Wake Up Whitfield!
Stormwater Management & Streambank Restoration Project
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Dalton-Whitfield Archway Partnership

Dalton Utilities
OptiLink
Stormwater Management

• Stormwater Overview:
  – Precipitation
  – Surface runoff flows directly into our waterways or storm sewers

• Why is stormwater a concern?
  – Flooding & Erosion
    • Property damage & loss of utilities
  – Water supply (reservoirs)
    • Potable water & lake recreation
  – Water pollution (contaminants)
    • Health issues, loss of fish habitat, and increase in treatment costs
  – Considered a “non-point” source
Stormwater Management

• Hydrologic Cycle – Then & Now

Natural System

- 10% runoff
- Quick infiltration into natural system
- Ideal situation

Today’s System

- 75% impervious
- Result: increase in volume, velocity, and discharge rate of our stormwater
- which leads us to Streambank Restoration...

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Streambank Restoration Project

- **Streambank Restoration:**
  - Main cause erosion
  - Stabilization of soil & vegetation
  - Goal: return stream back to its original shape

- **Streambank Restoration also IMPROVES water quality by:**
  - Maintaining its “sinuous” shape
  - Decreasing turbidity & contaminants
  - Filtering out sediment loads
  - Reducing temperature around stream corridors
Streambank Restoration Project

• Site Introduction

Located off Lessco Dr.
Streambank Restoration Project

Drowning Bear Creek Before Pictures
Streambank Restoration Project

• Brief Description of Drowning Bear Creek Project:
  – High velocity runoff
    • High altitude developments in Dalton
  – 75 linear feet of creek bank currently affected
  – Lack of vegetative cover allowing erosion
  – Potential for significant property damage if left without action
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• Potential Obstacles

- Existing building foundation in floodplain
- Sewer main line in danger (8’ from bank)
- Undercut bank is scoured on edge (needs footer)
- Rootzone encroachment on native hardwoods

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- Design Considerations

- Live Cribwall
- Rock Boulders
- Live Gabion Rock Wall

*Our Selection

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• Erosion Control / Restoration Plan

• Stream Cross Sections

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• Examples of successful Gabion Wall installations:

Druid Hills Golf Course, Decatur, GA
Atlanta Country Club, Marietta, GA
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• What will the streambank look like after construction?
Streambank Restoration Project

- What happens if we ignore our degrading streambanks?

- Poor water quality downstream
- Increased turbidity
- Widening of stream channels
- Loss of critical riparian habitats
- Safety issues
Dry Weather Screening

• What is it?
  – Field test for locating and identifying harmful discharges into municipal system

• Benefits?
  – Clean water for recreation
  – Protects drinking water
  – Healthy fish population
  – Effectively monitors illicit discharges
  – Prioritizes watershed protection projects
Rain Garden Design

- Location: Dalton Utilities Building

- Rain Garden replacing fountain
- Water-resistant native perennials, grasses, and deciduous shrubs
- 10% of roof water catchment area will satisfy water needs
Rain Garden Design

• Why a rain garden?
  – Aesthetic value
  – Captures & filters rain water
  – Encourages wildlife & biodiversity
  – Reduces surface runoff
  – It’s easy to create!

• Examples: