DOUBLE BAYOU WATERSHED PARNERSHIP

STAKEHOLDER MEETING 6

Tuesday, June 17, 2014
5:30 - 7:30 P.M.

Double Bayou Community Building
2211 Eagle Ferry Road
Double Bayou, TX

MEETING SUMMARY

Attendees: David Boyd (Sierra Club), Clay Dean, Karla Dean, Tom Douglas, Alice Durst, Keith Durst, Leroy Ezer, Norma Ezer, Becky Fancher, Clint Fancher, Aaron Humphrey, John W. Jenkins, Justin Jenkins, Charles Johnson, Janet Lagow, Kim Laird (TCEQ), Chip Lewis, Brandt Mannchen (Houston Sierra Club), David Manthei(NRCS), Lisa Marshall (GBEP), Tom McNeeley, Alice Rivon, Stephen Scalise (TCEQ), Matt Singer (GBF), Kenneth Standley, Mary Beth Stengler, Blake Turner, Otho Turner, Bertha White, Kay Willcox, and Pudge Willcox

Team Members: Ryan Bare (HARC), Abby Ficklin (Shead), Stephanie Glenn (HARC), Brian Koch (TSSWCB), Brandie Minchew (Shead), and Linda Shead (Shead)

1. Sign-In, Welcome, Agenda Review and Introductions – *Linda Shead*

Linda thanked Samson Energy for sponsoring the dinner, and Russell Ezer for preparing it. She also thanked Chambers County for their continuing support: Precinct Two for making the room available, Emergency Management for the use of the screen, and the Economic Development Office for the PA system and arranging for the room set-up.

Linda then reviewed the agenda and goals for the meeting: a presentation by Stephen Scalise on TCEQ's program of assistance for local governments and small businesses; update of the watershed land cover map; workgroup reports on potential bacteria sources; and soliciting stakeholder review and mark-up of the landcover maps with potential bacteria sources.

Next, Linda began the round of self-introductions.

2. Assistance for Local Governments and Small Businesses – *Stephen Scalise*

Stephen Scalise is a Compliance Assistance Specialist with the Texas Commission on

Environmental Quality (TCEQ). He provided a PowerPoint presentation about the programs offered by the TCEQ's office of Small Business and Local Government Assistance (SBLGA). It's a free and confidential service, and not involved in the enforcement process. The program works primarily with small business/industry and small local governments. For businesses, that means 100 or fewer employees; for cities, it's 50,000 or fewer residents; and for counties, 100,000 or fewer residents. The program offers a hotline, compliance commitment, EnviroMentors, expert regional technical assistance (including one-on-one), advisory committees and information resources, such as their newsletter.

To learn more about this program, the hotline number is 1-800-447-2827, Monday through Friday, from 8am to 5pm. Also, the web site is www.TexasEnviroHelp.org. For more information, contact Stephen Scalise, at 713-767-3726 or Stephen.Scalise@tecq.texas.gov.

In response to a stakeholder question, Linda noted that the Team will follow-up on getting the PowerPoint presentation on the website, or at least the various resource links in it. Additionally, Stephen had materials available for picking up after the meeting.

3. Workgroup Input on Land Cover in the Double Bayou Watershed

Linda reviewed the importance and role of good land cover information in identifying where potential bacteria sources might be found in the watershed. The computer model will use that information to compare the relative potential bacteria contribution from different sources in different areas of the watershed. When the project started, 2006 remotely-sensed data were available from the standardized database of the National Oceanic and Atmospheric Administration, as part of their Coastal Change Analysis Program. This data has 29 categories, which the HARC team consolidated into 7 categories to be more representative of what goes on in this watershed. After reviewing this data with some local folks, the team decided to wait for more recent data. The 2010 dataset is closer to what is found on the ground now, and a task force identified just a few areas that needed updating, with that information also subsequently reviewed/edited by each of the workgroups. Later in the meeting, everyone will have an opportunity to look at paper copies of the maps up close, for further review.

