

California Regional Water Quality Control Board

Central Coast Region

**Attachment 7**  
**Public Comments and Staff Responses to Comments**

*for*

Amendment to the Water Quality Control Plan for the Central Coastal Basin to Adopt Total Maximum Daily Loads for Turbidity in the Gabilan Creek Watershed, Monterey County, California  
(Resolution No. R3 -2022-0002)

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## INTRODUCTION

In this report, Central Coast Regional Water Quality Control Board (Central Coast Water Board) staff (staff) provides responses to public comments on the proposed amendment to the Water Quality Control Plan for the Central Coastal Basin (Basin Plan) to adopt Total Maximum Daily Loads (TMDLs) for turbidity in the Gabilan Creek watershed (TMDL Project) and the Substitute Environmental Documentation (SED) prepared for this TMDL Project. Public notice for this proposed Basin Plan amendment and SED provides interested persons an opportunity to review the documents and provide public comments preceding a Central Coast Water Board hearing regarding this matter. The public comment period commenced on October 19, 2021 and extended through December 3, 2021. During the public comment period, staff held a public outreach meeting on November 17, 2021. Additionally, staff held smaller meetings with individual stakeholders to review key components of the TMDL Project, to get their feedback, and answer questions. Staff received written comments from the following interested persons:

1. Elizabeth Krafft, Deputy General Manager, Monterey County Water Resources Agency, in an email attachment received December 3, 2021.
2. Kay Mercer, Environmental Scientist, Provost & Pritchard Consulting Group, in an email attachment received December 3, 2021.
3. Shaila Chowdhury, Chief Environmental Engineer, California Department of Transportation, Division of Environmental Analysis, in an email attachment received December 3, 2021.

Staff appreciate the written comments provided by these interested persons. Their comments and insight have prompted clarification and improvement of information in the TMDL Project as noted herein.

Format used for staff responses to written public comments: In the following sections of this document, staff reproduce direct and unmodified transcriptions of the comments from each reviewer. Staff responses are provided following each comment using **bold, blue text**.

## PUBLIC COMMENTS AND STAFF RESPONSES

### **1. Elizabeth Krafft, Deputy General Manager, Monterey County Water Resources Agency (MCWRA)**

#### ***Comments on Proposed Resolution No. R3-2022-0002 Attachment A***

Table 2, page 5 – Numeric Targets seem to be set very low, possibly unattainably low. More reasonable numeric targets should be considered so that a reduction in turbidity

can be spread out over the entire timeframe. In addition, the final numeric target should be developed relates to the natural condition of this particular watershed.

**Staff Response (SR-1):**

The turbidity numeric targets were developed to achieve the turbidity water quality objectives in the Basin Plan and therefore the water quality necessary to support designated beneficial uses (i.e., water quality standard attainment). Staff considered developing final turbidity numeric targets based on the conditions (turbidity water quality data) in the lower Gabilan Creek watershed, but this could not be accomplished because: a) the watershed is highly modified and b) the level of turbidity impairment in the waterbodies of the lower Gabilan Creek watershed (in the majority of samples, turbidity is extremely high). Staff instead derived natural turbidity targets from less-impaired waterbodies in the region with comparable watershed characteristics (hydrology and landscape features such as described in section 4.2 of the TMDL technical report (Attachment 2)). Staff used monitoring data from the Gabilan Creek watershed and from other watersheds with similar land uses to derive interim turbidity numeric targets. The turbidity numeric targets underwent scientific peer review and were found to be protective of beneficial uses, reasonable, and appropriate.

First Interim TMDL Milestone, page 8 - The document states this is ten years after OAL approval. Stakeholder presentation indicated that this will be changed to five years after OAL approval. The MCWRA recommends leaving it at the ten-year time step that has been published in the documents for review so that plans can be developed, and implementation can begin to address turbidity issues.

**Staff Response (SR-2):**

Staff evaluated the reasonableness of the First Interim TMDL Milestone and adjusted it to seven years instead of five. Staff recognizes that some stakeholders, such as MCWRA, will need time to develop implementation plans to specifically implement this TMDL Project. Establishing a First Interim TMDL Milestone of seven years is reasonable because the First Interim TMDL Milestone is an allocation equal to seasonal Interim-1 Numeric Target established for each waterbody and is equal to the turbidity level already being achieved in 25 percent of the samples from that waterbody. The First Interim TMDL Milestone provides seven years from the date of OAL approval to meet the numeric target in 50 percent of the seasonal samples. Although some stakeholders will need to develop implementation programs, other Central Coast Water Board programs, including the Irrigated Lands Program and Stormwater Program, already have orders or permits in place that address turbidity. Staff specifically considered the timelines established in the current Agricultural Order and its monitoring requirements when developing the TMDL numeric targets and attainment schedule for TMDL implementation.

## ***Comments on TMDL Project Technical Report October 2021***

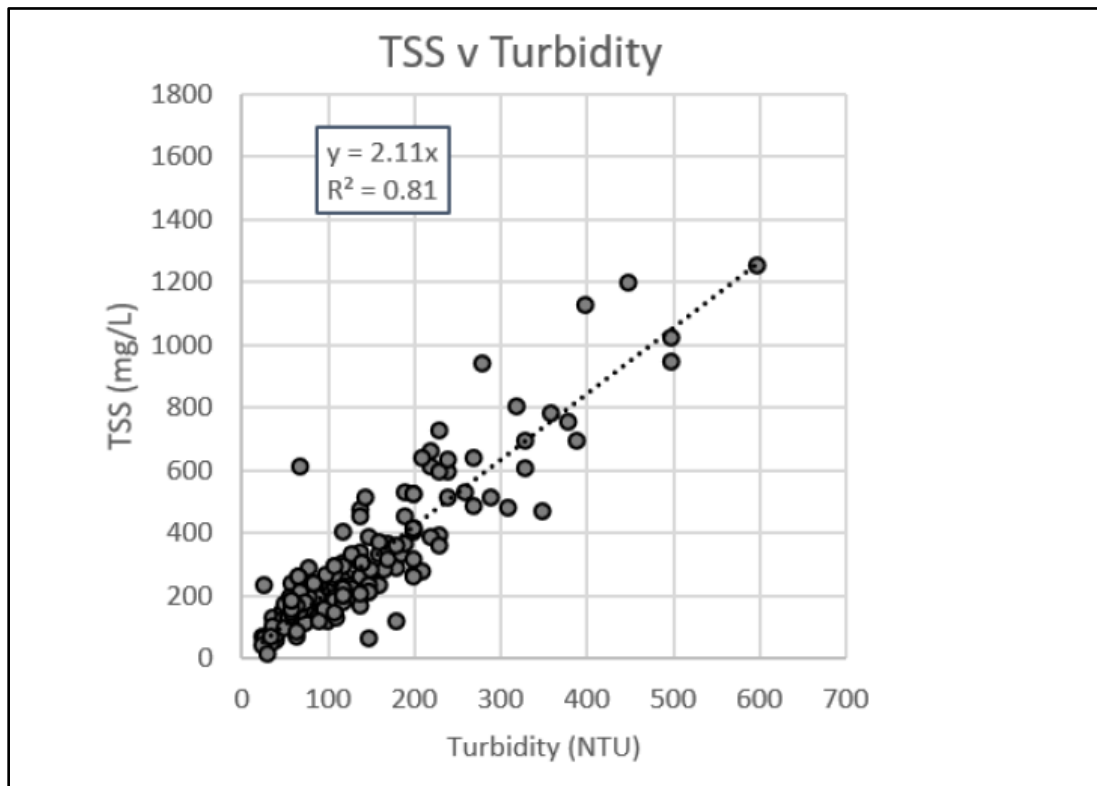
Total Daily Maximum Daily Loads (TMDL): - TMDLs are defined on page 23 of the Technical Report as: “A numerical calculation of the loading capacity of a water body to assimilate a certain pollutant and still attain all water quality standards. The sum of the individual waste load allocations (WLAs) for point sources, load allocations (LAs) for nonpoint sources and natural background, and a margin of safety (MOS).” Page 14 describes the Turbidity water quality objectives in nephelometric turbidity units (NTUs) which is a measurement of the optical measure of stream water clarity. The report continues to use NTUs as the measurement to implement the turbidity TMDL. There is no clear explanation on how the Regional Board considers NTUs, a measurement of water clarity, a viable substitution for WLAs and LAs, which are reported in mass per unit time. Section 8.2 Linkage Analysis on page 97 fails to establish the connection with any supportable explanation. Section 8.3 Allocations on page 97 leads the reviewer to believe that NTUs are a measurement of load allocations which they are not.

