bifenthrin; 2 for lambda cyhaolthrin; 3 for cypermethrin; and 6 for permethrin. There were a total of 6 different waterbodies impacted by incorrectly using the total pyrethroid fraction for the various pryethroids. These waterbodies are: Merrit Ditch; Natividad Creek; Old Salinas River; Tembladero Slough; Alisal Creek; and Chualar Creek.	Changes to listing recommendations were not made in response to this comment. See principal response 2.3 regarding use of total and dissolved fraction data for pyrethroids.

No.	Comment	Response
035.04	In addition to identifying impaired water body segments on a pollutant specific basis, the Draft Integrated Report also categorizes proposed listings with respect to if a TMDL will be developed or if the impaired waterbody will be addressed through other actions. Based on our review of the proposed new listing decisions, it appears that there are inconsistent determinations with respect to if a TMDL is required and will be developed, or if a listing will be addressed through another action. Specifically, review of the Central Valley's proposed new decisions showed numerous different category 5 classifications (e.g., 5A, 5B or 5C) for many of the newly proposed pyrethroid listings. Some are identified as needing a TMDL, while others are categorized as either being addressed by an existing TMDL or other program. With respect to the Central Valley listings, we recommend that the newly proposed pyrethroid listings be identified consistently as a 5B or 5C category due to the adopted Water Quality Control Plan for Pyrethroid Pesticides. Because of this adopted water quality control program for pyrethroid pesticides, it is not necessary for additional TMDLs to be prepared. Under the water quality control program, the Central Valley Board has established specific requirements for various types of discharges and requires the preparation of management plans when pyrethroid triggers are exceeded. Because the water quality control program already sets forth an implementation plan for addressing water bodies impaired by pyrethroid pesticides, no further TMDLs are necessary. To the extent that the water quality control plan already includes TMDLs for certain waterbodies, a 5B category may be appropriate for those waterbodies.	See principal response 2.4 regarding use of existing Central Valley Regional Water Board programs to address pyrethroid impairments.

No.	Comment	Response
	In short, the category determinations should be consistent for water bodies properly identified as having pyrethroid impairments if the water body is located within the San Joaquin or Sacramento River basin. Based on our review, there is no such consistency. If there is a reason for the inconsistency, then the staff report should be revised to explain these differences.	

Letter 36: Richard Boon, Riverside County Flood Control and Water Conservation District

No.	Comment	Response
036.01	Use adopted standards that are appropriate within a given region consistent with the intent of Sections 1 and 6 of the Listing Policy. The District recommends removing new listings in our watershed that were based on the Pyrethroid Pesticide Water Quality Thresholds in Table 6-1 in the Draft 2020-2022 Integrated Report (Pyrethroid Pesticide Water Quality Thresholds Developed by the University of California, Davis Methodology [Davis Methodology]). These pyrethroid pesticide water quality thresholds are not currently an adopted water quality standard in the San Diego Basin Plan. According to Page 1 of the Listing Policy, the Listing Policy should not be used to set new water quality objectives as referenced in Comment #1. The Davis methodology and pyrethroid pesticide water quality thresholds should be reviewed and adopted via a San Diego Basin Plan Amendment process.	See principal response 2.1 regarding the selection and use of thresholds for assessing pyrethroid data and principal response 2.2 regarding application of the threshold to waterbodies in the San Diego Region. .

No.	Comment	Response
036.02	Thresholds for pyrethroids are so low as to be nearly unattainable by current technology. Permittees should not be held responsible for meeting standards that exceed the best available technology and exceed the maximum extent practicable standards.	See principal response 2.5 regarding the ability of laboratories to achieve detection limits and the attainability of the best available technology standard.
036.03	Additionally, the assessment of pyrethroid pesticides is considered incomplete due to the omission of valid non-detects from the analysis and the limitations related to the analytical methods led to improper conclusions. This is one example in which non detects were omitted from the 303d analysis; more details of the lines of evidence (LOE) are provided in Comments #2 and #3.	Non-detect results where the laboratory data reporting limit(s) were above the objective are not quantified with the level of certainty required by the Listing Policy Section 6.1.5.5 and were not included in assessments.
036.04	Consider completeness and quality of the data set including temporal and spatial coverage and age of data for consistency with Sections 6.1.4 and 6.1.5 of the Listing Policy. The District recommends delisting copper in Murrieta Creek based on over 30 new data points submitted from 2012 and 2018 that satisfied the data quality and quantity requirements of Sections 6.1.4 and 6.1.5 of the Listing Policy to complete the delisting evaluation. There were zero exceedances of WARM or MUN water quality objectives in the new data meeting the delisting criteria. The exceedances included in the LOE were data prior to 2006; more details are provided in Comment #4 and Comment #5.	The “Do not Delist” recommendation for Murrieta Creek as impaired for copper is based on non-support of the WARM beneficial use, with four exceedances in 39 samples. All data were used to support this recommendation, including data collected prior to 2006, because copper is persistent in the environment. It may be appropriate to exclude older, transient pollutant data if they are no longer representative of current conditions and more current data are available. However, for toxicants that are persistent pollutants, the number of exceedances to delist for 39 samples must be three or fewer per Listing Policy Table 4.1. When additional samples are collected, they may be submitted for assessment.

No.	Comment	Response
036.05	The District recommends revising the spatial extent to be consistent with the Listing Policy to list a segment with data from monitoring stations within 200 meters. Murrieta Creek and Santa Margarita River, for example, include listing decisions in which the spatial representation includes monitoring stations greater than 200 meters apart and data without a defined location. A map showing the distance between monitoring stations at Upper Santa Margarita River for the listing for iron is provided as an example of this issue. Additional examples of listings with data quantity and quality issues are provided as Comments #5 through #8. Listings with LOE that include monitoring stations that are not defined cannot be verified for conformance with the Listing Policy and should not be considered.	Changes to listing recommendations were not made in response to this comment. Section 6.1.5 of the Listing Policy states: Before determining if water quality standards are exceeded, the Regional Water Boards have wide discretion establishing how data and information are to be evaluated, including the flexibility to establish water segmentation, as well as the scale of spatial and temporal data and information that are to be reviewed. The referenced Section of 6.1.5.2 of the Listing Policy refers to identification of samples collected at a proximal location being considered as collected from the same station or location. Section 6.1.5.2 of the Listing Policy does not require a waterbody to be segmented into 200-meter segments for impairment listing purposes. Multiple stations from a single waterbody can be considered for assessment of that waterbody. Additional information on this approach is found in Section 6.1.5.4 of the Listing Policy. Any requests for segmenting of a waterbody should provide evidence per the Listing Policy to support that segmentation. The referenced stations for Santa Margarita and Murrieta Creek were grouped together for assessment as they provide adequate representation of each waterbody based on the Regional Water Board's assessment of each waterbody's hydrology, land use, and discharges.
036.06	The District recommends that the spatial extent for Listing Decision 111431 be revised to Lower Temecula Creek, which is representative of the reference monitoring stations, and that	Please see response to comment 036.05.

No.	Comment	Response
	Upper Temecula Creek should not be listed as impaired. Per the Listing Policy, an impairment may only be considered up to within 200 meters of the station where data were collected. This listing did not adequately consider the spatial extent or critical condition in accordance with the Listing Policy. The Temecula Creek listing utilizes five sites in the lower extent of the Creek, which is not representative of the full 32-mile segment, included in Listing Decision for multiple pollutants. Further, Vail Lake acts as a hydrologic break, and the Upper section of Temecula Creek is an ephemeral creek and dry for the majority of the summer months. A map showing that the monitored sites are not representative of the full extent of the Creek is provided in Comment #9.	Additional evidence is required to make the requested segmentation of the waterbody into Upper and Lower Temecula Creek. The Listing Policy at section 6.1.5.4 allows for the Regional Water Boards to segment a waterbody, based on hydrology and relatively homogeneous land use, as well as for areas that may have different pollutant levels based on significant differences in land use, tributary inflow, or discharge input. Based on these evaluations of the water body setting, the Regional Water Boards should aggregate the data by appropriate reach or area. While Vail Lake acts as a hydrologic "break" by capturing flows from Temecula Creek and its tributaries, surface flows in Temecula Creek that enter Vail Lake are used by Rancho California Water District downstream, with surface flows percolated into the groundwater basin downstream of the dam. While some land use differs above and below Vail Lake, there is insufficient information on the hydrologic connectivity at this time to warrant segmentation of the waterbody. The stations located in Lower Temecula Creek include watershed stations that are intended to capture input and pollutants from the entirety of the watershed, including any pollutants from groundwater recharge that resurfaces downstream. The Water Board will re-evaluate the segmentation in a future listing cycle as information and data become available. Regarding the comment regarding ephemeral streams above Vail Lake, it should be clarified that ephemeral streams are considered those that flow only in direct response to storm events, and a lack of summer flows is

No.	Comment	Response
		not indicative of a stream being ephemeral. In addition, it should be noted that Upper Temecula Creek also has a documented population of arroyo chub (*Gila orcutti*), which indicates sustained surface water presence.
036.07	Provide documentation of how data analyses were performed in supporting documents. It is recommended that the data assessment methodology and resulting calculations used in the listing decision be provided as supporting documentation. With the increase in available data used in the listing, it is extremely challenging to complete a review within the provided timeline.	See principal response 4.3 for Data and Analysis Transparency, and Readily Available Data.
036.08	Consideration for future listings It is recommended that region-specific thresholds be considered for naturally occurring pollutants such as iron and manganese throughout the Santa Margarita River region (listed as impairments in Murrieta Creek, Adobe Creek, Redhawk Channel, Santa Gertrudis Creek, Warmsprings Creek, De Luz Creek, Long Canyon Creek, Sandia Creek, Upper Santa Margarita River, and Temecula Creek). The District agrees with the logic that if pollutants are naturally occurring at high levels in region specific reference streams, then it is appropriate to set region specific water quality standards as described in Section 6.1.3 of the Integrated Report. These naturally occurring pollutants are not controllable. The listing decision process should recognize the natural occurrence of iron and manganese as elements within soils, and that local levels can readily exceed basin plan objectives. The District completed a Santa Margarita River	Water Board staff agrees that natural levels of pollutants do occur in the environment and that existing pollutant objectives and thresholds may not reflect levels of naturally occurring pollutants in some cases. If water quality standards are not attained (as defined in the Listing Policy, Section 3), then the waterbody and pollutant combination is added to the 303(d) List. If the failure to attain water quality standards is due to the fact that the applicable standards are not appropriate to natural conditions, an appropriate regulatory response is to correct the standards and reevaluate the impairment status of the waterbody. Where natural sources are expected to be the source, documentation that justify development of a site-specific objective that is protective of the designated uses can be provided for the development of an amendment to appropriate basin plan. The referenced Santa Margarita River region-specific study will likely be helpful in recommending site-specific

No.	Comment	Response
	region-specific special study in 2014-2015, which showed local reference streams have naturally occurring iron and manganese concentrations more than 100 times the regulatory limit established by the Water Quality Control Plan for the San Diego Basin. Additional references are provided in Comment #10.	objectives for the San Diego Regional Water Quality Control board to consider. In the meantime, the existing water quality objectives and thresholds will be used to identify waterbodies as impaired.
036.09	The District agrees that a more appropriate specific conductivity threshold for San Diego Region waterbodies should be established for future Integrated Report assessments. We look forward to supporting you in this effort.	Comment noted.
036.10	Comment #1: Listing Policy, Page 1, Section 1 The Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (Listing Policy) states the following guidelines for Listing: "This Policy applies only to the listing process methodology used to comply with CWA section 303(d). In order to make decisions regarding standards attainment, this Policy provides guidance for interpreting data and information as they are compared to beneficial uses, existing numeric and narrative water quality objectives, and antidegradation considerations. The Policy shall not be used to: • determine compliance with any permit or waste discharge requirement provision; • establish, revise, or refine any water quality objective or beneficial use; or • translate narrative water quality objectives for the purposes of regulating point sources."	See principal response 2.1 regarding the selection and use of thresholds for assessing pyrethroid data and principal response 2.2 regarding application of the threshold to waterbodies in the San Diego Region.

No.	Comment	Response
	Recommendation: Do not list waterbodies in San Diego Region for pyrethroids using the Davis methodology.	
036.11	Comment #2: California Delisting Factors, Page 11, Section 4 The proposed pyrethroid assessment method has limitations related to the analytical methods. The Listing Policy states the following guidelines regarding Delisting Process: "Faulty data include limitations related to the analytical methods that would lead to improper conclusions regarding the water quality status of the segment." Recommendation: Do not list waterbodies in San Diego Region for pyrethroids using the Davis methodology.	See principal response 2.2 for Pyrethroids. In addition, non-detect results where the laboratory data reporting limit(s) were above the objective are not quantified with the level of certainty required by the Listing Policy Section 6.1.5.5 and were not included in assessments.
036.12	Comment #3: Reporting Limits, Line of Evidence (LOE) for Decision ID 126449; Pyrethroids, Murrieta Creek Appendix B: Statewide Waterbody Fact Sheets lists the LOE for including pyrethroids as a listed pollutant for certain waterbodies such as Murrieta Creek. The LOE excluded samples where the laboratory data reporting limits were above the water quality threshold. For example, for Pyrethroids in Murrieta Creek, LOE decision ID 126449 states the following: "Although a total of 26 samples were collected, 13 of these samples were not included in the assessment	Changes to listing recommendations were not made in response to this comment. Non-detect results where the laboratory data reporting limit(s) were above the objective could not be quantified with the level of certainty required by the Listing Policy Section 6.1.5.5. Therefore, these results were not included in the assessment.

No.	Comment	Response
	because the laboratory data reporting limit(s) was above the water quality threshold." Recommendation: Data reported below the laboratory data reporting limit(s) (i.e., non-detect results) should be considered in the listing evaluation of these pollutants.	
036.13	Comment #4: Age of Data, LOE for Decision ID 111361, Copper in Murrieta Creek Over 30 new data points were submitted from 2012 and 2018 and satisfied the data quality and quantity requirements of sections 6.1.4 and 6.1.5 of the Policy to complete the delisting evaluation. There were 0 exceedances in the new data set. All exceedances recorded in the LOE are older than 2006. The two exceedances of the water quality objective for municipal beneficial use were from 1998 and should not be included in the current 303d assessment. Recommendation: Delist copper in Murrieta Creek based on improving trend in water quality.	Changes to listing recommendations were not made in response to this comment. See response to comment 036.04.
036.14	Comment #5: Age of Data and Spatial Representation, LOE for Decision ID 111312; Benthic Community Effects in Santa Margarita River (upper) There are multiple examples of older benthic data being referenced and more recent data does not seem to be	Older Index of Biological Integrity (“IBI”) scores were not used in assessments of impairment for the 2020-2022 Integrated Report. These lines of evidence are historical and will be retired in a future listing cycle to provide a clearer description of the data used to assess for benthic community effects.

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	assessed. It is unclear why some of the assessments used IBI scores rather than CSCI scores. One specific example of this is that the data used for Site 902SMR-MLS-2 (SoCal IBI score of 22 ("Poor")) is from 2002. The older SoCal IBI is not as accurate in describing the biological condition of a site as the CSCI. It is unclear how data was processed in the case of benthic community effects analysis. Site 902SMR-MLS-2 is only 160m downstream of Site 902SMRDRx, within the 200m distance. Site 902SMRDRx has more recent CSCI scores within the last 10 years (2011, 2013, and 2015) all scores are above 0.79. Recommendation: Do not list benthic community effects in Santa Margarita River (upper) based on the recent CSCI scores.	Note: The commenter is referring to Decision ID 126468, Benthic Community Effects. More recent CSCI data on the upper Santa Margarita River includes sites with scores both below and above the 0.79 threshold. The more recent scores below the 0.79 threshold occurred in a portion of the Upper River and included stations 902MWD1xx (2017) and 902GG1xxx (2017). The recommendation was revised to reflect that the impairment appears to be limited to this specific spatial extent in the Upper Santa Margarita River. The spatial extent of impairment will be reassessed in a future cycle as data become available.
036.15	Comment #6: Spatial Representation, LOE for Decision ID 111361; Copper in Murrieta Creek Some listings for Murrieta Creek did not adequately consider the spatial extent in accordance with the Listing Policy. For example, the LOE for the copper listing at Murrieta Creek includes undefined location stating "Samples were collected at Murrieta Creek. Exact location was not reported." Section 6.1.5.2 of the Listing Policy for spatial representation states that "Samples should be representative of the water body segment. To the extent possible, samples should represent statistically or in a consistent targeted manner the segment of the water body. Samples collected within 200 meters of each other should be considered samples from the same station or location."	See response to comment 036.05.

No.	Comment	Response
	Recommendation: The District recommends that listings be redefined to be based on evidence from stations within 200 meters of each other. Listings with LOE that include monitoring stations that are not defined cannot be verified that they follow the Listing Policy and should not be considered.	
036.16	Comment #7: Spatial Representation, LOE for Decision ID 111312; Iron in Santa Margarita River (upper)Section 6.1.5.2 regarding spatial representation of the Listing Policy states *"Samples should be representative of the water body segment. To the extent possible, samples should represent statistically or in a consistent targeted manner the segment of the water body. Samples collected within 200 meters of each other should be considered samples from the same station or location."* The LOE presented for iron at Santa Margarita River (Upper) includes data that do not adequately consider the spatial extent in accordance with the Listing Policy. The LOE for iron includes monitoring stations 902S05173, SMR-MLS-2, and 902USM828. The distance between these three stations is as much as 21,952 meters, which is much greater than the 200 meters included in the Listing Policy. A map showing the distance between monitoring stations at Upper Santa Margarita River is provided below and enlarged in Attachment 2. Recommendation: The District recommends the spatial extent of the listings be redefined to an extent within 200 meters of the stations in	See response to comment 036.05.

No.	Comment	Response
	accordance with the Listing Policy and not the full extent of the Upper Santa Margarita River.	
036.17	Comment #8: Spatial Representation, LOE for Decision ID 76574, 76582, 76530, 220627; Indicator bacteria in Santa Margarita River (upper) Section 6.1.5.2 regarding spatial representation of the Listing Policy states *"Samples should be representative of the water body segment. To the extent possible, samples should represent statistically or in a consistent targeted manner the segment of the water body. Samples collected within 200 meters of each other should be considered samples from the same station or location."* The LOE presented for Indicator Bacteria at Santa Margarita River (Upper) includes data that do not adequately consider the spatial extent in accordance with the Listing Policy. Three LOE for Santa Margarita River (Upper) were collected at 2 monitoring sites [Santa Margarita River @ SDSU Ecological Reserve Entrance, Santa Margarita River @ Sandia Creek Drive (one-half mile east of De Luz Road)]. The data was collected over the time period between 05/12/2003 and 05/27/2009. These sites appear to be located in the Santa Margarita River (lower) reach. The last LOE was collected within the upper reach at 1 monitoring site(s), station(s): 902USM828. The data was collected over the time period between 05/12/2003 and 05/27/2009. According to the LOE, 0 of 4 samples exceed. Recommendation: The District recommends the spatial extent of the listings be redefined to an extent within 200 meters of the stations in	Changes to listing recommendations were not made in response to this comment. See response to comment 036.05.

No.	Comment	Response
	accordance with the Listing Policy and not the full extent of the Upper Santa Margarita River.	
036.18	Comment #9: Spatial and Temporal Representation, LOE for Decision ID 111431; Phosphorous in Temecula Creek The Temecula Creek Phosphorus listing references multiple monitoring stations, all within Lower Temecula Creek, as part of the spatial representation for the LOE. The stations that are in the lower extent of the Creek are not representative of the full 32-mile segment of the Creek. The extent of Temecula Creek includes Lake Vail which acts as a hydrologic break, breaking the creek up into Lower Temecula Creek and Upper Temecula Creek. Listing decision 111431 for Temecula Creek was based on samples collected at monitoring stations 902TCTCR1 and 777, which are both in Lower Temecula Creek. Section 6.1.5.2 regarding spatial representation of the Listing Policy states "Samples should be representative of the water body segment. To the extent possible, samples should represent statistically or in a consistent targeted manner the segment of the water body. Samples collected within 200 meters of each other should be considered samples from the same station or location." The monitoring data are not representative of the Upper Temecula Creek, which is typically dry during summer months and samples are not able to be collected. Multiple pollutant listings reference monitoring stations within Lower Temecula Creek; however, the entire creek segment (upper and lower) is listed. A map showing that the monitored sites are not representative of the full extent of the Creek is provided below and enlarged in Figure 1.	See response to comment 036.05 and 036.06.

No.	Comment	Response
	Recommendation: The District recommends that the spatial extent for Listing decision 111431 be revised to Lower Temecula Creek which is representative of the reference monitoring stations and that Upper Temecula Creek should not be listed as impaired.	
036.19	Comment #10: Naturally Occurring Pollutants, LOE for Decision ID 111368 and 111372; Iron and Manganese, Murrieta Creek The listing decision process should recognize the natural occurrence of iron and manganese as elements within soils, and that local levels can naturally and readily exceed Basin Plan objectives. Pollutants like iron and Manganese have been shown to be naturally occurring in the environment. Many Southern California streams, including reference-quality streams, have naturally occurring iron and manganese concentrations greater than the Basin Plan water quality objective (SCCWRP, 2007. Stein, E.D., Yoon, V.K., Assessment of Water Quality Concentrations and Loads from Natural Landscapes. Southern California Coastal Waters Research Project, Technical Report 500. February 2007). The District completed a special study in 2014-2015, showing that data gathered from reference streams studies had naturally occurring iron and manganese concentrations more than 100 times the regulatory limit established by the Water Quality Control Plan for the San Diego Basin. The water quality objective exceedances were recorded in the reference streams during both dry and wet weather conditions, indicating that the natural sources can contribute to iron and Manganese concentrations measured in the Santa Margarita River region above water quality objectives. The final report	See response to comment 036.08.

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	was provided in Attachment G (Special Studies, Work Plans, and Support Documentation) of the 2014– 2015 Monitoring Annual Report. Recommendation: The District recommends the development of more appropriate thresholds that considers naturally occurring concentrations of pollutants from local geology for San Diego Region waterbodies in advance of future Integrated Report assessments.	

