

Blackmon Road Community area Constructed Wetlands Assessment and Wastewater Management Report Summary

For
A Place for Hope
1020 Archer Drive
Rock Hill, South Carolina 29730

SITE

The site is located in York County, South Carolina adjacent to the Rock Hill City limits. Access to the area is from Blackmon Road which is south of Albright Road.

The project boundary is defined above. There are 48.4 acres defined by the boundary. There are approximately fifty (50) residents in seventeen (17) residential structures. The properties are in need of sustainable long term solutions to waste water treatment and management. Our task was to make an assessment of the environmental conditions and what options if any were available to solve the waste water management based on the site analysis.

The opportunity for a sustainable community using alternative methods of managing wastewater (both black water and gray water) is possible. It is possible through some combination of the alternative collection, pretreatment and simple treatment systems to provide wastewater services and public health protection for this community. Onsite wastewater management using traditional septic tanks and drainfields is currently difficult or impossible due to the existing soil system (rock and/or the lack of suitable soil). Wastewater design constraints include poor soil conditions and a need for simple, low cost, yet sustainable solutions. Wastewater management options for this community include a) conventional alternatives (mound disposal), b) composting toilets to eliminate the discharge of black water, c) engineered constructed wetland treatment systems (individual or clustered), d) decentralized treatment clusters, and/or e) small diameter sewer (pressure or STEP/STEG) to existing sewer lines. Because of the desired goal of wastewater management simplicity, cost effectiveness, and sustainability; it should be noted that gravity flow collection and wetland treatment/disposal are highly valued options, whether centrally located or serving several clusters of living units

Constructed wetland treatment systems are simple and cost effective treatment and disposal systems for both individual residences and small community systems. Designed and constructed wetlands are attached-growth biological filters that utilize vegetation adapted to grow in saturated (or nearly saturated) environments. With the inclusion of vegetation, treatment wetlands have the appearance of a natural wetland habitat and employ many of the biological processes found in natural wetland ecosystems.



Figure 6. VSB wetland.

WASTE MANAGEMENT OPTIONS:

We conclude this first phase by making the observation that three or four options are actually feasible for the community. Of those options, two could be more economical than the others.

The most economical option is the composting toilet and some type of onsite or community in-ground treatment/disposal system. It has a low cost entry and the gray water can be dispersed into a soil mound or small constructed wetland located near the individual residence if the grades allow for a gravity flow. One (or more) community soil mounds or wetland systems could potentially serve some cluster of homes.

Option 1 on site wetlands.

Approximately 0.5 acres of wetlands with and additional 1.5 acres of buffer area. The treated water could also be used for irrigation for lawns or gardens.