Uncontrollable sources should be included in the allocations.

### **Staff Response (SR-3):**

**Turbidity, or water clarity, measured using turbidity meters and reported as nephelometric turbidity units (NTU), is an appropriate measure for a TMDL. USEPA guidance specifically states that TMDLs can be expressed as “mass per time, toxicity, or other appropriate measure, depending on the type of waterbody or sources that contribute to impairment” (USEPA, 2000). Turbidity is an appropriate measure of suspended sediment and other suspended particles. Figure 21 in the TMDL technical report (Attachment 2) illustrates how turbidity correlates to suspended sediment concentrations. Recently, the City of Salinas evaluated the turbidity and total suspended sediment (TSS) concentrations in stormwater (see Figure 1) and found a strong and consistent correlation between turbidity measured as NTUs and TSS (2NDNATURE, 2020). Streams in the lower Gabilan Creek watershed are identified on the 303(d) List of impaired waters as impaired for turbidity, and the TMDL Project address these impairments. The TMDL technical report describes how turbidity is directly linked to impairment of beneficial uses and specifically aquatic life and migration. Additionally, turbidity can impact recreation and drinking water beneficial uses of water.**

**Uncontrollable sources, such as undeveloped areas and woodlands, are appropriately included in the TMDL allocations and are assumed to meet those allocations since these areas are in natural condition and are not identified as significant sources of turbidity in the TMDL technical report.**



**Figure 1. Compilation of 164 stormwater samples collected from Salinas City outfalls over a three-year period and analyzed for both turbidity and TSS. Note the strong and consistent correspondence.**

Characterizing of MCWRA pumps: - The TMDL technical report and the proposed Basin Plan amendment should properly characterize the pumps in the Gabilan Watershed operated by MCWRA. These pumps are not “agricultural discharges” as described in Section 9.6, page 116 (and page 14 of the Basin Plan amendment). MCWRA does not discharge agricultural waste within the Gabilan Watershed. These pumps serve as lift stations for 303(d) listed waterbodies impaired for turbidity as stated on page 12: Merritt Ditch, Espinosa Slough and Santa Rita Creek and “Waters of the state” as defined on page 18. MCWRA’s maintenance activities simply allow the water to continue its drainage path. Please correct both the TMDL report and the Basin Plan amendment accordingly.

**Staff Response (SR-4):**

**MCWRA pumps facilitate the discharge of agricultural wastes when the MCWRA pumps discharge high velocity flow into the downstream channels. Consequently, high velocity flows resuspend sediment and/or cause erosion that otherwise would not continue downstream. MCWRA provides more than maintenance activities; MCWRA pumps actively move water and sediment that would not otherwise move into and along waters of the state. Conditions in these**

**waterbodies and on these lands would be different in the absence of the MCWRA pumps.**

Page 31 states that “waters...are lifted by surface water pumps to increase flow”. These purpose of MCWRA’s pumps are not to increase flow, but rather to prohibit ponding and flooding. The pumps stations are not the source of turbidity as stated. Water coming into the pump stations already contains sediment that could be addressed by the upstream property owners within the Gabilan Watershed.

**Staff Response (SR-5):**

**Staff revised the TMDL technical report to state that “waters are lifted to prohibit ponding and flooding of historic lakebeds and sloughs (refer to Figures 10, 11, and 12).” The TMDL Project identifies land uses upstream of the MCWRA pumps that are sources of turbidity, and these sources must implement the TMDL Project and have TMDL allocations. Although the upstream farms are responsible for sedimentation in waterbodies, MCWRA’s operation of lift pumps resuspends and mobilizes sediments that cause turbidity.**

Section 1.4 Watershed Conceptual Model, page 13 - Page 13 states: “Streams in the lower Gabilan...are perennial”. MCWRA disagrees that all these streams should be classified as perennial, some are better described as non-perennial, which will affect the choices of reference streams for the development of numeric targets.

Table 6, page 29 - Channel classification for several of the ditches and creeks are listed as non-perennial, but all the reference steams are classified as perennial (Hydrogeomorphic Approach Appendix 1, table 1).

**Staff Response (SR-6):**

**The TMDL technical report states that waterbodies “just above the City of Salinas to the coast, are perennial (Attachment 2 see Figure 9 and Table 6).” This is consistent with monitoring data from sites in this area and flow data from the USGS gage on the Reclamation Canal. Table 6 and accompanying Figure 9 illustrate that waterbodies in the lower Gabilan Creek watershed have both perennial and non-perennial reaches, for example the lower reaches of Santa Rita are perennial, while the upland areas are non-perennial. The monitoring sites considered in this TMDL Project are in perennial reaches and align with perennial reference waterbodies.**

Section 5. Selection of Turbidity Numeric Targets, pages 66-72 - Numeric Targets seem to be set very low, possibly unattainably low.

