

PhD Dissertation Defense

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Title: Effects Of Stakeholder Involvement In Reduction Of Sedimentation In Northern Virginia Streams

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ABSTRACT

This thesis investigates the motivational factors and personal characteristics of individuals who are willing to participate in stormwater quality assessments at construction sites. Prior studies have shown that the effectiveness of stakeholder involvement in decisions that require knowledge of complex environmental issues has been limited by a lack of knowledge (Smedley, 2012). This research explores the effectiveness of several training approaches in improving stakeholders' knowledge, as well as on the willingness to volunteer and on the amount of time willing to volunteer. The training approaches consisted of various combinations of three training components: a PowerPoint demonstration, an interactive demonstration, and a statement of endorsement from a public official to use the data collected by volunteers.

A questionnaire was developed and administered to collect data on the willingness of various members of the public to participate in data collection efforts related to sedimentation issues caused by construction sites in Northern Virginia. A total of 212 participants took part in the survey. Participants were from Northern Virginia Community College (NVCC) – Alexandria

campus, George Mason University (GMU) – Fairfax campus, Metropolitan Washington Airports Authority (MWAA) at Ronald Reagan Washington National Airport (DCA) and Dulles International Airport (IAD), Friends of Accotink Creek (FAC), Friends of Accotink Park (FAP), and the Woodstone Homeowner Association (WHOA) in Alexandria, Virginia.

Willingness to participate as a volunteer in construction site data collection efforts positively correlated with an improved understanding of the problem ($r=-0.093$, $p<0.05$). Within this research effort, “willingness” is defined as an intention to volunteer as measured by Likert scale survey responses. The survey responses were also analyzed by age, education, gender, and organization type. The analysis showed that the willingness to participate post treatment improved with an increased education level. As education level increased, so did the likeliness to volunteer. Participants with graduate coursework were the most likely to volunteer and the least likely to be influenced by any of the training methods. Individuals with no education were the least likely to volunteer. Data for the amount of time that an individual is willing to volunteer was also collected and analyzed. The willingness to participate and amount of time willing to volunteer were found to be strongly and positively correlated ($R^2 > 0.7$). Citizens’ willingness to participate and time to participate improved significantly ($p<0.05$) with the PowerPoint presentation. This research contributes to academic literature on the topic of public participation by improving the understanding of emerging theoretical development within the field of stakeholder participation. Thus, this research will help practitioners and decision makers develop improved outreach programs that will better engage citizens in environmental data collection programs.