San Diego Regional Water Quality Control Board

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DATE: ~~November 22, 2021~~ June 8, 2023

SUBJECT: REQUEST FOR EXTERNAL SCIENTIFIC PEER REVIEW FOR PROPOSED TOTAL MAXIMUM DAILY LOADS FOR INDICATOR BACTERIA AND TRASH IN THE LOWER TIJUANA RIVER

Title of Proposal for Review

This request is regarding proposed total maximum daily loads (TMDLs) for indicator bacteria and trash in the lower Tijuana River. San Diego Regional Water Quality Control Board (San Diego Water Board) staff requests that you initiate the process to identify external scientific peer reviewers for TMDLs for indicator bacteria and trash in the lower Tijuana River, per the requirements of California Health and Safety Code section 57004.

Purpose of the Review

The eventual outcome of this TMDL project will be the San Diego Water Board adoption of an amendment to the Water Quality Control Plan for the San Diego Basin (Basin Plan) to establish and implement TMDLs for indicator bacteria and trash in the lower Tijuana River.

When References Will Be Available at the FTP Site

All review materials, including supporting documents for reference, will be available by ~~December 20, 2021~~ June 19, 2023.

Date Requested Review Period

We request that scientific peer review be accomplished within 45 days.

Necessary Areas of Expertise for Reviewers

Unlike technical reports for other TMDLs, this draft TMDL staff report is *not a highly technical document*. It does not contain modeling or in-depth scientific evaluations, modeling, or complex statistics. However, it does contain data analyses. Therefore, reviewers must be proficient in data analysis (e.g., calculation of pollutant loads and load reductions required to meet water quality objectives). In addition, the draft TMDL staff report contains conclusions that are based on technical studies/reports (supporting documents). Based on the content of these studies, and the conclusions they support, reviewers should have expertise in the following fields:

Solid Waste Management
Two reviewers with expertise on trash characteristics and management. Familiarity with: (1) typical density ranges of various materials and mixed solid wastes, and (2) best management practices to control trash pollution. Reviewers must be able to address the questions in Attachment 2 related to the focused peer review of the trash numeric target, trash source analysis, annual trash load estimates, the trash TMDL, and corresponding trash load allocations and wasteload allocations.

Public Health Microbiology
Two reviewers with expertise on human pathogens and pathogen indicators in domestic sewage. Familiarity with: (1) bacteria water quality objectives for

protection of human health in the context of water contact recreation and (2) best management practices to control pathogen risks. Reviewers must be able to address the questions in Attachment 2 related to the focused peer review of the indicator bacteria numeric targets, indicator bacteria source analysis, annual indicator bacteria load estimates, the indicator bacteria TMDLs, and corresponding indicator bacteria load allocations and wasteload allocations/reductions.

Refer to Attachment 2 for more details.

Contact Information

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Attachments

Attached please find:

- Attachment 1: Plain English Summary.
- Attachment 2: Scientific Assumptions, Findings, and Conclusions to Review.
- Attachment 3: Individuals who Participated in the Development of the Proposal.
- Attachment 4: References Cited.

ECM PIN: CW-650436

Attachment 1: Plain English Summary

Background Information

The San Diego Regional Water Quality Control Board (San Diego Water Board) is charged with implementing the provisions of both the Porter Cologne Water Quality Control Act (California law) and the federal Clean Water Act in the San Diego Region. Section 303(d)(A)(1) of the Clean Water Act requires the San Diego Water Board to identify those waters within the Region that do not support beneficial uses and to establish total maximum daily loads (TMDLs) for the pollutants causing the impairments. A TMDL specifies the maximum amount of a pollutant a water body can receive and still meet water quality standards. A TMDL also allocates acceptable pollutant loads to point and nonpoint sources.

Under California Law, TMDLs must be publicly reviewed and approved by the corresponding Regional Board, the State Water Resources Control Board (State Water Board), and the State's Office of Administrative Law (OAL). TMDLs must be submitted for consideration for adoption as part of a Regional Board Basin Plan amendment. The Basin Plan amendment must then be submitted to USEPA for review and approval under Clean Water Act section 303. San Diego Water Board Regional Board staff will be recommending the adoption of indicator bacteria and trash TMDLs for the lower Tijuana River.