**Staff Response (SR-7):**

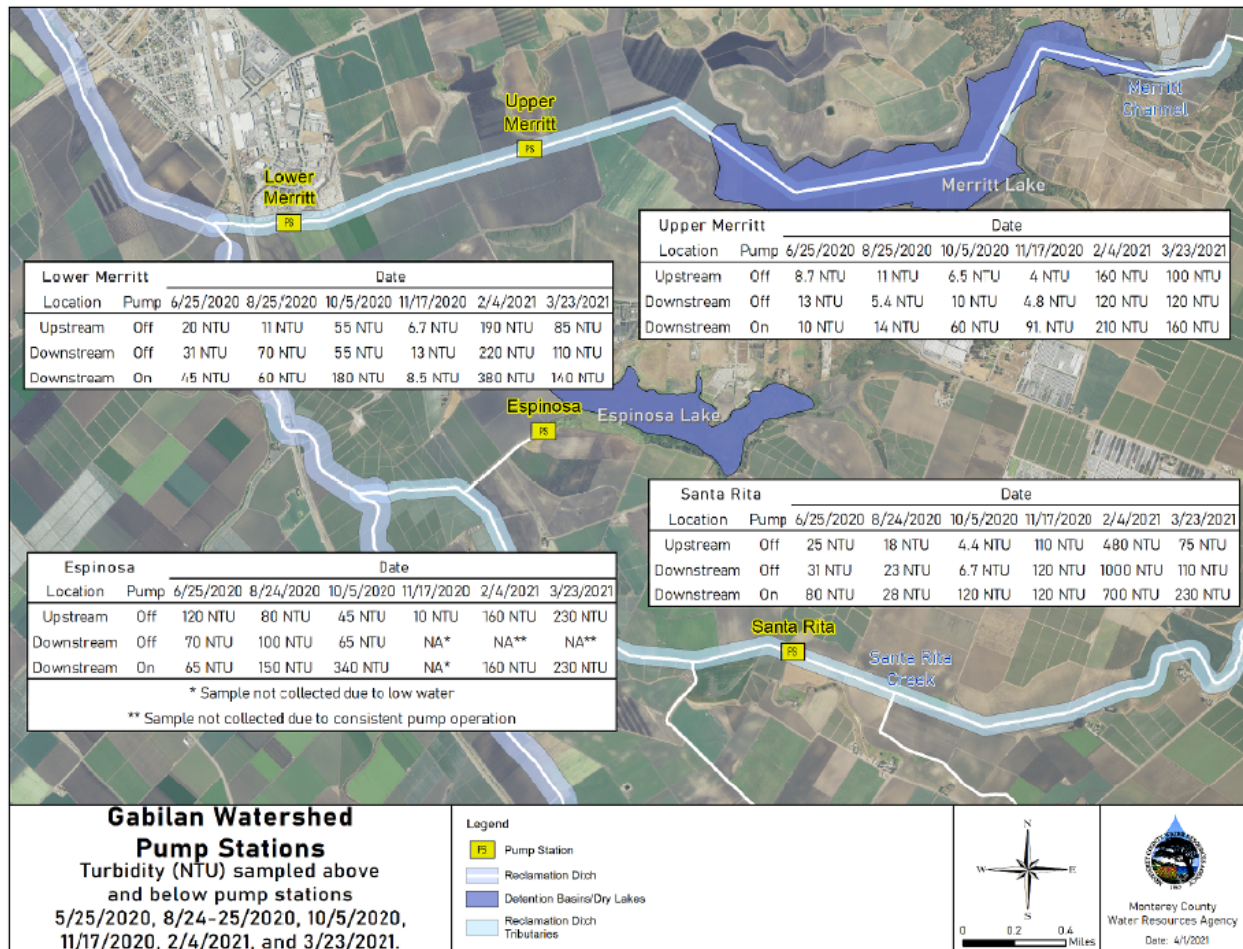
**Please refer to SR-2.**



Section 7.3 Pump Stations, Agricultural Drainage Pumps and Tile Drains, page 83 - MCWRA collected water quality samples in simulated exercises during which lift stations pumps, that would not otherwise be operational, were turned on. These sampling events were not conducted with a QA/QC plan nor intended to mimic actual operational conditions nor was there a large enough dataset to make definitive conclusions. Any turbidity increases from the simulated operations cannot be directly correlated to normal operations because upstream conditions are usually different under the normal pump operations.

**Staff Response (SR-8):**

**Staff acknowledges that MCWRA monitored their pumps without a quality assurance and quality control plan (QA/QC plan). Although the data may lack documentation on accuracy and precision that would be required by a QA/QC plan (e.g. calibration and drift checks), the data are useful to determine relative difference in turbidity in upstream and downstream locations (refer to Figure 2). Further, the results of the MCWRA monitoring are consistent with turbidity levels measured by regional monitoring programs at stations nearby pumps (see summary data in section 3 of the TMDL technical report (Attachment 2). MCWRA staff did sample five separate events from June 25, 2020 to March 23, 2021 and collected nearly 60 samples. This sample size, in the context of regional monitoring data documenting typical conditions near the pumps, provide a useful dataset for understanding the impact of the pumps on turbidity and indicate that the pumps are a source of turbidity.**



**Figure 2. A map of pump stations in the Gabilan Creek watershed operated by MCWRA and monitoring results.**

Page 87 - Page 87 states: “The sloughs and similarly low gradient tributary channels are susceptible to fine sediment resuspension due to discharges from pump stations operated by MCWRA...” There has been no data collected to demonstrate how far downstream of MCWRA lift stations turbidity is affected by their operation.

**Staff Response (SR-9):**

The full extent of downstream impacts is unknown. However, monitoring data indicates that turbidity greatly increases in Tembladero Slough downstream of tributaries (Merritt Ditch, Espinosa Slough, and Santa Rita Creek) with pumps operated by MCWRA. Please refer to Figures 10 and 18 from the TMDL technical report (Attachment 2).

Section 9.15 First Interim TMDL Milestone, page 127 - Document states this is ten years after OAL approval. Stakeholder presentation indicated that this will be changed to five years after OAL approval. Recommend leaving it at the ten-year time step that

has been published in the documents for review to increase the likelihood of successfully reaching the milestone. Five years is not adequate to develop the planning and implementation that may be necessary to address turbidity.

**Staff Response (SR-10):**  
**Please refer to SR-2.**

***Comments on Hydrogeomorphic Approach Appendix 1***

Table 1, Reference Watersheds - All the reference streams are classified as perennial, but Channel classification for several of the ditches and creeks are listed as non-perennial in table 6, page 29 of the TMDL Project Technical Report October 2021, document, which could affect the development of numeric targets.

The reference sites from San Luis Obispo and Santa Barbara Counties are not representative of conditions found in the Gabilan Watershed and should not be used to establish a TMDL.

**Staff Response (SR-11):**  
**Please refer to SR-6, which addresses a previous comment on perennial waterbodies.**

**It is appropriate to include reference sites from San Luis Obispo and Santa Barbara counties because they share a similar geomorphic settings, Mediterranean climate, and land uses with the Gabilan Creek watershed. Specifically, these sites have only winter season rainfall and similar average annual precipitation (see Table 1). The table below illustrates the similarities of rainfall amounts between the different parts of the Central Coast Region. Finally, the TMDL Project establishes unique turbidity numeric targets for the different geographic areas in the watershed, which include the upland headwater areas in the Gabilan Mountains, the lower Gabilan Creek watershed, and the still lower watershed brackish sloughs. These unique turbidity numeric targets are based on reference sites with comparable characteristics mentioned above.**

**Table 1. Average total annual precipitation from sites in the Central Coast Region.**

Site Location	Average Total Annual Precipitation (Inches)	Period of Record	Site Id.
Salinas	14.54	05/01/1958 to 06/09/2016	Salinas, California (047668)
Watsonville	21.52	01/01/1908 to 05/31/2016	Watsonville, California (049473)

San Luis Obispo	22.4	02/01/1893 to 06/10/2016	San Luis Obispo (Cal Poly), California (047851)
Santa Maria	13	01/01/1948 to 06/09/2016	Santa Maria public airport, California (047946)
Lompoc	14.67	03/01/1917 to 06/08/2016	Lompoc, California (045064)
Santa Barbara	17.73	01/01/1893 to 06/09/2016	Santa Barbara, California (047902)

**Source: Western Regional Climate Center.**

Table 2, Summary of Turbidity Data - Clarification needed: Do the zeros in this table represent a value of 0 NTUs or are they values below method detection limits, or do they represent when samples were not able to be collected due to no flow?

