List of Commenters:

1	Nathan Smith, City of Banning
2	Pat Bolt, WRCAC
3	Ray Hiemstra, Orange County Coastkeeper/Inland Empire Waterkeeper (OCCK/IEWK)

No.	Commenter	Comment	Response
1.1	City of Banning	The City of Banning has reviewed the staff recommendation for the adoption of the Basin Plan Amendment to revise the TMDLs for Lake Elsinore and Canyon Lake (LE/CL) and has strong concerns and reservations regarding the inclusion of the City of Banning as a responsible party in the Basin Plan Amendment, as outlined below.	No response required.
1.2	City of Banning	Incorrect Mapping of the City of Banning's Jurisdiction that has not been addressed or corrected, despite comments and technical data provided by the City of Banning. When the City was notified of our inclusion as a responsible party on the Basin Plan Amendment in July 2023, it was included using maps of the historic watershed within the City of Banning City Limits but included errors that ignored previous permanent diversions out of the watershed. The remaining areas did also include watershed within the City Limit, but not subject to a City MS4 Permit as the majority of the area was	Mapping used to support source assessment was based on the Southern California Association of Governments (SCAG) 2019 mapping data. Any built-in conditions, such as diversions, would still be subjected to the TMDLs if flow from the discharge point was located within the City of Banning's jurisdictional boundary. The Santa Ana Water Board recognizes the permanent diversions in portions of the watershed located above interstate 10 and has agreed to work with the Colorado River Basin to incorporate the Lake Elsinore and Canyon Lake Nutrient TMDLs into their permitting.

		within a private community, with private drainages, collections, and stormwater conveyances within their private MS4.	After reviewing the City of Banning's comments, Santa Ana Water Board staff and GEI Consultants determined that the area within the City's municipal boundary within the San Jacinto River watershed is only 240 acres, not 350 acres. Table 4-10 shows the watershed acreage by municipality or land-use type. This information was used to develop the source analysis (current nutrient loading) to Lake Elsinore and Canyon Lake. This includes the entire area within the City's jurisdiction, including the Sun Lakes homeowners' association, which owns and operates a private storm sewer system serving most of this acreage. The 110-acre difference is relatively insignificant to the overall loading calculations in the source analysis, so Table 4-10 was not revised to reflect this difference. There is no reason to distinguish between the City's MS4 service area and the private storm sewer system solely for purposes of the source analysis because the overall acreage would be the same. The interim milestones and final TMDLs do not include a wasteload allocation for the City of Banning. The TMDLs assume that nutrient discharges from the 240-acre area will continue with little or no net increase in loading, pending completion of Task 9 and any necessary TMDL revisions. To ensure the integrity of the milestones and TMDLs, the watershed retention assumption was increased slightly to account for the assumed

			nutrient discharges from within City boundaries. These assumptions will be further refined, as necessary, as part of Task 9.
1.3	City of Banning	RB8 staff stated the watershed mapping was completed in 2023 but this is not correct. Technical Documents from 2013, 2016, and 2017 show and include Banning within them. A Compliance Nutrient Reduction Plan for LE/CL dated January 28, 2013 prepared by CDM Smith for the RCFCD includes Tables B1 and B2, which are shown as Att. 1. These Tables list Banning as contributing 0.1% of the drainage to the San Jacinto Watershed. In another study shown as Att. 2, a Source Assessment Draft from October 2016, Figure 4.2, Banning is identified as a jurisdiction within the watershed. This is 7-years prior to the City of Banning being notified of its inclusion as a responsible party to the Basin Plan. Lastly, Att. 3 is a draft study from CDM Smith dated April 2017 that lists Banning in Table 6.3 with proposed waste load allocations. This draft was just over 6-years from when the City of Banning was first notified of its inclusion as a responsible party to the TMDL.	It is a correct statement that the watershed mapping that was used in the revised TMDL Technical Report was updated and completed in 2023. It is unclear why the City of Banning was not named as a responsible party in the 2004 TMDLs, however, their inclusion in 2013, 2016, and 2017 documentation were likely the result of better mapping tools being available.
1.4	City of Banning	The technical reports perpetuate these errors by allocating nutrient loads and consideration on 350 plus acres, and not the 5.5-acres that are within the City's MS4 Permit jurisdiction.	The City of Banning was notified they were identified as a responsible party in July 2023. This exceeds the applicable 45-day notice and comment period. (40 CFR 25.5(b), 25.10; Cal.

		There have not been updates by the Task Force that take into consideration the updated facts presented by the City of Banning. Had the City been included with discussion as far back as 2016, these items could have been daylighted and considered in the technical reports.	Code Regs. §3779(b).) While there was no legal requirement to include the City in the Task Force at any particular time, Santa Ana Water Board members recognized the unique stakeholder process involved in the development of these TMDLs and that the stakeholders might have been able to resolve the City's concerns among themselves had the City become involved earlier. See also, response to comment 1.2. In addition, Santa Ana Water Board staff has revised the 2024 TMDLs so that the City of Banning does not currently have a wasteload allocation. A study to define and identify minor sources and identify responsibility levels for TMDL implementation (Task 9) is under way. If the City is found to have a larger source contribution than the threshold identified through Task 9 or if the Santa Ana Water Board determines that it is necessary to assign wasteload or load allocations to minor source contributors, the TMDL will be updated to assign a wasteload allocation to the City.
1.5	City of Banning	The inaccuracies in technical studies are the basis for the revised TMDL and the Task Force has not acknowledged the technical inaccuracies brought to their attention with previous City correspondence. It is important to note that the City cannot be responsible for portions of the watershed outside of the City's MS4 Permit, such as the private MS4 property of the Sun Lakes community. The proposed nutrient load allocations in the	See response to comment 1.2.

		TMDL appear based on these inaccuracies. The City has identified 5.5-acres within its MS4, while the Task Force estimates 350-acres. This is greater than 50x the area the City has actual jurisdiction over.	
1.6	City of Banning	This creates Environmental Justice concerns, as the City is being held disproportionally liable for areas outside its control. These items could have been discussed and addressed if the Task Force included the City starting in 2016 and 2017, when technical reports identified Banning as being in the San Jacinto watershed draining to Lake Elsinore and Canyon Lake.	The Santa Ana Water Board recognizes that the City is identified as a disadvantaged community. The Office of Environmental Health Hazard Assessment's (OEHHA's) CalEnviroScreen mapping tool also identifies several other cities within the San Jacinto River watershed as disadvantaged communities including Hemet, Riverside, Moreno Valley, Perris, and Lake Elsinore for socioeconomic disadvantages. This stressor, however, does not provide a basis for an exemption from Clean Water Act TMDL requirements. Staff's recommendation to remove the City of Banning's wasteload allocation is not based on the City's status as a disadvantaged community.
1.7	City of Banning	On January 30, 2024, the City wrote a letter (Att. 4) stating these facts and providing exhibits of the MS4 showing that 350 acres of City discharge was incorrect and asked that the Task Force consultant show us the calculations used to determine Banning was a contributor to the watershed. There was no formal response and after two emails initiated by the City, on March 18, 2024 a meeting was held with the RB8 Executive Director and staff and City of Banning Public Works staff. RB8 staff stated they would analyze the	See response to comment 1.3.

		City's true contribution to the TMDL and confirm the City provided data. There was agreement that the City's contribution was "very small." A second letter dated June 26, 2024 addressed to Ray Akhtarshad, RB8, was written in response to his request to submit the status of our timeline to submit a ROWD (NPDES) application to Region 8, shown as Att. 5. The City provided a technical evaluation and evidence that only 5.5 acres of half street width from the City of Banning drains into the San Jacinto sub watershed, not 350 plus acres as estimated incorrectly by the LE/CL Task Force. A third letter to Tess Dunham, LE/CL Task Force Advisor (Att. 6), dated July 29, 2024 was sent and it stated that the City should not be listed as a responsible party and removed from the Basin Plan Amendment. A formal response was not received from any of the three letters mentioned above. The important miscalculation of the City's jurisdictional drainage area of 5.5 acres was never acknowledged, discussed or answered. Region 8 did finally respond to the City's letters on October 24, 2024 (Att. 7) and stated that the City had to stay in the TMDL for now, with no regard or response to the City's assertation that there were errors in the	

		mapping and allocation in the Basin Plan Amendment technical studies. In this letter signed by the Executive Director, there is a statement that the Task Force was made aware of the City's inclusion due to a mapping update that occurred in 2023. However, Task Force documents from 2013, 2016 and 2017 (Atts. 1-3) show the City of Banning within the San Jacinto watershed, and in fact include a base load allocation for the City of Banning in various tables. These items pre-dated any communication to the City by at least 7 years.	
1.8	City of Banning	**It is unreasonable to assign base nutrient loads to the City of Banning given the uncorrected errors in mapping.** The City asked for technical studies, including sampling results and modeling that were used to determine the City's contribution, but this request was never acknowledged or responded to. We do not know what methodology was used to assign nutrient load allocations. If we had been included earlier in the process, we could have stated that the City only has jurisdiction over 5.5 acres. As currently assigned, it appears that the nutrient loads assigned are assigned based on the 350 acres, which is more than 50 times greater that the portions of the watershed that were not permanently	See response to comment 1.4.

		diverted or would be outside of the City's jurisdiction. Thus, it is unreasonable to assign the City a nutrient contribution load when the mapping and data is flawed and incorrect.	
1.9	City of Banning	**Failure of the Regional Board and Task Force to notify and include the City of Banning during the TMDL development and significant delays in notification from the Task Force.** The Regional Board is obligated under AB2108 (signed by Governor on 9/16/22) that added section 189.7 to the Water Code stating that 'Outreach to identify issues of environmental justice needs to begin as early as possible in state board or regional board planning, policy, and permitting processes' and to 'promoting meaningful civic engagement in the public decision making process.' This was signed into law 9 months prior to the City of Banning being notified of its inclusion as a responsible party in the Basin Plan Amendment. The only action taken by Region 8 and the Task Force was to include City staff as task force members in mid-March of 2024, about 9 years after the process began, and more than 8 years after Task Force documents identified Banning as being within the watershed. The Regional Board has not conducted any outreach to the Community, City Council, or local interests.	The Santa Ana Water Board has satisfied the outreach requirements set forth in Water Code Section 189.7, which did not take effect until January 1, 2023, by conducting outreach in potentially affected disadvantaged and tribal communities. Staff used the Office of Environmental Health Hazard Assessment's (OEHHA's) CalEnviroScreen mapping tool to identify disadvantaged communities in which the median household income is less than 80% of the statewide annual median household income. Staff distributed flyers in both English and Spanish in disadvantaged and tribal communities within the geographic area of the Santa Ana region notifying interested persons of the proposed Basin Plan amendment, regulatory background, and the opportunity to provide comments and participate in the public adoption hearing. In addition, see responses to comments 1.3 and 1.4.

		The Board response in the October 24, 2024 letter from Region 8 falsely stated that it only determined in July 2023 that the City of Banning was to be part of the TMDL; however, Region 8 determined this as early as 2013, 2016 and 2017 as shown in Atts. 1-3. In summary, the TMDL Task Force and Regional Board 8 **WERE** aware as early as 2013 that Banning had a small area within the watershed but failed to notify the City until mid-2023. That action prohibited the City from making meaningful comments to address the previous errors in determining the City's true contributing area to the watershed, prior to reports being made "final." Inclusion of the City of Banning with this Plan Amendment is inconsistent with Santa Ana Water Board policy and state law on conducting meaningful outreach early in decision making processes.	
1.10	City of Banning	**Failure to provide the City of Banning an opportunity to study, collect wet weather samples and evaluate stormwater conditions** Jurisdictions that are currently listed as responsible parties have had more than 20 years to collect stormwater samples and evaluate stormwater samples to understand their contributions and pollutants to the watershed. The City of Banning, through the	See response to comment 1.4.

		failure of the Task Force to notify the City in a timely manner, was denied the opportunity to perform stormwater collections and sampling. Had the City been provided appropriate notice and inclusion with the update process, sampling and data could have been provided and incorporated in the technical studies. The City will commit to monitoring stormwater quality at the outfall to Potrero Creek, in association with Riverside County Flood Control District, developing testing protocols and beginning to gather data that the other regulated jurisdictions have been completing for over 20-years.	
1.11	City of Banning	**Unfounded concerns on precedent setting** The Santa Ana Water Board response of October 24, 2024 indicates that it is ‘unsolicitous’ for staff to evaluate individual requests and actions to exempt the City of Banning. It does not acknowledge that the Regional Board had already exempted the City in the initial actions in 2004. Thus, the previous precedent for this TMDL was established in 2004 when Banning was not included as a responsible party. Doing so again would not set a new precedent but perpetuate previous Board actions. Exclusion of the City of Banning maintains the status-quo and does not establish a new precedent. The Board now has opportunity to create a new beneficial precedent on how to	There is no documentation stating the City of Banning was exempt from the 2004 TMDLs. At the time, Santa Ana Water Board staff largely relied on stakeholders to provide jurisdictional boundary information. Since the 2004 TMDLs were adopted, new mapping technology has become available, which then identified the City of Banning as responsible party. See also response to comment 1.4.

		include 'De-minimus' contributors with FUTURE Basin Plan amendments.	
1.12	City of Banning	**Requests to the Regional Board when considering action on the Basin Plan Amendment** The City of Banning requests the following actions from the Board with regards to any action to adopt the Basin Plan Amendment: ➢ [1] Remove the City of Banning as a responsible party with THIS Amendment. The Basin Plan can be amended in the future as other sources are deemed to contribute to pollutants in the Basin; ➢[2] Direct staff to complete the De-minimus criteria within the timeframe noted in the proposed Basin Plan Amendment, and commit to a future Basin Plan Amendment that would be informed by the De-minimus study; ➢[3] Direct staff to remain actively engaged with the City of Banning as the De-minimums criteria is developed; ➢ [4] Direct staff to re-evaluate the City of Banning's stormwater discharge quality after the De-minimus criteria are adopted by this Board. At that stage, and if the City of Banning does have a negative impact on stormwater quality with regards to nutrients, to work with the City for future inclusion in the TMDL.	[1] See response to comment 1.4. [2] Task 9 is scheduled to begin no later than 3 years from the effective date of the revised TMDLs. Task Force representatives stated at the February 14, 2025 public hearing that they have already begun work on Task 9. [3] Santa Ana Water Board staff intend to work collaboratively with the Lake Elsinore and Canyon Lake TMDL Task Force and the City of Banning through the development of Task 9. [4] See responses to comments 1.2 and 1.4.

1.13	City of Banning	For the sake of the background, the City of Banning is a community of approximately 24 square miles situated in the San Gorgonio Pass along Interstate 10 between Riverside and Palm Springs. The City of Banning is a disadvantaged community. And according to information available on the SCAG regional data platform, the City of Banning is comprised of 11 census tracts, 3 of which have predominant household income of less than $15,000 annually, and the remaining at $75,000 annually. For comparison, the entirety of the SCAG region has, on average, a household income of $93,000. And for Orange County, it's over $113,000. Every census tract within the City of Banning falls below the SCAG average.	See response to comment 1.6.
2.1	WRCAC	**Western Riverside County Agriculture Coalition (WRCAC) Public Comments on the Proposed Draft Amendment of the Water Quality Control Plan, Basin Plan Amendment and Revised Total Daily Loads (TMDLs) for Nutrients in Lake Elsinore and Canyon Lake.** The Western Riverside County Agriculture Coalition (WRCAC), a small non-profit, representing dairy and agriculture operators for more than 20 years on the Task Force, is appreciative for the opportunity to comment on the Lake Elsinore/Canyon Lake Nutrient revised TMDL and Basin Plan Amendment. The revised Basin Plan Amendment requires	No response required.

		a comprehensive evaluation of the revised TMDL document that was released on December 26, 2024. Stakeholders reviewed earlier drafts but the final documents, with verified Santa Ana Regional Water Quality Board final edits released on December 26, 2024. In order to comment accurately on the Basin Plan Amendment, WRCAC has reviewed and commented on these final issues of concern and referenced where they are also of concern in the Basin Plan Amendment.	
2.2	WRCAC	WRCAC has provided comprehensive detailed comments throughout this multiple year and multiple layered process. Sometimes comments from the RWQCB staff and the TMDL Admin staff were addressed and sometimes not. On many occasions, after no action was taken to address an issue, WRCAC conducted a deeper evaluation on the topic to better define the concern. As an example, when the Basin Plan draft included a reference watershed condition 25th Percentile margin of safety (MOS) for Total Phosphorus of 600% and for Total Nitrogen of 150%, WRCAC completed a Cranston Station sampling dataset review. This evaluation resulted in a change of approach for determining the Numeric Targets MOS. WRCAC continuously provided detailed modelling and watershed characterization reviews, presented	The estimated Margin of Safety (MOS) was part of the 2018 draft TMDL revision and was not calculated correctly, as WRCAC's investigation revealed. See ES-22 for detailed information on how the MOS was determined for the revised TMDL Technical Report. Also see response to comment 2.5 below.

		constructive alternative options, and in-depth supplemental data when appropriate. These efforts came as a great expense for a tiny non-profit organization. WRCAC members fund this nonprofit by paying a per acre fee. As Ag cropland and ag operation stakeholders have declined substantially in the last 10-years, so has WRCAC's financial support.	
2.3	WRCAC	Understandably, the declining acres also impact the TP and TN percent of loading in the watershed. According to the PLOAD watershed model baseline conditions Dairy operations, after implementing their NPDES permit requirements, represent 0.18 percent of the TP total external load into Canyon Lake, and 0.13 percent of the TP into Lake Elsinore. Likewise Dairy is responsible for only 0.08 percent of the TN loading into Canyon Lake, and 0.06 percent of the TN loading into Lake Elsinore.	Comment noted.
2.4	WRCAC	The PLOAD model also indicates that the regulated Ag industrial croplands are responsible for only 4.5 percent of the current TP loading into Canyon Lake, and 1.2 percent of the TP Loading into Lake Elsinore. Likewise, regulated Ag industry croplands are responsible for only 1.2 percent of the external TN loading into Canyon Lake, and 0.3 percent of the external loading into Lake Elsinore	Comment noted.

2.5	WRCAC	Note that the PLOAD watershed model is based on a 2019 GIS land use data layer that is outdated by 5 years due to continuing decline occurring. WRCAC appreciated the level of effort that Steve Wolosoff and Richard Meyerhoff, GEI consultants, have provided on this very complex and challenging project. However, the direction taken at times by the RWQCB and TMDL staff has been less than collaborative in nature. This comment is based on the attached comments. In fact, a former RWQCB staff member is quoted in the September 28, 2021 TMDL Task Force meeting minutes stating: "…/Regional Board reported that they met with WRCAC where they discusses the use of the 25th percentile values. The Task Force discusses having an independent local peer review local reference condition data to opine on the appropriateness of using median or the 25th percentile to calculate targets and load allocations for the revised TMDLs. However, additional scientific review could trigger additional peer review, which would then cause further delay. The Task Force discussed including reopeners in the final revised TMDL to allow for re-consideration of final load and wasteload allocations based on the 25th percentile based on evaluation and analysis of additional reference condition data. At this time, Regional Board staff	The Santa Ana Water Board is using the 25th percentile for final allocations to provide a conservative margin of safety. The median is being used as an interim milestone. This milestone applies at the same 20-year point that was the final compliance deadline in the 2018 draft TMDL for final allocations based on the median. Additional data will take years to collect, and a special study will be conducted and results used in scheduled reconsiderations at 10 and 18 years from the effective date. Use of the 25th percentile is consistent with EPA published guidance (Nutrient Criteria Technical Guidance Manual: Lakes and Reservoirs, First Edition, 2000) and the 2004 Lake Elsinore and Canyon Lake TMDLs as well as the Big Bear Lake Nutrient TMDL, which also based numeric targets on the 25th percentile for all hydrological conditions.

		conveyed their position regarding using the 25th percentile of reference condition data to calculate targets and wasteload allocations for revised TMDLs for Lake Elsinore and Canyon Lake"	
2.6	WRCAC	This statement clearly demonstrates that their emphasis was placed on meeting deadlines and saving money, rather than employing better science to investigate the Median Numeric Targets during Phase II implementation. Notably, a great start on how to manage this information was already present in the draft 2018 Technical Report. WRCAC's view on this staff's choices is that there are many decisions made that emphasize the focus was on setting Reference Watershed Conditions to match possible Numeric Targets from other Reference Watersheds outside of the San Jacinto River Watershed's Level III Ecoregions, And, that they would give no further consideration regarding the high natural level of soil erosion that the draft 2018 Technical Report acknowledges in the Horne (2002) report citations.	High levels of soil erodibility are apparent in the San Jacinto River at Cranston Guard Station dataset with some grab samples > 10,000 mg/L Total Suspended Solids. More data will be collected to improve the scientific basis. With limited data, Santa Ana Water Board staff decided a conservative assumption should be used in the 30-year final allocations, which also aligns with comments from peer reviewers. The peer review included western water quality experts including individuals with experience in fire prone watersheds.
2.7	WRCAC	WRCAC's comments are direct and supported by the substantial-detailed examples from this revision to the TMDLs, because this serves as WRCAC's FINAL opportunity to voice our stakeholder's concerns over several issues in this revision.	Comment noted.

2.8	WRCAC	We also ask for point of contact information for the EPA person assigned to review this TMDL to ensure that these comments reach them for their consideration during their review. If adopted, this TMDL must still clear hurdles with approvals by various Boards and agencies.	The EPA staff person who had been assigned to this TMDL recently retired. Staff do not have contact information at this time. Please refer to EPA Region 9's website: EPA Region 9 (Pacific Southwest) | US EPA
2.9	WRCAC	The WRCAC review format for comments includes the use of Green Highlights to emphasize sections of a quote that are the primary focus of the discussion.	No response required.
2.10	WRCAC	WRCAC Comments for Attachment A Page Numbers end at 13; and the draft 2024 Technical Report Page Numbering starts at 1.	No response required.
2.11	WRCAC	The Western Riverside County Agriculture Coalition (WRCAC) appreciates the opportunity to provide final comments to the state on both the Basin Plan Attachment A and the draft 2024 TMDL Technical Report – Revision to the Lake Elsinore and Canyon Lake Nutrient TMDLs (Technical Report). Because the Basin Plan Attachment A is the portion of the many documents created to support the TMDL revision that will be promulgated into rule, WRCAC began by completing a thorough review of the Technical Report to confirm that the Basin Plan Attachment A aligns with the revised Technical Report. **The comparison of both documents has identified some topics that state the issue differently in the two**	Comment noted.

		documents. This must be remedied prior to adoption. These include wording or figures in: • Comment 2 • Comment 2 • Comment 12	
2.12	WRCAC	The list of comments provided below identify critical issues that should be resolved before approving this revised Technical Report and promulgating Attachment A. • Comments 1 and 2, Identification of the lack of having a uniform description for why the evaluation in Task 11 is for both Phase II and Phase III Numeric Targets • Comments 4, 5, and 12, of the impacts from having a poor predictive skill with the current lake model setup for Canyon Lake (comment 4) and Lake Elsinore (comment 5) • Comment 11, Issues with not using appropriate selection of the Numeric Targets. The full list of considerations provided in USEPA Region 9 Guidance for Developing TMDLs in California (USEPA, 2000a) was not used when selection the reference watershed and selected targets.	Comment noted.
2.13	WRCAC	**Basin Plan Attachment A Narrative Specific Comments** **Comment 1)** Page 2, second bullet, Phasing of the Nutrient TMDLs for Lake Elsinore and Canyon Lake sub-header. This bullet states: “The Phase II milestones and interim numeric targets are necessary because the final	The commenter’s assessment is not in agreement with the external scientific peer reviewers. Data does not yet exist for wet weather surface runoff from undeveloped canyons in the San Jacinto watershed to provide a more defensible

		numeric targets, total TMDLs, WLAs and LAs identified in Phase III are set at very conservative levels that may not reflect actual watershed conditions.” This sentence ignores that the interim numeric targets are also highly likely to be wrong. Section 7, Task 11 is established to assess the validity of both the Interim Phase II Numeric Targets, and the Final Allocations’ Phase III Numeric Targets.	scientific basis. Task 11 is intended to obtain this information.
2.14	WRCAC	**Comment 2)** Page 3, continuation of second bullet. This bullet further states: “During Phase II, studies and data collection will be performed to address data uncertainty and to review the appropriateness of the conservative final numeric targets, total TMDLs, WLAs and LAs. Further, because of the length of Phase II, the implementation plan for these TMDLs includes reconsideration of these TMDLs by the Santa Ana Water Board at least twice during the twenty-year period. Subject to resource constraints, the Santa Ana Water Board’s first process for reconsideration will occur no later than 10 years from the effective date; and the second process for reconsideration will occur no later than 18 years from the effective date. In the interim, dischargers subject to these TMDLs will implement the Phase II Tasks and Schedule, as applicable.”	If the Phase II milestones are found to best represent reference watershed nutrients at Year 10, then the interim milestones may become the final allocations. If the Phase II milestones are inconsistent with representative data collected in Task 11, then a future reconsideration may look at setting final allocations based on updated information.

		This quote references the Task 11 content to only review the Phase III Numeric Limits and Task 17 in Section 7, that describes in two different Phase II years where the consideration of reopening the TMDL for an update takes place. However, the Technical Report's Task 11 states on page 291, and the Task 11 description on page 61 of this Attachment: "Accordingly, a Study must be conducted to collect additional samples from this station and other undeveloped canyons in the San Jacinto River watershed to assess (a) the validity of the basis for Phase II milestones and interim numeric targets as being representative of the reference watershed condition, (b) if the Phase II milestones and interim numeric targets should be the final numeric targets, WLAs and LAs, or (c) if some other estimation of the reference watershed condition from the newly collected data should be used for calculation of numeric targets, WLAs and LAs. The results of this study will help to determine whether further revisions of these TMDLs are needed to better represent the reference watershed condition. The Study design will generate a dataset that is at least as robust as the historical sampling in the San Jacinto River at Cranston Guard Station (i.e., n = 51 samples)."	

2.15	WRCAC	**Comment 3)** Page 3 continuation of second bullet discussion. In comment 2's first quoted paragraph the stated revised Technical Report provides schedules to estimate when Tasks will be completed in Figures 7-4 and 7-5 on pages 276 and 277 respectively. The tight scheduled for tasks 7 through 13, Task 15 and Task 17 may interfere with schedule completion for the tasks which build upon earlier tasks being completed on time. See comment 12 regarding Implementation schedules for a detailed explanation of WRCAC's concern.	Comment noted.
2.16	WRCAC	**Comment 4)** Page 8, Numeric Targets, first and third paragraphs. This paragraph states what WRCAC has always understood to be the goal of creating a hypothetical reference watershed condition when it states: "Numeric targets for Lake Elsinore and Canyon Lake are based on the WARM and REC beneficial uses and associated water quality objectives in the Basin Plan, watershed reference conditions, and the varying conditions of flooding and desiccation in Lake Elsinore. More specifically, these TMDLs set numeric targets based on modeled, expected lake water quality responses to inflows of nutrient concentrations that represent a reference watershed condition, as defined by the 2024 TMDL Technical Report. Generally, a	Model performance was a challenge in the development of this TMDL. Many factors may have influenced performance such as the static watershed nutrient assumption for current conditions, observation data based on a single point measurement compared to lake-wide model results, influence of other changes to loads from watershed BMPs, agriculture attrition, LEAMS, and recycled water additions. The range of results show that both means and ranges of simulated water quality are quite comparable for most parameters. In the case of the reference watershed approach, the allocations are not determined by the linkage analysis, so these loading values are not influenced by any lake water quality modeling error.

		reference watershed condition is intended to represent most conditions in the watershed prior to development. For these 2024 Nutrient TMDLs, the numeric targets are presented as cumulative distribution functions (CDFs), which are plots of statistical distributions for sets of data, to characterize spatial and temporal variability in water quality expected to occur in Lake Elsinore and Canyon Lake under a reference watershed condition. The CDFs are modeled results of indicators of beneficial use impairments, including chlorophyll-a, dissolved oxygen, and ammonia based on a reference watershed condition. This expression of the targets is based on the premise that returning loads from the watershed to levels that would have occurred during the reference watershed condition would result in the inlake water quality parameters exhibiting the same spatial and temporal variability associated with the reference watershed condition. In other words, attainment of the numeric targets is achieved when CDFs developed from future, long-term monitoring results are similar to the reference watershed condition numeric target CDFs, based on the modeled condition. Ultimately, the primary objective for using a reference watershed condition approach for establishing numeric targets is for water quality conditions in each lake to be	Lastly, the predicted in-lake numeric target CDFs represent a condition that is substantially more lenient than the 2004 TMDL for Lake Elsinore.

		equal to or better than expected for a reference watershed condition." "As noted, lake water quality models were used to estimate the response within the lakes for a hypothetical reference watershed condition in the San Jacinto River watershed. The models were calibrated to existing water quality conditions, as described in the linkage analysis (LESJWA 2024). For Lake Elsinore, water quality modeling to support the development of numeric targets involved a very long simulation period from 1916- 2020. This captured the full range of dynamic water quality conditions that naturally occur in Lake Elsinore (see LESJWA 2024, Section 2). The general lake model (GLM) used for Lake Elsinore is an aquatic ecosystem and one dimensional (1-D) hydrodynamic model to facilitate boundary conditions and simulation of spatially varying mechanisms. For Lake Elsinore, a simple 1-D hydrodynamic model is appropriate because the lake's morphology is fairly uniform. For Canyon Lake, there is substantial variability in the lake basin morphology and water quality processes, which required the development of a three dimensional (3-D) hydrodynamic and water quality model, Aquatic Ecosystem Model 3D (AEM3D). These tools are described in Section 5 of the 2024 TMDL Technical Report (LESJWA 2024)."	

		Fulfilling the quotes from Page 8, Numeric Targets, is not possible according to the severely lacking Goodness of Fit testing results that almost eliminates the predictive skill of the Canyon Lake model AEM3D regarding Canyon Lake East Bay, Basin Plan Comments Table 1 below. And, this model's calibration also raises concerns regarding the lack of prediction capability for key parameters in the Canyon Lake Main Lake. Likewise, the Lake Elsinore model GLM-AED2 also has fit test results that are troubling Basin Plan Comments Table 2 below. WRCAC acknowledges the difficult challenge of calibrating a lake model when many of the parameters necessary have no, or limited, data available. The limited available information plays a large role in having poor Goodness of Fit test results. However, basing CDF curves on poor modeling is not an appropriate TMDL approach. For instance, the Nash-Sutcliff results in the Canyon Lake East Bay indicates it would be better to use the observed mean then the model. For more detail see the WRCAC comments for the draft 2024 Technical Report Section 5 below starting on page 62 of the revised Technical Report.	

