

EDUCATION ASSOCIATED WITH THE ON-SITE WASTE TREATMENT INDUSTRY AT THE UNIVERSITY OF GEORGIA

Gary L. Hawkins, Ph.D.¹

ABSTRACT

Flushing the toilet or pulling the plug in a sink starts the process of managing on-site wastewater in on-site wastewater management system (OSWM). In Georgia, on-site waste treatment is regulated by the Georgia Department of Public Health (DPH). Educating people from those at the Department of Public Health who permits and approves these systems, to the installers, to the pumpers, to the homeowners who use the systems need to know how the systems work. At the University of Georgia (UGA) we have and are developing an educational facility to provide education for the listed groups to help them better understand their role in the OSWM system. We have one demonstration and training facility and one being constructed at two of UGAs campuses. As mentioned the facility have many of the items and demonstrations typically seen when permitting, installing, pumping, and using OSWM. This presentation will show how we are using the sites to educate participants in various education events to better understand OWDS and how to maintain them. Besides the on campus facilities, we also provide education outside the university with mobile educational presentations and displays. Join us for this presentation to learn what we are doing to help better educate persons associated with the OWDS.

INTRODUCTION

Everyone receives an education at various times of their lives. Education is the process of receiving or giving systematic instruction. According to Wikipedia (2022) education is a purposeful activity directed at transmitting knowledge, skills or character traits. Further there is formal and non-formal education. From birth we are being educated on how to eat, how to walk, and how to talk. Once we reach school age we get more of a formal education in a school system where we learn reading, writing, and arithmetic. After 12 years of formal education paths can vary. Some people go into a profession such as the on-site wastewater management (OSWM) industry. Some go to trade schools to learn a trade that can be useful in a business related to the OSWM industry, and others may go onto a college or university to learn more of the technical side of the OSWM industry. No matter which path is taken, all are important to the industry as a whole. Once we are through all of the formal education of what is called school, there is always then the non-formal education again that we in the industry provide to a variety of people. If you are an on-site wastewater installer, pumper, manufacture representative, or other part of the industry you are having to educate your customers on the sizing and location of the system they want installed. If you are a pumper, you have to educate homeowners or commercial owners of OSWM system how to protect their systems. If you are a manufacturer representative, you have to educate those purchasing your products how they work and which is the best for their situation. So this form of non-formal education causes you to become directly involved in the industry to change from being taught to being the teacher. For those indirectly involved in the OSWM industry, i.e. regulators

¹ Water Resource Management and Policy Specialist and Associate Professor, University of Georgia, Crop and Soil Science Department, 1420 Experiment Station Road, Watkinsville, Ga 30677, ghawkins@uga.edu

and school educators, we also have to get education in this industry after we take a job in a regulatory position or in a higher education school where we are teaching the underlying concepts and sciences needed for the industry. Some of these underlying concepts can include but are not limited to soil science, engineering, business, and I expect there are others not listed here.

This is where this paper starts. The author is employed at the University of Georgia and one of his programs is to provide education to various groups in and outside the OSWM industry. The following is a short explanation of how his OSWM program is structured and delivered to educate a wide variety of people including field days, event presentations, school based education, and extension outreach to university employees and citizens. This paper will describe education events and programming for the industry professionals, the supporting professionals of the industry (i.e. regulators, soil scientist, and engineers), and the users of the on-site (and municipal) wastewater systems. Education for those involved in the OSWM industry occurs at many different schools, through trade organizations, at events such as the Mega-Conference, and other local events and is not exclusive to the authors programming at the University of Georgia (Silverman, 2005; Unknown, 2007). The programs and presentations described below are those developed and delivered by the author, his team, or organizations working with the author at various events.

MATERIALS AND METHODS/RESULTS/DISCUSSION

Field days

Field days are good opportunities for industry professionals to both learn about new products and get continuing education credits needed to keep their certifications updated. Field days are typically set-up as round-robin events where participants rotate between multiple stations covering various topics. The author works with various groups to help organize field days for groups such as the Georgia On-site Wastewater Association (GOWA), the Soil and Water Conservation Society (SWCS), American Society of Agricultural and Biological Engineers – Georgia Chapter (ASABE), and the Soil Science Society of America – Georgia Chapter (SSSA) to name a few. Through these field days, the installers, pumpers, regulators, soil scientist, and engineers get an opportunity to see some of the newest products on the market, ask questions about design, and learn or get updates on industry regulation. The GOWA field days in particular usually have approximately 100 plus attendees including installers, pumpers, regulators, soil scientist, and engineers. Figure 1 is a picture of two different field days showing a group at a couple of the round-robin stations.