**Staff Response (SR-12):**

The data were rounded to whole numbers and therefore, the zeros in Table 2 of the Hydrogeomorphic Approach (TMDL technical report (Attachment 2), Appendix 1) represent values less than 1 NTU. For clarification, the zero values have been updated to “< 1” NTU in Table 2 of the technical report.

***Comments on A Cost Analysis of the TMDL for Turbidity in the Gabilan Creek Watershed***

Other Non-Point Sources, page 10 - MCWRA’s pump stations are in wide well-established waterbodies within the Gabilan Watershed and are unlikely to cause erosion of stream banks.

**Staff Response (SR-13):**

Although they are wide well-established waterbodies, they are unstable because they are maintained to be almost entirely void of any vegetation along their banks and are subsequently subject to erosion through the movement of water during pumping.

Table 3, page 15 - Please flag this data as provisional. MCWRA collected these samples in a simulated exercise in an attempt to determine what, if any, effect the pump stations have to turbidity. In doing this, artificial scenarios were created by Staff that do not reflect actual operation and no QA/QC was performed on the sample collection. MCWRA will not use this data for any future analysis.

Espinosa means are incorrect. Correct values are: Upstream – 108 NTU, Downstream Pump Off – 59 NTU, Downstream Pump On – 158 NTU.

Suggest breaking down these means by Dry Season & Wet Season. Samples collected from June through November were dry events. Samples collected in February and

March were after rain events. This would provide consistency with the milestones presented in Table 2: Interim and final turbidity numeric targets.

**Staff Response (SR-14):**

In response to this comment, staff and the consultant updated the economic analysis report to include Year-Round, Dry Season, and Wet Season means (average turbidity in NTUs), see Table 3 in section 3 of the Economic Analysis, Attachment 4. The consultant updated the means for Espinosa, but their calculations did not coincide with the values calculated by MCWRA. The consultant believes that MCWRA included an 11/17/2020 monitoring event when there was insufficient water to sample in their calculations.

Staff acknowledges and noted in the economic analysis report that the monitoring data collected and submitted by MCWRA is provisional because it was not collected in accordance with an approved QA/QC plan (see response under SR-8). However, the provisional data confirm that the pumps are a potential source of turbidity and, to comply with the State's Nonpoint Source Policy, MCWRA shall prepare and submit a Nonpoint Source implementation plan that includes sufficient feedback mechanisms (e.g., monitoring and reporting program) to determine if turbidity water quality objectives are achieved and maintained (refer to section 9.6 of the TMDL technical report, Attachment 2).

**2. Kay Mercer, Environmental Scientist, Provost & Pritchard Consulting Group**

***Introduction***

Thank you for the opportunity to provide comment on the draft Gabilan Watershed Turbidity TMDL Report and support documents. This letter is being submitted on behalf of Provost & Pritchard (P&P) clients who farm or have property within the Gabilan Watershed Turbidity TMDL (Gabilan TMDL) project boundaries. It is recognized that turbidity and sedimentation are existing water quality issues in the project boundary; and there is support for reasonable timelines and standards for improving water quality.

To review the minimum required for a TMDL, an EPA Review Checklist is included:

- Identification of Waterbody, Pollutant of Concern, Pollutant Sources and Priority Ranking.
- Applicable WQS and Numeric Water Quality Target.\*
- Loading Capacity.\*
- Load Allocations and Waste Load Allocations.\*
- Margin of Safety.\*
- Consideration of Seasonal Variation.\*
- Reasonable Assurance for PS/NPS.
- Monitoring Plan to Track TMDL Effectiveness.
- Implementation Plan.
- Public Participation

\*Required by 40 C.F.R. Part 130

One point should be made with respect to nonpoint sources allocations. 40 C.F.R., Part 30 requires that a plan for implementing load allocations for waters impaired [by] nonpoint sources include reasonable assurances that load allocations will be achieved using incentive-based, non-regulatory or regulatory approaches.

Below is a discussion of the minimum TMDL elements as they might pertain to the Gabilan TMDL.

**Staff Response (SR-15):**

**Staff acknowledges that Ms. Mercer recognizes turbidity and sedimentation as water quality problems in the watershed. Staff notes the general comments on the TMDL Project and nonpoint source allocations, as well as the outline of specific items from the USEPA checklist of TMDL elements that are discussed in this comment letter. In the sections that follow, staff addresses the more specific comments submitted in this letter.**

***Identification of Waterbody, Pollutant of Concern, Pollutant Sources and Priority Ranking:***

Nonpoint sources are from diffuse sources, such as agriculture or forestry, but also include uncontrollable sources, such as naturally occurring conditions or those exacerbated by human disturbance.

Examples of such sources that might apply to the Gabilan TMDL would be highly erosive soil types, legacy sedimentation, bank sloughing, or future causes of sedimentation related to fire scars and/or climate changes to fluvial functions. Railroads are another nonpoint source that should be analyzed because railroads are present throughout the project area.

Gabilan TMDL peer reviewers discussed the absence of legacy loading and bank sloughing in the TMDL. A nominal effort was made to account for these in the draft TMDL. It is recommended that Staff further amend the draft Gabilan TMDL to include a stronger analysis of the impacts of soil erosivity, legacy sedimentation, bank sloughing, and potential climate-related sources of sedimentation. Failure to adequately consider these may result in unintentionally skewing data and failing to accurately analyze field conditions.

**Staff Response (SR-16):**

**Staff notes the recommendation for the TMDL Project to include a “stronger” analysis of the impacts of soil erosivity, legacy sedimentation, bank sloughing, and potential climate-related sources of sedimentation and acknowledges that these are important factors to consider when addressing turbidity. However, it is**

not clear from the comment what specific data may have been unintentionally skewed. The TMDL project clearly identifies turbidity water quality problems by including an in-depth analysis of monitoring data collected from the watershed (please refer to section 3.0 of the TMDL technical report, Attachment 2). In addition to identifying water quality problems, the TMDL technical report includes sources analysis that identifies specific management conditions and activities in the watershed that cause erosion of fine sediments and mobilization of instream fine sediments (Attachment 2, section 7.0). The TMDL source analysis includes GIS watershed analysis along with incorporating several detailed studies conducted in the watershed to identify sources of turbidity. The detailed studies included analysis of the specific factors mentioned by Ms. Mercer, such as field studies of soil erosion.

***Reasonable Assurances:***

Nonpoint source stakeholders do not possess reasonable assurance that proposed numeric targets and load allocations are attainable within the time frame proposed in the Gabilan TMDL.

**Staff Response (SR-17):**  
Please refer to SR-2.

***Implementation Plan:***

Lacking reasonable assurance of non-attainment is not simply a factor of the truncated TMDL timeline. Additionally, there are concerns about implementation expectations implicit in the TMDL. Stakeholders have been told they should simply “implement practices.” However, stakeholders do not believe that the TMDL appropriately acknowledges the current paucity of effective sediment management practices or concedes that cumulative implementation of ALL currently Best Available Treatments and Controls (BACT) is likely not sufficient to achieve the proposed targets and allocations.