The TMDL numeric targets define the measurements that will ensure recovery of the beneficial uses that are impaired so that water quality standards can be attained. Water quality standards include beneficial uses, water quality objectives (numeric and narrative), and an antidegradation policy. TMDL numeric targets are not themselves criteria or objectives and are therefore not enforceable. The San Diego Water Board has identified indicator bacteria and trash as pollutants that cause impairments in the lower Tijuana River, and therefore, has developed TMDLs for that segment of the river. The lower Tijuana River refers to the stretch of the river that crosses the border from Mexico into the U.S., where it traverses the Tijuana River Valley and the Tijuana River Estuary, and ultimately reaches the Pacific Ocean shoreline. This stretch of the river is approximately six miles in length.

The TMDLs that have been developed do not apply to the entire Tijuana River watershed. They apply only to the U.S. portion of the lower watershed. The circumstances for this particular case are unusual compared to other TMDLs because this watershed straddles an international border.

The Tijuana River watershed is approximately 1,750 square miles in area. Less than one-third of the watershed's area is in the U.S. (California), most of which is the upper watershed. Much of this portion of the watershed is within protected national forest and State of California (State) park lands. The water quality there is some of the best in the San Diego Region due, in large part, to the sparse population and limited development. Two drinking water reservoirs are located in the upper watershed and capture a significant amount of the surface water flows, so only a small portion of the upper watershed surface waters from the U.S. crosses the international border south into Mexico.

Over two-thirds of the watershed's area is in Mexico (Baja California). The river ultimately crosses the border back into the U.S. just upstream of where it discharges to the Pacific Ocean. Wastes generated in Mexico are transported by the river and its tributaries into this

small U.S. portion of the lower watershed, including the estuary, and into the ocean. Federal and State environmental regulatory agencies in the U.S. do not have jurisdiction in Mexico and therefore, do not have authority to regulate wastes in Mexico.

The *Water Quality Control Plan for the San Diego Basin (9)* (Basin Plan) designates a variety of ecosystem and recreational beneficial uses of the lower river, located in the small U.S. portion of the lower watershed. The beneficial use designations of the lower Tijuana River and the estuary also apply to their respective tributaries. Wastes generated in Mexico, including sewage and trash, are significant sources of impairments to these beneficial uses and threaten public health and wildlife.

Concentrations of indicator bacteria (*Escherichia Coli* and enterococci), which indicate the potential presence of pathogens from human fecal contamination, do not meet water quality objectives (WQOs) as defined in the *Water Quality Control Plan for the San Diego Basin (9)* (Basin Plan). Based on ongoing visual observations and estimated trash loading into the Tijuana River Valley, trash also does not meet WQOs as defined in the Basin Plan.

Draft TMDL Staff Report

The San Diego Water Board prepared a draft staff report to support development of the indicator bacteria and trash TMDLs for the lower Tijuana River. Unlike technical reports for other TMDLs, this draft staff report is *not a highly technical document*. No additional monitoring or modeling were conducted for this effort, and the draft staff report does not contain in-depth scientific evaluations. The data analyses in the draft staff report are based on existing data and independently produced studies/reports by other stakeholders. These data and studies/reports document the ongoing presence of excessive trash and exceedingly high concentrations of indicator bacteria due to polluted transboundary flows.

The significant sources of indicator bacteria and trash impacting the lower Tijuana River are transboundary flows from Mexico into the U.S. This includes the main channel (engineered flood control channel) itself and six cross-border tributaries. These are considered ~~point~~ nonpoint sources of pollution. The trash and vast majority of the indicator bacteria pollution in these transboundary flows are anthropogenic. Wastes generated in Mexico that cross the border pollute the lower six-mile stretch of the river in the U.S., where the Clean Water Act and California law apply.

Indicator bacteria and trash generated in the U.S. may also discharge to the lower river. However, these contributions are minor compared to the significant sources (transboundary flows). The draft staff report establishes numeric targets for the indicator bacteria and trash, acceptable pollutant load and wasteload allocations, and required reductions of these pollutants so that water quality standards are attained in the lower Tijuana River.

The San Diego Water Board relied on independently produced technical studies/reports to develop the draft staff report. The following studies/reports, listed in alphabetical order by author, are particularly relevant in the context of this peer review request:

- **AECOM, 2016. Nelson Sloan Management and Operations Plan and Cost Analysis**
  This study was conducted for the County of San Diego to present options for the management and operation of sediment fill activities to restore the former Nelson Sloan Quarry, located in the Tijuana River Valley. The report includes anticipated sediment excavation volumes, which were used in the draft staff report to calculate minimum trash loading into the Tijuana River Valley from transboundary flows.

