

**Beaches and Creeks TMDL Cost-Benefit Analysis**  
**Steering Committee Meeting**  
**Sept. 28, 2016**

**Committee Members Present**

Jeremy Haas, San Diego Regional Water Quality Control Board  
Jimmy Smith, 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  
Rob Hutsel, San Diego River Park Foundation  
Chris Crompton, County of Orange, Stormwater Quality Planning

**Supporting Roles**

Lewis Michaelson, Katz & Associates  
Bree Robertoy, Katz & Associates  
Michelle Mata, San Diego Regional Water Quality Control Board  
Jo Ann Weber, County of San Diego  
Mark Buckley, Eco Northwest (Participating via phone)  
Clint Boschen, Tetra Tech (Participating via phone)  
Chad Praul, Environmental Incentives (Participating via phone)  
Maso Matlow, Environmental Incentives (Participating via phone)  
Ken Schiff, Southern California Coastal Water Research Project (Participating via phone)  
Jian Peng, County of Orange, Stormwater Quality Planning

**Project Status Update**

*Analyses Updates*

- Data collection for the Financial Capability Analysis (FCA) is underway. The consultant needs to be connected with certain water service agencies to obtain data about households, service area and rates.
- The peer review of Water Quality Improvement Plan (WQIP) costs is also underway. The consultant plans to discuss the approach to reviewing the City of San Diego's costs with R. Kolb. The project is scoped to review Orange County's WQIP costs. As Orange County is in the process of developing their WQIP, time constraints may not allow this analysis to be done.
- Beach and exposure data have been collected, and the consultant is starting to see preliminary values. The consultant collected beach activity data from lifeguards and some other sources, and the Surfer Health Study provides good information about beach visits in relation to wet weather. There are different categories of beaches based on activity, as seen in the difference in data taken at Ocean Beach and Tourmaline. The consultant will need to do some sensitivity analyses. If there are sensitivities, the consultant will have to circle back and do more primary data collection.
  - T. Snyder: Do we have data regarding other activities?
    - No, there will be important extrapolations made.

- J. Haas: Have you analyzed attendance related to beach warnings (versus analyzing attendance related to wet weather/water quality)?
- C. Crompton: I don't think warnings are physically posted unless there is a sewage spill. There has been enough public education for general awareness.
  - J. A. Weber: It is the same in San Diego.
- K. Schiff: More than anything, the Surfer Health Study data are related to surf conditions. For Tourmaline, the difference may be because of surfer conditions rather than wet weather.
  - M. Buckley: We're looking at those factors, including surf conditions, and teasing out the information.
- The property value analysis modeling is also underway. Based on comments, the analysis will consider where infrastructure might have an impact on property value.
- Orange County's WQIP is under development, so the modeling needed to support the analysis is not available. The consultant will extrapolate from existing models and is looking at different ways of doing that.
- The consultant is making progress across all categories of benefits in the benefits analysis. The consultant has collected all existing data for the recreation and public health portion and will make some extrapolations for beaches that don't have data regarding changes in activity. The consultant is also developing estimates for illness and recreation.
- J. Smith: The end goal of WQIPs is eventual compliance, but they are developed for five-year spans; are you clarifying the years between five years after development of the WQIPs and compliance?
  - J.A. Weber: Some WQIPs didn't do modeling because the copermittees were already in compliance, but for those that did, model simulations of BMPs support the milestones to be met in each five-year permit period all the way to wet weather compliance in 2031.

#### *Consultant Involvement*

- Tetra Tech is leveraging past modeling efforts to figure out best management practices (BMPs), water quality loads and concentrations, and costs from regulatory endpoint scenarios. By mid-October 2016, results should be available. The consultant can then provide an analysis two weeks after.
- Brown and Caldwell calculated BMPs, load reductions and costs for mitigating human sources from leaking wastewater infrastructure and "failing" septic systems. The final technical memo showing load reductions and estimated costs.
- ESA Associates is quantifying BMPs and concentrations for stream restoration. This scenario is a couple of weeks behind schedule.
- Soller Environmental was brought on board to do conversions of load change to illness probability and set water quality criteria.