A much longer timeframe to develop more effective treatments and mitigations is needed. Failing development of more efficacious practices, no timeline may be sufficient to attain the proposed targets and allocations.

**Staff Response (SR-18):**

**Staff acknowledge stakeholder concerns about the lack of adequate management practices for implementing the TMDLs and how that could influence the ability of growers to meet TMDL timelines. However, staff noted in the TMDL source analysis section of the TMDL technical report (see section 7 of Attachment 2) and in the CEQA analysis (Attachment 3) that some growers do implement fundamental and effective erosion control management practices in agricultural areas. The CEQA analysis includes the following analysis of data from the annual**

compliance forms submitted to the Irrigated Lands Program for the entire Central Coast Region.

- Only 47% of the total reported acreage minimized presence of bare soil non-cropped areas;
- Only 58% of the total reported acreage planted cover crops;
- Only 61% of the total reported acreage controlled concentrated drainage on roads by grading to reduce erosion or installing culverts, rolling dips, or underground outlet pipe(s);
- Only 17% of the total reported acreage installed filter strips, vegetated treatment, or other systems to remove sediment and other pollutants from runoff; and
- Only 23% of the total reported acreage installed sediment basin(s), pond(s), reservoir(s), or other sediment trapping structures to remove sediments from discharge.

It is plausible that if growers in the watershed implement one or more of these and other fundamental erosion control practices, they would meet their load allocations without the need to develop advanced technologies and should be able to do so within the TMDL attainment schedule (please also refer to SR-2). The TMDL data analysis and source analysis in the TMDL technical report (see sections 3 and 7 of Attachment 2) also indicate that turbidity is not just a stormwater runoff issue but is also a problem in this watershed throughout the dry season due to irrigation runoff. Irrigation technologies and practices to treat and control irrigation runoff are currently available for growers to implement and use to meet allocations.

The TMDL report states that if future ongoing implementation efforts are insufficient to ultimately achieve the allocations and numeric targets, the TMDL Implementation Plan will be revised. Since stakeholders do not believe that these allocations/numeric targets are attainable within the current 20-year timeline, the TMDL should provide more details about what sort of revisions may be proposed.

**Staff Response (SR- 19):**

Staff could not identify this specific statement from the TMDL technical report but believes this comment is referencing a statement on the adequacy of the existing monitoring frequency to determine if load allocations are met during the wet and dry seasons (please refer to section 10.6 of the TMDL technical report (Attachment 2), Irrigated Lands Program Monitoring and Reporting). It is possible that during the implementation of this TMDL Project, turbidity monitoring in addition to that required in the current Monitoring and Reporting Programs required by Agricultural Order 4.0, may be necessary. The TMDL economic analysis describes potential costs for additional turbidity monitoring.



***Applicable WQS and Numeric Water Quality Target, Loading Capacity, Load Allocations and Waste Load Allocations, Margin of Safety, Consideration of Seasonal Variation:***

Attainment of water quality targets and allocations also hinges on the processes by which the targets and allocations are conceived. Questions and comments regarding establishment of targets and allocations are addressed below.

The Gabilan TMDL fails to factor in the soil erosivity of the project area. cursory analysis of both CMP and CCAMP data indicates that the origin of waters from the eastside Gabilan Hills may be more indicative of high turbidity levels than land use. Staff is encouraged to pursue more in-depth analysis in which they overlay sediment origin with soil types and watershed turbidity levels.

**Staff Response (SR-20):**

Soil erosivity was considered in the TMDL source analysis, specifically section 7.1 of the TMDL technical report (Attachment 2). This section of the TMDL technical report includes findings from the subwatershed sedimentation study conducted by researchers from California State University Monterey Bay (CCOWS, 2003). This study found that land use is a significant factor. Loading in crop lands was over eight times higher than in grazing/natural lands and over two times higher than in urban areas (please refer to Table 28 of the TMDL technical report (Attachment 2)). The turbidity monitoring data analysis also supports the conclusion that land use is a major source of turbidity (please refer to section 3 of the TMDL technical report (Attachment 2)). For example, Table 14 shows that turbidity is extremely high during the dry season when the primary sources are anthropogenic and not rainfall driven erosion of soils from the Gabilan Mountains. Additionally, in healthy watersheds, dry season turbidity samples generally have little variability. In the Lower Gabilan Creek watershed the variability in dry season samples is very large, as is documented by the difference between the 25<sup>th</sup> and 75<sup>th</sup> percentiles of the turbidity results from any give monitoring station, also referred to as the interquartile range (please refer to Table 14 of the TMDL technical report (Attachment 2)).

The alluvial geomorphology of watershed substrates in these waterbodies is largely ignored. It defies logic to expect a watershed formed through alluvial deposition, and classified as alluvial in nature, to meet the proposed targets and allocations, which approach a zero-tolerance level.

**Staff Response (SR-21):**

Section 2.0 of the TMDL technical report (Attachment 2) provides a description of the Gabilan Creek watershed and section 2.2 specifically describes the geomorphology. Section 2.2 includes a description of channel slopes, channel hydrology, and the presence or absences of vegetation. Staff also created a map of waterbody slopes and geology to locate and illustrate the geomorphic

characteristics of the Gabilan Creek watershed. Along with the map, this section describes of the watershed geologic features such as the alluvial valley floor and the granitic bed Gabilan Mountains. In addition to this discussion in section 2.2, the source analysis in section 7.0 incorporates the results of other studies that also analyzed geomorphology of the watershed. Staff maintain that the turbidity numeric targets can be achieved in the Gabilan Creek watershed because the targets are derived from the conditions in the Gabilan Creek watershed, from watersheds with similar land uses, and with similar hydrogeomorphic characteristics (please refer to SR-2). The proposed targets and allocations do not approach a zero-tolerance level. The turbidity numeric targets and allocations are established as seasonal medians and take into consideration natural fluctuations of turbidity that occur from storm events.

Stakeholders have been requesting an analysis of legacy sediment loading for years. We were gratified to see that peer reviewers suggested this as part of the TMDL analysis. This should be developed more fully and this TMDL should not be adopted until there is a better understanding of how previously deposited sediment loads impact today's monitoring results.

**Staff Response (SR-22):**

The TMDL source analysis considers the remobilization of waterbody sediments as a source of turbidity. Waterbodies in the lower alluvial valleys naturally have more fine sediments and are more turbid than in upland areas. In the lower Gabilan Creek watershed, waterbodies are very turbid, even during the dry season when there is no natural surface runoff, and this is due to controllable anthropogenic sources such as pump discharges, channel maintenance resulting in bare soil exposure, and irrigation runoff.