- **City of San Diego, 2011. Excavation and Post Storm Observations in TJ River Valley**
  This study was conducted to evaluate the nature and quantity of trash and sediment that had accumulated at two Tijuana River Valley sites since their excavations in 2003. The report includes estimates for trash abundance, which were referenced in the draft staff report to calculate minimum trash loading into the Tijuana River Valley from transboundary flows.

- **HDR, 2020. Tijuana River Valley Needs and Opportunities Assessment – Trash Technical Memorandum**
  This technical memorandum was prepared for the County of San Diego to identify projects to capture trash from transboundary flows into the Tijuana River Valley. The report includes the pounds-per-cubic-yard value used in the draft staff report to calculate minimum trash loading into the Tijuana River Valley from transboundary flows.

- **Lee, Lyndon, 2021. Report of Lyndon C. Lee, Ph.D. PWS**
  This report was prepared for the U.S. Department of Justice to evaluate conditions in the cross-border tributaries. The report includes Smuggler's Gulch mean annual rainfall, subwatershed annual precipitation, and subwatershed areas used to calculate annual pollutant loads in the draft staff report.

- **Los Angeles Regional Water Quality Control (LARWQCB), 2007. Trash Total Maximum Daily Loads for the Los Angeles River Watershed**
  This TMDL was developed for the Los Angeles River watershed. It contains litter generation rates for various land uses, which were used to calculate annual pollutant loads in the draft staff report.

- **Southern California Coastal Water Research Project (SCCWRP), 2020.Detection and Quantification of Sources of Human Fecal Pollution to the Marine Environment of the Southwestern U.S. Border**
  For this study, samples were analyzed for enterococci and human-associated genetic markers to identify the extent and impact of human fecal contamination in the border region. This report demonstrates that water quality in the lower Tijuana River is impacted by the cross-border transport of human fecal contamination from Tijuana, which was referenced in the draft staff report source analysis.

- **Stantec, 2020. Feasibility Study for Sediment Basins Tijuana River International Border to Dairy Mart Road**
  This study, conducted for USIBWC, estimated sediment, trash, and debris capture based on Light Detection and Ranging (LiDAR) comparison from 2015 to 2019. The report includes anticipated main channel sediment deposition volume, which was used in the draft staff report to calculate minimum trash loading into the Tijuana River Valley from transboundary flows.

- **URS, 2010. Report of Trash, Waste Tire and Sediment Characterization**
  This study was conducted for the California Department of Resources Recovery and Recycling (CalRecycle) and consisted of extensive qualitative and quantitative surveys to characterize the nature and extent of trash and sediment in the Tijuana River Valley. The report includes estimates for trash abundance, which were referenced in the draft staff report to calculate minimum trash loading into the Tijuana River Valley from transboundary flows.

- **USIBWC, 2008. Final Programmatic Environmental Impact Statement: Improvements to the Tijuana River Flood Control Project**
  This study was conducted to evaluate environmental impacts from potential improvements in operation and maintenance of the Tijuana River Flood Control Channel. The report discusses management of trash originating from Tijuana that is deposited in the flood control channel and downstream natural resources management areas.

- **Weston Solutions, 2012. Tijuana River Bacterial Source Identification Study**
  This study was conducted for the City of Imperial Beach to identify anthropogenic bacteria sources into the Tijuana River Estuary and to estimate annual bacteria loads into the lower Tijuana River. This report demonstrated that: (1) dry weather flows generated in the U.S. were not a consistent source of anthropogenic fecal indicator bacteria in the river and (2) the overwhelming majority of annual bacteria loads originated from Mexico, which was referenced in the draft staff report source analysis.

The draft staff report includes a section on implementation of the TMDLs. This section describes the San Diego Water Board's recommended actions to control pollutant loading. ~~This includes modifying an existing U.S. International Boundary and Water Commission (USIBWC) National Pollutant Discharge Elimination System (NPDES) permit and issuing enforcement orders to USIBWC for improved assessment, clean-up, and control of indicator bacteria and trash in the point and nonpoint sources.~~ This includes: (1) amending existing waste discharge requirements to include water quality-based effluent limits, numeric action levels, and/or best management practice (BMP) requirements consistent with achieving load allocations and wasteload allocations and (2) developing agreements and projects with dischargers to better assess, clean up, and control indicator bacteria and trash. The compliance schedules are: (1) seven years after the TMDL effective date for indicator bacteria and (2) five years after the TMDL effective date for trash with interim goals for progressive transboundary trash reduction.

