

Optimal Policy Design for Upgrading On-site Residential Wastewater Treatment: Does the Baseline Scenario Matter?

Jeffrey D. Mullen

Affiliation: Associate Professor, Agricultural and Applied Economics, University of Georgia, Athens GA 30602

Reference: McDowell RJ, CA Pruitt, RA Bahn (eds.), *Proceedings of the 2015 Georgia Water Resources Conference*, April 28-29, 2015, University of Georgia, Athens.

Abstract. When exploring environmental policy options, sometimes neither the current state of the environmental good being analyzed nor the effectiveness of the proposed policy is known with certainty. The issue under consideration in this study is the current state of water quality in Gwinnett County, Georgia, and the effectiveness of a particular policy – in our case, upgrading septic systems in the county to reduce nutrient loads from septic drainage fields – on improving water quality. Current water quality, expressed in terms of the probability a stream will fail to meet its designated use under the status quo, is unknown. Also unknown is the efficacy of the upgrade in reducing the probability of failing to meet designated uses. In this paper, we present the results of a choice experiment designed to explore how preferences for several policy attributes (cost of the policy, which stakeholder groups pay for the policy, and how costs are shared across stakeholder groups) are affected by changes in the status quo probability of failing to meet water quality and the efficacy of the policy in reducing the probability of failure. Results indicate that a) the status quo probability of failure does impact both individual preferences and estimated welfare measures for a given policy; b) policies in which costs are shared equally across stakeholder groups are preferred to those with unequally shared costs.