Meeting Summary
Clear Creek Bacteria TMDL Public Meeting

March 06, 2008
Environmental Institute of Houston
University of Houston Clear Lake

WATERSHED ADVISORY COMMITTEE MEMBERS ATTENDING:
Joe Ferro (Webster) represented by Bill Garvin; John Kennedy (Nassau Bay) represented by Chris Defrancis; Carol Ellinger (Houston) represented by Jason Iken; Jon-Paul Komar (Harris County Stormwater Quality); Ronald Schultz (Galveston Count Health Dist.) represented by Diana Stevens; Ron Drachenberg (Fort Bend County); Catherine Elliott (Harris County Flood Control); Jerald Landis (Gulf Coast Waste Disposal Authority) represented by Kathy Richolson; Bob Stokes (Galveston Bay Foundation)

SUPPORT TEAM PRESENT: Carl Masterson (H-GAC); Mary Jane Naquin; Hanadi Rifai (UH); Ron Stein (TCEQ); Mel Vargas (Parsons); Maria Modelska (UH)

OTHERS ATTENDING: Richard Bachman; Karen Atkinson (TCEQ Houston); Linda Broach (TCEQ Houston); Trent Martin (Harris County); Scott McDonald (Harris County); Charriss York (Texas Coastal Watershed Program); Sarah Metzger (Pasadena); Lisa Grecho (UH); Yinfei Sun (UH); Yaa Birago Kwakye-Amoah (UH); Nick Russo (Harris County); Steven Johnston (Galveston Bay Estuary Program); Alisa Max (Harris County); Jeff Taebel (H-GAC)

WELCOME & INTRODUCTIONS/AGENDA REVIEW
Following introductions facilitator Mary Jane Naquin reviewed the purpose of the meeting and the agenda, and presented the ground rules for the meeting.

PROJECT UPDATE
The project update was presented by Mel Vargas (Parsons) with the assistance of Ron Stein (TCEQ). The purpose of this agenda item is to give everyone an update on the technical work that's been done since the group last met in November 2007. The specific topics will be Pollutant Source Assessment, Load Duration Curve results for non-tidal segments, Tidal Prism methodology for tidal segments, and TMDL calculations. Mr. Vargas reviewed background information and said he would spend most of the time talking about how the methodologies were employed to arrive at preliminary TMDL numbers.

Pollutant Source Assessment
Sources of bacteria loads were identified, not for the purpose of quantifying loads but instead for the purpose of recognizing those sources that require attention in the implementation plan. In other words, what are the most probable sources of bacteria in the watershed? Loads are contributed by stormwater (permitted & non - permitted), livestock, pets, wastewater treatment facilities and septic systems.

Q: Does MS4 coverage include information from HC/HCFCD MS4 permits, or is it limited to City of Houston MS4 or Urban Area MS4?

R: We will look into it.

Comment: The use of the term permitted to refer to pipes identified in the pipe recon should include both wastewater treatment pipes and MS4 stormwater program.

R: The MS4 permitted outfalls do not permit non-stormwater discharges. Consequently, the discharges from permitted outfall pipes identified in the recon would not have been permitted discharges.

Q: What about the allowable non-stormwater discharges?

R: Non-stormwater discharges are only allowable if they do not convey a pollutant (in this case, bacteria) to waters of the state.

Q: In the pipe recon, did you sample the discharges? Or characterize the discharge?

R: No. We depended on the health district data. We were asking if there were still discharges.

Q: How many days after a rainfall event did you conduct the recons?

R: At least three days. Probably five days.

Q: Are the domesticated animal data based on the census?

R: Yes. The number of dogs and cats are based on the number of households identified in the 2000 Census, using a ratio (56 dogs and 61 cats per 100 households)

Q: Were wastewater treatment plant outfalls mapped?

R: Yes. Dry-weather discharges did not directly correspond to the WWT plant discharges.

Q: Is stormwater considered to contribute to the load during dry weather?

R: No. Stormwater doesn't 'storm' during dry weather.

<u>LDCs for non-tidal segments</u>

The purpose of the Low Duration Curve Methodology (LDC) is to be able to represent all possible flow conditions and then represent the loading of bacteria that is acceptable according to the water quality criterion for two indicators - *E. coli* and Fecal coliform - under high, mid-range, and low-flow conditions. Modeling incorporates load sources under various flow conditions.

Seven sampling stations were developed, only in freshwater streams. Chigger Creek station was discussed as an example. Samples were taken under various flow conditions and the level of indicator bacteria was plotted in relation to the TMDL under various conditions. In Mud Gully, there was insufficient data for *E. coli,* so Fecal coliform data was substituted.

Based on the data, reductions were calculated that would ensure that no more than 25% of samples would exceed the criteria for impairment. Required reductions (by %) at each station were presented for both instantaneous and geometric mean. Percentages ranged from 14% to 92%.

Tidal Prism Methodology for tidal segments

Note: The TCEQ-identified boundary between tidal and non-tidal may not reflect the actual boundary. More of the creek is tidally-influenced than previously indicated, and the current data reflects the new information.