Basin Plan Amendment

San Diego Water Board staff plan to recommend the TMDLs as an amendment to the Basin Plan for adoption by the San Diego Water Board at one of its public hearings ~~during spring 2022~~ in early 2024. At the public hearing, San Diego Water Board staff will present: (1) a resolution document with findings and resolutions consistent with the final TMDL staff report and (2) a Basin Plan amendment for Board consideration. The Basin Plan amendment would update Chapter 7 of the Basin Plan to incorporate TMDLs for indicator bacteria and trash in the Lower Tijuana River. The ultimate goal of the proposed Basin Plan amendment is to protect ecological health and the health and well-being of those that live, work, and recreate in/near the lower Tijuana River through attainment of water quality standards.

Primary Documents

~~San Diego Water Board, 2022. Draft Staff Report for Resolution No. R9-2022-00XX: Total Maximum Daily Loads for Indicator Bacteria and Trash in the Lower Tijuana River. Main body (112 pages), Appendix A: Data Inventory (53 pages), Appendix B: Data Analysis of Key Sites in the Tijuana River Valley (9 pages), Appendix C: Load Calculations (14 pages), and Appendix D: California Environmental Quality Act Checklist (71 pages).~~

San Diego Water Board, 2023. Draft Staff Report for Resolution No. R9-2024-XXXX: Total Maximum Daily Loads for Indicator Bacteria (*E. Coli* and Enterococci) and Trash in the Lower Tijuana River. Main body (103 pages), Appendix A: Data Inventory (53 pages), Appendix B: Data Analysis of Key Sites in the Tijuana River Valley (9 pages), Appendix C: Load Calculations (16 pages), and Appendix D: California Environmental Quality Act Checklist (75 pages).

Aforementioned supporting documents with values and conclusions used for the scientific basis of the draft staff report:

- AECOM, 2016. Nelson Sloan Management and Operations Plan and Cost Analysis. Prepared for the County of San Diego. Anticipated sediment excavation volumes are included in section 1.5.1 (eight pages).

- City of San Diego, 2011. Excavation and Post Storm Observations in TJ River Valley. Prepared by URS. Estimates of trash density (abundance) are included in section 4.1 (two pages).

- HDR, 2020. Tijuana River Valley Needs and Opportunities Assessment – Trash Technical Memorandum. Prepared for the County of San Diego. Pounds-per-cubic-yard value for loose solid waste is included in section 3 (seven pages).

- Lee, Lyndon, 2021. Report of Lyndon C. Lee, Ph.D. PWS. Prepared for the U.S. Department of Justice. Smuggler's Gulch mean annual rainfall, subwatershed annual precipitation, and subwatershed areas are included in Table 10 (one page).

- Los Angeles Regional Water Quality Control (LARWQCB), 2007. Trash Total Maximum Daily Loads for the Los Angeles River Watershed. Litter generation rate (baseline wasteload allocation) for freeways is included in section VI.D. and rates for other land uses are included in Appendix III (three pages).

- SCCWRP, 2020. Detection and Quantification of Sources of Human Fecal Pollution to the Marine Environment of the Southwestern U.S. Border. The presence of human fecal contamination in the Tijuana River due to cross-border pollution is discussed in section 5.2 (two pages).

- Stantec, 2020. Feasibility Study for Sediment Basins Tijuana River International Border to Dairy Mart Road. Prepared for USIBWC. The anticipated main channel comingled sediment/trash/debris deposition volume is included in section 5.8 (one page).

- Tijuana River Valley Recovery Team, 2012. Tijuana River Valley Recovery Strategy: Living with the Water. U.S. and Mexico watershed areas are included on page 5 (one page).

- URS, 2010. Report of Trash, Waste Tire and Sediment Characterization: Tijuana River Valley, San Diego, California. Prepared for CalRecycle. Estimates for trash abundance are included in section 6.1 (four pages).

- URS, 2016. Tijuana River Watershed Management Area Final Water Quality Improvement Plan. Prepared for the City of Imperial Beach, City of San Diego, and County of San Diego March 2016. Subwatershed land uses are included in Tables 1-2 and 2-13 in (two pages).

