

**Beaches and Creeks TMDL Cost-Benefit Analysis
Steering Committee Meeting
June 28, 2017**

Steering Committee Members Present

Todd Snyder, County of San Diego, Watershed Protection Program
Ruth Kolb, City of San Diego, Storm Water and Transportation
Jian Peng, County of Orange, Stormwater Quality Planning
Jeff Van Every, City of San Diego Public Utilities Division
Ted Shaw, Atlantis Group, representing San Diego County Taxpayers Association

Supporting Roles

Natalia Hentschel, Katz & Associates
Bree Robertoy, Katz & Associates
Chad Praul, Environmental Incentives
Mark Buckley, Environmental Incentives (participating via phone)
Evan Branosky, Environmental Incentives (participating via phone)
Jo Ann Weber, County of San Diego
Helen Yu, San Diego Regional Water Quality Control Board
Cynthia Gorham, San Diego Regional Water Quality Control Board
Michelle Santillan, San Diego Regional Water Quality Control Board
Stephanie Rose, California Water Resources Control Board (participating via phone)
Ken Schiff, Southern California Coastal Water Research Project

Meeting Objectives

N. Hentschel, facilitator, provided an overview of the meeting objectives, which included to:

- Review updates to the draft Cost-Benefit Analysis (CBA) report
- Provide an overview of the key findings of the CBA
- Review the two-page fact sheet developed by the consultant
- Conduct an exercise to determine key comments/actions needed to make the CBA report viable for public review

Draft CBA Updates and Findings

C. Praul presented a high-level overview of changes to and key findings of the CBA.

Focus on Cost Effectiveness – Illnesses Avoided

- A chart was added to the report depicting the number of illnesses avoided per \$1 million spent on cleanup efforts over a 65-year period for each scenario. The chart uses a logarithmic scale and shows uncertainty bars around selected scenarios.
- Stormwater scenarios avoided about 44 illnesses per \$1 million spent over a 65-year period, while human source scenarios avoided about 900 illnesses per \$1 million spent.
- **Action Items:** Add numbers to the bars, and label the chart as depicting a 65-year period.

Recreation Trips

- A chart was added to the report showing additional beach trips per \$1 million spent over a 65-year period.

- The recreation trips results showed it is about 10 times more effective to address human sources as opposed to stormwater sources.

Consistent Analysis Period

- Timing scenarios were analyzed over a 65-year period for consistency.
- The consultant used a 3 percent discount rate for the entire period. They also considered a declining discount rate, but the results did not differ substantially.

Uncertainty Analysis

- In response to Technical Advisory Committee (TAC) comments, the consultant added error bars to four of the scenarios (one of each type of scenario). Experts provided brackets based on best estimates for each of the four scenarios.
- Human source scenarios were the most uncertain, while stormwater scenarios were the least uncertain.

Key Findings

- Human source scenarios are substantially more cost effective.
- The net benefits are negative (i.e., the costs are higher than quantifiable benefits).
- Regarding uncertainty, the results of the analyses could change, but the findings of the study would be very unlikely to change.

Steering Committee Questions and Comments

- T. Snyder: The TAC commented that models are inherently uncertain. Does the analysis make sense to address Eric's comment?
 - K. Schiff: The model doesn't, but other language in the document does. Some people will agree and some people won't. What is important is that there is confidence in the conclusion.
- H. Yu: Regarding the human source scenarios, are costs of repairs taken into account in the study? Those repairs are not being done as part of the Rec-1 TMDL; they would be done no matter what. There are zero allowable discharges in the sewer system.
 - What is included are incremental costs, above and beyond current maintenance. The study does not include broken line repairs, only costs associated with leakage. Overflows were also examined, but those costs didn't make much difference in the results. The study does include line rehabilitation costs.
 - **Action Item:** C. Praul will distribute to the Steering Committee language from Brown & Caldwell regarding estimates.
- T. Shaw: Going back 15 or 20 years, there has been an effort to remove, replace or update pipes in canyons. Was that accounted for?

Fact Sheet

The Steering Committee was asked to review the two-page fact sheet developed by the consultant for the general public. In addition to providing comments at the meeting, the Steering Committee was invited to provide comments to the consultant via the comment table.

- T. Snyder: The first finding states that human source scenarios and changing compliance schedules are more cost effective than other scenarios. Since the human source scenarios are more cost effective, I recommend focusing on the first finding (i.e., human source scenarios

are more cost effective) as a headline, then expanding to say changing compliance schedules is more cost effective than other scenarios.