The Tidal Prism Methodology integrates flow, conductivity, and Enterococci levels. Sources that contribute Enterococci include stormwater-runoff , wastewater-treatment point-sources, and tidally-influenced loading (which can be upstream to downstream or vice-versa). The model also incorporates assumptions for decay rates of bacteria in marine waters.

Data was collected over almost six years in one-hour steps for 11 reaches on the main stem and on five reaches on tributaries. Input data were discussed:

- Conductivity calibration was used to confirm flow rate estimations. These numbers correlated well.
- Enterococci calibration: There is limited data on Enterococci levels in the watershed, especially in the tributaries. Where there is fecal coliform or *E. coli* data, this data was used to derive Enterococci levels, based on ratios between the different indicators that were identified in an H-GAC study.

The actual data appear to correlate well with the modeled data.

TMDL calculations

In the tidal sections of the watershed, loading levels are significantly higher than the geometric mean water quality criterion for Enterococci. The levels are much higher upstream than downstream. (Note: This could be because of incorrect assumptions in the model, for example, the use of *E. coli* data to determine Enterococci levels.) Reductions were calculated and compared to the criterion. If loads are reduced by 92% at the upstream end, it substantially decreases the reductions that would be required at downstream portions of the modeled area. The 92% reduction that was based on the geometric mean would satisfy required reductions for the single-sample criteria. On tributaries, the reductions would range from 36% to 99%.

The same calculations will be applied for the freshwater portions of the watershed using the LDCs.

Questions
Q: Are the tests/samples only fecal coliform, or total coliform?

R: In freshwater, we used *E. coli*; in tidal we used Enterococci

Q: There was a question about a line on a slide representing the flow from wastewater treatment plant. What does that line represent?

R: Wastewater treatment plants have a maximum flow that is permitted. We used this maximum permitted flow as a constant in our calculations.

Q: One can argue that the flow from wastewater treatment plants is not constant, but varies based on water.

R: The maximum rarely exceeds the permitted amount, and so we used that number, even if it might be lower.

BREAK

TCEQ PROCESS FOR ADOPTING TMDLs
Ron Stein took the meeting participants through the process TCEQ follows for adopting TMDLs. He then described where we are in the process and expected progress over the next eight months or so.

Process: A TMDL document includes background information, a description of the problem, and TMDL allocations (load capacity = wasteload allocation + load allocation + the margin of safety). For Clear Creek, the equation is calculated for each of the nine segments that are in this project.

- Once drafted, the document is brought to the commissioners of the TCEQ, requesting permission to release the document for public comment.
- Written comments are accepted and a public meeting is held within a 30-day comment period.
- Comments are responded to and the TMDL document is revised as appropriate.
- The updated document is resubmitted to the TCEQ commission for adoption after a 30-day notice period.
- The document is then sent to the EPA for approval, which can take from one to three months. Once approved, it becomes part of the state's water quality management plan.

Implementation Plan: A plan must be developed to address the problems described in the TMDL document. The process for adopting the IP is similar, with the exception of EPA approval. This often takes about six months and includes participation by stakeholders.

Where we are: The TMDL report has been drafted and is about ready to begin the approval process. The public comment period will probably be from mid-May to mid-June. A public meeting has been tentatively been scheduled for June 11, 2008. If all goes well, the TMDL document will be adopted in August.

Q: Will the stakeholders be able to review the document before the public comment period?

R: No. Stakeholders will review the document during the public comment period. However, the data and the technical report will be available before the comment period.

DISCUSSION OF BACTERIA TMDL STEERING COMMITTEE & NEXT STEPS

Carl Masterson briefed the meeting participants on a proposal for an overarching structure to oversee the development of a Bacteria Reduction Implementation Plan for all bacteria TMDLs rather than having many individual stakeholder groups. One of the main factors is the availability of resources to cover many watershed stakeholder groups, and the overlap and similarities between stakeholders and elements of the implementation plans. Based on previous stakeholder input, we will go with a large Steering Committee (30 or so people) with various workgroups such as stormwater, wastewater treatment plants, MS4 phases 1 and 2, outreach/education, etc.) to develop issue specific Best Management Practices. The Steering Committee will decide on the best method of communication between the committee and the various TMDL watersheds. A proposal will be sent out to all parties regarding composition and formation of the steering committee.

The Clear Creek group has been set up to develop the implementation plan for Clear Creek. This group could continue to work independently or it could coordinate with other groups. Ron Stein asked the meeting attendees to choose now.

Benefits of joining the larger effort would include economy of scale, consistency and commonality for stakeholders with overlapping interests.

Q: What portions of the 13-county region would be included and would there be any areas that have unique requirements?

R: Portions of Harris, Montgomery, Fort Bend, Galveston, and Brazoria Counties. Typically, the plans will have similar implementation recommendations.

Based on the apparent support of the proposal, the Clear Creek group will be included in The BIG (Bacteria Implementation Group). Next week, H-GAC will send out a proposal for the structure of The BIG. If the development of the structure appears to be acceptable, we will proceed with nominations. Alternatively, we will hold a meeting to develop the structure. Attendees are encouraged to submit names for inclusion in the process.

ADJOURN

Business being completed, the group adjourned at approximately 3:00 PM.