Recreation/Hunting Workgroup Meeting

August 12, 2014
5:30 – 7:30 PM
Chambers Recovery Team

MEETING SUMMARY

Stakeholders: David Boyd, Tom Douglas, Tyler Fitzgerald, Guy Jackson
Project Team: Abby Ficklin, Stephanie Glenn, Brian Koch, Brandie Minchew, Linda Shead

1. Sign-In, Welcome, Introductions, Review Agenda

Linda thanked everyone for attending and started self introductions. She noted the copies of the meeting notes, and then reviewed the numbers that the workgroup had previously developed for the different potential bacteria sources.

For feral hogs, the number used for water areas (within 100 meters of a waterway and in rice fields) was 33 acres per hog. Then, for the rest of the watershed, either 50 acres or 70 acres per hog was used, for a medium density scenario and a low density scenario, respectively. The number of deer set by TPWD for this area (RMU 13) is 5.15 deer per 1,000 acres, which translates to 313 deer in the watershed, which were applied to the mixed forest and forested wetlands landcover acres.

Since the last meeting, HARC has been running the SELECT model to see how much bacteria could be ending up on the land in the different areas of the watershed. The model does not show how much of the bacteria will end up in the water. All of the sources will be presented today, because the SELECT model works on a comparison basis.

2. Updated Watershed Landcover and SELECT Model Results for Potential Bacteria Contributions

Stephanie first showed the updated landcover map, which incorporates all the stakeholder suggested changes after several rounds of input. Also on the map are the outlines of subwatersheds used by the SELECT model. She also noted that, for several of the sources, *high* and *low scenarios*[*] were developed, as was described for feral hogs. This is because the model is a comparative tool, to help target the best place for BMPs.

[*] Following this meeting, the labels for the different scenarios were changed to "*upper scenario*" and "*lower scenario*" (and "*middle scenario*" in a few cases), to lessen any confusion with "high" and "low" subwatershed loads.

The first two slides show the results of the total load overall, and which are the main sources of all the inputs, in each subwatershed, according to the *high* and *low scenarios*. Again, as an example, BMPs for wastewater treatment plants would go in the subwatershed where that's the main source, and BMPs for other particular sources would go where those are the main sources. Looking at the two different *high*/*low scenarios*, there is not a lot of difference in terms of hot spots.

The same color scheme is used throughout the slides, with yellow subwatersheds being the ones with the highest load, and dark blue subwatersheds being the lowest load.

About the numbers in the slides, they are presented in three different formats, depending on which is more comfortable for the viewer: scientific notation (i.e., $5.4 \times 10^{10)}$; a more typical numerical amounts (54,000,000,000); and more in words (54 billion).

Also, a reminder that the numbers represent what's potentially on the ground (or in the water, especially in the case of feral hogs), and the model does not tell us what is going into the stream. Once the stream data is collected, it will be shared with everyone. Other considerations are how spread out the load is, whether it's close to the water, and whether there is vegetation to filter it. Plus, the inputs can vary depending on what the animals are eating. EPA does studies on excretion rates, and figures an average for the year, considering diet, etc.

<u>Wastewater Treatment Plant</u>

The wastewater treatment plant is the easiest one to talk about, again because there is only the one wastewater treatment plant, and it's located in the far west subwatershed. Thus, that will be the spot for the BMPs for that wastewater treatment plant. Two scenarios were run, decided by that workgroup.

The *high scenario* is based on the highest sampling event thus far. This was a really high rain event, and it happened after a number of days with no rain, which means a much bigger load coming into that wastewater treatment plant. The *high scenario* ended up with a potential subwatershed maximum of 1.8 trillion CFU. The *low scenario* is based on 126 CFU, because that is the actual permitted effluent for the wastewater treatment plant. The *low scenario* for this location is a potential subwatershed maximum of 9.5 billion, compared to the *high scenario* of a potential subwatershed maximum of 1.8 trillion, a big difference between the *high* and the *low* – again, the *high scenario* is based on the actual sampling, while the *low scenario* is the permit limit, with the plant tending to meet their permit. Regarding a question about storm sewers, it was noted that there is a separate storm sewer, but the integrity of the sanitary sewer is not very good, leading to infiltration.