Letter 37: Terrie L. Mitchell, Sacramento Regional County Sanitation District

No.	Comment	Response
037.01	We have significant concerns with the assessment made to support the proposed listing for aluminum. Importantly, research performed by permittees to support NPDES permitting decisions by the Central Valley Water Board in the past two decades has clearly demonstrated that the use of the guideline value of 87 ug/l for aluminum is inappropriate. Water Effect Ratio (WER) studies performed by a number of Central Valley POTWs have indicated that the appropriate aluminum concentration for protection of sensitive aquatic life in Central Valley waters is approximately two orders of magnitude higher than the 1988 USEPA chronic criterion. Since development of these WER results, NPDES permits in the Central Valley have long ceased usage of the 87 ug/l value for performance of reasonable potential analyses and for development of water quality-based effluent limits.	Please see response to comment 009.07. Decision ID 132145 (Waterbody name: Sacramento River (Sacramento City Marina to Suisun Marsh Wetlands)) was revised from “List” to “Do not List”. The data used in the listing determination was sourced through U.S. EPA’s Water Quality Portal and satisfies the data quality requirements of Section 6.1.4 of the Listing Policy. For the 2020-2022 Integrated Report, the Water Effect Ratio-adjusted chronic criterion range stated by the commenter was not used to assess data. Due to lack of total hardness and dissolved organic carbon data, the Water Boards was unable to apply the 2018 U.S. EPA criteria, which incorporates pH, dissolved organic carbon,

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	Additionally, in 2018, USEPA adopted new aluminum national aquatic life criteria, replacing the 1988 criteria. The new criteria recognize the importance of considering the pH, dissolved organic carbon, and total hardness of waters to which the criteria apply. These factors were inherently considered in the WER testing that has occurred in the Central Valley. Clearly these factors significantly reduce the toxicity of aluminum in Central Valley waters. The fact sheets are unclear as to the data used in the listing determination. We have accessed data in the EXCEL spreadsheet referenced in the fact sheet and found aluminum data for the Sacramento River at Hood. Maximum total aluminum measured at Hood from this dataset was 2040 ug/l (February, 2016). Maximum dissolved aluminum measured at Hood was 578 ug/l (March, 2016). These maximum observed values are well under the WER-adjusted chronic criterion range that has been determined in the Central Valley. As a result of the above, we request that the proposed listing for aluminum in the lower Sacramento River from Sacramento City Marina to Suisun Marsh Wetlands be removed.	and total hardness similar to the Water Effect Ratio-adjusted chronic criterion.
037.02	We have significant concern with the inappropriate use of a USEPA aquatic life benchmark value to support a 303(d) listing. These benchmark values were developed by USEPA for use in the process of registering pesticides and are intended to be used as screening tools in ecological risk assessments. They are not intended to be used as aquatic life criteria or water quality objectives. As such, their use in a	Please see the response to individual comment 11.04 regarding use of aquatic life benchmarks, principal response 2.1 regarding the selection and use of thresholds for assessing pyrethroid data, and principal response 2.3 regarding use of POC and DOC data.

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	determination of impairment of the COLD beneficial use and as the basis for 303(d) listing is inappropriate. The Central Valley Pyrethroid TMDL developed trigger values that are specifically not considered water quality objectives until further evaluation and study are performed including the Pyrethroid Research Plan and the outcomes from management programs developed in the TMDL. Moreover, the trigger values were developed to consider the bioavailable fraction associated with particulate organic carbon (POC) and dissolved organic carbon (DOC). All comparisons to triggers should consider the POC and DOC adjustments or otherwise use an approved method to measure filtered pyrethroid concentrations. As a result of the above, it is requested that the proposed listing for fipronil be removed.	
037.03	As noted above in the comments regarding fipronil, the Central Valley Pyrethroid TMDL developed trigger values that are specifically not considered water quality objectives until further evaluation and study are performed including the Pyrethroid Research Plan and the outcomes from management programs developed in the TMDL. Moreover, the trigger values were developed to consider the bioavailable fraction associated with particulate organic carbon (POC) and dissolved organic carbon (DOC). All comparisons to triggers should consider the POC and DOC adjustments or otherwise use an approved method to measure filtered pyrethroid concentrations. The use of the 1 ng/l threshold value and the data used in the evaluation is inappropriate.	Please see principal response 2.1 regarding the selection and use of thresholds for assessing pyrethroid data and principal response 2.3 regarding use of POC and DOC data.

No.	Comment	Response
	As a result of the above, it is requested that the proposed listing for permethrin be removed.	
037.04	Pyrethroids Basis for proposed listing: The fact sheet states that the proposed listing for pyrethroids is based on the summed ratios of six (6) pyrethroids measured in two (2) water samples and is also based on results for three (3) of four (4) sediment toxicity samples. The two water samples were taken on May 7, 2013 at the same location as the samples taken for permethrin, as noted above, and all sediment samples were collected on August 18, 2015, at a different location. A question exists as to the evaluation guidelines used to perform the summed ratio calculations, which are not explicitly stated in the fact sheets. As noted above, the Central Valley Pyrethroid TMDL developed trigger values that are specifically not considered water quality objectives until further evaluation and study are performed including the Pyrethroid Research Plan and the outcomes from management programs developed in the TMDL. Moreover, the trigger values were developed to consider the bioavailable fraction associated with particulate organic carbon (POC) and dissolved organic carbon (DOC). All comparisons to triggers should consider the POC and DOC adjustments or otherwise use an approved method to measure filtered pyrethroid concentrations. There is no indication that the data evaluation supporting the proposed 303(d) listing took these factors into account.	This comment is regarding the pyrethroids listing recommendation (Decision ID 121084) for Sacramento River (Sacramento City Marina to Suisun Marsh Wetlands). See principal response 4.3 for Data Analysis Transparency, and Readily Available Data concerning methodology transparency. One pyrethroid sediment LOE for this listing recommendation was affected by a miscalculation related to normalizing pyrethroid sediment data for organic carbon (please see response to comment 011.08 and Section 2.7 of the Staff Report for more details). The following outlines the corrected organic carbon normalization procedures: • LOE 196982 was removed from Decision ID 121084. After normalizing the pyrethroid data, quantitation revisions indicated the laboratory method was not sensitive enough to detect pyrethroid concentrations at the evaluation guideline threshold for any of the samples. The number of exceedances remained the same (zero exceedances). The listing recommendation was not changed because of this correction and remains “List.” The following reflects

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	A second question exists whether the May 7, 2013 sample for permethrin was used in the summed ratio calculation for that date. If so, this would be a case of one data point driving two listings in the same water body. This needs to be clarified. A third question also exists regarding the referenced sediment toxicity testing. The fact sheet seems to indicate that these data points are actually summed ratios, which would seem to indicate the samples are water samples as opposed to sediment toxicity tests. We request that a decision on the proposed listing for pyrethroids be postponed pending resolution of the questions raised above.	the corrected organic carbon normalization procedure for pyrethroids. Staff used the following thresholds: • For water chemistry LOEs, staff employed methods described in the Central Valley Water Quality Control Plan as amended by Resolution R5-2017-0057. • For sediment chemistry LOEs, staff normalized raw pyrethroid sediment data for organic carbon, divided the normalized pyrethroid pesticide by the associated organic carbon normalized criteria, and summed these ratios to calculate toxic units. To determine the criteria for each pyrethroid pesticide, staff calculated one tenth of the LC50 for each pyrethroid pesticide. The criteria were based on the geomean of multiple LC50s from the following studies: o Bifenthrin – 0.043 µg/g (one tenth LC50 geomean) ▪ Amweg et al., 2005. LC50 values – 0.57 µg/g, 0.63 µg/g, and 0.37 µg/g. ▪ Amweg and Weston, 2007. LC50 value – 0.26 µg/g o Cyfluthrin – 0.11 µg/g (one tenth LC50 geomean) ▪ Amweg et al., 2005. LC50 values – 1.07 µg/g and 1.09 µg/g. o Lambda-cyhalothrin – 0.044 µg/g (one tenth LC50 geomean) ▪ Amweg et al., 2005. LC50 values – 0.43 µg/g and 0.46 µg/g.

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		○ Permethrin – 0.89 µg/g (one tenth LC50 geomean) ▪ Amweg et al., 2005. LC50 values – 17.9 µg/g, 11.1 µg/g, and 3.51 µg/g. ○ Cypermethrin – 0.03 µg/g (one tenth LC50 geomean) ▪ Maund et al., 2002. LC50 values – 0.36 µg/g, 0.6 µg/g, and 0.18 µg/g. ○ Deltamethrin – 0.079 µg/g (one tenth LC50 geomean) ▪ Amweg et al., 2005. LC50 values – 0.87 µg/g and 0.71 µg/g. ○ Esfenvalerate – 0.15 µg/g (one tenth LC50 geomean) ▪ Amweg et al., 2005. LC50 values – 1.59 µg/g, 1.76 µg/g, and 1.28 µg/g. ○ Fenpropathrin – 0.12 (one tenth LC50 geomean) ▪ Ding et al., 2011. LC50 values – 2.2 µg/g, 1.4 µg/g, and 1.1 µg/g. Summed pyrethroid pesticide ratios exceeding one toxic unit (TU) were considered as an exceedance of water quality standards (Central Valley Water Quality Control Plan, 2018) See principal response 2 for Pyrethroids concerning pyrethroid thresholds and use of whole fraction water samples in the Central Valley Region. Please see response to comment 038.21 for details related to changes to the permethrin listing determination (Decision 130443) resulting from duplicate LOEs.

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		Regarding the commenter's second question, the May 7, 2013 permethrin sample was used for the pyrethroids water matrix assessment (LOE 193184 - Pyrethroids) and for the permethrin water matrix assessment (LOE 192829 - Permethrin). The listing determination for Pyrethroids (Decision 121084) remained "List" supported by two summed pyrethroid exceedances out of two samples (LOE 193184 contributed to this count). Due to duplicate LOEs the permethrin listing determination (Decision 130443) was revised from "List" to "Do not List" based on insufficient information. Regarding the commenter's third question, the commenter did not identify which LOEs were of concern. Staff reviewed pyrethroid sediment chemistry and toxicity LOEs for Decision 121084 and determined that these LOEs are based on assessments of sediment data.
037.05	Basis for proposed listing: The fact sheet states that the proposed temperature listing is based on continuous temperature data collected over an extended period at various locations. The fact sheet states that 1766 of 7533 measurements exceed the threshold value of 20 degrees C during the periods March 15 to June 15 and September 1 to December 31. The threshold value of 20 degrees C is a USEPA Region 10 guideline for protection of salmonid migration. It is well understood that the lower Sacramento River reaches elevated temperatures in the summer and fall months when ambient air temperatures in the 90 to100 degree F range are commonplace. This natural, seasonal variation in air temperatures in the Central Valley plays a large role in the	See response to comments 009.11 and 009.12.

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	temperature conditions in the Sacramento River and is not a controllable factor. We question whether a TMDL, which seeks to achieve objectives through control of defined sources, is an appropriate mechanism for addressing the issue of restricted fish migration during warm seasons. We request that the decision to recommend development of a TMDL for temperature in this reach of the Lower Sacramento River be reconsidered.	
037.06	Basis for proposed listing: The fact sheet states that the proposed listing for toxicity is based on eight (8) of 24 (twenty-four) toxicity tests run under the Delta RMP at Hood during the period from July 28, 2015 to June 13, 2017. The results are from three freshwater chronic tests for Ceriodaphnia dubia, Pimephales promelas, and Selanastrum conducted on each sample. We have two significant comments related to the proposed listing. Our first comment is that the newly proposed listing decision for toxicity in the Sacramento River (from the Sacramento City Marina to Suisun Bay) is redundant with existing listings. The Lower Sacramento River from Sacramento to Rio Vista is currently 303(d) listed as impaired for toxicity as an element of the Delta Waterways (northern portion) reach. This 2014-2016 Integrated Report decision[1] (ID 39706) was based on information that included Hyalella azteca toxicity test data with samples from the Sacramento River at Hood collected January 31, 2008, to December 30, 2009. The proposed 303(d) list includes a decision[2] (ID 73457) to not delist this segment for toxicity based on the same data collected January 31, 2008, to December 30, 2009. The Sacramento	Thank you for your comment. Previous integrated report cycles included geographically broad assessments of the Sacramento - San Joaquin River Delta, known as subareas. Some waterbodies within these large subareas were remapped and separated into individual waterways to ensure data were grouped to a representative waterbody segment. Over the next few Integrated Report cycles, waterways within the Delta will be remapped to the individual segments, and the subareas will be removed. Past Delta LOEs will be reassessed from the subareas to the remapped waterbody based on the monitoring station location. In the interim, there will be some overlapping listings. For the 2020-2020 Integrated Report, data from sampling locations that remain grouped in the Delta subareas were not used to make a new listing or delisting recommendations because that data may not represent the whole Delta subarea. Finally, future TMDL efforts will not be constrained by the precise segments that are listed in the Integrated Report.

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	River from Rio Vista to Suisun Marsh is also currently listed as impaired for toxicity as part of the Delta Waterways (western portion) based on toxicity to Americamysis bahia in samples collected in 1996, 1997, and 2007 (2014-2016 Integrated Report decision[3] ID 36700). As with the northern Delta, the proposed 303(d) list includes a decision[4] (ID 95461) to not delist the western Delta as impaired due to toxicity based on the same data used in the 2014-2016 California Integrated Report. The redundancy in listings as described above is problematic. Data could be developed in the future to support delisting the Sacramento River (Sacramento City Marina to Suisun Marsh Wetlands). However, the overlapping northern Delta and western Delta waters might not be delisted for toxicity for reasons unassociated with the Sacramento River. This would lead to unnecessary complications and confusion, both in any delisting action, as well as in TMDL development. It is requested that the proposed listing of the Sacramento River from the Sacramento City Marina to Suisun Marsh Wetlands be removed since this segment is already listed for toxicity as part of Delta Waterways (northern portion) and Delta Waterways (western portion). Footnote 1: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2014_16state_ir_reports/00138.shtml#39706 Footnote 2: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/00138.shtml#73457	

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	Footnote 3: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2014_16state_ir_reports/00136.shtml#36700 Footnote 4: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/00136.shtml#95461	
037.07	Our second comment pertains to the data used in the proposed listing. Data referenced in the draft listing includes nine (9) samples from the Sacramento River at Hood that caused a significantly lower (SL) response than in the control for *C. dubia*. These data are summarized in Table 1. The SL response is identified in the <SigEffectCode> in CEDEN for data where there is a statistically significant difference from the control that is greater than the evaluation threshold (i.e., greater than 20% difference). Most of these data match those in the Delta RMP reports; however, there were some inconsistencies. • 5/18/16 – Duplicate data for this test are presented in the integrated report source data file. The data were corrected as shown in Table 1 (changed from an 18.9% effect to a 36.1% effect) by the Delta RMP in Jabusch et al. (2018) after it was determined that the test termination criteria were met on day 6 instead of day 7. These incorrect data should be removed from the database. • 7/13/16 – Duplicate data for this test are presented in the integrated report source data file. The data were corrected as shown in Table 1 (changed from an 46.4% effect to a 58.8% effect) by the Delta RMP in Stillway and Teh (2019) after it was determined that	This comment refers to LOE 195725 for Decision ID 121080 (Toxicity) in the Sacramento River (Sacramento City Marina to Suisun Marsh Wetlands). The commenter provided a table with data from nine sample dates and 11 toxicity tests. The data source link provided by the commenter in this table incorrectly links to data collected for the Bay Area Regional Monitoring Program ("RMP") instead of the Delta RMP; however, the data presented in the table correctly reflects the Delta RMP data relevant to LOE 195725. *C. dubia* toxicity data duplicates on 5/18/16 and 7/13/16. The commenter correctly identified uncorrected duplicate data present in the data reference for LOE 195725. While these uncorrected duplicate data are present in the data reference, they did not contribute to exceedance count or total sample size. A sample is defined as a water or sediment sample collected from the same location on the same day. Although the sample may be tested in the laboratory with multiple test species and multiple toxicity endpoint tests, it is still considered one sample (see Section 2.5.5 of the staff report for more detail). At least one toxicity test from a sample must exceed toxicity thresholds for a sample to be considered

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	the test termination criteria were met on day 6 instead of day 7. These incorrect data should be removed from the database. • 5/16/17 – It is not clear from the integrated report fact sheet if C. dubia test results from this sample were included in the listing decision or rejected based on questionable quality. These data include a compliance code indicating that they are qualified, while batch verification codes indicate that the data were verified to be compliant with applicable measurement quality objectives (MQOs) and had minor deviations. Specifically, this sample was tested outside of the 48-hour holding time because the initial test did not meet test acceptability criteria. Results of the retest conducted 10 days after sample collection are reported and these data are flagged in CEDEN as being tested outside of the sample holding time. In addition, the sample had low conductivity (94 µS/cm) that was outside of the tolerance range for this test species (100–1900 µS/cm) identified in the SWAMP (2018) MQOs. The toxicity endpoint, C. dubia reproduction, is reported in CEDEN and the integrated report source data file to be compared with the low conductivity control (QACode: H [exceeded holding time],VTCI [conductivity insufficient for test species]; ToxBatchComment: CNSL [low conductivity control] used for statistical analysis. This is a retest, 48h holding time missed. Missing initial water quality data for CNSL. Field duplicate RPD above QC limit; ToxTestComment: #N/A). There is not a statistically significant difference between *C. dubia* reproduction in the sample and in the low conductivity control. However, the draft integrated report data file presents	an exceedance. Since the corrected toxicity data exceeded toxicity thresholds on both 5/18/16 and 7/13/16, these samples were correctly counted toward the exceedance total. The data contained within the data reference were downloaded from CEDEN after the 2020-2022 data solicitation period, which closed on June 14, 2019. The duplicate data, as identified by the commenter, were removed and will not be included in future data references. Clarification of data used for exceedance counts: • 5/16/17: The *C. dubia* toxicity data for neonates per female were not used in the listing determination for Decision ID 121080. This toxicity test is flagged as needing extensive review due to insufficient conductivity for the test species. The toxicity test also required some review due to the sample exceeding holding time requirements for the toxicity test. • 4/25/17: The commenter incorrectly identified a toxicity sample date of “April 25, 2018.” There were no samples collected on this date; however, Water Board staff were able to identify a sample collected on 4/25/17 which was tested for *Pimephales promelas* biomass toxicity and yielded the results described by the commenter. This response pertains to the sample collected on 4/25/17. *P. promelas* biomass toxicity results for 4/25/17 did not meet data quality conditions (see Listing Policy Section 6.1.4) and were not included

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	a percent effect based on the comparison with the standard control where there is a 31.6% effect. The Delta RMP Quality Assurance Project Plan (QAPP) describes the interpretation of such data as follows. *If CNSL does not meet test acceptability criteria, then comparison will be made with the CNEG [negative control] with notes/flags in CEDEN. In cases like these, the result of the statistical comparison may indicate that the sample is toxic, but effects may not be (entirely) due to toxic contaminants. Rather the effects may be due to a deficiency of ions that C. dubia need in order to thrive (i.e., because the organisms did not meet TAccC [test acceptability criteria in water quality similar to the sample, as reflected by the CNSL). Therefore, a comment may be added by the laboratory conducting the test to the CEDEN database field <ToxTestComments>: "Tolerance control based on sample conductivity did not meet test acceptability criteria; percent effect based on comparison with standard control. Effects may include response to low EC in sample." (Yee et al. 2021)* Given the issues noted for this *C. dubia* toxicty test with Sacramento River surface water collected at Hood on 5/16/17, it should not be considered reliable data for supporting a 303(d) listing decision. For other toxicity tests conducted with these samples, none caused SL effects in algae and one sample collected on April 25, 2018, was SL for the fathead minnow with a 41.7% effect. These data include a compliance code indicating that they are qualified while batch verification codes indicate that the data were verified to be compliant with applicable MQOs and had	in the assessment. If the commenter is aware of toxicity data obtained from a 4/25/18 sample, the commenter is encouraged to submit these data for future Integrated Report cycles.

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	minor deviations. This test missed the sample holding time and may have been affected by pathogen related toxicity (PRT). Stillway and Teh (2019) reported that "It is possible that these significant reductions in survival may be due in part to a pathogen, as fungus was observed on deceased fish. However, as these sites did not meet the trigger for a PRT follow-up test, we cannot definitively say that a pathogen(s) were the main cause of toxicity." It is not clear based on information provided in the fact sheet if this result is among the eight (8) exceedances that were used in the newly proposed listing decision. Given the issues noted for this test, it should not be considered reliable data for supporting a 303(d) listing decision. It is requested that the State Water Board review the toxicity data used to support the proposed listing to ensure that corrected data and appropriate statistical comparisons are made for 303(d) listing decisions, based on the referenced test methods and guidance.	
037.08	Basis for proposed listing: In the fact sheet, it is stated that three (3) of eight (8) data points indicate that Sediment Quality Guidelines for nickel were exceeded. It is also stated that toxicity was observed in five (5) of seventeen (17) Hyallela sediment toxicity tests performed in the period 2001 to 2018. With regard to the Sediment Quality Guidelines (SQG) assessment, all exceedances occurred in the period from 2010 to 2018. During that period, the fact sheet states that zero (0) out of eight (8) sediment toxicity (Hyalella) tests demonstrated toxicity. Therefore, no linkage between nickel concentrations in sediment and sediment toxicity has been	See response to comment 009.15.

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	demonstrated during tests performed over the same time period. We have significant concern that the use of a SQG value as derived in the 2000 paper by MacDonald, Ingersoll and Berger is not appropriate as the basis for 303(d) listing or for TMDL development. As noted in the 2000 paper, appropriate applications of SQG include: design of monitoring programs, interpretation of historical data, evaluation of the need for sediment quality assessments, and for use in the conduct of remedial investigations and ecological risk assessments. Further, the authors state that SQG "can be used to identify hot spots with respect to sediment contamination, determine the potential for injury to sediment-dwelling organisms, evaluate the need for sediment remediation, and support the development of monitoring programs…". Importantly, the authors do not suggest use of SQG as the basis for 303(d) listing or formal impairment determinations. The authors stop short of recommending the use of SQG as water quality objectives under the Clean Water Act and note that uncertainties regarding the bioavailability of sediment-associated contaminants, interactions between contaminants, and ecological relevance are factors which have limited such usage. Sediment quality criteria were strongly considered by USEPA in the 1990's. Most of the information referenced and utilized in the 2000 paper were the result of USEPA studies and associated research. In the end, despite the extensive work performed, for numerous reasons, USEPA never moved forward to establish sediment quality criteria under the Clean Water Act. In fact, few states took action to adopt sediment quality criteria or objectives. California was an exception,	

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	adopting sediment quality objectives in coastal embayments in 2008 as a result of a significant, multi-year scientific and stakeholder effort undertaken by the State Water Board. The State Water Board considered and rejected a similar concept to adopt sediment quality objectives in the Sacramento-San Joaquin Delta and has never indicated its intent to adopt sediment quality objectives in freshwater streams in California. The conclusions to be drawn from the above information is that the use of the SQG value of 48.6 mg/kg dry weight (taken from Table 3 of the 2000 paper by MacDonald et al) as the basis for the proposed nickel listing is not adequately supported, is not consistent with its intended use, has not been publicly vetted, and should not be utilized as an indicator of impairment to support 303(d) listing or TMDL development. With regard to the sediment toxicity results, the fact sheet states that the five (5) Hyallela sediment toxicity test results where toxicity was cited all demonstrated relatively low level toxicity (83 to 92% of control survival). These results were obtained based on testing performed in the period 2001 to 2009. Importantly, none were linked to concurrent sediment chemistry results indicating nickel-associated sediment toxicity. As a result of the above, it is requested that the proposed listing for nickel be removed.	
037.09	Basis for proposed listing: The fact sheet states that fifteen (15) of sixteen (16) samples exceed the site specific fish tissue objectives for Delta waters. Those objectives are 0.08	The Delta Methylmercury Total Maximum Daily Load (Delta MeHg TMDL) developed methylmercury fish tissue objectives and states: the average methylmercury

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	mg/kg wet weight methylmercury for trophic level 3 fish and 0.24 mg/kg wet weight methylmercury for trophic level 4 fish. Data assessed were for 16 largemouth bass (trophic level 4) captured on November 5, 2007. Our primary question is whether the Delta fish tissue objectives are applicable to the Cosumnes River at the sampling location used in the analysis and whether they serve as an appropriate evaluation threshold for 303(d) listing. We seek clarification on this point.	concentrations shall not exceed 0.08 mg/kg wet weight for trophic level 3 fish fillet length of 150 to 500 mm; 0.24 mg/kg wet weight for trophic level 4 fish fillet length of 150 to 500 mm; and, 0.03 mg/kg wet weight for whole fish less than 50 mm in length. The Delta MeHg TMDL was adopted by the Central Valley Regional Water Board and approved by the State Water Board, the California Office of Administrative Law, and the U.S. EPA (U.S. EPA Approval received on October 11, 2011). The 16 fish tissue samples were taken within the Delta MeHg TMDL boundary in the section of the Cosumnes River that is labeled in the Integrated Report as "Cosumnes River, Lower (below Michigan Bar; partly in the Delta Waterways, eastern portion)." The Delta MeHg TMDL fish tissue objectives apply only to the portion of the Cosumnes River that is within the Delta MeHg TMDL boundary. No other data collected on the Cosumnes River, Lower exceeded the applicable water quality objective or threshold for mercury. Decision 130901 has been revised to include a comment that the mercury impairment is restricted to the portion of the Cosumnes River, Lower that falls within the Delta MeHg TMDL boundary (which aligns with the legal boundary of the Delta for the Cosumnes River, Lower), and not the full segment of the waterbody. The Delta MeHg TMDL is currently being re-evaluated for revision using information from studies and data collected in the years since the TMDL was adopted and approved. Revised data may include more recent fish tissue sampling results from this section of the Cosumnes River, if fish were present at time of sampling. The current fish

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		tissue objectives are valid and in effect until a revision is adopted and approved by the appropriate entities. If no revision is adopted and approved, the current objectives will remain in effect.
037.10	Basis for proposed listing: The fact sheet states that 29 of 58 samples fail to meet the evaluation criteria for dissolved oxygen to protect the SPWN use and that 33 of 199 samples fail to meet the evaluation criteria to protect the COLD use. Examination of available data for the Lower Cosumnes River indicates that dissolved oxygen concentrations generally meet dissolved oxygen criteria at all locations. A handful of exceptions to this condition have been observed at the Twin Cities Road and single exceptions have been observed at three other sampling sites. This calls into question whether the monitoring sites in question are representative of conditions in the main stem of the river, and whether the few compliance issues are indicative of a problem warranting a TMDL. To the extent low dissolved oxygen concentrations are the result of site-specific or episodic conditions at these monitoring sites, a general listing for the entire reach of the Lower Cosumnes River is not appropriate. We request that a site-specific investigation be made to determine the nature of the problem observed in this reach of the Cosumnes River prior to proceeding with the proposed listing. We appreciate the opportunity to provide these comments and are available to meet to discuss your response to these comments and next steps in the 303(d) listing process. We also wish to offer our support for the comments made on the	Changes to listing recommendations were not made in response to this comment. Staff reexamined the monitoring locations and data along the Lower Cosumnes River and determined that all the samples are representative of the waterbody segment and comply with Section 6.1.5.2 of the Listing Policy. For dissolved oxygen, there are six monitoring locations that had associated data. The locations span the length of the waterbody segment and all sections of the waterbody showed exceedances of the dissolved oxygen objective. Although most of the data was collected at the Twin Cities Rd locations, if those data were removed, there would still be enough samples and exceedances from the other monitoring locations to show impairment for the SPWN beneficial use. Based on this evaluation, it is appropriate to include all the data in the assessment. Generally, and in this specific DO assessment, staff did not perform a detailed investigation of the underlying causes of the DO excursions or a wider range of constituents, as this was not necessary to assess the attainment of the DO objectives. Such an investigation would be undertaken during the development of TMDLs or other regulatory actions to address a DO impairment, per the Water Quality Control Policy for Addressing Impaired Waters.

