

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

Steering Committee Members Present

Jeremy Haas, San Diego Regional Water Quality Control Board
Jimmy Smith, San Diego Regional Water Quality Control Board
Ted Shaw, Atlantis Group, representing San Diego County Taxpayers Association
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

Supporting Roles

Lewis Michaelson, Katz & Associates
Bree Robertoy, Katz & Associates
Mark Buckley, Eco Northwest
Maso Matlow, Environmental Incentives
Tony Hancock, Brown & Caldwell (participating via phone)
Michelle Santillan, San Diego Regional Water Quality Control Board
Cynthia Gorham, San Diego Regional Water Quality Control Board
Ken Schiff, Southern California Coastal Water Research Project (participating via phone)
Jo Ann Weber, County of San Diego

Project Cost Analysis Results [M. Matlow]

- The consultant annualized costs to produce results for compliance schedule scenarios and to align costs with benefits (e.g., benefits that may not be realized until after 2021).
- The costs between the 2031 and 2051 TMDL compliance scenarios are the same costs, but extended over different timeframes.
- Tetra Tech defined bacteria load reduction targets to meet compliance for each scenario. Targets are different for each scenario.
- 'Ongoing' costs are the cost of maintaining current status.
- The CBA report will include step-by-step details regarding cost calculation methods.

Discussion

- J. Smith: Do programmatic costs contain differential costs (i.e., costs over and above TMDL requirements)? If not, they should be included.
 - One scenario does include costs of meeting the MS4 permit. The load reduction curve provided by Tetra Tech includes BMPs broken down by type.
 - **Action Item:** M. Matlow to check on this with Tetra Tech.
- Why does it appear programmatic costs are lower in the human sources scenario than in the 2010 TMDL scenario, although the load reduction targets are higher?

- The 2010 TMDL scenario shows total load reduction. If you assume the costs are the same, then the programmatic portion of human source costs is much lower.
- T. Snyder: I would think human source costs would not include a lot of things, such as street sweeping, so the two charts would not be directly comparable.
- J. Peng: A lot of activities for the MS4 permit that we thought control sources of illness are actually only helping indicator bacteria. Some BMPs would not address bacteria, but would address other issues (e.g., trash).
- **Action Item:** M. Matlow will provide more detail regarding these calculations at either the March 14 teleconference or March 22 meeting.
- J. Smith: Who is responsible for programmatic costs and operation and maintenance costs?
 - The costs are not broken down.
- Ruth: We need to know the definition of each type of cost. Typically, programmatic costs include a whole barrage of things to address issues, but human source costs include more focused actions (e.g., replacing broken or cracked laterals). We need to understand the fine detail of these costs so elected officials don't think less funding is needed for programmatic costs.
- T. Snyder: The scenario names should be distinct from one another. Change the name of the '2010 TMDL Scenario' to 'Stormwater BMPs,' and change the 'Human Sources Scenario' to 'Human Source BMPs.'
- J. Smith: For the human sources scenario, there is still a background effort by copermitees to address the MS4 permit, which needs to be accounted for as a baseline cost.
 - This speaks to preferred alternatives that may receive more focus by the committee in the future if the project is extended to the consultant's proposed Phase II.
- For the capital improvement projects scenario, the consultant should indicate in the report why the timeframe for compliance was extended to 2081. Make it explicit that there is no policy change indicating this timeframe.
 - J. Smith: It would make more sense to pick a timeframe that aligns with the most cost efficient date.
 - R. Kolb: The 2081 date follows the pattern of what EPA does. Explain that this is a routine method for other water utilities.
- T. Shaw: A lot of sewer work has been done over the past few years. The report should show how these functionally stack on top of one another by what is most cost effective.
- J. Smith: I know it isn't possible under the current funding for this project, but it would be great to see all of the scenarios come together and identify a compliance date when the most cost efficiency is achieved.
 - J. Haas: Regarding finding optimal cost efficiency, I would caution that some compliance targets have different outcomes for recreational use.
 - M. Buckley: Tetra Tech modeling is optimizing for cost efficiency, but we don't have anything that combines human source with stream restoration and stormwater. Some comparisons could be made.
- J. Haas: This is a one size fits all for multiple watersheds. Would data allow for optimization based on regions? Or, the consultant should inform reader as to how they could discern that.
 - M. Buckley: The benefits analysis is broken down by watershed (but not beach level).
- 'Annual' and 'ongoing' cost terminology is confusing.