2.17	WRCAC	**Comment 5)** Page 9 third paragraph and page 10, Numeric Targets continued. The third paragraph on page 9 states: “The data used to establish the numeric targets for each constituent are the daily model output from AEM3D for Canyon Lake and GLM for Lake Elsinore. Model scenarios were run for two sets of corresponding watershed loads to each lake. The first set of watershed loads, which are expressed as milestones that are to be attained by the end of Phase II, are based on using the median concentrations of TP and TN in watershed runoff measured from data collected at the Cranston Guard Station to represent the reference watershed condition. The second set of watershed loads, which are expressed as allocations that are to be attained by the end of Phase III, are based on using the 25th percentile of TP and TN in watershed runoff measured from data collected at the Cranston Guard Station. The second set of watershed loads based on 25^{th} percentile concentrations are used as the final TMDLs, WLAs and LAs in these TMDLs.” At the end of this paragraph the WLAs and LAs are beginning to be discussed, even though the WLAs and LAs are determined by the watershed model PLOAD. See comment 6 below for PLOAD concerns.	Comment noted.

		"As noted previously, these TMDLs are phased TMDLs due to data uncertainty. In particular, there is data uncertainty associated with the data used from the Cranston Guard Station for setting the interim and final numeric targets. Due to this data uncertainty, the Phase II implementation plan requires completion of multiple studies. This includes a multi-year study for the collection of additional data from the San Jacinto River at Cranston Guard Station and other nearby reference watersheds. The results of this multi-year study, and other studies, will be used to re-evaluate the modeled reference watershed condition prior to the start of Phase III. Specifically, Phase II anticipates that the Santa Ana Water Board will reconsider the TMDLs twice during the Phase II twenty-year period. Reconsideration of the TMDLs will include re-evaluation of the modeled reference watershed condition and resulting interim and final numeric targets based on the data and information collected up to when the reconsideration occurs." As stated in Comment 2. The Technical Report's Task 11 evaluates Phase II and Phase III Numeric Targets. [Basin Plan Comments Table 1, WRCAC Comment Letter, PDF pg. 8]	

		[Basin Plan Comments Table 2, WRCAC Comment Letter, PDF pg. 9]	
2.18	WRCAC	**Comment 6)** Page 9 Numeric Targets last paragraph. In this mention of the omission of Phase II Numeric Targets being evaluated this adds an urgency to the mistaken issue: “For Phase II, these TMDLs establish interim numeric targets that are to be achieved as soon as possible, but no later than 20 years from the effective date of the TMDLs.” **As stated previously the Phase II Numeric Targets contain uncertainty and must be reevaluated. However, the Phase II Task schedules issue permits and other regulatory actions in Task 2 long before the Numeric Targets can be reassessed.** Furthermore, the primary use of the PLOAD watershed model is to set WLAs and LAs for both Phase II and Phase III. However, the PLOAD model has Goodness of Fit issues of its own. The PLOAD model was tested for Goodness of fit using the Median concentration values of the Cranston Guard Stations water quality monitoring dataset. The Goodness of Fit testing results indicates that while the calibration of Average Annual AFY of runoff is modeled almost perfectly, the Average Annual Nutrient Loading underestimates the TP Loading of the San	There is a significant difference in the total phosphorus (TP) load with the San Jacinto River generating more TP than Salt Creek. Data does not yet exist to associate this difference with assumptions for undeveloped canyon nutrient washoff in the model. An alternative explanation could be that assumed washoff for developed land uses was too low in subwatershed zones 2, 5, and 6. Santa Ana Water Board staff are aware of this issue, and we encourage watershed stakeholders to collect data to better understand TP loading from existing land uses.

		Jacinto River's Goetz monitoring station measured loading by 25 percent. This underestimation uses these median concentration values only for the Forested and Open Space land uses' loading calculations; Median values are 0.32 mg/L TP and 0.92 mg/L TN. WRCAC ran this model using the 25th Percentile values of TP equaling 0.16 mg/L and TN equaling 0.68 mg/L for the Forested and Open Space loading calculations; the phosphorus results increased the underestimation to 31 percent at the San Jacinto River Goetz monitoring stations contributing area. Assuming the model is calibrated correctly, the true natural condition TP concentration is substantially higher than the Final Numeric Targets and even higher than the median concentration 0.32 mg/L. Therefore, the model's loading predictions for the WLAs and LAs for the Canyon Lake Main Lake external loading are going to include a substantial increase in reduction requirements.	
2.19	WRCAC	**Comment 7)** Page 15, beginning of the thorough Total Dissolved Solids explanation. WRCAC appreciates including this well written content.	Staff thanks you for your comment.
2.20	WRCAC	**Comment 8)** Pages 16 and 17, last paragraph beginning of page 16. This paragraph states:	There is no direction to stakeholders on how they should comply with allocations. Retention in the watershed is one approach that has a cost that exceeds other potential projects and that comes with a one-water paradox of less volume of

		"In summary, the addition of recycled water with an average TDS of 700 mg/L to Lake Elsinore that has an average of 2,000 mg/L of TDS provides for a short term dilution effect. However, the mass of salt from recycled water stays in the lake, causing long-term TDS concentrations to rise. Accordingly, the CDFs show fewer extreme highs in TDS concentration with the addition of recycled water (during periods of extended drought), but there is a greater frequency of low TDS in the reference watershed scenario that does not include supplemental recycled water. For example, modeled TDS is estimated to be below 2,000 mg/L approximately 55 percent of the time under the reference watershed scenario versus 42 percent of the time under the scenario that includes supplemental recycled water. Importantly, while the CDFs provide useful information, they are based on model assumptions that may or may not occur over the life of these TMDLs. For example, the CDFs were created assuming that EVMWD would add supplemental recycled water to Lake Elsinore at a level of 7.5 MGD. As noted previously, the current average amount of recycled water going into Lake Elsinore is approximately 6 MGD. Further, it is difficult to predict the future hydrologic conditions in the watershed, which will dictate the need and amount of recycled water that may be	valuable runoff delivered to the lakes. The inclusion of multiple more cost effective in-lake controls in the economic considerations shows that stakeholders may use other, more cost-effective approaches, including in-lake controls to offset excess nutrient loads.

		necessary to maintain lake levels above 1,240 feet mean sea level. For example, the addition of supplemental recycled water to Lake Elsinore was suspended in February 2024 due to high lake levels nearing 1,247 feet mean sea level. Thus, during wetter periods, less or no recycled water may be added to Lake Elsinore if it could cause lake elevations to exceed 1,247 feet mean sea level. Similar discussions of TDS concentrations with and with using supplemental water have taken place in TMDL Task Force meetings, regarding the use of detention basins and BMPs that utilize infiltration to reduce nutrients. The revisions of Attachment A and the Technical Report send mixed messages on watershed retention and infiltration BMPs. On page 423 in the revised Technical Report states in Section 10.1.2.8 Watershed BMPs in Urban Drainage Areas, under the sub-header Potential Implementation Issues lists this balance without solving it: "Implementation of BMPs to capture runoff would need to consider a number of potential constraints, including, for example, land availability, technical feasibility, environmental impacts from construction activities, and reduction in runoff volume delivered to lakes that support beneficial	

		uses dependent on adequate water, e.g., municipal water supply in Canyon Lake and recreation in Lake Elsinore. While LID BMPs can be very effective in managing stormwater quality within localized areas, reliance on these BMPs only to attain WLAs applicable to watershed runoff could reduce the volume of water arriving at the lakes that is needed to support downstream uses. Sensitivity analysis using the GLM model for Lake Elsinore showed that reduced volume (and associated nutrient load) has a net negative impact on long-term water quality (CDM Smith 2022).” And, in contradiction on page 424 the revision estimates costs by assuming ~50,000-acres of infiltrating BMPs will be deployed, it states: **“Sizing Assumptions and Estimated Costs** The load reductions required to meet final allocations reported in Table 6-3 requires an approximately 70 percent reduction of TP and TN from MS4 permittees across the San Jacinto River watershed. Based on available data, approximately 70,000 acres within the area draining to the MS4 within subwatersheds downstream of Mystic Lake (Subwatershed Zones 1-6) do not include post-construction BMPs associated with a	

		WQMP. For MS4 areas in Subwatershed Zones 7-9, it is presumed that load reductions would be met through in-lake offset programs after accounting for retention of ~96 percent of runoff volume and associated nutrient load in Mystic Lake. The cost estimate for the widespread deployment of watershed BMPs to capture stormwater assumes that infiltrating BMPs will be implemented on 50,000 urbanized acres (70,000 acres * 70% nutrient load reduction target = ~ 50,000 acres). …” These contradictions indicate a proper balance between cost-effective removal of nutrients and the need to promote maintaining or increasing the current levels of Average Annual runoff, especially during drier precipitation periods. If WRCAC has missed any language that directs the priority of this balance, this discussion would be a good place to restate these competing priorities.	
2.21	WRCAC	**Comment 9)** Beginning on page 18, in the Source Assessment discussion regarding the modeling of watershed source hydrology does not adequately address the near perfect runoff estimation predictions accomplished in PLOAD, the selected watershed model. This omission is important to correct because having a good Average Annual Runoff estimate provides approximately half of the	See response to comment 2.18.

		input influence with the Average Annual Nutrient Loading equations. Additionally, the Source Assessment discussion does not discuss the poor Goodness of Fit testing results that compared measured stream gage data with PLOAD modeling estimates. The tested comparisons presented are for the current conditions and PLOAD natural condition Median value nutrient Numeric Targets land uses Forested and Open Space assumed to have 0.32 mg/L TP concentrations and TN concentrations of 0.92 mg/L. Even though the selected natural condition concentrations at the 25th Percentile Numeric Targets of 0.16 mg/L TP and 0.68 mg/L TN. The PLOAD model goodness of fit comparison testing shows the model results underpredicts the measured values by 25 percent at the Goetz monitoring station on the San Jacinto River, while overestimating the TP by 19 percent at the Murrieta monitoring station on Salt Creek. The over and under differences between rivers is a strong indication that another calibration problem exists, or that the selected Numeric Target should be different for each watershed. When PLOAD was run by WRCAC using the 25th Percentile values the TP comparison with measured values increased in the San Jacinto River results to be 31 percent underestimation, while the Salt	

		Creek results was improved down to be a 11 percent overestimation. Comparing both model setup runs side by side highlight how significant the Numeric Target selection is when providing loading estimates to the two lake models. Unfortunately, the introduced error is not reasonable. Additionally, the identified error is not addressed by the proposed MOS for TP as calculated on page 34. The median value applications have a MOS of 22 which is insufficient for the 25 percent underestimation. Having an underestimation limits the use of the PLOAD model to check progress moving forward. For the 25th Percentile values the MOS percentage of 16 percent is a little more than half of the trial run WRCAC applied for the Goodness of Fit test. TN performance values were better, but it would be preferred to have all testing results to be within 10 percent of the measured values when using this model for regulatory allocation assignments.	
2.22	WRCAC	**Comment 10)** As discussed in comment 5, the Goodness of Fit testing results show a poor predictive skill level for many key parameters. While this is to be expected in this challenging watershed conditions with no or little data available for model parameterization, it is not usable for confirming lake response from changes in nutrient loading.	The range of modeled results is within the range of measured data. A change in nutrient loading was implemented to test the range of in-lake water quality with a reference watershed.

2.23	WRCAC	**Comment 11)** Source Assessment discussion on Page 20, second paragraph, which states: "The San Jacinto River watershed is prone to episodes of extreme sediment and associated nutrient loading to the downstream lakes due to numerous factors, including highly erodible calcareous soils. The San Jacinto River at Cranston Guard Station, located in sub-watershed zone 8, serves as the monitoring location to provide nutrient wet weather monitoring data representative of background or reference watershed conditions. Data from the San Jacinto River at the Cranston Guard Station was selected because more than 97% of the watershed upstream of the Cranston Guard Station is undeveloped." This paragraph is disconcerting for many reasons. First, while the monitoring station itself is in Zone 8, it is measuring water quality from a contributing area that is dominated by Zone 9; with a much higher level of precipitation, and higher slopes common to the San Jacinto Mountain Range. This statement does not acknowledge, or even purposefully misrepresents that the water quality data	Level III ecoregion is not discussed in the context of the reference watershed. A single reference watershed assumption was used for the TMDL revision. Thus, the approach generalizes factors such as slope, watershed position, and soil type. With more data collected through Task 11, a new way to represent the reference watershed condition could be developed in the future.

		reflects a different Level III Ecoregion than most of the San Jacinto River Watershed.	
2.24	WRCAC	Second, the statement that "The San Jacinto River watershed is prone to episodes of extreme sediment and associated nutrient loading due to numerous factors including highly erodible calcareous soils" is also used to misrepresent the fact that this dataset applies to the whole watershed as a reference condition. The San Jacinto River plains and associated land use characteristics are ***Not*** "prone to episodes of extreme sediment and associated nutrient loading". In fact, during periods of heavy rainfall it is more common to see flooded land instead of gully erosion. True there sometimes is channel erosion when higher river flows occur. . **But this nutrient source does not have an allocation.** Furthermore the NRCS soil maps also includes large areas in the San Jacinto plans that are not calcareous soils.	Allocations are assigned to forested lands according to their underlying jurisdiction (e.g., federal or state lands).
2.25	WRCAC	Third, the sentence "Data from the San Jacinto River at the Cranston Guard Station was selected because more than 97% of the watershed upstream of the Cranston Guard Station is undeveloped." Importantly points out that the full conditions of USEPA Region 9 Guidance for Developing TMDLs in California (USEPA, 2000a) were not applied:	The USEPA guidance does not require a specific criteria or nutrient threshold to be used when establishing a reference site. The guidance allows for selection of a location of minimal disturbance based on expert guidance and then ground truthing its condition. Assuming the selected reference condition has some level of degradation,

		"… It is sometimes possible to supplement instream indicators and targets with hillslope targets—measures of conditions within the watershed which are directly associated with waterbodies meeting their water quality standards for the pollutant(s) of concern. The numeric targets section generally includes the following elements: • identification of one or more instream indicators (and possibly hillslope indicators) and the basis for using the indicator(s) to interpret or apply applicable water quality standards• identification of target levels for each indicator and the technical basis for the targets• comparison of historical or existing conditions and target conditions for the indicators selected for the TMDL." The green highlighted section of this quote indicates how the following bullet list is to be applied. Conflicts with the way the monitoring data was applied with the USEPA guidance include: • Mystic Lake has 96 Percent retention and does not load Canyon Lake; therefore, this subwatershed has minimal influence on the two downstream lakes • The allocations are applied to land uses that do not experience the High Soil Erosion level, and the upland runoff volume and velocity in the upland areas cannot transport Total Suspended Solid (TSS) concentrations of 21,000, 27,000, 50,000 and 59,000 mg/L.	the 25th percentile can be used to apply conservatism. The Cranston Guard Station was selected to be representative of canyons in the region. The future special study (Task 11) should include stations downstream of Mystic Lake. The reference watershed approach was selected because the stressor-response model used for the 2004 TMDLs resulted in negative assimilative capacities in the downstream lakes.

		Most upland sites cannot carry even the moderate amount of TSS concentrations experienced in this "reference condition" subwatershed. Because the average annual rainfall assigned to Zones 1 through 8 areless than half of Zone 9's 25.00 inches per year used in the PLOAD watershed model's runoff and nutrient loading estimation calculations. o The ***Stream Power*** of the Zone 9 storm events are sufficient to erode and then transport the high TSS concentrations; where the Stream Power experienced in the San Jacinto plains are not sufficient. **[Contrary to what the name implies, stream power also applies to any channelized flow, including gully forming channelized flows.]** o The stream power equation is: W = $(Density\ of\ Water\ (kg/m^3)\ x\ Gravity\ Acceleration\ (kg/m^2)\ x\ Discharge\ (m^3/second)\ x\ Slope\ (m/m)$ Or, W = 9,810 ((kg/m^3) x Discharge ($m^3/second$) x Slope (m/m) **Which demonstrates how important slope and velocity (discharge) are to creating sufficient stream power to cause the high levels of erosion experienced and then transport it downstream to the Cranston Guard Sation monitoring site. Again, the PLOAD model estimates Average Annual**	

		precipitation in Zones 1-8 to be less than half of Zone 9, and the vast majority of Zones 1 – 8 anthropogenic land uses are on slightly sloped lands. • The Lake Elsinore nutrient loading sources Atmospheric Deposition and Sediment Nutrient Flux provide 72 percent of the TP load, and 79 percent of the TN load. Whereas the Zones 7, 8, and 9 nutrient loading percentages are 1 percent for TP, and 0.3 percent for TN. **In summary, the contributing area that the Cranston Guard Station monitor fails to meet the prerequisite provided by the USEPA Guidance, states as: "which are directly associated with waterbodies meeting their water quality standards for the pollutant(s) of concern." Namely, the lack of being directly associated with the downstream lakes includes:** **1. The nutrient loading of this subwatershed has no impact to Canyon Lake** **2. The nutrient loading of this subwatershed experiences a Mystic Lake assigned Percent Retention value of 96 percent, meaning only four (4) percent loads Lake Elsinore**	

		3. This subwatershed is responsible for nutrient loads entering Lake Elsinore at 1 percent for TP, and 0.3 percent for TN	
2.26	WRCAC	**Comment 12)** Linkage Analysis discussion, page 22 and 23. The third paragraph under the Linkage Analysis sub-header states: "Existing conditions approximate the current distribution of water quality in two lake segments for Canyon Lake (Main Lake and East Bay) and for Lake Elsinore. A subset of the period of simulation for existing conditions is used to calibrate water quality model parameters to achieve a reasonable goodness-of-fit with measured data collected by the in-lake monitoring program. In the case of Lake Elsinore, the LEMP project was implemented to improve water quality by reducing the surface area of the lake and recycled water has been added to maintain water levels. The smaller lake surface area for Lake Elsinore as compared to its original surface area is a baseline assumption in the creation of lake water quality models for the reference watershed condition." **As pointed out in the Comment 5 provided tables, the Goodness of Fit test results do not provide any confidence, or are sufficient, to predict lake responses at a level necessary to create appropriate regulatory goals. The regulatory controls**	The Goodness of Fit test results determined the distribution was a reasonable fit for the data based on long-term averages and range of results.

		begin in Phase II before more Section 7 Tasks can be used to collect more data and likely reset the Numeric targets. The green highlighted text should state "given the limited data for parameterization the Goodness of Fit testing with measured data collected by the in-lake monitoring program is most reasonable result that could be achieved, but still does not provide confidence that the prediction capability is accurate."	
2.27	WRCAC	**Comment 13)** TMDLs and Allocations beginning on page 23. Given the comments above, the tables used to present milestone and Final Allocations are not founded on satisfactory Numeric Target selections, models that have predictive capability, or statements that clearly provide guidance that permits and other regulatory actions must be issued in a manner to allow compliance flexibility until Section 7 Tasks are completed and the findings introduced in a future revision of the TMDL.	Despite concerns of model performance, the linkage analysis between allocations and in-lake responses operate under different approach than what was done for the 2004 TMDLs. Allocations are independent from in-lake numeric targets; therefore, any concerns regarding the lake model performance is inconsequential to the allocations. The revised TMDL Technical Report acknowledges there are limited data available. By taking a phased approach, the studies and data collected will be used to address uncertainty in the data from the Cranston Guard Station.
2.28	WRCAC	**Comment 14)** Margin of Safety discussion beginning on page 32. First, the beginning paragraph states: "For these TMDLs, the margin of safety is an explicit margin of safety incorporated into the TMDLs through conservative data analysis in	The Basin Plan amendment will be updated to make the correction, "For these TMDLs, the margin of safety is an implicit margin of safety incorporated into the TMDLs through conservative data analysis in establishing the reference watershed condition."

		establishing the reference watershed condition”. Which should read “implicit” instead of explicit.	
2.29	WRCAC	Second, the revised Technical report continues to use the term Event Mean Concentration inappropriately. The attached memorandum of the WRCAC Corrected Final Appendix A Reply to March 1 MOS Email 010925.pdf is a correction errata of the original submitted document; reflecting corrections to remove typos and improve terminology. This memorandum identifies the inappropriate: timing of sample collection, the manner in which the statistical analysis is being applied, and the false use of the well-defined watershed manage term Event Mean Concentration which now is called Event Means. Are the event mean calculations using basic statistic formulas on the total 51 sample within the storm events to provide the results provided in the Attachment A Table 3-2 on page 34? Or, are the statistical formulas applied to storm event datasets when multiple samples are collected on one day. Stated another way, three storm events collected a different number of samples on different days sampled. Each day sampled therefore has a different amount of influence	The arithmetic means of grab samples are taken during a distinct wet weather event.

		on the event mean results. Were daily mean values considered in the calculation of event means? [It would be best if time weighted daily means were calculated for days with multiple samples collected.] Thank you for only using event means in the MOS equations on page 33.	
2.30	WRCAC	**Comment 5) [Comment 15]** Tasks and Schedules for Phase II (Years 1-20) page 45. WRCAC is concerned with the number of Tasks being completed and how each task is sequenced in the schedules. Certainly, if everything is completed on time this tight sequencing of schedules is ideal. However, all too often weather, biology, and funding do not work according to previous developed schedules that are tight. The Attachment A schedule for Task 2. Revise Permits and Other Regulatory Actions the implied in Figure 7-4 on page 276 of the revised Technical Report. Although the same language is used in the revised Technical Report Table 7.7. Attachment A schedule language: "In a timely manner, and as needed, at the discretion of the regulatory agency." The footnote to Table 7-4 states the blue shading indicates general timing of preparation of task deliverable. At no point in the Task 2 discussions does the draft Attachment A or revised Technical Report provide a	An achievable sequencing of tasks leading to TMDL reconsideration is laid out in the TMDL revision. Tasks may begin early if desired by the Task Force to allow time for data to be collected and interpreted. In addition, demonstration of progress towards meeting attainment of interim numeric targets and milestones will be assessed for all entities every three years (Task 14), which will provide necessary information to determine if the TMDLs need to be reopened and revised.

		discussion on how to set progress result goals that honor the Phase II Numeric Targets are being assessed in Task 11 which may end as late as 2016 according to Table 7-5 in the Technical Report (below). The Task 11 discussion in the draft Attachment A and revised Technical Report Table 7.7 agree and state: • "Within five (5) years from the effective date of the revised TMDLs, submit a Work Plan for conducting the Study to the Santa Ana Water Board's Executive Officer for review and approval. • Complete the Study per the schedule in the approved Work Plan." However, it is WRCAC's opinion that to collect meaningful water quality monitoring data to assess the Phase II Numeric Targets and different locations within the watershed the 10-years scheduled in Figure 7.5 is reasonable. These schedules need to present the same information. Excerpt of Figure 7-4 [Figure 7-4, WRCAC comment letter; PDF pg. 16] Notably, the Task 11 schedule will be completed after the first 10-year Task 17 –	

		Review and Reconsider Lake Elsinore/Canyon Lake Nutrient TMDLs. And, Task 17 considers Task 15 – Re-evaluation of Final Numeric Targets, WLAs and LAs and Task 16 – Identify Possible Revisions to the TMDLs. according to the Task 17 description. Lastly, the Task 15 schedule is based on reviewing results for Tasks 7 through 13 many of which collect data during and after the years 13 through 16. The late timing of data collection may be important to capture more temporal events. However, this may complicate the work performed for Task 15. Which feeds into Task 17's year 18 deadline. [Figure 7-5, WRCAC comment letter; PDF pg. 16]	
2.31	WRCAC	**WRCAC Comments on the 2024 Revised TMDL Technical Report – Revision to the Lake Elsinore and Canyon Lake Nutrient TMDLs WRCAC Comments on the Executive Summary** **Comment 1)** Page ES-4, Section 2: Problem Statement last paragraph on page. Over the last 2 decades the level of collaboration has grown. WRCAC appreciates being able to leverage watershed monitoring costs, purchase in-lake generated offset credits, and comment on important documents like the TMDL revisions with the rest of the TMDL Task Force stakeholders. However, WRCAC	The Santa Ana Water Board has no authority over Task Force fees or the contributions to various projects by individual stakeholders.

		has never been an equal partner, in fact WRCAC has given more than its fair share: 1. WRCAC was overcharged by approximately $573,000 in the first 3 years of fees due to poor land use assumptions. WRCACs first task was to prove that much of the land use data used in the 2004 TMDL was taken from as far back as the 1980s,20+year old data. In contrast, WRCAC was charged in subsequent years 2009-2023 an average rate of $32,000 per year. WRCAC was never credited for an estimated 17-18 years of Task Force fees. 2. WRCAC has been the only entity contributing land use updates at a high cost to farmers, WRCAC members. To prevent overcharging and obtaining accurate agricultural land use for the TMDL, WRCAC updated GIS information approximately every 2-3 years. 3. WRCAC has provided salient information regarding Mystic Lake dynamics, and Salt Creek subwatershed background monitoring through special studies 4. WRCAC often has provided comments on this TMDL revision that have not received replies for extended periods of time	
2.32	WRCAC	ES-7, Section 2: Problem Statement last two sentences in the first paragraph:	The statement describes the work completed to date as a “firm foundation” for revising the 2004 TMDLs. Additional tasks completed during

		"In total, the body of work completed to date provides a firm foundation regarding what is potentially attainable with regards to water quality given the highly managed conditions that exist in the lakes. Accordingly, these prior work products serve as the primary resources for updating and revising the 2004 TMDLs." This narrative needs an additional sentence that acknowledges there are still significant information gaps; hence having a long list of Section 7. Implementation Tasks, and another long list of direct and highly troubling concerns in the WRCAC comments regarding Sections 3, 4, 5, 7 and 10 in the revised 2024 Technical Report below.	implementation of the proposed 2024 TMDLs will collect new data to build upon this foundation.
2.33	WRCAC	Page ES-9, Section 2: Problem Statement last paragraph: "The San Jacinto River at Cranston Guard Station, located in Subwatershed Zone 8, serves as the monitoring location to provide nutrient wet weather monitoring data representative of background or reference conditions for this watershed. With more than 97% of the watershed upstream of the Cranston Guard Station undeveloped, both the 2004 and revised TMDLs relied on data from this site to support TMDL development. Figure ES-4 illustrates long-term wet weather TP and TN	See response to Comment 2.23

		monitoring results from this reference site. Generally, the San Jacinto River watershed has highly erodible calcareous soils that are prone to episodes of extreme sediment and associated nutrient loading to the downstream lakes, which explains the occurrence of few very high (> 1 mg/L TP, > 5 mg/L TN) nutrient concentrations measured at Cranston Guard Station." The green highlighted sentence misinforms readers by explaining the "occurrence of few very high (> 1 mg/L TP, > 5 mg/L TN) nutrient concentrations occur throughout the watershed's 9) TMDL Zones. This occurrence is related to the Cranston Guard Station's contributing area and not the San Jacinto Plains. While riverbank erosion does occur in some of the subwatershed, energy from streams to erode the banks primarily comes from the San Jacinto Mountain Range and not the cropped fields, or municipal sources of discharges. Furthermore, the Horne (2002) report refers to the 100-times higher natural hillside erosion, not the calcareous soil. The plains of the San Jacinto valley do not have the upland stream power to create gulley erosion or transport TSS loads of 21,000, 27,000, 50,000 and 59,000 mg/L documented downstream of the mountains that are in the Cranston Guard Station's contributing area. **This is a continued**	

		misrepresentation of what is an attempt to call this station's dataset a Reference Watershed Condition and apply the Numeric Targets across the entire watershed. See Section 3 comments below.	
2.34	WRCAC	Pages ES-12 through ES-14 Section 3: Numeric Targets. As stated in WRCAC's comments on Section 3 of the draft 2024 Technical Report revision, WRCAC has serious concerns with the methods used to select the Reference Watershed Condition Numeric Targets and resulting nutrient concentrations (See Section 3 Comments Below). WRCAC appreciates the document including Section 7 Task 11 to evaluated the selected Numeric Targets for the Reference Watershed Condition. However, what raises a very high concern is the 2024 revision is a Section 7, Task schedule that allows the Median value to be confirmed in year 16 of the 20-year Phase II period. The revisions Section 7.2.2.2 Description of Phase II Tasks describes Task 11 beginning on page 291. The key purpose of Task 11 is stated as: "Accordingly, a Study must be conducted to collect additional samples from this station and other undeveloped canyons in the San Jacinto River watershed to assess (a) the validity of the basis for Phase II milestones and interim numeric targets as being representative of the reference watershed	The five-year timeline is necessary to ensure that regulatory orders are consistent with the requirements of Phase II and, ultimately, Phase III. In addition, NPDES permits are limited to 5-year terms (CWA §402(b)(1)(B)). NPDES permits with compliance schedules must include the final compliance requirements and date, even if the final compliance date is beyond the permit term. (State Water Board Resolution No. 2008-0025, Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits, §8 [NPDES permits subject to CWA §301(b)(1)(C)].) Waste discharge requirements may be amended at any time (Wat. Code, §13263, subd. (d)). Similar compliance schedule requirements apply to WDRs as for NPDES permits. (See, State Water Board Order WQ 2023-0081 (*Review of General Waste Discharge Requirements for Discharges from Irrigated Lands*), pp. 20-24, 32-34.) The implementation schedule allows ample time to revise regulatory orders to reflect any modifications to the final allocations.

		condition, (b) if the Phase II milestones and interim numeric targets should be the final numeric targets, WLAs and LAs, or (c) if some other estimation of the reference watershed condition from the newly collected data should be used for calculation of numeric targets, WLAs and LAs. The results of this study will help to determine whether further revisions of these TMDLs are needed to better represent the reference watershed condition." However, the Task 11 description allows five (5) years to develop and approve the Task 11 workplan in Phase II. The current Section 7 Table 7-5 shows a Task 11 – Study for Evaluating Reference Watershed Conditions ending in approximately year 16 of the 20-year. In contrast, the Section 7 Task 2 – Revise Existing Permits and Other Regulatory Actions has a description on page 284 of the revision that states: "… Accordingly, the Santa Ana Water Board and State Water Board, as applicable, will need to (a) update existing permits to incorporate Phase II provisions for these TMDLs; and (b) incorporate Phase II provisions, as needed, into new permits adopted within the Lake Elsinore and Canyon Lake watershed. …" Task 2's implementation schedule in Table 7-4 indicates the revision to regulatory permits	

		and orders must be completed within the first five (5) years of Phase II. This creates a substantial conflict in timelines between starting to regulate the progress being made on achieving the interim Numeric Target based loading in year 6 in order to achieve the initial estimate of loading by year 20, when the initial estimate of loading may be adjusted as late as in year 16 in the 20-year Phase II period. This will require financial resources and time to be expended on planning and implement reductions in an affordable manner, for a goal that may be adjusted to require less reductions in Phase II and Phase III. WRCAC's comments on the revised version of Section 3 and Section 4 demonstrate Median and 25th Percentile nutrient concentration Numeric Targets are most likely to be wrong, and too restrictive.	
2.35	WRCAC	These Numeric Targets were selected without properly using USEPA guidance, as well as a willful approach by a former Santa Ana Regional Water Quality Control Board staff member to arbitrarily select lower conservative nutrient concentrations to avoid a second expert peer review to achieve their deadline goals. This places undo costs on watershed dischargers during the 20-year implementation Phase II.	The selection of the 25th percentile as a more reasonable nutrient concentration was based on comments from external scientific peer reviewers and USEPA recommendations (Nutrient Criteria Guidance Manual: Lakes and Reservoirs, EPA 2000b).
2.36	WRCAC	Pages ES-12 through ES-14 Section 3: Numeric Targets. WRCAC comments for Section 5. Linkage Analysis (Below) raises	See responses to comments 2.18, 2.22, and 2.26.

		how much the lake modeling setup is hampered by insufficient information. The Goodness of Fit test results for Canyon Lake East Bay, Canyon Lake Main Lake, and Lake Elsinore all have poor predictive performance indicators from the tests applied. However, Canyon Lake East Bay modeling has the poorest performance of all three lake segments. Having poor predictive performance sets up a poorly constructed method to justify that the lakes' Numeric Targets and cumulative distribution functions are appropriately established. These errors occurring simultaneously within the verification tasks in Section 7 emphasize how the 2024 revision's focus on the Final Allocations Numeric Targets changed the verification schedules; and disregards that the Phase II Numeric Targets need to be verified in a timely manner before regulating the interim milestone reductions. See WRCAC's Section 5 Comments to view how poorly the PLOAD watershed model's Goodness of Fit test results are; and that this is a strong indicator that forested and open space land uses set at Median value nutrient concentrations trigger negative fit testing results and when the 25th Percentile Numeric Target values are tested, the most egregious underestimation of TP in the San Jacinto River using Median values (i.e., -25 percent) increases to -31 percent. (See comment 6)	

2.37	WRCAC	Pages ES-14 through ES-17 Section 4: Source Assessment. WRCAC understands that there is limited data available to setup the PLOAD watershed model's land use categories nutrient concentrations. And as such, WRCAC appreciates the quality work that went into the model set up for long-term Annual Average Runoff Volume. However, while the discussion of the performance of PLOAD begins with the statement "Generally, the model performed well in predicting average annual nutrient loads …"1 which ignores the actual Goodness of Fit test results. Furthermore, the Goodness of Fit testing is performed based on the Median value nutrient Numeric Targets for Forested and Open Space land uses. The resulting fit when compared with San Jacinto River Goetz monitoring station's measured estimates is that the PLOAD TP estimates are 25 percent below the measured values. Additionally, the Salt Creek Murrieta comparison test shows a 19 percent overestimate of TN loading. These results demonstrate that a sizable prediction error exists in the phosphorus reduction requirements provided in Section 6.	See responses to comments 2.18, 2.22, and 2.26.
2.38	WRCAC	Page ES-17, Section 5: Linkage Analysis. This section and its figures do not represent the Goodness of Fit test results that identifies there is a very poor predictive performance of the three lake segment models (See WRCAC	See responses to comments 2.18, 2.22, and 2.26.