<u>Septic Systems</u>

On the septic systems, the Septic/Wastewater System Workgroup had previously identified locations and then approximated ages of the septic systems. The age range is broken down into: 0-15 years old, 15-30 years, and 30+ years. The workgroup was able to circle areas and denote the ages of the septic systems in those areas very well.

For the *high scenario*, 50% failure rate was assigned for all the septic systems; so no matter what their age or where they are, there were assigned a 50% failure rate. There will still be differences

because of their age – they will still be considered a little bit leakier. And there are going to be some differences in the soil.

For the *low scenario*, a failure of 30% was applied to the newer systems (0-15 years old) and a 50% failure rate for the older. This was a result of some EPA numbers and some discussion within the workgroup on how correct those numbers were thought to be.

So, on the *low scenario*, the model showed a potential subwatershed maximum of 4.8 billion CFU in the highest subwatershed. For the *high scenario*, the model showed a potential subwatershed maximum of 5 billion CFU in the highest subwatershed. This shows that the two failure rates did not make much difference. The locations are also very similar.

Cattle

The Ag Workgroup worked through land cover where the cattle would be found, such as grassland/pasture and scrub/shrub. That group was more comfortable applying estimated stocking rates to that landcover, rather than using Texas Ag Statistics watershed-wide. The outlines on the map indicate the locations for applying those stocking rates. If there was a range in those numbers – e.g., 7-8 acres per cow or 12-15 acres per cow – the *high scenario* ran all the high stocking rates and the *low scenario* ran the low stocking rates. On the *high scenario*, that calculated to 4,074 cattle in the watershed, which was slightly under the Texas Ag statistics number for the whole watershed. The *high scenario* was a potential subwatershed maximum of 4.2 trillion CFU/day. The *low scenario* (this is the lower end of the stocking rates) was 3,494 cattle input in the watershed. The *low scenario* resulted in a potential subwatershed maximum of 3.7 trillion CFU/day. So 4.2 trillion CFU (*high scenario*) versus 3.7 trillion CFU (*low scenario*) in the potential heaviest load subwatershed. For the lightest load subwatershed, the *high scenario* is a potential subwatershed maximum load of 21 billion CFU vs. a potential subwatershed maximum load of 17 billion CFU in the *low scenario*.

Horses

The numbers used for horses came from the Census of Agriculture for the two counties. Putting them together, the total input was 294 horses. The Ag workgroup thought that was about accurate, so that is what was used in the model. The horses were distributed among grassland/pasture and scrub/shrub, equally. The basic differences in the subwatersheds are the differences in acreages of that particular land cover. The potential subwatershed maximum is 9.6 billion CFU/day for the potential heaviest load subwatershed and the potential subwatershed maximum is 87 million CFU/day for the lightest load subwatershed. Only one scenario was run, because the workgroup suggested just the one number for horses.

Feral Hogs

As noted before, the riparian buffer zones can be seen (on the feral hog slides). All the waterways have a "buffer" zone around them. Also, the cultivated/rice crop areas can be seen. Those are the places that folks said feral hogs could be found. Although feral hog information is hard to find, both scenarios use the highest acre/hog number that is published – 33.8 acres per hog, in studies by TAMU and the Texas Water Resources Institute – for the places where feral hogs are more likely to be found. The *high scenario* uses 50.4 acres per hog in the rest of the watershed, and the *low scenario* uses 70 acres per hog in the rest of the watershed. The bacteria load difference between the *high/low scenarios* for the highest sub-watershed is not that great

(potential subwatershed maximum of 1.1 trillion CFU vs. 1.0 trillion CFU). The low subwatersheds show more difference between the *high/low scenarios*: potential subwatershed maximum of 30 billion CFU vs. 22 billion CFU.

Deer

Also developed by this workgroup were the deer inputs. Although the area with the highest mixed forest/forested wetlands has the highest bacteria contribution from deer, the total numbers are comparatively small – a potential subwatershed maximum of 1.9 billion CFU for the highest subwatershed and a potential subwatershed maximum of 3.3 million CFU for the lowest subwatershed.