- USIBWC, 2008. Final Programmatic Environmental Impact Statement: Improvements to the Tijuana River Flood Control Project. Prepared by Parsons. Presence of substantial amounts of trash originating from Tijuana acknowledged in section 2.2 (two pages).

- Weston Solutions, 2012. Tijuana River Bacterial Source Identification Study. Prepared for the City of Imperial Beach. The sources of anthropogenic bacteria and annual bacteria loads from Mexico are discussed in section 4.5 and section 5.5 (four pages). Results from a groundwater special study are presented in section 7.4 and discussed in section 7.5 (nine pages).

Attachment 2: Scientific Assumptions, Findings, and Conclusions to Review

The statute for external scientific peer review (CA Health and Safety Code, section 57004) states that the reviewer's responsibility is to determine whether the scientific portion of the proposed rule is based upon sound scientific knowledge, methods, and practices. We request that you make this determination for the assumptions, findings, and conclusions that constitute the scientific basis of the proposed regulatory action.

Unlike technical reports for other TMDLs, the draft staff report to support development of the indicator bacteria and trash TMDLs for the lower Tijuana River is *not a highly technical document*. No additional monitoring or modeling were conducted for this effort, and the draft staff report does not contain in-depth scientific evaluations or complex statistical analyses. However, it does contain values and conclusions that are based on independently produced technical studies/reports (supporting documents). The San Diego Water Board requests that reviewers assess the appropriateness of using these values and conclusions in the draft staff report.

Note that a complete TMDL report must contain all of the following elements in order to be approved by the U.S. Environmental Protection Agency (USEPA): (1) problem statement; (2) numeric targets; (3) source analysis; (4) allocations; (5) implementation plan; (5) linkage analysis; (6) monitoring plan; and (7) margin of safety. The following discrete TMDL elements require the bulk of critical focus and review of the scientific basis underlying these elements:

1. Numeric targets
2. Source analysis with annual load estimates
3. TMDLs and corresponding load allocations and wasteload allocations/reductions

These elements requiring focused peer review are outlined below.

1. Numeric Targets

1.a. Are the proposed numeric targets in the draft staff report reasonable and adequately protective?

Numeric targets are measurable indicators that demonstrate attainment of water quality standards. The proposed numeric targets for bacteria and trash in the lower Tijuana River are set equivalent to their respective water quality objectives (WQOs), which are set forth in the *Water Quality Control Plan for the San Diego Basin (9)* (Basin Plan).

Proposed indicator bacteria numeric targets for the lower Tijuana River are statewide contact recreation water quality objectives (REC-1 WQOs) established in the Basin Plan. The WQOs apply to *Escherichia Coli* (*E. Coli*) and enterococci and are based on an acceptable health risk for recreational waters of 32 illnesses per 1,000 exposed individuals.

The proposed trash numeric target for the lower Tijuana River is zero. The numeric target is derived from narrative WQOs established in the Basin Plan. The WQOs are based on preventing nuisance and protecting beneficial uses.

The basis for proposing these numeric targets is primarily found in sections 3 and 7 of the draft staff report. The San Diego Water Board requests review of the appropriateness and adequate protectiveness of applying these numeric targets to the lower Tijuana River.

2. Source Analysis

2.a. Are the seven transboundary flows the significant sources of anthropogenic indicator bacteria and trash in the lower Tijuana River?

Source analysis identifies the potential sources of pollutants that cause impairments in water bodies. The San Diego Water Board identified seven significant sources of anthropogenic indicator bacteria and trash in the lower Tijuana River: the Tijuana River Flood Control Channel and six cross-border tributaries. These ~~point~~ nonpoint sources of pollution carry wastes generated in Mexico across the border into the U.S., polluting the lower six-mile stretch of the river, including the estuary, and the downstream Pacific Ocean shoreline.

The basis for identifying the significant sources of impairments is primarily found in sections 4 and 5 of the draft staff report. The San Diego Water Board requests review of the load calculations and the conclusion that the seven transboundary flows are the significant sources of anthropogenic indicator bacteria and trash in the lower Tijuana River.