The scientific peer reviewers provided feedback to better inform the TMDL Project, but overall supported proceeding with the TMDL Project absent a legacy sediment loading analysis. The following comment from scientific peer reviewer George M. Hornberger, PhD. on the TMDL technical report illustrates overall support for the TMDL Project:

*The report and the supporting material are thorough, thoughtful, and clear. The basis for the decisions about setting targets for turbidity remediation is well documented. In my opinion, the report provides a sound basis to proceed. My comments below on the specific questions to which I was asked to respond highlight a few things that might be considered in the future as the plans are finalized and the program is moved to an implementation stage but in no way should they be taken to imply that there are critical inadequacies.*

Watersheds in the TMDL project area have been hydromodified and the subsequent head-cutting of creek banks result in continual bank sloughing. Peer reviewers also

suggested that this be included in the TMDL as a source. Of course, sedimentation from head cutting can be addressed through expensive and time-consuming restoration efforts. The question is whether these can be effectively implemented with the 20-year proposed compliance schedule. Also, the question exists at what point the cost: benefit ratio is unreasonable.

**Staff Response (SR-23):**

**Also see SR-22 above. The TMDL Project includes head-cutting and bank sloughing as sources of turbidity. Staff acknowledge that restoration projects can be time consuming and expensive. However, staff is confident that these types of projects can be implemented in the watershed. For example, independent of the TMDL Project, stakeholders in the watershed have taken the initiative to develop plans for restoration and sediment control through the local Integrated Regional Water Management (IRWM) group. The IRWM group developed a regional stormwater plan that includes ten regional projects to restore water quality and wetland habitats (please refer to the TMDL technical report (Attachment 2, section 9.4)). These are multi-benefit projects and the cost to benefit ratio leans towards a greater benefit for the local communities. These projects not only address water quality but also water supply, flood protection, environmental protection, habitat restoration, and community benefits such as jobs and recreation. Details on the costs of these projects are included in the TMDL economic analysis (see Attachment 4).**

**One of these ten IRWM projects, the Carr Lake Project, was recently funded by California State Parks. The Big Sur Land Trust was awarded an \$8.5 million Proposition 68 grant to finalize design and construction of a neighborhood park that has community, environmental, and water quality benefits. The Carr Lake project would improve water quality and reduce turbidity by converting a large portion of a seasonal dry lakebed that is currently farmed into treatment wetlands.**

The Gabilan TMDL fails to address shifts in types of turbidity that occur when there are decreases in sediment loading. Typically, reduced sediment loads result in increased sunlight penetration in receiving waters. If the waters are nutrient-rich with nitrate and/or phosphorous, as is the case on the Central Coast, and there is increased sunlight; then, algal-related turbidity will increase. Turbidity levels may not be attenuated: there may simply be a trade-off from sediment-caused turbidity to algal-caused turbidity. This should be modeled in the Gabilan TMDL.

**Staff Response (SR-24):**

**The TMDL technical report notes that algae and other organic materials are potential sources of turbidity but the focus of this TMDL Project is to address turbidity caused by suspended sediments because that is the primary cause of turbidity in the watershed (please refer to the TMDL technical report (Attachment 2, section 1.3)). Although, the turbidity TMDL Project does not address algal**

**blooms and other nutrient related biostimulatory responses, the previously adopted Salinas Watershed Nutrient TMDL Project (CCRWQCB, 2013) does address these pollutants and associated response conditions (e.g., nutrient driven algal blooms and fluctuations in dissolved oxygen). Therefore, modeling is not necessary.**

Sedimentation is largely driven by slope and soil type. The methodologies here do not utilize that information to calculate turbidity waste load and load allocations.

**Staff Response (SR-25):**

**As noted in this comment, the waste load and load allocations are not directly calculated based on slope and soil type. The allocations are equal to the turbidity numeric targets, which are calculated based on water quality at the Gabilan Creek sites and at reference sites with similar characteristics to the Gabilan Creek watershed and the characteristics include slope, land use, hydrology and soil type.**

The single use of perennial stream classifications is inappropriate for certain reaches. Segments in Alisal, Gabilan, Natividad and Santa Rita Creeks are dry through most of the year. Typically, they only have water after storm events or if there is significant tailwater runoff. Classifying these waterbodies as perennial subsystems belies years of watershed descriptions contained in multiple watershed plans and reports. For example, the Gabilan TMDL Report references the National Wetlands Inventory. However, that database classifies upper- and mid-reaches of the Alisal, Natividad, Gabilan, Santa Rita, Espinosa Creeks and Merritt Ditch as intermittent waterbodies. Also, the CDWR Bulletin 118 states: *“Intermittent streams such as Natividad, Alisal, Quail, Parsons, Muddy and Johnson Creeks drain the western slopes of the Gabilan Range and flow across the Subbasin toward the Salinas River on the west side of the Valley.”* Many other local, state, and federal plans and reports classify mid- and upper-reaches of the waterbodies in the Gabilan Watershed to be intermittent or ephemeral subsystems or both.

**Staff Response (SR-26):**

**As previously stated in SR-6, some waterbodies such as Natividad Creek have both perennial and intermittent reaches and this is acknowledged in the TMDL technical report (Attachment 2, section 2.2). The watershed assessments for the turbidity TMDL Project are based on monitoring data from perennial reaches that are representative of conditions in the Gabilan Creek watershed and for consistency, the TMDL project will use these same sites for future water quality assessments.**

The methodologies being developed should qualify the of unconsolidated class with a subclass that includes sand and mud, not rock or rubble. This would be a better characterization of mid- and lower- reaches of waterbodies in the Gabilan watershed.

The Water Board is encouraged to reclassify stream subsystems and subclasses and to reconduct the turbidity analysis based upon these reclassifications.

**Staff Response (SR-27):**

**Ms. Mercer’s comment on the use of unconsolidated stream classifications is in reference to the USEPA Ecoregional Approach for developing potential numeric targets, which is described in the TMDL technical report (see Attachment 2, section 4.3) and in Appendix 2 of Attachment 2, Natural Turbidity Report – USEPA Ecoregional Approach. For the turbidity TMDL Project, staff used two different approaches to develop potential numeric targets for the upper Gabilan Creek watershed headwaters and the lower Gabilan Creek watershed. In the lower Gabilan Creek watershed, which has some waterbodies with sand and mud substrates, staff considered potential numeric targets based on USEPA Ecoregional Approach. These potential turbidity numeric targets are very low compared to the highly impaired existing turbidity conditions in the lower Gabilan Creek watershed. Consequently, for the lower Gabilan Creek watershed, staff identified appropriate turbidity numeric targets using the Hydrogeomorphic Approach (see TMDL technical report [Attachment 2, section 4.2] and Appendix 1, Hydrogeomorphic Approach). With the Hydrogeomorphic Approach, reference sites were identified in waterbodies with similar water source, flow direction, stream gradient, and velocity to the Gabilan Creek watershed. In addition, topographic landscape features were considered in the selection of reference sites and features considered include slopes, soil types, land use, and physical geology.**

The use of reference sites from Southern San Luis Obispo and Santa Barbara Counties are NOT representative of conditions found in the Gabilan Watershed. It is unclear whether the Gabilan TMDL is making assumptions based on land use or if they fully analyzed the applicability of these watersheds. However, the use of these reference sites and data from these areas are not useful for determining numeric targets and load allocations.

**Staff Response (SR-28):**

**Refer to SR-11.**

One peer reviewer suggested that data be presented in graphs utilizing Minimum, Maximum, Median and Mean values. Such presentation would better inform the Water Board and the public about the range and seasonality of turbidity levels. The current data presentation obscures current conditions and does not allow the reader to fully understand the likelihood of attainment or the impact of adoption of the proposed Gabilan TMDL.

