

Buckhannon River Watershed Association

PO Box 1047, Buckhannon, WV 26201

REQUEST FOR PROPOSALS

For a Feasibility Study

Removing household sanitary waste from Bull Run in Upshur County: a comparison of methods with special consideration of Septic Tank Effluent (Pumped) treatment.

Upshur County
Adrian, WV

3/14/2023

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Introduction

The Buckhannon River Watershed Association (BRWA), a non-profit organization, is dedicated to preserving, conserving, and monitoring the health of the Buckhannon River Watershed and promoting our West Virginia heritage through public awareness. BRWA has taken a particular interest in Bull Run, a tributary that flows into French Creek near Adrian, WV. Bull Run does not meet water quality standards for fecal coliform bacteria or iron. BRWA is developing a plan for reducing loads of fecal coliform bacteria to Bull Run and is seeking a contractor to compare various options. BRWA is calling for special attention to a Septic Tank Effluent (pumped) treatment system (STEP system), possibly with septic tanks serving clusters of houses.

BRWA is hiring a company to:

- Review the information BRWA has concerning sanitary waste in Bull Run.
- Gather information from any other sources, as needed.
- List options for treating household sewage from houses upstream from river mile 2.68 and in the Bull Run watershed as a whole.
- Provide lists of pros and cons associated with the options.
- Compile reasonable cost estimates for implementing three different options, including a STEP system.
- Outline necessary steps for building two of the three options.

Project Overview

1. Location of Bull Run watershed.

Bull Run flows from west to east and discharges to French Creek in the unincorporated community of Adrian, WV, in Upshur County, WV (Figure 1). Adrian lies 8 miles south of US-33/Corridor H on West Virginia State Route 20 at 38°54'16"N 80°16'33"W. The Unnamed Tributary at River Mile 2.68 (see below) passes under Adrian-Abbott Road 2.4 miles west of Adrian.