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	proposed report by the Central Valley Clean Water Association.	Regarding Decision ID 128971, for the COLD beneficial use, 25 of 172 samples exceeded the objective which does not exceed the allowable frequency listed in Table 3.1 of the Listing Policy. For the SPWN beneficial use, 21 of 29 samples exceeded the objective which exceeds the allowable frequency listed in Table 3.1 of the Listing Policy. Therefore, the recommendation of "List" remains as it's appropriate for DO in the Cosumnes River, Lower (below Michigan Bar; partly in Delta Waterways, eastern portion). However, during staff's evaluation of this comment, it was noted that some of the LOEs were incorrectly written for Decision ID 128971. LOEs 223990, 223991, 223993, 223994, 223995, 223996, 224018, 224019, 224020, 224021, 224022, 224023, 224038, 224039, 224042, 224043, 224044, 224065, 224066, 224067, 224068, 224069, 224070, 224071 were deleted and replaced with LOEs 233927, 224066, 233932, 233929, 233933, 233935, 233820, 233934, 233931, 233928, 233926, 233930, and 233821. Details of corrected and replaced LOEs for the Central Valley Regional Water Board waterbodies are available in Appendix T: List of Central Valley Regional Water Board Corrected Dissolved Oxygen SSO LOEs in the Proposed Final Staff Report.

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038.01	Errors in the analysis including comparisons to minimum dissolved oxygen values and duplication of lines of evidence (LOE).	Please see responses to specific comments below.
038.02	Incorrect impairment classification of pyrethroid listings where a Total Maximum Daily Load (TMDL) is already implemented. The Central Valley Regional Water Quality Control Board (Central Valley Water Board) previously adopted a regionwide TMDL and program for pyrethroid pesticide management. The Partnership submitted a Baseline Monitoring Report (SSQP 2020)[2], acknowledged that all urban tributaries in the Jurisdictional Runoff Areas are similar to the impaired "TMDL" waters, and developed a countywide management program consistent with the program of implementation requirements. Therefore, waters should not be listed as Category 5 waters requiring a TMDL for pyrethroids, pyrethroid related toxicity, or replacement pesticides. Footnote 2: Sacramento Stormwater Quality Partnership (SSQP). 2020. Pyrethroid Baseline Monitoring Report. April.	See principal response 2.4 regarding use of existing Central Valley Regional Water Board programs to address pyrethroid impairments. In addition, the Pyrethroid Baseline Monitoring Report was completed after the 2020-2022 Integrated Report data solicitation cutoff date (June 14, 2019), so it was not considered in this cycle. The commenter is encouraged to submit the 2020 Pyrethroid Baseline Monitoring Report during the next Integrated Report solicitation period.
038.03	New proposed impairments that are already covered by an implemented TMDL and control program. A number of proposed Decision IDs to list as impaired are based on Hyallela Azteca water column and sediment toxicity as well as concentrations of pyrethroids in both matrices. The Central Valley Pyrethroid TMDL uses these four measurements to identify impairments for pyrethroids. The entire Partnership jurisdictional runoff area is already considered in the Central	See principal response 2.4 regarding use of existing Central Valley Regional Water Board programs to address pyrethroid impairments. Listing Policy Section 3.9 details the requirements for identifying benthic community effects. This includes associating a benthic community effects recommended listing with a "water or sediment concentrations of

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	Valley Pyrethroid TMDL, and these lines of evidence should not be applied for new more general impairment listings (e.g., benthic community effects or toxicity) when a more specific impairment is already identified and a TMDL is adopted and implemented.	pollutants including but not limited to chemical concentrations, temperature, dissolved oxygen, and trash." This includes pollutant concentrations associated with pyrethroids or toxicity. Additionally, Listing Policy Section 3.6 details the requirements for water/sediment toxicity. This also includes associating a toxicity recommended listing with a pollutant. Both benthic community effects and toxicity further indicate aquatic life impacts contributed by pyrethroids. A causal assessment is the next step following a listing to determine if pyrethroids, another toxicant, or other factors contribute to impaired benthic communities. Should the causes be addressed by existing TMDLs or other control actions, the waterbody may be categorized in 4a, 4b, or 5 alt. Future data may indicate a toxicity reduction and improvement in benthic macroinvertebrate conditions as a result of the TMDL or controlled action.
038.04	The toxicity exceedance assessment methodology is not clearly described and is not reproducible in a manner consistent with the Listing Policy binomial distributional basis. Binomial distributions are based on the assumption of a yes/no or pass/fail test for a single decision point. The methodology in multiple Decision IDs specifies that "A sample may have multiple toxicity test results but will only be counted once. A sample is defined as being collected on the same day, at the same location with the same lab sample ID (if provided)." This suggests that one sample could have multiple	In recognition that assessments of aquatic toxicity data are complex, the assessment methodology is described in Section 2.5.6 of the Staff Report. In addition to the description in the Staff Report, please note that the Listing Policy requires that all information and data assessed under its provisions be assessed using the weight-of-evidence approach. The weight-of-evidence approach is detailed in Section 1 of the Listing Policy and

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	species and multiple endpoints. A failure/exceedance is then presumably determined if any of the multiple species-endpoint combinations is determined as a significant effect (i.e., a failure identified as "SL" in the "Significant Effect Code"). If multiple species and multiple endpoints are assessed in a sample, there are multiple opportunities to fail the test. For example, LOE 195725 specifies eight exceedances from 28 total evaluations. This data refers to Delta Regional Monitoring Program data that has 28 unique "TOX ID" values for sample collection at one site (510SACC3A) and on one sample date (7/13/2016) for a total of 56 endpoints for that one site and date. Many of the samples are replicates and longer duration assessments. While there may be a sufficient number of exceedances to meet the Listing Policy requirements, the methods of evaluation do not appear to consider the toxicity study design or the underlying binomial distributional assumptions. Additionally, acute and chronic endpoints for a test species are linked such that a failure of the chronic endpoint should not be factored into the impairment assessment if the acute endpoint resulted in a failure.	states that all assessments "shall be made on a pollutant-by-pollutant (including toxicity) basis." As described in Section 2.5.6 of the Staff Report, all aquatic toxicity samples from the same location (i.e., same sample ID), of the same matrix type (e.g., surface water), and taken on the same date were combined into one sample. Although the sample may be tested in the laboratory with multiple test species, it is still one sample. The commenter is correct that if multiple species (e.g., invertebrate, plant) and multiple endpoints (e.g., reproduction, survival) are assessed in one sample, there are multiple opportunities for there to be an exceedance. This approach is conservative in identifying waterbodies which are toxic to aquatic life given the wide variation in responses which different organisms exhibit in response to different toxicants. Additionally, this approach provides an exceedance/non-exceedance result that allows application of the binomial distribution as described in Section 3.1 of the Listing Policy as the binary test being applied asks, "is the sample toxic?". Regarding acute and chronic toxicity endpoints, any failure of one or more toxicity endpoints will be reported as a single exceedance for toxicity samples collected on the same day and location. Therefore, regardless of the number of endpoints tested, if the sample fails one or more toxicity tests such as acute, chronic, or both, it will be considered a single exceedance.

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038.05	Inappropriate use of total fractions when the filtered or dissolved fraction should be used. The Central Valley Pyrethroid TMDL was developed to consider the bioavailable fraction associated with particulate organic carbon (POC) and dissolved organic carbon (DOC). All comparisons to triggers should consider the POC and DOC adjustments or otherwise use an approved method to measure filtered pyrethroid concentrations.	See principal response 2.3 regarding use of total and dissolved fraction data.
038.06	Inappropriate use of the California Stream Condition Index (CSCI) threshold that does not consider adequate Central Valley references. The study referenced as support for the LOEs based on CSCI thresholds "established 4 biological condition classes based on the distribution of CSCI scores at reference calibration sites."[3] The CSCI 0.79 threshold used in the LOEs for designating a stream reach as altered (impaired) was calibrated on only one Central Valley reference stream that is not on the valley floor or representative of the types of streams considered for these listings. The one site calibration was not validated against any additional sites: Only 1 reference site was found in the Central Valley, so that region was combined with the Interior Chaparral (whose boundary was within 500 m of the site) for stratification purposes. Therefore, the CSCI threshold of 0.79 is not sufficiently supported to be used as the justification for impairment until additional valley floor reference streams are identified. Footnote 3: Raphael D. Mazor, et. Al. Bioassessment in complex environments: designing an index for consistent	See principal response 3.3 regarding the use of the CSCI threshold of 0.79 for waterbodies in the Central Valley floor.

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	meaning in different settings. https://www.waterboards.ca.gov/water_issues/programs/tmdl/records/state_board/2016/ref4296.pdf	
038.07	Inappropriate listing of stormwater facilities. Locations on "unnamed tributaries" where samples were collected by the California Department of Pesticide Regulation are in fact within a MS4 and by definition are not Waters of the United States and should not be classified as waters of the state or listed as impaired. The Waters of the United States rule (33 CFR § 328.3) specifically defines the exemption for "stormwater control features constructed or excavated in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater runoff".	See response to comment 005.08, 006.01, and 006.03.
038.08	Incorrect use of USEPA Office of Pesticide Program (OPP) benchmark values. OPP benchmarks are not appropriate for use as water quality objectives to determine impairments. OPP benchmarks are not developed by EPA as actionable thresholds, as they are not water quality objectives and are intended by EPA to be used for screening purposes only.[4] Impairment listings should not be based solely on OPP benchmarks. Footnote 4: https://www.epa.gov/pesticide-science-and-assessing-pesticide-risks/aquatic-life-benchmarks-and-ecological- risk#relationship	Please see response to comment 011.04.
038.09	Insufficient data to compare bacteria results to statistical threshold value (STV) in statewide bacteria provisions. In several cases use of the STV (i.e., value which no more than	The geometric mean ("geomean") was applied only if a statistically sufficient number of samples was available (generally not less than five samples collected over the

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	10% of samples can exceed in a month) is based on one or two samples in a month. Because the STV is a statistically-based value, insufficient sample collection results in an overly conservative exceedance assessment. A more reasonable approach would use the six-week rolling geometric mean and weekly sampling.	specified averaging period of 30 days, a calendar month, or six weeks). In waterbodies where a statistically sufficient number of geomean samples were not available, then attainment of the bacteria objective was determined based only on the statistical threshold value or single sample maximum per the weight of evidence approach outlined in Sections 3.11 and 4.11 of the Listing Policy. For additional information on the Water Board's bacteria assessment methods, see the Staff Report Section 2.5.1.
038.10	Bifenthrin (Decision IDs 116035) The proposed bifenthrin impairment listings are already included in Central Valley Pyrethroid TMDL management programs. Moreover, the LOE for bifenthrin lists that dissolved concentrations were evaluated, however, the referenced data does not specify a sample fraction ("FractionName" = "Not Recorded") suggesting that results are unfiltered samples and the comparisons do not consider bioavailability. For these reasons, there are insufficient lines of evidence and the Partnership requests that this proposed listing be removed unless dissolved comparisons can be performed, or the proposed listing be reclassified as Category 4a as the impairments are already addressed by the Central Valley Pyrethroid TMDL.	See principal response 2.3 regarding use of total and dissolved fraction data and principal response 2.4 regarding use of existing Central Valley Regional Water Board programs to address pyrethroid impairments. The Central Valley Pyrethroid TMDL established a pyrethroids TMDL for Arcade Creek to address the pyrethroids impairment. The Central Valley Pyrethroid TMDL does not establish a bifenthrin specific TMDL. In addition, water matrix pyrethroid LOEs for the Central Valley Region are assigned a label of "dissolved" for internal grouping and listing determination. This label is not necessarily indicative of the fraction provided in the data reference. For LOE 186542 associated with Decision ID 116035 identified in this comment, the data used for comparison were from the whole water sample because the freely dissolved fraction could not be calculated due to the lack

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		of reported dissolved organic carbon and total organic carbon results.
038.11	Fipronil Sulfone Listing (Decision ID: 11045) The proposed fipronil sulfone impairment listing is solely based on the EPA OPP aquatic life benchmark that is not considered an actionable threshold as they are not water quality objectives and are intended by EPA to be used for screening purposes only. There are no LOEs with supporting water quality objectives. For these reasons there are insufficient lines of evidence and the Partnership requests that this proposed listing be removed.	See response to comment 011.04.
038.12	Dissolved Oxygen (Decision ID 122566) The single dissolved oxygen (DO) concentration identified as an exceedance under LOE ID 207992 is described as measured in “stagnant pooled water”. Similarly, two DO concentrations identified as exceedances under LOE ID 207980 are described as measured in “stagnant pooled water”. DO measurements taken in stagnant water are likely to be low in dissolved oxygen due to lack of aeration from non-flowing water and presence of photosynthesizing material. Such measurements likely are not representative of typical conditions with respect to DO. Also, for small streams such as Deer Creek, normal fluctuations of dissolved oxygen occur within a 24-hour period. The three remaining DO exceedances were all measured before 10:30 AM when DO is	The commenter is correct that measurements taken in stagnant water are likely to be low in dissolved oxygen due to lack of aeration from non-flowing water. Such measurements likely are not representative of typical conditions; therefore, the LOEs associated with those data (LOEs 207992 and 207980) were removed from the assessment. The recommendation was revised from “List” to “Do not List”, following the removal of the unrepresentative data.

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	just beginning to recover from the early morning depression. The averaging period of DO data should be considered. For these reasons there are insufficient lines of evidence and the Partnership requests that this proposed listing be removed.	
038.13	Benthic Community Effects (Decision ID 131804) The bioassessment LOE IDs (232159, 31394, and 2637) are not appropriate to determine impairment. The CSCI benchmark used (0.79) is not an adopted water quality objective and has not been sufficiently calibrated and validated for Central Valley reference conditions with respect to channels and creeks that experience seasonal flows on the valley floor. The chlorpyrifos LOE IDs (31394 and 2637) are based on data collected through mid-April 2003 that provide a dated snapshot of ambient chlorpyrifos concentrations measured prior to the 2005 ban on chlorpyrifos for urban use. The Partnership has provided data demonstrating that chlorpyrifos is no longer present in urban streams and therefore, the two lines of evidence based on historical chlorpyrifos data are not representative of current conditions. The final sediment toxicity LOE ID (22096) is identified as pyrethroid-related toxicity and the water body is already included in Central Valley Pyrethroid TMDL management programs and a Category 5 listing is not necessary.	See principal response 3.1 regarding use of the CSCI threshold prior to having a CSCI water quality objective. See principal response 3.3 regarding the use of the CSCI threshold for waterbodies on the Central Valley floor. For information on the use of historical data, please see principal response 4.4 for Data and Analysis Transparency, and Readily Available Data. While data from other urban creeks has demonstrated a reduction in chlorpyrifos water column concentration since the chlorpyrifos ban for urban use, these data are not present for Elder Creek. These post-ban data are critical to determine if chlorpyrifos was/is no longer used and if concentrations further decreased in Elder Creek. The commenter correctly identified Elder Creek as a waterbody included in the Central Valley Pyrethroid TMDL. However, benthic community effects indicate aquatic life impacts contributed by pyrethroids. A causal assessment is the next step following a listing to determine if pyrethroids, another toxicant, or other factors contribute to impaired benthic communities. Should the causes be addressed by the existing pyrethroids TMDL or other control actions, the waterbody may be categorized in 4a, 4b, or 5 alt.

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	For these reasons there are insufficient lines of evidence and the Partnership requests that this proposed listing be removed.	
038.14	Benthic Community Effects (Decision ID 131805) The bioassessment LOE IDs (232143, 232158, and 232145) are not appropriate to determine impairment. The CSCI benchmark used (0.79) is not an adopted water quality objective and has not been sufficiently calibrated and validated for Central Valley reference conditions with respect to channels and creeks that experience seasonal flows on the valley floor. The water column toxicity LOE IDs (195711 and 195699) are not directly relevant to benthic effects. Moreover, because of the predominance of Hyallela azteca endpoint exceedances the water body is already considered under the Central Valley Pyrethroid TMDL management programs. The sediment toxicity LOE IDs (195684 and 195708) are identified as pyrethroid-related toxicity and the water body is already included in the Central Valley Pyrethroid TMDL management programs. For these reasons there are insufficient lines of evidence and the Partnership requests that this proposed listing be removed.	See principal response 3.1 regarding use of the CSCI threshold prior to having a CSCI water quality objective. See principal response 3.3 regarding the use of the CSCI threshold for waterbodies on the Central Valley floor. In addition, pursuant to the Listing Policy, any waterbody proposed for listing for benthic community effects must also have other 303(d) impairments identified for that waterbody for aquatic life. The TMDL status of the other 303(d) impairment does not negate a listing for benthic community effects. Should the cause of a benthic community impairment be aquatic toxicity, it may be appropriate to categorize the waterbody in Category 4b or 5alt in future Integrated Report cycles. Categorizing a waterbody as 4b or 5alt requires evidence of reasonable assurance that water quality standards will be attained in a reasonable period of time or of a plan to address the impairment. Depending on the sources and if the waterbody is part of a program or has an established plan that accounts for the management of all these sources (e.g., under the ILRP), an approved toxicity management plan developed to comply with the Central Valley Pyrethroid TMDL may be adequate to categorize a waterbody in 4b or 5alt. In 2019, the Central Valley Pyrethroid TMDL established pyrethroid TMDLs for nine waterbodies that does not include the waterbody identified in Decision ID 131805 (Laguna Creek [Sacramento County]). Waterbodies with

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		TMDLs established by the Central Valley Pyrethroid TMDL are as follows: • Arcade Creek, • Chicken Ranch Slough, • Curry Creek (Placer and Sutter Counties), • Elder Creek, • Kaseberg Creek (tributary to Pleasant Grove Creek, Placer County), • Morrison Creek, • Pleasant Grove Creek (upstream of Fiddyment Rd), • Pleasant Grove Creek, South Branch, and • Strong Ranch Slough See also principal response 2.4 regarding use of existing Central Valley Regional Water Board programs to address pyrethroid impairments.
038.15	Toxicity (Decision ID 120972) The water column toxicity LOE IDs (195711 and 195699) are not specified in enough detail to determine how the number of exceedances and total number of tests were determined. To meet the Listing Policy technical requirements, each endpoint should be considered separately. Moreover, because the toxicity exceedances are predominantly Hyallela azteca endpoints the impairments should be considered through the already implemented Central Valley Pyrethroid TMDL management programs.	Please see individual response to comment 038.04 regarding toxicity assessment methods and use of data from different endpoints. The Central Valley Pyrethroid TMDL established pyrethroid TMDLs for nine waterbodies that does not include the waterbody identified in Decision ID 120972 (Laguna Creek [Sacramento County]). Waterbodies with TMDLs established by the Central Valley Pyrethroid TMDL are as follows: • Arcade Creek, • Chicken Ranch Slough, • Curry Creek (Placer and Sutter Counties), • Elder Creek,

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	The Hyallela azteca sediment toxicity LOE ID (195708) and the water body is already considered in Central Valley Pyrethroid TMDL management programs. For these reasons there are insufficient lines of evidence and the Partnership requests that this proposed listing be removed or be reclassified as Category 4a as the impairments are being addressed by the Central Valley Pyrethroid TMDL.	• Kaseberg Creek (tributary to Pleasant Grove Creek, Placer County), • Morrison Creek, • Pleasant Grove Creek (upstream of Fiddyment Rd), • Pleasant Grove Creek, South Branch, and • Strong Ranch Slough Additionally, please see principal response 2.4 regarding use of existing Central Valley Regional Water Board programs to address impairments.
038.16	Benthic Community Effects (Decision ID 131507) The LOEs provided to support this proposed listing decision are inappropriate or are related to existing TMDLs that address the impairment already. The bioassessment LOE IDs (232206 and 232224) are not appropriate to determine impairment. The CSCI benchmark used (0.79) is not an adopted water quality objective and has not been sufficiently calibrated and validated for Central Valley reference conditions with respect to channels and creeks that experience seasonal flows on the valley floor. The aluminum aquatic toxicity LOE ID (199206) is based on the USEPA aquatic life water quality criteria (87 µg/L) that has been demonstrated throughout the Central Valley in numerous NPDES permit water effect ratio studies (Modesto, Turlock, etc.) to be orders of magnitude overly protective. Moreover, this water column aluminum water quality criteria	Changes to listing recommendations were not made in response to this comment. Decision ID 131507 pertains to Morrison Creek. See principal response 3.1 regarding use of the CSCI threshold prior to having a CSCI water quality objective. See principal response 3.3 regarding the use of the CSCI threshold for waterbodies on the Central Valley floor. Regarding the aluminum aquatic toxicity LOE (LOE 199206), the station associated with this LOE (Station: CALWR_WQX-A1102000) was reassigned from Morrison Creek to the correct waterbody (WBID: CAR5266108019990126150509, Pit River [from confluence of N and S forks to Shasta Lake]). As a result, the aluminum aquatic toxicity was removed from this listing determination. Please see response to comment 038.17 for further detail on this revision. Additionally, see response to comment 009.07 regarding