One thing to note is that the landcover map that will be used for this project is to be a June 2014 snapshot – recognizing that land uses may switch some from year to year, However, for example, the overall number of cows won't change much, and will mostly just shift from field to nearby field.

A second consideration that arose during this mapping was better defining the edge of the watershed. The normal physical definition of the edge of a watershed is the boundary within which water on the surface would eventually drain off to a particular stream and a particular point, primarily based on elevations. For the Double Bayou watershed, water would drain into the West or East fork and then ultimately flow out into Trinity Bay at Oak Island. However, we learned that water on the ground surface north of Anahuac cannot naturally drain to the West Fork of Double Bayou, because levees of the Lone Star Canal block it. Similar conditions exist on the western border of the watershed, which was observed on a special field trip with locals and team members. Also on that field trip came the recognition that during major storm events, because of the very flat ground, water on the surface might go to different channels than it would under lesser events.

Lastly, the Anahuac wastewater collection system also plays a role in surface drainage and subsequent sources of bacteria in the West Fork of Double Bayou. Wastewater collected

throughout Anahuac (even if on the other side of the canals) ends up at the Anahuac treatment plant and then is discharged to the West Fork. Also, because of the age of the Anahuac collection system, some of the stormwater (and its contaminants) throughout Anahuac ends up in that wastewater collection system.

Question: What is the effect of the treated wastewater on the water in Double Bayou? Answer: That is being monitored right now. Once enough samples have been collected – probably this fall – we will know more about the effect on the stream.

4. Workgroup Recommendations on Bacteria Source Distribution

Stephanie and Brian then presented the workgroup recommendations for each of the major potential bacteria sources, based on the watershed boundary and landcover presented today. (The potential source numbers presented may change if stakeholder input today changes the boundary and/or landcover.) After input from today's meeting, the information will be fed into the model to compare areas where bacteria sources may impact Double Bayou water quality. The model results will be brought back to stakeholders for review.

Wastewater

Stephanie noted that the SELECT model will treat the wastewater treatment plant as a point source, to which will be assigned a particular bacteria load. The workgroup decided to have two runs: one with a "normal" load of the permit limit (126 CFU), and one with the highest level so far monitored during a rain event. The model will help identify where best management practices (BMPs) will be the most valuable, so having a worst case scenario will help with the workgroup's decisions about that.

Septic Systems

For the septic systems, Stephanie noted that developing the model inputs is more challenging. They worked with two sets of data – that from H-GAC's OSSF (Onsite Sewage Facilities) dataset (beginning from the year 2000), and that from a local workgroup member who identified where there are structures that are not connected to a public wastewater collection system. These were combined, and duplicates were eliminated.

The model considers the effectiveness of septic systems based on the soils (whether the wastewater would be absorbed or instead quickly run off to the bayou), by age of the system (0-15 yrs, 16-30 yrs, or more than 30 years), and by estimated failure rate. The soils in the watershed area are poor for absorption. The age of the systems was estimated in clusters by the workgroup based on their local knowledge.

Question: Were systems checked on whether they'd changed to aerobic? *Answer*: The model doesn't differentiate between aerobic and anaerobic (conventional). Failure rate of aerobic systems depends on maintenance. A rate was assigned to each of the age groupings. There had been some discussion about assigning a portion of the aerobic systems an older age grouping to allow for less maintenance. So, one run of the model for worst case might be with an older age assignment or failure rate to see what difference that makes.

Question: Is there access to test the output of aerobic systems, to see if there is a problem? *Answer*: Testing will not be done at any individual's home. Instead, the team is trying to develop worst case and best case scenarios, considering whether well maintained or not.

Question: How can you come to a conclusion without data? What's the methodology? Where do the numbers come from? *Answer*: After doing multiple studies, the EPA has actually put together numbers on failure rates for systems and what the bacteria load would be, from a 5-year or 15-year or 30-year system, also depending on the type of soil.

Question: Do you determine a factor for houses that don't have a septic system? (That is, a straight pipe discharge instead.) *Answer*: This has been discussed, but without knowing where one is, it cannot be incorporated into the model.