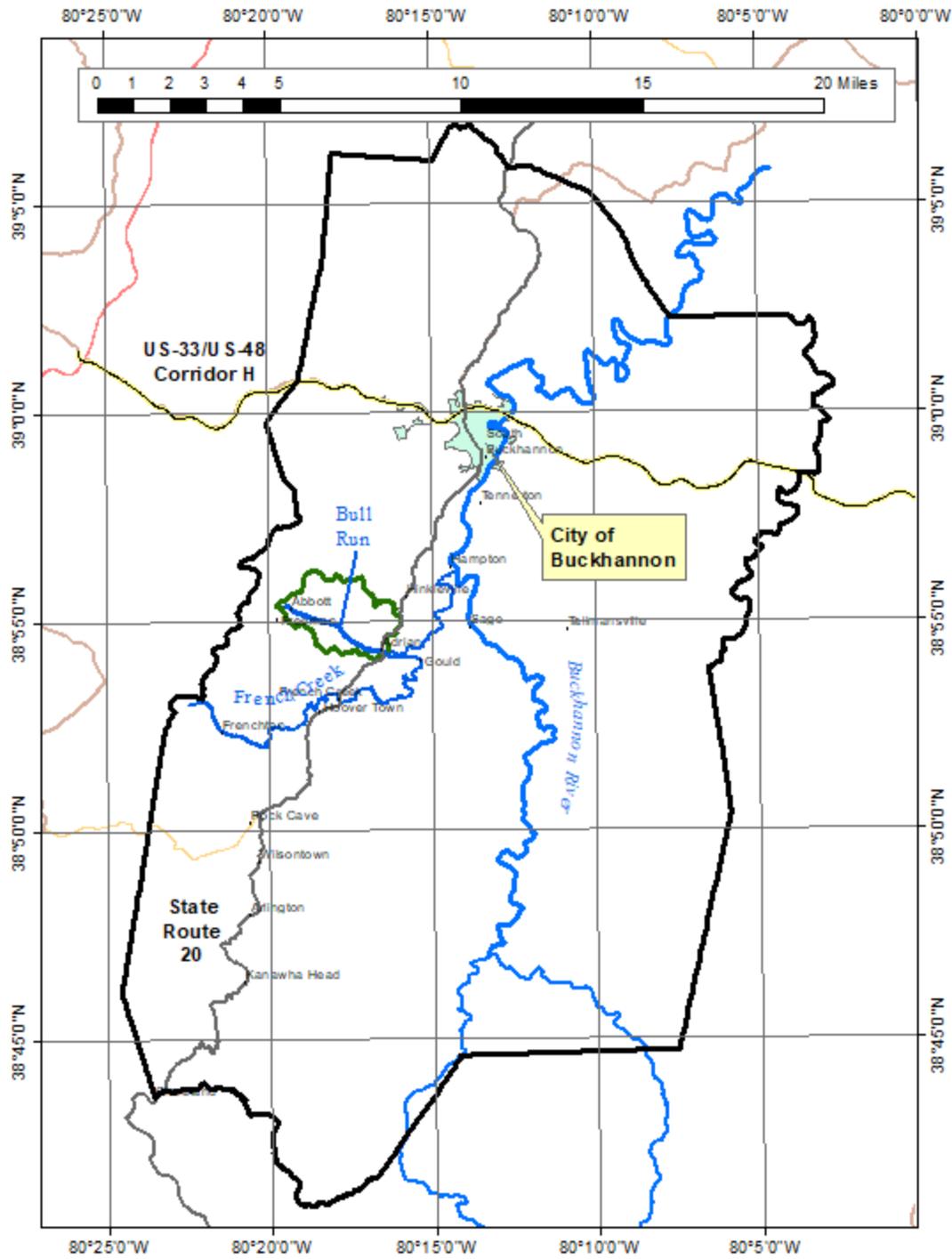


Figure 1: The Bull Run watershed is near the western side of Upshur County.

2. Geography within the Bull Run watershed.

Bull Run drains approximately 5 square miles. It has three named tributaries, Newfound Run, Blacklick Run, and Mudlick Run, and unnamed tributaries at river mile 1.83, 2.68, and 3.14 (Figure 2). Bull Run's mouth is at an elevation of 1408 feet above sea level. The highest point in the watershed is at 1830 feet above sea level. Most of the stream is gently sloped, dropping approximately 80 feet over 3 miles.

There are approximately 187 dwellings in the Bull Run watershed. 101 of these lie within 0.1 miles of Bull Run, and 142 lie within 0.1 miles of the stream system.

3. Water quality

WVDEP's Integrated Water Quality Monitoring and Assessment Report assigns impairments (Table 1) to the mainstem and the three named streams in the watershed. The unnamed tributaries are small and probably escaped scrutiny during data collection for the integrated report, but BRWA's data indicate that they also violate the fecal coliform standard (Figure 3).

The TMDL for the Tygart River watershed attributes 80% of the fecal coliform load in the Bull Run watershed to "pasture," but BRWA has measured fecal coliform bacteria in various parts of the watershed dominated by houses and is skeptical of this conclusion. Fecal coliform concentrations are high in the westernmost subwatershed of the Bull Run watershed, upstream of RM 2.68, where older houses cluster on relatively small parcels. Some of these houses stand on soils mapped as "Orville-Holly," a series described as poorly drained and with a depth to water table of 0-12 inches.

Table 1: Impairment of Bull Run streams.

Waterbody Name	NHD Code	Extent	Size	Parameter
Bull Run	MT-62-AV-7	Entire Length	3.52 miles	Fecal coliform Iron Dissolved oxygen CNA-Biological
Blacklick Run	MT-62-AV-7-B	Entire Length	2.04 miles	pH Iron Dissolved aluminum
<u>Mudlick Run</u>	MT-62-AV-7-B	Entire length	0.97 miles	Fecal coliform Iron Dissolved Oxygen

BRWA has divided the watershed into ten similar-sized subwatershed areas, and has sampled the streams discharging from these areas. BRWA's results are not entirely consistent with those in the Integrated Report. Notably, Mudlick Run has relatively low bacteria counts. UNT/RM 1.83 has the highest number, and the mainstem upstream of UNT/RM 2.68 has the highest count that is not downstream from UNT/RM 1.83.

