

FEASIBILITY OF A CONSTRUCTED WETLAND FOR WASTEWATER TREATMENT IN JULIAETTA, IDAHO

TOMPKINS, ALISON

University of Idaho Landscape Architecture Graduate Program
Nez Perce County Planner and Floodplain Coordinator
atompkins@roadrunner.com

AUSTIN, GARY

University of Idaho Professor of Landscape Architecture
gaustin@uidaho.edu

1 ABSTRACT

Rural communities have a small tax base, limited staffing, and must meet all federal and state requirements for the treatment of wastewater. Many small communities in the United States now face the challenge of how to replace aging rural infrastructure like wastewater treatment systems with limited resources. This is compounded by increasingly stringent water quality standards for treated effluent. A review of current literature regarding the use of constructed wetlands for wastewater treatment is summarized. Case studies of effective wastewater treatment wetlands in cold climates are presented. Federal, state, and local government sources are reviewed to evaluate permitting and funding options available to rural communities. Permitting and funding logistics are discussed, with specific examples from a rural community in Idaho. Cost, effectiveness, and benefits of a constructed wastewater treatment wetland are compared to traditional systems to demonstrate the value and feasibility of a constructed wastewater treatment wetland for the conceptual redesign of a system in Juliaetta, Idaho. Cold climate does not limit the use of constructed wetlands for sustainable wastewater management. Constructed wetlands provide a cost-effective solution for wastewater treatment that can be applied to small, rural communities and provide sustainable benefits that traditional engineered systems cannot, such as wildlife habitat, energy savings, irrigation water, and recreation area.

1.1 Keywords

Cold climate; constructed wetland; funding; permitting; wastewater treatment