Supporting Documents:

- Tijuana River Bacterial Source Identification Study (Weston Solutions, 2012)
- City of San Diego, 2011. Excavation and Post Storm Observations in TJ River Valley. Prepared by URS. Estimates of trash density (abundance) are included in section 4.1 (two pages).
- HDR, 2020. Tijuana River Valley Needs and Opportunities Assessment – Trash Technical Memorandum. Prepared for the County of San Diego. Pounds-per-cubic-yard value for loose solid waste is included in section 3 (seven pages).
- Lee, Lyndon, 2021. Report of Lyndon C. Lee, Ph.D. PWS. Prepared for the U.S. Department of Justice. Smuggler's Gulch mean annual rainfall, subwatershed annual precipitation, and subwatershed areas are included in Table 10 (one page).
- SCCWRP, 2020. Detection and Quantification of Sources of Human Fecal Pollution to the Marine Environment of the Southwestern U.S. Border. The presence of human fecal contamination in the Tijuana River due to cross-border pollution is discussed in section 5.2 (two pages).

- Stantec, 2020. Feasibility Study for Sediment Basins Tijuana River International Border to Dairy Mart Road. Prepared for USIBWC. The anticipated main channel comingled sediment/trash/debris deposition volume is included in section 5.8 (one page).

- Tijuana River Valley Recovery Team, 2012. Tijuana River Valley Recovery Strategy: Living with the Water. U.S. and Mexico watershed areas are included on page 5 (one page).

- URS, 2010. Report of Trash, Waste Tire and Sediment Characterization: Tijuana River Valley, San Diego, California. Prepared for CalRecycle. Estimates for trash abundance are included in section 6.1 (four pages).

- URS, 2016. Tijuana River Watershed Management Area Final Water Quality Improvement Plan. Prepared for the City of Imperial Beach, City of San Diego, and County of San Diego March 2016. Subwatershed land uses are included in Tables 1-2 and 2-13 in (two pages).

- USIBWC, 2008. Final Programmatic Environmental Impact Statement: Improvements to the Tijuana River Flood Control Project. Prepared by Parsons. Presence of substantial amounts of trash originating from Tijuana acknowledged in section 2.2 (two pages).

- Weston Solutions, 2012. Tijuana River Bacterial Source Identification Study. Prepared for the City of Imperial Beach. The sources of anthropogenic bacteria and annual bacteria loads from Mexico are discussed in section 4.5 and section 5.5 (four pages). Results from a groundwater special study are presented in section 7.4 and discussed in section 7.5 (nine pages).

3. TMDLs and Corresponding Load Allocations and Wasteload Allocations/Reductions

3.a. Are the proposed TMDLs and load/wasteload allocations reasonable and adequately protective?

3.b. Are the reductions in indicator bacteria concentrations that are required to attain water quality standards calculated appropriately?

A TMDL for a given water body/pollutant combination is based on the amount of pollutant the water body can receive without experiencing impairments (referred to as “loading capacity”) with a margin of safety applied to account for any uncertainties. Once the TMDL is established, pollutant sources receive load allocations for nonpoint sources and wasteload allocations for point sources. The draft staff report identifies load allocations and wasteload allocations so that the San Diego Water Board and responsible parties can take appropriate control actions to achieve load allocations and wasteload allocations and attain water quality standards in the lower Tijuana River.

The proposed TMDLs for indicator bacteria in the lower Tijuana River are based on *E. Coli* and enterococci concentrations that indicate the potential presence of illness-causing pathogens. They contain two implicit margins of safety: (1) The extensive epidemiological studies and risk analyses conducted by USEPA, upon which the indicator bacteria WQOs are based and (2) State Water Board's choice of indicator bacteria WQOs corresponding to 32 illnesses per 1,000 recreators (versus 36 illnesses per 1,000 recreators) for protection of public health because it is the more conservative estimate of the two USEPA recommendations.

The corresponding load and wasteload allocations are set equal to the concentration-based TMDLs. The draft staff report also includes calculations of indicator bacteria reductions required at nine key sites in order to meet water quality objectives. These key sites correspond to: (1) the significant sources of pollution (sites are located immediately north of the U.S.-Mexico border and representative of loads coming exclusively from Mexico's subwatersheds) or (2) sites in the main channel of the river, downstream of the border, that are impacted by these sources. The wasteload reductions were calculated using a statistical rollback method to determine wasteload reductions required to attain the beneficial uses. The statistical rollback method prescribes a procedure for using statistical characteristics of a concentration distribution to estimate future concentrations after management actions to address sources have been implemented. This method was used previously by another regional water board, the North Coast Regional Water Quality Control Board, to calculate wasteload reductions for the Russian River watershed pathogen TMDLs it adopted in 2019.

