

## RESPONSE TO PUBLIC COMMENTS ON THE SAN DIEGO REGION’S BACTERIA TMDL COST-BENEFIT ANALYSIS WORK PLAN

This document contains responses to public comments made on the San Diego Region Bacteria TMDL Cost-Benefit Analysis Work Plan. Comments were captured during the Public Meeting on 08/31/16, or submitted during the public comment period. The responses were prepared by Environmental Incentives and ECONorthwest under the direction of the Steering Committee.

### GLOSSARY

BMP	Best Management Practice
CBA	Cost-benefit analysis
CPH	Cost-per Household
FCA	Financial Capability Assessment
FCI	Financial Capability Indicator
GI	Green infrastructure
LID	Low impact development
RAA	Reasonable Assurance Analysis
RIS	Residential Indicator Score
SC	Steering Committee
SHS	Surfer Health Study
TMDL	Total Maximum Daily Load
WQIP	Water Quality Improvement Plan

	COMMENT SOURCE	COMMENT SUMMARY	RESPONSE TO COMMENTS
1	Coastkeeper & Surfrider comment letter –  CBA Overview and Policies, Scenarios, and Analyses	According to Triennial Review language the scenarios analyzed should focus on the TMDL  Including multiple scenarios results in an inherent bias in the study	This analysis meets the requirements of the triennial review language by including TMDL-focused scenarios. Including additional scenarios does not negate fulfillment of this requirement.  The project is guided by a Steering Committee (SC) charged with ensuring a variety of viewpoints are considered through different scenarios in a technically rigorous and defensible method. The SC consists of regulators, permittees, a business association, and one representative from a recreational/ environmental NGO. Each scenario supported by one or more members is included in the analysis. This inclusive approach was taken so the diverse perspectives of SC members would be represented through the scenarios analyzed. Scenarios to be analyzed include options that would make the existing TMDL requirements either more or less stringent. Therefore, the inclusion of multiple scenarios protects against bias by representing diverse viewpoints and potential outcomes.

2	<p>Coastkeeper &amp; Surfrider comment letter –</p> <p>Policies, Scenarios and Analyses Considerations</p>	<p>Only the existing TMDL and compliance schedule should be analyzed.</p> <p>Several scenarios considered are illegal or unsupported by scientific data and should be removed</p>	<p>See response to comment #1 for basis for including all scenarios. The TMDL compliance schedule will be analyzed as part of this CBA. It is necessary to analyze the schedule for compliance with the EPA 2012 recreational water quality criteria because the future of the TMDL relies on these new criteria. Regardless of TMDL decisions water quality criteria in the San Diego region and throughout the state will be updated to EPA rec criteria.</p> <p>This effort focuses on better understanding the costs and benefits of each scenario as proposed. Scenario characteristics, such as a lack of scientific data, which may prevent adoption of a scenario become relevant during the decision making process, which is not part of this CBA. Scenario adoption decisions will be made at a hearing by Regional Board Members who are not on the Steering Committee. Although some scenarios may be rejected for adoption, many, if not all, of the scenarios represent approaches or strategies utilized in other regions. In addition, other scenarios such as “2012 REC Criteria” and “Adjust wet weather beach WQ objective” are recommended as options in USEPA’s 2012 Recreational Water Quality Criteria. Additionally, the decision makers will consider other information, such as special studies, when making implementation decisions.</p>
3	<p>Coastkeeper &amp; Surfrider comment letter –</p> <p>Benefits Calculations</p>	<p>Any analysis that takes place prior to an RAA cannot adequately characterize the true costs or benefits that would result from such an assessment</p> <p>The WQIPs are not grounded in an adequate, rigorous assessment</p> <p>Green infrastructure feasibility, intensity, type, location, cost cannot be determined without an RAA. The proposed analysis will significantly undervalue co-benefits such as increased water security.</p> <p>The TMDL was amended to a 20 year compliance timeline to address multiple pollutant parameters. Strategies that address multiple pollutants should be prioritized.</p>	<p>The cost-benefit analysis will not include a RAA. An RAA is an assurance that shows compliance is possible rather than a prescription for specific compliance actions. As implementation proceeds, BMP sizes/types/locations are often altered and this is explicitly allowed in the Los Angeles WMPs as long as equivalent performance in runoff volume reductions is achieved by the revised BMPs.</p> <p>WQIPs in San Diego County have been reviewed, revised, and accepted by the San Diego Regional Water Quality Control Board. Many of these WQIPs rely on quantitative modeling such as that used in Los Angeles as part of the RAA. Thus, the SC feels the WQIPs are an adequate basis for the analysis and will enable a rigorous and technically defensible CBA to be performed.</p> <p>Benefit analyses will be performed according to federal guidance from the Office of Management and Budget's A-4 Circular (5) and the USEPA's guidance for preparing economic analyses (6). Therefore, the basis for analysis will be rigorous and defensible. The consulting team will estimate an appropriate range of value for the total co-benefits to the extent they can be valued using federal guidance and available data. It is likely that some co-benefits are not able to be quantified and will be documented qualitatively.</p> <p>Where data and literature allow and assumptions are</p>

