

Beaches and Creeks TMDL Cost-Benefit Analysis
Draft Work Plan Public Meeting
August 31, 2016

Committee Members Present

Jeremy Haas, San Diego Regional Water Quality Control Board
Ruth Kolb, City of San Diego, Storm Water and Transportation
Todd Snyder, County of San Diego, Watershed Protection Program
Jeff Van Every, City of San Diego Public Utilities Division
Ted Shaw, Atlantis Group, representing San Diego County Taxpayers Association
Chris Crompton, County of Orange, Stormwater Quality Planning
Rob Hutsel, San Diego River Park Foundation

Supporting Roles

Lewis Michaelson, Katz & Associates
Bree Robertoy, Katz & Associates
Cynthia Gorham, San Diego Regional Water Quality Control Board
Jo Ann Weber, County of San Diego
Jian Peng, County of Orange, Stormwater Quality Planning
Chad Praul, Environmental Incentives
Mark Buckley, ECONorthwest
Maso Matlow, Environmental Incentives

Presentation

Project Background

- Each regional water quality control board has a basin plan that undergoes a triennial review process. As part of the San Diego Region Basin Plan triennial review conducted in 2014, a priority was identified to conduct scientific studies that could lead to revised Basin Plan objectives.
- The Beaches and Creeks TMDL Cost-Benefit Analysis (CBA), along with other scientific studies, is being conducted to identify better and more cost effective ways of meeting the wet weather REC-1 total maximum daily load (TMDL) and ultimately achieving safe to swim waters.

CBA Development Process

- Twelve scenarios will be analyzed in the CBA specific to TMDL changes. A review of existing cost estimations will also be performed as well as a screening Financial Capability Assessment (FCA), which is required by the Environmental Protection Agency (EPA) to adjust regulation compliance schedules.
- The study will be transparent regarding uncertainty of each of the factors. A sensitivity analysis will be included for each.
- A draft work plan has been developed and reviewed by an independent technical advisory committee. The work plan is available for public review and comment.
- The consultant has gathered available data sets from copermitees, but also asked attendees to send or direct them to any relevant data that are available to add to the data plan.

Activity: Participant Interest

- Attendees were asked to identify the organizations they represent by a show of hands and were given an opportunity to say what they hoped to get out of the meeting. Several attendees were members of copermittee organizations. Consultants, one trade organization representative and two environmental organization representatives made up the balance of those present.

Participant Responses

- Mo Lahsaie, City of Oceanside: Kudos to the regional board for conducting the CBA. This has been coming for a long time. Elected officials always ask what results they'll get for their money. This study will help copermittees get funding.
- Michael McSweeney, Building Industry Association: I believe copermittees are doing a study on bacteria sources, particularly to figure out what portion of it is from human sources. How will this study be incorporated?
 - The copermittees along with Southern California Water Research Project have completed a study to determine the natural bacteria load. The REC-1 TMDL does currently account for that with allowable exceedance days. The reference study has been recently updated with a lot more data.
- Tony Hancock, Brown & Caldwell: From different perspectives, I'd like to know what success looks like at the end of the day. Are we looking to get to zero illness?

Public Questions and Comments

Scope

- M. Lahsaie: The focus of this study is on wet weather, but in a tourist town like Oceanside, we're getting calls from rental houses along the coast because they can't use beaches for periods of time in dry weather.
 - The study is just looking at wet weather, but it will provide insight into dry weather as well. For instance, the property value analysis will look at total weather. There could also be dry weather benefits for some best management practices (BMPs) analyzed, and the study would capture that information.
- Matt O'Malley, Coastkeeper: Can you explain a little more about cost-benefit in terms of looking at bacteria load reduction versus total load reduction? Part of the extended schedule was to look at total load reduction. Costs and benefits from this study would be understated since it only considers bacteria load reduction in wet weather.
 - M. Buckley: The study will focus on all pathogen improvements and benefits to human health. It will quantify all benefits, not just those related to the TMDL.
 - C. Praul: Part of the analysis is to discern costs related to bacteria control from overall program costs. It is possible the benefits would be underestimated, but I'm concerned there is an inability to quantify the broad spectrum of benefits.
 - J. Haas: The regional board is anxious to make sure copermittees focus on making waters safe to swim. As it is now, the TMDL doesn't necessarily do that. A lot of resources were spent on things that aren't the most pertinent to achieving safe to swim waters. We want to determine the key actions to achieve safe to swim waters, but it does not happen in a vacuum. The CBA is looking at alternative scenarios, but it doesn't expect to quantify all benefits to society. It can quantify costs, but not all benefits.

Benefits will need to be qualitatively discussed if they can't be quantified, and the final report will need to articulate this.