		Section 5 comments below). WRCAC acknowledges how difficult it is to such complicated models on little or no available data to use during the model's parameterization. However, this limitation and poor testing results are never acknowledged, and the models are being used to justify the lake Numeric Targets and CDF results.	
2.39	WRCAC	Pages ES-17 through ES-25 Section 6 Allocations. This section's stated results, figures, and tables are being held up as justified reduction requirements for external loading. These reductions are being issued without being supported by appropriate science and following all of the USEPA guidance recommendations in many of the revision Sections within the 2024 draft Technical Report. The issuance of these reduction requirements is not accompanied by sufficient guidance to allow for the compliance flexibility necessary to minimize the likely high cost of compliance in Phase II that is based on a median nutrient concentration Numeric Target with known errors (See Section 3 comments). Furthermore, the WRCAC comments for Section 4. Source Assessment, and Section 5. Linkage Analysis points out the poor predictive performance of the modeling being applied. WRCAC understands how important the adaptive management approach will be to appropriately correcting the modeling	See responses to comments 2.18, 2.22, 2.26, and 2.35.

		prediction errors. However, as stated in Comment 4) above the sequence of the adaptive management timing wrongly places the schedule of the verification of Numeric Target nutrient concentration values (Section 7, Task 11, Figure 7-5) after the schedule of regulatory permit and other regulatory actions (Section 2, Task 2, Figure 7-4) revisions. The Section 7 Task schedules completely ignore that there is a high probability that sizeable errors exist in using the Median Cranston Guard Station monitoring dataset selected Numeric Target values (Section 3 comments below).	
2.40	WRCAC	**Comment 9)** Page ES-22 Section 6 Allocations, Margin of Safety. This section describes a margin of safety approach that is based on “the margin of safety is incorporated into the TMDLs through conservative data analysis when establishing the reference watershed condition.” While the discussion in the Executive Summary on page ES-22 states: “However, to provide a margin of safety, the median and 25th percentile from the 51 grab samples was selected to serve as the basis for the reference watershed concentrations. By using lower values based on computations from all 51 grab samples, the resulting margins of safety for the reference watershed conditions ranges between 16-	A Margin of Safety for the interim milestones and final allocations is based on the same comparison of the median and 25th percentile of event means versus all samples. Also see responses to comments 2.18 and 2.26.

		31% - depending upon the specific nutrient and milestone and allocation.” This statement is in conflict with what the draft 2024 revised Technical Report states in Section 3.2.2.3 on page 132: “By selecting values at the 25th percentile of all grab samples rather than event means, from a reference watershed station, a margin of safety (MOS)13 of at least 10 percent is accounted for in the revised TMDLs (see Section 6.1 below). As noted above, the appropriateness of the proposed percentile thresholds and MOS should be further evaluated as part of the revised TMDLs’ Implementation Plan.” This text is in conflict with the discussion in the 2024 draft revision Section 6.1 only states the MOS is entirely implicit based on the final allocations Numeric Targets without providing a estimated percentage: “… The MOS is incorporated into the LECL TMDLs implicitly through conservative assumptions; specifically, the use of the 25th percentile TP and TN concentrations (0.16 mg/L and 0.68 mg/L, respectively) of water quality observations from the San Jacinto River watershed Cranston Guard Station reference site as a MOS for the TMDLs.”	

		However, even as stated in the Executive Summary on page ES-22, the entire implicit MOS is based on the conservative implicit 25th Percentile nutrient concentrations, which do not exist in Phase II calculations. Furthermore, as WRCAC has points out in our Section 4 comments the PLOAD model contains underestimations for TP in the San Jacinto Goodness of Fit testing of -25 percent, and a calculated -31 percent when the forested and open space land uses use the median and 25th Percentile nutrient Numeric Targets. Likewise for TN the PLOAD Goodness of Fit, in Salt Creek's Murrieta monitoring station's measured value comparison the fit test results increase from and underestimation of -9 percent to and underestimation of -12 percent. The PLOAD model's Goodness of Fit testing results demonstrate a lake of prediction performance that consumes most of the stated MOS. Additionally, WRCAC comments on Section 5 indicate that the Canyon Lake model's Goodness of Fit in the Canyon Lake East Bay segment is highly troubling for predicting key parameters responses; like Chl-ą TN and TP. In the other two lake segments the lake models also have Goodness of Fit tests that provide results indicated key parameters have poor prediction capabilities as well. All these factors combined indicate that there is	

		no implicit margin of safety available for other errors that impact TP discharges.	
2.41	WRCAC	**Comment 10)** Page ES-27, Section 7: Implementation Plan, sub-header Phase II Program. The introduction to this sub-header states: "The Phase II Implementation Plan updates and enhances the current Phase I program in its entirety and begins implementation upon the effective date of the revised TMDLs. Phase II tasks range from continued implementation over the Phase II implementation period of existing tasks (e.g., operation of existing in-lake projects, stakeholder coordination and monitoring and reporting) to new tasks that involve focused studies or planning efforts that occur over a specific year. These focused studies and planning activities are designed to provide the LECL Task Force and the Santa Ana Water Board with the information they need to assess the status of attainment with the revised TMDLs, measure the long-term performance of watershed controls, evaluate the potential need to consider revising the Lake Elsinore water quality criteria, and evaluate what constitutes appropriate reference concentrations for nutrients (i.e., the median, the 25th percentile, or some other value)."	Offsets created by in-lake projects will need to be confirmed on a regular basis and regulated entities will need to include long-term operation and maintenance plans, and demonstrate that projects are performing as expected.

		WRCAC appreciates the statement in the last sentence that includes "some other value"; however, the fragile nature of in-lake projects and their life cycle carried out in Task 4 on page ES-28 cannot be stressed enough. The external loading allocations have less to do with the actual reductions being made, then they do with creating a funding stream to operate, maintain, and periodically replace the in-lake projects.	
2.42	WRCAC	**Comment 11) Pages** ES-32 and ES-33, Section 9: CEQA. WRCAC does not agree with this summation of finding for the CEQA review. The draft 2024 Technical Report's Section 9. California Environmental Quality Act Analysis, Section 9.4.3.2 Agriculture and Forestry Resources contains a Table that identifies item e) as having No Impact. Item e) states "Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?" This finding does not acknowledge the yearly minimum costs identified to purchase credit offsets to be in compliance with the nutrient loading reductions required for Phase II and Phase III natural condition Numeric Targets. Credit offsets are most often the least	The 2024 TMDLs do not prescribe specific BMPs. Agricultural operators are free to implement the most cost-effective BMPs for their individual operations and circumstances. See also response to comment 2.135 which discusses how the revised TMDL Technical Report uses cover crops solely for illustrative purposes. See also Section 10 of the revised TMDL Technical Report which discusses potential funding sources available for agricultural operators. In this example of a 100-acre irrigated agriculture parcel in zone 2, using agricultural cost estimates as described in Section 10.2 of the revised TMDL Technical Report, staff estimates TP removal with alum to be ~$125/kg. Therefore, removal of 3.6 kg/yr would cost ~$450 per year or roughly $4.50 per acre. Assuming the commenter's additional TN cost of $130 per year, the combined annual total for a 100-acre parcel is approximately $580 or roughly $5.80 per acre.

		expensive means of achieving compliance with reduction requirements. To offset nutrient reductions Section 10 Economic Considerations states: "As part of the development of this TMDL Technical Report, multiple supplemental water quality treatment options were considered at a planning level to assess whether economically viable paths to compliance may be available. This analysis determined that the ability to continue to use in-lake water quality controls to offset excess external nutrient loads provides highly cost-effective alternatives ($100 - $1,000/kg/yr for TN and TP, respectively) relative to capture of nutrients in the watershed (e.g., urban stormwater: $1,000 - $7,000/kg/yr for TN and TP, respectively, or agricultural field BMPs: ~$8,000/kg/yr for TP and TN). Continued implementation of in-lake projects also supports the overall wet lake strategy inherent in the TMDLs' Implementation Plan." The use of credit offsets requires annual purchases. For example, a small agricultural operator with 100- acres of irrigated cropland in Zone 2 the final allocation reduction requirement for TP is 3.6 kg/yr which requires an annual purchase price of $3,600 per year, the additional TN cost is $130; for a combined total of $3,730. This cost comes	

		out of their per acre profit margins from this point forward. Due to commodity prices volatility and volatility in farm equipment purchase and operation, and field soil inputs have been and will be years where the per acre net profit will not be able to cover $37.30 per acre credit offset purchases required. This is on top of monitoring and reporting costs. This will force small farmers who grow crops that produce a moderate profit per acre out of business. Furthermore, Ag entities should not be compared with incorporated entities that spread the funding of reduction projects across a sizeable population that pay stormwater utility fees. Ag operations must pay for reductions out of their per acre net profit; the profit margin is calculated by considering the operation’s difference between production costs and commodity returns. Even if funding is made available, getting land owners and land renters to agree on the terms for capitalization, operation and maintenance can be problematic as a renter may not be granted a long-term rental agreement. In the 2023 cropping year’s required AgWDR annual surface water report approximately 56 percent of the acres reporting were on rented lands. Additionally, grant funding does not fund the whole implementation cost for BMPs, offset credits, monitoring requirements, and reporting requirements.	

<table>
<tr><td>2.43</td><td>WRCAC</td><td>Comment 12) Page ES-33, Section 10: Economic Considerations. This section states:

“As part of the development of this TMDL Technical Report, multiple supplemental water quality treatment options were considered at a planning level to assess whether economically viable paths to compliance may be available. This analysis determined that the ability to continue to use in-lake water quality controls to offset excess external nutrient loads provides highly cost effective alternatives ($100 - $1,000/kg/yr for TN and TP, respectively) relative to capture of nutrients in the watershed (e.g., urban stormwater: $1,000 - $7,000/kg/yr for TN and TP, respectively, or agricultural field BMPs: ~$8,000/kg/yr for TP and TN). Continued implementation of in-lake projects also supports the overall wet lake strategy inherent in the TMDLs’ Implementation Plan.”

As comment 11 explains the cost of purchasing offset credits to achieve the Allocation reduction requirements is not going to be affordable to some operations growing less profitable crop types that were able to survive before having a regulation that requires high nutrient reductions. Contrary to the text highlighted in green above, there is no highly cost effective</td><td>Water Code Section 13141 only requires the board to “prepare an estimate of the total cost of such a program, together with an identification of potential sources of financing …” Section 10: Economic Considerations of the revised TMDL Technical Report describes potential funding sources available to agricultural operators including, but not limited to, federal and state grants, and low interest loan programs. Section 10 also considers the relative costs of potential compliance options. This discussion may provide a starting point for feasibility determinations in future CEQA review of compliance options selected by regulated entities.</td></tr>
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		alternative when you cannot afford any alternative.	
2.44	WRCAC	WRCAC Comments on Section 1. Introduction WRCAC has no comments on this section.	Comment noted.
2.45	WRCAC	WRCAC Comments on Section 2. Problem Statement Page 44, Section 2.2.2.5.1 Subsection Phosphorus, and page 46 Subsection Nitrogen. The second paragraph on page 44 only discusses the compliance status, and the first paragraph on page 46, states: "As opposed to TP, there appears to be no visually discernable long-term trend in TN concentrations. This provides a line of evidence that the ongoing twice per year alum additions (that only treat TP) are causing an indirect benefit of reduced TP in Lake Elsinore. There have been several spikes of TN greater than 8.0 mg/L in November 2003, January 2004, and August and October of 2004, and most recently in February 2016. These spikes have occurred in periods with lower lake levels and could be caused by wind driven resuspension of lake bottom sediments that are rich in nitrogen. The very wet winter of 2005 dramatically reduced TN concentrations in the lake. Within a period of a couple months TN concentrations declined from 8 mg/L to	This finding is based on modeling results over the long-term and does not negate the finding of dilution following the 2005 storms. See Figures 2-19 and 2-20 of the revised TMDL Technical Report. Secondly, the machine learning modeling conducted by Anderson in 2021 for TP is misleading. Close inspection of Figure 24 shows that recent (post 2015) TP is lowest in the period of record for the empirical analysis.

		almost 2 mg/L. The lowest concentration of TN recorded in Lake Elsinore since 2002 was 0.8 mg/L in May 2008." Both discussions did not rectify the numbers base on lake levels, and because lake levels can be a dilution factor for mass of nutrients in the lake the statements are completely subjective. In comparison the December 6, 2021 report by Horne and Anderson to EVMWD which states in the paragraph beginning at the end of page 4 and on Page 5: "**This indicates that total N and total P concentrations have increased slowly in the lake over the past two decades even when correcting for differences in lake level and implies that the axial flow pumps and diffused aeration system are not providing sufficient control on nutrient levels to fully offset inputs associated with recycled water supplementation.**"	
2.46	WRCAC	And, "Over the last decade, the water chemistry in Lake Elsinore has changed for reasons other than the aeration-mixing system or recycled water additions. In addition, the aeration systems aged and are at the end of their useful life. During the 20 years, extensive	A better treatment system for Lake Elsinore is needed to replace LEAMS, which is aging out, to improve oxic conditions in the lake bottom in the future.

		monitoring and analyses have been conducted in the Lake, including manual water column profiling, nutrient and chlorophyll-a measurements, algae speciation, cell counting, and automated hourly monitoring by EVWMD sondes at every meter depth for many parameters. These have assisted tremendously in better understanding of the functioning of Lake Elsinore and identifying the potential limitations in achieving the goals vis-à-vis the aeration system. The objectives of analyses reported herein are to evaluate effectiveness of the project at increasing DO concentrations and improving water quality. The remaining goals (reduce algal blooms, increase water clarity, and reduce or eliminate fish kills) were expected to be achieved only if the increases in average lake levels and DO concentrations and reductions in N&P concentrations (i.e., improvement in water quality) allowed. **Because of multiple factors described in the paragraph above, and the existing aeration systems unable to adequately meet Lake's DO demands and nutrient offsets, several other alternatives considered for future improvement are summarized below." (Emphasis added)**	

		WRCAC acknowledges that a LEAMS replacement is underway, but the report citation above emphasizes the need for a better treatment system to protect the lake in the long-term.	
2.47	WRCAC	Page 106, 2.5 Summary: Comment 1 is not included in the summary, as well as the important discussion about historic TDS concentrations levels during a drought and low flow period on page 52 Subsection Total Dissolved Solids, which states: “TDS concentrations increased at a nearly exponential rate during the drought of 2000-2002 to values greater than 2,200 mg/L, before decreasing following rainfall and runoff in 2003 to about 1,400 mg/L and declining further in 2005 to about 800 mg/L as reported by Anderson (2010). TDS concentrations increased from 2006-2007 and remained around 1,600 mg/L into the summer of 2009 (Figure 2-27). In the midst of a severe drought, concentrations of TDS in the lake remained above 2,000 mg/L between July 2015 and October 2019. A further reduction in TDS has been recorded with several wet years and elevated lake levels with concentrations as low as 1,400 in April 2024.” All three of these paragraphs (corrected paragraphs on pages 44 and 46) are important enough to mention in the Section Summary as these need to be addressed.	A focus on TDS in general has been incorporated into the public draft. This detail supports general findings presented throughout the document.

2.48	WRCAC	WRCAC Comments on Section 3. Numeric Targets The selected Watershed Reference Condition Nutrient Numeric Targets for the final allocations are not valid. Both the Interim Milestone and Final Allocation Numeric Targets for nutrient concentration selection were selected using inappropriate science applications to select a reference watershed, and then during the selection of appropriate Numeric Target discharge concentrations. However, the use of the Cranston Guard Stations Water Quality Dataset's median value was selected as appropriately as possible. In this challenging semi-arid desert, there was and still is a lack of sufficient watershed monitoring to be able to definitively state this concentration represents natural conditions, without anthropogenic influence. The draft 2018 Lake Elsinore and Canyon Lake nutrient Technical Report (Technical Report) provided justification from three sources of monitoring data to select the median value of the Cranston Guard Station as the initial Watershed Reference Condition Numeric Targets for Total Phosphorus (TP) and Total Nitrogen (TN) concentrations. Given that these Western Riverside County Agriculture Coalition (WRCAC) are delivered	The use of the 25th percentile for the basis for allocations for a downstream lake TMDL should not be confused with determination of nutrient criteria for rivers and streams. TMDL allocations are primarily addressing wet weather given limited flow during dry weather at the lake inflows. Conversely, USEPA guidance for nutrient criteria in rivers and streams generally applies to low flow conditions in flowing waters.

		at this late date in the process of providing the draft 2024 Technical Report, the comments provided are direct and present the flawed process applied during the development and the selection of Reference Watershed Condition nutrient Numeric Target concentrations. While WRCAC agrees with the Interim Milestone Numeric Targets may be the only useable approach to select an initial allocation target, what is problematic in the draft 2024 Technical Report is that the TMDL begins to implement Task 2 Revise Existing Permits and Other Regulatory Actions to be accomplished within several years after approval before Task 11. Study for Evaluating Reference Watershed Conditions milestones, interim numeric targets (i.e., TP = 0.32 mg/L and TN = 0.92 mg/L) is required to submit a work plan (i.e., within 5-years from the effective date of Phase II). Figure 7-5. Indicates the completion of Task 11 may occur as late as 16 years into the 20-year Phase II period. Meanwhile, the schedule indicates that it is likely that regulatory progress towards meeting the Phase II required reductions has been underway for over 10-years. After an extensive review, and offering multiple comments over the last three years, WRCAC has not observed any valid supporting justification to switch to the 25th	

		Percentile concentrations. In fact, the methods used to select the 25th Percentile concentrations is flawed and violates USEPA guidance for selecting river and stream nutrient criteria, and their guidance statements for guiding the selection of TMDL concentration targets. This comment memorandum provides in detail the WRCAC methods used to develop multiple lines of evidence that the nutrient selection process is flawed. The sections below deliver errored approach after errored approach that were applied to select the Numeric Target concentrations that in a self-serving nature must support the Lake Elsinore and Canyon Lake selected Numeric Targets and Water Quality Objectives. In this selection process for Numeric Targets for watershed dischargers, what has been forgotten is that the current level of lake water quality experienced in both lakes has never before been achieved in a sustainable manner. The draft 2024 Technical Report itself mentioned the unique nature of this watershed when it states in Section 3.2.1.1 (page 118): “There are no comparable inland lakes to Lake Elsinore or Canyon Lake that could be considered reference sites. These lakes have unique conditions that are not replicated downstream of a natural watershed in the same geographic region. These unique	

		conditions were described in the Problem Statement (see Section 2.4). Therefore, for the revised TMDLs a hypothetical scenario was employed to define the reference site, whereby runoff nutrient concentrations representative of a completely natural, or reference, watershed was assumed to comprise the entire drainage area to the existing lake basins, This approach is consistent with USEPA Region 9 in Guidance for Developing TMDLs in California (USEPA 2000a). This guidance recognizes the utility of hillslope targets, such as a reference watershed nutrient concentration, for setting numeric targets in a TMDL for impaired receiving waters (page 3): "…It is sometimes possible to supplement instream indicators and targets with hillslope targets - measures of conditions within the watershed which are directly associated with waterbodies meeting their water quality standards for the pollutant(s) of concern." However, this revision fails to acknowledge this document's full guidance narrative on this subject many times during the selection and implementation of the 25th Percentile nutrient concentration values. Instead of letting the adaptive management approach that is discussed in the 2024 Technical Report perform as intended, the interim	

		median value Numeric Target selection process acknowledges the uncertainty that exists but does not discuss the regulatory timing flexibility that is necessary to prevent undue expenses being placed on regulated dischargers if or when the Median value is proven to be too restrictive.	
2.49	WRCAC	The use of flawed methods to select the new arbitrary Numeric Targets appears to have been completed based on the goals of a previous Santa Ana Regional Water Quality Control Board (Regional Board) staff member. While the TMDL development team responds to the TMDL Task Force stakeholder members in theory, the development team must also respond --- to the Regional Board staff comments and their desired direction; because the Regional Board has the final step at the state level by awarding approval. Without obtaining the state's approval the proposed TMDL development process is ended. WRCAC does not make this statement lightly. WRCAC performed a review of salient records to track the decision process where the arbitrary and unsupported new Reference Watershed Condition Numeric Targets were decided upon, and then documents how the decision triggered the development supporting justifications for the new Numeric Targets selection. Many of the following multiple lines of evidence identifies and documents how	Numeric Targets were not selected arbitrarily. Santa Ana Water Board staff determined that additional conservatism was needed because of the uncertainty in the basis for the reference watershed nutrients and expert opinion from the scientific peer reviewers. Collaboration with the Task Force involved a phased approach with an extended compliance timeline and multiple scheduled reconsiderations.

		the supporting justification submitted had identified data gaps, ignored available information, and operated in conflict with the very guidance documents the draft 2024 Technical Report quotes. The documents reviewed include the LECL TMDL Task Force meeting minutes, Presentations, and three rounds of review of TMDL draft materials; the submitted expert Peer Review comments, Staff Responses (March 2023), and the TMDL Task Force Consultant's Team response comments.	
2.50	WRCAC	In addition, WRCAC meet with key members of the TMDL Task Force and Barbra Barry (Regional Board staff) to discuss the use of the 25th Percentile based Numeric Targets. In the TMDL Task Force September 28, 2021 Meeting Minutes Mrs. Barry statement is recorded as: *"Recommendation of 25th Percentile* Barbara Barry /Regional Board reported that they met with WRCAC where they discussed the use of the 25th percentile values. The Task Force discussed having an independent local peer review local reference condition data to opine on the appropriateness of using median or the 25th percentile to calculate targets and load allocations for the revised TMDL. However, additional scientific review could trigger additional peer review, which would	The median was never adopted as the basis for allocations in 2018. The change to the 25th percentile did not involve any new data for the reference condition, but rather a more conservative interpretation of the same dataset. Phase II planning tasks would be required with or without the change. The cost impacts could translate to additional offsets needed from the downstream in-lake controls in 2045-2055. Data will be collected prior to this period to improve the Santa Ana Water Board and Task Force understanding of the reference watershed condition.

		then cause further delay. The Task Force discussed including reopeners in the final revised TMDL to allow for reconsideration of final load and wasteload allocations based on the 25th percentile based on evaluation and analysis of additional reference condition data. At this time, Regional Board staff conveyed their position regarding using the 25th percentile of reference condition data to calculate targets and wasteload allocations for revised TMDLs for Lake Elsinore and Canyon Lake." This response did not acknowledge that a basis based on science is not being proposed, or that more reasonable, science based efforts were used to evaluate the median (50th Percentile) Numeric Target values. It simply justifies the direction forward being based on potential time delays from requiring another Peer Review, and the Regional Board staff position regarding the use of the 25th Percentile of reference condition to calculate targets and wasteload allocations for revised TMDLs. WRCAC notes that this position was stated with no discussion of additional expenses being required of dischargers during implementation requirement in Phase II that are orders of magnitude higher than the cost of delay and acquiring more information.	

2.51	WRCAC	The problems that have manifested as a consequence of the identified decisions and process used outlined in Comments 1 and 2 and the multiple lines of evidence below are discussed in the WRCACs Comments for Section 4. Source Assessment, Section 5. Linkage Analysis, and Section 10. Economics. These review comments outline: 1. In Section 4, how the selected PLOAD watershed model used to assign Wasteload Allocations (WLAs) and Load Allocations (LAs) was calibrated and tested for Goodness of Fit using the original Median Value Numeric Targets of TP = 0.32 mg/L and TN = 0.92 mg/L, and still received conflicting and poor Goodness of Fit test results. [A Goodness of Fit test can be one of many different statistical tests, or direct result, comparisons with measured watershed data. Each test type assesses a different characteristic of modeling predictions.]	The underestimate of TP in the San Jacinto River at Goetz may be caused by another source (for example channel erosion) or an underestimate of developed land use washoff concentrations.
2.52	WRCAC	2. In Section 5, the two lake models' Goodness of Fit test results were extremely concerning for the lack of predictive performance aligning with measured values in the Canyon Lake East Bay modeling. The Canyon Lake Main Lake and Lake Elsinore Goodness of Fit test results also raise troubling issues regarding the accuracy of their predictive performance. This is even more troubling because, again, existing	The error statistics when comparing daily lakewide average model results to point measurements on the same day were poor in some cases. However, the overall average and range of simulation results did compare well between modeled and measured data.

		conditions were used to calibrate and validate these models. A poor Goodness of Fit test result indicates the prediction of lake conditions has a level of error involved. One test, the Root Mean Standard Deviation Ratio (RSR) result was 23.36 in the Canyon Lake Main Lake segment, 30.11 in the Canyon Lake East Bay segment, and 63.00 in Lake Elsinore. This is disconcerting because the predictive nature of this test is based on: A lower resulting value indicates the model's capability to predict the measured values' fluctuation is better than the test results with higher values. A result of zero (0) is a perfect fit to the measured values. Values above 0.50 may be acceptable in challenging datasets like this watershed experiences. However, values above 1.00 are larger than natural occurring variation. (This statement is from this WRCAC representative's professional opinion, which is based on previous model review and testing experience and literature reviews.)	
2.53	WRCAC	3. In Section 10, the implication for financially viability after paying for required Best Management Practice (BMP) installations on farm fields, or the purchase of nutrient offset credits to comply with surface water TMDL requirements of the State Orders already is	See response to comment 2.43.

		highly problematic for many farmers when using the Numeric Targets at the Median concentration values; but will be untenable for almost all farmers if required to implement compliance attainment at the proposed 25th Percentile Numeric targets. This comment also highlights the questionable nature of the Median concentration values. And, that the Section 7. Implementation, Task 11, Study for Evaluating Reference Watershed Conditions should have language that emphasizes a cost effective approach be taken until the Task 11 schedule is completed.	
2.54	WRCAC	Page 132, Section 3, subsection 3.2.2.3 Nutrient Concentration in Watershed Runoff. The method used to address Margin of Safety (MOS) at the end of this Section states: "By selecting values at the 25th percentile of all grab samples rather than event means, from a reference watershed station, a margin of safety (MOS)13 of at least 10 percent is accounted for in the revised TMDLs (see Section 6.1 below). As noted above, the appropriateness of the proposed percentile thresholds and MOS should be further evaluated as part of the revised TMDLs' Implementation Plan."	See responses to comments 2.18, 2.22, 2.26, 2.35, 2.51, and 2.52.