			<p>appropriate, we will provide discussion of secondary consequences of co-benefits, in terms of avoided externalities such as reduced demand for potable water. Co-benefits will be documented in terms of the supply of the service from the BMP or BMP category, and in terms of the demand or scarcity for that benefit. Not all BMPs and all sites will provide the whole range of co-benefits listed. And some co-benefits might not be possible given the vegetation, climate, or land use facing feasible BMP options.</p>
5	<p>Coastkeeper &amp; Surfrider comment letter –</p> <p>Data Consideration</p>	<p>The work plan places too much emphasis on the results of the Surfer Health Study</p> <p>The SHS is not representative of the beach-going public. The study did not include non-surfers or those under the age of 18.</p> <p>The draft gives insufficient attention to recreation and other activities in our freshwater systems. The benefits of recreation in freshwater systems should be carefully considered.</p>	<p>The consulting team will add the local studies identified in the comment letter to the work plan and consider the information they provide during the analysis.</p> <p>We realize that the SHS results need to be extrapolated to all beach visits that potentially involve exposure to pathogens during wet weather events and for three days afterwards. Total exposure during and immediately after wet weather events are relatively much lower for non-surfing activity categories. Numerous data sources are being gathered and applied to estimate these other activity categories, and literature exist for consideration of extrapolation of the epidemiology effects measured in the SHS to these other populations.</p> <p>The Steering Committee understands the importance of benefits from freshwater recreation based on input from the San Diego River Foundation and was already including them as part of the analysis. Examples of benefits from other freshwater recreation included in the analysis are fishing, hiking and paddle sports.</p>
6	<p>Coastkeeper &amp; Surfrider comment letter –</p> <p>Financial Capability Analysis</p>	<p>Full FCA, particularly FCI, should be done</p>	<p>The FCA will be performed according to federal EPA guidance including from 1997 (2), 2012 (3), and 2014 (4).</p> <p>A screening-level financial capability assessment will provide a representation of both the financial burden through the Cost Per Household calculation and the ability to pay through the Residential Indicator Score calculation. Performing only this portion of the FCA will not favor the financial burden, or ability to pay portion of the calculation. Performing the FCI portion of the FCA would just add detail to the residents' ability to pay through consideration of additional factors.</p> <p>Results of the screening-level FCA will determine whether a full FCA is warranted. If a significant financial burden is indicated, the full FCA will be needed for discussion with US EPA before any schedule change can be approved.</p>
7	<p>EMAIL - REC-1 Triennial Review Project – Indicator</p>	<p>Benefits of GI greatly outweigh those of single-purpose infrastructure</p>	<p>See response to comment #3</p>