- T. Snyder: If this is something other regions will use, would it be helpful to have some mention of the Surfer Health Study as it relates to the analysis done? The Surfer Health Study was conducted up and down the coast, but there is a perception that it was only in San Diego County. I want to find a way to explain that better, but it doesn't necessarily have to be in the fact sheet.
 - H. Yu: The Surfer Health Study is a great study, but as far as its application to the whole region, I'm not sure I would recommend that.
 - T. Shaw: The Surfer Health Study is not the sole source of data for the CBA. If we cite one, do we need to cite the others?
 - C. Gorham: If we had a location where we have the studies stored online, we could provide a link to where they are located.

Key Comments Exercise

N. Hentschel led the group in an exercise to determine what actions are needed to make the draft CBA report viable for public review. In the activity, Steering Committee members were asked to brainstorm individually to produce a list of action items. The group then categorized the list, resulting in a set of overarching action items. If the resulting action items required more description, Steering Committee members were directed to provide further detail to the consultant via the comment table. The resulting list is below.

Action Item 1: Check human sources costs are marginal

- Net benefits reassessed
- What are public benefits from report?

Action Item 2: Create load reduction chart

- Tables with water quality load reduction to TMDL goals
- Clearly and simply state in Executive Summary load reduction goals

Action Item 3: Add limitations section

- Expand benefits to dry weather

Action Item 4: Write cost-effectiveness uncertainty section

- Error analysis provided needs backup
- Human contributions uncertainty details

Action Item 5: Include public-friendly introduction to each chapter

- Clear, concise, easily understandable findings
- How report can relate to general public
- Workshop materials – public inform
- Give proper background information
- Properly convey the significance of the study
- Help the reader relate the findings to their own perspectives
- Not as technical so public can understand

Action Item 6: Incorporate clear comments

- Incorporate comments from tables comprehensively
- Tons of small improvements (e.g., three significant figures, cover clarity)
- Clearly and simply state difference in level of analysis per scenario
- Consistent descriptions (e.g., high-flow suspension, remove low-flow suspension)
- Remove U.S. EPA from Steering Committee
- Move recommendations for further research to standalone section
- Consistent homeless terminology
- All references to TMDL should indicate it has year-round (not just wet weather) requirements
- Revise important statement sentences (e.g., statements regarding the Surfer Health Study)
- Reference Soller’s paper on risk from human sources
- Graphic to illustrate “move compliance locations”
- Clearly and simply state in Executive Summary limitations of CBA

Action Item 7: Add next steps section

Steering Committee Comments

- H. Yu: At a minimum, the study should include a scenario for net costs if sewage collection systems costs were removed.
- J. A. Weber: The uncertainty analysis is not totally believable. The report includes a lot about how much uncertainty there is in modeling, but some error bars don’t support that. The document needs to provide a better understanding.
- R. Kolb: The materials for the public need to be clear, concise and transparent so proper information is considered and extraneous information isn’t brought forward.
- H. Yu: Additional analysis should be conducted for dry weather, since benefits will extend to dry weather as well. You could possibly use a bracket approach (e.g., exceedances during dry weather adjusted to be considered zero). It is important to be complete about the total benefit that will occur.
 - C. Praul/M. Buckley: The Steering Committee decided early on to limit the study to wet weather. The co-benefits analysis includes dry weather. It is possible to do sensitivity tests to analyze the value of illnesses avoided on dry weather days, but it would be difficult to analyze lost trips to the beach during dry weather because there is no basis in facts. The study is not scientifically designed to give dry weather benefits. It is also unlikely to change the overall findings of the study.
 - **Action Item:** Add to the limitations section.
- M. Santillan: The scenarios evaluated in the study are not representative of all possible actions; that needs to be included in the limitations section.
- T. Snyder: We can ask members of the County of San Diego/focus groups to review the materials and provide comments to make sure this is public-friendly.
- K. Shiff: SCCWRP has a science communications person that can work with the consultant to develop the public-friendly introduction for one chapter as an example.

Schedule Update

- Comment table submittal is due from the Steering Committee by July 7.
- The public meeting was pushed to August 17 to accommodate Regional Water Quality Control Board Members’ schedules and a briefing of the Regional Water Quality Control Board Chair.
- Final document submittal is anticipated on October 6.