ASEE AMERICAN SOCIETY FOR ENGINEERING EDUCATION

Paper ID #44867

Increasing Access to Water, Sanitation and Hygiene (WASH) in the Unincorporated Areas of Lowndes County, Alabama

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Background

An estimated two million Americans throughout the US still face significant challenges in gaining and maintaining access to essential water and wastewater services, posing a major public health threat. Challenges to household systems include lack of basic indoor plumbing, unsanitary on-site wastewater disposal, contaminated and at-risk private wells, and community system challenges including contaminated or depleted water supplies and customers struggling to pay for services. These domestic water, sanitation, and hygiene (WASH) challenges are not spread uniformly throughout the US, but rather, are concentrated in pockets throughout the US due to historical and ongoing marginalization and disenfranchisement based on recent research [1]. Research indicates that there are six areas in the US that are most affected by limited access to water: California, because of drought and contamination from chemicals in farm run-off water; the Navajo Nation in the four corners where Utah, Arizona, New Mexico and Colorado meet; the Texas colonias (low-income, unincorporated residential areas with informal, substandard housing) along the border with Mexico; the rural South, particularly Black communities in Mississippi and Alabama; Appalachia; and Puerto Rico [2]. Research indicates that, within the United States, race is the strongest predictor of water and sanitation access, with Black and Indigenous communities much more likely to experience poor water and sanitation [3]. Other key factors associated with poor water and sanitation are communities with a high proportion of people with lower-incomes or Hispanic or Latino persons, and rural communities. To battle these challenges a community-based organization (CBO) called The Black Belt Unincorporated Wastewater Program, BBUWP was created.

The Black Belt Unincorporated Wastewater Program, (BBUWP), a private 501(c) 3 nonprofit, community-based organization, headquartered in Montgomery, Alabama. BBUWP, was formed in

2019 to comprehensively address the pressing Water Sanitation and Hygiene (WASH) challenges in the AL Black Belt region.

Figure -1 (Map of Albama with the Black Belt highlighted in grey with Lowndes County highlighted in red.)

BBUWP is presently implementing and managing a $2.2M American Rescue Plan Act (ARPA) funded pilot program that is demonstrating potentially viable solutions to the non-sewered sanitation problems experienced in the unincorporated areas of Lowndes County, AL for the past 40 years. The intent of the pilot is to increase the number of households, the majority of whom live in old, poorly maintained manufactured homes, with safe, decentralized (onsite) wastewater systems. Effectiveness, affordability, and sustainability are the primary objectives for this pilot project. The BBUWP's organization and leadership are unique in that it was organized by and for residents of the unincorporated areas of Lowndes County, AL which has a USDA DCI Score of

92.2, a median income of $23,000.00 and a population composed primarily of underrepresented minorities, women, and the elderly [4]. Its board of directors is led by a 40-year resident of area – Ms. Perman Hardy who is universally known and respected as a leader and activist and “One of the Women of the AL Black Belt”.

The Executive Director of the BBUWP, Ms. Sherry Bradley, MPH, BCES, recently retired from the AL Department of Health, and rose through the ranks to become head of the agency. She worked for ADPH for 40 years before retiring this past February 2023. In addition to being supported by dedicated donors, PEER Consultants P.C, an environmental engineering consulting firm, is providing organizational support and structure to the BBUWP along with much needed capacity building, CBO strengthening, and outreach locally, nationally, and internationally. The CDC Foundation Grant – “Increasing Access to WASH in Underserved Communities” supported the activities of this paper starting from May 2023 to March 2024.