The proposed TMDL for trash in the lower Tijuana River is zero, based on preventing nuisance and protecting beneficial uses. Therefore, the wasteload allocations for the seven identified significant sources of trash are also zero and the corresponding required wasteload reductions are 100%. The trash loading into the lower Tijuana River Valley was estimated for significant sources (transboundary flows) and potential U.S.-side sources.

The basis for establishing TMDLs, load and wasteload allocations, and required wasteload reductions is primarily found in sections 4 and 6 of the draft staff report. The San Diego Water Board requests review of the appropriateness and adequate protectiveness of the proposed TMDLs, load and wasteload allocations, and wasteload reductions.

Note Regarding USEPA Recommendations

USEPA's recommended indicator bacteria criteria corresponding to 32 illnesses per 1,000 recreators are:

- A six-week rolling geometric mean (GM) of E. Coli not to exceed 100 colony forming units (CFU) per 100 milliliters (mL), calculated weekly, and a standard threshold value (STV) of 320 CFU/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner.

- A six-week rolling geometric mean of enterococci not to exceed 30 CFU/100 mL, calculated weekly, with an STV of 110 CFU/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner.

The terms “criteria” and “objectives” are a frequent source of confusion. Water quality “criteria” are values recommended by USEPA for adoption by the states. If promulgated by USEPA, the criteria become enforceable water quality “objectives” in California parlance. Water quality objectives can be either numeric or narrative.

Supporting Documents

- AECOM, 2016. Nelson Sloan Management and Operations Plan and Cost Analysis. Prepared for the County of San Diego. Anticipated sediment excavation volumes are included in section 1.5.1 (eight pages).

- City of San Diego, 2011. Excavation and Post Storm Observations in TJ River Valley. Prepared by URS. Estimates of trash density (abundance) are included in section 4.1 (two pages).

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- Los Angeles Regional Water Quality Control (LARWQCB), 2007. Trash Total Maximum Daily Loads for the Los Angeles River Watershed. Litter generation rate (baseline wasteload allocation) for freeways is included in section VI.D. and rates for other land uses are included in Appendix III (three pages).

- Stantec, 2020. Feasibility Study for Sediment Basins Tijuana River International Border to Dairy Mart Road. Prepared for USIBWC. The anticipated main channel comingled sediment/trash/debris deposition volume is included in section 5.8 (one page).

- Tijuana River Valley Recovery Team, 2012. Tijuana River Valley Recovery Strategy: Living with the Water. U.S. and Mexico watershed areas are included on page 5 (one page).

- URS, 2010. Report of Trash, Waste Tire and Sediment Characterization: Tijuana River Valley, San Diego, California. Prepared for CalRecycle. Estimates for trash abundance are included in section 6.1 (four pages).

- URS, 2016. Tijuana River Watershed Management Area Final Water Quality Improvement Plan. Prepared for the City of Imperial Beach, City of San Diego, and County of San Diego March 2016. Subwatershed land uses are included in Tables 1-2 and 2-13 in (two pages).

Attachment 3*:* Individuals Who Have Participated in Development of the Proposal

SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD

David Gibson, Executive Officer

Kelly Dorsey, Assistant Executive Officer

Jeremy Haas, Environmental Program Manager

Cynthia Gorham, Senior Environmental Scientist

James Smith, Senior Environmental Scientist

Melissa Corona, P.E., Water Resource Control Engineer

Jody Ebsen, P.G., Engineering Geologist

Michelle Santillan, Water Resource Control Engineer

Nicole Gergans, P.G., Engineering Geologist

Emma Blankenship, Student Intern

Corey Clatterbuck, California Sea Grant State Fellow

STATE WATER RESOURCES CONTROL BOARD, OFFICE OF CHIEF COUNSEL

Vincent Vu, Staff Counsel

Attachment 4: References Cited

AECOM, 2016. Nelson Sloan Management and Operations Plan and Cost Analysis. Prepared for the County of San Diego. April 5, 2016.

Arcadis, 2019. Tijuana River Diversion Study: Flow Analysis, Infrastructure Diagnostic and Alternatives Development. Prepared for NADB. July 2019. https://www.nadb.org/uploads/files/tijuana_river_diversion_study_final_report_full_sm.pdf

Butkus, 2013. Memo from Steve Butkus to File: Russian River; TMDL Development and Planning regarding Fecal Indicator Bacteria Concentration Reductions Needed to Meet Water Quality Criteria. November 7, 2013.

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