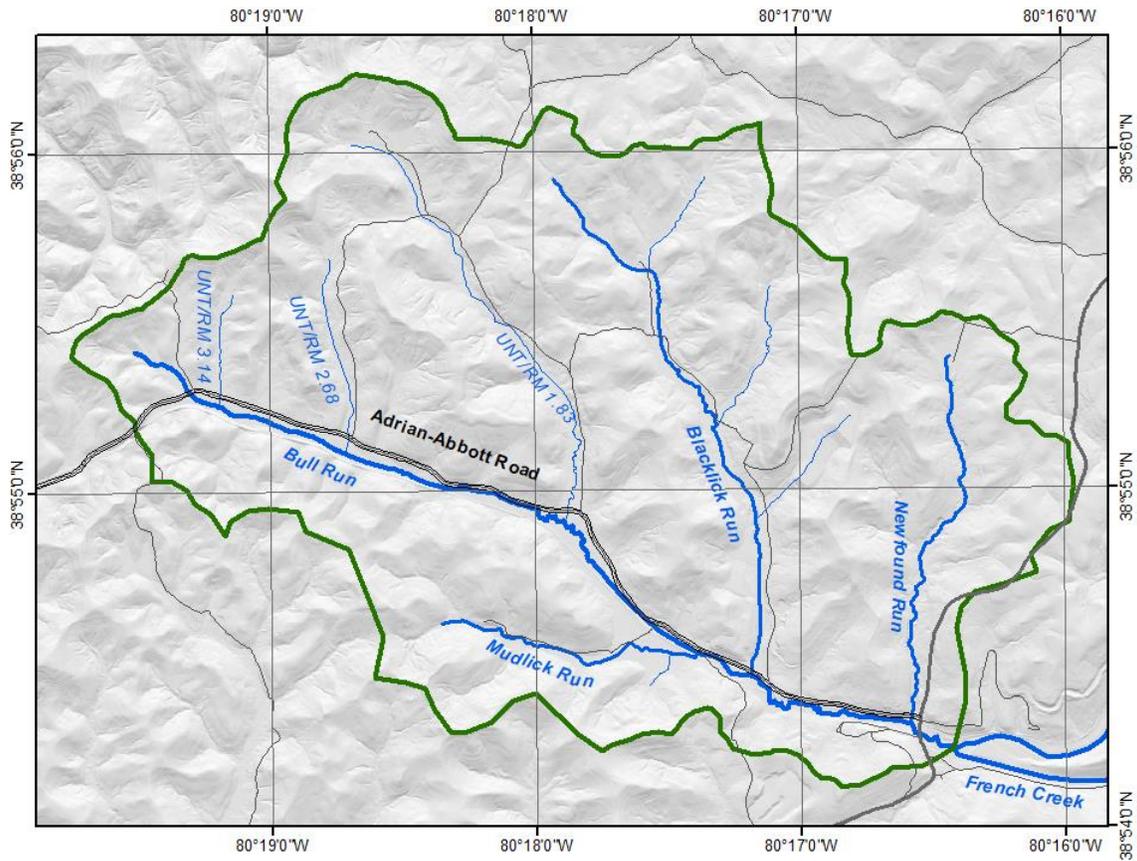


Figure 2: The Bull Run watershed contains three named tributaries. Three unnamed tributaries have also been identified on the USGS 7.5-minute topographic map for the Adrian quadrangle.