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	developed based on non-benthic species should not be applied for benthic toxicity assessments. The sediment toxicity LOE IDs (59127 and 25581) are identified in the LOE as pyrethroid-related toxicity and the water body is already included in the Central Valley Pyrethroid TMDL management programs. The sediment pollutant LOE ID (30941) is based on sediment pyrethroid concentrations compared to calculated LC50s thresholds. The water body is already included in Central Valley Pyrethroid TMDL management programs and a separate less specific listing is not indicated for benthic community effects. The pentachlorophenol LOE ID (26106) is an incorrect application of a human health water quality objective (one in a million cancer risk increase for seventy years of human consumption) for this benthic community effect (i.e., benthic aquatic life) proposed listing. Moreover, the data were collected between December 2003 and June 2006 for a chemical that has a short half-life in shallow waters like Morrison Creek because the primary mode of degradation is photolysis. For these reasons there are insufficient lines of evidence and the Partnership requests that this proposed listing be removed.	the use of U.S. EPA aquatic life recommended criteria to assess aluminum data. The commenter correctly identified Morrison Creek as a waterbody included in the Central Valley Pyrethroid TMDL. However, benthic community effects indicate aquatic life impacts contributed by pyrethroids. A causal assessment is the next step following a listing to determine if pyrethroids, another toxicant, or other factors contribute to impaired benthic communities. Should the causes be addressed by the existing pyrethroids TMDL or other control actions, the waterbody may be categorized in 4a, 4b, or 5 alt. Also see response to comment 011.07. A pyrethroids sediment chemistry LOE (LOE 30941) was found to have an incorrect data reference citation. As a result, LOE 30941 was replaced with LOE 234551. This new LOE assessed the same sediment chemistry data and found the same exceedance count and total samples. LOE 234551 meets the requirement of associated pollutant samples that exceed water quality objectives. A Sediment toxicity LOE (LOE 25581) was also found to have an incorrect data reference citation. As a result, LOE 25581 was replaced with LOE 234552. This new LOE assess the same sediment toxicity data and found the same exceedance count and total samples. LOE 234552 meets the requirement of associated pollutant samples that exceed water quality objectives. The commenter correctly identified that the human health threshold used in the pentachlorophenol LOE 26106 was incorrectly applied to this benthic community effects listing

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		determination. LOE 26106 was removed from Decision ID 131507. In addition, by revisiting this listing recommendation, Water Board staff identified that LOEs related to diazinon in water (LOEs 23067, 2635, and 23066) were not correctly counted toward the associated pollutant(s) samples that exceed water quality objectives. These diazinon LOEs have been added to this listing determination. For information on the use of historical data, please see principal response 4.4 on Data and Analysis Transparency, and Readily Available Data. In addition, pursuant to the Listing Policy Section 3.9, any waterbody proposed for listing for benthic community effects must also have other 303(d) impairments identified for that waterbody for aquatic life. The TMDL status of the other 303(d) impairment does not negate a listing for benthic community effects.
038.17	Aluminum (Decision ID 122225) The aluminum aquatic toxicity LOE ID (199206) is based on the USEPA aquatic life water quality criteria (87 µg/L) that has been demonstrated throughout the Central Valley in numerous NPDES permit water effect ratio studies (Modesto, Turlock, etc.) to be orders of magnitude overly protective. The Secondary MCL for aluminum has been determined to be the controlling water quality objective for the discharge to waterbodies in the Sacramento area and downstream Delta.	The monitoring station associated with Decision ID 122225 and LOE 199206 (Station ID: CALWR_WQX-A1102000) was reassigned from Morrison Creek to the correct waterbody (WBID: CAR5266108019990126150509, Pit River [from confluence of N and S forks to Shasta Lake]). As a result of the station reassignment, this listing determination was removed from Morrison Creek and the waterbody is no longer recommended to be listed for aluminum. These changes are provided in Appendix R: List of Central Valley Regional Water Board Station Location Revisions

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	The determination was made through evaluation of available aluminum toxicity bioassay results performed in the Central Valley (e.g., City of Manteca, City of Yuba City, and City of Modesto) which resulted in adjusted chronic criteria more orders of magnitude greater than the 1988 U.S. EPA ambient water quality chronic criterion of 87 µg/L (U.S. EPA, 1988), and greatly exceeding the Secondary MCL concentration of 200 µg/L. Previously, the 304(a) 87 µg/L aquatic life criterion had been selected based on best professional judgment utilizing available information for use in Central Valley permits as an interpretation of the narrative toxicity objective in the Basin Plan. However, considering information generated in the last 15 years regarding the low aluminum toxicity in Central Valley waters provided by bioassays, the fact that the Secondary MCL concentration is an order of magnitude less than the bioassay effects levels, and the fact that the U.S. EPA criteria document acknowledges many high quality waters with aluminum concentrations exceeding 87 µg/L and recommends consideration of the site-specific waters in determining the appropriate aquatic life criterion, the use of the 200 µg/L Secondary MCL value is deemed appropriate. For these reasons there are insufficient lines of evidence and the Partnership requests that this proposed listing be removed.	to Correct Mapping Error and Listing Recommendation Updates in the Proposed Final Staff Report. Also, please see response to comment 006.17, where the scope of the mapping error and how it is being remedied is discussed. For discussion of the U.S. EPA aquatic life recommended criteria to assess aluminum data, please see response to comment 009.07.
038.18	Dissolved Oxygen (Decision ID 128996) Dissolved oxygen data referenced in LOE IDs 224260 and 224237 erroneously concluded ten samples analyzed did not meet of the Basin Plan objective for minimum dissolved oxygen of 7.0 mg/L (expressed as a 7-day minimum averaging period) when the lowest measured DO	Comment noted. During staff's evaluation of this comment, it was noted that some of the LOEs were incorrectly written for Decision ID 128996. LOEs 224237, 224260, 224261, and 224263 were deleted and replaced with LOEs 233866 and 233865. The listing recommendation was changed from "List" to "Do Not List". Details of corrected and replaced LOEs for the Central

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	concentration in the dataset is 7.89 mg/L. The 7.0 mg/L objective is a minimum threshold for DO, not a maximum threshold. LOE 224260 erroneously specifies that the Basin Plan objective for dissolved oxygen in the Sacramento River below the I Street Bridge is 5.0 mg/L. Among the 22 dissolved oxygen (DO) data points referenced in Decision ID 128996, there is only a single DO measurement that falls below the 7.0 mg/L water quality objective for DO that is used to protect the Cold Freshwater Habitat beneficial use. This one sample result which is below the Basin Plan objective (minimum) was a DO concentration of 6.5 mg/L recorded at the Sacramento Marina Site 3 on August 16, 2006, at 9:41 AM. The Partnership requests that this listing be removed because the minimum number of exceedances needed to place a water segment on the Section 303(d) list for conventional or other pollutants was not met. A dataset containing 22 samples would require at least 5 dissolved oxygen values below the Basin Plan objective to list the water segment.	Valley Regional Water Board waterbodies are available in Appendix T: List of Corrected Dissolved Oxygen SSO LOEs in the Proposed Final Staff Report.
038.19	**Bifenthrin (Decision ID 120667), Fipronil (Decision ID 120663), Fipronil Sulfone (Decision ID 120675), Imidacloprid (Decision ID 120665), and Pyrethroids (Decision ID 120662**) The data used to support multiple proposed new listing decisions for this unknown tributary were collected at collocated California Department of Pesticide Regulation (DPR) monitoring site (FOL100) and USGS monitoring site (USGS-383844121084001). The sampling location is part of a MS4 (City of Folsom) structure used to convey residential	See response to comment 006.03.

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	drainage along a greenbelt prior to draining to stormwater detention ponds tributary to Alder Creek. As such, these sampling locations are part of the MS4 and associated treatment features. Because the sample location is within the MS4 it is not by definition a Water of the United States and therefore, it is not appropriate as an impairment listing for a surface water or water of the state. For these reasons there are insufficient lines of evidence and the Partnership requests that these proposed listings be removed.	
038.20	**Fipronil (Decision ID 121085)** The fipronil impairment is based on the EPA OPP aquatic life benchmark that is not considered an actionable threshold as they are not water quality objectives but are intended by EPA to be used for screening purposes only. For this reason, there are insufficient lines of evidence and the Partnership requests that this proposed listing be removed.	See response to comment 011.04.
038.21	**Permethrin (Decision ID 130443)** The two LOE IDs (203419 and 192829) refer to the same sample at site USGS-11447650 on the same date May 7, 2013, and then incorrectly state two unique LOEs. Only one sample comparison exceeds the threshold and the minimum Listing Policy requirements have not been met.	The comment is appreciated. LOE 203419 was removed from the assessment and Decision 130443 was revised. As a result, the listing recommendation was changed from “List” to “Do not List.”

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	The Partnership requests that this listing be removed because the dataset that does not possess the minimum number of exceedances needed to place a water segment on the Section 303(d) list.	
038.22	**Pyrethroids (Decision ID 121084**) The proposed pyrethroid impairment listings are already included in Central Valley Pyrethroid TMDL and are addressed by that management program. For this reason the Partnership requests that this impairment be reclassified as Category 4a as the impairment is being addressed by the Central Valley Pyrethroid TMDL.	The Central Valley Pyrethroid TMDL established pyrethroid TMDLs for nine waterbodies that does not include the waterbody identified in Decision ID 121084 (Sacramento River [Sacramento City Marina to Suisun Marsh Wetlands]). Waterbodies with TMDLs established by the Central Valley Pyrethroid TMDL are as follows: • Arcade Creek, • Chicken Ranch Slough, • Curry Creek (Placer and Sutter Counties), • Elder Creek, • Kaseberg Creek (tributary to Pleasant Grove Creek, Placer County), • Morrison Creek, • Pleasant Grove Creek (upstream of Fiddyment Rd), • Pleasant Grove Creek, South Branch, and • Strong Ranch Slough Additionally, please see principal response 2.4 regarding use of existing Central Valley Regional Water Board programs to address impairments.
038.23	**Temperature, water (Decision ID 124702)** The 84 LOEs state that the proposed temperature listing is based on temperature data collected over an extended period	See response to comment 009.11 and 009.12.

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	at various locations and 1766 of 7533 measurements exceed the threshold value of 20˚C during the periods March 15 to June 15 and September 1 to December 31. The threshold value of 20˚C is a USEPA Region 10 guideline for protection of salmonid migration. The lower Sacramento River reaches elevated temperatures in the summer and fall months when ambient air temperatures in the 90 to 100˚F range are commonplace. This natural, seasonal variation in air temperatures in the Central Valley plays a large role in the temperature conditions in the Sacramento River and is not a controllable factor. The Clean Water Act TMDL toolbox seeks to achieve objectives through control of defined sources and is not an appropriate mechanism for addressing the issue of restricted fish migration during warm seasons. The Partnership requests that the decision to recommend development of a TMDL for temperature in this reach of the Lower Sacramento River be reconsidered.	
038.24	**Toxicity (Decision ID 121080)** The proposed listing decision based on LOE ID 195725 for toxicity in the Sacramento River (from the Sacramento City Marina to Suisun Bay) is redundant to existing listings. The Lower Sacramento River from Sacramento to Rio Vista is currently 303(d) listed as impaired for toxicity as an element of the Delta Waterways (northern portion) reach. This 2014-2016 Integrated Report decision (Decision ID 39706)[5] was based on information that included Hyallela azteca toxicity test data with samples from the Sacramento River at Hood	Changes to listing recommendations were not made in response to this comment. Previous integrated report cycles included geographically broad assessments of the Sacramento - San Joaquin River Delta, known as subareas. Some waterbodies within these large subareas were remapped and separated into individual waterways to ensure data were grouped to a representative waterbody segment. Over the next few Integrated Report cycles, waterways within the Delta will be remapped to the individual segments, and the subareas will be removed. Past Delta LOEs will be

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	collected January 31, 2008 to December 30, 2009. The proposed 303(d) list includes a decision (Decision ID 73457)[6] to not delist this segment for toxicity based on the same data collected January 31, 2008 to December 30, 2009. The Sacramento River from Rio Vista to Suisun Marsh is also currently listed as impaired for toxicity as part of the Delta Waterways (western portion) based on toxicity to Americamysis bahia in samples collected in 1996, 1997, and 2007 (2014-2016 Integrated Report Decision ID 36700[7]). As with the northern Delta, the proposed 303(d) list includes a decision[8] (Decision ID 95461) to not delist the western Delta as impaired due to toxicity based on the same data used in the 2014-2016 California Integrated Report. The redundancy in listings as described above is problematic. Data could be developed in the future to support delisting the Sacramento River (Sacramento City Marina to Suisun Marsh Wetlands). However, the overlapping northern Delta and western Delta waters might not be delisted for toxicity for reasons unassociated with the Sacramento River. This would lead to unnecessary complications and confusion, both in any delisting action as well as in TMDL development. The Partnership requests that the proposed listing of the Sacramento River from the Sacramento City Marina to Suisun Marsh Wetlands be removed since this segment is already listed for toxicity as part of Delta Waterways (northern portion) and Delta Waterways (western portion). Footnote 5: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2014_16state_ir_reports/00138.shtml#39706	reassessed from the subareas to the remapped waterbody based on the monitoring station location. In the interim, there will be some overlapping listings. For the 2020-22 Integrated Report, data from sampling locations that remain grouped in the Delta subareas were not used to make a new listing or delisting recommendations because that data may not represent the whole Delta subarea.

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	Footnote 6: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/00138.shtml#73457 Footnote 7: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2014_16state_ir_reports/00136.shtml#36700 Footnote 8: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_draft/apx_b/00136.shtml#95461	
038.25	Toxicity (Decision ID 120455) The water column toxicity LOE IDs (195706, 195713, 195689, and 195712) are not specified in enough detail to determine how the number of exceedances and total number of tests were determined. The approach suggests that an individual toxicity sample is tested against multiple endpoints such that a sample failure can occur with any of the endpoint failures. The Listing Policy is based on a binomial distribution test (i.e., two outcome test), but the approach used is not a binomial test because of the multiple number of outcomes for each sample endpoint. To match the Listing Policy approach, each endpoint should be considered as a separate evaluation and not consider chronic endpoints if acute endpoints fail. Moreover, it is likely that toxicity effects are pyrethroid related and the water body is already included in Central Valley Pyrethroid TMDL management programs and that if an impairment is confirmed it should be classified as Category 4a.	Changes to listing recommendations were not made in response to this comment. Each LOE referenced in Decision ID 120455 was reviewed and determined to be correct. As described in the Waterbody Fact Sheet, no source analysis has been conducted and no pyrethroids data indicating pyrethroids impairments are available for this recommendation. As such, toxicity cannot be definitively linked to pyrethroids impairments in this given waterbody for this Integrated Report cycle. In future Integrated Report cycles, if the data indicate pyrethroids impairments and the waterbody falls within the geographic and regulatory scope of the Pyrethroids Control Program, the waterbody may be re-assigned to the appropriate Integrated Report Listing Category.

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	For these reasons there are insufficient lines of evidence and the Partnership requests that this proposed listing be postponed until additional justifications consistent with the Listing Policy are provided.	Please see response to comment 038.04, which addresses concerns with one sample being tested against multiple endpoints.
038.26	Mercury (Decision ID 130901) The fish tissue LOE ID (232780) indicated was based on fifteen of sixteen tissue samples exceeding the site-specific objective for the COMM beneficial uses. Those objectives are 0.08 mg/kg wet weight methylmercury for trophic level 3 fish and 0.24 mg/kg wet weight methylmercury for trophic level 4 fish, which are based on Delta-specific fish tissue objectives. Data assessed were for sixteen largemouth bass (trophic level 4) captured on November 5, 2007. The Partnership requests the impairment listing be postponed until clarification on the technical appropriateness of the Delta fish tissue objectives in the Cosumnes River for the purpose of impairment listing is provided and a review of more recent data is conducted.	See response to comment 037.09.
038.27	Nickel (Decision ID 119276) LOE ID (25705 and 59152) for sediment toxicity specify three of eight data points exceed the Sediment Quality Guidelines (SQG) for nickel. It is also stated that toxicity was observed in five of seventeen Hyallela sediment toxicity tests performed in the period 2001 to 2018. With regard to the SQG assessment, all exceedances occurred in the period from 2010 to 2018. During that period,	See response to comment 009.15.

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	the fact sheet states that zero out of eight sediment toxicity (Hyallela azteca) tests demonstrated toxicity. Therefore, no linkage between nickel concentrations in sediment and sediment toxicity has been demonstrated during tests performed over the same time period. Sediment quality criteria were strongly considered by USEPA in the 1990s. California adopted sediment quality objectives in coastal embayments in 2008 as a result of a significant, multi-year scientific and stakeholder effort undertaken by the State Water Board. The State Water Board considered and rejected a similar concept to adopt sediment quality objectives in the Sacramento-San Joaquin Delta and has never indicated its intent to adopt sediment quality objectives in freshwater streams in California. The conclusions to be drawn from the above information are that the use of the SQG value of 48.6 mg/kg dry weight (taken from Table 3 of the 2000 paper by MacDonald et al.) as the basis for the proposed nickel listing is not adequately supported, is not consistent with its intended use, has not been publicly vetted, and should not be utilized as an indicator of impairment to support 303(d) listing or TMDL development. With regard to the sediment toxicity results, the fact sheet states that the five Hyallela azteca sediment toxicity test results where toxicity was cited all demonstrated relatively low-level toxicity (83 to 92% of control survival). These results were obtained based on testing performed in the period 2001 to 2009.	

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	Importantly, none were linked to concurrent sediment chemistry results indicating nickel-associated sediment toxicity. For these reasons there are insufficient lines of evidence and the Partnership requests that this proposed listing be removed.	
038.28	Oxygen, Dissolved (Decision ID 128971) Multiple LOEs cumulatively state that 20 of 58 samples fail to meet the evaluation criteria for dissolved oxygen to protect the SPWN use and that 33 of 199 samples fail to meet the evaluation criteria to protect the COLD use. Examination of the provided data for the Lower Cosumnes River indicates that dissolved oxygen concentrations generally meet dissolved oxygen criteria at all locations except the Twin Cities Road location. This calls into question whether the monitoring site in question is representative of conditions in the main stem of the river. To the extent low dissolved oxygen concentrations are the result of site-specific conditions at this monitoring site, a general listing for the entire reach of the Lower Cosumnes River is not appropriate. The Partnership requests that a site-specific investigation be made to determine the nature of the problem observed at the Twin Cities Road monitoring site prior to proceeding with the proposed listing.	Please see response to comment 037.10.

Letter 39: Bruce Houdesheldt, Sacramento Valley Water Quality Coalition

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039.01	BIG CHICO CREEK (BUTTE AND TEHAMA COUNTIES) Bifenthrin and Pyrethroids (Decision IDs 116463 and 116461) The proposed Big Chico Creek bifenthrin and pyrethroids impairment listings are for a waterbody that is already subject to Central Valley Water Board actions for control of pyrethroid pesticide discharges through its Pyrethroid Pesticides Control Program that was established with approval of the Central Valley Pyrethroid Pesticides TMDL and Basin Plan Amendment (Resolution R5-2017-0057; approved by the Office of Administrative Law on 19 February 2019; hereafter TMDL). The Pyrethroid Pesticides Control Program, still in its first couple of years of implementation, exposes municipal stormwater, municipal and domestic wastewater, and agricultural dischargers to a conditional prohibition of pyrethroid pesticide discharges unless they develop and implement pyrethroid management plans to reduce pyrethroid levels in their discharges to the maximum extent practicable. The Pyrethroid Pesticides Control Program should be allowed to be fully implemented to determine if newly implemented management practices are sufficient to allow for attainment of water quality standards for pyrethroids based on current data. Data used to support these two decisions were collected 3–13 years ago prior to approval and implementation of the Pyrethroid Pesticides Control Program in the Central Valley. For these reasons, the noted decisions are unnecessary and premature considering the recently implemented Pyrethroid	The Central Valley Pyrethroid TMDL established pyrethroid TMDLs for nine waterbodies that do not include the waterbody identified in Decision IDs 116463 and 116461 (Big Chico Creek [Butte and Tehama Counties]). Waterbodies with TMDLs established by the Central Valley Pyrethroid TMDL are as follows: • Arcade Creek, • Chicken Ranch Slough, • Curry Creek (Placer and Sutter Counties), • Elder Creek, • Kaseberg Creek (tributary to Pleasant Grove Creek, Placer County), • Morrison Creek, • Pleasant Grove Creek (upstream of Fiddyment Rd), • Pleasant Grove Creek, South Branch, and • Strong Ranch Slough See principal response 2.4 regarding use of existing Central Valley Regional Water Board programs to address pyrethroid impairments. Since the conditional prohibition of pyrethroid use, the next few years of data will be valuable to determine if pyrethroid constituent concentration is reduced in Big Chico Creek. In future Integrated Report cycles staff will consider all readily available data for pyrethroid pesticides and update the assessments for individual pyrethroid pesticides and for the additive effects of pyrethroids to reflect conditions in the waterbody.

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	Pesticides Control Program. The Coalition requests that these proposed listings be removed.	For information on the use of historical data, please see principal response 4.4 on Data and Analysis Transparency, and Readily Available Data.
039.02	ACHE CREEK, LOWER (CLEAR LAKE DAM TO CACHE CREEK SETTLING BASIN NEAR YOLO BYPASS) Specific Conductivity (Decision ID 126891) Elevated salinity in the lower reaches of large drainages due to natural erosion processes and upstream salt-containing discharges can result in specific conductance levels that exceed the recommended 900 µS/cm level of Title 22 of the California Code of Regulation's Secondary Maximum Contaminant Level (MCL) for specific conductance. The recommended 900 µS/cm Secondary MCL historically has been used to assess protection of the Municipal and Domestic (MUN) beneficial use for many surface waters and groundwaters identified in the Central Valley Basin Plan. However, in its 2017 Amendment to the Sacramento/San Joaquin River Basin Plan to add electrical conductivity water quality objectives in the San Joaquin River between the mouth of the Merced River and the Airport Way Bridge near Vernalis (Resolution R5-2017-0062), the Central Valley Water Board found that specific conductance that falls within the recommended range (900 to 1,600 µS/cm) of the Title 22 Secondary MCL for specific conductance "is considered reasonably protective of the MUN use in the Basin Plan." It has long been recognized that the Central Valley faces a threat to its productive agricultural lands and water supplies delivered across the state due to rising salt levels. To	See response to comment 023.04.

