STAKEHOLDER MEETING 13

November 10, 2015
5:30 – 7:30 PM
Double Bayou Community Building

MEETING SUMMARY

Stakeholders: David Boyd, Roberta Bradford, Tom Douglas, Becky Fancher, Steve Fitzgerald, Elga Jackson, Justin Jenkins, Charles Johnson, Kim Laird, Brandt Mannchen, David Manthei (NRCS), Bob Scherer, Jerry Shadden (TBCD), Rex Tunze, Otho Turner, Gary Weaver, Pudge Willcox

Team Members: Stephanie Glenn (HARC), Brian Koch (TSSWCB), Lisa Marshall (GBEP), Brandie Minchew (Shead), Brad Neish (HARC), Linda Shead

1. Welcome, Introductions, and Agenda Review

Linda Shead welcomed and thanked everyone for attending the meeting. She also thanked TBCD for the dinner, as well as Chambers County for its continued support: Precinct 2 for the meeting room, Emergency Management for the screen, the Economic Development Office for the PA system, and the Parks Department for getting inmates to set up the tables and chairs. She reviewed the evening's agenda, which included: review and comment on the human history section of Chapter 2, presentation on examples of management measures, review and comment on the pollution sources and loads chapter, review of proposed load reduction goals for Double Bayou, and planning for completion of the WPP document. She then started self-introductions of attendees.

2. Review and Comment on Human History Section

Linda allowed time for folks to read/review of the Human History section handout. One stakeholder noted that the section does not mention the oyster business. While oystering does not occur within the watershed, waters from Double Bayou flow to the highly productive oyster harvesting region in Trinity Bay, and Linda will add mention of that to the paragraph on commercial fishing.

3. Presentation on Example of Management Measures

Brian Koch began with mentioning that stakeholders had asked about what's going on in other watersheds that have done something similar to Double Bayou. One with which the Soil Board assisted is the Leon River, which is in north central Texas and eventually flows into the Brazos River. The Leon River was first put on the 303(d) list in 1996, for bacteria, from Lake Proctor down to Belton Lake. Once on the list, some sort of action is required. In 2002, TCEQ initiated a TMDL process. Stakeholders wanted a different approach. An application was made to TSSWCB in 2006 for funding for a Watershed Protection Plan.

After completing the planning, the plan was approved by stakeholders in 2010, and implementation began that year, with a project to remediate septic systems. A couple of years later, funding was provided for a watershed coordinator, like what is proposed here. A couple of years after that, a technician was hired for the Soil and Water Conservation District to help ag producers implement grazing management practices, with 13 water quality management plans produced, covering 3,000 acres so far. They have also continued to obtain funding for septic system repairs. The result of these efforts is that a tributary of the Leon River was de-listed in 2010, having no more impairment for bacteria. In 2012, a segment of the river in the upper watershed was also de-listed, along with another segment on the mainstem and another major tributary. Two additional segments in the lower reaches of the river should go off the next list, once it's approved.

The Leon River watershed is similar to Double Bayou in that it is definitely more rural than urban. Stakeholders there had concerns that the standard wasn't appropriate, and had some bacteria source tracking conducted, which found that more than 50% of the bacteria came from wildlife, both avian and non-avian. However, they were not able to get EPA implementation dollars until their plan addressed meeting the existing standard. They changed their plan to meet the standard, and, since then, have continued to make progress, including in the segments that are not de-listed yet.

The Double Bayou plan has similar practices included, and the dedicated group here should help make a difference.

A stakeholder asked about the timing of the study on 50% contribution from wildlife. Brian responded that their study was in 2006, and 50% is a number that is seen consistently statewide in rural areas. Linda noted that it was encouraging that the water body was still able to be delisted even with the high wildlife contribution.

4. Review and Comment on Water Pollution Sources and Loads Chapter

Stephanie Glenn reviewed the sections of the Water Pollution Sources and Loads chapter (Ch. 5). It starts with a discussion of the approach of the chapter and of the modeling analysis. It describes the importance of land use/land cover information, and gives a brief overview of the SELECT model and the load duration curve analysis of watershed data. Potential bacteria sources are then described in terms of whether they are point source or nonpoint source contributions, and how the workgroups developed the information for nonpoint sources.