Question: If not going door to door to test systems, how will you determine if there is a problem? Will someone get penalized? Or everyone? *Answer*: It has more to do with selecting locations for the application of BMPs (best management practices). The goal will be to identify areas where systems can be improved without penalizing any one person. Currently in the County, there is not enough manpower, nor state law support, to inspect systems in general, but rather only on a complaint basis. Again, this (the WPP project) is a voluntary program to seek assistance for areas that stakeholders identify as problems and where stakeholders recommend solutions. One solution would be to get more areas on sewer systems, since it's easier to address it at one point (a treatment plant) than at 400 individual septic systems.

Question: I had two people come out and inspect 40 aerobic systems. Who are they? *Answer*: It could be that these are folks doing aerobic system maintenance as part of a two-year service agreement – we can follow up with you after the meeting.

Question: Doesn't Trinity Bay Conservation District have a wastewater treatment plant at Oak Island? *Answer*: Yes, but it discharges to Trinity Bay instead of into Double Bayou.

<u>Cattle</u>

For cattle, Brian noted that the starting point was Texas Agriculture Statistics data, with a 5-year average for the county, and using beef cattle numbers, which are consistent with cow-calf operations, since that is what local folks report is the majority of cattle operations in the watershed (rather than stockers or animal feeding operations). Those numbers suggest an overall average of 8 acres per animal unit in the watershed, which would be applied to the landcover categories of grassland/pasture and scrub/shrub.

The model does not pick out individual fields, but instead takes smaller sub-watersheds within the big watershed. Also, the model is using a June 2014 snapshot, and the Team recognizes that cattle may rotate to a different nearby field in a different year, and also recognizes that some grassland/pasture is strictly hay (not fenced, so it can't hold cattle), and some scrub/shrub land is left fallow, also without cattle. The model only takes into consideration how much bacteria could be on the land and ranks the highest to lowest potential for each source, but it does not tell how much or how little bacteria is getting into the stream.

Using local knowledge with the workgroup, estimates were made of approximate stocking rates and their general locations within the watershed. These are summarized in the table

below, and boundaries were marked on the map by the workgroup members. Everyone will have a chance to mark on the maps if they know something different than what is shown.

Area	Density	General Location
30 acres	1 acre/AU*	Upper West Fork
3%	5-6 acres/AU	??
<50%	7-8 acres/AU	Upper "half" of watershed
<50%	12-13 acres/AU	Lower "half" of watershed

* 1 AU = 1 animal unit = 1 adult cow + 1 nursing calf

Using these stocking rates and the marked landcover map, the number of cattle for the entire watershed comes to 4,360. Using Texas Ag Statistics, the number would be 4,550, so the numbers are consistent.

Question: What factors are used for fallow ground or a field that is only hay, with no cattle? *Answer*: That was taken into consideration with the *average* stocking rates recommended by the workgroup.

Question: A fallow rice field averages 12-13 acres [per animal unit]? *Answer*: No, not a rice field. Fallow means nothing is produced there, and there are no cows.

Question: How did you get the cow population of 4,360? *Answer*: The number is developed by taking the number of acres shown as pasture-hay and scrub-shrub in each of the sub-watershed areas, and then multiplying that by the average density recommended by the workgroup for that area – again, with the average considering that it isn't always grazed and some parts of it might be higher or lower density.

Question: Is it correct that cows are not being counted, but a systematic number is developed and put into a plot? *Answer*: We used the stocking rate given to us by the workgroup and applied that to the available land used for grazing. In some parts of the state, people are more comfortable with the Texas Ag Statistics numbers. What we want is the most accurate numbers we can get for the area.

Question: We have crops and we have pastures. What about those areas that have no crops and no fences? *Answer*: We've seen that in the watershed, and that's why we need you to tell us if we've missed anything that should not have cows, because it's not fenced, or it's really forested, or anything else you may know. Then we will make adjustments

Question: Is there a classification that could be used for areas that are not used for grazing or whatever? *Answer*: Absolutely, we can make our own categories. It's very important that folks help with identifying on the map the information that is known.