Why The BBUWP is Necessary

The lack of sanitation infrastructure in rural America, particularly in regions like Alabama's Black Belt, represents a significant public health crisis. Residents are forced to rely on "straight piping" – the direct discharge of wastewater onto the ground. Despite the urgency of the issue, funding for WASH (Water, Sanitation, and Hygiene) programs in the US remains scarce. This lack of national focus on domestic sanitation infrastructure is further compounded by minimal mainstream media attention, leaving many residents without access to adequate disposal of wastewater. The Biden-Harris administration committed $2 Billion to combat environmental and climate justice programs driven by local community projects [5]. BBUWP was able to secure grants to allow for the purchase of onsite wastewater disposal systems that would be connected to the plumbing fixtures of the trailer homes that are common in the community. Since BBUWP is a nonprofit CBO, it has relied upon donations. Its donors have been very gracious in providing support for BBUWP’s effort in improving WASH access and education. These donations provide much needed financial support for items not covered by federal grants. The clay soil of the Blackbelt of Alabama offers a challenge to traditional methods of sanitation. Most residents use straight piping, a technique where the wastewater run-off from the homes is directed towards their yards directly outside their homes using a straight pipe. This leads to the wastewater accumulation on top of the surface. Due to the black soil of Alabama which does not

drain, the wastewater sits on top of the surface causing a health hazard. Without access to county sewage lines due to the rural nature, residents are left without adequate and safe sanitation creating a health hazard.

Our work so far

Under the CDC Foundation CBO strengthening grant, our organization, PEER Consultants P.C. prepared and mailed a SWOT survey to BBUWP vendors, septic system recipients, other related CBOs, trusted local residents, politicians, members of professional and academic organizations and others who have knowledge of the BBUWP in some manner. The survey consisted of questions that were meant to assess the strengths, weaknesses, opportunities and threats that BBUWP faces from the unique perspectives of the different individuals. The initial survey was followed by detailed interviews of select candidates to get more in-depth data. The results of the SWOT analysis laid the groundwork for restructuring the organization, preparing, and implementing operating policies, procedures, and processes that will ensure sustainability and the ability to meet its mission. The SWOT analysis revealed the need for an "old school", on the ground outreach. The target demographic consisted of elderly residents who did not use social media. Thus, plans for social media outreach and internet ad campaigns for scrapped in favor of traditional methods such as billboards, pamphlets and posters. A special team of local residents who would serve as the BBUWP outreach liaisons called the BBUWP Community Service Corps was created. The Community Service Corps was trained and divided into groups based on the geographical zones they would work in. These zones were classified based on the type of soil in the region which would dictate the type of system that would be installed for a member in that region. The Community Service Corps is made up entirely of local women. They are paid an hourly wage to encourage participation and empower the participants. We found that paying the Service Corps staff rather than asking for volunteers helps empower the women but also creates a long-term investment into the local economy. The long-term sustainability and growth of the Service Corps is also the reasoning behind the decision to employ these women rather than rely on a volunteer force. Our organization designed outreach material and training sessions to train the service corps team members in community outreach and WASH education. The need for outreach materials like brochures, posters and WASH educational material was crucial. The Service Corps needed to seem "official" to build authority

in the local cultural context, while WASH educational material that was simple and direct was necessary to educate the community members about WASH best practices while also bringing attention to the program. Multiple training sessions were conducted to train the Service Corps team. We conducted five training sessions for the Service Corps that focused on BBUWP's initiative, the membership process, and how to answer questions residents would have about the program. WASH educational training was given to the Service Corps Team so that they could be effective intermediaries with the local community members. BBUWP switched to "old school" advertisement and outreach techniques such as press releases in local newspapers, ads in radio stations, billboard advertisements, posters in local barbershops, churches and handing out brochures to help spread awareness of the membership program and WASH education. We have created and published our first success story highlighting the importance of stakeholder engagement in community outreach. We conducted our first annual community membership meeting that was a big success. BBUWP launched a mascot – Miss Poopette to help make WASH education easier and accessible to local residents by removing the stigma around the topic. The resulting change in outreach methods reflected an increase in press coverage and higher membership application rate. The results have clearly shown the success of the current model. We are currently in the process of expanding the program to neighboring counties that require similar support to improve WASH access and education. The Service Corps efforts for community outreach have produced significant results with an increase in residents attending community outreach meetings and a higher number of membership applications. BBUWP has piloted three types of systems - conventional, engineered and advanced engineered. The choice of the systems has been dependent on the soil type and size of the lot and flow rate of the wastewater of the resident's home. With these systems needing to be placed on the site of the members' property there are a few technical and logistical challenges. Soil testing and plot inspection is required to determine the type of system that should be installed. The rural and scattered nature of the residents' homes has meant that we had to improvise to keep overhead and commute time of our installers down. This has resulted in the creation of installation zones (UNZs) to group sites into zones based on system type to streamline the process of installation. With multiple installation sites lined up, the installer can reduce overhead by setting up close to these locations and then proceeding to install the systems. Initially we had low membership application and demand for the systems. But with the success of the community outreach

program the demand for systems has fast outpaced our rate of installation and administrative capabilities. We are developing a database to digitize the membership and warehouse the data. Our approach has been to create a guidebook of best practices for future CBOs in tackling WASH related challenges. We believe the roadmap we created can reduce the learning curve and help other CBO's tackle WASH related challenges effectively.