The chapter then goes into detail about the SELECT model – its basis in land use/land cover, the subwatersheds used for analysis, the total model results, and then the model results for each potential source. The wildlife model focused on deer, because that was the only wildlife source for which population data were available. For feral hogs, the workgroup identified water areas and "buffers" of 100 meters around them, where feral hogs would be more likely to spend time. Livestock inputs to the model were based on workgroup knowledge of numbers of livestock, such as cattle stocking rates. The wastewater results had been updated to reflect the existing two output pipes, instead of the one pipe that had been considered before, with the overall load being only slightly different from before. Potential septic system outputs are the final model results described in that section of the chapter.

The next section covers the load duration curve (LDC) for Double Bayou. The load duration curve only applies to the East Fork Upper station, because that is the only one that is nontidal. The section also shows how the group came up with its goal for load reductions at this location.

The last section of this chapter addresses tidal mixing, and how it affects the four sampling stations. A discussion of tidal effects in Trinity Bay describes how variable these effects are, based on winds and river inflows and resulting in unpredictable tidal flows. A special gauge to measure both positive and negative flows – an Index Velocity Gauge – was installed at the West Fork Lower station to measure and record flows automatically, because this station is closest to Trinity Bay, and would thus be most affected by tides. TCEQ's bacteria readings in Trinity Bay show low bacteria levels, which is why Trinity Bay is not seen as a contributor of bacteria to Double Bayou, and, instead, water from Trinity Bay dilutes the bacteria in Double Bayou. Following a discussion of the calculated bacteria loads at the West Fork Lower station, based on the gauge's flow measurements and the bacteria monitoring results at that station, the chapter presents the method for selecting a percent reduction goal for the West Fork Lower area.

Stephanie closed with noting that the appendices have more in-depth information on SELECT, tidal mixing, LDCs, and the different scenarios for SELECT that the workgroups had considered.

Next, Linda led a discussion of key points in the chapter by describing some features of SELECT and LDCs and asking questions to help identify the significance of some of these.

She started with describing how the SELECT model uses land cover to work with numbers of sources to develop loads. In response to her question about the significance of the SELECT results, a stakeholder noted that it determines where the problem areas are. Linda agreed, but noted that it tells us where the problems *could* be, because it tells where the bacteria are landing, but not necessarily how much is getting to the bayou. Another stakeholder asked for a description of a buffer. She responded that most of us think of a buffer as where something isn't happening, but, in this case, it's a zone around a particular area where it's more likely to be happening. She asked about the value for knowing which subwatershed might have the largest potential bacteria load, and a stakeholder responded that it might be a place to focus. Linda agreed, and gave the example of focusing efforts on failing septic systems in a particular subwatershed, rather than one where it wasn't as much of a problem.

The next discussion topic was load duration curves. She started with explaining the use of a flow duration curve – it helps determine how frequently a stream exceeds certain flows. From that curve, the water quality standard for the maximum amount of bacteria in a volume of water is multiplied by the flow coming down the stream to determine the maximum load in the stream that will meet the standard. Then, you can create a statistical load duration curve from the observed bacteria in the sampling data. The purpose of the load duration curve is to help understand how much the bacteria in the bayou has to be adjusted to meet the standard. Stephanie's group determined that a 28% reduction in the bacteria load in the bayou would help meet the standard. The group agreed that they can't predict that everything will work 100%, so they added a 10% margin of safety, which translates to a 38% reduction. Linda reminded everyone that setting a goal is not a regulatory requirement.

Other questions and answers from this section of the plan:

Q: I didn't know if all bacteria is bad? But they're all lumped together?
A: Not all are bad. We are measuring *E. coli*, because it has been identified as the best freshwater indicator that fecal wastes are in the water, which could make people sick.
Q: What about the fish?
A: Fish don't have *E. coli*; only warm-blooded animals do, and the closer to human-types of waste, the more likely to make humans sick.

The next topic of discussion was tidal flows. When Linda asked about what was remembered about the tides and the bayou's water quality, a stakeholder responded that it can dilute, because the Galveston Bay water doesn't have a bacteria problem, so it dilutes the stream when the tide comes in. Another stakeholder remembered that Trinity Bay had the same kind of fecal matter. Linda noted that while it's the same, it's at much lower levels.

In response to a question about whether saltwater makes a difference in test results, Linda noted that a different bacteria is used for the saltwater indicator – Enterococcus – because it tests better.

Regarding the west side of Trinity Bay, Linda noted that only the area close to Double Bayou was studied. In terms of the refineries contributing to poor water quality, Linda noted that refineries don't produce a lot of fecal bacteria, because those bacteria come from warm-blooded animals.