- R. Kolb: As one of the people involved in the TMDL development, we decided to look at the bacteria TMDL as a first step. Even if we look at the total picture, it would need to be broken into pieces.
- M. O'Malley: Because there are no new models or calculations being done as part of the CBA, I see a disconnect. Our opinion is in order to have the most benefit, there needs to be a reasonable assurance analysis that looks at green infrastructure and feasibility. The co-benefits analysis could also look at water supply augmentation, such as the value of desalination benefits. In terms of model inputs, our position is that the amount of modeling that went into the Water Quality Improvement Plans (WQIP) is not adequate (i.e., not as adequate as Los Angeles' WQIP).
 - The WQIPs are an important point of reference, but not a universal one. Input is necessary from the WQIPs, but we go into other strategies (e.g., stream restoration) that are not from WQIPs. Also, we have a team looking just at human sources. The project is not scoped to do a Reasonable Assurance Analysis (RAA), due to funding restrictions. This study is already a bigger effort than a lot of CBAs; most analyze four scenarios, this study has 12. This is a well-funded CBA, with a budget of about \$600,000.
- G. Yamout: Is the ultimate goal to determine BMPs to achieve compliance, or is it to drive policy regarding TMDL objectives?
 - The study will analyze whether the WQIPs are the best way to achieve public health benefits or if there is a quicker, better way to achieve public health.
- G. Yamout: It's good that you will be developing a BMP list.
- M. O'Malley: What is the utility of the residential indicator in the FCA screening analysis? Why is the cost per household worthwhile without looking at what copermitees can afford? Why is the study only including half the assessment? It will not provide the full story of whether the copermitees are capable of paying.
 - The screening analysis is the core piece according to EPA guidance. The screening analysis will give an indication of whether it will be worth it to do the full FCA.
 - R. Kolb: The City of San Diego is concerned about doing a full FCA before the scenarios are analyzed. Also, this study is for the whole region (including a portion of Orange County), while the FCA will not be.
- M. O'Malley: I was surprised at the policies and scenarios. It reads as a TMDL alternatives analysis. I understand that the board is trying to get to swimmable waters, but the mechanism is meeting load reduction requirements.
 - Steering committee members were uncomfortable with some of the scenarios being analyzed also. The decision was made not to prejudge the scenarios.
- G. Yamout: The process you're following for each scenario is similar to an RAA. This is a huge effort. I think you're being underpaid.
 - The study is based on existing data. There will need to be some assumptions for inputs to the CBA, but the consultant is relying on copermitees and consultants to help with that.
 - T. Snyder: Copermitees already paid millions of dollars to develop modeling for structural and nonstructural BMPs; those are being fed to the consultants.

Policy Decisions

- Copermittee Legal Representative: How will the final report be used to compare different scenarios across different policies?
 - C. Praul: Each scenario is an independent snapshot and could be compared to an extent. The project is not scoped to make it so scenarios could be added together, due to budget constraints.
 - R. Kolb: This is part of a larger work group assessing the REC-1 TMDL. Eventually, the work group will work with the board to see what will be carried forward to be vetted through a public process.
- M. McSweeney: At the end of the report, will there be specific recommendations made regarding policy decisions?
 - The consultant will not provide policy recommendations but will highlight key effects to benefits (i.e., unfavorable or favorable cost-benefit ratios).
 - J. Haas: The regional board is looking for recommendations based on local and national scientific studies that have been/are being developed. The CBA will point out key drivers. From that, policy suggestions will be developed by water board staff. The staff will then take the recommendations to their board for consideration. Along the way, there will be public participation opportunities.

Data Sources

- Rick Wilson, Surfrider: I'm concerned about potential misapplication of the Surfer Health Study. There are limitations to the study. For instance, the study 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.
 - The project team spent a lot of time considering whether the Surfer Health Study was applicable. Ken Schiff, who led the study, is highly involved with the project. The team is also using other data to understand the total range of activity and exposure (e.g., lifeguard counts and a study into the effects on children).
- R. Wilson: It is important that the Surfer Health Study team found a high percentage of human fecal indicators in the Tourmaline Storm Drain and San Diego River. I was happy to see the team has been looking into that right away and has corrected some of it, but since human sources were found in a high percentage of samples, I'm not sure if the microbial study is appropriate. Microbial studies usually look at microbial bacteria after human source is eliminated.
 - The Quantitative Microbial Risk Assessment will analyze the relationship between changes in pollutant loads and health outcomes. There will have to be some augmentation of that data for the CBA.
- M. O'Malley: 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.
 - Green streets have different scarcities depending on the locale. The co-benefit process will look at the best understanding of BMP mixes. Other studies have looked at green

stormwater infrastructure, and the team has the best data available. However, the study can only go as far as the inventory details allow.

- M. Lahsaie: The data in a model or analysis are only as good as the assumptions made. 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. They are still looking for data about non-beach visits and recreation. Any challenging extrapolations will be transparent in the report.
 - Another challenging extrapolation was regarding the effect of human source and aging infrastructure on water quality effects. The County of San Diego quickly brought in qualified consultants to help make informed assumptions.
 - The consultant will also have to make assumptions about the adaptiveness of the WQIPs. The public will be able to weigh in on these assumptions.

CBA Process

- Ghina Yamout, Alta Environmental: Are you developing utility function or multi-criteria analysis to rank or compare scenarios?
 - Essentially, it will be a utility function. For multi-criteria analysis, the data will be aggregated. The CBA will not include any ranking or non-monetary analyses.
- G. Yamout: Are you concerned you might be missing a first step, particularly a first step to an optimization tool?
 - The consultant is working with the steering committee throughout the process. If the data show tweaks are necessary, scenarios are flexible.

Other

- M. McSweeney: 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?
 - It is true that at the end the costs may outweigh the benefits in dollar terms, but the study is still capable of separating out effective strategies, costs and benefits.
- Lori Walsh, San Diego Regional Water Quality Control Board: We want to make sure we're more careful with responses. Earlier in the meeting, you said you weren't sure if the WQIP was the way to achieve the public health benefit; the study is not looking at the WQIP, but the implementation strategies within the WQIP.
 - T. Snyder: WQIPs are certainly one strategy, but we're also looking at other strategies such as sewer systems taking an implementation role.
- G. Yamout: This is a great study, and it must be very fun.

Next Steps

- Written public comments are due Sept. 16, 2016.
- The next steering committee meeting will be Sept. 28, 2016.
- Responses to public comments will be provided Sept. 30, 2016.
- The draft CBA will be available for review March 7, 2017.