Meeting Summary
Buffalo & White Oak Bayous Bacteria TMDL Stakeholder Group

February 7, 2006

STAKEHOLDERS PRESENT: Adam Aschmann; Latrice Babin; Neil Bishop; Craig Bourgeois; Claire Caudill; Catherine Elliott; Terry Hershey; Bob Hunt; Tom Ivy; Steve Johnston; Steve Lewis; Trent Martin; Linda Pechacek; Todd Running; Linda Shead; Mary Ellen Whitworth;

STAKEHOLDERS ABSENT: Del Cannon; Bill Manning Sr.; Robert Hauch; Paul Nelson (retired from City of Houston) represented by Carol Ellinger;

SUPPORT TEAM PRESENT: Carl Masterson (H-GAC); Mary Jane Naquin; Tina Petersen (UH); Hanadi Rifai (UH); Ron Stein (TCEQ); Tom Weber (TCEQ); Gian Villareal (UH); Roy Lehman (TAMU-CC); Joanna Mott (TAMU-CC)

OTHERS PRESENT: Jim Coody (Greater Houston Builders Assoc.); Linda Broach (TCEQ Houston); Jon-Paul Komar (HC SWQ); Jeff Taebel (H-GAC); Lisa Montemayor (Houston-PHE); Lynne Johnson (BPA); Mary Purzer (TCB); Jean Wright (H-GAC); Alisa Max (HC SWQ); Roger Whitney (Houston); Simon Sarkis (UH); Cornelius Crockett (ATC); Joe Myers (HCFCD); Pat Smiley (HC SWQ); Blake Traudt (TGLO); Cindy Contreras (TPWD); Michael Bloom (PBS&J); Paul Jensen (PBS&J); Jeremy Hanzlik (TCB).

WELCOME & INTRODUCTIONS

Facilitator Mary Jane Naquin welcomed the stakeholders and audience at approximately 4:15 PM and there followed self introductions.

AGENDA REVIEW

Ms. Naquin then reviewed the agenda giving a brief description of each item.

ADOPTION OF November 1, 2005 MEETING SUMMARY

There were no suggested changes to the meeting summary and it was adopted by consensus.

STATUS OF TMDL

Tom Weber, TCEQ, presented a status of the TMDL. He noted that there have been a lot of meetings of this group since 2001, to talk about the bacteria pollution problems of Buffalo and White Oak Bayous and that this is one of the most significant and complex situations in the entire state with some of the highest concentrations of E. coli (urban and rural) and deserves TCEQ's attention. At this point the data gathering is complete, TCEQ staff is looking to have the TMDL recommendation to the Commissioners in late calendar 2006 or a little thereafter, and there are still some issues. These issues are fundamental and effect how the TMDL equation is calculated – background load, flow cutoff and how effluent loads from treatment facilities are identified. This groups needs to be involved in continuing discussions of the issues. The TMDL team needs to coordinate with the water quality standards group, be on same page with how permits are written and with the assessment team who knows how to list impairments in the first place, and finally the policy makers.

There are similar issues with other bacteria TMDLs in the state and Buffalo/White Oak will probably not be the first one out – the probable order is: Upper Oyster Creek (mostly in Fort Bend County), the Leon River and Peach Creek, both of which are in the central part of the state, with Buffalo/White Oak to follow.

Mr. Weber presented the three issues for which TCEQ wants input from the group – background load; flow cutoff and loads from treatment facilities:

Background load

A decision must be made on what to include in the background load – the bacteria load considered not controllable, such as direct deposit into the water, release from sediment and potentially non human source runoff from wildlife, domestic animals and birds. Bacteria from compost and mulch could also be included in background load. The question arises whether to put as little as possible in the background load or all of the aforementioned? If all are included, data shows the background could exceed the standards, regardless of what else is done. This could hinder TCEQ's ability to issue any more permits and would apply to permits for new treatment facilities and expansion of existing facilities. If the minimum is included in background, it assumes all else is controllable and could be addressed through incremental implementation.

Comments and questions on background loads:

- The TMDL must show that the water quality standard will be met to get approval from EPA. If we are to have a product, TCEQ must adhere to EPA's standard.
- It would be a wrong assumption to say that all background level bacteria is natural – other coastal streams without a major city do not have the background levels of bacteria present in Buffalo and White Oak Bayous, especially if all sources are included as background.
- The Cleans Rivers Program monitored Lake Creek and Peach Creek in Montgomery County and bacteria levels are no where near the background levels of Buffalo and White Oak – but of the two, Lake Creek had higher numbers and was more developed with more people and impervious surface.
- Is E. coli the right indicator to show there are problems with pathogens? TCEQ reviews water quality standards every three years and that period approaches. TCEQ changed from fecal coliform to E. coli in 2000, and EPA hasn't approved those standards yet, but TCEQ did follow EPA guidelines. If there is an indicator better than E. coli, TCEQ is not sure.
- The issue of background load needs to be resolved before TCEQ can complete the TMDL.
- Direct deposit into the water would be background and runoff contribution of wildlife could be included, making them part of the Load Allocation in the TMDL formula.
- TCEQ should think carefully about taking loads out of NPS runoff as all control recommendations have to be justified.
- Runoff containing bacteria from wildlife and mulch shouldn't be included in background.