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	address the threats posed by increasing salinity (and nitrate) levels in the Central Valley, a broad coalition of agriculture, cities, industry, and regulatory agencies joined together to develop a vision and plan for managing salts and nutrients. The Central Valley Salinity Alternatives for Long-Term Sustainability initiative (CV-SALTS) is a collaborative effort initiated in 2006 to find solutions to the salt problem in the Central Valley. CV-SALTS participants are working together to develop a workable, comprehensive plan to address salinity (and nitrates) throughout the Central Valley in a comprehensive, consistent, and sustainable manner. The CV-SALTS process is envisioned to occur in three phases, with the first phase, a salinity prioritization and optimization integrated study, initiated in 2021. This long-term Basin planning effort to establish a Central Valley Salt and Nitrate Control Program must be allowed to determine salinity levels that are appropriate for different regions in the Central Valley and that protect the most sensitive beneficial uses in those regions. Until those determinations are made, it is premature to list as impaired water bodies with specific conductance levels between the Title 22 Secondary MCL recommended range (900 to 1,600 µS/cm). Furthermore, as drought continues to impact the state, consideration of appropriate salinity levels during extended dry periods will also need to be identified. For these reasons, this decision is inconsistent with a recent Central Valley Water Board Basin Plan Amendment that is relevant to the listed water body and premature considering the ongoing CV-SALTS process. The Coalition requests that the proposed listing be removed.	

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039.03	CACHE SLOUGH (IN DELTA WATERWAYS, NORTHERN AND NORTHWESTERN PORTIONS) Bifenthrin, Cyhalothrin-Lambda, Permethrin, and Pyrethroids (Decision IDs: 119096, 119098, 130407, and 119095) The data references for the bifenthrin, cyhalothrin-lambda, permethrin, and pyrethroids listings do not include particulate organic carbon and dissolved organic carbon concentrations that are required to be considered to compare measured pyrethroid concentrations to either single (bifenthrin, cyhalothrin-lambda, permethrin) or additive (the six pyrethroids identified in the TMDL) chronic concentration goals specified in the TMDL. For these reasons, there are insufficient lines of evidence to support these decisions and the Coalition requests that these proposed listings be removed.	Changes to listing recommendations were not made in response to this comment. See principal response 2.3 regarding use of POC and DOC data.
039.04	LASSEN CREEK (MODOC COUNTY) Benthic Community Effects (Decision ID 131734) The study[1] referenced as support for the lines of evidence (LOEs) based on California Stream Condition Index (CSCI) thresholds “established 4 biological condition classes based on the distribution of CSCI scores at reference calibration sites.” The CSCI 0.79 threshold used in the LOEs for designating a stream reach as altered (impaired) was calibrated on only one Central Valley reference stream that is not representative of all the types of streams in the Central	Changes to listing recommendations were not made in response to this comment. See principal response 3.3 regarding the use of the CSCI threshold of 0.79 for waterbodies on the Central Valley floor.

No.	Comment	Response
	Valley and considered for these 303(d) listings. The single site calibration was not validated against any additional sites: *Only 1 reference site was found in the Central Valley, so that region was combined with the Interior Chaparral (whose boundary was within 500 m of the site) for stratification purposes.* Therefore, the CSCI threshold of 0.79 is not sufficiently supported to be used as the justification for impairment until additional reference streams at multiple geographic locations in the Central Valley are identified. The bioassessment LOE IDs (232217, 95989, 232102, 232214) are not appropriate to determine impairment. The CSCI benchmark used (0.79) is not an adopted water quality objective and has not been sufficiently calibrated and validated for Central Valley reference conditions with respect to channels and creeks in far Northern California (where Lassen Creek is located). For these reasons, there are insufficient lines of evidence to support this decision and the Coalition requests that the proposed listing be removed. Footnote 1: Mazor, RD et al. 2016. Bioassessment in complex environments: designing an index for consistent meaning in different settings. Freshwater Science 35(1):249-271.	
039.05	LINDSEY SLOUGH (SOLANO COUNTY) Chlorpyrifos (Decision ID 121541)	Changes to listing recommendations were not made in response to this comment. Since the ban on chlorpyrifos in 2005 for urban use, declines in exceedances have been observed. Additionally, on January 1, 2021,

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	The use of chlorpyrifos in California has been on the decline for over 15 years. The organophosphate insecticide was banned for urban use in 2005 and banned for agricultural use on January 1, 2021. The data used to support this decision were collected in 2011 and are no longer representative of ambient water column concentrations of chlorpyrifos in Lindsey Slough. Additionally, the half-life estimated for chlorpyrifos in aerobic aquatic conditions is approximately one month and in anerobic aquatic conditions half-life ranges from 50 to 120 days. Any residual chlorpyrifos from an agricultural application made just prior to its ban would be below levels of detection at this date. There is no reason to list a water body as requiring a TMDL for a particular pesticide when that pesticide is banned for use and no longer poses a threat to water quality. For these reasons, there are insufficient lines of evidence to support this decision and the Coalition requests that the proposed listing be removed.	chlorpyrifos was banned for agricultural use. Therefore, the next couple of years of data will be valuable to determine if chlorpyrifos is no longer used and if concentrations further decrease in waterbodies. With the agricultural ban in place for only a few months, it is crucial that we monitor for the constituent for the time being. Then, in future cycles, we can determine how to move forward based on the data.
039.06	Pyrethroids (Decision ID 121542) The data reference for the pyrethroids listing does not include particulate organic carbon and dissolved organic carbon concentrations that are required to be considered to compare measured pyrethroid concentrations to the additive chronic concentration goal for the six pyrethroids specified in the TMDL. For this reason, there are insufficient lines of evidence to support this decision and the Coalition requests that the proposed listing be removed.	Changes to listing recommendations were not made in response to this comment. See principal response 2.3 regarding use of POC and DOC data.

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039.07	PINE CREEK (BUTTE AND TEHAMA COUNTIES) Bifenthrin and Pyrethroids (Decision IDs 120106 and 120096) As described in detail above for the proposed listing of Big Chico Creek for pyrethroids, the Central Valley Pyrethroid Pesticides Control Program should be allowed to be fully implemented to determine if newly implemented management practices by municipal stormwater, municipal and domestic wastewater, and agricultural dischargers are sufficient to allow for attainment of water quality standards for pyrethroids based on current data. Data used to support this decision were collected in 2018 prior to approval and implementation of the Pyrethroid Pesticides Control Program in the Central Valley. For these reasons, this decision is unnecessary and premature and the Coalition requests that the proposed listing be removed.	See response to comment 039.01.
039.08	Chlorpyrifos (Decision ID 120061) The use of chlorpyrifos in California has been on the decline for over 15 years. The organophosphate insecticide was banned for urban use in 2005 and banned for agricultural use on January 1, 2021. The data used to support this decision were collected in 2018 and are no longer representative of ambient water column concentrations of chlorpyrifos in Pine Creek. Additionally, the half-life estimated for chlorpyrifos in aerobic aquatic conditions is approximately one month and in anerobic aquatic conditions half-life ranges from 50 to 120 days. Any residual chlorpyrifos from an agricultural	Changes to listing recommendations were not made in response to this comment. Additionally, see response to comment 039.05.

No.	Comment	Response
	application made just prior to its ban would be below levels of detection at this date as confirmed by 2021 monitoring performed by the Coalition in Pine Creek. There is no reason to list a water body as requiring a TMDL for a particular pesticide when that pesticide is banned for use and no longer poses a threat to water quality. For these reasons, there are insufficient lines of evidence to support this decision and the Coalition requests that the proposed listing be removed.	
039.09	Metolachlor (Decision ID 120113) The USEPA Office of Pesticide Program (OPP) benchmark values are not appropriate for use as water quality objectives to determine impairments. OPP benchmarks are not developed by USEPA as actionable thresholds, as they are not water quality objectives and are intended by USEPA to be used for screening purposes only. Impairment listings should not be based solely on OPP benchmarks. Furthermore, the 1 µg/L value described in the decision as “invertebrate (acute)” is erroneous. The 1 µg/L value is the chronic OPP benchmark for invertebrates. The acute OPP benchmark is 550 µg/L. The Coalition requests that the metolachlor impairment listing be removed because it is based on the USEPA OPP aquatic life benchmark that is not considered an actionable threshold. OPP benchmarks are not water quality objectives and are intended by USEPA to be used for screening purposes only.	Please see response to comment 011.04. Additionally, the threshold language in the LOE has been revised to reference invertebrate (chronic) and not invertebrate (acute) data.

No.	Comment	Response
	For this reason, there are insufficient lines of evidence and the Coalition requests that this proposed listing be removed.	
039.10	PLEASANT GROVE CREEK Fipronil (Decision ID 116145) The USEPA Office of Pesticide Program (OPP) benchmark values are not appropriate for use as water quality objectives to determine impairments. OPP benchmarks are not developed by USEPA as actionable thresholds, as they are not water quality objectives and are intended by USEPA to be used for screening purposes only. Impairment listings should not be based solely on OPP benchmarks. The Coalition requests that the fipronil impairment listing be removed because it is based on the USEPA OPP aquatic life benchmark that is not considered an actionable threshold. OPP benchmarks are not water quality objectives and are intended by USEPA to be used for screening purposes only. For this reason, there are insufficient lines of evidence and the Coalition requests that this proposed listing be removed.	Changes to listing recommendations were not made in response to this comment. See response to comment 011.04.
039.11	Fipronil Sulfone (Decision ID 116164) The USEPA Office of Pesticide Program (OPP) benchmark values are not appropriate for use as water quality objectives to determine impairments. OPP benchmarks are not developed by USEPA as actionable thresholds, as they are not water quality objectives and are intended by USEPA to be	Changes to listing recommendations were not made in response to this comment. See response to comment 011.04.

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	used for screening purposes only. Impairment listings should not be based solely on OPP benchmarks. The Coalition requests that the fipronil sulfone impairment listing be removed because it is based on the USEPA OPP aquatic life benchmark that is not considered an actionable threshold. OPP benchmarks are not water quality objectives and are intended by USEPA to be used for screening purposes only. For this reason, there are insufficient lines of evidence and the Coalition requests that this proposed listing be removed.	
039.12	Imidacloprid (Decision ID 116148) The 0.016 µg/L value described in the decision as "the 4-day average concentration of Imidacloprid" that aquatic life should not exceed neither matches the 0.014 µg/L value included in the referenced UC Davis Water Quality Criteria report nor the 0.01 µg/L chronic invertebrate value included in the referenced USEPA OPP Aquatic Life Benchmarks. To this end, it is unclear from where the 0.016 µg/L value was derived. Nevertheless, neither OPP benchmarks nor a chronic criterion taken from a UC Davis Water Quality Criteria Report for Imidacloprid are considered actionable thresholds as these values are not adopted water quality objectives. For this reason, there are insufficient lines of evidence and the Coalition requests that this proposed listing be removed.	Changes to listing recommendations were not made in response to this comment. Data were evaluated using the threshold 0.016 ug/L chronic criterion from the UC Davis Water Quality Criteria Report for Imidacloprid (CalWQA reference number 4634). LOE 201724 referenced the U.S. EPA Office of Pesticide Programs ("OPP") Aquatic Life Benchmarks and was revised to reference the UC Davis Water Quality Criteria Report for Imidacloprid. See principal response 4.3 for Data and Analysis Transparency, and Readily Available Data.
039.13	ULATIS CREEK (SOLANO COUNTY)	See response to comment 039.01.

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	Bifenthrin (Decision ID 118864) As described in detail above for the proposed listing of Big Chico Creek for pyrethroids, the Central Valley Pyrethroid Pesticides Control Program should be allowed to be fully implemented to determine if newly implemented management practices by municipal stormwater, municipal and domestic wastewater, and agricultural dischargers are sufficient to allow for attainment of water quality standards for pyrethroids based on current data. Data used to support this decision were collected in 2015, 2017, and 2018 prior to approval and implementation of the Pyrethroid Pesticides Control Program in the Central Valley. For these reasons, this decision is unnecessary and premature and the Coalition requests that the proposed listing be removed.	
039.14	Imidacloprid (Decision ID 118857) The 0.016 µg/L value described in the decision as "the 4-day average concentration of Imidacloprid" that aquatic life should not exceed neither matches the 0.014 µg/L value included in the referenced UC Davis Water Quality Criteria report nor the 0.01 µg/L chronic invertebrate value included in the referenced USEPA OPP Aquatic Life Benchmarks. To this end, it is unclear from where the 0.016 µg/L value was derived. Nevertheless, neither OPP benchmarks nor a chronic criterion taken from a UC Davis Water Quality Criteria Report for Imidacloprid are considered actionable thresholds as these values are not adopted water quality objectives. For this reason, there are insufficient lines of evidence and the Coalition requests that this proposed listing be removed.	Changes to listing recommendations were not made in response to this comment. LOE 201749 incorrectly referenced the U.S. EPA Office of Pesticide Programs ("OPP") Aquatic Life Benchmarks and was revised to reference the UC Davis Water Quality Criteria Report for Imidacloprid. Please also see response to comment 039.12.

No.	Comment	Response
039.15	Metolachlor (Decision ID 118871) The USEPA Office of Pesticide Program (OPP) benchmark values are not appropriate for use as water quality objectives to determine impairments. OPP benchmarks are not developed by USEPA as actionable thresholds, as they are not water quality objectives and are intended by USEPA to be used for screening purposes only. Impairment listings should not be based solely on OPP benchmarks. Furthermore, the 1 µg/L value described in the decision as "invertebrate (acute)" is erroneous. The 1 µg/L value is the chronic OPP benchmark for invertebrates. The acute OPP benchmark is 550 µg/L. The Coalition requests that the metolachlor impairment listing be removed because it is based on the USEPA OPP aquatic life benchmark that is not considered an actionable threshold. OPP benchmarks are not water quality objectives and are intended by USEPA to be used for screening purposes only. For this reason, there are insufficient lines of evidence and the Coalition requests that this proposed listing be removed.	Changes to listing recommendations were not made in response to this comment. See response to comment 011.04.
039.16	Specific Conductivity (Decision ID 131435) As described in detail above for the proposed listing of Cache Creek, Lower for specific conductivity, the CV-SALTS process and the Central Valley Water Board's long-term Basin planning effort to establish a Central Valley Salt and Nitrate Control Program must be allowed to determine salinity levels that are appropriate for different regions in the Central Valley and that protect the most sensitive beneficial uses in those	Changes to listing recommendations were not made in response to this comment. See response to comment 023.04.

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	regions. Until those determinations are made, it is premature to list as impaired water bodies with specific conductance levels between the Title 22 Secondary MCL recommended range (900 to 1,600 µS/cm). Furthermore, as drought continues to impact the state, consideration of appropriate salinity levels during extended dry periods will also need to be identified. For these reasons, this decision is inconsistent with a recent Central Valley Water Board Basin Plan Amendment that is relevant to the listed water body and premature considering the ongoing CV-SALTS process. The Coalition requests that the proposed listing be removed.	

Letter 40: John Helly, Private Citizen

No.	Comment	Response
040.01	As I have thoroughly documented elsewhere (cf. California Coastal Atlas), the City of Encinitas has been dumping stormwater into the back of the beach for decades and is now implementing a complex new stormsewer that is yet unpermitted by the California Coastal Commission and which will, by design, dump much larger volumes of wet-season stormwater and store contaminated dry-weather flows to be purged during storm events. Two newly functioning outfalls have been added to the historic outfall as part of the design.	This comment is outside the scope of the Integrated Report. On March 15, 2021, Mr. Helly submitted a letter to the San Diego Regional Water Board requesting review of the City of Encinitas' activities related to the Encinitas Beach Resort development project and the North Coast Highway 101 Streetscape (also known as Leucadia 101 Streetscape) project. Via email dated March 19, 2021, San Diego Regional Water Board staff communicated to Mr. Helly that review of his request would take several weeks due to other pressing assignments with pre-existing deadlines taking precedence over Mr. Helly's request. On July 20, 2021, the San Diego Regional Water Board responded to Mr.

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		Helly's letter via letter signed by the Executive Officer. The San Diego Regional Water Board's letter concluded that the City's determinations and the projects are compliant with the Board's regulatory requirements pertaining to the Regional MS4 Permit. Furthermore, the letter concludes that no new outfalls were installed as part of the Encinitas Beach Resort project, instead modifications were made to the existing outfall draining to Batiquitos Lagoon. The San Diego Regional Water Board determined that the dredge and fill activities associated with the modifications to the existing outfall draining to Batiquitos Lagoon do not require the Board's regulatory oversight. Additionally, the letter identified that the City of Encinitas confirmed, via email dated July 14, 2021, that no new outfalls are proposed by the City as part of the Leucadia 101 Streetscape project.
040.02	I am speaking to you today to draw your attention to the fact that, in my opinion, the City of Encinitas is doing this in such a way as to evade regulatory oversight with the intention of dumping contaminated stormwater into a listed waterbody: Batiquitos Lagoon. Batiquitos Lagoon is on the 2018 303d listing and is also on the new list for 2020-2022. What good is the listing process, that you are engaged in here today, if the regional and state water boards fail to enforce its purpose? For example, Batiquitos Lagoon has no TMDL, and there is apparently no plan to develop one, although it has been on the 303(d) list for years. Whose responsibility is this anyway: the State Board, the Regional Board, the USEPA, the Army	Please see response to comment 040.01. The existing impairment listing for toxicity for Batiquitos is for stations located in the eastern portion of the lagoon and is currently being investigated for the municipal copermittees as required by the State of California sediment quality objectives. A TMDL may be prioritized for development for toxicity for Batiquitos Lagoon based on the results of these investigations and available staff resources. Both the State Water Board and Regional Water Board (collectively, "Water Boards") are responsible for establishing a TMDL program for waterbodies not attaining water quality standards. However, a 303(d)

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	Corps of Engineers; everybody, nobody or some combination?	listing is not a prerequisite for TMDL development. A TMDL may be developed for waterbodies that are not previously listed as impaired on the 303(d) list. As discussed in the Water Quality Control Policy for Addressing Impaired Waters: Regulatory Structure and Options ("Impaired Waters Policy") adopted by State Water Board Resolution 2005-0050, "Where waters are not meeting their beneficial uses from anthropogenic sources of pollutants, the Water Boards will use the Total Maximum Daily Load (TMDL) program to craft an implementation plan to ensure that the waters meet all applicable standards as soon as is practicable" (p. 1). "Irrespective of whether CWA section 303(d) requires a TMDL, the process for addressing waters that do not meet applicable standards must be accomplished through existing regulatory tools and mechanisms" (p. 2)." "Existing regulatory tools include individual or general waste discharge requirements (be they under Chapter 4 or under Chapter 5.5 (NPDES permits) of the Porter-Cologne Water Quality Control Act), individual or general waivers of waste discharge requirements, enforcement actions, interagency agreements, regulations, basin plan amendments, and other policies for water quality control" (p. 5). TMDLs are often adopted as basin plan amendments and are one type of program of implementation to achieve water quality objectives authorized under Water Code Section 13242. Establishing programs to achieve water quality objectives are not dependent on the water body

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		first becoming impaired and identified on the CWA Section 303(d) list.
040.03	I have submitted a detailed complaint to the San Diego Regional Water Quality Control Board (RWQCB) in March, 2020 and still have no written response. I recently was informed, through a phone call with a junior staff engineer, that the RWQCB finds no problems with what the City is doing although I still await the rationale for this determination. It is my opinion that I only received that communication because I complained additionally to the Executive Director that I could not get a response from the staff who I had been directed to communicate with.	Please see response to comment 040.01.
040.04	So now I turn to the State Board with the hope of more appropriate and effective over-sight of this issue and to additionally review the behavior, and likely consequences of that behavior, by the City of Encinitas. This municipality in threatening a unique coastal re-source, which is already impaired, with further unregulated pollution that may very well threaten human health and do long-term damage to an invaluable coastal resource.	Comment noted. Additionally, see response to comment 040.01.
040.05	Finally, along with the Batiquitos Foundation, we are planning a new environmental monitoring program to baseline the condition of the Lagoon before the new stormwater is dumped. We would like to work with the State Board to contribute these new data to the regulatory process and will seek the appropriate paths to do this.	Comment noted.

Letter 41: Ray Tahir, TECS Environmental

No.	Comment	Response
041.01	The 2018-2020 303(d) TMDL list for RB-4 shows Arroyo Seco Reaches 1 through 3 not listed for any metal. This has been the case since 1998, when the first 303(d) list appeared for RB4. However, no decision ID fact sheet has ever been issued to either place the metals TMDL on the "do not list" or "de-list" categories. Would it be possible to issue one in connection with the integrated report? I realize that this will need to be done through the State's 2015 303(d) listing/de-listing policy, which could take some time. An estimation would be helpful.	See response to comment 041.02. To be considered for a listing recommendation, the commenter is encouraged to submit data for Arroyo Seco Reaches 1 through 3 during the data solicitation period. State Water Board staff will develop a Waterbody Fact Sheet for high quality data that meet Listing Policy requirements and decide to "Delist" or "Do not List" if the data provide sufficient justification for not placing the Arroyo Seco Reaches 1 through 3 on the 303(d) list of impaired waters. The data cut-off date (October 16, 2020) for the 2024 cycle has passed; however, the commenter may submit the Arroyo Seco metals data off-cycle to be considered for a high priority, off-cycle assessment.
041.02	Notwithstanding whether RB4 is off-cycle, could you indicate when the 2020-2022 303(d) list will be effect for RB4? Can it be interpreted to mean that it is in effect now?	The current 303(d) list is encompassed in the 2018 Integrated Report. Information on waterbodies listed as impaired in the Los Angeles Region can be found in that report, approved by the U.S. EPA on June 29, 2021. The 2020-2022 Integrated Report and 303(d) list will go into effect after approval by the U.S. EPA, planned for Spring of 2022. The Los Angeles Regional Water Board will assess data again during the 2024 Integrated Report cycle.

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041.03	Will the decision ID fact sheets for those TMDLs that have been listed, not listed, or de-listed for 2020-2022 be made available any time soon?	Please reference the 2018 Integrated Report for all current listing and delistings (https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/2018_integrated_report.html).

Letter 42: John Phillips, City of El Cajon

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042.01	Remove the selenium impairment from Forester Creek (Decision ID 111956). Not all data were considered in the listing decision, and older, unrepresentative data were included. Considering all applicable data demonstrates that the Listing Policy delisting criteria are met.	Changes to listing recommendations were not made in response to this comment. See response to comment 042.06 and principal response 4.2 for Data and Analysis Transparency, and Readily Available Data.
042.02	The City requests that the turbidity water quality standard for habitat beneficial uses (20 NTU) be used as the WQO for Forester Creek (Decision ID 111959) instead of the drinking water standard (5 NTU). Forester Creek is not currently used as a source of drinking water, and no future plans to do so have been proposed.	Changes to listing recommendations were not made in response to this comment. See response to comment 042.07.
042.03	The City requests that the turbidity water quality standard for habitat beneficial uses (20 NTU) be used as the WQO for San Diego River (Lower) (Decision ID 111908) instead of the drinking water standard (5 NTU). This segment of the San Diego River is not currently used as a source of drinking water, and no future plans to do so have been proposed. Additionally, the lower stretch, Hydrologic Area (HA) 907.11 is	See response to comment 042.08.