**Staff Response (SR-29):**

**During the data analysis stage of this TMDL Project, staff considered different approaches to graph turbidity, including the ones mentioned by the scientific**

peer reviewer. Box plots are useful and interesting data visualizations but not necessary to define the numeric targets, which are based on median values of a seasonal data set in accordance with standard statistical methods.

It is not appropriate to assign all watersheds the same final waste load or load allocations. Upper-, Mid-, and Lower-segments of each waterbody possess unique geomorphological, topographical, or physical characteristics that influence potential sediment loads, and algal populations, and subsequent turbidity.

**Staff Response (SR-30):**

**Staff acknowledges that different waterbody segments can have different morphological characteristics and the TMDLs reflect these differences. Load allocations are equal to the turbidity numeric targets and both the interim and final turbidity numeric targets take local characteristics into account. The final numeric targets are separated into two distinct geographic areas in the watershed, the upper Gabilan Creek watershed (headwaters) and the Lower Gabilan Creek watershed (refer to Attachment 2, section 4.). The lower Gabilan Creek watershed, which encompasses the alluvial plain from the base of the Gabilan Mountains to the coast, is further divided into two sections: freshwater waterbodies and brackish waterbodies near the coast. The final numeric targets in the lower Gabilan Creek watershed are based on existing conditions at reference waterbodies with similar hydrogeomorphic characteristics. These reference sites were selected because they have similar geomorphic setting, water source, climate and rainfall patterns, and hydrodynamics. The specific hydrogeomorphic characteristics are described in the TMDL technical report (Attachment 2, section 4.2).**

There should be a higher degree of public dialog with regard to the use of Biological Condition numeric targets before they are included in this TMDL.

- The California Rapid Assessment Method (CRAM) is rather controversial. Furthermore, it can easily be misused when establishing regulatory metrics, as was evidenced in the 2020 ILP 4.0 proposed riparian habitat requirements.
- Stakeholders deserve to know HOW the Biological Condition numeric targets will be used to evaluate whether waterbodies are achieving TMDL allocations. The TMDL document is too vague with regard to these evaluations and more detail should be provided.

**Staff Response (SR-31):**

**The TMDL Project has two types of biological condition numeric targets with the first based on benthic invertebrate community assessments and the second based on a rapid habitat assessment method. Both methods are standard methods for assessing biological health with established protocols. The specific assessment levels for the numeric targets are described in the Basin Plan amendment (Attachment 1) and in the TMDL technical report (see Attachment 2, section 6).**

These numeric targets are not allocations, and therefore will not be incorporated into the Agricultural Order (or other permits) as numeric limits. However, these numeric targets will be evaluated and considered when determinations are made as to whether waterbodies are achieving water quality standards and TMDL allocations for turbidity; for example, they may be considered proxies for turbidity allocations (i.e., if the biological numeric targets are met, then we may conclude that aquatic life uses are supported). Biological assessments have been included in the previous agricultural monitoring programs and discussed with the agricultural stakeholders during development of Agricultural Order 4.0 and at the public workshop for this TMDL Project.

The TMDL is silent on how additional monitoring will be accomplished. Who is going to do the monitoring and how will it be funded? Perhaps, this was discussed in the economic analysis. If so, a reference should be made to the analysis in the TMDL report.

**Staff Response (SR-32):**

Monitoring will be implemented by the programs given allocations once the permits are revised to incorporate the TMDLs or, when nonpoint source implementation plans are developed and approved. Staff revised the monitoring recommendations in the TMDL technical report (see Attachment 2, section 10) and in the Basin Plan amendment (Attachment A to Attachment 1) to reflect that the existing Agricultural Order 4.0 monthly monitoring requirements are adequate for determining compliance with the TMDL Project.

What is the basis for determining the margin of safety? The explanation appears rather arbitrary.

**Staff Response (SR-33):**

The margin of safety is a required TMDL component (see Clean Water Act, section 303(d)(1)(C)). The margins of safety account for the uncertainty in the relationship between load allocations and water quality objectives of the receiving waters (SWRCB, 2005). The margins of safety described in this TMDL Project are based on standard safety factors (commonly used to account for uncertainty in calculating risk levels such as 1/2 or 1/10<sup>th</sup> the effect level). Safety factors were applied to potential turbidity numeric targets derived from scientific studies. In addition, the turbidity water quality objective allows a level of increase above natural turbidity and this increase is not included in the TMDL turbidity numeric targets to provide a margin of safety between natural conditions and the numeric objective.

The TMDL report discusses the possibility of 303(d) de-listing of watersheds; however, this is misleading because the process for delisting is not well-defined. The delisting policy is based on the number exceedances per number of samples taken. However,

the policy is unclear whether “dry” samples can be included in the total sample count for delisting purposes. The mid-and upper-reach segment are dry throughout the majority of the year; therefore, it is unclear what the requirements are for de-listing any watershed for any constituent on the Central Coast.

**Staff Response (SR-34):**

The delisting process is described in the Water Quality Control Policy for Developing California’s Clean Water Act section 303(d) List (Listing Policy) (SWRCB, 2015). The Listing Policy provides guidance not only on how to identify waters that do not meet water quality standards, but also on how to remove waters from the 303(d) List of impaired waters. A common approach for evaluating water quality monitoring data and making listing decisions is based on sample exceedance frequency. With decisions based on sample exceedance frequency, documentation of dry waterbodies (e.g., site visits where no turbidity measurement was collected) are not counted in the total sample count. However, naturally dry ephemeral and intermittent waterbodies could be evaluated using the Listing Policy’s weight of evidence approach (see Listing Policy, sections 3.11 and 4.11) if supporting documentation (such as photo documentation and flow data) were provided in a manner that could be used to determine water quality standards attainment. Currently, information documenting dry waterbody conditions is not associated with a pollutant in the database and therefore is not assessed or counted.

Staff shared this comment and response with Integrated Report Staff and recommend that the commenter to work with Integrated Report Program staff to determine how such information could be submitted for future consideration.

Many of the comments made herein are influenced by the possible transition of load allocations to permit limits under the Irrigation Lands Program 4.0 if there is non-attainment by the 20-year compliance deadline. This possible automatic conversion from receiving water load allocation to edge-of-field discharge limits based on ranch-level discharge monitoring is very concerning.

- TMDL receiving water numeric targets and allocations reflect the total load from ALL sources. It is unclear how these targets and allocations can be partitioned at the point of discharge.

**Staff Response (SR-35):**

The TMDL Project establishes turbidity numeric targets and load allocations at receiving water monitoring sites and not at specific points of discharges. Monitoring specific points of discharge is not a component of the turbidity TMDL Project nor does Agricultural Order 4.0 establish “automatic conversion from receiving water load allocation to edge-of-field discharge limits,” as the commenter stated. Under Agricultural Order 4.0, the Executive Officer may



require ranch-level surface discharge monitoring (edge-of-field monitoring) based on exceedances of applicable surface water quality limits (see CCRWQCB, 2021b, section E. *Surface Water Monitoring and Reporting*, and paragraph 22, page 29). The Agricultural Order 4.0 requirement for ranch-level discharge monitoring (and thus edge-of-field limits) will be determined on a case-by-case basis to assess and quantify the grower's contribution to the exceedance, including concentration and loading, to evaluate effects of the discharge on receiving water quality and beneficial uses, and to demonstrate compliance with load allocations and water quality objectives over time.