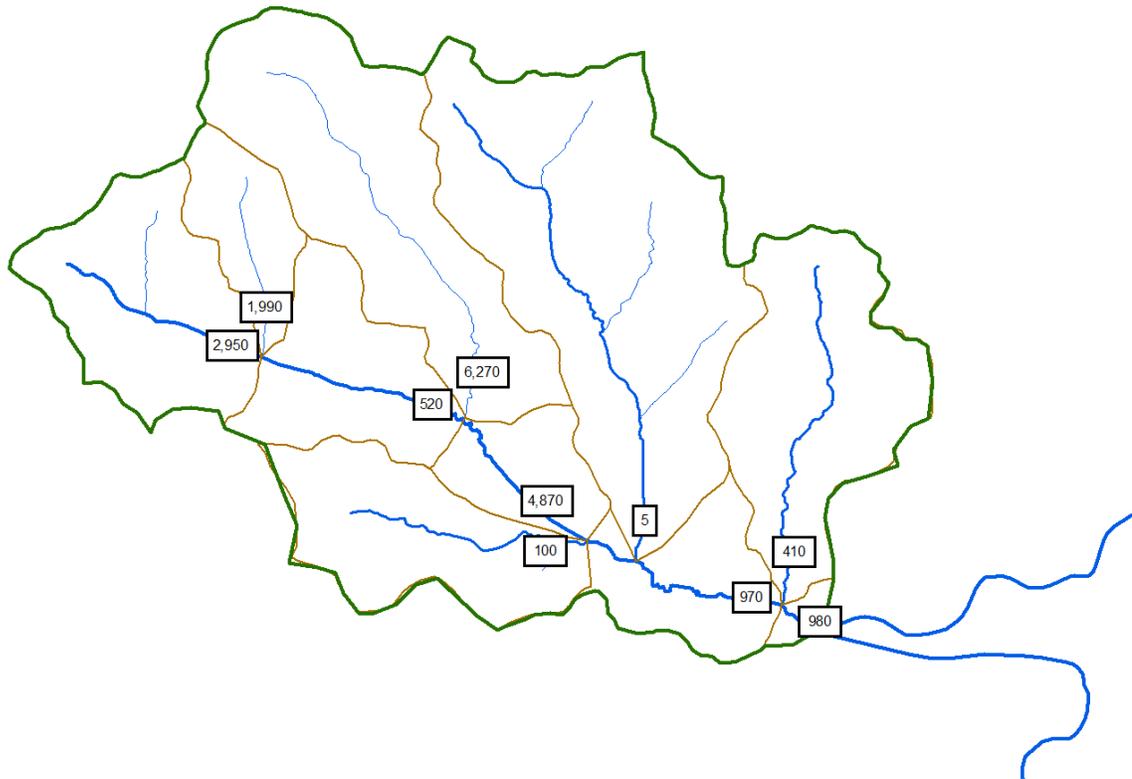


Figure 3: Fecal coliform counts (colony forming units per 100 mL) in water discharging from each of ten subwatersheds of the Bull Run watershed in December, 2019. State water quality standards are violated if more than one in ten measurements exceeds 400 cfu/100 mL.

BRWA believes, based on what can be seen from the road, that livestock contribute most of the bacteria load to UNT/RM 1.83, but that human dwellings contribute the majority of the load upstream of UNT/RM 2.68. Although houses in the upper mainstem subwatershed may have septic tanks and leachfields, BRWA is skeptical that they are adequate, but is interested in hearing evidence that on-site treatment is possible.