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	listed as exempt from the municipal drinking water beneficial use in the San Diego Basin Plan.	
042.04	Do not list the San Diego River (Lower) for pyrethroid pesticides as a group or for individual pyrethroids (Decision IDs 111911, 111928, 111918, 111919, 13029). It is not appropriate to apply a standard for pyrethroids from the Central Valley, where agriculture use is abundant, to the San Diego Region, where agriculture use is markedly less. Additionally, the listings are proposed to address toxicity caused by pyrethroids, but historical monitoring data in the San Diego River (Lower) does not show evidence of toxicity.	See principal response 2.2 regarding application of the threshold to waterbodies in the San Diego Region. Additionally, the lower San Diego River has been listed as impaired due to toxicity since 2010.
042.05	Do not list the San Diego River (Lower) for chlordane (Decision ID 111870). The water quality standards noted in the lines of evidence propose guidelines that are based on academic papers rather than standards adopted through a formal regulatory process. Historical Copermittee monitoring data in the San Diego River (Lower) does not show evidence of toxicity, and the limited SWAMP data that suggests some toxic effects are present does not directly link the toxicity to chlordane.	Please see response to comment 042.12 regarding the threshold used to assess chlordane data. Please see response to comment 042.04 regarding toxicity.
042.06	Item 1: In the evaluation of the listing for selenium in Forester Creek (Decision ID #111956), staff finding #3 states "Seven of 16 samples exceeded the threshold, and this exceeds the allowable frequency listed in Table 4.1 of the Listing Policy." Comment: The City of El Cajon and the neighboring City of Santee both completed additional studies to investigate selenium levels in Forester Creek. However, based on review	See principal response 4.2 for Data and Analysis Transparency, and Readily Available Data. Changes to listing recommendations were not made in response to this comment. Decision 111956 remains a recommendation of “Do not Delist”. However, the total exceedance count for the recommendation has been changed from seven of 16 samples to seven of 41

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	of the lines of evidence, not all of that data was considered in the listing evaluation. Additionally, the majority of the selenium exceedances are outdated, having come from testing before a major restoration project was completed in Forester Creek and are over 15 years old. Those samples are not representative of current conditions and should not be considered. The City requests that selenium is delisted for Forester Creek. Additional detail is provided below. • Seven (7) samples from the Forester Creek Additional Study, at site EC_S, do not appear to have been considered. This data is present in CEDEN, and the corresponding QAPP is listed in the reference material for the draft Integrated Report. • The sample counts presented in multiple lines of evidence exclude one of the relevant data points, for example: o LOE ID 146372 notes six (6) samples were collected at monitoring site FC-4 between 2013-10-02 and 2014-07-02. The corresponding data download (ref4881) notes seven (7) individual samples were collected at the site between the specified dates. o LOE ID 146564 notes six (6) samples were collected at monitoring site FC-13 between 2013-10-02 and 2014-07-02. The corresponding data download (ref4881) notes seven (7) individual samples were collected at the site between the specified dates. o LOE ID 146584 notes six (6) samples were collected at monitoring site FC-16 between	samples. The original count was based solely on the dissolved fraction samples, whereas the revised count is based on dissolved plus total fraction samples, using only total fraction samples that are different in station or sample date to the dissolved (i.e., there was no double counting of samples). As for samples from the Forester Creek Additional Study that were not considered, staff manually searched CEDEN and found the seven samples from station EC_5. The station was not mapped, nor the data assessed for the 2020-2022 Integrated Report. During a future cycle, Water Board staff can explore the reason for the missing station. Should the station be able to be mapped (e.g., the datum is available and meets all data requirements), the data will be assessed in a future Integrated Report cycle. A brief review of the data reveals that two of the samples would be averaged and counted as one because they were collected just three days apart (10/8/2013 and 10/11/2013). As per the Listing Policy, Section 6.1.5.6, samples collected less than 7 days apart shall be averaged, and considered a single sample for Integrated Report analyses. Therefore, should the mapping problem be resolved, six additional samples would be available to be assessed. The comment states that “The sample counts presented in multiple lines of evidence exclude one of the relevant data points.” This is not the case; all data were used in the cited LOEs, as detailed below. LOE 146372: Eight samples were collected at station FC-4. Two samples collected on the same day were averaged (10/29/2013) and two collected three days apart

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	2013-10-02 and 2014-07-02. The corresponding data download (ref4881) notes seven (7) individual samples were collected at the site between the specified dates. ○ LOE ID 146637 notes six (6) samples were collected at monitoring site FC-101 between 2013-10-02 and 2014-07-02. The corresponding data download (ref4881) notes seven (7) individual samples were collected at the site between the specified dates. • The 4 samples noted in LOE ID #9014 should not be considered in the listing evaluation because that data was collected in 2004 and 2005 from a segment of Forester Creek where a major restoration project has since taken place, which was completed in the summer of 2008. The creek underwent significant physical change as a result of the project, and the data collected before the restoration project no longer reflects the current conditions at the site. • After making the adjustments noted above to include all submitted data and to remove older data collected before the Forester Creek Restoration Project, the total count comes to 48 individual samples, three (3) of which exceeded the water quality standard. Accordingly, using the guidelines in Table 4.1 in the Listing Policy, selenium should be delisted from Forester Creek.	were averaged (10/8/2013 and 10/11/2013), so six sample results, or samples, were assessed. LOE 146564: Seven samples were collected at station FC-13. Two samples collected three days apart were averaged (10/8/2013 and 10/11/2013), so six samples were assessed. LOE 146584: Eight samples were collected at station FC-16. Two samples collected on the same day were averaged (6/9/2014) and two collected three days apart were averaged (10/8/2013 and 10/11/2013), so six were samples assessed. LOE 146637: Seven samples were collected at station FC101. Two samples collected three days apart were averaged (10/8/2013 and 10/11/2013), so six samples were assessed. The commenter also states that four older samples in LOE 9014 should not be considered in the listing evaluation. These four samples were collected at station 907SDFRC2 (at the north end of Fanita Dr.), and each exceeded the water quality threshold for selenium. It is reasonable to include these samples in the assessment, especially as there was an exceedance at the same station in 2012, four years after completion of the restoration project. Two additional exceedances, also in 2012, were from upstream stations within about a mile, i.e., stations 907SDFOL1 and 907SDFPB1 at the Olive Lane and Prospect bridges, respectively. These post-restoration exceedances show that more data are needed

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		to ascertain the current site conditions within the restored reach.
042.07	Item 2: Turbidity is being considered for placement on the CWA 303(d) list for Forester Creek. Decision ID 111959 identifies exceedances through comparison against the water quality objective (WQO) for inland surface waters with a municipal drinking water beneficial use (5 NTU). Comment: The City requests that the turbidity water quality standard for habitat protection (20 NTU) be used as the WQO for all Forester Creek samples. While the San Diego Basin Plan lists a municipal drinking water as a potential beneficial use for Forester Creek, the creek is not currently used as a source of drinking water, and no future plans to do so have been proposed. There are no nearby water treatment plants that could reasonably access Forester Creek as a source of water, and the flow rate in the creek is also generally too low to be a viable drinking water supply source.	Changes to listing recommendations were not made in response to this comment. Integrated Report listing recommendations are based on the most sensitive beneficial use, i.e., the beneficial use with the most stringent water quality threshold. This is the case even when the beneficial use is designated as a potential use. According to the San Diego Regional Water Board Basin Plan (Table 3-2), MUN is a designated potential beneficial use in Forester Creek. Decision ID 111959 is therefore based on the 5 NTU water quality threshold. [Note: Forester is spelled Forrester in the Basin Plan.]
042.08	Item 3: Turbidity is being considered for placement on the CWA 303(d) list for the San Diego River (Lower). This decision (ID 111908) is based primarily on applying the water quality standard criterion for water bodies with municipal drinking water beneficial use (5 NTU). Comment: In the Basin Plan the upstream portion of the Lower San Diego River (HA 907.12) is noted as having potential municipal beneficial use. However, the creek is not currently used as a source of drinking water, and no future plans to do so have been proposed. There are no existing water treatment plants or potential sites were additional	Changes to listing recommendations were not made in response to this comment. Integrated report listing recommendations are based on the most sensitive beneficial use, i.e., the beneficial use with the most stringent water quality threshold. This is the case even when the beneficial use is designated as a potential use. As the comment states, MUN is a designated potential beneficial use in the upstream portion of the Lower San Diego River. Decision ID 111908 is therefore based on the 5 NTU water quality threshold.

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	treatment plants might be build in the future located along this stretch of the river that could feasibly use water from the river as a drinking water source. The lower portion of the San Diego River (HU 7.11) is noted as exempt from the municipal beneficial use. • We request that the criterion for habitat protection (20 NTU) be used as the WQO for both the HA 907.11 and 907.12 stretches of the San Diego River as neither are currently, nor planned to be, used for municipal drinking water beneficial use. • If the criterion for municipal drinking water beneficial use continues to be applied to the HA 907.12 portion of the river, we request that the HA 907.11 and 907.12 segments of the San Diego River be evaluated separately for 303(d) listing purposes. The current lines of evidence appear to propose listing the HA 907.11 portion, which has few exceedances of the 20 NTU standard, based on combining it with data from the 907.12 portion, which has a relatively high rate of exceedances of the 5 NTU standard. If the segments were evaluated separately, it does not appear that the data would support listing the HA 907.11 segment.	A future split of the Lower San Diego River for assessment will be considered. In the meantime, these two statements have been added to Decision ID 111908: • "This decision is based on the MUN beneficial use and applies to the upstream reach of the Lower San Diego River where MUN is a designated potential beneficial use (upstream of HA 7.11). The decision does not apply to the downstream reach of the Lower San Diego River where exempted by the Regional Water Board from the MUN beneficial use designation under the terms and conditions of State Board Resolution No. 88-63, Sources of Drinking Water Policy." and • “This decision is based on the MUN beneficial use and applies to the upstream reach of the Lower San Diego River where MUN is a designated potential beneficial use (upstream of HA 7.11). It does not apply to the downstream reach where exempted from the MUN beneficial use designation.”
042.09	Item 4: New listings for pyrethroids (as a group) and individual pyrethroids, as detailed in the table below. San Diego River (Lower) • Waterbody ID: CAR907110002001 1025101606 • HSA: 90711 • Decision ID: 111911	See principal response 2.1 regarding the selection and use of thresholds for assessing pyrethroid data.

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	• Decision Pollutant: Pyrethroids • Decision Pollutant Category: Pesticides San Diego River (Lower) • Waterbody ID: CAR907110002001 1025101606 • HSA: 90711 • Decision ID: 111928 • Decision Pollutant: Cyfluthrin • Decision Pollutant Category: Pesticides San Diego River (Lower) • Waterbody ID: CAR907110002001 1025101606 • HSA: 90711 • Decision ID: 111918 • Decision Pollutant: Bifenthrin • Decision Pollutant Category: Pesticides San Diego River (Lower) • Waterbody ID: CAR907110002001 1025101606 • HSA: 90711 • Decision ID: 111919 • Decision Pollutant: Cypermethrin • Decision Pollutant Category: Pesticides San Diego River (Lower) • Waterbody ID: CAR907110002001 1025101606 • HSA: 90711 • Decision ID: 130294 • Decision Pollutant: Permethrin • Decision Pollutant Category: Pesticides Comment: Numerous new listings for pyrethroids as a group and for individual pyrethroid pesticides are proposed in the	

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	San Diego Region. Based on review of the decision summaries for these listings, they are based on applying regulatory criteria from the "Amendment to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Pyrethroid Pesticide Discharges." This reference appears to be referring to Central Valley Regional Water Quality Control Board Resolution No. RS-2017-0057 (Resolution). The Resolution established a total maximum daily load (TMDL) for 14 specific water body segments in the Central Valley Region that had already been found to have sediment toxicity linked to pyrethroids and general triggers for other water bodies. The staff report for the Resolution notes that the Central Valley Regional Board did not yet have enough information to establish water quality objectives for pyrethroids.[1] Footnote 1: "At this time the [Central Valley Regional] Board does not have enough information to complete the analysis required in the water code for the adoption of pyrethroid water quality objectives. More information is needed, especially on effectiveness of management practices in order to assess attainability of concentration goals and the costs of implementation that would be required to attain water quality objectives. Concentration goals are proposed to be established as numeric targets and allocations for TMDLs, and as triggers for the requirement of management practices in a conditional prohibition to move toward improved water quality while needed information is developed." Staff Report, page xiv. https://www.waterboards.ca.gov/centralvalley/waterissues/tmdl/central valley projects/central valley pes ticides/pyrethroid tmdl bpa/2017 0608 pyrbpa staffrpt.pdf	

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042.10	It is not appropriate to apply a set of relatively tentative goals from the Central Valley Region to the San Diego Region without giving San Diego Region stakeholders an opportunity for public input and without consideration of how differences between the San Diego Region and the Central Valley Region may result in different goals for the San Diego Region. Water bodies in the San Diego Region should not be added to the 303(d) list based on comparing monitoring data in the San Diego Region to the goals listed in the Resolution. It is recommended that the pyrethroid pesticide water quality thresholds in the Resolution not be used to list water bodies as impaired at this time, as this policy should not be used to set new water quality objectives according to page 1 of the Listing Policy. However, in the event that the San Diego Water Board still moves forward with applying the Central Valley Region criteria to San Diego Region water bodies, water bodies that do not show evidence of toxicity to Hyalella azteca (H. azteca) should not be included on the 303(d) list for pyrethroids impairments, even if they have "exceedances" for pyrethroids based on the Central Valley Region standards. The administrative record for the Resolution notes that H. azteca is the toxicity test species most sensitive to pyrethroids. Several water bodies in the Central Valley Region had already been included on the 303(d) list for pyrethroids based on a history of sediment toxicity and high pyrethroid levels in the sediment. Many of the San Diego water bodies proposed to be added to the 303(d) list for pyrethroids as a group or for individual pyrethroids do not have a history of H. azteca toxicity. Often samples analyzed for pyrethroids and identified as "exceedances" per the Central Valley standard were also	See principal response 2.2 regarding application of the threshold to waterbodies in the San Diego Region. Please see individual response to comment 12.02 regarding the link between *H. azteca* and pyrethroids.

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	analyzed for H. azteca toxicity, and no toxic response was noted. This indicates that the standards developed for the Central Valley are not necessarily predictive of toxicity in the San Diego region and therefore should not be applied to the San Diego region, as discussed above in more detail.	
042.11	The San Diego MS4 Copermittees have completed H. azteca toxicity tests within the San Diego River. Data reported in the San Diego River Transitional Monitoring Report notes a total of 54 samples collected between sites SDR-MLS, SDR-TWAS-1, SDR-TWAS-2, and only two exceedances.[2] Two (2) of 54 samples is not enough to trigger a new listing per the Listing Policy; therefore, listing the San Diego River for pyrethroids as a group, or for individual pyrethroids, is not warranted. Footnote 2: San Diego Copermittees, 2015. San Diego River (SOR) Transitional Monitoring and Assessment Report -20 7 4-20 7 5 Final. http://www.projectcleanwater.org/download/san-diego-river-sdr-transitional-monitoring-and-assessment-program-report-tmar/	See response to comment 042.04 regarding toxicity. The samples referenced by the commenter are water column toxicity test data. Water column toxicity data are not considered for listing determination of pyrethroids collectively or individual pyrethroids. However, sediment toxicity data are required to supplement nonattainment of standards for pyrethroid sediment chemistry LOEs. While the referenced sampling did document lower rates of toxicity than historical water column sampling, sediment sampling by the State of California's SWAMP program for the lower San Diego River from 2009-2018 found toxicity in 7 of 10 samples. This exceedance frequency supports the lower San Diego River not being delisted for toxicity. Furthermore, pyrethroid thresholds were exceeded for both water column and sediment, which is significant because pyrethroid pesticides are largely hydrophobic and more likely to be found in sediments. Thus, the assessment supports both the listing of pyrethroids as well as the continued listing for toxicity.
042.12	Item 5: Proposed listing for chlordane in the San Diego River (Lower), Decision ID 111870.	The assessment for chlordane uses a peer-reviewed and published evaluation guideline that adheres to the necessary parameters outlined in Section 6.1.3 of the

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	Comment: We request that chlordane not be added to the list of impairments for the San Diego River (Lower). Discussion in the lines of evidence appear to identify exceedances based on using values from academic literature to interpret a narrative toxicity standard in the Basin Plan. This approach conflicts with the Listing Policy, which states that the process of making decisions regarding inclusion on the 303(d) list should not be used to translate narrative water quality standards (Listing Policy, page 1). The San Diego MS4 Copermittees have completed H. azteca toxicity tests within the San Diego River. Data reported in the San Diego River Transitional Monitoring Report notes a total of 54 samples collected between sites SDR-MLS, SDR-TWAS-1, SDR-TWAS-2, and only two exceedances.[3] Two (2) of 54 samples is not enough to trigger a new listing per the State Listing policy, therefore listing the San Diego River for pyrethroids as a group, or for individual pyrethroids, is not warranted. While there is some limited SWAMP data presented in the lines of evidence that illustrate a toxic response, that SWAMP study does not directly tie observed toxicity to chlordane. Additionally, SWAMP data from fish tissue analysis (lines of evidence 135112 and 135069) did not find chlordane above the regulatory limit, despite the fact that chlordane is a persistent organic compound that might be expected to bioaccumulate. Therefore, it is inappropriate to list the river as impaired for chlordane. Footnote 3: San Diego Copermittees, 2015. San Diego River (SOR) Transitional Monitoring and Assessment Report -2014-2015 Final. http://www.projectcleanwater.org/download/san-	Listing Policy. The reference to conflicting with page 1 of the Listing policy is incorrect, as the referenced text on page 1 states the following: The Policy shall not be used to: • determine compliance with any permit or waste discharge requirement provision; • establish, revise, or refine any water quality objective or beneficial use; or • translate narrative water quality objectives for the purposes of regulating point sources. Section 6.1.3 of the Listing Policy states that "narrative water quality objectives shall be evaluated using evaluation guidelines" and provides guidance for selection of numeric evaluation guidelines. The requirements specify that the evaluation guidelines must be applicable and protective of the beneficial use, linked to the pollutant under consideration, scientifically-based and peer reviewed, well described, and identify a range above which impacts occur and below which no or few impacts are predicted. The guideline used for chlordane is a peer-reviewed scientific publication (MacDonald et al. 2000: Development and Evaluation of consensus-based Sediment Quality Guidelines for Freshwater Ecosystems). The exceedances of chlordane for the listing recommendation (Decision ID 111870) were specific to concentrations in sediment samples (7 of 7 samples) and concurrent observed sediment toxicity (7 of 10 samples). The sediment sampling for both were done at the same station, which is sampled by the Surface Water Ambient Monitoring Program's Stream Pollution Trend Program.

No.	Comment	Response
	diego-river-sdr-transitional-monitoring-and-assessment-program-report-tmar/	See response to comments 042.04 and 042.11 regarding toxicity in the lower San Diego River.

Letter 43: Ronda Sandquist, Costa Farms

No.	Comment	Response
043.01	Sections of Northern Chualar Creek were sampled only twice. Department of Pesticide Regulation took a series of samples in 2002 and Central Coast Water Quality Preservation, Inc. conducted a year of follow-up monitoring for the Cooperative Monitoring Program in 2008. From our analysis of the data collected at Chualar Creek and Old Stage Road, it appears that there are an insufficient number of samples, exceedances, and contributing evidence to support listing the Chualar Creek segment of Old Stage Road for the following constituents: Chlorophyll a, Specific Conductivity, Dissolved Solids, Orthophosphate, Dissolved Oxygen, Oxygen Saturation, pH, Salinity, Dimethoate, Malathion, Chlorpyrifos, Diazinon, Bensulide, Imidacloprid, Methomyl, Bifenthrin, Lambda cyhalothrin, Orgnophosphate pesticides, and permethrin.	Changes to listing recommendations were not made in response to this comment for Chualar Creek. The 2020-2022 Integrated Report assessments make no formal distinction between Chualar Creek and Northern Chualar Creek or Chualar Creek upstream of Old Stage Road. It could be appropriate to make such a distinction if there were substantial evidence that a) water quality standards are attained in one segment (as defined in Section 3 or 4 of the Listing Policy), or b) there is a distinct reach based on hydrology and relatively homogeneous land use, tributary inflow, or discharge input (see Section 6.1.5.4 of the Listing Policy). The commenter is encouraged to provide such data or documentation during a future public data solicitation period for the Integrated Report. Central Coast Regional Water Board staff followed the requirements in the Listing Policy to make listing recommendations for pollutant data available for Chualar Creek in accordance with Sections 3 and 4 of the Listing

No.	Comment	Response
		Policy. Please see principal response 4.3 for Data and Analysis Transparency and Readily Available Data. The commenter notes that for some constituents mentioned by the commenter, there are an insufficient number of samples to list (i.e., for chlorophyll-*a*, specific conductivity, dissolved solids, organophosphate, oxygen saturation, and salinity). These pollutants do not have recommendations to "List." All other pollutants listed by the commenter have enough samples to "List" or "Do not Delist."
043.02	a. In addition to a lack of sufficient data for the listed compounds, it should be noted that only three irrigated farms exist upstream on Chualar Creek from the Old Stage Road sampling site. Two of these farms belong to Costa Farms. Costa terminated the use of Chlorpyrifos and Diazinon in 2012. Given that the third ranch is a Tier 2 ranch, it can be assumed that the third ranch also terminated use of the Chlorpyrifos and Diazinon in 2012. Otherwise, the third ranch would have been characterized as Tier 3 due to is use of Chlorpyrifos or Diazinon. b. Further, Costa has made material changes to how the ranches are managed. Land has been reconstructed to capture all runoff through a series of sediment basins. Roads are sloped away from Chualar Creek. Costa Farms also added multiple new containment basins. The water is retained on the ranch, except during heavy storm events. Water is rarely present in Chualar Creek except during heavy, episodic storm events. As a result, it is unlikely that this reach of Northern Chualar Creek is capable of supporting most	a. Changes to listing recommendations were not made in response to this comment for Chualar Creek. The 2020-2022 Integrated Report does not define distinct segments of Chualar Creek as discussed in response to comment 043.01. The listing recommendations for chlorpyrifos and diazinon (i.e., "Do not Delist") are justified by the readily available data from the Creek, assessed in accordance with the Listing Policy. Specifically, the data show the following sample and exceedance counts for Chualar Creek (referencing only the most recent data included in this assessment, samples collected between 2011 and 2017): • chlorpyrifos, 12 of 29 water samples exceed the threshold; and • diazinon, four of 29 water samples exceed the threshold. Regarding the use of chlorpyrifos and diazinon on any given ranch in the watershed: It is outside the scope of

No.	Comment	Response
	aquatic species habitat, particularly cold-water aquatic for coldwater species. There are other material differences in this reach of the Northern Chualar Creek upstream and downstream of the Old Stage Road sampling site. Upstream of Old Stage Road, the slope is steeper than reaches downstream from this sampling site. Most of the land use downstream from this data collection site is either in intensive farming of cool season vegetables or within the City of Chualar. Upstream land use is primarily grazing or rural residences.	the Integrated Report assessment to evaluate California Department of Pesticide Regulation pesticide application data and to determine which specific ranches apply each pesticide. Rather, that information is evaluated in development of the TMDLs and determining compliance with the Central Coast Regional Water Board's Agricultural Order ("Ag Order"). TMDLs have been developed for both chlorpyrifos and diazinon in this watershed. The regulatory mechanism for Costa Farms to comply with these TMDLs is through compliance with the Ag Order. Reporting required under the Ag Order is the appropriate place to document pesticide application data and information. The Water Board appreciates comments that highlight the Costa Farms implementation projects that are designed to capture and retain sediment and runoff. b. Staff discussed this letter with the commenter on 8/31/2021. Regarding the appropriateness of designated beneficial uses for aquatic life, please refer to response 020.01.c., where staff describe the documentation necessary to justify a water quality standards action change such as removing an aquatic life beneficial use designation. Documentation in support of this request should be submitted to the Central Coast Regional Water Board during a Basin Plan Triennial Review public comment period. Regarding the commenter's recommendation to define Northern Chualar Creek (upstream of Old Stage Road) as a distinct reach from Chualar Creek, additional data and

No.	Comment	Response
		information are needed to consider such a request. The Listing Policy states that the Water Boards can define distinct reaches based on hydrology and relatively homogeneous land use (see section 6.1.5.4). The commenter is encouraged to provide documentation to substantiate these recommendations during a future public data solicitation for the Integrated Report. The Listing Policy also allows for a situation-specific weight of evidence approach in evaluating water quality impairments (see sections 3.11 and 4.11 of the Listing Policy). Using this approach, data or information including current conditions that form a substantial basis and are scientifically defensible and reproducible can be used to evaluate water quality standards attainment for a given reach. Information such as maps, photo documentation, flow data, management practice effectiveness documentation, and other water quality data can be combined to support a weight of evidence-based decision.
043.03	In the 2016 Section 303(d) Listings, the Regional Board determined that the weight of the evidence from downstream sections of Chualar Creek was not sufficient to list Northern Chualar Creek as impaired for temperature. Now, the 2021 Section 303(d) Listings proposes to list Northern Chualar Creek as impaired based primarily based on data and evidence from the southern sections of Chualar Creek.	Changes to listing recommendations were not made in response to this comment for Chualar Creek. Northern Chualar Creek is not defined as a distinct reach for the purposes of the Integrated Report assessments (please refer to the response to comment 043.01). Commenter is correct that Chualar Creek was not listed for temperature during the 2014-2016 listing cycle because the readily available data did not warrant a recommendation to “List” at that time. Central Coast Regional Water Board staff recommend adding Chualar

No.	Comment	Response
		Creek to the 303(d) List for temperature in the 2020-2022 listing cycle based on 14 of 65 samples exceeding the water quality objective for temperature. As stated in the recommendation language (Decision ID 126195), the publication (Steelhead/Rainbow Trout (*Oncorhynchus mykiss*) Resources South of the Golden Gate, California (Becker, G.S and I.J Reining, October 2008)) identifies the Salinas River as having a "definite run or population." Chualar Creek is a tributary to the Salinas River. Therefore, discharge of warm water from Chualar Creek (waters with temperatures exceeding 21 degrees C) is specifically prohibited by the General Objectives in the Central Coast Water Quality Control Plan, which states that natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses.
043.04	Based on the information above, it is questionable whether the downstream conditions and data are representative of the conditions in Northern Chualar Creek upstream from Old Stage Road.	Changes to listing recommendations were not made in response to this comment for Chualar Creek. See response to comment 043.01.
043.05	For these reasons, Northern Chualar Creek should not be placed on the Section 303(d) list for the following constituents: Chlorophyll a, Specific Conductivity, Dissolved Solids, Orthophosphate, Dissolved Oxygen, Oxygen Saturation, pH, Salinity, Dimethoate, Malathion, Chlorpyrifos, Diazinon, Bensulide, Imidacloprid, Methomyl, Bifenthrin, Lambda cyhalothrin, Orgnophosphate pesticides, and permethrin. Further, the Regional Board also must support its	Changes to listing recommendations were not made in response to this comment for Chualar Creek. Please see response to comment 043.01.