Question: We need data from the streams first, so we are not chasing places where there is not a problem. *Answer*: While we cannot monitor every single spot, we have two upper and two lower watershed sampling sites, plus the Wastewater Treatment plant. It turns

out there are problems at each of those spots. So we have to look at potential sources in the whole watershed.

Question: What about sampling by boat or from the bank? *Answer*: There is no money for boat sampling. Bank sampling does not follow the criteria of taking into consideration the differences at different depths and places across the stream. Thus, a bridge is needed if there is no boat.

Horses

For horses, national agricultural statistics were used, because Texas Ag Statistics do not cover horses. The national statistics suggest 299 horses in the watershed. These were distributed evenly across the watershed on the grass/pasture and scrub/shrub land use, because the workgroup said there are not concentrations of horses. Attendees agreed this number sounded reasonable if donkeys are included.

Question: What is the total area of the watershed? *Answer*: 60,748 acres.

Goats

The official statistics show no goats in Chambers County, but that is known not to be true. Although there is no goat production in the area, the workgroups identified goats (and horses) as potential contributors of bacteria. The number of goats was applied to the same landcover as other animals for grazing.

Deer

The number of deer in the watershed – 310 – is based on data from Texas Parks & Wildlife Department (TPWD), which does surveys on "resource management units," which are areas with similar habitat. For the watershed, the 310 deer would be evenly distributed across their preferred habitats of mixed forest and forested wetland.

Feral Hogs

There is no entity that keeps track of feral hogs, so it is difficult to get numbers for them. TPWD doesn't count them, because they are considered a nuisance species. The Texas Water Resources Institute suggests 33 acres per adult hog across various land uses. Other reported densities are a high rate of 38 acres per adult hog, a medium rate of 50 acres per adult hog, and a low rate of 71 acres per adult hog.

Originally, the habitat considered was waterways, because the hogs will spend most of their time within 100 meters of a waterway or water source. Included would be canals, the bayou itself (and tributaries), and then rice fields were added. Two workgroups considered feral hogs: Agriculture/Wildlife/Feral Hogs and Recreation/Hunting. The Ag/Wildlife/Feral Hog workgroup discussed a high 33 acres/hog value to be applied across the watershed. However, it was felt that would not capture the higher density feral hog areas in the watershed. Consequently, the workgroups decided on a low/high scenario. The high scenario applied the high density number (33 acres per hog) to all the waterway areas (including the 100-meter "buffer" along streams plus rice fields), and then the medium number of 50 acres per hog to the rest of the watershed. The low scenario applied the high density number again to all waterway areas, and the low density number of 71 to the rest of the watershed.

Question: This is adult hogs, right? And there will be roughly 3-6 offspring per adult? *Answer*: Yes, roughly.

Question: Was the waterway area for hogs applied to stock tanks and farm ponds? *Answer*: We did not do that, but could if we had the data.

5. Stakeholder Input on Land Cover and Bacteria Source Distribution Recommendations

Stakeholders were invited to view the assembled information, on landcover and bacteria sources, as represented on maps on tables in the back of the room, and to add any new information, either directly on the maps or on sticky notes.

6. Wrap-Up and Next Steps

After twenty minutes, stakeholders were invited to return to the front of the room for wrap-up, although the maps would be available for additional input after the close of the meeting. Linda thanked everyone again for providing the input, which is so critical for the process. The next step will be for Stephanie and the folks at HARC to crunch the numbers to get any new acreages for sources, and to start the modeling. The models will tell us where there is more likely to be bacteria, which, in turn, could possibly get into the bayou.

Depending on how well everything goes, workgroups will meet again in August to review the model results. Everyone is welcome at the workgroup meetings, whether or not they've attended one before. Then, tentatively, the next general meeting would be on September 16 (third Tuesday). Watch email for notice of the meetings.

The Feral Hog Workshop is a week from the coming Friday. And a Riparian Workshop will be coming in the fall.

Linda thanked Stephen for his presentation and everyone for attending the meeting, and welcomed folks to add more info to the maps before leaving.

7. Adjourn