Event presentations

Field days are good ways to provide information to professionals in the industry, but they do not generally get many persons from the general public attending. So, for the general public, the author uses other means such as attending water festivals, community events, school events, and including information on social media and websites for annual events such as SepticSmart Week. Educating the public on how septic systems work, why toilet paper breaks down better than flushable wipes, and what should and should not be flushed is not typically technical, but provides these citizens with information that help them better protect their on-site wastewater treatment systems. Since



a.



b.

Figure 1. a) Participants at a GOWA field day learning about the regulations related to pumping in Georgia according to the on-site wastewater regulations. B.) Participants learning about serial installations using one of the above ground demonstration trenches.

at most of these various events, the participants have both OSWM and sewer connection, the author and others assisting with the education provide information on the basics of protecting the on-site systems as well as the municipal systems using the same displays and demonstrations. Some of the events the author and others use includes the local MS4 (Municipal Separate Storm Sewer Systems) events required to provide public education to citizens in and around the MS4 communities. Figure 2 provides some images of the different stations typically used at the mentioned festival and other outreach events at schools, community events, and during SepticSmart week via videos on the author’s website.



a.



b.



c.

Figure 2. a) Graduate student demonstrating and helping the participant play the “Flushable OR Non-Flushable” Game to learn what should and should not be flushed to protect a septic or municipal wastewater system; b) a graduate student demonstrating how an on-site wastewater system works and how to protect the system using a working model of septic tank and distribution system; and c) a lab technician demonstrating which papers break apart the best under stirring using a jar test apparatus.

School based education

Another way to educate people on OSWM systems is through formal and semi-formal education. In a formal setting where students are in classes, the author teaches a class to first year students at the University of Georgia (UGA) in a seminar class where one-third of the class is dedicated to on-site wastewater management. Students in this seminar class range from engineers to finance. So, the author uses demonstrations, regulations, and the students’ knowledge of everyday use of

OSWM or municipal systems to help them better understand why managing and protecting the systems is important from an environmental, homeowner, and financial aspect. Additionally some of the other professors at UGA incorporate on-site waste management in their classes and visits the demonstrations of the author so he can help them make the connection between what the students learn in class and how the topics are used in the field from a soils, distribution, and environmental aspect. In a semi-formal setting, professors from UGA works with the Georgia Department of Public Health (DPH) to train their employees on the different aspects of on-site wastewater management. This includes a complete review and study of the DPH regulations related to OSWM and associated field day such as that mentioned above and shown in Figure 1. The professors also works with DPH to conduct a week long soils class to provide education to those inspecting on-site wastewater systems who had a soils class or who have never had a soils class. This week long training is concluded with a formal test taken by the participants so they can be certified within DPH to inspect plans and installations. Recertification is required which circles back around to these DPH employees attending field days as discussed above.

Extension outreach

One other aspect of extending education to different groups of citizens, the author works with the County Extension Agents in Georgia to conduct educational trainings. These trainings consist of workshops, presentations included as part of larger trainings, and through e-mails and a UGA website (<https://site.extension.uga.edu/water/>). The author is an Extension Specialist with responsibilities in water resource management and OSWM falls under that heading. As part of that responsibility, the author provides trainings of UGA Extension Agents on the basics of OSWM systems so they can better assist citizens in their communities. The author has also produced a powerpoint presentation that the agents can use to conduct workshops in their communities to better educate the citizens. The author is also working to get funding to produce additional “Flushable OR Non-Flushable” games (Figure 2a) that can be used in classrooms across the state to educate citizens in many different settings. Additionally, the author manages a website where he puts OSWM information to be used by extension agents and citizens (<https://site.extension.uga.edu/water/>) such as short video clips on how to protect OSWM (or municipal wastewater) systems.

CONCLUSION

As you can see from the activities above, the author’s education program provides information to a variety of groups from the industry professional to the K-12 student. The use of demonstrations, displays, and presentations along with the ability to answer questions is educating the professional and the homeowner on ways to use and protect the environment, the OSWM system, and even the municipal wastewater treatment system. Education begins early in our lives and continues as we grow through school and then into our professional and older years. Providing education as described here with field days, event activities, school based education, and extension outreach helps reminds us all on what OSWM systems are and how we can protect them.

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