Beaches and Creeks TMDL Cost-Benefit Analysis
Steering Committee Meeting
October 25, 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
Ted Shaw, Atlantis Group, representing San Diego County Taxpayers Association
Jian Peng, County of Orange, Stormwater Quality Planning

Supporting Roles
Lewis Michaelson, Katz & Associates
Bree Robertoy, Katz & Associates
Cynthia Gorham, San Diego Regional Water Quality Control Board
Michelle Santillan, San Diego Regional Water Quality Control Board
Helen Yu, San Diego Regional Water Quality Control Board
Jo Ann Weber, County of San Diego
Mark Buckley, Eco Northwest (Participating via phone)
Chad Praul, Environmental Incentives (Participating via phone)
Ralph Mastromonaco, Eco Northwest (Participating via phone)
Maso Matlow, Environmental Incentives (Participating via phone)
Ken Schiff, Southern California Coastal Water Research Project (Participating via phone)

September 28 Meeting Summary
- J. A. Weber submitted edits to the October 25 meeting summary. Committee members should review the summary and submit additional edits or questions.

Project Status Update
- The project is approximately two weeks behind. However, some intermediate results are available for discussion.
- The Financial Capability Assessment (FCA) and property value analysis are progressing faster than anticipated. Preliminary results are available.
- To keep the project on schedule, Orange County needs to decide whether it will be able to provide water quality data inputs or if the data will be extrapolated from San Diego.

Financial Capability Assessment Review
- A screening FCA is being conducted for San Diego County, which will determine the total financial burden of water services (measured in cost per household) on residents and ability to pay based on median household income. Initial results show the financial impact is low, however wastewater and stormwater costs are not included in the assessment yet.
- Some analyses that would be included in a full FCA are not scoped to be performed as part of this project. While the screening FCA is a robust analysis, the analyses completed in the full FCA would provide a deeper understanding of the financial impact. The limitations of performing a screening FCA, as opposed to a full FCA, are to be clearly stated in the final CBA document.

Discussion
- T. Snyder: What is the cutoff for mid-range financial impact?
  - Mid-range financial impact is more than 2 percent of median household income. The thresholds are determined by the Environmental Protection Agency.
- R. Kolb: Typically, a FCA would include just wastewater and stormwater costs. Water service costs could be included if water services are provided by the same organization.
  - J. Haas: The only reason for this analysis is to determine whether an extended TMDL compliance timeline is warranted. Financial burden needs to be put in clear context.
- T. Snyder: Will current and projected stormwater and wastewater fees be included?
  - Yes. Projected stormwater costs will be pulled from the Water Quality Improvement Plans developed, based on current regulations.
- J. Smith: The final document should show the financial burden as compared to other regions. It should also be broken down by categories of cost (e.g., wastewater or stormwater).
  - T. Snyder: To respect the scope of the project, maybe the San Diego County Water Authority (SDCWA) can provide information regarding how water service costs in San Diego County compare to other regions.
- H. Yu: Is it possible to ask SDCWA for a list of what is included in the water service costs they provided for the assessment?
  - The breakdown of costs will be clearly identified.
- J. Smith: Why were south Orange County data not included? Does it bias our results? It needs to be clearly indicated that Orange County was excluded and that it may have an impact on the analysis.
  - R. Kolb: It would be difficult to pull out cost data for a portion of Orange County's watershed.

Next Steps
- The consultant will contact the SDCWA to check their assumptions.
- Data from stormwater and wastewater agencies will be identified, gathered and added to the FCA.

Hedonic Model Review

- The consultant is building a hedonic model that includes properties up to two miles from the beach. The model considers neighborhood characteristics (e.g., school quality), square footage, beach grades and weather.
- The model does not show responsiveness to water quality for all homes, but it does show responsiveness for homes worth more than $1 million.
- The hedonic analysis will not necessarily produce results that will be additive to public health, but it might reveal a benefit that could be further explored in the CBA.

Discussion

- T. Shaw: I continue to struggle with this approach. Imperial Beach and Oceanside are less desirable because of proximity to border and Camp Pendleton, respectively. Schools are very different in those areas than those in Point Loma. I have doubts about controlling for those factors to get information about water quality.
- H. Yu: This model shows correlation, not causation. There is a difference between statistical significance and true existence.
    - R. Mastromonaco: The model shows causation, not correlation. It is a regression model based on observed data. The fact that schools are very different depending on the area has been explicitly controlled for. Homes worth $1-3 million do exist in areas with mid-grade beaches (e.g., Encinitas), not just in high-grade beach areas.
- J. Haas: It is important for the report to acknowledge that benefits aren't spread evenly across the region and extrapolation won't apply everywhere.
- J. Smith: I would like to see the validation step of the model. If there is confidence in the model, then we would want to use it in the final report.
- T. Snyder: Imperial Beach should not be included in the model because it is not part of the Rec-1 TMDL.

Next Steps

- The consultant will refine the model and provide a list of controlled factors, a scatter plot graph and an explanation of linear regression to the committee. The committee will then decide how to use the hedonic analysis.

Beach Attendance Model Review

- The beach attendance model analyzes attendance at Rec-1 TMDL beaches, broken down by recreation type. Beach attendance was modeled as a function of day, week, month and weather factors.
- There was a substantial set of data to work with, taken from daily lifeguard beach attendance counts and the Surfer Health Study. The study will model total changes, then estimate the total value of recreation, which translates into public health benefit.
- The Surfer Health Study looks only at Ocean Beach and Tourmaline Beach. Surf condition information was also pulled from surflinecondition.com to control for surf conditions in the model.
- Imperial Beach showed a drop in attendance that is statistically significant up to five days after a wet weather event. Encinitas showed a drop in attendance that is statistically significant up to

three days after a wet weather event. San Clemente showed similar results. The implication is that if water quality is improved, the lost trips after wet weather events would be regained.
- o J. Smith: Do these trends align with data from Del Mar?
    - ▪ The data from Del Mar are monthly.

Freshwater Analysis
- The consultant has been looking for any evidence that there are exposures to freshwater after wet weather events, but they have not found those data in qualitative interviews with freshwater recreation groups. A robust analysis will not be possible. Freshwater will not be left at zero values in the model; the study will lay out some assumptions.
- J. Smith: How do we know people wouldn't be out there if the water quality was better?
    - o The consultant has not found data regarding recreational uses of freshwater when the water quality is good.
- T. Shaw: The consultant should look at reservoirs.
- J. Haas: Sometimes recreation occurs at the bottom of streams (e.g., Buccaneer Park at Loma Alta, San Elijo, Del Mar, Torrey Pines, Felicita Creek).

Water Quality Input Analysis Review
Orange County Inputs
- Orange County has the option to provide water quality inputs or allow San Diego BMP data to be extrapolated to Orange County land uses. The consultant's preferred option is to extrapolate endpoint compliance and stream restoration data from modeling done by Tetra Tech for San Diego. Orange County-specific calculations would be developed for human sources. The human source study would need to be provided to the consultant by November 7.
- J. Peng: Orange County is still working on a contracting mechanism with the consultant who will be conducting the human source study. They would need to check with the consultant before deciding.
- J. Smith: I'm nervous about using BMP costs for another set of copermittees.

Next Steps
- The committee will talk to the consultant offline regarding the approach to Orange County's water quality data.

Committee Meetings
- To ensure the full agenda can be covered at each meeting, meetings need to be extended or added to the schedule.
- Items that require feedback should be presented at the start of the meeting.
- Methodological discussions should include the entire committee, but follow up discussions can be in Memo or online meeting format.