Flow Cutoff

The bacteria standard is set to allow contact recreation and contact recreation doesn't occur at very high flows, so TCEQ is seeking to identify some flow level as an upper end where contact recreation standards wouldn't apply. The ideas so far are to develop a safe flow or choose some percentile above which the standard wouldn't apply. Percentile flows could be considered arbitrary but the positive is that they could be easily calculated. Safe flow has a rationale that equates more with what is going on in the real world. If large amounts of debris are coming downstream it wouldn't be safe for kayaking or canoeing or swimming. If water has a very high velocity, people aren't going to go in it. The safe flow level could be customized for different streams. Another factor to consider is the fate of bacteria downstream. Buffalo Bayou flows to the

Houston Ship Channel that doesn't have a contact recreation use and the HSC flows into Galveston Bay, which does have a contact recreation use. While there is no assessment that shows what the bacteria levels are in the HSC there is assessment for Galveston Bay and it is meeting the contact recreation standard.

Questions & Comments on Flow Cut Off:

- Can we develop a Safe Flow without a change in the formal standard? If there is going to be a high/lo flow standard, why not do it the same as temperature is handled in permits? - TCEQ is looking across programs and permits do have Force Majeure consideration.

- How will TCEQ account for the possibility of WWTPs dumping pollutants just before or during Safe Flow events? Rules and permits would not be void during this Safe Flow time and a message wouldn't be sent that it is OK to dump, but this could be a consideration in deliberating whether or not to go with a Safe Flow.

- A high cut off flow could help reduce what is calculated as contributing to background components.

- In 1994, TNRCC had a goal to develop wet weather standards. This is a very complex evaluation and was not moved forward.

- TCEQ is dealing internally with trying to match assessment with the TMDL model.

- There could be an agreement on "safeness" where there could be a lower flow in different parts of the watershed - some number that would protect the watershed. This is more difficult than picking a percentile.

- Regardless of flow there is little contact recreation in Buffalo Bayou – only small group of people use the bayou for recreation.

- The Buffalo Bayou Partnership is spending millions of dollars to bring people closer to the bayou – should we just let the water be bad?

- There is no pathogenic link right now.

Effluent Loads

Permits are issued with a requirement to maintain a certain amount of chlorine residual in the effluent. Facilities that use alternative disinfection processes have a requirement to test for bacteria (Fecal coliform). The current limits in permits are the stream standard and if wastewater is treated according to the permit, it will meet the stream standard at the end of pipe. In terms of developing the TMDL it is acknowledged that there will have to be an accounting for certain situations like, upsets and peak flow discharges. There will be further internal TCEQ discussions with people in the compliance and permitting areas to untangle various issues.

Questions & Comments on Flow Cut Off:

- TCEQ is looking for engineering answers to say what WWTPs should be doing – they will not be discharging zero bacteria.
- How do we deal with bad engineering? – need better checks and balances so end of pipe meets design and the design is right.

- It is worth keeping in mind that in employing measures to reduce E. coli, other bacteria, harmful bacteria are being killed. It is an unknown because monitoring did not include these bacteria.
- The issue of bacteria is more complex in urban areas, and in this part of the state, streams don't go through long periods where they dry out, and moisture is present almost all the time and the Houston area doesn't get 'nature's helping hand' as other parts of the state do to knock down levels.

Additional Comments & Questions following the break:

- The daily load is 99% from stormwater – is this similar to other Bacteria TMDLs? – No probably a reflection of the area and land use.

- Why were the issues discussed today the only things for which comments were requested? Only the 3 issues were highlighted because they are the ones for which TCEQ needs the group's input – without the 3 can't develop the TMDL. Background is more important than the other 2. Once these three issues are resolved, the allocation can be completed, even though there will remain uncertainties in other issues.

- How will allocations for construction permits be handled? The allocation will not be broken down to that specific level – it will be at the level of wasteload and load allocations and background. It will be part of implementation to identify which permits need to be allocated.

- Where does the 20-year figure come from? – It is a general time frame for long term TMDL planning – could be quicker if we had more resources.

- After all this it is still unclear what the background load should be – It is a developmental thing and more discussions needed, but during implementation planning phase – there will be no more studies for TMDL part.

PROJECT UPDATE

Dr. Hanadi Rifai (UH) gave a summary of progress since the last stakeholder meeting and Dr. Joanna Mott (A&M Corpus Christi) gave a summary of the Bacteria Source Tracking work.

Over the past through months the team received information on the distribution of septic systems from Harris County and evaluated septic systems on a sub-watershed basis. Spreadsheet modeling was done on contributions from wildlife vs. human bacteria and hydrologic simulation program-Fortran modeling was done. There is very little information on the impact of septic systems on water quality so there were assumptions put into the model. Dr. Rifai guided the group through the assumptions and model results and Dr Mott dealt with the Bacteria Source Tracking in Buffalo and White Oak Bayous. A summary of findings and pertinent comments from stakeholders are:

- Human sources are found in every sample and appear widespread, although sometimes as a small proportion, varying with site and rainfall.
- Human contribution is high even in watersheds without wastewater treatment plants;
- Residential land use had the lowest human contribution.
- BST results suggest a higher proportion of non-human isolates in dry weather, with an increase in human source after rainfall and 39% (the human level) is 3 times the rate for other areas in Texas and indicates there is a problem.

- BST data was collected from other studies in Texas but none were comparable to the Houston situation.
- If 100% of all other sources was eliminated, wildlife uses up the standard. Has there been research on the effects of urbanization on wildlife – do they use the habitats closer to water?

IMPLEMENTATION PLAN DEVELOPMENT ORGANIZATION

Ron Stein noted that TCEQ and H-GAC are working to find resources to fund a watershed coordinator to guide the implementation plan strategy and that this summer is the target for organizing the watershed partnership and put it in place so that by early fall we can begin to breakout work groups and begin the implementation planning strategy

MEMBERHIP ISSUES

Carl Masterson noted that new members who are in attendance were introduced at the beginning of the meeting and that there was no further membership business for this meeting.

NEXT MEETING

It is anticipated that the next meeting will be held during the summer/fall.

ADJOURN

The meeting was adjourned at approximately 6:00 PM.