Consideration of Small-Scale Stream and Wetland Restoration Efforts in an Urban Environment

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Charlotte Quick Facts

- Population: 859,000 (16th)
- Metro Population: 2.4 million (22nd)
- Fastest Growing City: 2nd-13th
- Area: 300 sq. miles
- Streams: 1,300 miles
- 2nd Largest Banking Center in US
- 6 Fortune 500 Company Headquarters in Charlotte Metro Area
- Major Redevelopment in Uptown and along Transit Corridors
Program History

Missions of Charlotte Storm Water Services:

Maintain storm water infrastructure
Reduce flooding
Improve water quality
Program Goals

Watershed Stressors:

• Spills and illicit discharges
• Development and impervious surfaces
• Historic loss of floodplains, buffers, and streams and wetlands
• Stream erosion
• Sedimentation and loss of habitat
Program Goals

Improving Water Quality:

Stream Restoration

Wetland Restoration

Stormwater Control Measures (a.k.a. BMPs)
Program Goals

Watershed Improvement with Ecological Restoration:
Mitigation Bank

Overview

- Established in 2004
- Serves 3 watersheds
- Currently 20 projects
- Mitigation for municipal project impacts
- Watershed improvement tool
- Keeps mitigation local
- Generates $ for more improvements
Mitigation Bank

Project Selection:

- **Stream Restoration Ranking Protocol**
  - First completed in 2002
  - Several iterations have followed as projects have been implemented
  - Currently working from a list of 20 identified projects

- **Wetland Identification and Prioritization Protocol**
  - First completed in 2013
  - 7 wetland restoration/enhancement sites
  - 10 wetland preservation sites
  - 2 R/E sites and 4 P sites in City
  - Another iteration in 2015 ID’ed several more candidate sites

- **Opportunities within other City flood control projects**
- Moving towards watershed planning based project implementation
Urban Challenges

Project Implementation:

- Habitat degradation and fragmentation
- Limited ecological function(?)
- Urban hydrology
- Costs
- Physical constraints
- Citizen perceptions...
Urban Challenges

Community Engagement:

- Enhanced project communication
- Public education
- Nature as an amenity
- Aesthetics
Program Future

Initiatives:

• Strategic watershed planning
• Incentivize private sector investment
• More watershed improvement, less stream mitigation
• Wetland mitigation
• Non-traditional mitigation
• Innovation and monitoring to advance the science of urban restoration
• Work with stakeholders to develop best practices
Program Future

Questions:

• Maximum urban aquatic ecosystem function?
• New technologies and techniques?
• Most effective watershed improvement measures?
• New regulations?
• Time to watershed recovery?

Reedy Creek Stream Restoration Project