	Bacteria Further resources on CBA and multi-benefit approaches		
8	Public meeting	How will the copermitttee’s bacteria study be incorporated	The human marker (FH183) study is being used to inform incorporation of pathogens into the “Focus on Human Sources” scenario. Additionally, the reference watershed study is being incorporated into the “2010 TMDL via WQIPs” scenario.
9	Public meeting	Should the study include dry weather? Beach closure days in dry weather are important in SD	This analysis is focusing on wet weather since that is how the Regional Board scoped the study when it adopted the Triennial Review, but it will also provide insight into dry weather in several ways. First, the property value analysis will include both wet and dry weather periods. Additionally, implementation of BMPs may result in dry weather benefits which would be captured in the benefit analysis.
10	Public meeting	There needs to be a reasonable assurance analysis that looks at green infrastructure and feasibility. The amount of modeling that went into the Water Quality Improvement Plans (WQIP) is not adequate	For RAA response see comment #3  The WQIPs are an important point of reference, but not the focus for every scenario. For example, the stream restoration, or other human sources scenarios identify load reduction strategies based on screening-level modeling efforts completed as part of this analysis; they are not based on BMPs from the WQIP.
10	Public meeting	Why is this analysis only considering the RIS and not the rest of the FCA	See response to comment #6
11	Public meeting	The scenarios and policies proposed read as a TMDL alternatives analysis. The mechanism to reaching swimmable waters is meeting load reduction requirements.	See response to comment #1 & 2 for basis for including all scenarios, not just the TMDL.
12	Public meeting	How will the final report be used to compare different scenarios across different policies?	See response to comment #1 & 2
13	Public meeting	At the end of the report, will there be specific recommendations made regarding policy decisions?	See response to comment #1 & 2
14	Public meeting	There is concern about potential misapplication of the Surfer Health Study. There are limitations to the study. For instance, the study	See response to comment #5

		only used surfers 18-years-old and over at two beaches during dry weather. There are people who swim during wet weather, and kids weren't considered.	
16	Public meeting	There was a study conducted by TreePeople in Los Angeles comparing capital costs against green stormwater that was pretty comprehensive. It looked at costs of deferred compliance compared to implementing low impact development now over conventional stormwater maintenance. It showed an overwhelming benefit. Including this would be necessary to show true cost-benefits.	See response to comment #3
17	Public meeting	What are some challenging assumptions the consultant has had to make?	One challenging key assumption is how to extrapolate the Surfer Health Study to all beaches and population. The consultant is working to come up with comprehensive measures and get the best, most complete set of data. Any challenging extrapolations will be transparent in the report.
18	Public meeting	Are you developing utility function or multi-criteria analysis to rank or compare scenarios?	See response to comment #1 & 2
19	Public meeting	Are you concerned you should do optimization as first step?	Several of the scenarios in this analysis are based on strategies from the WQIP which were optimized through WQIP development. Therefore, additional optimization is not within the scope of the CBA.
20	Public meeting	How do you avoid subjectivity when performing the analysis? For example, if 14 swimmers get sick, how do you value that when compared to millions of dollars spent to make changes?	The consulting team acknowledges that one of the difficulties of CBA can be capturing all benefits. This cost-benefit analysis will be performed according to federal guidance and as a result will avoid subjectivity. The consulting team will make every effort to include all relevant benefits.  See federal guidance reference in response to comment #3

## REFERENCES

- (1) NGUYEN, THANHLOAN, DR.C.P. LAI, IVAR RIDGEWAY, and DR.JUN ZHU. GUIDELINES FOR CONDUCTING REASONABLE ASSURANCE ANALYSIS IN A WATERSHED MANAGEMENT PROGRAM, INCLUDING AN ENHANCED WATERSHED MANAGEMENT PROGRAM. Rep. Los Angeles Regional Water Quality Control Board, 25 Mar. 2014. Web.

[http://www.swrcb.ca.gov/losangeles/water\\_issues/programs/stormwater/municipal/watershed\\_management/docs/RevisedRAAModelingCriteriaFinal-withAtts.pdf](http://www.swrcb.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/docs/RevisedRAAModelingCriteriaFinal-withAtts.pdf)

- (2) U.S.A. Environmental Protection Agency (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.
- (3) United States Environmental Protection Agency (U.S. EPA). 2012. Memorandum: Integrated Planning for Municipal Stormwater and Wastewater. <https://www.epa.gov/npdes/integrated-planning-municipal-stormwater-and-wastewater>.
- (4) United States Environmental Protection Agency (U.S. EPA). 2014. Memorandum: Financial Capability Assessment Framework. [https://www.epa.gov/sites/production/files/2015-10/documents/municipal\\_fca\\_framework.pdf](https://www.epa.gov/sites/production/files/2015-10/documents/municipal_fca_framework.pdf).
- (5) Office of Management and Budget. 2003. Circular A-4. [http://www.whitehouse.gov/omb/circulars\\_a004\\_a-4](http://www.whitehouse.gov/omb/circulars_a004_a-4).