		Because the Interim Milestone reduction goals are based on the Median value Numeric Targets the MOS does not activate until, and *if*, the Final Allocations Numeric Targets are verified and used in Phase III. Furthermore, the WRCAC comments for Section 4. Source Assessment indicate that the PLOAD watershed model Goodness of Fit test results for the San Jacinto River indicates the model underestimates the TP measured values at the Goetz monitoring station by -25 percent when using the Median concentration values for forested and open space land uses; which increases to a TP underestimation of -31 percent when using the 25th Percentile concentration values or forested and open space land uses. Likewise, the PLOAD model overestimates the TP measured values in Salt Creek by 19 percent when using the Median concentration values for forested and open space land uses. **The Basin Plan Attachment A has the best presentation of the Margin of Safety development and that should appear in the revised Technical Report.**	
2.55	WRCAC	Background WRCAC was once asked a question by Tess Dunham (Kahn, Soares & Conway, LLP) during a TMDL Task Force Meeting: “Why is WRCAC raising this issue now, for the first	No response required.

		time?" WRCAC is a very small nonprofit that must make hard choices on where to expend its limited financial resources. The rollout of the draft alternative Watershed Reference Condition Numeric Targets discussed for the draft 2024 Technical Report, highlighted a flawed decision that could not remain ignored. However, since beginning this deeper review of the Draft 2024 Technical Report, a review of a very complex series of sections, the questions raised by WRCAC since September of 2021 have only marginally been addressed. This constant refusal by the TMDL development team and the Regional Board to seriously consider an investigation into the merit of WRCAC's question has consumed too much of WRCAC limited financial resources. Therefore, since this public review period is the last chance to work with both the TMDL development team and the Regional Board in a professional manner the following comments are direct and straight forward.	
2.56	WRCAC	The creation of the comments above entailed the developing multiple lines of evidence that all demonstrate that the Watershed Reference Condition Numeric Target selection process omitted, or possibly even ignored, the use of good science. Regrettably, WRCAC trusted both the Regional Board regarding defending the Reference Watershed Condition defense of	The median values are higher than values for experimental forests. The adaptive science and policy incorporated into the revised TMDL Technical Report was developed to address earlier comments by WRCAC and others. The Santa Ana Water Board also signed a key principles agreement with the Task Force to meet common goals of TMDL revision. Staff have reviewed the materials provided by WRCAC on the San Jacinto

		the selected Numeric Targets during the 2018 draft Revision Technical Report's Peer Review process. The reveal of simply trying to match reference conditions that are from areas outside of this unique watershed appeared when the Regional Board's decision to reduce the Numeric Target from the median (50th percentile) concentration values to the 25th Percentile of the Cranston Guard Station became clear to WRCAC during the TMDL Task Force's meeting on January 25, 2021 water chemistry dataset in response to the expert Peer Review comments. Since that time, in our opinion, the comments provided by WRCAC to the TMDL development team and the Regional Board have not been given due consideration, and appear to have been handled with a dismissive attitude. While this may be explained by some that the 2024 TMDL Technical Report includes a 20-year timeline with required special studies in Section 7. Implementation, Task 11 schedule for confirming or adjusting the Median value Numeric Targets does contain language to not align . However, during Phase II's 20-year period, the study and verification or adjustment the nutrient concentration targets selected, is scheduled to be completed sometime around 16-years into the 20-years (Figure 7-5 on page 277 of the draft revision). Meanwhile, requirements for Irrigated Ag	River watershed soils. These materials point to highly erosive soils that have naturally high P content. This local condition is captured with the San Jacinto River at Cranston Guard Station dataset. There is currently no data or interpretation, found by WRCAC or others, that would provide a basis for setting the allocation basis at the median instead of the 25th percentile.

		operations working under the Ag General Order (R8-2023-0006) and the operations who will be covered by pending program for Non-irrigated Ag covered by R8-2020-0009 must begin to show progress after these orders have been revised to reflect TMDL requirement. According to Figure 7-4 on page 276 of the revised Technical Report the schedule for regulatory permits and other actions is scheduled to be completed after 5-years. **Progress towards reaching the Phase II interim compliance Median values needs to address that the Median values are still being verified**.	
2.57	WRCAC	The additional large cost of complying with this future regulation adds to the reasons Ag operators are already experiencing dwindling profit margins and/or more desirable opportunities than farming in this watershed. Personal discussions with a few farmers that have moved to Idaho and Oklahoma did so to keep farming, working in a more farmer friendly state. This highlights reasons why a sizable decline of Ag operation acres exist in the watershed. Future regulatory costs predicted by the draft 2024 Technical Report will increase the cost of compliance three orders of magnitude during Phase II. This statement is based on the currently the Ag compliance status with the 2004 TMDLs has been achieved; without having to buy offset credits from the TDML Task Force or	See responses to comments 2.42 and 2.43.

		implement further BMPs on the field. This draft of the 2024 revision will require most farmers to purchase offset credits in Phase II at high price, which minimally is the cost of offset credits. According to the Executive Summary on page ES-33 offset credit prices are currently $100 for 1 kg/yr of TN, and $1,000 for 1 kg/yr of TP. According to the adjacent text on page ES-33. BMP implementation can cost eight time more. Therefore, WRCAC's comments on the Numeric Targets are focused on having the best available science being applied to the selection of the Reference Watershed Condition's hypothetical watershed goals and discharger allocations. Farmers deserve to have regulatory requirements that will not run them out of business simply when trying to apply the minimum cost option to achieve compliance.	
2.58	WRCAC	Justification of the Comment Position that the Numeric Target Selections Did Not Use All of the Available Information and Appropriate Methods: The 2024 Draft Technical Report for the proposed revision to the TMDLs states on page 109, the first bullet: "Section 3.2 – Establishment of a Reference Watershed: No watersheds comparable to Canyon Lake or Lake Elsinore exist in	See responses to comments 2.35 and 2.49, and Section 10.2 of the revised TMDL Technical Report.

		southern California or other areas with similar climatic regimes. As such it is not possible to establish allowable pollutant loads using another watershed/ downstream waterbody combination to describe an expected reference condition. Instead, a lake water quality modeling scenario representative of a hypothetical reference watershed condition for drainage areas to Lake Elsinore and Canyon Lake was developed to provide the basis for establishing numeric targets. This approach will be described in this section. In addition, this section will briefly describe the characteristics of the reference watershed condition for Lake Elsinore and Canyon Lake." (Highlight added for emphasis.) Very similar language was used in the Draft 2018 Technical Report on page 3-1. As mentioned, WRCAC did not question the validity of the hypothetical approach during the review of the 2018 TMDL Revision Technical Report; WRCAC's decisions were based on finding an appropriate means to manage its limited budget, and trusting the TMDL development team to carry out the selection process using the best available information. WRCAC targeted its resources towards other issues to protect the members, by providing appropriate representation during the TMDLs development of Ag regulatory requirements.	

		WRCAC applied multiple lines of evidence by reviewing draft 2024 Technical Report Sections and the PLOAD watershed model to demonstrate how the Reference Watershed Condition methods to select Numeric Targets does not use the available information in a manner that applies good science to draw the right conclusion. Cumulatively, the multiple lines of evidence support WRCAC's bold statement that there is a consistent and persistent issue with the selection process and Numeric Target selection. Our findings justify the draft 2024 Technical Report's Watershed Reference Condition's selected Numeric Target concentrations are flawed.	
2.59	WRCAC	**Lack of Good Science In: Staff Responses to Peer Review Comments** In the 2018 Draft Technical Report median (50th percentile) concentration values of the Cranston Guard Station were the selected as the discharger's washoff concentrations. However, the level of trust WRCAC placed in the Regional Board and TMDL authors team began to erode with the results of a Peer Review period at the end of the 2018 TMDL Revision Technical Report evaluation occurred. At that time, the Regional Board requested that the CalEPA Scientific Peer Review Program (CalEPA) initiate the process with the University of California,	No response required.

		Berkeley (University) to identify and select external scientific peer reviewers for these reports. The selection results picked six qualified reviewers. These reviewers provided many critical comments regarding their concerns about the selected Watershed Reference Condition nutrient Numeric Targets. To provide a concise list of WRCAC comments on the Peer Review process, WRCAC selected seven (7) Peer Reviewer Comments that summarize the discussions held regarding the selected draft 2018 Reference Watershed Condition selected Numeric Targets concentrations. Each selected Peer Reviewer comment is associated with the Staff Response provided by Regional Board in their document dated December 26, 2024, which provides the finalization of their draft March 2023 response document. In addition, a TMDL Task Force Consultant Team was formed to draft initial comment options as requested by Barabra Barry (Regional Board staff) in the November 12, 2019 LE/CL TMDL Task Force (TMDL TF). WRCAC comments on the seven selected Peer Reviewer Comments in a manner that also discusses the two-response document narratives. Because listing all three sections (i.e., Peer Reviewer Comment, Staff Response, and TMDL TF Consultant Team	

		responses) for each comment in full ends up being a lengthy narrative the following format was used in this memorandum: 1. WRCAC comments are presented below, with headers that include the Peer Review Comment Number as sorted by the Regional Board; LECL Peer Review Response to Comments (Dec 26, 2024) 2. At the end of this memorandum, sorted by the comment number header are the: a. Peer Reviewer Comments (December 26, 2024 document) b. Staff Response (December 26, 2024 document) c. TMDL Task Force Consultant Team's response (March 23, 2022 document) 3. In this process WRCAC sometimes used green highlights to emphasize key narratives. This format was selected to provide readers a faster review. However, if a reader wishes to review the comments or responses in full, the quotes are available at the end of the Section 3 comments. The seven comments were selected to record when the switch in in TMDL Numeric Targets from the 50th Percentile to the 25th Percentile concentration values was made and what reasoning was supplied to justify such a switch.	

2.60	WRCAC	WRCAC Comments on Seven Selected Peer Review Comments, Staff Response, and TMDL Task Force Consultant Team Responses **WRCAC Comment on Comment 1. By Marc Beutel, Ph.D.** **T**he TMDL TF Consultant Team recommended response made in March 2020 stated that the draft TMDL relied on estimates of natural background concentration of TN and TP to estimate the allowable nutrient loading in both lakes in the absence of any anthropogenic discharges. Whereas, the Staff Response drafted for the March 2023 version (3-years later) states "… A proposed revision is that the TMDLs will rely on the 25th percentile of the natural background concentrations of nutrients for the final TMDL targets (Phase III). The median natural background concentrations, as first proposed, will be used as interim targets in Phase 2 of the TMDL." This difference in the two responses underscores the 2018 original context of the hypothetical watershed reference condition with a longer Implementation Phase II to collect water quality data to decide on the true watershed natural condition concentrations. Later on in their document, the consultant team refers to the use of two	WRCAC is correct that efforts will be taken as part of Phase II implementation to verify or adjust the Numeric Targets (Task 15).

		watershed monitoring results, and lake sediment cores that were considered to develop this target. Even then, the consultant team's response later to Comment 47 states: "Regarding the natural background nutrient levels, the Cranston Guard Station values are supported by findings from other sampling efforts downstream of undeveloped canyons in the San Jacinto River watershed. Even with this support, the TMDL includes a requirement for the stakeholders responsible for TMDL implementation to complete a study to further evaluate nutrient loads from reference watersheds (see Table 7-12; Section 7.4.2.5)" Which acknowledges that efforts already were in place to verify or adjust the Numeric Targets.	
2.61	WRCAC	**WRCAC Comment on Peer Reviewer Comment 29, by Marc Beutel, Ph.D.:** The responses to the Peer Reviewer comment points out that the discussions held three years apart are based on two different strategies. The Staff Response states: "In the revised Technical Report, a footnote will be added to Table 6-6 indicating that the reported loads are reflective of the reference watershed condition", the Staff is speaking into Numeric Targets based on the 25th Percentile concentrations which were never	That is correct. Based on scientific peer reviewer comments, Santa Ana Water Board staff concluded that numeric targets based on the 25th percentile of nutrient concentrations collected from the Cranston Guard Station was more appropriate than the median. The median is being used as an interim target in the revised TMDLs.

		designed to reflect natural watershed concentrations. Whereas, when the TMDL TF Consultant Team responds, their response is balancing the lake loading with the selected Numeric Target concentrations, where Numeric Targets were based on comparing two marginal watershed's water quality data: "Regarding tables in Section 6, the reference watershed loads are equal to the allocations in Table 6-2. The Peer Reviewer is correct in finding that the sum of the values in Table 6-2 and 6-3 is intended to equal the existing watershed load."	
2.62	WRCAC	**WRCAC Comment on Comment 46 by Jack Brookshire, Ph.D.:** The Staff Response regarding the selected Numeric Target states that a conservative measure to reduce the concentrations to the 25th percentile is proposed so that the nutrient concentrations used will be more comparable to Dr. Buetel's references that were provided later in his list of comments. This response is stated numerous times as an answer to many comments. This selected method not only applies a method lacking in good science, but is in direct conflict with USEPA Region 9 Guidance for Developing TMDLs in California (USEPA, 2000a). The Staff Response is based on a change in the Technical Report Watershed Reference	See responses to comments 2.5 and 2.35.

		Condition Numeric Target concentration selection approach. A fuller presentation of this change occurred during the TMDL TF meeting minutes for January 25, 2021 state: "**Status: TMDL Update (Regional Board)** a. Timing of Response to Comments Barbara Barry /Regional Board informed the Task Force that Regional Board staff has been working with the consultant team on the scope of work for the additional modeling requested to address comments by Peer Reviewers and questions by Regional Board staff. Barbara stated that until this modeling is completed, the Regional Board will not be able to provide an update on the timing of when the Response to Comments or revisions to the TMDLs will be completed. The Regional Board staff intends to incorporate the results of this modeling into the Response to Peer review comments and to amend the TMDL Technical Report." And, "c. Revisions Recommended by Regional Board Staff Revisions to the TMDL Technical Report are tied to the completion of additional modeling as stated above." In this same meeting Steve Wolosoff, (formally with CDM Smith) gave a PowerPoint presentation with two of the	

		slides presenting the approach, and then discussing the Regional Board staff's change of purpose regarding the Cranston Guard Station's water quality monitoring dataset. [Figure 1, WRCAC comment letter; PDF pg 33; PowerPoint slide of Modeling Scope] [Figure 2, WRCAC comment letter; PDF pg 34; PowerPoint slide of 25th percentile justification]	
2.63	WRCAC	Figure 1, clearly identifies that the Regional Board staff directed the change in selecting the Watershed Reference Condition Numeric Targets concentration levels to be the 25th Percentile. Figure 2, clearly identifies a flawed concept being applied by the Regional Board staff. **In Figure 2's first bullet**, it states that 92.4% of the watershed is forested; but does not discuss the Horne (2002) report that identified atypical High Soil Erosion Rates that should have been a response to Peer Review comments from Jack Brookshire, Ph.D. Comment 46 which states: "Further the nutrient concentrations values from the Cranston guard station are outstandingly high for naturally vegetated ecosystems I am familiar with and compared	Santa Ana Water Board staff opted to apply conservatism by using the 25th percentile despite knowledge of naturally erosive and nutrient rich runoff in reference watersheds. Within the Cranston Guard Station dataset, several samples reflect highly erosive events. Thus, this knowledge was accounted for by using the best available dataset for nutrients in wet weather runoff from undeveloped canyons in the region. In addition, if needed, data collected during Task 11 could be used to develop a new method to better represent the reference watershed condition.

		to those from other natural watersheds in Southern California (references below).” The 2018 Technical Report mentions the Horne (2002) report two times, first on page 2-74 when discussing Canyon Lake retains a significant portion of sediment and nutrients; and again, most importantly, on page 2-77 when discussing: **“2.4.3 Watershed Soil Erosion** Monitoring data show very high concentrations of suspended solids and nutrients during high intensity storm events (most recently in January 2011) that generate significant soil erosion, even from undeveloped hillsides. Sediment loads from these types of events may exceed typical winter storms by 100 times (Horne 2002).” Which verifies both the Regional Staff and TMDL TF Consultants knew about the high soil erosion rates; but did not adjust their reference condition selection approach using appropriate information and guidance.	
2.64	WRCAC	**In the second bullet**, it states that there is a Presumption is that a reference watershed results in reference conditions in downstream waters. Which implies that because the watershed is 94.2 percent forested, it must be a reference watershed for downstream waters. This Regional Staff assumption is discussed at length in this comments	See response to comment 2.63. Also note, if necessary, data collected during Task 11 could be used to develop a new method to better represent the reference watershed condition before the Santa Ana Water Board’s reconsideration of the TMDLs.

		subsection entitled: "Lack of Use of Good Science in Reference Watershed Representation According to Ecoregions". This subsection again quotes the draft 2024 Technical Report's own reference to the USEPA Region 9 Guidance for Developing TMDLs in California (USEPA, 2000a); however, the very same Technical Report does not apply the very guidance's full list of checks before applying this approach a is quoted from page 3 of the guidance: "… It is sometimes possible to supplement instream indicators and targets with hillslope targets—measures of conditions within the watershed which are directly associated with waterbodies meeting their water quality standards for the pollutant(s) of concern. The numeric targets section generally includes the following elements: • identification of one or more instream indicators (and possibly hillslope indicators) and the basis for using the indicator(s) to interpret or apply applicable water quality standards • identification of target levels for each indicator and the technical basis for the targets • comparison of historical or existing conditions and target conditions for the indicators selected for the TMDL."	

		The high rates of soil erosion (100 fold of typical winter periods) and the associated high particulate phosphorus loading present in the Cranston Guard Station's contributing area cannot be removed (ignored) to create a reference watershed.	
2.65	WRCAC	**In the third bullet**, it states "San Jacinto has uniquely high TP from forested canyons –a key observation from peer review". This bullet is followed by two figures, the first Figure is the Cranston Guard Station's fitted distribution of the Lower and Upper 25th Percentiles for TP. This Figure is discussing the river's TP concentrations percentiles. The second Figure presents the USEPA Nutrient Criteria Technical Guidance Manual – Lakes and Rivers (2000), Figure 1.4 Two approaches for establishing a reference condition value using total phosphorus as the example variable. This figure is found on page 1-14. Furthermore, the supporting text for this figure in the USEPA guidance states: "The choice of the upper 25th and the lower 25th percentiles for the selected reference lakes and the random sample reference or census of all lakes in a class, respectively, is a rational but qualitative decision. It represents the effort to avoid imposing an undue penalty on high-quality mesotrophic lakes in regions where the lakes are	Comment noted. Also see responses to comments 2.63 and 2.64.

		predominantly oligotrophic. By selecting an upper percentile of the reference lakes, there is a greater likelihood that more of the broader population of lakes will comply. Conversely, in regions of intense cultural enrichment, a lower percentile of the distribution of the remaining lakes used as reference must be selected to avoid establishing criteria based on degraded conditions. The quarterly increments were chosen as a reasonable division of the data sets recognizable by the public, and the upper 25th percentile and lower 25th percentile as reasonable and traditional fractions of the range and frequency of distribution. This approach promotes water quality enhancement and has broad application over the country." WRCAC's objection to this approach is outlined in the following bullets: 1. The presumption stated in bullet two, is that the Cranston Guard Station's monitoring station, which is on a river and not a lake or reservoir, is to be used to determine the results in determining the reference conditions in downstream waters. However, the TMDL Technical Report development team did not use entire the guidance steps to "to supplement instream indicators and targets with hillslope targets" when verifying	

		the Cranston Guard Station monitors a reference condition. Also, and the TMDL development process can use identification of one or more instream indicators (and possibly hillslope indicators) and the basis for using the indicator(s) to interpret or apply applicable water quality standards. The Regional staff uses only a small fraction of the hillside monitoring data in a way that inappropriately set the lake WQOs: a. The method used to set watershed loading levels is backward, instead of informing the watershed managers what a watershed's natural background nutrient concentration likely were in pre-anthropogenic conditions – the use of the conservative concentrations at the 25th Percentile decides what the Watershed's discharge concentration should be to meet the desired Lake WQOs b. The Staff Response uses the comments about high TP concentrations to push an agenda that this dataset should reflect other regions fully vegetated condition concentrations c. The WQOs to protect a surface drinking water source and provide a higher recreational Beneficial Use may still be accomplished, but will not be appropriately set to natural conditions, if the selection of Numeric targets are based upon the actual natural background nutrient concentrations d. Item c is discussed simply because the	

		arbitrarily selected lower nutrient concentration Numeric Targets triggers dischargers having to purchase more offset credits because the reservoir never experienced today's level of drinking water Numeric Targets	
2.66	WRCAC	2. Item 1 above, is discussing topics that use terminology that can be found in the draft 2024 Technical Report. The term reference condition, reference watershed, and selecting a Percentile to select the Numeric Targets are discussed in the USEPA Region 9 Guidance for Developing TMDLs in California (USEPA, 2000a). As presented in draft 2024 Technical Report in Section 3.2.1.1 Use of the Watershed to Define the Reference Condition uses this USEPA guidance is to justify the method of use of the river's dataset to select the lake and reservoir numeric targets as a "hypothetical" watershed condition. But the full guidance method to be used was not implemented in the intended manner so that a dataset receives the due caution it deserves. The draft 2024 Technical Report refence to the USEPA 2000a guidance states on page 118: "There are no comparable inland lakes to Lake Elsinore or Canyon Lake that could be considered reference sites. These lakes have unique conditions that are not replicated	See responses to comments 2.63 and 2.64.

		downstream of a natural watershed in the same geographic region. These unique conditions were described in the Problem Statement (see Section 2.4). Therefore, for the revised TMDLs a hypothetical scenario was employed to define the reference site, whereby runoff nutrient concentrations representative of a completely natural, or reference, watershed were assumed to comprise the entire drainage area to the existing lake basins. This approach is consistent with USEPA Region 9 in Guidance for Developing TMDLs in California (USEPA 2000a). This guidance recognizes the utility of hillslope targets, such as a reference watershed nutrient concentration, for setting numeric targets in a TMDL for impaired receiving waters (page 3): "…It is sometimes possible to supplement instream indicators and targets with hillslope targets - measures of conditions within the watershed which are directly associated with waterbodies meeting their water quality standards for the pollutant(s) of concern." Within the context of the revisions to these TMDLs, this guidance is interpreted to mean that measures of hillslope, or watershed, conditions are directly associated with attainment of water quality standards in their downstream waterbodies. The allocation	

		for external nutrient load is set to achieve runoff concentrations estimated for a reference watershed condition. Hence, since Lake Elsinore and Canyon Lake are downstream waterbodies within the San Jacinto River watershed, upstream reference watershed conditions may be used to establish appropriate TMDL numeric targets for these waterbodies through the linkage analysis lake water quality models." Once again, what the cited USEPA guidance (2000a) actually states in full is below: "In situations where applicable water quality standards are expressed in narrative terms or where 303(d) listings were prompted primarily by beneficial use or antidegradation concerns, it is necessary to develop a quantitative interpretation of narrative standards. Since a TMDL is an inherently quantitative analysis, it is necessary to determine appropriate quantitative indicators of the water quality problem of concern in order to calculate a TMDL. It is sometimes possible to supplement instream indicators and targets with hillslope targets-- measures of conditions within the watershed which are directly associated with waterbodies meeting their water quality standards for the pollutant(s) of concern.	

		The numeric targets section generally includes the following elements: • identification of one or more instream indicators (and possibly hillslope indicators) and the basis for using the indicator(s) to interpret or apply applicable water quality standards • identification of target levels for each indicator and the technical basis for the targets • comparison of historical or existing conditions and target conditions for the indicators selected for the TMDL." (Green highlight added for emphasis) While the draft 2024 Technical Report discussion does include the basis for using the indicator(s) to interpret or apply applicable water quality standards, the hillslope indicators are not being applied correctly. The identification of target levels is being used to match other mountain streams outside of the Ecoregions located in the San Jacinto River Watershed by cho0sing the 25th Percentile instead of an actual reference condition watershed that should represent the entire watershed natural conditions at a 75th Percentile; or at least the draft 2018 Technical Reports modified median value. A comprehensive review of the Cranston Guard Monitoring Station's dataset and contributing factors appears to never have been	

		completed by the TMDL development team because they never disclosed the poor quality of the US Forest Service data collection methods. A comprehensive review was completed by WRCAC when the Basin Plan draft adoption of a TP concentration Margin of Safety 600 percent and a TN MOS of 150 percent in March of 2024. For more detail, please see the subsection below entitled: Lack of Using Good Science Uncovered in the Cranston Guard Station's Water Quality Statistics.	
2.67	WRCAC	**WRCAC Comment on Comment 53, by Jack Brookshire (Comment Response 55 by TMDL TF Consultant Team):** While the Staff response provided the conservative proposed Numeric Targets without justification, in contrast, the TMDL TF Consultant Team recommended a response focused on: 1. A reminder that three sources of information were used to confirm the Watershed Reference Condition Numeric Targets 2. The treatment efficiency of in-lake treatment systems' effectiveness currently not tied to the prosed watershed reductions 3. The multiple ways available in which watershed dischargers can achieve compliance	See responses to comments 2.25 and 2.35.

		4. And, in Section 7 there is a requirement for stakeholders to conduct a study to further evaluate the natural reference condition for nutrients While the TMDL TF Consultant Team's response did not address the Peer Reviewers perceived need to link watershed reductions to improved lake water quality, it did truthfully state the accuracy they believed went into selection of the Watershed Reference Condition Numeric Targets, and how offset credits would be used. In contrast, the Regional staff response indicates the accuracy or appropriateness of the Watershed Reference Condition is secondary to artificially linking watershed reductions equally to in-lake treatment reductions. As outlined in Comment 46, this is not the intended application of the sentence in the Guidance document that states "Since a TMDL is an inherently quantitative analysis, it is necessary to determine appropriate quantitative indicators of the water quality problem of concern in order to calculate a TMDL." Because the direct basis for the 25th Percentile was to support lake WQOs, instead of using hillside datasets to set downstream WQOs.	
2.68	WRCAC	**WRCAC Comment on Comment 54 by Jack Brookshire, Ph.D. (Comment**	Note that with data collected during Task 11, if needed, a new method to represent the reference watershed condition could be developed. This

		Response 56 by TMDL TF Consultant Team): The Staff Response did nothing to explain why the Watershed Reference Condition was higher than other regions in Southern California, even though there is evidence that the Staff knew about the Horne (2002) identification of unusually high levels of soil erosion. The Staff Response is to propose using lower Numeric Target concentrations. In contrast, the TMDL TF Consultants Team did a remarkable job of explaining the potential differences between data set. It is appearing that Regional Board at that time, only was looking for numbers to support the Lakes' WQOs, and not using the best available estimate of Watershed Reference Condition Numeric Targets.	could include, if appropriate, modifications to Compliance Option 3a, to provide more flexibility regarding downstream monitoring stations that have been impacted by hillside erosion.
2.69	WRCAC	**WRCAC Comment on Comment 56 by Jack Brookshire, Ph.D (Comment Response 58 by TMDL TF Consultant Team):** WRCAC is concerned with how the Peer Reviewer's comment contents differs between the Staff Response quote of the Peer Reviewers and what the TMDL Consultant Team states is the comment.	Peer review comments were taken directly from the original comment letter. Staff did not alter or paraphrase any of the peer review comments.
2.70	WRCAC	As important, WRCAC fully agrees with Peer Reviewer's statement in the first sentence **"At the heart of this conclusion is the assumption that the reference conditions used here are actually valid."**	No response needed.

2.71	WRCAC	**First**, the Ecoregion Level III, Aggregate Nutrient Ecoregions in the San Jacinto River Watershed are separated into two different Aggregate Nutrient Ecoregions. Aggregate Nutrient Ecoregion II and Aggregate Nutrient Ecoregion III. **The Aggregate Nutrient Ecoregion II:** describes the forests of Region II are characterized by much lower anthropogenic inputs of nitrogen and phosphorus from artificial fertilizers than neighboring, more agricultural, nutrient regions. Ecoregion II is a large, discontinuous region covering the mountainous areas of the western Unites States (Figure 1). The region includes the western 1/3 of Washington and Oregon and the northern border between Oregon and California. The region continues southwards as a narrow strip running down the eastern side of California; where California's border bends eastward, the region continues to stretch southward into the center of the state terminating in the southwestern part of the state. Aggregate Ecoregion II contains the Level III Ecoregion 8 in the San Jacinto River Watershed. 8. Southern California Mountains Like the other ecoregions in central and southern	The special study (Task 11) during Phase II implementation to characterize reference watershed nutrients will involve multiple sites, including those in Level III ecoregions 6 and 8.

		California, the Southern California Mountains has a Mediterranean climate of hot dry summers and moist cool winters. Although Mediterranean types of vegetation such as chaparral and oak woodlands predominate, the elevations are considerably higher in this region, the summers are slightly cooler, and precipitation amounts are greater, causing the landscape to be more densely vegetated and stands of ponderosa pine to be larger and more numerous than in the adjacent regions. Severe erosion problems are common where the vegetation cover has been destroyed by fire or overgrazing. **The Aggregate Nutrient Ecoregion III:** contains the Level III Ecoregion 6 which contains a part of the San Jacinto River Watershed. *6. Southern and Central California Chaparral and Oak Woodlands* The primary distinguishing characteristic of this ecoregion is its Mediterranean climate of hot dry summers and cool moist winters, and associated vegetative cover comprising mainly chaparral and oak woodlands; grasslands occur in some lower elevations and patches of pine are found at higher elevations. Most of the region consists of open low mountains or foothills, but there are areas of irregular plains in the south and near the border of the adjacent Central California	

		Valley ecoregion. Much of this region is grazed by domestic livestock; very little land has been cultivated. As discussed in more detail below in the subsection entitled "Lack of Use of Good Science in Reference Watershed Representation According to Ecoregions", there are distinct differences with a dataset taken within the Level III Ecoregion number 8 for the Southern California Mountains and the rest of the San Jacinto River Watershed. The Reference Watershed sought does not represent the lower elevations in the San Jacinto River Basin.	
2.72	WRCAC	**Second**, according to the 2000 USEPA Nutrient Criteria Technical Guidance Manual – Rivers and Streams (EPA-822-B-00-002 a reference stream is determined by: "Identification of reference streams allows the investigator to arrange the streams within a class in order of nutrient condition (i.e., trophic state) from reference, to at risk, to impaired. Defining the nutrient condition of streams within a stream class allows the manager to identify protective criteria and determine priorities for management action. Criteria developed using reference reach approaches may require comparisons to similar systems in States or Tribes that share the ecoregion so that criteria can be	This suggestion will be considered in the development of a study design for the reference watershed condition (Task 11).

		validated, particularly when minimally-disturbed systems are rare. Best professional judgement-based reference reaches may be identified for each class of streams within a State or Tribal ecoregion and then characterized with respect to algal biomass levels, algal community composition, and associated environmental conditions (including factors that affect algal levels such as nutrients, light, and substrate). The streams classified as reference quality by best professional judgement may be verified by comparing the data from the reference systems to general population data for each stream class. Reference systems should be minimally disturbed and should have primary parameter (i.e., TN, TP, chl a, and turbidity) values that reflect this condition. Factors that are affected by algae, such as DO and pH, should also be characterized. At least three minimally impaired reference systems should be identified for each stream class (see Chapter 2). Highest priority should be given to identifying reference streams for stream types considered to be at the greatest risk from impact by nutrients and algae, such as those with open canopy cover, good substrata, etc. [Conditions at the reference reach (e.g., algal biomass, nutrient concentrations) can be used in the	

		development of criteria that are protective of high quality, beneficial uses for similar streams in the ecoregion.] …" (page 94)	
2.73	WRCAC	And, a nutrient criteria that is based on starting with the 25th Percentile distribution must be based on a large dataset that contains samples collected from many streams: "The second frequency distribution approach involves selecting a percentile of (1) all streams in the class (reference and non-reference) or (2) a random sample distribution of all streams within a particular class. Due to the random selection process, an upper percentile should be selected because the sample distribution is expected to contain some degraded systems. …" (page 95) While this manual is for developing river and stream criteria, the guidance manual also states: "The development of TMDLs may serve as an intermediate step between criteria development and watershed-based management planning." This USEPA Nutrient Manual for Reivers and Streams identifies two important conflicts with the draft 2024 Technical Report's citing the	The wet weather grab sample nutrient concentration data is the primary parameter and reflects that condition by being collected downstream from a 94.2 percent forested watershed. Also note, with data collected during Task 11, if needed, a new method to represent the reference watershed condition could be developed.