No.	Comment	Response
	determination with evidence that the southern sections of Chualar Creek are representative of the Northern Chualar Creek in order to support its Section 303(b) Listing.	

Letter 44: Dane Hardin, Applied Marine Sciences

No.	Comment	Response
044.01	The data provided by CCLEAN that have been produced using isotope dilution methods do not easily compare to required definitions of method detection limit (MDL) and reporting limit (RL). We have had numerous conversations with staff at Surface Water Ambient Monitoring Program (SWAMP) and CEDEN at regional data centers in coming to agreements about how to populate the respective columns in an acceptable SWAMP, and then CEDEN, electronic data deliverable (EDD). During some periods, populating the MDL with numeric values and using -88 for the RL was acceptable. In other periods, the reverse was desired. From what we have recently been told by Regional Board staff, both MDL and RL must now be reported in numeric format for data to be acceptable for use in a 303(d) list evaluation. Moreover, the solicitation of water quality data for the 2020 Integrated Report (December 14, 2018) made no mention of any criteria for use, except for inclusion of associated geospatial data and a QAPP. Unfortunately, as we have learned, there were other requirements placed on CEDEN data for it to be considered in the 303(d) list evaluation about which there was no public or Regional Board awareness. For example, it was decided that any data that did not include the datum for its geospatial data would be excluded and no data providers were made aware	The data identified by the commenter that were omitted during the 2020-2022 listing cycle will be considered in the 2024 listing cycle. Increasing the transparency of data screening steps and rules of the Integrated Report assessment is a priority for the 2024 listing cycle. Water Board staff created formats where data screening business rules and the data that are screened out can be visualized by data users early in the assessment process so that issues such as those described by the commenter may be addressed during the assessment cycle. Water Board staff acknowledge that different advice was provided by SWAMP and CEDEN staff and that this guidance was not informed by the data screening rules employed for the Integrated Report assessment. Water Board staff are also working to increase cross program communication and understanding and to improve guidance documentation to reflect requirements of the Integrated Report assessment. Regarding notification transparency on data requirements: The May 7, 2019, , enclosure 2, page 1

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	of this until they inquired as to why their data were not included. In addition, certain valid sample-types, such as Extract_samplewater were arbitrarily excluded due to a lack of understanding by the staff culling the data from CEDEN.	(https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/docs/2020_rev_solicitation_notice_final.pdf), discussed the requirements for data submission and this included a statement saying *"Be prepared to include this critical information for assessment. Your data may be un-assessable without this information:* • *Latitude, longitude, and datum of site locations* • *Minimum detection limit (MDL) and reporting limit (RL)…"* Water Board staff acknowledge the letter could have been explicit about the consequences (e.g., data will be excluded unless both MDL and RL are reported, and station information includes datum). Water Board staff also acknowledge that the data solicitation letter does not mention specific types of matrices that could result in data being excluded (such as the "Extract_samplewater" matrix). Extract_samplewater, which is samplewater extracted from sorbent media (e.g., resin beads) or solid phase extraction, is now recognized by the Integrated Report assessment tools for the CCLEAN Project data. Central Coast Regional Water Board staff have been in communication with CCLEAN staff and will be working with State Water Board staff to assess CCLEAN data during the 2024 listing cycle.

No.	Comment	Response
		Also, see principal response 4.2 for Data Transparency and Readily Available Data.
044.02	In addition to the lack of transparency regarding what constitutes acceptable CEDEN data for 303(d) list evaluations, the data-gathering process undertaken for the 2020-2022 document has left out of the loop the people who are most knowledgeable about regional data and water bodies that particularly deserve scrutiny. Regional staff know the sampling programs and potential problem areas in their own region, whereas State Board staff do not. Neither data providers, nor Regional Board staff knew what screening processes and criteria were being used to aggregate data for the 303(d) evaluation. CCLEAN has nearly 20 years of excellent data that have remained inaccessible to the 303(d) process due to changing conventions on what constitutes acceptable data and a lack of transparency in the review process. The inaccessibility of CCLEAN data has left impairments of ocean water quality unaddressed. Please see the attached figure of PCB concentrations in Monterey Bay as an example.	See principal response 4.2 for Data and Analysis Transparency, and Readily Available Data. State Water Board staff recognize the importance of consulting with and learning from Regional Water Board staff. Regional Water Board staff harbor region-specific knowledge that's highly valuable to the Integrated Report assessment process. Regional Water Board staff have ample opportunity to share region-specific knowledge, and this knowledge is applied to water quality assessments for the Integrated Report. For example, State Water Board and Regional Water Board staff meet quarterly to foster collaboration and discuss Integrated Report topics, areas of concerns, and assessment strategies. Additionally, State Water Board and on-cycle Regional Water Board staff meet monthly to discuss status, to-do lists, assessment topics, and other pressing matters. Water Board-wide trainings further enhance understanding of intra-agency procedures, such as LOE development, listing recommendation development, and data screening processes. Additionally, please see Response to Comment 009.05.
044.03	Based upon the problems discussed above, we urge consideration of the following recommendations for improving the effectiveness of future 303(d) list data evaluations:	Comment noted. Water Board staff appreciate these recommendations and have already made significant progress on implementing improvements. Please see response to comments 044.01, 044.02 and principal

No.	Comment	Response
	1. Provide to all interested parties a thorough description of the data screening process, including any disqualifying attributes. 2. Integrate the protocols provided through Recommendation #1 into the CEDEN process so that data providers can know that their data will meet the requirements for 303(d) list evaluations when accepted by CEDEN. 3. Include Regional Water Board staff in the evaluation and decisions about data that apply to water bodies in their regions.	response 4.2 for Data and Analysis Transparency, and Readily Available Data.

Letter 45: Alicia Appel, City of Escondido

No.	Comment	Response
045.01	The City supports comments relevant to our jurisdiction included in letters submitted by the California Stormwater Quality Association, City of San Diego, County of San Diego, and Riverside County Flood Control District, and would like to emphasize these specific comments on the draft Integrated Report.	Comment noted. Please see response to comments in letters 6; 18; 26; and 36 for the listed organizations, respectively.
045.02	The City supports the County of San Diego's efforts to delist Escondido Creek and San Marcos Creek for selenium, as data collected in each creek support de-listing based on the Listing Policy. In May 2014, the County of San Diego submitted five comment letters related to the 2010 §303d listings for selenium in five creeks; the letters and data are referenced and included in the County of San Diego's	Comment noted. See response to comment 026.11.

No.	Comment	Response
	comment letter for this decision. Additional data were collected by the County of San Diego for use in the de-listing evaluation and compared to the California Toxics Rule (CTR) Freshwater Criterion of 0.005 mg/L. In Escondido Creek, 0 of 32 samples exceeded the criterion; in San Marcos Creek, 0 of 31 samples exceeded the criterion. Based on the age of the exceedances (each major Line of Evidence was based on samples collected in 2002) and significantly decreasing trend results (step six of section 3.10 of the Listing Policy) this pollutant is not likely to exceed the criterion in the future. This comment was again submitted by the County of San Diego and City of Escondido in the 2016 303(d) listing comment periods.	
045.03	Pyrethroid Pesticide Water Quality Thresholds in Table 6-1 should not be used to list waterbodies as impaired at this time. Significant financial burdens will be imposed on cities given the limited ELAP certified laboratories in Southern California. Permittees should not be held responsible for meeting standards that exceed the best available technology. Furthermore, these pyrethroid pesticide water quality thresholds developed by UC Davis have not been adopted as a water quality standard by the San Diego Basin Plan. If this assessment methodology is to be used, it should be adopted through a State Amendment or the San Diego Basin Plan Amendment Process. Finally, the assessment of pyrethroid pesticides is considered biased due to the fact that valid non-detect results were excluded from analysis.	See principal response 2.1 regarding the selection and use of thresholds for assessing pyrethroid data and principal response 2.5 regarding the ability of laboratories to achieve detection limits and the attainability of the best available technology standard. Additionally, non-detect results where the laboratory data reporting limit(s) were above the threshold could not be quantified with the level of certainty required by the Listing Policy Section 6.1.5.5. Therefore, non-detect results were not included in the assessment.
045.04	Split the San Dieguito River into upper and lower sections, as the dam at the Lake Hodges Reservoir creates a hydrologic disconnection. The City participates in Water Quality	The proposal to split the San Dieguito River into upper and lower sections is reasonable due to the hydrologic disconnection created by Hodges Reservoir, which only

No.	Comment	Response
	Improvement Planning for the San Dieguito Watershed and believes this administrative change would help accurately describe the waterbody. The table below provides the proposed change in the format of Appendix F in the 2020-2022 California Integrated Report. • Region: 9 • Waterbody: San Dieguito River • Waterbody ID: CAR905110002008082509083O • Waterbody Type: River & Stream • Change Type: Split • Change Information: San Dieguito River split into two waterbodies: San Dieguito River, Lower (below the dam at Lake Hodges), and San Dieguito River, Upper (above the dam at Lake Hodqes)	overflows during exceptionally high precipitation years. The waterbody segmentation was attempted for the 2020-2022 Integrated Report, but was unable to be completed due to errors with the current National Hydrologic Dataset mapping information available for the San Dieguito River upstream of the reservoir. This waterbody will be prioritized for segmentation in a future Integrated Reporting cycle. In regards to accurately describing the waterbody for Water Quality Improvement Planning, it is important to note that many impairment listings would also apply to the "Upper San Dieguito River" despite the split, as thresholds are exceeded at stations located upstream of the reservoir. Based on existing data these would include, but would not necessarily be limited to, benthic community effects, total phosphorous, and total nitrogen.

Letter 46: Bryan Buchanan, City of Roseville

No.	Comment	Response
046.01	Dissolved Pyrethroid Concentrations There are three issues with the decisions and LOEs listed below: Decision ID: 116151 • Pollutant: Bifenthrin • LOE IDs: 199541, 186800, 186822 Decision ID: 116152	See response to comments 046.02, 046.03, 046.04, and 046.05. Additionally, revisions to several LOEs and listing recommendations were made to correct a miscalculation related to normalizing some pyrethroid data for organic carbon (please see response to comment 011.08 for more details). One LOE from Decision ID 116152 (Cypermethrin) and one LOE from Decision ID 116144

No.	Comment	Response

	• Pollutant: Cypermethrin
	• LOE IDs: 187982, 188132, 188227, 188078
	
	Decision ID: 116144
	• Pollutant: Pyrethroids
	• LOE IDs: 193225, 193348
	
	Decision ID: 116158
	• Pollutant: Cyfluthrin
	• LOE IDs: 187749, 187790, 187748, 187746
	
	Decision ID: 130341
	• Pollutant: Permethrin
	• LOE IDs: 192759, 193045, 193029, 193049
		(Pyrethroids) were corrected. The LOEs were revised as follows:
		
		• Pleasant Grove Creek (Cypermethrin): LOE 196305 is replaced by LOE 234547.
		  ○ LOE 234547 has a total sample count of two while LOE 1196305 had a total sample count of 17. The discrepancy in total sample count is due to quantitation revisions from the organic carbon normalization process that indicated the laboratory method was not sensitive enough to detect cypermethrin concentrations at the evaluation guideline threshold. The number of exceedances remained the same (zero exceedances).
		• Pleasant Grove Creek (Pyrethroids): LOE 196967 is replaced by LOE 234545.
		  ○ LOE 234545 has two fewer total samples than LOE 196967. The discrepancy in total sample count is due to quantitation revisions from the organic carbon normalization process that indicated the laboratory method was not sensitive enough to detect some pyrethroid concentrations at the evaluation guideline threshold. The number of exceedances remained the same (16 exceedances).

046.02	Hence, the Basin Plan's direction regarding the use of total pyrethroid concentrations is not considered an indication that	See principal response 2.1 regarding the selection and use of thresholds for assessing pyrethroid data.

No.	Comment	Response
	surface waters are impaired. The Basin Plan's direction allows the Central Valley Water Board the flexibility to consider total pyrethroid concentrations and to require management actions in the absence of dissolved measurements. Freely dissolved pyrethroids are considered by the pyrethroid Basin Plan amendment as the toxicologically relevant and bioavailable form.	
046.03	The City of Brentwood commented on this issue for the proposed bifenthrin 303(d) listing of Marsh Creek during the 2014 Integrated Report and the Central Valley Water Board[1] responded in the following manner: "Staff agrees that water column pyrethroid concentrations should be adjusted to account for the bioavailable fraction. Staff is no longer proposing pyrethroid listings based on total pyrethroid water column concentrations." Thus, it is not appropriate to use "total" pyrethroid concentrations to compare to the Basin Plan's concentrations goals when conducting the 303(d) evaluations. If the concentration goals continue to be used for 303(d) assessments, their application to surface water should consider only the freely dissolved fraction. Footnote 1: Central Valley Regional Water Quality Control Board. 2016. Appendix K: Response to Comments. Clean Water Act Sections 305(b) and 303(d) 2014 Integrated Report for the Central Valley Region Final Staff Report. December.	Since the 2014-2016 Integrated Report, Water Board methodology has changed for assessing pyrethroids, including bifenthrin. For waterbodies within the Central Valley Region, if pyrethroids data for the freely dissolved concentration were reported or could be calculated, then freely dissolved concentrations were preferentially used. However, in the absence of freely dissolved data, Water Board staff used total concentration data to assess pyrethroids waterbody impairment. See principal response 2.3 for discussion regarding use of pyrethroid data from the total fraction.
046.04	The LOEs listed above indicate the pollutant "Fraction" is "Dissolved." However, data references provided for the LOEs do not present concentrations of dissolved pyrethroids, as	Changes to listing recommendations were not made in response to this comment. Please see principal response 2.3 regarding use of total and dissolved fraction data and response to comment

No.	Comment	Response
	defined by the pyrethroid control program Basin Plan amendment. The Basin Plan's concentration goals are intended to be compared with the "freely dissolved" pyrethroid concentration, which is the fraction of the pyrethroid in a water sample that is unassociated (not adsorbed) to organic carbon and this fraction is calculated using partitioning coefficients and measures of organic carbon from the same sample following the approach provided in the Basin Plan. There is no commercial analytical method available to measure "freely dissolved" pyrethroids. If measures of dissolved organic carbon (DOC) and total organic carbon (TOC) are provided, freely dissolved concentrations can be calculated for each sample. It is unclear if the State Water Board calculated freely dissolved pyrethroids by the approach provided in the Basin Plan or whether the Board simply relied upon the data reference to identify whether or not the measurements provided were in the "dissolved" or "total" fraction. Showing the calculations of freely dissolved concentrations is important because there are different sets of partitioning coefficients that must be used for different sample types (i.e., ambient or discharge). If freely dissolved pyrethroid concentrations cannot be calculated for the data reference, then the reference should not be used to support the listing decision. Otherwise, the calculated freely dissolved concentrations should be provided in the data references. For example, LOE 187749 for the cyfluthrin decision (Decision ID 116158) indicates one of one samples exceeded the evaluation guideline. The sample in question was collected by the California Department of Pesticide Regulation (CDPR) from station PGC058 on 10/14/2016 and it yielded a	038.10 for discussion on pyrethroid pesticide LOEs that reference the dissolved fraction. Regarding the methodology used for the comparison of pyrethroid data to thresholds, if analytical dissolved fraction pyrethroid data were available, these data were preferentially compared to thresholds. In the absence of dissolved data, the freely dissolved fraction was calculated using total concentration pyrethroids data if the total organic carbon and dissolved organic carbon values were reported. Please see response to comment 006.08 for the equation used to calculate the freely dissolved fraction from total pyrethroids data. LOE 187749 (Cyfluthrin) used analytical cyfluthrin data that were also used in LOE 187790. In addition to the cyfluthrin analytical data, the data reference for LOE 187790 also included TOC and DOC from which the cyfluthrin freely dissolved fraction was calculated and compared to the cyfluthrin threshold. LOE 187749 was removed from the assessment for Decision ID 116158. Please see response to comment 046.06 concerning LOE 187749 and other duplicate LOEs.

No.	Comment	Response
	total cyfluthrin concentration of 3.7 ng/L. Using the Basin Plan's partitioning coefficients and equation, as well as the DOC (11.1 mg/L) and TOC (11.1 mg/L) measurements for the sample, the freely dissolved cyfluthrin concentration is 0.13 ng/L. Thus, the sample does not exceed the 0.2 ng/L concentration goal using the freely dissolved fraction.	
046.05	Measurements reported as "dissolved" by the USGS in LOE 199541 are not calculations or measurements of the freely dissolved pyrethroid concentration, rather they are the measurement of the pyrethroid in a sample after it has been filtered. Even after filtering, pyrethroids can be adsorbed to DOC. In fact, the staff report[2] for the Central Valley Water Board's pyrethroid Basin Plan amendment states: "The USGS filtration method only removes suspended solids, it does not filter DOC, so the resulting pyrethroid concentration is the sum of the freely dissolved concentration and the concentration bound to DOC." Hence, it is appropriate to utilize the partitioning coefficients of the Basin Plan to calculate the "freely dissolved" fraction of the pyrethroids in the USGS' samples prior to their comparison to the Basin Plan concentration goals. Footnote 2: Central Valley Regional Water Quality Control Board. 2017. Proposed Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Pyrethroid Pesticides Discharges Final Staff Report. June.	See principal response 2.3 for discussion on pyrethroids concentration comparison to thresholds. While the principal response addresses commenters' concern about comparing total fraction pyrethroid data to the guidelines presented in the Central Valley Region Water Quality Control Plan, the argument presented is relevant to comparing dissolved fraction pyrethroid data to thresholds.

No.	Comment	Response
046.06	The following table shows duplicate LOEs that are included in the respective decisions. Duplicate LOEs are not appropriate to be used and should be removed from the record.	Please note that LOE196305 (Cypermethrin) was replaced by LOE 234547 due to errors associated with organic carbon normalization (see response to comment 046.01). This correction is reflected in Comment 046.06 Table (below). Thank you for your comment. With one exception, these duplicate LOEs were correctly identified by the commenter. Staff reviewed each LOE pair and removed one LOE from the listing recommendation. The commenter incorrectly identified Decision IDs for pyrethroids and cyfluthrin. The correct Decision IDs for the duplicate LOEs are Decision ID 116144 (pyrethroids) and Decision ID 116158 (cyfluthrin). This correction is reflected in Comment 046.06 Table (below). Duplicate LOEs associated with station PGC058 were removed (these corrections are reflected in Comment 046.06 Table below). Staff reviewed LOE data references and determined the identified LOEs associated with station PGC058 relied on California Department of Pesticide Regulation pyrethroid data from two different data references: • "Field, Habitat, Sediment, Toxicity data for the 2020-2022 integrated report in Region 5" ("ref4870"), which includes calculated freely dissolved pyrethroid fraction data. The data reference contains components necessary for calculating this fraction (i.e., whole fraction pyrethroid data and associated total and dissolved organic carbon data).

No.	Comment	Response
		• "Sediment, Water data for the 2020-2022 integrated report in Region 5" ("ref4951"), which includes total fraction pyrethroid data. These data are duplicates from ref4870. Bifenthrin, cypermethrin, pyrethroids, cyfluthrin, and permethrin LOEs developed from calculated freely dissolved fraction data in ref4870 were retained in listing recommendations identified in this comment, as freely dissolved pyrethroid data are preferred for comparison to pyrethroid thresholds. Fipronil and imidacloprid duplicate total fraction LOEs from station PGC058 that used data reference ref4951 were removed from listing recommendations in this comment for consistency with pyrethroid LOE removal actions described above. LOEs associated with station PGC030 were removed since station PGC030 is a storm drain outfall (these corrections are reflected in Comment 046.06 Table, below). Please also see response to comment 046.07 regarding Station PGC030. Station 519SED008 data evaluated by LOEs 131990 and 131646 are associated with the data reference "Water Quality Assessment Data for the 2018 solicitation cycle submitted through CEDEN for SWAMP Stream Pollution Trends" ("ref4561"). These data were assessed during the 2018 Integrated Report. Data associated with this station were also submitted during the 2020-2022 data solicitation period ("ref4960") and contained the same data submitted during the 2018 data solicitation period. This resulted in duplicate LOEs associated with this

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		station. These corrections are reflected in Comment 046.06 Table (below). Changes to listing recommendations were not made in response to this comment for identified listing recommendations. However, in addition to duplicate LOEs, the Decision IDs in the Comment 046.06 Table were also reassessed to address comments 046.07 and 046.12. Please see response to comments 046.07 and 046.12 for additional detail concerning changes to listing recommendations associated with these Decision IDs.