Linda gave examples of how management strategies might be considered: picking the biggest source for focusing management measures; trying a few measures at a time to see what works; considering whether money is available to implement particular measures; and/or remembering that feral hog measures may require cooperation beyond just the watershed.

To a question about what some of the high bacteria levels at low flows on the LDC might suggest, Stephanie responded that it would typically suggest a point source, but that (high bacteria levels at low flows) isn't the case for Double Bayou. Linda noted that having more nonpoint source effects isn't surprising for the Double Bayou watershed, because there is only one point source.

In response to a comment that bacteria would be diluted at flood stage – so much that it might not be detected – Linda remarked that that has not been the case in double Bayou, because they are finding high levels during rain events. Brian commented that it's a combination of the intensity of the rain event and the frequency. A 10-inch rain today might not have as much bacteria if there had been a 3-4 inch rain two days ago; whereas a buildup and flush would occur if there were two weeks or a month between rains. Stephanie noted that the highest bacteria samples overall are during the targeted rain events. Linda reminded everyone that the plan is not aiming at those spikes, because there is a limit to what can be done. The plan is aiming at the mid-range, achievable conditions for meeting the standards, which are based on the geomean, and not on the extreme highs and lows.

5. Review Proposed Load Reductions for Double Bayou WPP

Returning to the question of the proposed load reductions, Linda summarized that, for the upper East Fork, the group had previously discussed a 38% reduction, including a 10% margin of safety, and for everywhere else in the watershed, a 61% reduction, including a 5% margin of safety. At the most recent meeting, the attendees wanted to apply the same reduction goal (61%) everywhere. Linda asked to confirm this one more time to be sure everyone was on board. She reminded folks that it is not regulatory, but instead helps determine how many management measures to try to achieve the goal. She also asked the upper East Fork representative whether the uniform goal was acceptable, and he agreed that it was.

A stakeholder noted that 61% seemed high, and Linda asked Brian how it compared to other watersheds. Brian noted that Cedar Bayou's goal is 90%, but they have more to deal with there. Across the state he has seen many in the 70% and 50% range, with the lowest at 20%. More importantly, they are seeing improvements in all the areas where they are working. Another example is the San Antonio watershed, where they found more than 50% contribution from wildlife. However, with the only implementation being Water Quality Management Plans (more than 100 of them) and their implementation, two segments will be delisted in the next round. It doesn't happen

overnight – but it does improve. Linda added that the goal setting is for the stakeholders; it's not written into permits or regulations.

The group agreed on the 61% overall goal to go forward.

6. Planning for Completion of the WPP Document

Linda presented a proposed meeting schedule for completing the process:

- Week of Nov. 16 – Distribute Full Draft WPP
  Distribution would be through the website; hard copies available at Commissioner George's office; and hand delivery would also be possible.
  ~ Stakeholders review/comment (4 weeks) – and recognizing holidays in between ~
- December 18 – Deadline for Stakeholder Comments
  ~ Team addresses comments ~
- January 19 – General Meeting for Final WPP
  ~ Review and final stakeholder approval ~
- January 20 – Post WPP for "official" Public Comment (It has already been public locally.)
  ~ Public review/comment (30 days) ~
- February 19 – Deadline for Public Comment
  ~ Team addresses public comments and submits to EPA for review ~
- March 29 –General Meeting
  ~ Review public comments; see what is submitted to EPA; updates; Celebrate ~

Regarding a question about EPA timing, Brian noted that EPA has 90 days to respond. Sometimes, the plan goes back and forth, and EPA has recently been backlogged, but 3 months is the hoped for timeline for a response.

A stakeholder asked about the meaning of "consistency," and Linda explained that EPA has studied plans and implementation, and found that a plan is more likely to have successful implementation if it contains certain elements. The Double Bayou plan has been written to follow those nine elements.

An explanation of the process of "de-listing" was also requested, and Linda noted that TCEQ requires more than one year of improved data for a stream to go off the list. In fact, just like that it takes seven years' worth of data for analysis to determine listing, it takes the same amount to show that water quality has improved. So, "graduation," is when they have accumulated enough data, and the average reflects meeting the standard.

Linda reiterated that questions are welcome, and she will be happy to meet with anyone to explain any items.

7. Wrap-Up, Timeframe, Announcements and Next Steps

An attendee noted that Pudge Willcox had recently been elected Vice Chair of the Natural Resources Advisory Committee of the Houston-Galveston Area Council, to which there was applause.

Linda thanked everyone for attending.