Little Commissioner Creek Recommendations

1. Further Targeted Sampling Plan

Our initial informal sampling indicates low levels of fecal coliform concentrations, and we feel that these results justify going forward with the drafting and submission of a Sampling and Quality Assurance Plan. This plan represents the first step in the process of delisting. However, to be completely thorough and assured that submission of such a plan is warranted, more targeted sampling should be conducted.

Future informal sampling should occur at a variety of locations. The locations used in our sampling are easily accessible and should be utilized in the future. Frank Henning has the supplies needed to carry out further informal testing. He should be contacted to arrange the logistics of securing a laboratory where the samples can be analyzed.

Furthermore, the informal sampling should ideally occur during periods of varied flow and in different seasons. Fecal coliform levels fluctuate depending on these varied conditions. Sampling under different conditions will yield a more complete understanding of the fecal levels in Little Commissioner Creek.

When informal sampling reveals an area with fecal levels approaching or exceeding permissible concentrations, efforts should be made to walk the sections of the creek directly upstream from the spot. During the stream walk, samples should be taken at various points and visual analysis of the surrounding land should be made. Because fecal coliform contamination in Little Commissioner Creek likely results from non-point source pollution in the area, the stream walk of potentially affected areas will be very important. Improved knowledge of the potential causes of the contamination will be necessary to develop a comprehensive plan to attack the problem.

2. Wildlife Fecal Sources

EPD Environmental Rule 391-3-6-.03(6)(c)(iii) states, “Should water quality and sanitary studies show fecal coliform levels from non-human sources exceed 200/100 ml (geometric mean) occasionally, then the allowable geometric mean fecal coliform shall not exceed 300 per 100 ml in lakes and reservoirs and 500 per
100 ml in free flowing freshwater streams.” In other words, if it is documented that fecal coliform contribution is from non-human sources, EPD can allocate a higher fecal load to a given stream.\(^1\) However, this narrow exception is typically reserved for streams in wholly undeveloped areas.\(^2\) If the stream in question is not highly developed, contains no septic tanks and/or sewer lines, and is not subject to agricultural use, it might qualify for this exception.

While proving that a given stream meets this exception is exceedingly difficult, it is at least theoretically possible. Peter Hartell of UGA Crop and Soil Sciences is a potential resource for this analysis. He has conducted some research involving ribotyping through which E.coli can be traced to a given species. This would distinguish between the human and non-human sources of fecal in Little Commissioner Creek. However, given the multitude of possible animal sources of fecal, this procedure would be extremely labor and cost intensive. To conclusively demonstrate that the fecal coliform in a stream does not come from wildlife, one would have to eliminate all potential animal sources. This would require a complete library of E.coli type by species. Because such a library does not exist and the creation of one would be a monumental undertaking, this potential path seems unlikely.

### 3. Submission of Sampling and Quality Assurance Plan

The first step in the delisting process is the submission of a Sampling and Quality Assurance Plan to EPD. If the plan is acceptable and the year of formal sampling specified in the plan reveals acceptable fecal coliform concentrations, the stream can be delisted.

We have drafted a Sampling and Quality Assurance Plan. Once Mayor Turner is satisfied that the informal sampling supports going forward with the plan, it should be submitted to EPD. The plan will be ready for submission and hopefully only minor date changes will be necessary. EPD agent Cathy Methier will be an invaluable resource for ensuring the plan meets EPD specifications, and she will ultimately be the person responsible for approving the plan.

### 4. Biota

Little Commissioner Creek is also listed on the § 303(d) list for biota. As our group took no steps to address this problem, the next group to work on this project should consider addressing it. A stream walk covering portions of the creek may be beneficial in revealing possible sources of sediment, a usual cause of biota impairment.

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\(^1\) Telephone Interview with Cathy Methier, Georgia Environmental Protection Division in Atlanta, Ga. (Nov. 8, 2007).  
\(^2\) Id.
5. Funding

Frank Henning has the supplies used in our informal testing. The remaining supply of materials will be sufficient to allow for more targeted sampling.

The cost of each fecal coliform test required under the Sampling and Quality Assurance Plan is $25. As sixteen (16) tests are required over the course of a one year period, the total cost of the testing along will be approximately $400. However, the lab analysis of this test is much more labor intensive and might not be possible for student volunteers. The assistance of Paul Vendrell in this portion of the testing will be critical.

Transportation and labor costs will be assumed by the River Basin Center, as the sampling will be conducted by River Basin Center staff and/or Environmental Practicum students.

Potential Sources of Funding:

- UGA School of Agricultural. Susan Varlamoff is the contact person in this regard. The school has already contributed $1000 to the project. Most of this money was used in procuring the necessary supplies for the informal sampling. Because many of the materials for the initial target sampling must be purchased in bulk, future sampling will be less expensive as supplies will already be available. If these funds are exhausted, Susan and Frank Henning expressed at least the possibility of more funds being available.

- Dr. Mark Risse may also have some funds under his control that could be used in this project. Dr. Risse is a Water Quality Coordinator through the UGA Extension Service.

- Mayor Turner has also indicated that the city of Gordon may be able to contribute some funding to the project. The amount of such funding, however, is probably limited to a maximum contribution of around $1500.