



WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2004OK31B

Title: Optimal Selection of Management Practices for Phosphorus Abatement Using GIS and Economic Methodology in the Modeling of a Watershed

Project Type: Research

Focus Categories: Economics, Nutrients, Management and Planning

Keywords: GIS, poultry litter, Eucha-Spavinaw, phosphorus, watershed modeling, hydrology, BMPs

Start Date: 03/01/2004

End Date: 02/28/2005

Federal Funds: \$25,000

Non-Federal Matching Funds: \$50,094

Congressional District: OK - 3rd

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Abstract

Lake eutrophication has been blamed on excessive land application of poultry litter and resulting phosphorus runoff. The proposed research will provide spatially optimal, least-cost allocations of management practices between point and non-point sources to reduce phosphorus runoff in a watershed. Second, it will provide recommendations on management practices each producer should adopt. Each producer should apply less litter, use alum treated litter, buffer strips, or adopt other management practices. It investigates the feasibility of a cooperative venture to convert poultry litter into electricity

and commercially saleable byproducts, which will reduce the land application of poultry litter. The amount of litter allocated to this plant and the plant's expected net income/loss will be included with the alternative management practices to determine the plant's effect on cost of achieving TMDLs.