		USEPA Region 9 in Guidance for Developing TMDLs in California (USEPA 2000a). This USEPA Region 9 manual states "Since a TMDL is an inherently quantitative analysis, it is necessary to determine appropriate quantitative indicators of the water quality problem of concern in order to calculate a TMDL." The first quoted two paragraphs from the USEPA River and streams manual includes the term "appropriate". If seeking a Reference Watershed designation, the evaluation to determination a stream is a Reference Watershed needs to be based on an acceptable approach. Accordingly, the 94.2 percent forested land use does meet the definitions stating a "Reference systems should be minimally disturbed …", However, the Cranston Guard Station watershed does not meet the second condition " … and should have primary parameter (i.e., TN, TP, chl-ą, and turbidity) values that reflect this condition." **Therefore, the Cranston Guard Station's water quality monitoring dataset should not qualify as a Reference Watershed, and its dataset should not be used as one.** While WRCAC might entertain the TMDL TF Consulting Teams use of the data in a different manner to support the natural condition goals, its use as a reference condition is not valid.	
2.74	WRCAC	However, do not assume WRCAC will support the use of the 25th Percentile of the	Section 3.2.2.3 of the revised TMDL Technical Report discusses the applicability of USEPA's

		Cranston Guard Station's water quality monitoring dataset as the nutrient Numeric Target concentrations because it is not a reference condition. The second quote above from page 95 of the USEPA river and stream guidance was not fulfilled. In the quote provided from the USEPA guidance specifically provides two other options to set an upper percentile, like the 25th Percentile. Both options contain the phrase "all streams" meaning including reference streams and many other streams; then the upper percentile is used because of some of the streams are expected to be degraded. This is based on the manuals context that states and tribes are collecting data on multiple streams to set tiers of streams based on their water quality level. A regional dataset containing only one stream does not a provide a statistical valid representation of the Aggregated Ecoregion.	guidance based on a single site and recommends using the 25th percentile.
2.75	WRCAC	While one can agree that in most cases a watershed that is 94.2 percent forested should be relatively undisturbed, the use requires full due caution be taken during the approach. The Comment Response to the Peer Reviewer concern should have confirmed that dataset contains sediment loads from events exceed typical winter storms by 100 times. This review step would have not found the dataset to be an appropriate reference watershed. The	Santa Ana Water Board staff disagree. Staff and the Task Force have come to a consensus that naturally occurring reference watershed runoff in the San Jacinto River mountains does sometimes contain 100 times more sediment than typical. In addition, the selection of the 25th percentile does not need to be linked to the threshold in USEPA's guidance about setting nutrient criteria based on a dataset of "all streams" in an ecoregion. The USEPA guidance does not require

		guidance states: "and should have primary parameter (i.e., TN, TP, Chl-ą, and turbidity) values that reflect this condition" as part of evaluation requirements before using the dataset. Therefore, WRCAC agrees with the Peer Reviewer comment "**At the heart of this conclusion is the assumption that the reference conditions used here are actually valid**." Furthermore, this point was not corrected by selecting the 25th Percentile Numeric Targets. The arbitrary selection of the 25th Percentile only adds another reason that underscores this selection was made in a self-serving manner, simply to meet the Staff deadlines; considering the USEPA guidance method's proper application of having sufficient available information. Again, stated another way, because the total monitoring dataset will not be able to achieve the downstream water resource's WQOs, the dataset by itself is not a appropriately used at as a reference condition at the 75th Percentile. And, because there are not multiple other river or stream datasets from this or similar ecoregions included in the Numeric Target database setting the 25th Percentile values as a reference condition does not follow USEPA's guidance. The best use of this watershed data appears to have been the method applied in the 2018 draft when it was aligned with data from two other sources, using the available information in a	a specific criteria or nutrient threshold to be used when establishing a reference site. The guidance allows for selection of a location of minimal disturbance based on expert guidance and then ground truthing its condition. Assuming the selected reference condition has some level of degradation, the 25th percentile can be used to apply conservatism. Santa Ana Water Board staff selected the 25th percentile, then the consultant team calculated the values for TP and TN. The percentile threshold was not a back-calculation from arbitrarily selected TP and TN values.

		manner that is good science during the previous draft 2018 Technical Report, **but only when supplemented by the required stakeholder study identified in 2018 draft Section 7**.	
2.76	WRCAC	**WRCAC Comment on Comment 71 by Jack Brookshire, Ph.D. (TMDL TF Consultant Team Comment 69 in their table):** Regarding the Peer Reviewer's comment: "However, as addressed above, it is my finding that the fundamental basis for the proposed rule change—the reference watershed condition—is not adequately justified nor is how it will be implemented adequately explained. In particular, how the cumulative distribution functions will actually be used is unclear. The reference conditions described assume exceptionally high background nutrient loading." WRCAC supports the TMDL TF Consultants Response at a higher level than the Staff Response. The Consultant Team uses the best available data for form a multiple line of evidence approach to select the Numeric Target at the median concentration. WRCAC does not think the Cranston Guard Station monitoring site is collecting a Reference Watershed dataset, nor was the data collection method using today's level of rigor	The revised TMDL Technical Report provides more detailed presentation of the CDFs. If the scientific basis for using the median is sound, then the debate is more about whether moving to the 25th percentile is being overly conservative. A detailed special study (Task 11) will be conducted in Phase II implementation to allow for more robust data from multiple sites across the watershed to be considered before the more conservative basis is in effect.

		needed to be sufficient to calculate Event Mean Concentrations. However, the TMDL TF Consultant Team applied their best available science to use this dataset more appropriately. Their approach did not use the data by itself, they cross checked it with another tributary reach with relatively low levels of disturbance and Canyon Lake sediment cores that documented historic loadings. In contrast, the Staff Response appears only to have selected the Watershed Reference Condition solely on the basis to be able to achieve their desired Lake WQOs, and do so by passing the cost of in-lake treatment systems onto the backs of dischargers throughout the watershed.	
2.77	WRCAC	As to the Staff Response statement: "That is how the CDF curves will be used to implement the revised TMDL. stakeholders also have the option to demonstrate compliance by showing that the cumulative TN & TP loads discharged from their jurisdiction are less than or equal to the nutrient loads washing off the same land area under natural, pre-development conditions."	The lake sediment cores would be supportive of the values at the 25th percentile when comparing proxies for nutrient enrichment in the modern era to the pre 1800s (Kirby et al. 2005)[1].

[1] Kirby, M.E., M.A. Anderson, S.P. Lund and C.J. Poulsen. 2005. Developing a Baseline of Natural Lake-Level/Hydrologic Variability and Understanding Past Versus Present Lake Productivity Over the Late Holocene: A Paleo-Perspective for Management of Modern Lake Elsinore. Final report prepared for LESJWA. March 2005.

		The application of this method of compliance with the proposed allocations will only apply infrequently to rare dischargers. Especially so because the lakes also require watershed runoff to backfill the lake levels after long evaporation periods. This necessary secondary objective eliminates BMPs that provide total retention or infiltration of the site's runoff as the treatment process. **In Conclusion** **The findings of WRCAC's evaluation of the Peer Review Comments dealing with the Watershed Reference Condition Numeric Targets, as well as the Staff Responses, and TMDL TF Consultants Responses results in its own multiple lines of evidence that the use of the 25th Percentile conservative Numeric Targets concentrations have a gross lack of good science being applied. Furthermore, it is telling that the Staff Response's repeatedly pushed for a conservative concentration without defending its basis. The resulting Final Allocations nutrient concentrations are most likely to be below a true natural background as discovered by the lake sediment cores. Furthermore, use of the median concentration values still requires a Section 7 Watershed Reference Condition study. The next sections contain more detail regarding the**	

		sources of information and evaluation steps WRCAC used during the Numeric Target evaluation.	
2.78	WRCAC	Additional Multiple Lines of Evidence Highlighting Discrepancies in the Selection Methods Applied Durning Selection of the Reference Watershed Condition Numeric Targets The following subsections continue to present multiple lines of evidence that the use of good science to set the Watershed Reference Condition Numeric Targets was consistently ignored. It appears to be whenever the use of good science made it inconvenient to justify the Staff's desired lake WQOs in this *nationally* unique watershed guidance was ignored. **According to the Technical Report development team's own word this watershed is unique in the nation.**	As the San Jacinto River Watershed is unique, a novel approach to attaining water quality objectives is needed. See below for line-item responses.
2.79	WRCAC	USEPA Level III Ecoregion Guidance The draft 2024 Technical Report states: "No watersheds comparable to Canyon Lake or Lake Elsinore exist in southern California or other areas with similar climatic regimes. As such it is not possible to establish allowable pollutant loads using another watershed/downstream waterbody combination to describe an expected	See response to comment 2.71.

		reference condition. Instead, a lake water quality modeling scenario representative of a hypothetical reference watershed condition for drainage areas to Lake Elsinore and Canyon Lake was developed to provide the basis for establishing numeric targets. This approach will be described in this section. In addition, this section will briefly describe the characteristics of the reference watershed condition for Lake Elsinore and Canyon Lake." (Section 3. Numeric Targets, page 109) And, quotes the USEPA guidance for proper use of Ecoregions is touched upon in Section 3.2.1.1.: 1. "Define the reference site, whereby runoff nutrient concentrations representative of a completely natural, or reference, watershed were assumed to comprise the entire drainage area to the existing lake basins. 2. The USEPA Region 9 Guidance for Developing TMDLs in California (USEPA, 2000a) recognizes the utility of hillslope targets, such as a reference watershed nutrient concentration, for setting numeric targets in a TMDL for impaired receiving waters (page 3): ""…It is sometimes possible to supplement instream indicators and targets with hillslope targets - measures of conditions within the watershed which are directly associated with	

		waterbodies meeting their water quality standards for the pollutant(s) of concern." However, even with these acknowledgements, the recommended Ecoregion approach was not applied.	
2.80	WRCAC	**Lack of Use of Good Science: Reference Watershed Selection in Conflict with USEPA Ecoregion Guidance** The Peer Reviewers' comments and comment responses did not include or address the question of whether the reference watershed condition's Level III Ecoregion represents the entire San Jacinto River Watershed's Level III Ecoregions. Additionally, no comments were provided concerning deviations from applying the USEPA Region 9 Guidance for Developing TMDLs in California (USEPA, 2000a). Specifically, the clause: "Define the reference site, whereby runoff nutrient concentrations representative of a completely natural, or reference, watershed was assumed to comprise the entire drainage area to the existing lake basins." It appears that having some data was more important than the misuse of data in the development of Numeric Targets. Figure 3 below, presents an excerpt of the USEPA Level III California Ecoregions map.	The Cranston Guard Station provided the most robust available dataset at the time. Additional data will be collected from streams that fall within other Level III ecoregions through a special study of reference watershed conditions (Task 11). Results may be used to justify future revisions to the TMDLs.

		[Figure 3; WRCAC comment letter; PDF pg 44] The area highlighted by a red circle in Figure 3, includes the Level III Ecoregions of interest for the San Jacinto River Watershed.[2]	
2.81	WRCAC	The Cranston Guard Station is located at the base of the Level III Ecoregions used to define the San Jacinto Mountains natural ecosystem; namely 8d, 8e, and 8f. The subwatershed Zone 9 is the monitoring station's location in the watershed. Zone 9 spans 90,024 acres which is 18.9 percent of the watershed. In contrast the San Jacinto plains area is divided up into Level III Ecoregions that describe the semi-arid desert inland valleys and inland hills; with gentler slopes and less precipitation and its associated natural vegetation. These Level III Ecoregions are 85k and 85l. The USEPA map descriptions of these ecoregions are provided below. As can be noted there is a substantial difference in vegetation, precipitation and soil slopes between these two groups of Ecoregions. San Jacinto Mountains Level III Ecoregions: • 8d, Southern California Subalpine/Alpine Ecoregion: *The Southern California Subalpine/Alpine ecoregion includes the highest elevation areas, generally 8,500 to*	The Cranston Guard Station was selected as a reference site given its general location in the San Jacinto River watershed and its representativeness based on the high percentage of forested lands. Even looking outside of the San Jacinto River watershed, there is limited wet weather nutrient data for undeveloped canyons in southern California.

		greater than 11,000 feet, including peaks such as Mounts San Antonio (Baldy), San Gorgonio, and San Jacinto. Mount San Gorgonio in the San Bernardino Mountains at 11,502 feet is the southernmost point in California with evidence of glaciation. The large distances between these islands" of high elevation habitat contribute to distinctive floras on each major peak. A few endemic alpine plant species occur. Scattered krummholz trees grow in some areas. The subalpine areas contain lodgepole pine, limber pine, and white fir. Some Sierra juniper occurs along with montane chaparral scrub. Gneiss, schist, and granitic rocks are dominant. Annual precipitation ranges from about 36 to 44 inches, and winter snowfall is typical. *• 8e, Southern California Lower Montane Shrub and Woodland Ecoregion: The Southern California Lower Montane Shrub and Woodland ecoregion occurs on the igneous-dominated mountains of the eastern Transverse Range and the Peninsular Ranges at elevations ranging from about 3,000 to 5,000 feet. The chaparral-dominated landscape also contains patches of mixed evergreen woodland consisting mostly of big cone Douglas-fir and canyon live oak. These fragmented, compact groves typically occur in deep canyons and on steep north-facing slopes. Some minor areas of coastal sage*	

		scrub occur near the lower margins, although most of that scrub occurs at lower elevations in Ecoregions 85c and 85f. The mosaic of land cover and vegetation communities is complex in the Peninsular Ranges. Certain chaparral shrubs in the Peninsular Ranges, such as mission manzanita and red shank, have limited ranges in southern California and Baja California. Other shrubs, such as California buckwheat, are ubiquitous. *• 8f, Southern California Montane Conifer Forest Ecoregion: The Southern California Montane Conifer Forest ecoregion occurs on the igneous-dominated mountains of the eastern Transverse Range and the Peninsular Ranges, at elevations generally ranging from 5,000 to 8,500 feet. These high elevations contain a mixed coniferous forest with ponderosa pine, Jeffrey pine, sugar pine, white fir, incense cedar, hardwoods such as canyon live oak and black oak, and areas of montane chaparral. Ponderosa pine tends to be limited to moist areas with deeper soils, with extensive stands occurring in the western San Bernardino Mountains and on the western slope of San Jacinto Mountain. Fires are common in these forests, and in San Diego County in 2003, nearly all conifers in the Cuyamaca area were burned. Recovery of conifers in these southern areas remains uncertain.*	

		SJRW Plains (A.K.A. Valleys and Hills) Level III Ecoregions: • 85k, Inland Valleys Level III Ecoregions: *The Inland Valleys ecoregion has less marine influence on climate compared to other valley regions to the west such as Ecoregions 85b and 85d. It consists of alluvial fans and basin floors immediately south of the San Gabriel and San Bernardino Mountains of Ecoregion 8, and includes the San Jacinto and Perris Valleys toward the south. Ecoregion 85k includes some floodplains along the Santa Ana River. The soil temperature regime is thermic and soil moisture regime is xeric. Vegetation historically included Riversidean coastal sage scrub, valley grasslands, and some riparian woodlands. The ecoregion now is heavily urbanized. A few areas of pasture or cropland persist.* • 85l, Inland Hills Level III Ecoregions: The moderately steep to steep Inland Hills ecoregion is in a hotter and drier environment than the coastal hills of Ecoregion 85c to the west. Elevations generally are between 1,000 and 3,000 feet. Mesozoic granitic rocks are common along with some gabbro, diorite, and Jurassic argillite and graywacke. Diverse habitat mosaics occur with various types of sage scrub mixing with areas of grassland and chaparral. This contrasts with the mostly urbanized surrounding lowland of Ecoregion	

		85k. Interior or Riversidean sage scrub is more widespread than coastal sage scrub communities typical of ecoregions to the west. Annual precipitation is mostly 10–14 inches. In the 2024 Draft Technical Report the selected watershed model PLOAD3, the Cranston Guard Station's monitoring station's contributing area consists of the Level III Ecoregions 8d, 8e, and 8f. This station monitors washoff from TMDL Zone which uses the Idyllwild, CA long-term precipitation annual average of 25.0 in/yr. The other eight TMDL Zones' combined average of their long-term annual average precipitation rates is 11.8 in/yr with a range of values in the eight zones that is +/- 1.1 inches. This watershed has over twice the average annual precipitation rate, much higher elevations that create a Mountain Rain shadow effect, and much steeper slopes. The Mountain Rain Shadow effect creates a temperature range in Idyllwild, CA where the summers are warm, arid, and mostly clear and the winters are long, very cold, snowy, and partly cloudy. Over the course of the year, the temperature typically varies from 25°F to 83°F and is rarely below 17°F or above 90°F.4 According to Eric Kauffman's contribution to the Atlas of the Biodiversity of California5 the modified Köppen Climate Classification the San	

		Jacinto Mountain Range are in the Csa zone (Mediterranean/hot summer) and Csb zone (Mediterranean/cool summer), while the San Jacinto Plains are in the BSk zone (Semi-arid, steppe); which also explains the differences in precipitation, vegetation and temperature. An additional contributing factor to the error of using Cranston Guard Station water quality monitoring dataset is the minimal impact this Level III Ecoregion has on the downstream lakes of concern. The PLOAD watershed model setup defines the Percent Retention of subwatershed zones above Mystic Lake to be 96 percent. This means only four percent (4%) of the nutrient loading moves downstream. Furthermore, the PLOAD model setup structure is based on the science that no Cayon Lake nutrient retention occurs during Mystic Lake overflows; therefore, all the Mystic Lake overflow loading enters Lake Elsinore. **Not only is this Level III Ecoregion atypical for the majority of the SJRW, it is a minimum source of nutrient loading for Lake Elsinore's external loads and does not impact Canyon Lake**. <u>In direct contrast, if the Cranston Guard Station dataset is continued to be pushed forward stating it is a reference condition and is being used to set natural conditions</u>	

		regarding nutrient Numeric Targets, then the full language in Section 3.2.1.1 should be employed. In addition, one Peer Reviewer discussed comparing this region and its Ecoregions with other areas around the nation: for which comparing watershed data in other ecoregions can be inappropriate unless vetted thoroughly.	
2.82	WRCAC	The USEPA's guidance for proper use of Ecoregions is touched upon in Section 3.2.1.1. As is the watershed description that identifies because there are no comparable inland lakes to Lake Elsinore or Canyon Lake that could be considered as comparable reference sites a hypothetical watershed had to be created. This is due to these two Lakes having unique conditions that are not replicated downstream of a natural watershed in the same geographic region. "Therefore, if the premise of the 2024 Technical Report is to create a hypothetical scenario to select the watershed's contributing area's Numeric Targets, then: 1. Define the reference conditions, whereby runoff nutrient concentrations are representative of a completely natural, or reference condition that can be appropriately	The Cranston Guard station dataset is used to represent undeveloped canyons in the watershed that are tributary to Lake Elsinore and Canyon Lake. Runoff from undeveloped canyons can improve water quality in downstream water bodies as long as the runoff is of good water quality. Potential alternative references sites will be evaluated in Task 11. Recent EPA guidance and TMDL development in other locations throughout the United States have supported the approach presented in the revised TMDL Technical Report for LECL (USEPA, 2010[2] and USEPA, 2022[3]). In addition, the Cranston Guard Station may be more representative of a high stream power and the application of the data from this watershed may overestimate nutrient loads in the floodplains. This potential overestimation supports the

[2] USEPA. 2010. Chesapeake Bay Total Maximum Daily Load for Nitrogen, Phosphrous and Sediment. December 29, 2010. https://www.epa.gov/sites/default/files/2014-12/documents/cbay_final_tmdl_exec_sum_section_1_through_3_final_0.pdf. Last accessed May 16, 2025.
[3] USEPA. 2022. Connecticut Statewide Lake Nutrient TMDL Core Document and Appendix 1: Bantam Lake Watershed. January 25, 2022. https://www.epa.gov/system/files/documents/2022-01/bantam-lake-tmdl-approval-docs.pdf. Last accessed May 16, 2025.

		assumed to apply to the entire drainage area in the existing San Jacinto River Basin. 2. The USEPA Region 9 Guidance for Developing TMDLs in California (USEPA, 2000a) recognizes the utility of hillslope targets, such as a reference watershed nutrient concentration, for setting numeric targets in a TMDL for impaired receiving waters (page 3): ““…It is sometimes possible to supplement instream indicators and targets with hillslope targets - measures of conditions within the watershed which are directly associated with waterbodies meeting their water quality standards for the pollutant(s) of concern.” If one was to assume that the Cranston Guard Station water quality monitoring dataset was a proper reference watershed, then one should have used the entire list of guidance steps that fulfill the green highlighted action below: “… It is sometimes possible to supplement instream indicators and targets with hillslope targets—measures of conditions within the watershed which are directly associated with waterbodies meeting their water quality standards for the pollutant(s) of concern. The numeric targets section generally includes the following elements:	application of additional conservatism by using the 25th percentile value.

		• identification of one or more instream indicators (and possibly hillslope indicators) and the basis for using the indicator(s) to interpret or apply applicable water quality standards • identification of target levels for each indicator and the technical basis for the targets • comparison of historical or existing conditions and target conditions for the indicators selected for the TMDL." The green highlighted section of this quote indicates how the following bullet list is to be applied. Conflicts with the way the monitoring data was applied with the USEPA guidance include: • Mystic Lake has 96 Percent retention and does not load Canyon Lake; therefore, this subwatershed has minimal influence on the two downstream lakes • The allocations are applied to land uses that do not experience the High Soil Erosion level, and the upland runoff volume and velocity in the upland areas cannot transport Total Suspended Solid (TSS) concentrations of 21,000, 27,000, 50,000 and 59,000 mg/L. Most upland sites cannot carry even the moderate amount of TSS concentrations experienced in this "reference condition"	

		subwatershed. Because the average annual rainfall assigned to Zones 1 through 8 are less than half of Zone 9's 25.00 inches per year used in the PLOAD watershed model's runoff and nutrient loading estimation calculations. o The ***Stream Power*** of the Zone 9 storm events are sufficient to erode and then transport the high TSS concentrations; where the Stream Power experienced in the San Jacinto plains are not sufficient. **[Contrary to what the name implies, stream power also applies to any channelized flow, including gully forming channelized flows.]** o The stream power equation is: W = ($Density\ of\ Water$ (kg/m3) $x\ Gravity\ Acceleration$ (kg/m2) $x\ Discharge$ (m3/$second$) $x\ Slope$ (m/m) Or, W = 9,810 ((kg/m^3) x Discharge (m3/$second$) x Slope (m/m) **Which demonstrates how important slope and velocity (discharge) are to creating sufficient stream power to cause the high levels of erosion experienced and then transport it downstream to the Cranston Guard Sation monitoring site. Again, the PLOAD model estimates Average Annual precipitation in Zones 1-8 to be less than half of Zone 9, and the vast majority of**	

		Zones 1 – 8 anthropogenic land uses are on slightly sloped lands. **• The Lake Elsinore nutrient loading sources Atmospheric Deposition and Sediment Nutrient Flux provide 72 percent of the TP load, and 79 percent of the TN load. Whereas the Zones 7, 8, and 9 nutrient loading percentages are 1 percent for TP, and 0.3 percent for TN.**	
2.83	WRCAC	**In summary, the contributing area that the Cranston Guard Station monitor fails to meet the prerequisite provided by the USEPA Guidance, states as:** "which are directly associated with waterbodies meeting their water quality standards for the pollutant(s) of concern**."** **Namely, the lack of being directly associated with the downstream lakes includes:** **1. The nutrient loading of this subwatershed has no impact Canyon Lake** **2. The nutrient loading of this subwatershed experiences a Mystic Lake assigned Percent Retention value of 96 percent, meaning only four (4) percent loads Lake Elsinore** **3. This subwatershed is responsible for nutrient loads entering Lake Elsinore at 1 percent for TP, and 0.3 percent for TN Additionally, Which includes following the USEPA guidance of selecting a lower**	See responses to comments 2.81 and 2.82.

		quality percentile from the reference watershed like the 75th percentile value for each numeric target. The guidance also does not condone the use of an arbitrarily low 25th percentile value in a manner to simply to mimic watershed conditions from other regions. The contributing area of the Cranston Guard Station's monitoring site is recording a naturally occurring transport of high soil erosion loads. These loads are part of the pollutant loading dynamics. Which is another reason to consider the subwatershed is not a reference condition; nor should it be used to represent the other subwatershed Zones without forest cover, and having gentler slopes.	
2.84	WRCAC	Additionally, the 2000 USEPA Nutrient Criteria Technical Guidance Manual – Rivers and Streams (EPA- 822-B-00-002) a reference stream is determined by: "Identification of reference streams allows the investigator to arrange the streams within a class in order of nutrient condition (i.e., trophic state) from reference, to at risk, to impaired. Defining the nutrient condition of streams within a stream class allows the manager to identify protective criteria and determine priorities for management action. Criteria developed using reference reach	USEPA guidance for criteria development in streams is largely focused on dry weather conditions. The selection of the 25th percentile is not linked to the threshold in USEPA guidance regarding setting nutrient criteria based on a dataset of "all streams" in an ecoregion. Instead, it is a logical threshold with support from a statistical standpoint and precedent in other USEPA regulation development guidance. In more recent guidance than the USEPA 2000 guidance, USEPA has supported TMDL development approaches comparable to the one used in this revised TMDL Technical Report (USEPA, 2010 and USEPA, 2022).

		approaches may require comparisons to similar systems in States or Tribes that share the ecoregion so that criteria can be validated, particularly when minimally-disturbed systems are rare. Best professional judgement-based reference reaches may be identified for each class of streams within a State or Tribal ecoregion and then characterized with respect to algal biomass levels, algal community composition, and associated environmental conditions (including factors that affect algal levels such as nutrients, light, and substrate). The streams classified as reference quality by best professional judgement may be verified by comparing the data from the reference systems to general population data for each stream class. Reference systems should be minimally disturbed and should have primary parameter (i.e., TN, TP, chl a, and turbidity) values that reflect this condition. Factors that are affected by algae, such as DO and pH, should also be characterized. At least three minimally impaired reference systems should be identified for each stream class (see Chapter 2). Highest priority should be given to identifying reference streams for stream types considered to be at the greatest risk from impact by nutrients and algae, such as those with open canopy cover, good	

		substrata, etc. [Conditions at the reference reach (e.g., algal biomass, nutrient concentrations) can be used in the development of criteria that are protective of high quality, beneficial uses for similar streams in the ecoregion.] …" (page 94) And, selecting nutrient criteria that is based on 25th Percentile distribution must be based on a large dataset that contains samples collected from many streams: "The second frequency distribution approach involves selecting a percentile of (1) all streams in the class (reference and non-reference) or (2) a random sample distribution of all streams within a particular class. Due to the random selection process, an upper percentile should be selected because the sample distribution is expected to contain some degraded systems. This option is most useful in regions where the number of legitimate "natural" reference water bodies is usually very small, such as highly developed land use areas (e.g., the agricultural lands of the Midwest and the urbanized east or west coasts) …" (page 95) The second quote from page 95 of the USEPA river and stream guidance was not fulfilled. In this quote the USEPA guidance specifically provides two other options to set	

		an upper percentile, like the 25th Percentile. Both options contain the phrase "all streams" meaning reference streams and where the upper percentile is used because of the streams are expected to be degraded. This is based on the manuals context that states and tribes are collecting data on multiple streams to set tiers of streams based on their water quality level. A regional dataset containing only one stream is not a statistical representation of the region. The Staff Response to introduce "a more conservative number", referring to the 25th percentile used in the draft 2024 Technical Report, which is an attempt to manipulate the dataset statistics to select a set of Numeric Target nutrient concentration levels that aligned with watersheds outside the region. By doing so, the larger storm events are removed from consideration. Not having a reference watershed dataset that encompasses the full range of low to high storm event values eliminated the USEPA guidance methods, because this is the only dataset being evaluated. The full range of storm events' flows are an important part of the guidance, because in a valid reference watershed the wet weather loading needs to be considered. The wet weather nonpoint source washoff introduces a reasonable level of naturally occurring TP, TN, and TSS	

		loading that the estimation calculation for washoff acknowledge as a true and appropriate range of loadings from natural conditions. The USEPA River and Stream Nutrient Guidance illustrates the difference between using a dataset containing all streams in an Ecoregion which uses the 25th Percentile, and a dataset from a watershed reference site which recommends **using the 75th percentile value of the dataset, Figure 4.6**	
2.85	WRCAC	Furthermore, using the 25th percentile to set Numeric Targets ignores the USEPA Region 9 guidance's quote the Technical Report uses to justify the reference condition approach; the quote listed above begins with the wording: ***"… It is sometimes possible to …"*** The WRCAC comprehensive review of the dataset's finding presented in the next subsection clearly indicates that there are substantial reasons why this monitoring station is not one of the specified "sometimes possible" instances being referred to by USEPA Region 9. USEPA demonstrates how to optimize region specific Nutrient Criteria int their Technical Guidance Manual, for Rivers and Streams. Ecoregions that are well monitored start the nutrient criteria evaluation by sorting all	The basin plan amendment does not include nutrient water quality objectives for streams. Development of water quality objectives for streams would require a very different process. In watershed model development, any available data that is representative of a given land use is used in parameterization. Selecting the 25th percentile of grab samples as opposed to the 25th percent of reference sites should not be viewed as identical.

		steams into Tiers of water quality. It is best to have three reference streams, and many stream water quality datasets to create a 75th Percentile distribution for reference streams and a 25th Percentile. Because the San Jacinto River Watershed is "unique" applying data from outside of the watershed in not available. **Unfortunately, the use of the 25th Percentile distribution is not appropriately applied to one stream's dataset. The reason the 25th Percentile is applied to many stream datasets, is having many streams makes it highly likely that there is a number of streams more poor water quality datasets along with a few reference watershed streams. While the San Jacinto River watershed managers are not setting watershed reference condition is not setting nutrient criteria for regional watersheds, the process for selecting Numeric Targets determined from natural background from a Watershed Reference Condition is identical.** [Figure 4, WRCAC Comment Letter, PDF pg. 50]	
2.86	WRCAC	While the draft 2018 Technical Report did not follow these USEPA nutrient criteria development guidance's, it did use two stream monitoring datasets, and lake sediment cores to determine the median	See response to comment 2.77.

		values; this method used the best available information instead of selecting an arbitrary percentile distribution from one stream's data; this is especially problematic as the Staff knew that stream had episodes with high TSS concentrations which also carries sediment attached particulate phosphorus.	
2.87	WRCAC	Improper Analysis of the Cranston Guard Station Data As late in the 2018 draft Technical Report's Peer Review process, WRCAC believes that the TMDL development team and Regional Board staff did not fully evaluated the storm event dataset quality. WRCAC believes this because the draft 2018 and 2024 Technical Report continues to use terms like Event Mean Concentrations and reference watershed for Cranston Guard Station's waters quality monitoring dataset. However, the two CDM Smith slides that WRCAC presented in the Peer Reviewer and Staff Responses section, do demonstrate the TMDL TF Consultant Team did consider the TSS dataset. What the fail to discuss at any point in the draft Technical Reports is the poor data collection timing methods that the US Forest Service applied in the first decade of the 2000s. This issue appears to have been minimized throughout the 2018 draft Technical Report development which contains a reference to Dr. Horne's 2002	Revised TMDL Technical Report Section 3.2.2.3 provides a basis for why the Cranston Guard Station was selected to be representative of a reference watershed because the watershed has less than 0.4 percent imperviousness and greater than 95 percent of the land use is undeveloped. Some samples collected by the US Forest Service were found to have extremely high TSS and nutrient concentrations, thus the influence of more powerful storms, previously documented in Horne (2002), is represented within the existing dataset for the San Jacinto River (SJR) at Cranston Guard Station. Limitations of the sample collection methods used by the US Forest Service during the first decade of the 2000s are identified on page ES-22 as follows, "The sampling methodology used [by US Forest Service] was not developed to facilitate flow-weighted composite event mean concentrations to be computed for these nutrients." Additionally, a footnote to Table 3-2 explains that 'event means' are based on events with varying number of samples. In the revised TMDL, a margin of safety (MOS) is provided by using conservatism in the approach used to address this limitation, which in the case of the

		report in Section 2.4.3 Watershed Soil Erosion on page 2-76 that states: "Monitoring data show very high concentrations of suspended solids and nutrients during high intensity storm events (most recently in January 2011) that generate significant soil erosion, even from undeveloped hillsides. Sediment loads from these types of events may exceed typical winter storms by 100 times (Horne 2002). While these events may be infrequent and episodic, the impact to water quality in the downstream lakes persists for multiple years in the form of enrichment of bottom sediments and subsequent nutrient flux rates to the water column (see Section 4)" Specifically, in the Horne (2002) report he identified a comment paper by Kilroy (2001) that states: "The most likely explanation for the discrepancy between the estimate of sediment and TP accumulation and that made the City of Lake Elsinore (Kilroy, 2001) lies in the transport of sediment in normal winter storms and that in the 10 or 50-year storms. Kilroy based his estimates on normal winter storms. Typically, major storms carry about 100 times more particulate matter, such as particulate phosphate than normal	SJR at Cranston Guard Station dataset involved computing statistical thresholds based on grab samples rather than event means. Lastly, the revised TMDL Technical Report calls for future watershed monitoring to involve flow-weighted composite sampling in a revised TMDL monitoring program, which will include the reference watershed study (see Table 8-1). As a result, the proposed TMDL is established as a phased TMDL due to the uncertainty associated with the data from the Cranston Guard Station. During Phase II, studies and data collection will be performed to address data uncertainty and to review the appropriateness of the conservative final number targets, total TMDLs, WLAs and LAs that were developed using data from the Cranston Guard Station.

		storms. The logarithmic shape of the relationship between water velocity and sediment transport explains the difference between the directly measured sediment accumulation and that found from estimates made in relatively low water velocities. Thus, increasing the winter storm flow by tenfold, the sediment carried will increase by about 100 fold. The lack of good measurements in major storms is possibly the greatest problem in TMDL calculations and lake P and sediment budgets. Several storms sampled only had one or two samples collected, while other storms sampled had five or six samples collected on the same day. Only one storm sampled, in 2010, has a sufficient number of samples collected across the hydrograph to generate a proper Event Mean Concentration. The hydrograph data was gathered from a USGS water quantity monitoring station downstream that is relatively close to the Cranston Guard Station's monitoring site. The USGS station is close enough to Cranston Guard Station to be used for approximations. Given the previous supporting subsection on USEPA guidance, and the narrative included in the 2024 draft Technical Report that states: "1. Define the reference site, whereby runoff nutrient concentrations representative of a completely natural, or reference, watershed	

		was assumed to comprise the entire drainage area to the existing lake basins." The presence of available monitoring data that included Total Suspended Solids, and the referenced concern by Dr. Horne, the method uses to select the Numeric Targets failed to address the USEPA guidance	
2.88	WRCAC	**Lack of Using Good Science: Cranston Guard Station's Water Quality Statistics** The WRCAC comprehensive evaluation of the Cranston Guard Station's water quality monitoring dataset findings uncovered many irregularities that confirm the data does not depict a reference condition for the SJRW plains. Building on the finding that the primary sources of washoff loading that enter the two lakes of concern are downstream of Mystic Lake, the sources of outstanding high nutrient concentration loading is primarily due to the high sediment erosion rates identified in Dr. Horne's 2002 Paper. Figures 5 and 6 below illustrate the severe impact high soil erosion has on increasing TP loadings. Figure 5 depicts the dataset's correlation between TP and higher Total Suspended Solids (TSS) values; and Figure 6 the correlation between and TP, for and TSS using seven storm events with lower TSS values.	Task 11 of the phase II implementation plan is intended to investigate potential alternate reference condition locations. For consideration in this task, a flow-weighted composite sample would be needed similar to the samples collected from the lake inflow watershed monitoring sites. Cost and feasibility will need to be considered in smaller canyons that generate flashier hydrographs when developing the study design for the reference watershed nutrient special study. Also see response to comment 2.64.