Totals

The next slide was the total sums of the potential daily bacteria – that is, per day, what you are getting from each source over the entire watershed. The largest contributors are cattle, feral hogs, and the *high scenario* for the wastewater treatment plant. The total *high scenario* for these model runs was a potential maximum of 39 trillion CFU/day, and the total *low scenario* was a potential maximum of 33 trillion CFU/day.

3. Discussion

So, with these model results, the Team wanted to hear from the workgroup whether the numbers make sense, need to tweaked, or other concerns. And again, a reminder that, for feral hogs and deer and cattle and such, the model shows what is potentially falling on the ground, but doesn't say what is going into the stream. However, more of the feral hog waste could end up in the stream, since in or near streams is where the hogs spend more of their time, to cool off. Also, the numbers used in the model are based on average bacteria in excrement over the course of a year, which will vary as the animals' diet varies with season.

The group was generally positive about the model results and the visual representation, with the *high* and *low scenarios*, and different colors for amount of load in a subwatershed. There was some confusion between *high* and *low scenarios* of contributing animals (or wastewater) vs. high and low subwatershed (geographical) contributions. There was also discussion about whether an alternate representation could be made that reflected the density/intensity; that is, taking into consideration the size of the subwatershed, such as by showing the potential bacteria load per acre.

4. Consideration of Comparisons with Others Potential Sources & Relationship of Results to Potential BMPs [30:45]

A stakeholder noted that cattle and feral hogs are the largest potential contributors, and thus, one approach would be to concentrate on those sources. For example, although feral hog BMPs are few and far between, those that do exist could be applied where there are the most hogs projected. (The numbers are comparable to those found in other watersheds in the state.) However, rainy days for the wastewater treatment plant are also significant for that subwatershed. Additionally, some BMPs for some sources can be more available and effective than others. For example, controlling cattle waste could be addressed by land management strategies, BMPS that would have less impact on the economics of agriculture in the watershed,

while controlling feral hog waste would be more effective by reducing the number of hogs. Furthermore, some of the cattle BMPs already have available funding.

Even though the deer numbers are very low, there is very little besides normal hunting that can be used to address them. For feral hogs, more aggressive eradication is likely the best solution, but disposal of carcasses is still an issue, although there are not any numbers to model carcasses in the water.

Regarding the septic system load, the overall amount is not that much, but it's fairly high for the relatively small number of systems (459), compared to some watersheds. Thus, BMPs for those septic systems could make a difference.

One geographic concern was the upper West Fork subwatershed, where the load was relatively high for all sources except for deer and the wastewater treatment plant. The lower East Fork and upper East Fork subwatersheds may also need more discussion in other workgroups to better understand their relative contributions.

Suggestions were made on how to improve the labels on the final table (such as adding Watershed in the title).

The discussion then turned to recreation and hunting sources that do not have numbers for modeling, such as boater waste and carcasses. It was noted that, even though boater waste may not be a major source and addressing it is mainly a function of education and enforcement, adding a pump station at Job Beason Park and other sanitation facilities is very important, because these are sources of human waste, which has a higher risk potential for disease. For dumping of carcasses, enforcement and education will also be important, and signs could play an important role. These topics will be covered more at a future meeting.

Returning to other questions about the results, clarification was given regarding the high load from the treatment plant on rainy days – that the wastewater collection system integrity is lacking, from issues such as age of the pipes and breaking from tree roots, allowing much stormwater to enter the wastewater collection system. Also, the definition of subwatersheds was clarified - as drainage sub-basins, using data such as elevations, drainage areas, and soils. Furthermore, the bacteria load from a sub-watershed is a result not just of area, but also land cover. The team will discuss further how to convey information about the relative intensity of the different loads in different subwatersheds. Lastly, the group discussed the relative contribution from septic systems. With the somewhat low number of systems in the watershed, the group wondered whether assigning different failure rates would show much difference. The real estate inspector program of H-GAC was mentioned as an effective BMP. These items will be discussed further with the Wastewater Workgroup.

5. Wrap-Up and Next Steps

Linda distributed the brand-new flyer for the upcoming Riparian Workshop. She also noted that the next general meeting will probably not be until October, because of needing to schedule the Ag Workgroup meeting around the schedule for rice harvesting, which means they will not meet until late September. The general meeting will thus most likely be October 21st.

6. Adjourn

The meeting adjourned at approximately 6:45 p.m.