

RESPONSE TO PUBLIC COMMENTS ON THE COST-BENEFIT ANALYSIS: SAN DIEGO REGION BACTERIA TOTAL MAXIMUM DAILY LOADS VERSION 0.9

This document responds to public comments on the Cost-Benefit Analysis: San Diego Region Bacteria Total Maximum Daily Loads Version 0.9 (CBA). The public review and comment period began on July 27, 2017 and closed on August 27, 2017. In response to publication of the draft CBA document, the San Diego Regional Water Quality Control Board (San Diego Water Board) received two comment letters:

1. San Diego Coastkeeper and Surfrider Foundation (August 25, 2017)
2. San Diego Unified Port District (August 24, 2017)

Public comments on the draft document are the culmination of an extensive process of development and review by relevant stakeholders. In August 2016, under Steering Committee guidance, the CBA consulting team produced a work plan that underwent review by the Steering Committee, Technical Advisory Committee, and public. The consulting team responded to public comments. Also, the draft document was developed by the consulting team under Steering Committee guidance. The Steering Committee reviewed multiple document versions and the Technical Advisory Committee conducted a review and provided feedback in April 2017. Responses to public comments and other CBA documents are available at http://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/issue3.shtml.

This response to comments document includes a summary of each comment, notes the relevant section in the document, and provides a response. The responses were prepared by the CBA consulting team under the direction of the Steering Committee. Consensus among members was sought but not necessarily gained.

GLOSSARY

CBA	Cost-benefit analysis
CWA	United States Clean Water Act
EPA	United States Environmental Protection Agency
FCA	Financial Capability Assessment
MOU	Memorandum of Understanding
MS4	Municipal Separate Storm Sewer System
RIS	Residential Indicator Score
SHS	Surfer Health Study
TAC	Technical Advisory Committee
TMDL	Total Maximum Daily Load

	COMMENT SOURCE AND SECTION	COMMENT SUMMARY	RESPONSE TO COMMENTS
1	San Diego Coastkeeper and Surfrider Foundation – Overall	The Regional Board should require third-party review of the analysis	<p>The CBA supports Triennial Review Issue 3, which seeks to determine whether and to what extent data supports amending the objectives, implementation provisions for applicable TMDLs, or the TMDLs themselves. The copermitees’ MOU regarding recommendations for TMDL revisions allows the parties to recommend TMDL changes based on findings of the CBA and other studies. The San Diego Water Board would consider and evaluate recommendations at a public hearing, meeting, or workshop. If the San Diego Water Board decides to proceed with TMDL changes, it could seek additional review of the CBA at that time. In addition, if the CBA forms the basis for proposed revisions to local Water Quality Improvement Plans, then the applicable public participation process could allow for a third-party review.</p> <p>It is also important to note that the TAC, which included five independent experts, reviewed the work plan and draft document during the CBA development process. The TAC provided extensive feedback that informed revisions to data sources, methods, and assumptions. TAC members’ areas of expertise included stormwater, economics, wastewater, and epidemiology.</p> <p>Finally, the project team is investigating options to publish the CBA in an economics journal. The journal manuscript would undergo academic review before publication.</p>
2	San Diego Coastkeeper and Surfrider Foundation – Overall	Data gaps and uncertainty in data and assumptions are significant throughout the analysis, limiting the utility of this analysis in future decision making	<p>The CBA is based on the best available science and provides new information that was not available for the original TMDL. Nonetheless, data gaps remain. Recognizing these data gaps, the CBA includes uncertainty and sensitivity analyses and recommendations for future research.</p> <p>The commenter mentions concern with the SHS as a data source because “subjects of the study are not representative of the typical beach-going public, even during wet weather” and “Mission Bay is heavily used by children and non-surfers regularly for contact recreation”. The project team recognizes the SHS focus on surfers and includes a recommendation for future research to “quantify region-wide beach visitation during wet and dry weather, including the mix of local residents, tourists, and age groups”. This effort is underway, with recreational observation data from Ocean Beach showing 85% of submergence activity occurring by adults. Finally, Mission Bay is not a TMDL watershed and is not specifically addressed in the CBA analysis.</p> <p>The commenter also expresses concern over the freshwater analysis, noting a report section that mentions minimal access by residents and visitors to fresh bodies of water. The respondent attributes the lack of visitation to poor development practices. However, as it relates to the CBA, the project team was unable to find data supporting resident and visitor attendance at creeks and rivers during wet weather.</p> <p>Finally, the respondent cautions “against relying too heavily on the underlying assumptions and data related to [human sources] in the</p>