#### *Fecal Coliform- versus Enterococcus-Based Approaches*

- There are two sets of scenario data needs:
  - Costs from a compliance perspective
  - Changes in bacteria concentrations over time related to human health

- WQIP costs are developed based on meeting load reduction targets for fecal coliform, whereas the Surfer Health Study and other CBA scenarios are focused on enterococcus. The consultant recommended a hybrid approach for the CBA, which would use fecal coliform to estimate costs and enterococcus models to estimate benefits. If enterococcus is used instead of fecal coliform for both, new costs will have to be developed. Benefits need to be based on enterococcus to be defensible for human health concerns. Costs based on fecal coliform will be relative to enterococcus.
  - J. Smith: I understand the challenge of transitioning from fecal coliform to enterococcus. My concern is about the relativity of the approach. At some point, there will be an absolute value, and if there is a difference in fecal coliform versus enterococcus, that will impact the cost-benefit ratio. What do we know about the distribution of both and the BMPs' ability to reduce each at the same level?
  - C. Boschen: Most structural BMPs are generic in terms of fecal indicator bacteria reductions. In terms of designing a non-structural program (e.g., beach cleanup or pet waste disposal), there are some differences.
  - J. A. Weber: The WQIPs were developed based on fecal coliform because existing BMP data is mostly for fecal coliform.
  - C. Praul: Modeling with fecal coliform is hard because fecal coliform is not related to human health. The hybrid approach would use BMPs that meet standards, then put them into models for enterococcus. Soller Environmental was brought on board to translate load change to illness probability. There are also additional models specialized toward enterococcus that would be used.
  - K. Schiff: There are a lot more data, particularly in the BMP database, for fecal coliform than enterococcus. To say you can extrapolate from one to the other is an assumption, and I've seen conflicting info. This would need to be looked at more in depth.
  - R. Kolb: The City of San Diego collected data for all fecal indicator bacteria. Some are from source analysis. We could compare it to get a ratio, but I'm not sure it would demonstrate BMP effectiveness. BMPs are geared towards fecal indicator bacteria, not necessarily coliform. We need to find a translator.
  - The alternative to the hybrid approach is to estimate costs and benefits based on enterococcus so everything is equivalent. The consultant might be able to come up with conversions from data in the BMP database to enterococcus modeling.
  - R. Hutsel: I have concerns about some things I heard. I want to make sure it's fully justified, articulated and defensible. Isn't there a difference in persistence of enterococcus?
    - J. A. Weber: Wet weather models are based on runoff, which means the estimates would be overly conservative.
- Resolution: Use hybrid approach but clearly describe method, assumptions and rationale.

#### **Public Comments on Draft Work Plan**

- Written comments were only received from San Diego Coastkeeper and Surfrider Foundation. Oral comments were also received at the public meeting on Aug. 31, 2016. Both will be addressed in responses.

- Responses will be provided in the order raised in the letter and in a format that will be easy to print. They will also be incorporated into the work plan.
- Acronyms and jargon are to be eliminated from responses.
- The first three comments/responses may need to be combined to add clarity.

#### *Scenarios*

- Comment from comment letter: There are too many scenarios to be analyzed in the CBA. Scenarios should only focus on TMDLs.
  - Consultant's proposed response: The process of developing the scenarios was thoughtful and important to steering committee members. The steering committee considered a variety of viewpoints and did not want to eliminate scenarios based on perceived bias. The purpose of the scenarios is to provide information and options to decision makers. Scenarios will not be removed from the CBA.
  - C. Crompton: Based on the letter from Coastkeeper and Surfrider, the issue appears to be that there is a perceived bias toward relaxing standards by including all of these scenarios. That needs to be addressed and clarified.
  - T. Snyder: We could point out that most, if not all, of the scenarios have a precedent in other TMDLs. Looking at multiple scenarios provides more information to decision makers. The scenarios consider making TMDLs both more and less stringent.
  - R. Hutsel: They are saying to focus only on the TMDL, which is a policy decision that we made that needs to be more clearly articulated. I don't think we need to discuss changing the scenarios.

