

2003 GEORGIA WATER RESOURCES CONFERENCE

Call for Papers Presentation Abstract

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Watershed-Based Stormwater Master Planning – Watershed Assessments

City of Griffin Stormwater Utility Department, Griffin, Georgia

Watershed Assessments have been conducted in all of the City's watersheds. As the location of three headwater drainages, the City is in the unique position of having initial impact on water quality in those drainages. Shoal Creek and Potato Creek in the Upper Flint River Watershed, and Cabin Creek in the Upper Ocmulgee Watershed, have their beginnings within the City of Griffin. The Assessments have quantified the City's impact to water quality leaving its jurisdictional boundary, and have identified water quality issues within its jurisdiction that have not necessarily been transmitted downstream. The purpose of the Assessments has been to develop comprehensive watershed-based plans that will improve water quality within and leaving the City's boundary. Difficult watershed management decisions require a level of detail gleaned from the Assessments that will produce targeted and cost-effective Best Management Practices, both structural and non-structural for improved water quality. These improvements will assist the City, not only in improving the quality of life within its boundaries and beyond, but also to adequately address the regulatory issues, such as NPDES permits and/or TMDLs, that require a financial outlay from the City. The Assessments have identified those improvements that will have the most impact on the City's water quality.

The major action to be implemented is stream restoration of degraded channels within the City. The City partnered with the Army Corps of Engineers (ACOE), Mobile District under authority of Section 206 of the 1996 Water Resource Development Act to restore its degraded aquatic ecosystems. The restoration will focus on improving the environment while involving the public in a cost effective manner. The proposed restoration will be performed utilizing a phased approach by watershed. Some of the restoration measures proposed by the ACOE include stormwater detention facilities, sediment collection basins, and high and low level stream restoration.

Specific remedial elements of the restoration measures consist of constructing stormwater detention facilities at selected locations within the headwaters of the watershed. The detention structures will reduce the stream velocities and peak discharges during high rainfall events that are damaging the stream's ecosystem. An incidental benefit of the detention facilities will be a reduction in the downstream transport of suspended sediments and their associated contaminants. These facilities will be designed to allow the periodic removal of sediment deposits to maintain their long-term stormwater detention capacity. Stream restoration refers to the alteration of stream channel pattern, for and/or profile to a point where the channel is stable (i.e. the channel is neither aggrading nor degrading). The degree of restoration will vary from active in stream channel improvements to stabilizing the existing channel in-place depending on the extent of degradation.

The ultimate goal of stream restoration is to improve the biological integrity and water quality of streams within the City that have been adversely affected by urban growth and development.