			<p>analysis”. The respondent also requests prioritization of human sources through regulation. Regarding the assumptions and data related to human sources, the document describes uncertainty arising from limited sampling points and limited data on illicit discharges and illegal dumping. This uncertainty is presented visually with whisker plots and described where data is presented in graphs and charts. This information is also presented in the Human Sources technical memorandum, Water Quality Inputs section, and explanations of uncertainty methods. Also, three recommendations for future research focus on additional studies to reduce uncertainty in Human Sources scenarios. Finally, regarding prioritization of human sources, results of the cost-effectiveness analysis find that human sources scenarios result in the greatest number of avoided illnesses and regained beach trips per million dollars spent. This finding suggests that a cost-effective strategy would prioritize repairing broken pipes and replacing leaking septic systems. If the San Diego Water Board or jurisdictions choose to drive investment through regulations, findings support a focus on human sources.</p>
<p>3</p>	<p>San Diego Coastkeeper and Surfrider Foundation – Overall</p>	<p>Several findings, including net benefits findings and financial burden findings, are unsupported and should be amended</p>	<p>Regarding net benefits, the commenter highlights the OMB guidance that the results can be misleading if important benefits or costs are omitted or not quantified. Omitted benefit categories are an important concern under certain conditions, none of which are found in this CBA. Much of the concern with limitations of CBA arises from situations where some scenarios involve the potential degradation or loss of important natural resources with non-market values. This CBA does not have any such scenarios, and rather involves only scenarios with identifiable incremental improvements in resource conditions.</p> <p>There is no evidence that the benefits (and costs) described qualitatively would be a substantial portion of the overall net effect if they were to be quantified and monetized. The benefit categories that are quantified and monetized are the primary benefits and collectively address the identifiable and likely benefits based on the most current available information and scenario details. Furthermore, there is no evidence that the monetary values systematically omit portions of the total value for each benefit, as they represent average values and value ranges that generally encompass the range of comparable values in the literature. All identified types of potential benefits throughout the project process were fully investigated.</p> <p>The fundamental characteristic of the CBA, that scenarios only involve improvements in natural resource conditions rather than potential losses, guards outcomes from major negative consequence risks where a precautionary approach is particularly warranted.</p> <p>It is possible, that in conjunction with the actions and investments included in the scenarios for this CBA, additional investments or scenario modifications might make other benefits possible. A CBA cannot include benefits if the corresponding costs are not also included. Further, hypothetical benefits cannot be included if the feasibility of those additional actions have not been assessed. Technical constraints or other unintended consequences might counter such potential benefits. Consequently, only benefits that correspond to existing scenario elements can be considered.</p>

			Regarding the Screening FCA , the commenter mentions that the CBA document should only include services related to the Bacteria TMDL. However, EPA guidance encourages municipalities to include all CWA services in assessments. The EPA guidance has evolved since its initial publication in 1997, growing in scope from focusing on consent decrees to address Combined Sewer Overflows to stormwater MS4 programs and wastewater treatment plant NPDES compliance. Thus, the screening FCA is consistent with EPA guidance. Further, it does separate residential indicator score results to aide in reader in understanding which portion of the results come from the Bacteria TMDL versus other services.
4	San Diego Unified Port District – Overall	The District supports the Regional Board's efforts to produce an unbiased evaluation of both the costs and benefits of varied implementation methods that may assist in achieving wet weather numeric targets defined in the 20 Beaches and Creeks Bacteria TMDL	No response is necessary.
5	San Diego Unified Port District – Overall	The District recommends the Regional Board evaluate all Bacteria TMDLs in the same manner as the 20 Beaches and Creeks TMDL	No response is necessary.

REFERENCES

- (1) Memorandum of Understanding Between the County of San Diego, City of San Diego, and the County of Orange, and the San Diego Water Board Regarding Bacteria TMDL and Recommendations for TMDL Revisions. http://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/docs/issue3/MOU.pdf
- (2) Office of Management and Budget. 2003. Circular A-4. http://www.whitehouse.gov/omb/circulars_a004_a-4.
- (3) Arnold, Benjamin F., Kenneth C. Schiff, Ayse Ercumen, Jade Benjamin-Chung, Joshua A. Steele, John F. Griffith, Steven J. Steinberg, Paul Smith, Charles D. McGee, Richard Wilson, Chad Nelsen, Stephen B. Weisberg, and John. M. Colford, Jr. (2017). *Acute Illness Among Surfers After Exposure to Seawater in Dry- and Wet-Weather Conditions*. Available online at <http://www.sccwrp.org/shs/>.

- (4) U.S. EPA. 2012. 2012 Recreational Water Quality Criteria. <https://www.epa.gov/wqc/2012-recreational-water-quality-criteria-documents>
- (5) U.S. EPA. 2014. Memorandum: Financial Capability Assessment Framework. https://www.epa.gov/sites/production/files/2015-10/documents/municipal_fca_framework.pdf.
- (6) U.S. EPA. Office of Water, Office of Wastewater Management. Combined Sewer Overflows - Guidance for Financial Capability Assessment and Schedule Development. N.p.: n.p., 1997. Print.