		[Figure 5, WRCAC Comment Letter, PDF pg. 52] [Figure 6, WRCAC Comment Letter, PDF pg. 53] A detailed explanation of the comprehensive evaluation of the Cranston Guard Station's water quality monitoring dataset is attached to this comment submittal. The PDF file name is "WRCAC Corrected Final Appendix A Reply to March 1 MOS Email 010925.pdf". On January 9, 2025 an Errata was completed for the March 17, 2024 submitted memo to clean up typos, some terminology, and two graphs that were draft versions of the final, mistakenly included in the memo. The Errata did not change the findings of the evaluation. Figures 5 and 6 demonstrate the high correlation between TP and TSS because each figure has large R2 values, R2 = 0.7489 and R2 = 0.8965 respectively. The large influence TSS concentrations (sediments) have on TP concentrations is primarily because of the larger fraction of particle phosphorus in the TP due to the transporting of more eroded soils. This validates Dr. Horne's 2002 Report statement. Furthermore, the US Forest Service did not collect the grab samples using a method that would be acceptable today. WRCAC compared the 51 water quality samples and	

		divided them up into groups based on using adjacent calendar days. Then, WRCAC accessed the USGS San Jacinto River near San Jacinto water quantity monitoring station because it is located close to the Cranston Guard Station water quality monitoring site. This allowed WRCAC to use the USGS number 11069500's daily Cubic Feet Per Second (CFS) stream flow values that coincided with the storm events in the Cranston Guard Station's period of record.	
2.89	WRCAC	This allowed WRCAC to examine the storm event hydrographs and note when the samples were collected according to the hydrograph's rise, peak and fall. This evaluation discovered many peculiarities that limit the useability of many of the data points: 1. Only one storm event collected a sufficient number of samples across the hydrograph to correctly calculate an Event Mean Concentration for the storm event. Data collected from January 14, 2010 to February 1, 2010 collected more than enough TSS and TP to assess the adequacy of the storm event monitoring, Figure 7. 2. Several storm event's sample collections occurred on one day. For small datasets, like the 51 samples collected at this site, collecting multiple samples on a single day can skew the statistics when the context of the data collected is not reviewed. For	Staff disagree with the suggested alternative calculation method. The revised TMDL Technical Report recognizes the variable number of samples over the course of 10 wet events. Samples collected on the same day are spaced apart by at least one hour and are not duplicate samples. An average of all samples collected within each of the 10 events was computed (this is referred to as an event mean in Table 3-2 and not to be confused with an Event Mean Concentration that would require flow-weighting of sample results spread evenly over a hydrograph). The difference in the statistical metrics based on these event means and all grab samples provides the implicit margin of safety as described in revised TMDL Technical Report Sections 3.2.2.3 and 6.1.

		example, the six (6) water quality sampling data collected on January 23, 2008, Figure 8, was reviewed for potential problems. The collection day is on the rise of a large flow increase. This timing of collection is insufficient to use storm event loading calculations. However, the data (Table 1) from the six samples illustrate how TSS influences TP concentrations due to particulate TSS associated phosphorus increases. 3. The five paired samples collected on January 5, 2008, Figure 9, created problems that blocked the estimation of storm event pollutant loading and will skew the dataset's percentile ranking by introducing redundant results for two of the five samples Table 2. [Figure 7, WRCAC Comment Letter, PDF pg. 54] [Figure 8, WRCAC Comment Letter, PDF pg. 55] [Figure 9, WRCAC Comment Letter, PDF pg. 56] [Table 1, WRCAC Comment Letter, PDF pg. 55] [Table 2, WRCAC Comment Letter, PDF pg. 56] In Table 3, the third storm event (February 26, 2004) sampling collected pairs occurred	

		on 1:02:00 and 5:00:00; but provide redundant information. The information provided on this day, were experiencing the same conditions. By quickly grabbing samples on the same day that do not supply new information, February 26, 2004 sampling skewed the dataset statistics by creating an unequal level of influence for the conditions on that day. [Table 3, WRCAC Comment Letter, PDF pg. 57] Table 3 compares two storm events side by side, where storm event 3 has two pairs of samples collected on the same day and storm event 5 collects one sample pair each day. One can observe how sampling the same condition hours apart could skew the dataset statistics if a time-weighted average is not used for storm event 3. This clear illustration of redundant sampling on the same day makes that day twice as important as the other day's with only one sample, if not averaged. The proper use of this type of redundancy in the draft 2024 Technical Report did not occur when calculating 51 sample statistics for the Median or 25th Percentile Numeric Targets. The impact from not using this type of good science is demonstrated by the information provided in Table 4 on the next page.	

		In the Table 4 example, the review for redundant samples began with seeking two TP sample concentrations on the same day with concentration differences within 0.05 mg/L of each other. This small difference is likely to be within the analytical margin of uncertainty. Then, a comparison of TSS mg/L was made to make sure the sediment conditions were also redundant. Finaly, a review of how many hours between samples was completed to make sure the time span was narrow (subjectively). Completing a review of all 11 storm events using the above description for redundant sampling, five pairs were found that are redundant. Then the 50th and 25th percentile equations were run on all 51 TP data points. Next, the five redundant values were removed by selecting the lowest concentration of the two values, and the 50th and 25th percentile equations were rerun to demonstrate the change in Numeric Target: • 51-point 50th Percentile value 0.32 mg/L TP versus 46-point 50th Percentile value 0.35 mg/L TP • 51-point 25th Percentile value 0.15 mg/L TP versus 46-point 50th Percentile value 0.17 mg/L TP	

		To demonstrate how loading results can change when applying the statistical value based on the simple use of complete dataset samples collection statistics versus using a method to review the data for redundancy and the average the redundant sample in a small dataset is provided in Table 5. A better approach would be to use Event Mean Concentrations (EMC); but the data was not collected in a manner to provide for the EMC values properly. The 2018 original PLOAD setup used a 50th Percentile Numeric Targets of 0.32 TP mg/L. Using the 2024 PLOAD model, Table 4 shows a reduction in TP loading reduction requirements by Zone when the adjusted 50th Percentile Numeric Target of 0.35 TP mg/L. [Table 4, WRCAC Comment Letter, PDF pg. 58] The current 50th percentile total for all nine Zones is 6,761 TP kg/yr. By adjusting the 50th Percentile Numeric Target to remove redundant values by time-weighted averaging creates the total for all nine Zones is reduced to be 5,906 TP kg/yr. This the difference between the two TP Numeric Target reduction requirements is 855 TP kg/yr (12.6 %) less. The process used to select appropriate Numeric Targets blindly used reference condition data without	

		considering the unequal weight collecting multiple samples on one day could have on the nutrient concentration Numeric Targets, and associated allocations. This is another instance where the lack of Good Science was not applied.	
2.90	WRCAC	**Lack of Using Good Science: PLOAD Watershed Model Calibration and Goodness of Fit Testing** WRCAC representatives use the PLOAD model as part of the AgWDR surface water Annual Reporting requirements for compliance with the currently USEPA TMDL allocations; which is currently the 2004 TMDLs. As such a WRCAC representatives has developed a proficiency in running the model. Because compliance status with the currently approved TMDLs is part of the Ag General Order, WRCAC requests the latest version of PLOAD so the assessment can use the best available science. Therefore, the most recent PLOAD version used in the 2024 Technical Report was provided to WRCAC on July 18, 2024. This comment's evaluation of the Numeric Targets nutrient concentrations of the 25th Percentile values of 0.16 TP mg/L and 0.68 TN mg/L, has two important model setup and modeling scenario results that that provide evidence that the nutrient concentration	No response required.

		Numeric Targets are not based in a good science.	
2.91	WRCAC	**The First modeling result** that manifests as an issue stemming from the lack of good science is that even though the 25th Percentile Numeric Targets are selected; the calibration process and associated measurement of the Goodness of Fit test are based on the 50th Percentile Numeric Targets. For this modeling calibration the Goodness of Fit test is a direct comparison of the PLOAD estimated TP and TN loading at baseline conditions with the watershed's water quality monitoring water quantity and quality measurements used to produce watershed nutrient loading results at the point of monitoring. This information and results can be found in the PLOAD spreadsheet entitled "PLOAD_Fit". The PLOAD model uses a complex set of equations to estimate TP and TN washoff nutrient loadings. At the core of PLOAD estimations are the reference watershed's Numeric Targets for nutrient concentrations values in Forested and Open Space Land Uses. The entire list of the PLOAD MS Excel spreadsheets dedicated to run different loading allocation scenarios, draw upon the Numeric Target concentration values contained in the PLOAD spreadsheet named "Parameters". The Parameters spreadsheet	The commenter is correct that the calibration of the watershed model for current land use distribution used the median nutrient concentrations from the San Jacinto River at Cranston Guard station to simulate runoff from current forest/open space lands in the watershed. Parameter adjustments in the calibration were made to nutrient concentrations for all land uses within ranges of literature values. Using a lower (25th percentile) value for nutrients for forest / open space and higher values for developed (urban, agriculture) could have yielded similar Goodness of Fit. The modelers did not think it would be necessary to increase estimates of existing loads from developed lands based on the decision to increase conservatism in the final allocations, thus the median value was used in the source assessment modeling for forest/open space. Allocations and existing loads will be reconsidered with future updates to land use mapping (Task 15).

		contain the Technical Report's finding regarding "Event Mean Concentration (mg/L)". The name Event Mean Concentration (mg/L) no longer applies to this watershed as the Percentile calculations are performed on individual data points not on mean concentrations. Table 5, below is a copy of the table's data in its entirety. There are five PLOAD spreadsheets that perform loading calculations. The following list provides which Numeric Target percentile is used, or which previous calculation spreadsheet is used to calculate the desired loading estimate: 1. **PLOAD_LongTerm (Appendix B)** – This spreadsheet calculates an **"Owner" baseline loading for edge-of-field using TP and TN runoff concentrations in the 50th Percentile Numeric Targets; TP = 0.32 mg/L and TN = 0.92 mg/L.** In addition, this spreadsheet calculates Canyon Lake Main Lake, Canyon Lake East Bay, and Lake Elsinore nutrient loadings that are adjusted by channel and Mystic Lake Percent retention values. 2. **PLOAD_LongTerm(25th%ile)** – This spreadsheet calculates an **"Owner" nutrient loading by Land Use category. The Forested and Open Space Land Use categories draw upon the 25th Percentile Numeric Targets; TP = 0.16 mg/L and TN =**	

		0.68. The other Land Use categories use the measured or estimated existing condition nutrient concentrations listed in Table 5 below. In addition, this spreadsheet calculates Canyon Lake Main Lake, Canyon Lake East Bay, and Lake Elsinore nutrient loadings that are adjusted by channel and Mystic Lake Percent retention values. 3. **PLOAD_Fit** – This spreadsheet **calculates baseline loading for edge-of-field using TP and TN runoff concentrations in the 50th Percentile Numeric Targets; TP = 0.32 mg/L and TN = 0.92 mg/L to use in the** spreadsheet's lake segments Canyon Lake Main Lake, Canyon Lake East Bay, and Lake Elsinore Goodness of Fit test. In this spreadsheet the nutrient loadings are first adjusted by channel and Mystic Lake Percent retention values. **Then, the Goodness of Fit process sums each lake segments' 50th Percentile loading totals from each lake segments' Zones in contributing area and compares it to measured loading.** To calculate measured loading two spreadsheets, WQ Data and Runoff Data, contain the monitoring station datasets and simple statistics over different period of records, The spreadsheet CL to LE then draws upon the data spreadsheets to calculate AFY, TP (kg/yr), and TN (kg/yr) for different monitoring periods of record from the complete period of record, 2000 to 2022	

		water years. The CL to LE spreadsheet then calculates 10-yr Annual Average values, Calibration Period Annual Average (2006-2022) values, and Canyon Lake to Lake Elsinore overflow values. 4. **Interim Allocations (A.K.A., Interim Milestones) – This spreadsheet calculates the Interim Milestone by retrieving the Acre Feet per Year (AFY) of every Land Use category in each Responsible Agencies' (A.K.A, Owner in Item 1 and 2 above) Zones that they have a footprint in, and multiplying the AFY times the 50th Percentile Numeric Targets of TP = 0.32 mg/L and TN = 0.92 mg/L and a mass conversion coefficient.** Then, another step also calculates all the responsible Agencies' land use categories summed by Zone and then again for Zone totals to generate different results for tables in Section 6. In addition, this spreadsheet calculates the reduction requirements for all Responsible Agencies by subtracting the Interim Milestone results from the Baseline results in the PLOAD_LongTerm (Appendix B) spreadsheet. This spreadsheet produces the Interim Milestone values used in the Technical Report's Table 6-1 Allocations for Watershed Runoff in Canyon Lake Nutrient TMDLs; Table 6-2. Allocations for Watershed Runoff in Lake Elsinore Nutrient TMDLs, and Table 6-3. Nutrient Load Reduction Required	

		for Watershed Jurisdictions Downstream of Mystic Lake to Lake Elsinore and Canyon Lake Nutrient TMDLs. **[Note: this spreadsheet uses the 50th Percentile Numeric Targets that the Goodness of Fit test in the spreadsheet PLOAD_Fit.]** 5. **Final Allocations– This spreadsheet calculates the Final Allocations by retrieving the Acre Feet per Year (AFY) of every Land Use category in each Responsible Agencies' (A.K.A, Owner in Item 1 and 2 above) Zones that they have a footprint in, from the PLOAD_LongTerm (Appendix B) and multiplying these AFYs by the 25th Percentile Numeric Targets of TP = 0.16 mg/L and TN = 0.68 mg/L, and a mass conversion coefficient.** Then all the responsible Agency's land use categories are summed by Zone and then again by all Zones to generate tables for Section 6. In addition, this spreadsheet calculates the reduction requirements for all Responsible Agencies by subtracting the Interim Milestone results from the Baseline results in Item 1 above. This spreadsheet produces the Interim Milestone values used in the Technical Report's Table 6-1 Allocations for Watershed Runoff in Canyon Lake Nutrient TMDLs; Table 6-2. Allocations for Watershed Runoff in Lake Elsinore Nutrient TMDLs, and Table 6-3. Nutrient Load Reduction Required for Watershed Jurisdictions Downstream of	

		Mystic Lake to Lake Elsinore and Canyon Lake Nutrient TMDLs. **[Comment: this spreadsheet's use of 25th Percentile values is of great concern. Since the 50th Percentile Numeric Targets the Goodness of Fit in the spreadsheet PLOAD_Fit was used, the 25th Percentile Numeric Targets were not provided. Were they tested? The Goodness of Fit test for the 25th Percentile Numeric Targets is evaluated below and shows a substantial increase in TP underestimation compared to San Jacinto River measurements when using the 25th Percentile Numeric Targets.]**	
2.92	WRCAC	The Supplemental Water allocations are based on measured values from EVMWD recycled water. In addition, some tables in the Technical Report sum all discharges according to the San Jacinto River, Salt Creek, and the San Jacinto River and runoff in Zone 1. This does not represent delivered nutrient loading but is useful to visualize monitoring station's contributing areas; especially when the Zones above andbelow Mystic Lake are listed separately.	Comment noted.
2.93	WRCAC	The PLOAD model set up has a few issues, some are due to the wide variability in precipitation while other issues could be improved by applying better science. The lack of using good science when working with the PLOAD model setup appears in the spreadsheets PLOAD_Fit and Final	This type of calibration and validation in watershed modeling generally applies to dynamic models. In the case of the LECL TMDL, a static model was selected. The term "fit" was used instead of calibration to avoid unnecessary concerns that could arise if one were interested in understanding individual wet weather event performance or event

		Allocations. It is immediately apparent that the Goodness of Fit test in the PLOAD_Fit spreadsheet lacks a validation period to test the calibration period's setup. A Goodness of Fit test is usually completed twice by dividing up the existing monitoring datasets into two periods; a calibration period and a validation period. The first period is for testing the calibration modeled estimates against measured results (monitoring); if necessary, the model setup can be adjusted to improve the calibration. The second independent dataset is for running the Goodness of Fit test for validation of the calibration. Not having a validation period to test the results using a different period of record is not possible when setting up a model for a 10-year rolling average compliance period and the best available data has only 16-years of monitoring. Not having a validation period test can reduce the confidence others have in the model setup.	seasonal patterns. The Task Force decided to employ a simple watershed modeling approach in this TMDL.
2.94	WRCAC	The PLOAD model's setup for hydrology has an extremely strong Goodness of Fit test result when using the selected monitoring period of record for measured Average Annual Runoff Volume (2006-2022). With a test result for the San Jacinto River (to Main Lake) being -1.4% and the test result for Salt Creek (to East Bay) being 0.9% one has confidence the hydrology estimations are a good fit to the watershed. This version of a	Comment noted. The Santa Ana Water Board will consider potential refinements during a future TMDL revision, if needed. In addition, the model years reported in the revised TMDL Technical Report are correct.

		Goodness of Fit test applies a simple equation [Equation 1] to compare the difference between measured amounts and PLOAD estimated amounts. **[Equation 1]** $\boldsymbol{Percent\ Results} = (\boldsymbol{Measured} - \boldsymbol{PLOAD}\ \boldsymbol{Estimated})\ \boldsymbol{Measured}$ A negative percentage appears when the PLOAD estimated amount is lower than the Measured amount; vice-versa a positive percentage appears when the Measured amount is higher than the PLOAD estimated amount. The hydrology setup in PLOAD can be complemented, even though a year's Goodness of Fit test is much easier than achieving a monthly Goodness of Fit test result, this hydrology result is notable. The number of input values that are used to estimate AFY, and the wide range of site-specific variability in this watershed makes the calibration challenging. The runoff from the headwater tributaries to the two different downstream Canyon Lake segments must successfully overcome the challenge of working with 208 Owners, each having up to 12 different Land Use categories. Furthermore, each Land Use category has its own Runoff Coefficient specific to the Zone it	

		is in, as well as having Zone-specific long-term average annual precipitation rates from appropriate weather stations. And finally, PLOAD estimated amount must also include appropriately selected Percent Retention losses that are associated with Zone specific channel losses, and the Mystic Lake retention for Zones 7, 8, and 9. Having such a tight Goodness of Fit test result for hydrology, makes the comparison of measured and estimated Average Annual Nutrient Loads results better than if a poor test result occurs. This is because about half of a nutrient loading equations deals with volume of runoff. However, the Goodness of Fit test results for Nutrient Load (kg/yr), unlike the hydrology test, gives one pause before accepting the watershed's Goodness of Fit. Nutrient loading in washoff is very complicated in its own right. Annual precipitation does not factor in site specific issues like how much rain, the intensity of rain, and antecedent soil moisture condition that influence a single storms discharge rate of nutrients. Plus, each of the Land Use categories uses selected/representative TP and TN concentration. Therefore, given the lack of data in this watershed the Goodness of Fit test results for the San Jacinto River (Main Lake) TP equaling -25%, and TN equaling 6%, and the Salt Creek (to East	

		Bay) test result for TP equaling 19% and TN equaling -9% the model setup might be at the best calibration level; simply introducing error because of lack of more data. **Aside**: The Technical Report's Figure 4-18 on page 172 states "Comparison of Measured and Estimated Average Annual Nutrient Loads (2000-2022) to Monitoring Sites for San Jacinto River at Goetz Road and Salt Creek at Murrieta Road". The monitoring period 2000-2022 is an error; the PLOAD model estimation process uses only the period of record 2006-2022 for both hydrology and nutrient loading. **[When WRCAC went to test the dataset used in Figure 18, WRCAC discovered that the model is using the years 2006-2022. The Figure 4-18 caption should be edited accordingly**.]	
2.95	WRCAC	**Detailed PLOAD Model Goodness of Fit Background** The calibration's Goodness of Fit testing for the PLOAD setup is presented in tables and graphs in the PLOAD_Fit spreadsheet. As discussed above the test results for water quantity is excellent; which removes hydrology from being an issue when considering why TP in the San Jacinto River ➔ Canyon Lake Main Lake has a result of -25%, and the Salt Creek ➔ Canyon Lake East Bay has a test result of 19%.	A watershed model update for future Santa Ana Water Board consideration could be developed using more informed data collected by the reference watershed study (Task 11) and watershed controls study (Task 10). Changes to other sources may need to be considered to achieve a satisfactory model fit. Also see response to comment 2.91 on how parameters adjustment elsewhere would accommodate a lower assumption for forest/ open space.

		Plus, the 50th Percentile Nutrient Numeric Target concentrations are used for Forested and Open Space Land Uses for TP concentrations of 0.32 mg/L, and TN concentrations of 0.92 mg/L. The use of these 50th Percentile Numeric Targets representing natural conditions raises important concerns in two ways. The First concern, is that the calibration Goodness of Fit test did not use the 25th Percentile Numeric Targets for natural conditions; TP equaling 0.16 mg/L and TN equaling 0.68 mg/L. This raises model performance issue questions for the Final Allocation scenario, such as: • Will the use of lower concentration values be outside of the calibrated model prediction range? If so, will this result in increasing the loading estimation error without being detectable? • What is the Goodness of Fit test results when the 25th Percentile values are used in the PLOAD estimated Annual Average Nutrient Loads? Given the challenges of wide variability in climate, and having limited data available for a reference condition, WRCAC accepts that the first set of questions are being addressed as adequately as reasonably possible.	

		Therefore, the remainder of this subsection will discuss how the PLOAD model uses the 50th versus the 25th Percentiles and provide PLOAD results from changing the Numeric Target Percentile input values.	
2.96	WRCAC	The PLOAD table and graph of the results of the Goodness of Fit test result is provided in Figure 10. Again, Figure 8 shows the results when using Forested and Open Space TP concentrations of 0.32 mg/L, and TN concentrations of 0.92 mg/L. Next, WRCAC ran the 25th Percentile natural condition concentrations Goodness of Fit test for TP of 0.16 mg/L and TN of 0.68 mg/L, the result is presented in Figure 11. As can be observed when comparing Figures 10 and 11, the Goodness of Fit test results for the two different sets Numeric Targets identified substantial differences with the calibration of TP versus TN, and again when comparing San Jacinto River versus Salt Creek. For the Goodness of Fit comparison of 50th Percentile concentration values PLOAD estimated TN loading values are both within 10 percent of the measured values; while the TP concentrations range from 19 to 25 percent differences. This difference between parameters is assumed to be due to the ratio of the two phosphorus fractions within TP. Particulate Phosphorus (PP) typically is the higher fraction in TP	The value used for the San Jacinto River includes drainage areas upstream of Mystic Lake, which are not included in the fitted model (because no overflows occurred in the period of fitting, 2007-2011).

		water quality samples collected from rivers and upland soils. PP also can remain for longer periods of time, unless the water column experiences pH values of 6.8 or lower which release soluble phosphorus bound to calcium carbonate as a particulate, or when low levels of dissolved oxygen release soluble phosphorus previously bound to iron as a particulate. Soluble phosphorus can be bound again to soil particulates in dry riverbeds. TN consists of many soluble forms of nitrogen and organic nitrogen as a particulate form. In general, it is typical to have a higher ratio of soluble nitrogen forms (i.e., ammonia, nitrate, and nitrite) than organic nitrogen which typically refers to nitrogen found within organic particulates. And, microbes near or in the riverbeds can convert organic nitrogen into forms of soluble nitrogen more readily than the PP conversion to soluble phosphorus. Each model prediction estimates on different PLOAD workbook spreadsheets draw the Land Use nutrient concentration from the PLOAD “Parameters” spreadsheet. These concentration values are provided in Table 6 [Table5]. [Table 5, WRCAC Comment Letter, PDF pg. 63]	

		[Figure 10, WRCAC Comment Letter, PDF pg. 64] [Figure 11, WRCAC Comment Letter, PDF pg. 65] The calibration's Goodness of Fit test results differences between San Jacinto River and Salt Creek are likely due to many factors. One is the size difference of the watersheds and the ratio difference of Forested plus Open Space versus total acres. In the San Jacinto watershed, the total acres (not reduced by the ungagged section of Zone 2) is 364,528-acres, with Forested plus Open Space acres totaling 247,925. The percentage of natural conditions to total acres is 49 percent in Salt Creek, versus 68 percent in the San Jacinto River; albeit most natural condition acres are above Mystic Lake with its high Percent Retention. More acre by Zone and Zone Percent Retention details are provided in Table 6. [Table 6, WRCAC Comment Letter, PDF pg. 66]	
2.97	WRCAC	The most compelling outcome that demonstrates the lack of good science used when selecting the 25th Percentile to set Numeric Targets is that there are sufficient Forested and Open Space acres to change the Goodness of Fit test results where TP was 25 percent PLOAD estimated values	See response to comment 2.91.

		below the measure TP Average Annual Nutrient Loading to dropping even further to 31 percent in the San Jacinto River. This provided a further underestimate of 278 kg/yr more. Inversely, in the Salt Creek watershed the Goodness of Fit test results indicated an overestimated TP PLOAD this overestimate was reduced when the applying the 25th Percentile Numeric Targets. **In both Goodness of Fit runs only the Forested and Open Space land uses were at Numeric Targets so by running two different sets of Numeric Targets the impact to PLOAD predictions is evident when changing the Numeric Target. The PLOAD model errors in the San Jacinto River TP, and the Salt Creek TN predictions are expected to increase when all discharging land uses are set to the Median and 25th Percentile Numeric Targets. The arbitrary lowering of Numeric Target TP concentrations from 0.32 mg/L to 0.16 mg/L shows up in these PLOAD model responses. Two of the four nutrient loading increase in error when using the lower concentration values. Allowing the model calibration remain as is, will not prevent the errors from appearing in most of the source discharge tables found in Section 6 Total Maximum Daily Loads, Wasteload Allocations and Load Allocations.**	

2.98	WRCAC	Detailed Presentation of the Full Narrative Provided for the Seven Peer Review Comments, Staff Responses and TMDL Task Force Consultant's Team Response	No response required. This section of the comment's letter titled "Detailed Presentation of the Full Narrative Provided for the Seven Peer Review Comments, Staff Responses and TMDL Task Force Consultant's Team Response" includes the following reference materials: the Peer Reviewer comments, Santa Ana Water Board staff responses, and Task Force consultant responses as they related to the 2018 draft TMDL Technical Report.
2.99	WRCAC	WRCAC Comments on Section 4. Source Assessment Western Riverside County Agriculture Coalition Section 4. Source Assessment comments focus upon the setup and performance of the watershed model PLOAD that is used to assess baselines, Interim Milestone targeted loadings, and Final Allocations loading goals. The draft 2024 Technical Reports states in Section 4.1.3.2 Nutrient Loading to Lakes, on page 172: "Generally, the model performed well in predicting average annual nutrient loads when compared with estimated loads from measured data at the two downstream monitoring sites (REs for TP and TN to San Jacinto River of -25 percent and +6 percent,	Comment noted.