#### *Co-Benefits and Reasonable Assurance Analysis*

- Comment from comment letter: The co-benefits, particularly low-impact development, are undervalued, and a reasonable assurance analysis (RAA), such as what was done in Los Angeles, should be done prior to the CBA.
  - Consultant's proposed response: The CBA is being developed according to federal regulations. It is analyzing co-benefits and includes a lot of data sources. An RAA is not necessary. While it provides some assurance, the basis under which an RAA is performed usually changes over time. Information about benefits and costs can be obtained from the modeling efforts scoped for the project. The data sources suggested in the letter from San Diego Coastkeeper and Surfrider Foundation will be considered and incorporated into the study as appropriate.
  - T. Snyder: Definitely look at the Los Angeles studies to see what can be included, but a lot of studies done in Los Angeles may not be directly comparable because aquifers in San Diego don't recharge as well.
  - J. A. Weber: According to our modelers, an RAA can mean a number of things. California is developing standards for an RAA, but they aren't established yet. We have a defensible product in the WQIP and those within the bacteria TMDL that are an "active", not "dormant" TMDL meet USEPA's RAA standards. In Los Angeles, they used an 85th percentile storm event as a design standard to meet the requirements of a number of TMDLS, not just bacteria, but that is not required in an RAA, but an option to meet compliance in the LA Stormwater Permit.

- T. Snyder: The response should provide more detail about how similar/equivalent our efforts were to an RAA.
- C. Crompton: Orange County is doing an RAA equivalent as well.
- J. Smith: Make sure to tell the reader what we are and are not doing for all responses (e.g., state clearly that an RAA is not being performed).

#### *Policies, Scenarios and Analyses*

- Comment from comment letter: The scenarios are illegal or unsupported by scientific data.
  - Consultant's proposed response: The results of the analyses provide information, not recommendations. Decision makers are independent of this process.
  - C. Crompton: I'm not sure any of the scenarios are illegal.
  - J. A. Weber: Some scenarios might only be illegal from a policy standpoint (e.g., if you don't comply with TMDL, you are not legally compliant).
  - J. Haas: We could clarify that we are evaluating moving the compliance endpoint, not water quality compliance standards.
  - J. A. Weber: "Decision makers" should be changed to "decisions."

#### *Data Considerations*

- Comment: The Surfer Health Study is overemphasized. Benefits of freshwater recreation are undervalued.
  - Consultant's proposed response: The CBA is using the best available data sources. The best option is extrapolating from the Surfer Health Study. The study focuses on surfing and the beach because of higher incidence, but it will also consider fresh water.
  - J.A. Weber: The response needs to acknowledge that the concern has been heard and the consultant is working with investigators to address it.
  - R. Hutsel: I'm also concerned about this. The San Diego River used to have ponds and Native American sites, but those were lost. Freshwater has value and a lot of uses. It's a really important issue and needs to be included. It's not good enough to say we don't have adequate data sources. The response should also say that we are not just focusing on current conditions, but looking at future uses of freshwater.
  - The response talks about types of benefits, but it doesn't address how freshwater will be looked at. That should be expanded upon.
  - C. Crompton: There is minimal recreational use of freshwater in Orange County. Inherently, the likelihood of freshwater recreation will diminish. Other than during stormwater events, we're beginning to turn the systems back to the way they were historically, which was dry.
  - M. Buckley: We're definitely looking at and thinking about this. The issue is capturing climate changes, consumption, clarity and recreation data. We will include all the data we can find, but we're not finding a lot that will show big changes.

#### *Financial Capability Analysis*

- Comment from comment letter: Conducting a screening level FCA without a financial capability indicator analysis (FCI) is essentially favoring the cost portion over ability to pay.

- Consultant's proposed response: The FCI is not necessary, as the analysis being performed follows EPA standards and provides information regarding both cost and ability to pay. The FCI would just provide additional details. The results of the screening level FCA will determine whether a full FCA is warranted.
- R. Kolb: What additional detail is in the FCI?
  - The FCI tells more about what the community's financial situation is. Some things could be useful to add, but some are trivial.

#### *Green Infrastructure*

- Comment from email: Benefits of green infrastructure greatly outweigh those of single-purpose infrastructure.
  - Consultant's proposed response: The CBA will analyze co-benefits to the extent data are available or reasonable assumptions can be made.

#### **Next Steps**

- The consultant will circulate responses via email to the steering committee, including responses to the oral comments received at the public workshop, then finalize and send responses one week after.
- The consultant will discuss with Orange County how to address extrapolation and applicability of certain scenarios.
- The consultant will compile a list of data needs and send to the steering committee.