USGS

WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2002IN60B

Title: Water Quality Management and Improvement in the Urban Setting

Project Type: Research

Focus Categories: Surface Water, Nitrate Contamination, Water Quality

Keywords: Bacterial Contamination, Surface Water, Surface Water treatment

Start Date: 03/01/2002

End Date: 02/28/2003

Federal Funds: $35,990

Non-Federal Matching Funds: $100,243

Congressional District: 7th

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Abstract

The occurrence of bacteria in surface water can reflect varied input sources that can include runoff from land application of manure, leakage from home septic systems, runoff from streets which can be contaminated with inputs from domestic and wild animals, discharges from wastewater treatment facilities. For example, in Indiana, Iowa, Minnesota, and Kentucky routine releases have allowed E. coli levels to exceed water quality standards for 46 of the 208, 19 of 157, 56 of the 143 and 104 of the 231 impaired streams on each state's 303(d) list, respectively. The exact source of these E. coli events can rarely be determined but it is generally assumed to reflect the dominant land use in the watershed. In addition to waters being listed on a state's 303 (d) list many smaller bodies of water can be impacted by local activities and these impacts go unreported until someone is exposed and becomes sick. For example, storm water collection ponds or smaller ponds located within city parks are often overlooked as sinks for contamination. Given the high potential for human contact with these waters this is a significant oversight.

The results of this research will be a set of assessment methods and best management practices to evaluate water and treat the conditions, respectively, typically found in the urban setting. The preliminary study will focus on 16-acre pond near Dyer, Indiana. The goals of first year of the two-year project are to identify pollutant sources, provide a suite of management options to the city board and then use these data as examples in outreach programs to assist other small town governments in reaching a goal of improved water quality. The second year of the project will evaluate the affects of the suggested changes. This is an important effort as other urban waters locations can include, for example, runoff retention ponds, small recreational lakes or small lakes on golf courses and all of these can have water quality that is affected by local land use. In general, our goal is to use the information developed in this project to decrease the pollutants load entering these small water bodies by proving practical and cost affective solutions to the problem.