		respectively; TP and TN to Salt Creek of +19 percent and -9 percent, respectively).” WRCAC opposes the statement “Generally, the model performed well in predicting average annual nutrient loads when compared with estimated loads from measured data … ”. These model predicted estimates are used to set regulated entities’ Interim Milestone reduction targets; and, the magnitude of impact on individual’s reduction requirements has not been evaluated.	
2.100	WRCAC	**Comment 1)** WRCAC representatives acknowledge how complicated and complex modeling a watershed that is 486,137-acres in extent, with 12 different types of land uses, nine subwatersheds, approximately 24 different kinds of land administrating entities. Additionally, the model setup addressed each the list of categories internal multiple input parameters that are used in the determination of hydrology runoff, watershed retention, land use washoff loadings, and downstream loading pathways. The fact that thereis such a good match between the PLOAD model predicted Annual Runoff (AFY) and the water quantitymonitoring stations’ measured volumes is outstanding.	Santa Ana Water Board staff appreciates the commenter’s acknowledgement of the complexity and complications involved in modeling the San Jacinto River Watershed to revise the Nutrient TMDLs. We also agree that despite these complexities, the PLOAD model predictions correlated well with the actual monitoring data.
2.101	WRCAC	**Comment 2)** WRCAC also acknowledges the same complications exist for the determination of nutrient loading to downstream segments. This is a challenging	Comment noted.

		watershed, and establishing a predictive model that is reasonably accurate is further hampered by the limited availability of water quality monitoring stations with sufficiently long monitoring periods of record.	
2.102	WRCAC	**Comment 3)** Given the challenges presented in comments 1 and 2, the general setup of the PLOAD model is commendable. However, the PLOAD model does not satisfactorily address the watershed discharged nutrient loading for use in allocations, given the model's identified under and over estimations uncovered in the Goodness of Fit test results (Figure 1).	See response to comment 2.95.
2.103	WRCAC	**Comment 4)** The Goodness of Fit testing is based, in part, on using the "Event Mean Concentration Values" of TP = 0.32 mg/L and TN = 0.92 mg/L, instead of the arbitrarily selected Reference Watershed Condition nutrient concentration values of TP = 0.16 mg/L and TN = 0.68 mg/L. The PLOAD model algorithms select the nutrient concentrations from the PLOAD Workbook's spreadsheet entitled "Parameters" which contains Table 4-8 Event Mean Concentration (mg/L). An excerpt of Table 4-8 is provided below and is referred to as Table 1 in this comment. In Table 1 [Table 7], the two natural condition Land Uses, Forested and Open Space, have two rows assigning nutrient concentration values; the Forest and Open Space rows have the median nutrient	See response to comment 2.91.

		concentration values of TP = 0.32 mg/L and TN = 0.92 mg/L. While the 25th Percentile values of TP = 0.16 mg/L and TN = 0.68 mg/L are located in the rows Forested (25th%ile) and Open Space (25th%ile). The rest of the land use categories use the predicted concentrations provided except for Dairy which has its own additional adjustment by using a Percent Retention value of 99.7 percent to reflect their NPDES permit requirements. Because the selected Reference Watershed Condition is based on the 25th Percentile for the Final Allocation, WRCAC expected the Goodness of Fit test to use the lower concentration values. This type of testing would have evaluated the current baseline condition if all the acres in Forest and Open Space land uses are really discharging at the lower concentration rates. Instead, the median value concentrations were tested. [Table 7, WRCAC Comment Letter, PDF pg. 76]	
2.104	WRCAC	**Comment 5)** The Goodness of Fit testing results are problematic. First, the test results indicate a sizable TP under estimation (-25 percent) is occurring in the San Jacinto River at the Goetz monitoring station. Second, there is a sizable TP over estimation (19 percent) occurring at the Salt Creek Murrieta	When looking at the total load to Canyon Lake, the prediction error is ~13% for TP and 0.5% for TN. Santa Ana Water Board staff and the modelers have noted higher Event Mean Concentrations in runoff from the San Jacinto River watershed relative to Salt Creek. A potential unaccounted source in the San Jacinto River watershed may

		monitoring station. Third, the San Jacinto River estimated and measured comparison has opposite results for TP and TN at both monitoring stations. These Goodness of Fit test results, and their multiple conflicting over and under predicted estimate are problematic for two reasons. First, the TP underestimation is over 20 percent which would be a very gracious allowable margin of error when setting allocation reduction requirement. And second, the different mix of land use sources and their associated acres in each watersheds contributing area demonstrates the assumptions applied during model setup do not consistently predict nutrient discharge loading across entire watershed discharged loading. Because the two monitoring stations are not located at the mouths of Zone 2 for the San Jacinto River, and Zone 3 for Salt Creek. To run the Goodness of Fit tests, an acre reduction was performed to remove the unmonitored land use loadings. Therefore, the San Jacinto River contributing area to the Goetz monitoring station is 345,707-acres and the estimated nutrient discharged loading has been adjusted by the Percent Retention rates by Zone and for Mystic Lake in Zones 7, 8, and 9. The Salt Creek Murrieta monitoring station contributing area is 79,233 and estimated nutrient discharged loading	exist or there may be differences between nutrient washoff across common land uses in cities within Zone 2, 5, and 6 and cities relative to Zones 3 and 4. This will be explored further in watershed plan updates (Task 3 of the Phase II program of implementation).

		has been adjusted by the Percent Retention by Zone. In total, the 424,940-acres tested of the total watershed's discharging 477,310-acres demonstrates that 89 percent of the watershed uses a prediction model with internal prediction conflicts; some internal conflicts result in sizable prediction errors.	
2.105	WRCAC	**Comment 6)** Because the Forested and Open Space land uses are not expected to reduce their loading for the Final Allocations Reference Watershed Condition Numeric Targets based on the 25th Percentile, WRCAC performed the same Goodness of Fit testing using the TP = 0.16 mg/L and TN = 0.68 mg/L concentration values for Forested and Open Space land uses (Figure 2). No other land use loading equations were altered. Figure 2, emphasizes that the 25th Percentile Numeric Target nutrient concentrations exacerbate the TP discharged loading issue in the San Jacinto River, by increasing the underestimation from -25 percent to -31 percent. And, increasing the TN underestimation in Salt Creek from -9 percent to -12 percent. Inversely, the San Jacinto River TN discharge loading improved for TN overestimations which dropped from 6 percent to 2 percent. In Salt Creek the overestimation of TP improved with a drop from 19 percent down to 12 percent.	See response to comment 2.91. In addition, if the lower concentrations for nutrients from openspace/ forest are supported by the reference watershed study, then future model updates would need to adjust other parameters within ranges provided by literature to fit the model.

		[Figure 12, WRCAC Comment Letter, PDF pg. 77] [Figure 13, WRCAC Comment Letter, PDF pg. 78]	
2.106	WRCAC	**Comment 7)** The PLOAD watershed model development team might have missed a possible model setup and calibration opportunity. WRCAC does not know if the modelers explored using the San Jacinto River testing results against the Salt Creek testing results to slightly adjust the modeling input values so that the results of the over under estimations were under 10 percent for each nutrient in each river. It is a common method to consider adjacent watershed result differences as part of an interim step in the calibration process. However, WRCAC acknowledges when dealing with the complexity of 12 different land use categories, finding the correct adjustment for a few land uses' loading equation can be problematic. Certainly, using one monitoring station result, and estimated concentration values are problematic. WRCAC objectively points out the following nutrient concentration assumptions that could have been tested by slightly tweaking the nutrient concentrations as part of the calibration process, and using the Goodness of Fit test to guide the improvement process: **1. Commercial / Industrial nutrient concentrations, one monitoring station for**	The modelers agree with the commenters suggested method and did use it to arrive at the reported fit. In addition, all models are based on limited datasets and are imperfect and improvements can be made with more robust datasets. In the revised TMDL Technical Report the estimated load to the lake is sufficient for use in apportioning allocations to upstream entities. Further, entities can collect additional data in the watershed to support more refined nutrient source assessment as well as for use in compliance demonstration

		15,307-acres in the SJR, and 4,653-acres in Salt Creek 2. Irrigated Ag calculated nutrient estimates applied to 15,011-acres in the SJR, and 4,150-acres in Salt Creek 3. Non-irrigated Ag calculated nutrient estimates applied to 12,775-acres in the SJR, and 9,503- acres in Salt Creek 4. Orchards / Vineyards calculated nutrient estimates applied to 3,899-acres in the SJR, and 284- acres in Salt Creek 5. Other Livestock calculated nutrient estimates applied to 1,844-acres in the SJR, and 1,076- acres in Salt Creek 6. Pasture / Hay calculated nutrient estimates applied to 2,259-acres in the SJR, and 328-acres in Salt Creek 7. Roadway using NSQD local sites FW land use (n=14) (which appears not to include nonforested watershed monitoring values?) applied to 3,233-acres in the SJR, and 888-acres in Salt Creek 8. Sewered Residential using one station, 316 Sunnymead Channel (n=49) 2004 – 2022 for 36,298-acres in the SJR, and 16,762-acres in Salt Creek 9. Unsewered Residential using one station, at 834 Quail Valley site (n=21) 2000-2004 for 6,765- acres in the SJR, and 2,327-acres in Salt Creek	

		To tamper with agreed upon nutrient concentrations as part of the calibration process the communication of changes must be openly discussed and consider equity issues between land use categories. Therefore, such a process would be advised to start with a way to minimize disagreements such as limiting the adjustments for a given nutrient concentration to be a hundredth or two mg/L changes in any given land use category. **The Ag category acres listed reflect both the Ag regulated industry, and the presences of Ag acres which are within other governed entity boundaries; like MS4s, County, State, Tribal, and Federal properties.** Certainly, performing the change in nutrient concentrations may not improve the model results sufficiently to reduce the model prediction errors substantial enough to achieve a 10 percent margin of error. And, such a step may start disagreements about equity decisions between regulated entities if one source's allocation is decreased while another's allocation remains the same, or increased.	

		However, WRCAC's opinion is that the current level of underestimation of TP in the San Jacinto River and the 19 percent over estimation of TP in Salt Creek is not acceptable or equitable. These errors need to be addressed because the errors will likely restrict some allocations more than others; and no explanation of who is most affected was provided.	
2.107	WRCAC	Section 5. Linkage Analysis; WRCAC Comments The following comments demonstrate the linkage analysis has multiple times where the Goodness of Fit results, and the use of the PLOAD watershed model results linking methods do not create findings that support the proper use of the Watershed Reference Condition Numeric Targets. The following comments provide multiple lines of evidence that can be combined into one general statement. Namely: There is an alarming lack of supporting justification based on the provided modeling analysis' standard method results that the intended Lake Water Quality Objectives will be achieved. Additionally, the Goodness of Fit results and methods used when linking the watershed loading to the two lakes do not support that water quality improvements will result when applying the proposed	Responses to specific comments are addressed below.

		Watershed Reference Condition Numeric Targets of 0.16 mg/L TP and 0.68 mg/L TN.	
2.108	WRCAC	Re-review of PLOAD, the Watershed Runoff Model Setup Even though the PLOAD model is not discussed in Section 5, the predictive errors will add to the uncertainty when NPDES permits and State Orders require tracking milestone and allocation attainment progress. As discussed in Section 4 comments, the PLOAD watershed model setup resulted in two different Goodness of Fit test results; when compared to the two major tributaries' measured water quality loading into Canyon Lake. These results are an important example of the PLOAD model's setup not representing the true Watershed Reference Condition and land use representative washoff loadings. WRCAC acknowledges and appreciates the 2018 draft Revision to the TMDLs statements that the stakeholders would be required to conduct studies to verify or adjust the selected Numeric Targets. Furthermore, the PLOAD model was calibrated and had Goodness of Fit testing only upon the Cranston Guard Station's water quality monitoring dataset's median nutrient concentration values (TP = 0.32	See responses to comments 2.91 and 2.95.

		mg/L; and TN = 0.92 mg/L). The Technical Report's content did not include a Goodness of Fit test for the Watershed Reference Condition's selected concentrations for nutrient Numeric Targets set at the 25th Percentile (TP = 0.16 mg/L; and TN = 0.68 mg/L). So, WRCAC completed the test on its own. Table 1 presents the Goodness of Fit testing results for the median and 25th Percentile Numeric Targets. [Table 8, WRCAC Comment Letter, PDF pg. 80]	
2.109	WRCAC	Table 1 demonstrates that the nutrient loading Goodness of Fit testing results were in conflict for the San Jacinto River and Salt Creek comparisons. The two monitoring stations' contributing areas differed in size dramatically and had substantially different channel Percent Retention and Mystic Lake Percent Retention values as well. As such, WRCAC acknowledges that when working on such a complex hydrological watershed and having a limited water quality dataset model setup is difficult. However, the Average Annual Runoff (Acre Feet per Year) Goodness of Fit test results are extremely good. The Average Annual Runoff percent differences between measured and estimated results for the San Jacinto River (to Main Lake) was -1.4 percent and Salt Creek (to East Bay) was 0.9 percent. This	See responses to comments 2.16 and 2.91.

		tight comparison between the two rivers indicates the hydrology methods applied are an effective standard method to represent hydrology across the entire watershed. **Because the Annual Average Runoff is around half of the Nutrient Loading estimation equation the dramatically lower Goodness of Fit test results for Nutrient Loading is almost entirely due to the estimation methods used for selecting nutrient concentrations and washoff dynamics of pollutant loading. This last sentence is less important for an approach that uses the median dataset values (50th Percentile) and accompanying watershed reference study, than when using the Final Allocations 25th Percentile values and special studies focused on the selecting correct Numeric Targets for Final Allocations.** This is because in the 2024 draft Technical Report the 20-year Phase II implementation plan requirements exist to meet the median values and demonstrate progress towards attaining the Interim Milestone values. **The Watershed Reference Condition concentration Numeric Target special studies in Phase II have an implementation schedule that provides results too late in the required reduction schedule to supersede the financial expenditures necessary to achieve a potential falsely-restrictive the**	

		Interim Milestone. The Watershed Reference Condition Numeric Target special studies are focused on limiting unnecessary expenditures on the Final Allocations if the 25th Percentile nutrient concentrations are too low.	
2.110	WRCAC	**Of equal importance is how to interpret the WRCAC adjustments used to conduct a Goodness of Fit test were completed for the 25th Percentile natural condition concentrations.** WRCAC did not adjust any anthropogenic land use type's nutrient concentrations. WRCAC only adjusted the two natural condition land uses' concentrations from the 50th to the 25th Percentiles in the Forested and Open Space categories. This means that as setup in the PLOAD model, if the 25th Percentile is the appropriate natural condition Numeric Target then the Goodness of Fit test results should show improvements over using the 50th Percentile concentrations for natural conditions in the PLOAD model. Instead, conflicting results for the two tributaries and the two nutrient parameters occurred. In the San Jacinto River Tributary to the Canyon Lake (Main Lake) TP increased in underestimation while TN improved its Goodness of Fit test results. In this river the Goodness of Fit test results showed an increase in underestimating TP loading (i.e., changing from -25 percent to -31 percent)	See responses to comments 2.91 and 2.105.

		and an improvement in estimating TN loading (i.e., changing from 6 percent to 2 percent). These changes in measured versus estimated loading comparisons are the opposite in Salt Creek (loading East Bay of Canyon Lake). This river's Goodness of Fit test results showed an improvement in overestimating TP loading (i.e., changing from 19 percent down to 11 percent) and an increase underestimating TN loading (i.e., changing from -9 percent to -12 percent). **Therefore, if the Watershed Reference Condition selected nutrient concentration Numeric Targets do appropriately represent the Forested and Open Space concentrations then nutrient loading should consistently improve when the concentration values are closer to the correct Numeric Targets. However, the PLOAD model Goodness of Fit test results *did not* consistently respond in this manner.**	
2.111	WRCAC	Section 5.4 Canyon Lake Model Configuration, Calibration and Scenario Simulations Fortunately, due to complexity of lake dynamics the AEM3D model for Canyon Lake the model setup for calibration does not use the annual averaged results of the PLOAD model and the model's associated under and over estimations. However, the future	No response required.

		response predictions for external loading estimation process does rely on the PLOAD watershed model results. Therefore, the PLOAD models under and over estimation issues in the previous discuss will continue to impact the lake modeling prediction errors. Unfortunately, the lake model's calibration Goodness of Fit test results provide their own dramatic lack of ability to predict the future water quality responses. The AEM3D model's Goodness of Fit tests applied are: Equation 1. Standard Deviation (SD, A.K.A., "s"): $\mathbf{s} = \sqrt{\frac{\sum_{i=1}^{n}(x_i - \bar{x})^2}{n-1}}$ Where: • s is Population Standard Deviation • $\mathbf{x_i}$ is ith observation • $\bar{x}$ is Sample Mean • **N** is Number of Observations How to interrupt results: The Standard Deviation test result indicates how dispersed data points are within the dataset relative to the mean value of the dataset. A small standard deviation means the data points are tightly clustered around the mean value; inversely a large SD means that the data is widely dispersed across a range of values.	

		Equation 2. Root Mean Square Error (RMSE): $$RMSE = \sqrt{\frac{\sum(Modeled - Observed)^2}{n}}$$ How to interrupt results: The RMSE is used in model evaluation to understand the model performance; where a result of zero (0) indicates a perfect prediction. However, RMSE is susceptible to outliers and may have skewed results when the target's scale is being compared across different datasets of variable scales. Equation 3. Relative Percent Error (% RE): %RE= |Modeled-Observed|/Observed How to interrupt results: The Relative Percent Error is a measure of error margins. The lower the value indicates that the prediction is doing a better job of predicting the measured values. Equation 4. Nash-Sutcliff Efficiency (NSE): $NSE= 1-\sum(Modeled_t – Observed_t)^2/-\sum(Modeled_t – Observed_{mean})^2$ How to interrupt results: The Nash-Sutcliff Efficiency test interprets how well the predictions match the measured values. The ranges of values to expect can be from extremely low negative values to one (1),	

		where the closer the result is to 1 the better fit the model predictions are to measured values. The test indicates how the model performance compares to simply using the observed mean value as the prediction. A result of zero (0) indicates the model is operating equal to using the observed mean; as the result would be the same predictive skill. A NSE result of less than zero means that the observed mean of the dataset is a better predictor than using the model. Equation 5. Root Mean Standard Deviation Ratio (RSR): $RSR = \frac{\sqrt{(Modeled_t - Observed_t)^2}}{\sqrt{(Observed_t - Observed_{mean})^2}}$ How to interrupt results: The Root Mean Standard Deviation Ratio (RSR) compares the average deviation of predicted and measured values of the dataset with the mean standard deviation of the dataset. A lower resulting value indicates the model's capability to predict the measured values' fluctuation is better than the test results with higher values. A result of zero (0) is a perfect fit to the measured values. Values above 0.50 may be acceptable in challenging datasets like this watershed experiences. However, values above 1.00 are larger than natural occurring variation. If large outliers	

		are present in the measured dataset the RSR results shows up as very high values as the test results are very sensitive to outliers. Equation 6. Percent Bias (PBIAS): $PBIAS = \frac{\sum(Modeled_t - Observed_t)}{Observed_{mean}}$ How to interrupt results: The Percent Bias (PBIAS) testing results indicate how much the measured values deviate from the predicted values where the results is provided as a percentage of the measured values (A.K.A., "reference values" which is an unfortunate second definition to the TMDL studies use of reference conditions; the test does not refer to the selected Numeric Targets). A Goodness of Fit test result close to zero (0) is desired, and a positive result means the prediction is that percentage higher than the measured; while a negative result indicates the prediction is that percentage lower than the measured values. In Table 9 below, an excerpt of the 2024 draft Technical Report's Table 5-4. Model Calibration Summary Statistics for Water Quality Parameters in Canyon Lake is provided. The Table 9 excerpt focuses on the nutrients (i.e., Seasonal Average TN and TP)	

		and the Seasonal Average Chlorophyl-ą (Chl-ą) Goodness of Fit test results. [Table 9, WRCAC Comment Letter, PDF pg. 84]	
2.112	WRCAC	As illustrated in Table 9, the Standard Deviation test result values verify that the modeling is being conducted on a dataset that has widely variable hydrology, and associated variables occurring in the watershed. This watershed hydrology and eutrophication is challenging to model. However, overcoming these challenges is important if the model is to perform adequately. The As shown in Table 2 the model setup did not consistently overcome the challenges. As a consequence, the other Goodness of Fit test results raise a High Concern that the predictive performance of the model is questionable. Additionally, the consistent poor performance of the prediction of the Seasonal Annual Average Chl-ą test results indicates that nutrient concentrations are not the exclusive limiting parameter of the eutrophication problem. Of more concern is that the external loading concentration reductions will not accurately predict the Chl- ą response. This statement is made based upon the reasonable possibility that other factors and sources in Canyon Lake may be contributing	This is correct. Prior to the construction of Rail Road Canyon Dam, nutrient enrichment in Lake Elsinore sediment associated with pre-development era runoff is assumed to be similar to Canyon Lake.

		loading or limiting conditions that are not being modeled correctly. For instance, the Technical Report clearly states on page 179 that: “It is unknown what the internal load from sediment nutrient flux should be once the allocations in the revised TMDLs are achieved. No data are available for measurements of sediment nutrient flux in Canyon Lake or Lake Elsinore from hundreds of years ago prior to Railroad Canyon Dam construction and land development, when periodic lakebed desiccation facilitated export of bottom sediments in the form of dust. Nor is there a comparable lake in the region with a undeveloped watershed that can be used to estimate sediment nutrient flux for a reference condition. Rather than wait to conduct core-flux studies after allocations are met, which would then be followed by years of mineralizing the legacy nutrient enrichment, the revised TMDLs developed an approximation of the future internal load from lake bottom sediment. This approximation is based on the following lines of evidence that provide consistent estimates of the enrichment of bottom sediments relative to current conditions: • Kirby et al. (2005) evaluated the paleolimnology of Lake Elsinore through the collection and dating of 10-m sediment cores to represent the past 10,000 years. The	

		sediments at very shallow depths (most recent 200 years) were compared with the remainder of the core which represented pre-development (200 – 10,000 years ago). Results showed an enrichment in organic phosphorus (OP) and a proxy for nitrogen of ~50 percent (**Figure 4- 23**). • An independent sediment diagenesis model (CDM Smith 2017) was developed for Lake Elsinore to test the impact of changing external nutrient loads from current levels to the reference watershed condition. The flux of nutrients from simulations involving less enriched lake bottom sediments was reduced by 40 percent for TP and 60 percent for TN. Based on these two lines of evidence, a reference watershed condition scenario was developed that accounts for expected reductions to internal loads that will follow required reductions in external loads.21 Specifically, the linkage analysis model parameter for sediment nutrient flux rate was adjusted to half of current levels when developing TMDL numeric targets based on a reference watershed condition. Modeled annual load from lake bottom sediments under a reference watershed condition is reported in **Table 4-14** above." And, Footnote 21 states:	

		"This approach involving estimation of different sediment flux parameters for current and reference conditions is necessary because the version of GLM and AEM3D used in the TMDL revision does not allow for a dynamic simulation of sediment diagenesis." In the quote it is important to note that both studies used for a basis to justify future lower lake sediment flux rates in Canyon Lake were completed for Lake Elsinore. Lake Elsinore is a shallower lake than Canyon Lake and has a higher variability in TDS concentrations and areas with and without dissolved oxygen at depth. In addition, the current Alum treatment program used in Canyon Lake already sets a high percent retention rate for TP and TN according to the PLOAD watershed model monitoring data used in the setup.	
2.113	WRCAC	The PLOAD calibration period was based on the Average Annual monitoring data collected from 2006 – 2022, of which alum additions occurring twice per year have occurred since 2013. The PLOAD model spreadsheet entitled "CL to LE" states the Canyon Lake release to Lake Elsinore has a TP retention rate of 61 percent, and a TN retention rate of 41 percent. Since future reductions in TP and TN watershed loading allow the purchase of offset credits which are generated by the same alum addition treatment system that	The calibration period for AEM3D was developed for 2007-2011 and did not overlap the alum addition program.

		existed during the PLOAD calibration period. Therefore, it is highly questionable that the future projected reduction in lakebed sediment flux will be as high as stated.	
2.114	WRCAC	The East Bay Goodness of Fit test results for the five critical tests point out there is a weak comparison between measured values and the model's ability to predict usable estimates. The Goodness of Fit poor results in the East Bay presents a very high level of concern; both for the TMDLS' prediction capability and the ability to recognize watershed external loading reductions in Canyon Lake alongside the prediction errors discovered by the poor fit analysis. For the variable Chl- ą, of the five (5) applicable Goodness of Fit test result all but one test provided values that are rated by WRCAC as a High Concern, and the remaining test (i.e., RSR) is just nine (9) percentage points away from being a High Concern. The results for Seasonal Average TP values rank four of the five Goodness of Fit tests as High Concern. Likewise, the results for Seasonal Average TN values rank three of the five Goodness of Fit tests High Concern. **Again, these poor fit results are of High Concern. The calibration testing was performed on the Cranston Guard Station dataset's median value; and the results indicate this model has poor predictive capability. Expecting this model to work well on the 25th**	The poor performance measures for paired samples was noted in the report. The model could not accurately capture the temporal dynamics of algal blooms in both lakes due to the timing of the blooms. However, long-term average and range of model results fit well within the measured data.

		Percentile nutrient concentration as the Watershed Reference Condition Numeric Target is a wrong assumption. The modeling predictive errors will mask the results of the reduction implementation efforts; because both error and predictive response are presented together as one result. Furthermore, these concerns impact the lake Numeric Targets and the Cumulative Distribution Functions that set Interim Milestones and Final Allocations watershed discharger requirements.	
2.115	WRCAC	The lake model Goodness of Fit results for the Main Lake is better than the East Bay results. However, the Goodness of Test results for Seasonal Average TN values has two tests WRCAC ranked as High Concern (i.e., the NSE and RSR tests), and one for TP results that points out the model's tendency to over predict concentrations. The fit tests for TP also include a Moderate Concern for the NSE test results indicating a concern over the models predictive skill in comparison with just using the observed mean value. This error must be considered alongside of the PLOAD underprediction of TP in the Main Lake. Finally, the Goodness of Fit test results for Chl-ą has one ranking of High Concern; the RMSE test which indicates whether a model prediction is close to actual values on average. In addition, the Moderate Concerns for the % RE, NSE, and PBIAS test results	The commenter noted high concern with regard to performance metrics that describe the model's ability to simulate the temporal dynamics of nutrients and related constituents. Many factors may have influenced such performance metrics, such as the static watershed nutrient assumption for current conditions, observation data based on point measurement compared to lake-wide model results, influence of other changes to loads from watershed BMPs, agriculture attrition, LEAMS, and recycled water additions. The range of results show that both means and ranges of simulated water quality are quite comparable for most parameters. In the case of the reference watershed approach, the allocations are not determined by the linkage analysis, so these loading values are not influenced by any lake water quality modeling error. Lastly, the TMDLs includes an adaptive approach allowing for new information to support future TMDL

		combine with the RMSE High Concern result to indicate that the predictive skill of the model setup is marginal at best for predicting Chl- ą results. A similar review of the Lake Elsinore GLM-AED2 modeling Goodness of Fit is provided in Table 3. Specifically, Table 3 provides an excerpt of Table 5-2. Mean Observed and Predicted Values and Model Percent Relative Error of Key Water Quality Parameters for Calibration Period (2000-2014) for Lake Elsinore on page 208 of the draft 2024 Technical Report.	reconsiderations. Lake water quality model improvements should be considered in developing proposed TMDL amendments.
2.116	WRCAC	Section 5.3 Lake Elsinore Model Configuration, Calibration and Scenario Simulations Similar to the Canyon Lake model Goodness of Fit test results the Lake Elsinore model GLM-AED2 struggled to predict the Seasonal Average Chl-ą and Seasonal Average TN concentrations. The fit testing results indicates that the Lake Elsinore model overestimate these parameters' concentration values by 33 percent. In fact, the Root Mean Square Error results indicates there is an extreme level of error occurring in the Chl-ą predictions. The standard deviation test result indicates the wide variability that should be expected in a terminal lake that has periods with higher TDS levels found	The poor performance measures for paired samples was noted in the report. The model could not accurately capture the temporal dynamics of algal blooms in both lakes. However, long-term average and range of model results fit well within the measured data.

		during the calibration period of 2000-2013 presented in Figure 1. In Figure 14 there are three periods that exceed the TDS concentration of 2000 mg/L that is identified as a Level 3 Priority in Section 3. Numeric Targets. Additionally, the PBAIS test indicates that the Seasonal Averages for TN and Chl-ą are overestimated by 33 percent. However, because the agricultural regulated dischargers are a minor source of Lake Elsinore nutrient loadings, WRCAC did not complete the comprehensive review of results like it did for Canyon Lake. WRCAC is a small nonprofit and as such has limited financial resources that must be well managed. Regardless of WRCAC not providing a narrative breakdown of Table 3, the Goodness of Fit test results highlighted in Table 3 should be of great concern to other watershed managers as well. [Figure 14, WRCAC Comment Letter, PDF pg. 87] [Table 10, WRCAC Comment Letter, PDF pg. 87]	
2.117	WRCAC	Summary of Linkage Analysis Review Comments	No response required.