- **Action Item:** Make PowerPoint slides and charts more legible (e.g., with more striking color differences).

Net Benefit Results [M. Buckley]

Human Sources

- There is more uncertainty regarding human source benefits than stormwater benefits.
- Using a Quantitative Microbial Risk Assessment (QMRA) model, the consultant developed load reduction projections to analyze differences in the number of days that it is safe to get in the water, not including the day of a storm event.
- The consultant has not addressed stream restoration benefits yet, but Soller Environmental is working on it. Daily data are not available, so the model will be based on proportions.
- One issue the consultant is facing is considering illness beyond gastrointestinal illness (GI). There is an ongoing conversation about how specific the analysis can go (e.g., sewer vs transient camp sources). The report will include the boundaries of where scientists are comfortable. The background baseline doubles when moving from analyzing only GI to analyzing all illnesses.
 - J. Smith: For the compliance timeline scenarios, the analysis can include other illnesses. Under human source scenarios, the report cannot include other illnesses. The report should look at relative differences between all illnesses and GI.
 - Based on the data, Soller is uncomfortable using the QMRA model for that. They are going to model GI first, then all illnesses and finally take the difference. The report will also talk about other illnesses.
 - J. Peng: There is a correlation present for more than GI, but it could be a haphazard correlation, not causation.
 - T. Snyder: The QMRA doesn't have data to show relationships between other exposures.
 - J. Haas: This is anecdotal, but a physician recently asked me when I was in the water last. She said she sees a lot more instances of people with infections from beach water exposure as opposed to GI.
- **Action Item:** Update the presentation charts to explicitly show/say whether GI or other illnesses are shown.
- **Action Item:** Present more information to the committee regarding J. Soller's concerns.

Stream Restoration

- Total benefit ranges are high when talking about habitat values, but there are disparate values among scenarios.
- The consultant doesn't have water quality benefits data for stream restoration yet.
- T. Snyder: Is the difference based on literature values?
 - It is based on literature and anecdotal costs of how expensive restoration has been in the area. The biggest issue is scarcity (i.e., residents feel habitat is scarce). The results are over time, but the values are large.
- T. Snyder: Why wouldn't costs be of the same magnitude?
 - The benefits are in terms of avoided costs. The range is context-specific.
- J. Smith: What is the timeframe for this scenario?

- This is a 40-year timeframe. The consultant needs to standardize timeframes among scenarios still.
- T. Shaw: There is a definite value in stream restoration, but I'm struggling with the context. My experience is related to mitigation banks for which there are certain costs per acre that are then sold. What you pay for is what the market will bear. Just because the City will pay a certain amount per acre, doesn't mean it will be valued at that amount. Then, there are ongoing costs to consider. There is a benefit to someone looking at it, but how do you value something based on proximity. I'm uncomfortable with the amount of information we know versus what we don't know.
 - M. Buckley: The analysis will show a range. Credits bought by the City are demonstrating the benefit outweighs the cost. It's not directly comparable, but it is relatable. The alternative is taking broader values of willingness to pay, but I'm more uncomfortable with that because it is more context-specific.
 - T. Shaw: My understanding of mitigation credits is that there is an impact being mitigated. It is a function of the permit, not necessarily buying credit for benefit.
 - M. Buckley: Locally, one would have the ability to offset costs by buying mitigation credits, which would make this alternative cheaper.
 - J. Haas: A city looking to restore areas may have significant cost savings. I understand and agree with the idea that it is dangerous to look at costs and benefits based on the permit. The report could include grant funds earmarked for stream restoration irrespective of the compliance setting. The application of those funds gets a certain amount of restoration area, which could give a better benefit per acre.