- The Gabilan TMDL analyzed receiving water data and did not review the discharge monitoring programs (e.g., municipal and ILP 3.0 Tier 3 Surface Water Monitoring programs) to gauge the achievability of the proposed WQOs. Many of the dischargers are implementing current BACT and are not able to attain existing Basin Plan numeric WQOs of 25 and 10 NTUs. What is the likelihood that they will attain proposed, substantially lower targets and allocations using the same 90-year, old dust-bowl technologies?

**Staff Response (SR-36):**

The TMDL Project includes analysis of turbidity data from receiving water monitoring sites provided by various programs including the Water Board's ambient monitoring program, the Cooperative Monitoring Program for agriculture, and the City of Salinas. The ability for growers to achieve allocations at these sites is discussed in SR-2 and SR-18.

- With respect to the economic analysis, does it evaluate the impact of agricultural dischargers not attaining these targets and having to conduct edge-of-field discharge monitoring, which is imposed as a negative consequence of non-attainment?

**Staff Response (SR-37):**

The TMDL economic analysis estimates the incremental cost associated with implementing the TMDL Project. Incremental costs are new direct costs associated with this TMDL Project. The follow-up edge of field monitoring costs are not new direct costs, since they were considered during the development of the economic analysis for Agricultural Order 4.0 (CCRWQCB, 2021a). Further, as described in SR-35, the need for and extent of edge of field monitoring is uncertain at this time, since such monitoring *may* be required *on a case-by-case basis*, and thus any associated cost analyses would be speculative.

***Public Participation:***

Staff have done a superb job of outreach relative to agricultural stakeholders but have not necessarily addressed comments about non-attainability that have been voiced at the multiple stakeholder meetings. The proposed Gabilan TMDL will also apply to

grazers and rangeland managers. What outreach was conducted with respect to these stakeholders?

**Staff Response (SR-38):**

**Staff appreciate the acknowledgement for superb public outreach relative to agricultural stakeholders. The comment regarding attainability is addressed in SR-18. Staff conducted outreach to ranchers that are on the TMDL Project email subscription list and ranchers participated in stakeholder meetings. Outreach was also conducted by Monterey County Farm Bureau to ranchers in the watershed and their input on rangeland implementation is included in section 9.1 of the TMDL technical report.**

***Closing Comments.***

In closing, while we believe that addressing turbidity is a critical undertaking throughout the Central Coast, there are multiple concerns related to:

- The science used in the Gabilan Watershed Turbidity TMDL,
- The lack of development of practices to effectively reduce sedimentation and turbidity,
- The conversion from sediment-based to algal-based turbidity, the attainability of proposed targets and allocations, and
- The costs associated with implementing this TMDL.

Amending the methodologies to better reflect actual watershed characteristics and conducting more in-depth analysis of the conditions that contribute to sediment loading would improve the Gabilan Watershed Turbidity TMDL.

Definitely, the proposed methodologies for determining natural background and numeric targets are not ready for application throughout the Central Coast.

Hopefully, these comments will be considered and are helpful in preparation of the Gabilan Watershed Turbidity TMDL.

**Staff Response (SR-39):**

**These closing comments on the turbidity TMDL Project provide a summary of Ms. Mercers previous more detailed comments that staff already addressed.**

**3. Shaila Chowdhury, Chief Environmental Engineer, California Department of Transportation, Division of Environmental Analysis**

***Comment: Caltrans Waste Load Allocations and Negligible Contributor of Turbidity Loads to the Watershed***

The Basin Plan amendment assigns a waste load allocation (WLA) and requirements directly for point sources, including Caltrans. Caltrans operates an estimated 35 miles of roadway in the Gabilan Creek watershed or about 250 acres. This is approximately 0.25 percent of the total watershed area (the total watershed area is approximately 100,000 acres). Caltrans highway system is unique, as it is a linear municipal separate storm sewer system (MS4) agency with a relatively small footprint scattered throughout the state, with limited impacts in a watershed. Implementing runoff treatment from various parts of Caltrans highway would have negligible impacts to the overall load reductions within Gabilan Creek.

Based on existing data available from Caltrans past four year's Annual Report, Caltrans has no slopes prone to erosion within the Gabilan Creek watershed. Given the lack of susceptible slopes within the watershed, Caltrans requests that the Regional Water Board recognize 1) that the occurrence and discharge of turbidity from Caltrans' right-of-way are caused by natural background sources and 2) the impacts caused by these natural sources represent a negligible impact to the Gabilan Creek watershed. Therefore, Caltrans requests the TMDL should indicate that Caltrans is a negligible contributor of turbidity, and the WLAs assigned to Caltrans should be equal to existing loads.

**Staff Response (SR-40):**

**Staff recognizes that Caltrans' roadways, compared to other land uses, represent a relatively small area in the watershed; however, Staff does not consider Caltrans a negligible contributor because runoff from Caltrans roadways could cause turbidity. Potential sources of turbidity from roadways include the mobilization of waterbody sediments due to increased rates, velocities, and volumes of runoff from roadway impervious surfaces and the potential for stormwater runoff to wash sediment from roadways into waterbodies.**

**REFERENCES USED BY STAFF IN RESPONSES TO REVIEWS**

2NDNATURE. 2020. Memorandum: City of Salinas Stormwater Pesticide Data Collection and Analysis

California State Water Resources Control Board (SWRCB). 2005. State of California, S.B. 469 TMDL Guidance, A Process for Addressing Impaired Waters in California

Central Coast Watershed Studies (CCoWS). 2003. Salinas Valley Sediment Sources.

Central Coast Regional Water Quality Control Board (CCRWQCB). 2013. Total Maximum Daily Loads for Nitrogen Compounds and Orthophosphate for the Lower Salinas River and Reclamation Basin, and the Moro Cojo Slough Subwatershed, Monterey County, California

Central Coast Regional Water Quality Control Board (CCRWQCB). 2021a. General Waste Discharge Requirements for Discharges from Irrigated Lands, Attachment A – Findings.

[https://www.waterboards.ca.gov/centralcoast/water\\_issues/programs/ilp/docs/ag\\_order4/2021/ao4\\_att\\_a.pdf](https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ilp/docs/ag_order4/2021/ao4_att_a.pdf)

Central Coast Regional Water Quality Control Board (CCRWQCB). 2021b. General Waste Discharge Requirements for Discharges from Irrigated Lands, Attachment B – MRP. [https://www.waterboards.ca.gov/centralcoast/water\\_issues/programs/ilp/docs/ag\\_order4/2021/ao4\\_att\\_b.pdf](https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ilp/docs/ag_order4/2021/ao4_att_b.pdf)

United States Environmental Protection Agency Office of Water (USEPA). 2000. Guidance for Developing TMDLs in California, EPA Region 9

State Water Resource Control Board (SWRCB), 2015. Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List. Adopted September 30, 2004 and Amended February 3, 2015