Comment 046.06 Table:

Decision ID	Pollutant	Duplicate #	LOE	Description	Revised LOE Action	Reason for LOE Removal
116151	Bifenthrin	Duplicate 1	186822	CDPR data from PGC058 2011–2017	Retained	NA
			186760		Removed	Freely dissolved data from station available.
		Duplicate 2	195902	SWAMP data from 519SED008 2013–2017	Retained	NA
			131990	SWAMP data from 519SED008 2013–2015	Removed	Updated data set available for 2020-2022 IR.
116152	Cypermethrin	Duplicate 1	188132	CDPR data from PGC058 2011–2017	Retained	NA
			188227		Removed	Freely dissolved data from station available.
		Duplicate 2	~~196305~~ 234547	SWAMP data from 519SED008 2013–2017	Retained	NA
			131646	SWAMP data from 519SED008 2013–2015	Removed	Updated data set available for 2020-2022 IR.
~~193225~~	Pyrethroids	Duplicate 1	183225		Retained	NA

116144			193348	CDPR data from PGC058 2011–2017	Removed	Freely dissolved data from station available.
~~187790~~ 116158	Cyfluthrin	Duplicate 1	187749	CDPR data from PGC058 2011–2017	Removed	Freely dissolved data from station available.
			187790		Retained	NA
130341	Permethrin	Duplicate 1	193029	CDPR data from PGC058 2011–2017	Retained	NA
			193049		Removed	Freely dissolved data from station available.
116145	Fipronil	Duplicate 1	189709	CDPR data from PGC058 2011–2017	Removed	Consistency with station PGC058 pyrethroid LOE removal actions.
			189731		Retained	NA
116164	Fipronil Sulfone	Duplicate 1	189870	CDPR data from PGC030 2010–2011	Removed	Station is storm drain outfall.
			189871		Removed	Station is storm drain outfall.
116148	Imidacloprid	Duplicate 1	190836	CDPR data from PGC058 2011–2017	Retained	NA
			190753		Removed	Consistency with station PGC058 pyrethroid LOE removal actions.

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046.07	Stormwater Outfall Samples Counted Toward Waterbody Exceedances. Data from CDPR monitoring station PGC030 was used by listing decisions listed in the table below. Station PGC030 is defined by CDPR as a storm drain[3] and, hence, it is not located within the waterbody segment and is not representative of ambient conditions in Pleasant Grove Creek. Data for PGC030 should be omitted from these listing decisions since it does not meet the 2015 Listing Policy	Thank you for your comment. Staff reviewed the spatial information and the comment's footnoted monitoring report regarding the location of station PGC030 and agree that this station is a storm drain outfall and data from this station should not be included in listing determinations. The LOEs identified in this comment were removed from listing determination assessments. LOEs for this station identified in response to comments 046.06 and 046.12

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	requirement that data "be measured at one or more sites in the water segment." PGC030 is not within the water segment. Decision ID: 116152 • Pollutant: Cypermethrin • LOE ID: 188078 Decision ID: 116158 • Pollutant: Cyfluthrin • LOE ID: 187748 Decision ID: 130341 • Pollutant: Permethrin • LOE ID: 192759 Decision ID: 116145 • Pollutant: Fipronil • LOE ID: 189688 Decision ID: 116164 • Pollutant: Fipronil Sulfone • LOE ID: 189870, 189871 Decision ID: 116148 • Pollutant: Imidacloprid • LOE ID: 190674 Footnote 3: Ensminger, M. and K. Kelley. 2011. Monitoring Urban Pesticide Runoff in Northern California, 2009 – 2010. California Department of Pesticide Regulation Report 264. July.	were also removed from pertinent Decision IDs named in this comment. Staff reassessed these pollutants in Pleasant Grove Creek based on the remaining LOEs. Staff revised Decisions 116158 (Cyfluthrin), 130341 (Permethrin), and 116164 (Fipronil Sulfone) as revised listing recommendation from "List" to "Do not List."

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046.08	Sediment Evaluation Guideline Decision 116151 for bifenthrin (LOE 195902) and Decision 116144 for pyrethroids (LOE 196967) use pyrethroid measurements in sediment collected by the Surface Water Ambient Monitoring Program (SWAMP) at station 519SED008 during 2013–2017 to conclude that beneficial uses are impaired due to bifenthrin and pyrethroids. The thresholds used as the evaluation guidelines consist of (or rely on) one-tenth the value of LC50s for Hyalella azteca developed using 10-day sediment bioassays. These thresholds are 10-times lower than the thresholds used to evaluate the original pyrethroid 303(d) listings for Pleasant Grove Creek during the 2010 303(d) listing evaluation (see LOE 30942) and they have been selected without adequate justification. For the 2010 303(d) evaluation, sediment toxicity to H. azteca in Pleasant Grove Creek was closely associated with toxic units (TUs) calculated using LC50s for 10-day H. azteca (not one-tenth the LC50) in sediment samples collected by Dr. Don Weston (U.C. Berkeley) in 2004 (LOEs 30942 & 22962)—3 of 7 samples exceeded the evaluation guideline of 1 TU for pyrethroids, with the TUs calculated using LC50s for the individual pyrethroids, while these same three samples also exhibited toxicity to H. azteca and the remaining four samples were not toxic to H. azteca growth or survival (Table 1). The association between TUs (based on LC50s) and H. azteca limited the 303(d)-listed segment to "upstream of Fiddyment Road" because all samples collected downstream did not exhibit toxicity and did not exceed the 1 TU evaluation guideline for sediment pyrethroids (i.e., TUs based on the LC50s).	Changes to listing recommendations were not made in response to this comment. For sediment chemistry, the selection of one-tenth the LC50 value as an evaluation guideline is a new approach since the 2010 Integrated Report. The evaluation guideline meets all the requirements of Section 6.1.3 of the Listing Policy and is supported by the Water Quality Control Plan for the Sacramento and San Joaquin River Basins. The justification for using one-tenth of the LC50 value is described in Section 4.5.5 of the Sacramento River and San Joaquin River Basin Plan as follows: *'Where valid testing has developed 96 hour LC50 values for aquatic organisms (the concentration that kills one half of the test organisms in 96 hours), the Board will consider one tenth of this value for the most sensitive species tested as the upper limit (daily maximum) for the protection of aquatic life. Other available technical information on the pesticide (such as Lowest Observed Effect Concentrations and No Observed Effect Levels), the water bodies and the organisms involved will be evaluated to determine if lower concentrations are required to meet the narrative objectives.'* (Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, 2018) LOE 22962 contains sediment toxicity data where observed toxicity, determined using 10-day *Hyalella azteca* sediment toxicity tests, was associated with

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		pyrethroid pesticides. This LOE was correctly used to support a listing of Pleasant Grove Creek for pyrethroids.
046.09	During 2013–2017, 19 sediment samples were collected by SWAMP at 519SED008 and assessed for pyrethroid concentrations and toxicity to H. azteca growth and survival in 10-day sediment bioassays, similar to monitoring conducted by Dr. Weston. No sediment sample collected during this period (0 of 19 samples) was toxic to H. azteca (growth or survival), yet LOEs for bifenthrin and pyrethroids (LOEs 195902 and 196967) identify that 16 of 19 samples exceed the one-tenth LC50 evaluation guidelines by a high magnitude (Table 1). Note that only 1 of 19 samples would exceed evaluation guidelines were they based on the 10-day LC50s themselves (not one-tenth 10-day LC50s). Hence, transitioning to use of the one-tenth 10-day LC50 guideline has significantly decreased the clear association between toxicity and exceedances of evaluation guidelines. Pyrethroid bioavailability can depend on the nature and type of organic carbon contained in sediments and the pyrethroid LC50s used for evaluation guidelines were not developed using sediment from Pleasant Grove Creek. Concentrations of pyrethroids at least two-times higher than the LC50s have been necessary to observe lethal or (the more sensitive) sub-lethal toxicity to H. azteca in Pleasant Grove Creek sediment. Hence, the literature-derived sediment LC50s are themselves protective against pyrethroid toxicity and impairments in Pleasant Grove Creek. The poor association between exceedances of the one-tenth 10-day LC50 threshold and toxicity to H. azteca survival or growth in 10-day tests indicates that this evaluation guideline is overly conservative.	Comment noted. Please see response to comment 046.08 regarding the use of the one-tenth LC50 value as a threshold for sediment chemistry data.

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046.10	As an aside, the 19 SWAMP sediment samples discussed above for H. azteca toxicity testing are only partially summarized in the toxicity LOE 131299, which includes results only for samples collected during 2013–2015. Data collected during 2016 and 2017 should be included in LOE 131299 since pyrethroid measurements on the 2016-2017 samples are included in the administrative record.	Thank you for your comment. LOE 131299 was replaced with LOE 195755 which includes the 2018 data and the additional data submitted during the 2020-2022 data solicitation period.
046.11	No justification has been provided to demonstrate that one-tenth the 10-day LC50 is necessary to protect beneficial uses of Pleasant Grove Creek. On the contrary, data in the record demonstrate that the 10-day H. azteca LC50s are, themselves, protective of sediment toxicity in the creek. Moreover, given the uncertainty in sediment thresholds that could be used as evaluation guidelines, the Central Valley Water Board's Basin Plan amendment for pyrethroid discharges[4] determined the most appropriate manner to ensure that creek sediments are protected against pyrethroids was not to use numeric pyrethroid sediment thresholds, but rather to base waste load allocations for pyrethroids on sediment toxicity results from 10-day H. azteca bioassays. Sediment bioassays for Pleasant Grove Creek indicate that evaluation guidelines based on the 10-day LC50, themselves, are protective. Until toxicity data for Pleasant Grove Creek demonstrates that sediment evaluation guidelines should be based on one-tenth 10-day LC50s, we request that the sediment evaluation guidelines for pyrethroids (individual and total) continue to be based on the LC50s themselves. There are numerous LOEs for Pleasant Grove Creek associated with decisions for bifenthrin, cypermethrin, permethrin, esfenvalerate, cyfluthrin,	Please see response to comment 046.08 regarding the use of the one-tenth LC50 value as a threshold for sediment chemistry data.

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	and lambda-cyhalothrin that utilize the one-tenth LC50 evaluation guideline for sediment, and these LOEs should be re-evaluated since an evaluation guideline based on the LC50 (alone) is protective. Footnote 4: Central Valley Regional Water Quality Control Board. 2017. Proposed Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Pyrethroid Pesticides Discharges Final Staff Report. June.	
046.12	Incorrect Pollutant Designation for LOE 59085 For LOE 59085 (Decision ID 116151/Bifenthrin, 116152/Cypermethrin, 116158/Cyfluthrin, and 130341/Permethrin), the LOE mistakenly identifies the pollutant as sediment toxicity when the LOE does not provide any sediment toxicity measurements. Rather, the LOE pertains to pyrethroids and evaluates sediment concentrations relative to evaluation guidelines for pyrethroids in sediment. These samples do not have corresponding toxicity tests, so it is not appropriate to identify the pollutant as sediment toxicity.	Although changes to listing recommendations were not made in response to this comment, changes were made to LOEs and listing recommendations. LOE 59085 was removed from Decision ID 116151 (Bifenthrin) and 116152 (Cypermethrin) and the listing recommendations were revised using the remaining LOEs to inform the listing recommendation. The pyrethroid sediment data associated with LOE 59085 will be assessed in the 2024 Integrated Report Cycle to determine pyrethroid impairment (see Section 2.7 of the Staff Report for more information). The listing recommendations for bifenthrin and cypermethrin for Pleasant Grove Creek did not change as a result of these changes and remain “Do not Delist.” Decisions 116158 (Cyfluthrin) and 130341 (Permethrin) did not include LOE 59085 and no changes were made to those decisions, which remain as recommendations to “List.” Additionally, there are no sediment toxicity

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		pollutant LOEs included in Decisions IDs 116158 or 130341. Staff also removed LOE 59085 from Decision ID 116143 for Toxicity. The removal of LOE 59085 from Decision ID 116143 did not result in a change to the listing recommendation. The listing recommendation for Pleasant Grove Creek for toxicity remains "Do not Delist".
046.13	California Department of Pesticide Registration Quality Assurance Data All LOEs cited in the listing decisions for Pleasant Grove Creek that are based on CDPR data provide the following statement for the QAPP Information Reference(s) field: "This is a placeholder reference for data that was collected after QAPP requirements were developed, but exempt from the requirements." Section 6.1.4 (Data Quality Assessment Process) of the 2015 Listing Policy states: "Even though all data and information must be considered, the quality of the data used in the development of the section 303(d) list shall be of sufficient high quality to make determinations of water quality standards attainment. Data supported by a Quality Assurance Project Plan (QAPP) pursuant to the requirements of 40 CFR 31.45 are acceptable for use in developing the section 303(d) list. The data from major monitoring programs in California and published U.S. Geological Survey (USGS) reports are considered of adequate quality. The major programs include SWAMP, the Southern California Bight Projects of the	See principal response 4.2 for Data and Analysis Transparency, and Readily Available Data. State Water Board staff reviewed the LOEs associated with Pleasant Grove Creek and determined that the monitoring site PGC030 is a stormwater outfall. Effluent data are not subject to 303(d) assessments; therefore, State Water Board staff removed all stormwater outfall sites from consideration and re-evaluated the decisions to create new listing recommendations. Details of LOEs and revised listing recommendations for Pleasant Grove Creek are in Appendix U: List of Central Valley Regional Water Board Revised Decisions Associated with Stormwater Outfall Sites in the Proposed Final Staff Report. Finally, Water Board staff reviewed the quality assurance documentation associated with the data collected by CDPR in Pleasant Grove Creek and have determined that the data meet the requirements of Section 6.1.4 of the Listing Policy. The QAPP reference (reference 5661) associated with these LOEs was updated. Here is a link

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	Southern California Coastal Water Research Project, U.S. EPA's Environmental Monitoring and Assessment Program, the Regional Monitoring Program of the San Francisco Estuary Institute, and the BPTCP." The 2015 Listing Policy does not yet list CDPR as one of the major monitoring programs that produce data of adequate quality. Listing decisions that rely upon CDPR data are, therefore, required to make findings that the data is of adequate quality, verify that data quality objectives have been met, and that the monitoring was compliant with the Quality Assurance Project Plan (QAPP) or equivalent document. If this cannot be demonstrated for CDPR data, then it is more appropriate for CDPR data to be used as ancillary LOEs.	to the QAPP reference document (https://www.waterboards.ca.gov/water_issues/programs/tmdl/records/state_board/2021/ref5661.pdf). Please note that an amendment to the Listing Policy is necessary to identify CDPR's monitoring program as a major monitoring program in Section 6.1.4 of the Listing Policy.
046.14	Quality Assurance for Sediment Tests The data references for the bifenthrin (LOE 195902), cypermethrin (LOE 196305), cyfluthrin (LOE 196330), lambda-cyhalothrin (LOE 196281), permethrin (LOE 196816), esfenvalerate (LOE196374), deltamethrin (LOE 196434), and pyrethroids (LOE 196967) all pertain to sediment samples collected at station 519SED008 and rely upon the same data reference (Field, Habitat, Sediment, Toxicity data for the 2020/2022 integrated report in Region 5, reference 4960). Data from this reference is provided in Table 2. This data reference includes a number of comments on the laboratory's analytical batches (LabBatchComments column) for which these pyrethroids were tested. Although these comments are abbreviated notations, they appear to highlight a number of issues with the analytical method that have the potential to affect the outcome of testing on the sample. For example, matrix effects could cause measurements on the sample to be	Changes to listing recommendations were not made in response to this comment. The data associated with this comment were collected by SWAMP, which is identified as a major monitoring program. Data from SWAMP are considered of adequate quality per Section 6.1.4 of the Listing Policy. While identification as a major monitoring program does not signify that all data from SWAMP are in assessments, it does signify that data are supported by a Quality Assurance Program Plan and a Quality Assurance Project Plan that meet the requirements of 40 CFR 31.45 and are acceptable for use in developing the section 303(d) list. Laboratory notations from the "ResQualCode" and "QACode" columns are used to inform the selection of data used for the assessment. Information in the

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	high or low, which was one comment on the bifenthrin result from 11/10/2015 that was flagged by the QAO officer. The 2015 Listing Policy (section 6.1.4) identifies that "If any data quality objectives or requirements in the QAPP are not met, the reason for not meeting them and the potential impact on the overall assessment shall be documented." Since a number of analytical issues are highlighted in the "LabBatchComments" of the data reference for the pyrethroid measurements in question, the administrative record should more fully define what the issues consisted of, whether the issues caused measurement quality or data quality objectives to not be met, and describe the potential impact of these issues on the measurements' veracity. The data reference identifies the "DataQuality" code as "Passed QC" for most of the measurements, but there is insufficient information in the record to determine the scope of the issues identified in the LabBatchComments column, whether these issues caused data quality objectives to not be met, and the potential impact of these issues on the overall assessment.	"QACode" column informs data quality by describing any special conditions, situations or outliers that occurred prior to or during laboratory analysis to achieve the result. The information provided in the "ResQualCode" column informs specific details about the analytical result of the sample, such as if the analyte was detected but not quantifiable or if the result was a field estimation. The two columns, which were populated by the laboratory, identify significant issues with the sampling and analysis processes that may affect the reported result. Additionally, these two columns also inform the "DataQuality" column. Some analytical results identified as "Passed QC" in the "DataQuality" column were not included in the assessment since the laboratory method was not sufficiently sensitive to detect sample pyrethroid concentrations. Analytical results that were identified as non-detects where the reporting limit was greater than the threshold were omitted from the assessment. Additionally, detections that were not quantifiable were omitted from the assessment. Data omitted from the assessment were not used to make listing or delisting recommendations for the 303(d) list.

Summary of Oral Comments from the July 6, 2021 Board Hearing

Code	Commenter
047.1	John Buckley, Central Sierra Environmental Resource Center
047.2	Tess Dunham, Pyrethroid Working Group
047.3	John Helly, Private Citizen

047.4 Sarah Ryan, Big Valley Band of Pomo Indians

047.5 Kaitlyn Kalua, California Coastkeeper Alliance

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047.1.1	Supports 303(d) listing recommendations.	Comment noted.
047.1.2	Identifies that data driven identification of where water quality is impaired needs to be improved.	Comment noted. Please see principal response 4 for Data and Analysis Transparency, and Readily Available Data.
047.1.3	Commenter notes that there are low stream forest flows due to the water year and drought. This issue can lead to more contamination in forest streams (low flow). Commenter also notes that there has been increased visitation to forest streams.	Comment noted.
047.2.1	Commenter notes that they worked with the Department of Pesticide Regulation, stormwater agencies, and Regional Boards to evaluate pyrethroids. From their assessment, they found that Region 5 and Region 9 followed a Basin Plan Amendment. For those regions, they looked at the dissolved fraction utilizing an equation that was adopted by Region 5 and the State Water Board. They noted that Region 3 used total fraction or did not specify between total and dissolved fraction. Commenter notes that the assessment of pyrethroids between the regions should be consistent and encourages the State Water Board and Region 3 to re-evaluate pyrethroid data and look at the dissolved fraction.	See principal response 2 for Pyrethroids.

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047.2.2	Commenter states that Region 5 should have no need for a TMDL with these new listings. They ask instead that pyrethroids be listed as 4b due to having other plans/programs in place to implement best management plans and monitoring, rather than a TMDL. Commenter notes that Region 5 already has a water quality control plan that applies to the whole Sacramento San Joaquin River Basin.	See principal response 2.4 for Pyrethroids.
047.3.1	Commenter discusses the location of Batiquitos lagoon in South Carlsbad California, near Encinitas. Notes that Batiquitos lagoon is designated by the California Resources Agency as an ecological reserve and communicates with the Pacific via a hardened inlet that is open perennially. Commenter states it is a heavily used beach with a new hotel. Commenter claims the City of Encinitas has been dumpling stormwater at the back of the beach for decades and that they are implementing a new storm sewer – unpermitted by the California Coastal Commission. Commenter states there are two new outfalls at this location.	See response to comments 040.01 and 040.02.
047.3.2	Commenter claims the City of Encinitas has evaded regulatory oversight with intent of dumping storm water into a listed water body (Batiquitos Lagoon, on the 2018 303(d) list and on the new 2020-2022 303(d) list). Commenter wants to know what is the enforcement of this? Commenter claims there is no TMDL for Batiquitos lagoon even though it is listed twice.	See response to comments 040.01 and 040.02.

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047.3.3	Commenter gave a complaint to the San Diego Regional Board in March 2021 and said there was no written response. Commenter states they were contacted via phone by a Junior Staff Engineer stating that the Regional Board finds no problem with what the city is doing but gave no rational.	See response to comments 040.01 and 040.02.
047.3.4	Batiquitos Foundation is implementing a data collection program for baseline information before new stormwater is dumped. Commenter is looking to pass along the data to the State Water Board.	The commenter is encouraged to submit data and information for the 2026 Integrated Report during the data solicitation period. Please ensure that you are signed up to receive email notifications for the Division of Water Quality – Integrated Report – 303(d)/305(b) program at the State Water Resources Control Board's webpage for public participation (https://www.waterboards.ca.gov/resources/email_subscriptions/swrcb_subscribe.html). Also, see principal response 4 for Data and Analysis Transparency, and Readily Available Data.
047.4.1	Commenter appreciates that more Tribal data is included in the Integrated Report and wants to commend Region 5 and their outreach efforts. Commenter notes that they are seeing a much more thorough listing compared to last Integrated Report. Commenter also encourages other regions to collaborate with Tribal Groups in their area.	Comment noted. The State Water Board appreciates the support.
047.4.2	Commenter state that they will likely be submitting comments but did not specify about what. They will potentially respond	Comment noted.

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	to the different ways Tribal Groups use waterways that are not listed or protected by the existing beneficial uses.	
047.5.1	Commenter notes that the California Coastkeeper are concerned with a reliance on too old or too little data.	See principal response 4 for Data and Analysis Transparency, and Readily Available Data.
047.5.2	Commenter calls attention to the barriers in data submission by the public and limits to full public participation, especially the lack of notice when data is excluded or disqualified. Commenter provides an example: An organization learned years later the data they submitted was disqualified (Data was submitted to CEDEN).	See principal response 4.4 for Data and Analysis Transparency, and Readily Available Data.
047.5.3	Commenter encourages State Water Board and Regional Boards to prioritize and direct resources to update the publicly available data and maps informed by the Integrated Report. Commenter states that there are current data gaps in Region 9. The specific waterbodies that are in the wrong place in Region 9 will be noted in the written comment.	See response to comments 003.05 and 003.09. Also, see Staff Report Section 6.6.2, which was added to the Staff Report and describes San Diego Regional Water Board staff's planned efforts to investigate data issues during the next assessment cycle.
047.5.4	Commenter claims that the Integrated Report relies on stale data with regions only being on cycle and assessed once every six years. Commenter states that the Water Boards should end three cycle approach and go to a two-year process.	See response to comment 003.07.
047.5.5	Commenter notes that inclusion of hydromodification and flow impairments are an important tool to identify and address	See response to comment 003.10.

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	rivers that are impaired by poorly timed or too low flow. Commenter states that California can and should join other arid western states in including hydro modification listings to protect flow impaired waterways. Commenter calls for hydrologically impaired waterways to be listed under 4c. Commenter states that they will provide further information in their written comment on hydrologically impaired waterways.	
047.5.6	Commenter states that they will also provide a written comment on the analysis used for listing and delisting recommendations related to pathogens, E-coli, and total coliform bacteria.	Comment noted. See responses to comments provided to letter 3 – California Coastkeeper Alliance.