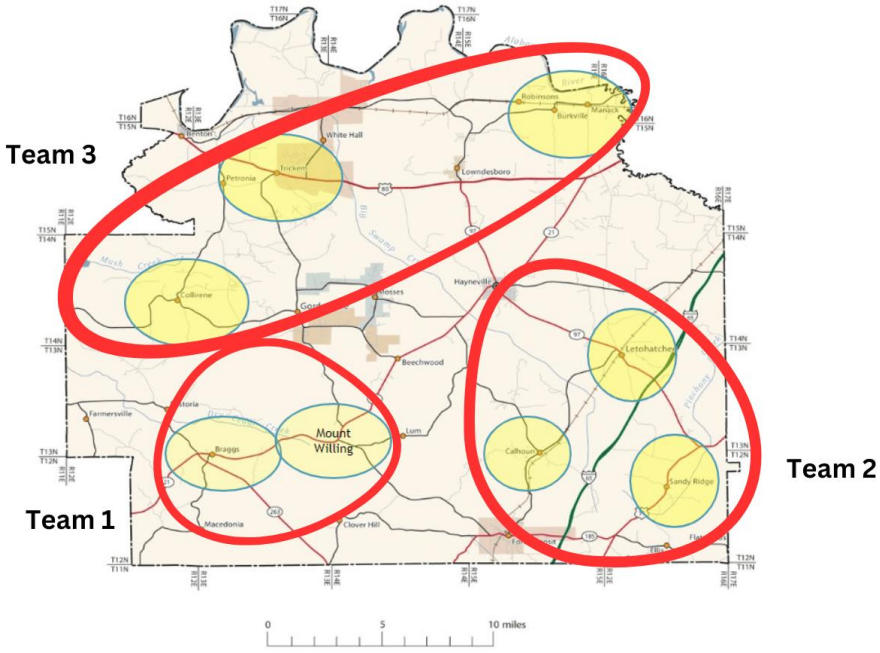

Figure 2 - (Map of Lowndes County highlighting the grouping of unincorporated areas into UNZs)

The SWOT analysis also highlighted the fact that there is a critical shortage of level II septic tank installers needed (especially local females) to keep pace with the planned goal of installing up to 200 systems annually. The proposed workforce development program is designed to enhance BBUWP stakeholder engagement and facilitation, and administrative and operational systems to attract, hire, and train certified plumbers, journeyman plumbers, and plumber assistants. It also aims to engage with other stakeholders that are interested in this trade and needed to fill educational, and skills gaps required to support the installation, operation, and maintenance of onsite wastewater treatment septic systems to households in the unincorporated counties in Lowndes County, AL and beyond. The Lowndes County Technical School is presently seeking certification to add Level II Septic Tank Installation to their course offerings

because of the BBUWP program engagement. The program aims to develop a local skilled workforce while simultaneously creating interest in the plumbing trade among high school students in the community. We are looking to pilot the program starting in Summer 2025.

Conclusion

The work BBUWP has done to impact people through WASH access and education was direct and crucial in helping the local community reduce health risks and environmental pollution. BBUWP's program has been limited to Lowndes County due to its size. BBUWP's pilot program has been successfully able to show the on the ground impact of a community-based approach, creating a roadmap for other CBOs to follow. Crucially BBUWP has established a blueprint that can sustainably scale to a larger geographic area. BBUWP has plans to expand to adjacent Dallas and Wilcox Counties in the Black Belt. BBUWP is currently looking for funding opportunities to continue its work of improving access to WASH for individuals and improve community involvement as it solves WASH challenges.

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