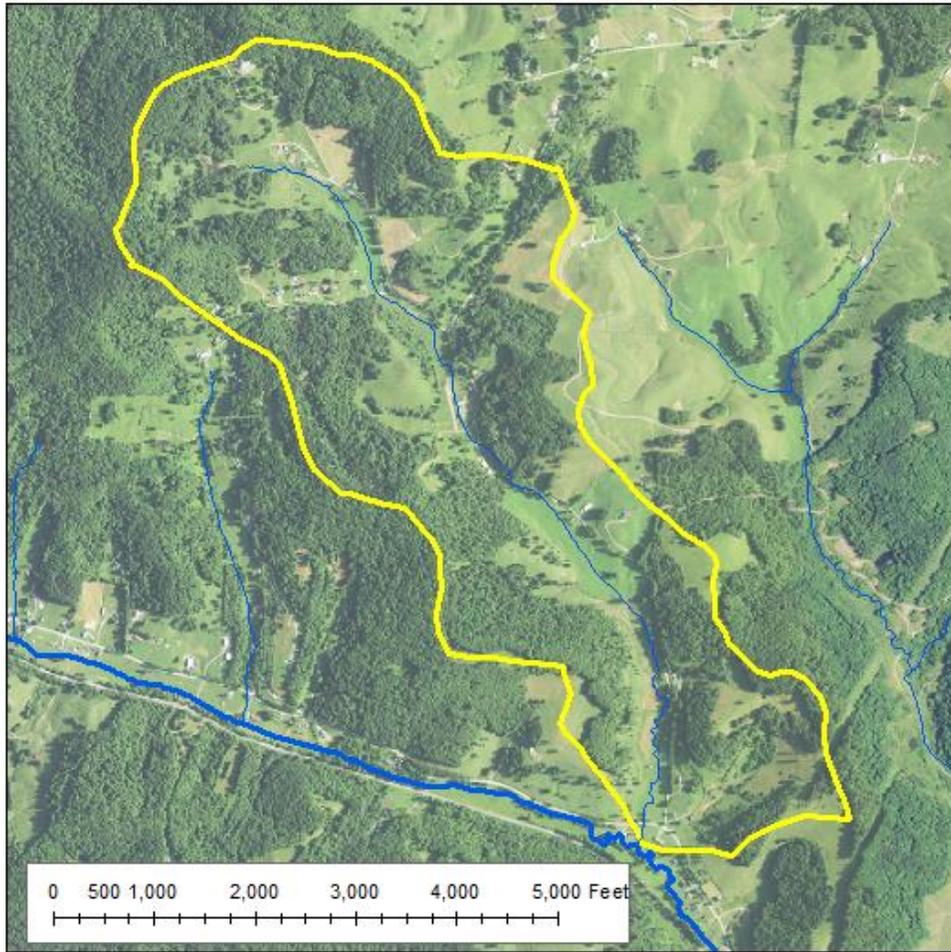


Figure 4: The watershed of UNT/RM 1.83 of Bull Run. The road on the NE side of the creek is Booney Hull Road.

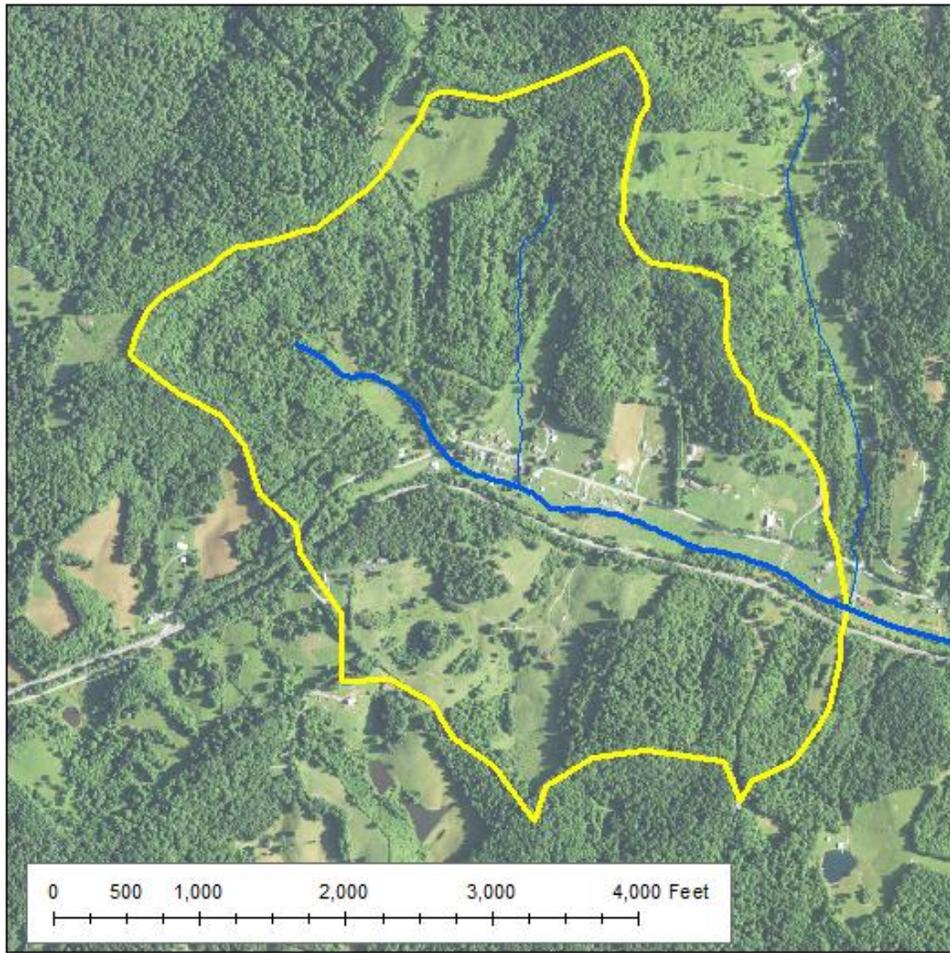


Figure 5: The watershed of Bull Run upstream from river mile 2.68 of Bull Run. The unincorporated community of Abbott lies at the center of the map.

