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An adaptive approach to gaining stakeholder confidence in Watershed Protection Plan development in the Plum Creek Watershed

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Abstract Text:

A critical component of Watershed Protection Plan development is the compilation of data to guide stakeholders through the decision-making process. In many areas, data on many variables are scarce. In these situations, a combination of data-based analyses and modeling approaches is used to determine the contributors to pollutant sources in streams and potential management measures to improve water quality. Stakeholders and agency representatives alike wrestle with what degree of uncertainty they are comfortable in moving through the planning and implementation phases. In some situations, lack of stakeholder buy-in and rejection of scientific approaches have been serious obstacles to watershed restoration. The Texas Bacteria TMDL Task Force represents a tiered approach for development of TMDLs and WPPs that aims to accomplish water quality improvements through cost-effectiveness and scientific credibility.

The development of the Plum Creek Watershed Protection Plan is a priority interagency project with involvement by the Texas State Soil and Water Conservation Board, the Texas Commission on Environmental Quality, and the EPA. Progress has demanded confidence in the process from stakeholders. With stakeholders having widely varying levels of familiarity with water quality science, gaining this credibility has been difficult when data are lacking. As questions arise, the Plum Creek Watershed Partnership has employed a variety of approaches in a tiered approach to boost stakeholder confidence. Efforts began with the construction of Load Duration Curves to address pollutant loading and were supplemented by a GIS-based approach used to determine sources of bacteria and nutrients. Routine monitoring efforts were seen by stakeholders as insufficient. As a result, an intensive short-term monitoring project was developed to provide further information. Even after implementation begins, stakeholders have expressed a strong desire to incorporate Bacteria Source Tracking and Soil and Water Assessment Tool results as part of an adaptive management approach.

Impact Statement:

Because of preconceptions and/or lack of exposure to water quality monitoring and modeling, uncertainty can be a barrier to stakeholder involvement. An incorporation of multiple modeling and data assessment approaches has dramatically boosted the local level of confidence in watershed planning. Development of the Plum Creek Watershed Protection Plan has provided an invaluable study in what level of detail and certainty are required for success, from both the agency and stakeholder perspectives. This tiered method provides one approach to plan development.