Human Source Scenario Methodology [T. Hancock]

Transient Benefit and Health Effect Quantitative Valuation

- The analysis includes exposures in San Diego River and undiluted concentrations for about 300 exposures per wet day. This assumes 100 percent of the population along the River is exposed each day. The consultant is still researching other watersheds with transient populations to include.
- The study focuses on use benefits as opposed to recreation benefits. While there is a very small benefit, by examining this issue explicitly, the study will address any concern that the CBA report neglected transient populations.
- J. Smith: There is mass loading outside the San Diego River in the flood plain, which is mobilized during wet weather events. Was that considered in the study?
 - The consultant doesn't have any data for those concentrations. There needs to be some rationale for it.
 - K. Schiff: In the event that there is a buildup released during a storm event, equilibrium would be reached within a day or two.
- **Action:** The committee approved using a higher estimate of the exposed population to represent other watersheds besides the San Diego River, assuming there is sufficient detail in the report regarding process and reasoning.

Impact of Non-Spill Reservoirs on Scenario Results

- The consultant revised the watershed boundaries based on comments from the committee regarding reservoirs which typically do not release water into their drainages, eliminating certain areas.
- Peñasquitos and Miramar are labeled separately on the map because they have two different hydrologic subareas.
- One small portion of Peñasquitos was removed, as it is not included in the TMDL. Mission Bay and the Rose Creek watershed were also removed for the same reason.
- **Action:** The new boundaries were approved by the committee.

Scenario Results without Large Sewer Spills

- If sewer spills over 1 million gallons were treated as outliers and removed, the annual spill volume would be reduced, but the change to the model would not be significant.
- **Action:** The committee opted to leave spills over 1 million gallons as part of the analysis.

Sewer Leakage Volume Tables

- The consultant calculated the estimated amount of leakage from the sewage system based on a method used by Berkeley. The number is the total amount of load from sewage leaks, not necessarily the amount entering receiving waters.
- The resulting number seems high, but available data don't support revising it. The consultant recommends further literature review.
- R. Kolb: Were the data supplied by Orange County used?
 - Those resulted from a measurement at a pipe joint, so it was not possible to use the data for the total length of pipes in the system.
- R. Kolb: Do we know how much sewage is processed in this system? What percentage is the leakage of the total amount processed?
 - The leakage is about 4 percent of the total capacity of the Point Loma processing center.
- J. Peng: Based on my conversation with a sewage expert, sewer pipes tend to leak, but due to the design of the trench most of it would be contained. Some load can migrate, but it can only get to water ways through overflow or when a pipe crosses a waterway or stormwater pipe. We need more information.
- R. Kolb: What is the infiltration rate during storms? If something comes in, it can go out.
 - The infiltration rate could be three to four times more during a storm.
 - J. Peng: There is a 50 percent increase in Orange County.
- **Action:** T. Hancock will adjust calculations to only include wet weather days and present revisions to the committee at the March 14 teleconference.

Technical Advisory Committee Process [K. Schiff]

- The Technical Advisory Committee (TAC) is scheduled to meet April 10 and 11 to review and comment on the draft CBA.
- K. Schiff prepared questions for the TAC, which were reviewed and approved by the committee. When addressing the level of uncertainty in the results of the CBA, K. Schiff will direct the committee to provide related examples and specifically address how uncertainty was handled.

- **Action Item:** J.A. Weber will work with M. Santillan to coordinate meeting space for the committee.

Schedule and Next Steps

- The next teleconference is on March 14.
- The delivery of the first draft of the CBA report is on March 20.
- The next CBA committee meeting is March 22.