Project Scope

The selected Contractor must:

1. List all reasonable methods for treating household sewage in the subwatershed upstream of UNT/RM 2.68. Include the following methods or combinations thereof, as well as any other reasonable methods:
 - Repairs to make each individual house's septic system adequate.
 - On-site alternatives to septic systems, such as peat filters.
 - Devise a system for individual houses to use clustered septic systems.
 - Installing home aeration units at some or all houses.
 - Installing "package" aeration units for housing clusters.
 - Installing new septic tanks with pumps that convey effluent to an effluent treatment system in a relatively uninhabited place in the watershed (STEP system).
 - Installing septic tanks for clusters of houses. Tanks would have pumps to convey effluent to an effluent treatment system (Clustered STEP system).
 - Creation of a new sewage treatment plant.
 - Extending sewer lines from a sewage treatment utility to Abbott and tap all houses on.
 - Other(s)
2. Compile a list of advantages and disadvantages for each method.
3. Identify the three most promising methods and present detailed descriptions and rough budgets for them.
4. Identify required steps for accomplishing two of the three most promising methods.

Clarifications

1. BRWA is NOT seeking to hire a consultant for information on these tasks:
 - a. Decreasing fecal coliform loads from pastures. BRWA agrees with the TMDL that livestock contributes a significant portion of fecal coliform bacteria pollution to the Bull Run stream system, but BRWA is in contact with the Tygarts Valley Conservation District and expects to have full access to the expertise of the West Virginia Conservation Agency and the USDA Natural Resources Conservation Service in eliminating pollution from livestock. The consultant should not compile such information for this report.
 - b. Decreasing loads of mine-drainage pollutants. BRWA has worked with the West Virginia Water Research Institute on six abandoned mine land pollution projects, and believes it can do so again, if necessary.

2. BRWA is particularly interested in STEP systems because they do not require leachfields in areas with unsuitable soils, because effluent can be easily treated with relatively inexpensive methods, and because, if the scale is correct, treated effluent can be discharged to a leachfield without an NPDES permit. A STEP system or Clustered STEP system must be one of the three methods described in detail.
3. BRWA does not rule out the possibility of creating or recruiting an entity to manage some kind of treatment utility.
4. The following items should be considered in the “Detailed Descriptions and Rough Budgets.”
 - a. List and estimate costs for capital expenses, including treatment facilities, installed pipes, on-site tanks, and other substantial items from a likely construction contract. Briefly describe information sources for the estimates, including the date the costs were based on.
 - b. List and estimate ongoing operation and maintenance costs, including electricity, pumper truck operation, reasonable staff costs.
 - c. List permits that will have to be obtained.

Procurement Procedure

Awards shall be made to the offeror whose offer is most advantageous to BRWA, price, quality and other factors considered.

Proposal Checklist

1. Cover letter must
 - a. Be on company letterhead.
 - b. Identify an officer of the company who will sign valid contracts.
 - c. Identify a Point of Contact
 - d. State how long the offer is in force. BRWA prefers a duration of 180 days.
 - e. State a price for the work described.

2. Statement of qualifications. Include the following information:
 - a. Name of the principal writer of the study.
 - b. A general profile of her or his experience.
 - c. Specific experience with various methods of household sewage treatment.

Evaluation criteria

Offerors will be evaluated using the following rubric.

1. Do they have experience with diverse methods of treating household waste? (40%)
2. Can they document projects that removed some or all sewage from a stream? (20%)
3. Is the price advantageous? (20%)
4. Is the proposal written clearly? (20%)