		WRCAC included a review of all three models Goodness of Fit test results even though Section 5. Linkage Analysis did not include the review of the PLOAD model. The PLOAD model Goodness of Fit test is discussed on page 158 in Section 4 for Average Annual Runoff Volume (2006-2022); and on page 172 in Section 4 for Estimated Average Annual Nutrient Loads (2000-2022). In both cases a graph is used to present the comparison of PLOAD model estimates, and a narrative presents the comparison test results for nutrients (page 172): "Generally, the model performed well in predicting average annual nutrient loads when compared with estimated loads from measured data at the two downstream monitoring sites (REs for TP and TN to San Jacinto River of -25 percent and +6 percent, respectively; TP and TN to Salt Creek of +19 percent and -9 percent, respectively)."	
2.118	WRCAC	As discussed above in the comment section entitled "Re-review of PLOAD, the Watershed Runoff Model Setup" WRCAC identified that the San Jacinto River underestimations of -25 percent is for the median value of the Cranston Guard Station water quality monitoring dataset. This underestimation grows to -31 percent when the 25th Percentile values are used for Forested and Open Space land uses. The rest of the	See response to comment 2.91 and comment 2.95. In addition, a longer compliance timeline is provided to accommodate new scientific information and flexibility in reissued permits.

		discharging land uses were not altered. Therefore, the PLOAD model is ***not*** performing well as stated in the quoted narrative on page 172 of the draft 2024 Technical Report. Furthermore, the PLOAD modeling setup results in the two watersheds having inverse and conflicting underestimation and overestimation results. The San Jacinto River TP loading is greatly underestimated while the TN loading is overestimated. Inversely, the Salt Creek estimation comparisons for TP are overestimated while TN comparisons show the parameter is underestimated. **A properly setup model should be consistent across the watershed; or acknowledge the subwatershed discrepancies and use and describe subwatershed calibrations that perform better in the Goodness of Fit testing. Either way, a proper watershed model is needed for assigning loading predictive estimates that will be used in the Interim Milestones Phase II and Final Allocations Phase III Numeric Targets and Cumulative Distribution Functions. The poor Goodness of Fit results based on the median value also underscores the draft 2018 Technical Support statement that stakeholders will be required to complete a study to gather more data to confirm or adjust the Watershed Reference Condition Numeric Target concentrations. Which is**	

		included in the draft 2024 revision as Task 11 in Section 7. Unfortunately, there is no mention of the need for compliance flexibility in reissued permits and other regulatory actions about meeting a load reduction that is based on Numeric Targets that are yet to be confirmed, and likely will be adjusted.	
2.119	WRCAC	WRCAC's review of the Canyon Lake model AEM3D, and the Lake Elsinore model GLM-AED2 Goodness of Fit testing results raises a high level of concern that the predictive skills of both models are not capable to estimate Chl-ą response to nutrient reductions in the Interim Milestone Implementation Plan's Phase II period; and will likely have increased prediction errors when working with the unknown future lake dynamics associated the Final Allocations in the Implementation Plan's Phase III. The Canyon Lake East Bay model predictive performance is of great concern, to the point where it should not be used even during the Phase II period. While the Canyon Lake Main Lake model predictive performance raises a substantial concern that should necessitate the model be recalibrated early in the Phase II period.	The models were parameterized with average inflow concentrations and thus may not have been able to capture temporal variability in the response. However, the modelers determined that a sufficient calibration was reached for long-term averages and the range of modeled water quality measures.
2.120	WRCAC	The Lake Elsinore Goodness of Fit test results indicated that there are consistent over estimations according to the PBIAS test for Seasonal Average TN and Chl-ą. And the combined high concern for the RMSE test,	The Task Force has the option to begin work on select tasks sooner than described in Figure 7-4 and Table 7-7 as they see fit.

		and the Moderate Concerns identified in the % RE, and NSE test results for Chl-ą result in a severe loss of confidence in the lake model's capabilities. Combined, these test results demonstrate that both lakes still have a substantial lack of understanding regarding in-lake eutrophication dynamics. Additionally, some internal sources and algal production limiting parameters may have sizable misrepresentations that introduce the identified modeling errors. WRCAC acknowledges and appreciates the long list of Special Studies that are provided in Section 7. Implementation Plan. **However, WRCAC emphasizes that the Section 7 Task 2 and 11 have schedules that do not allow the Interim Milestone Numeric Targets to be verified before requiring the Permits and State Orders to be reissued and regulated interim progress steps and final attainment of the initial estimated median value Numeric Targets that WRCAC Section 3 comments demonstrated are highly questionable. These Task schedules also conflict with the Task 17 – Review and Reconsider Lake Elsinore/Canyon Lake Nutrient TMDLs schedule in Figure 7-5 which indicates the consideration takes place in year 10 and again in year 18. All three**	

		Task schedule create high risk that reissued regulatory requirements will not provide sufficient guidance for consideration of implementation flexibility before dischargers must expend financial resources Task 11 and Task 17 provide a more correct set of Numeric Targets and reopen the TMDLS.	
2.121	WRCAC	WRCAC Comments on Section 6. Total Maximum Daily Loads, Wasteload Allocations and Load Allocations **Comment 1)** In the introduction to Section 6, on page 230, the draft 2024 Technical Report States: "The allowable nutrient loading to Lake Elsinore and Canyon Lake is determined from analysis of the hydrology and water quality for the reference watershed condition (see Section 3.2 for description of the reference watershed condition). Specifically, this information was developed based on the following: • Reference watershed conditions were approximated from modeling the watershed subareas by reducing external inflow nutrient concentrations levels estimated from wet weather samples collected at the San Jacinto River Cranston Guard Station (see Section 3, Numeric Targets). • Loading of nutrients to the lakes under reference conditions was simulated based on	Only the hydrology simulation of PLOAD is employed in determining allocations. The commenter noted in Comment 2.100 the excellent performance with regard to hydrology.

		the hydrologic responses in the watershed runoff model developed to assess existing sources of nutrients from the watershed (see Section 4, Source Assessment). …” Although this quote does not mention the PLOAD watershed model by name, it is the only model considered to simulate the hydrologic responses. Therefore, WRCAC’s comments in Section 4. Source Assessment are directly applicable to the uncertainty in this Section’s milestone targets and final allocations.	
2.122	WRCAC	Likewise, Section 6.4 – Internal Loads and Section 6.5 Summary of Allocated Loads are questioned due to the systemic and intrinsic nature of using lake models to predict internal loadings; and key water quality objective parameters like ammonia, dissolved oxygen and Chl-ą. The lack of acceptable predictive models necessitates not setting firm WQBELS and compliance schedules until sufficiently confirmation from Section 7, Task 11, Study for Evaluating Reference Watershed Conditions is provided regarding the Median Numeric Targets; and, the other Section 7, special study Tasks provide sufficient information to recalibrate lake models.	Allocations are based on watershed hydrology models and interpretation of the reference watershed nutrient concentrations. See earlier responses to comments, such as responses to comments 2.18, 2.26, and 2.35, about the selection of the reference nutrients concentrations.
2.123	WRCAC	**Comment 2)** Page 232, Section 6.1 Total Maximum Daily Loads. The discussion of margin of safety states:	A Margin of Safety for the interim milestones and final allocations use the same comparison of the median and 25th percentile of event means versus all samples.

		"A TMDL requires a MOS that accounts for the uncertainty about the relationship between pollutant loads and the quality of the receiving water. As noted in Section 3, the MOS may be implicit, i.e., it is incorporated into the TMDLs through conservative assumptions in the analysis, or explicit, i.e., it is an explicit load set aside to provide a MOS. The MOS is incorporated into the LECL TMDLs implicitly through conservative assumptions; specifically, the use of the 25th percentile TP and TN concentrations (0.16 mg/L and 0.68 mg/L, respectively) of water quality observations from the San Jacinto River watershed Cranston Guard Station reference site as a MOS for the TMDLs." This discussion regarding the MOS directly states that no MOS will be present until the lower 25th Percentile based nutrient concentration Numeric Targets are being used. These targets likely will not be used. Furthermore, there are conflicting MOS discussions in this document. This referral to Section 3 states: "By selecting values at the 25th percentile of all grab samples rather than event means, from a reference watershed station, a margin of safety (MOS)13 of at least 10 percent is accounted for in the revised TMDLs (see Section 6.1 below)."	Additionally, see responses to comments 2.91, and 2.105 regarding watershed model parameter adjustments that would accompany a scenario with forest/open space at the lower values.

		While the Executive Summary states: "By using lower values based on computations from all 51 grab samples, the resulting margins of safety for the reference watershed conditions ranges between 16-31% - depending upon the specific nutrient and milestone and allocation." The PLOAD watershed model Goodness of Fit test results for the San Jacinto River that underestimates the Median Value based Numeric Target TP loading by 25 percent definitely exceeds the statement "of at least 10 percent is accounted for in the revised TMDLs (see Section 6.1 below)." And, the lack of the lake models have such poor Goodness of Fit results in Canyon Lake East Bay definitely combines with the PLOAD underestimation issue to substantially exceed the 31 percent value stated in the Executive Summary.	
2.124	WRCAC	WRCAC Comments on Section 7. Implementation **Comment 1)** Page 266 Subsection Addition of Supplemental Water: This narrative does not mention that EVWMD is not able to achieve their TDS permit limit of 2000 mg/L, and that Lake Elsinore TDS impacts have been experienced in the recent past as stated on Page 52:	The current NPDES discharge permit (R8-2019-0054 amending R8-2013-0017) sets a permit limit of 700 mg/L for TDS. Reference to 2,000 mg/L most likely refers to the water quality objective for TDS in Lake Elsinore, not EVMWD's permit limit. With respect to EVMWD's permit limit, a TDS offset plan for discharges in excess of 700 mg/L is required for discharges to Temescal Creek. However, this provision does not apply to

		““TDS concentrations increased at a nearly exponential rate during the drought of 2000-2002 to values greater than 2,200 mg/L, before decreasing following rainfall and runoff in 2003 to about 1,400 mg/L and declining further in 2005 to about 800 mg/L as reported by Anderson (2010). TDS concentrations increased from 2006-2007 and remained around 1,600 mg/L into the summer of 2009 (Figure 2-27). In the midst of a severe drought, concentrations of TDS in the lake remained above 2,000 mg/L between July 2015 and October 2019. A further reduction in TDS has been recorded with several wet years and elevated lake levels with concentrations as low as 1,400 in April 2024.” Additionally, there is no potential available to generate offsets for TDS. If a long-term drought occurs in the future the lake Chl-ą goals may not be achievable. This is a very important caveat that needs to be discussed. The proposed Basin Plan Amendment does a far better job explaining this impact on page 16: “However, operation of LEAMS does not address TDS in recycled water that is added to Lake Elsinore. Increased TDS from recycled water additions may impact food webs in the lake that support control of algae	EVMWD’s outfalls to Lake Elsinore (DP002, DP002a). The permit states that “TDS Offsets are not required for discharges at DP-002 and DP-002A because there is not a reasonable potential for the discharge to exceed the water quality objective for TDS of 2000 mg/L for Lake Elsinore”. The long-term impact of extended drought on TDS is accounted for in the TMDL numeric target. Reduction of nutrient loads to meet allocations can be accomplished and result in a wide range of algal response within the lake, therefore a CDF basis was employed for setting numeric targets that allow for climate variability.

		by predators. Consequently, increased TDS may impact the effectiveness of future nutrient controls to meet the numeric targets for chlorophyll-a and dissolved oxygen." This omission needs to be corrected.	
2.125	WRCAC	**Comment 2)** Under Section 7.2.5 Methods to Demonstrate Attainment of Phase II Milestones, on page 307, first full bullet it states: "For some jurisdictions, it may be infeasible to collect water quality samples to characterize all runoff discharged to downstream receiving waters. However, Task Force collected monitoring data can be used to determine excess nutrient loads at the watershed scale which may then be reduced via in-lake offsets (*Approach 4: In-Lake Offsets*)." This statement applies to many aspects of compliance, not just the Phase II Milestones. Thank you for stating this. However, for many small dischargers this fact needs to be mentioned in Table 7-7. Phase II (Years 1 – 20) Implementation Activities, Task 2. Update permits, adopt new permits and take other actions for TMDL implementation; and the Task description on page 284. And, added to Table 7-12 Phase II (Years 21 – 30)	See Section 7.2.4.2, Table 7-10, of the revised TMDL Technical Report for compliance demonstration options for agricultural operators.

		Implementation Plan Activities, Task 2. Revise Existing Implementation Plans; and all associated discussions.	
2.126	WRCAC	**Comment 3)** The same regulatory NPDES permit, and Non-NPDES Permittees as mentioned in Comment 2, should include a discussion instructing all permit writers and State Order authors that if or when an In-Lake Credit Offset generating projects fails, those regulated entities that depend on purchasing the failed project's credit offset as part of their compliance attainment will not be considered non-compliant during the downtime of the project or its replacement period. This discussion was mentioned and promised during the TMDL Task Force Meeting that discussed the fact that such stakeholders are not involved in the selection of the LEAMS replacement or decision-making aspects of such projects.	Task 6 for Phase II of the Basin Plan Amendment requires the LEAMS Operators to implement the preferred option (or options) with respect to a potential LEAMS replacement project. As part of this task, a proposed Offset Program is to be developed that is associated with implementation of the preferred option, or options, once they are operational. Through the proposed Offset Program, the LEAMS Operators and Task Force members relying/purchasing offset credits will need to identify and outline the terms of purchasing offsets and operation of the LEAMS replacement project. That proposed program is subject to Santa Ana Water Board's Executive Officer review and approval. As part of the Offset Program submittal, issues related to compliance attainment and reliance on offsets generated by the LEAMS replacement project will need to be addressed. The terms of the Offset Program as approved by the Santa Ana Water Board's Executive Officer will be enforceable through the various NPDES permits, waste discharge requirement orders, and other orders as applicable. Adaptive management and accounting for contingencies should be addressed in the Offset Program submittal for review and approval by the Santa Ana Water Board's Executive Officer.

2.127	WRCAC	WRCAC Comments on Section 8. Monitoring Requirements WRCAC has no comments on this section.	No response required.
2.128	WRCAC	WRCAC Comments on Section 9. California Environmental Quality Act Analysis The following comments reflect the cumulative comments and concerns WRCAC presented in the other Sections; regarding methods and small dischargers like Ag cropland Operations.	No response required.
2.129	WRCAC	**Comment 1)** In Section 9.2 page 344 the statement that: "In fact, because regular review and revision was successful, the Santa Ana Water Board adopted an Implementation Plan specifying that the TMDLs be "re-evaluated at least once every three GEI Consultants, Inc. 344 December 26, 2024 Revised TMDL Technical Report years to determine the need for modifying the load allocations, numeric targets or implementation schedule" (Santa Ana Water Board 2004a; see Task #14 on page 21 of 22)." WRCAC is concerned that meaningful data may not be available in the first 3-years of Phase II and Phase III.	The Task Force has the option to begin work on select tasks sooner than described in Figure 7-4 and Table 7-7.
2.130	WRCAC	**Comment 2)** WRCAC comments provided for Section 3. Numeric Targets, and Section	See responses to comments 2.16, 2.25, 2.27, and 2.61.

		4. Source Assessment that are in complete disagreement with the Numeric Target discussion in Section 9.2.2.1 Nutrient Targets on page 345, because the premise used in the draft 2024 Technical Report is to based lake Numeric Targets on a Reference Watershed Condition set of nutrient Numeric Targets that even the current version of the PLOAD watershed model indicates cannot be valid (See WRCAC Comments for Section 4).	
2.131	WRCAC	**Comment 3)** Beginning on Page 349, Section 9.2.3 Identification of Reasonably Foreseeable Methods of Compliance, states on page 350: “TMDL implementation in Lake Elsinore and Canyon Lake has been occurring since 2005 after the effective date of the original TMDLs. Two general strategies are being employed: (1) reduction of external nutrient loads to achieve WLAs and LAs and in turn response targets; and (2) implementation of water quality controls that directly affect the response targets in the lakes. Ongoing and past implementation activities for each lake and their respective watersheds have spanned both of these strategies, including (1) implementation of external nutrient controls for urban and agricultural sources; and (2) application of direct controls to manage algae, nutrients, DO, and/or hydrology within the lakes.	See responses to comments 2.25, 2.48, and 2.61.

		The current strategies being implemented have resulted in water quality improvements; however, the 2004 TMDL response targets continue to be exceeded despite ongoing implementation of water quality controls. Given these circumstances, the revised TMDLs include a two-phased Implementation Plan (i.e., Phases II and III, given that the Implementation Plan in the existing TMDLs is considered Phase I) to achieve interim and final compliance milestones. These phased implementation plans include continued implementation of existing water quality controls, where they are providing water quality benefits, evaluation and potential implementation of new water quality controls to further improve water quality, special studies to inform the long-term implementation process and continued implementation of watershed and lake surveillance and monitoring programs." (Green Highlight Added for Emphasis [no highlighting in original]) WRCAC again points out that the approach is building on the basis of implementing Reference Watershed Condition Numeric Targets that are not developed using existing USEPA guidance methods, and are not financially affordable for smaller discharging	

		entities; as presented in WRCAC's Section 10. Economic Considerations comment list.	
2.132	WRCAC	WRCAC Comments on Section 10. Economic Considerations The following list of comments for Section 10. Economic Considerations focuses on the true cost of regulatory compliance for Ag cropland operations. WRCAC acknowledges that an improved discussion has been inserted for portions of this Section that pertain to Ag operations. WRCAC appreciates this effort. However, the discussion still falls short of providing a cost comparison that identifies whether the cost of compliance is beyond an affordable threshold for some farmers. The comments provided will focus on Section 10.2 Agricultural Costs, and if the document satisfies both the Water Code section 13141, and California Public Resources Code section 21159. • Water Code section 13141 requires that prior to implementation of any agricultural water quality control program, the Santa Ana Water Board must include an estimated cost of such a program, together with an identification of potential sources of funding. • California Public Resources Code section 21159 requires the Santa Ana Water Board, when adopting an	No response required. See below for line-item responses.

		amendment that will require the installation of pollution control equipment or is a performance standard or treatment requirement, to include an environmental analysis of the reasonably foreseeable methods of compliance.	
2.133	WRCAC	**Comment 1)** When reviewing the following comments, it is important to understand the different context for funding nutrient reductions farm operations face when compared to entities that distribute costs across a tax base. For farmers, the reductions per acre required must be compared to the farm's Crop Enterprise per acre budget (A.K.A., Commodity Costs and Returns). The USDA Economic Research Service provides example costs and returns calculations on their website.7 For example selecting wheat and clicking the outline of the Fruitful Rim on the interactive map Figure 1), leads you to the provided costs and returns graphed estimate for the wheat crop multistate state average (Figure 2). The Fruitful Rim includes data from Florida, Texas, Washington, Oregon, Idaho, California, and Arizona. As illustrated in Figure 2, the returns minus the operating costs per acre have fluctuated up and down yearly for the last 20-years. Some years provided a per acre profit (i.e., 2011 provided $101 profit per acre) while most years	Comment noted.

		cropping wheat lost money on average across the Fruitful Rim. **However, this is only an example of actual costs and returns volatility because the Fruitful Rim average is not specific to California. The San Jacinto watershed cropping includes high costs for many inputs because of the challenging semiarid desert climate that can have long periods of drought. Higher than average costs include volume of water needed for irrigation and difficulties from working with high pH soils that require higher phosphorus application rates to provide crop available phosphorus.** Any mentioned source of external funding, like grants, and operation and maintenance programs must be performed by the farm staff alongside of their operation's daily tasks; farm operations do not have a dedicated utility departments to administer and operate storm water projects. Outside funding does not pay for Offset Credits, the full total cost of BMP implementation & operation, and State Order required monitoring and reporting. Some funding sources' eligibility requirements do not include projects that are needed to achieve a regulatory compliance requirement.	

		It would also be of interest to explore cropped fields that are within MS4 incorporated areas that may also pay utility fees as part of the MS4 stormwater permit program. [Figure 15, WRCAC Comment Letter, PDF pg. 95] [Figure 16, WRCAC Comment Letter, PDF pg. 95]	
2.134	WRCAC	**Comment 2)** The Section 10.2 Agricultural Costs provides a list of regulatory compliance costs along with a mention of how some of the costs increase for individual operators as the cropping acres continue to decline this basin. WRCAC appreciates the mention of individual cost reduction benefits that occur when applying the Law of Economy of Scale. A few monitoring and reporting economy of scale benefits are part of the Agriculture General Order surface water requirements. For example, the Order approved the Eastern Municipal Water District (EMWD) to form the San Jacinto Coalition Group and benefit greatly from cost reductions experience during monitoring and reporting. The EMWD Coalition Group should not be confused with WRCAC. WRCAC only supports EMWD's Coalition Group for surface water compliance issues. The Ag General Order requires a State reporting fee of be paid by operators enrolled in this coalition group of $1.42 per acre (Year 2023). When compared to non-	Comment noted. The Santa Ana Water Board does not have authority over coalition membership or Task Force fees. Accordingly, the cost for non-members of the EMWD coalition group is an issue that regulated entities may want to consider addressing during the 30-year TMDL attainment timeline.

		members fee of $35.45 per acre (Year 2023), the cost savings for every 100-acres is compared to non-members the fee reduction savings is $3,687 per 100-acres. However, EMWD has an enrollment policy that coalition group members must be EMWD irrigation water purchasers in most cases except for Ag cropland in the Lake Hemet Municipal Water District where there is a reciprocal arrangement, and a few other small operators who collect groundwater samples to help fulfill the groundwater requirements of the Ag General Order. Likewise, there are enrollment requirements that must be fulfilled to be a Member in Good Status. Such as paying the State Fees, TMDL Task Force fees, and submitting monitoring results on time. If an operation falls out of being a Member in Good Status, they are no longer eligible to receive the reduce per acre fee. Membership in this coalition group also benefit from being eligible to use the Water Quality Index for Ag surface runoff (WQIag) which is a USDA NRCS based tool. Using this tool WRCAC provides technical assistance to operators annually to comply with the field monitoring requirements in the Ag General Order. Non-members must conduct their own sampling to fulfill this requirement. Finally, WRCAC creates a dataset of submitted WQIag field evaluations to create a Surface Water Discharge Annual	

		report for the enrolled members to fulfill the surface water reporting requirements of the Ag General Order. The WRCAC assistance provided for reporting remains about the same cost every year for compiling the information and creating of the report. WRCAC charged a per acre fee of $10 dollars per acre for reporting 2023's crop year, which increased to $11.00 in 2024 to assist in covering the costs of draft TMDL reviews over the previous three years. As Ag acres decline, fewer acre payments will exist requiring an increase in the acre-based fee, because the work load will remain roughly the same. Again, it is emphasized that the regulatory cost of monitoring and reporting is an order of magnitude higher for non-members. The cost of compliance monitoring and reporting for members and nonmembers are not eligible for grant dollars or outside funding. In addition, while purchasing offset credits for compliance is often the least expensive means to achieve compliance, members of WRCAC do not have outside funding sources that would support the costs of credit purchases. Likewise, those who are not member in WRCAC are not currently eligible to purchase offset credits from the TMDL Task Force.	

2.135	WRCAC	**Comment 3)** Implementation of onsite BMPs experience the Law of Diminishing Returns for the second, third, fourth, … , BMP treatment efficiencies. That is to say, the first BMP experiences pollution reduction at the tested and expected rates, however, the second BMPs has a harder time removing pollution. For example, the first BMP has an expected treatment efficiency for removing particulate phosphorus, however the treatment efficiency is reduced in the second BMP application because the first BMP already settled the larger and easier particulate phosphorus out of the runoff. Likewise, treating soluble nutrients like ammonia, nitrate and soluble phosphorus is only possible through infiltration into the soils, or total containment. Previously, WRCAC's consultant created an illustration of the law of diminishing returns as predicted for TP by running the USDA Nutrient Tracking Tool. The example is for calculating the loss of treatment efficiency from implementing a cover crop BMP when a buffer is already installed. The area of interest was in Albert Lea, Minnesota because the consultant used a location where the model and its inputs had been created previously by the consultant. Table 1 illustrates the TP treatment efficiency reductions for the second BMP applied in an	Staff agree that in-lake offsets are highly cost effective for agricultural operators as well as other stakeholders. Staff also recognize the cost associated with compliance and implementation of BMPs. However, the irrigated lands order (R8-2023-0001) and the TMDLs do not *require* farmers to implement specific BMPs. Cover crops were used in the Technical Report as an illustration. Where the cost of cover crops becomes too high relative to the nutrient reduction obtained, farmers are free to substitute more cost-effective BMPs. In addition, as discussed in Section 10 of the revised TMDL Technical Report, there are State and Federal grant and loan programs available for agricultural specific projects or in-lake projects that may help reduce the costs.

		agricultural treatment train. The cover crop treatment efficiency is highlighted in red in row five (5) for both TN and TP without a previous BMP being installed. The cover crop treatment efficiency is again highlighted in Red for the BMP when a Buffer has already been installed. A third BMP would continue have a reduced treatment efficiency but suffers a larger rate of treatment efficiency reduction. The WQIag Tool for monitoring also accounts for the Law of Diminishing Returns. Even though treatment efficiency drops, the total cost of the BMP remains the same. Which increase the unit cost of removing TP and TN. **For example, in Section 10.2 Table 10-11 Estimated Costs to Deploy Cover Crop on Irrigated Cropland in the San Jacinto River Watershed, the low-end unit cost of treating TP is $5,370. Having a reduction in treatment efficiency raise the TP treatment unit cost to be $6,041. Therefore, considering the fluctuation in acre profits illustrated in Comment 1, and the cost of treatment using a single BMP and then adding more BMPs the use of credit offsets becomes the only affordable compliance option for many farmers if the plan to stay in business.** **The draft 2024 Technical Report Executive Summary states the cost of purchasing**	

		offset credits (page ES-33) to be $100 - $1,000/kg/yr for TN and TP, respectively. While these costs threaten some farmers ability to reach compliance attainment, the costs do not post as much hardship as the cost examples presented for agricultural field BMPs on page ES-33, ~$8,000/kg/yr for TP and TN. **Unfortunately, Farmers who are not members of WRCAC cannot buy offset credits from the TMDL Task Force because they are not represented by WRCAC at the TMDL Task Force. So, for members who choose not join WRCAC or lose their Member in Good Standing status the only compliance option left is implementing BMPs onsite**. [Table 11, WRCAC Comment Letter, PDF pg. 97]	
2.136	WRCAC	**Comment 4)** Contrary to the discussion provided on page 429 of Section 10.2 where it states: " … participation in more cost effective in-lake nutrient reduction offset programs. For example, ~70 percent of the annual TP load from an irrigated cropland agricultural field (0.022 kg/acre reduction) can be removed at less than $3.00/acre through participation in the alum addition program, with a current cost of ~$125/kg TP removed."	For 3.3 kg/yr TP reduction through participation in the alum program, it would cost $413/yr for 100 acres of irrigated cropland in zone 5. This amounts to $4.13/acre. In addition, the 2024 TMDLs do not require the purchase of offsets to achieve attainment of LAs. See Section 7.3.2.4 of the revised TMDL Technical Report for alternative compliance options.

		WRCAC calculated reduction for three categories of Ag cropland across the TMDL Zones where\ they are located. This calculation was to answer the question What required annual reduction is need to be incompliance with the Final Allocations (Table 2). Table 2 also shows how variable the amount of reduction that is due based on crop type and location. WRCAC created Table 2 using the PLOAD watershed model load estimations for baseline and Final Allocations for 20-acres of the three Ag categories. Because, the table presents 10-acres of discharge, if you multiple the reduction requirement given in the last two columns by 5, you have an estimate of how many kg/yr must be reduced for a 100- acre field which is a more normal field size then 10-acres. For instance, 100-acres of Ag Irrigated Cropland in Zone 5 needs to reduce 3.3 kg/yr of TP and 1.1 kg/yr of TN. Which according to the cost of credit offsets quoted in the Executive Summary would require paying $3,300 for TP offset credits and $110 for TN offset credits to be compliant. **Purchasing offset credits for both TP and TN compliance will cost $3,410 annually for 100-acres; that is $34.10 per acre whether the crop is generating a profit or not**.	

2.137	WRCAC	**Comment 6) [Comment 5]** On page 430, Section 10.2 ends with a discussion of possible funding options: "Funding for selected projects may be available through the following potential sources: • Private financing by individual and/or group sources; • Bonded indebtedness or loans from governmental institutions; • Federal grants or low-interest loan programs, such as the USDA Natural Resources Conservation Service's Environmental Quality Incentive Program (EQIP) (e.g., in 2023 the EQIP program incentive payment for a basic cover crop for organic and non-organic crops was $61.23/acre in California); • Single-purpose appropriations from federal or State legislative bodies; and • Grant and loan programs administered by the State Water Board and California DWR. Grants and loan programs may be directed to agricultural specific projects or in-lake projects. Such grants or loans would help to decrease costs for implementation of the Phase II and Phase III Implementation Plans for the TMDLs. These programs currently include: – Clean Water Act funds (State Water Board);	Comment noted. See Section 10 of the revised TMDL Technical Report for potential funding options.

		– Agricultural Water Quality Grant Program (State Water Board); – Clean Water State Revolving Fund (State Water Board); and – Integrated Regional Water Management grants (State Water Board, CDWR)." **Seeking these funding sources is currently left to the operators and land owner left in the watershed. With the number of operations left in the watershed, WRCAC cannot charge the remaining land owner and operators for the staff resources to write applications for funding; especially since many applications are not awarded funding. Additional hurdles include operating on rented lands; during the 2023 WQIag field reporting approximately 56 percent of operating acres were on rented lands. For rented lands the land owner and operator must agree on the BMP selection, and the increase cost of land**	
2.138	WRCAC	**Comment 7) [Comment 6]** The loss of total agricultural acre across 2000 to 2023 is reflected in Table 3. The loss of Ag cropland acres is due in part to the rising costs of regulation, and will increase when farmers are expected to reach State Order compliance attainment based on the new nutrient Numeric Targets. The 2023 year's acres of 19,189 is only active irrigated and	The 2024 TMDLs do not require the purchase of offsets to achieve attainment of LAs. See Section 7.3.2.4 of the revised TMDL Technical Report for alternative compliance options.

		non-irrigated acres. An additional 3,291-acres fall into categories of exempt/fallow fields, or developed MS4 acres. Developed MS4 acres total 587. Purchase of offset credits is currently not required to achieve compliance under the 2004 USEPA approved TMDLs; which will change with the new Numeric Target nutrient concentrations under the current draft 2024 Technical Report approach. [Table 12, WRCAC Comment Letter, PDF pg. 99]	
2.139	WRCAC	**Comment 8)** On behalf of WRCAC members, WRCAC is pursuing Ag land uses receiving approval from the Regional Board to be a Section 7. Implementation Task 9 Study to Define and Identify Minor Sources and Identify Responsibility Levels for TMDL Implementation for Such Sources. However, this is a developing program and approval by the Regional Board staff is not certain. This approval could affect over 50% of current ag operations.	The remaining 50 percent, or ~9,500 acres, is not likely to be considered minor with a large fraction of this area located downstream of Mystic Lake. The TMDL allocations are based on all agricultural lands, not individual operations.
2.140	WRCAC	Attached Reference Document: WRCAC Corrected Final Appendix A Reply to March 1 MOS Email 010925.pdf	Memorandum noted. No response required.
3.1	OCCK/IEWK [Note: The OCCK/IEWK	My main concern is about the timeline. I think 30 years is way too long. When we tack in where we started from in 2005, this ends up	Lake Elsinore and Canyon Lake have unique and complex characteristics that vary over longer periods of time. Because of this, additional time

	comments in the table are based on the transcript of Ray Heimstra's testimony at the February 14, 2025 public hearing.]	being a 50-year TMDL. So, I don't think that was ever the intent of the Clean Water Act.	has been included in the implementation plan so that the necessary data to evaluate and determine the final numeric targets, TMDLs, WLAs, and LAs can be obtained. Time is also needed to complete studies to evaluate a potential alternate reference watershed condition, evolving science related to nutrients, and other studies identified during Phase II implementation.
3.2	OCCK/IEWK	What we would like to see is, we need to follow the science. Reading the peer reviewers comments, that was very helpful.	Comment noted. Staff made extensive changes to the previous (2018) draft of the TMDL based on comments from the scientific peer reviewers.
3.3	OCCK/IEWK	I am concerned about 30 years. I don't think it will take that long. One of the presenters at a stakeholder group meeting earlier had said "because of the 10-year average, we're not going to have accountability for the first 10 years." I don't know if that person knew what they were talking about, but I certainly found that disturbing.	Reconsiderations are expected to occur no later than every 10 years following the effective date. TMDL reconsiderations are intended to determine progress toward attainment of the interim numeric targets and milestones, evaluate the effectiveness of in-lake projects and their ability to provide offsets, assess results from special studies, and determine the appropriateness of the final numeric targets, TMDLs, WLAs, and LAs.
3.4	OCCK/IEWK	I like what I heard from Tess about the 3-year reviews and coming back to the Board at least every 10 years, but I think we need a harder deadline. And I think 15 years for this is long enough to figure out what we need to do. And at that point, there can be a TMDL revision. But again, a combined 50 years, I think, is too long.	See response to comment 3.1.