



Date: August 06, 2013

To: Thomas J. Bonfield – City Manager
Through: W. Bowman Ferguson – Deputy City Manager
From: Marvin G. Williams – Public Works Director
Subject: Update on NC Ecosystem Enhancement Program Stream Restorations in Durham

Executive Summary

Through a collaborative partnership with the City, the North Carolina Ecosystem Enhancement Program (NCEEP) has built several stream restoration projects in Durham. These projects help to protect its urban streams and riparian resources by reducing erosion and restoring stream function. These projects contribute to pollutant reduction and Falls and Jordan Lake Nutrient Management Rule compliance as well as address local creek impairments such as excess sediment (turbidity). The NCEEP constructed these projects and then evaluates the projects annually for a period of approximately 5 years. Project success is primarily based on continued stability of the stream, structural elements, and plant survival in vegetated areas. The two stream restoration projects that have been completed and evaluated have been successful. After the NCEEP evaluation period is complete, long term maintenance of the projects becomes the responsibility of the City. Currently, two of the NCEEP stream restoration projects are under City maintenance with the remaining three expected to transfer within the next four years.

Recommendation

The Public Works Department recommends that the City Council receive a presentation on the NC Ecosystem Enhancement Program Stream Restorations in Durham.

Background

The City of Durham has several stream restoration and stormwater quality projects within City limits that serve to restore and protect its urban streams and riparian resources. These projects help the City comply with the Falls and Jordan Lake Nutrient Management Rules as well as address local creek impairments such as excess sediment (turbidity). They help to improve the water quality of our local streams by reducing erosion and restoring stream functions. The North Carolina Ecosystem Enhancement Program (NCEEP) has worked collaboratively with the City to design, construct, and maintain these projects. After construction, the projects are evaluated annually by NCEEP for a period of at least 5 years. The projects are studied to ensure that they are performing and meet the success criteria. NCEEP will conduct additional work to repair specific project elements if needed during this time. Success criteria are based on the stream exhibiting a stable channel, bank, and bed. Additionally, any structural devices installed are to be intact and functioning as intended. The stream restorations restore the connection to the floodplain and stream buffer. The stream

buffer is established with native plants. The City is responsible for long term maintenance (for example, invasive species management) of the projects after the evaluation period.

Issues and Analysis

The State's evaluation period is complete for two of the City's NC Ecosystem Enhancement Program restoration projects, Third Fork Creek stream restoration in Forest Hills Park and Ellerbe Creek stream restoration at the Hillandale Golf Course. The projects were evaluated by the state and City staff and were considered successful upon closeout. The City has taken over maintenance of these projects and contracted to address invasive and nuisance vegetation in restored buffer areas along the streams. It is anticipated that the remaining three projects will be transferred to the City for long term maintenance in the next two to four years. The invasive vegetation work is needed in order to preserve the buffer areas and to ensure that the water quality aspects of the stream restoration function properly. Proliferation of these types of plants can degrade the quality of the wetland and stream resources on these projects. These are beneficial projects that will continue to help reduce pollutants such as nitrogen, phosphorus, and sediment in three major watersheds. In total nearly 3 miles of stream have been restored.

Alternatives

The Council could decide to not receive the presentation on the NC Ecosystem Enhancement Program Stream Restorations in Durham.

Financial Impact

There are no direct financial impacts associated with receiving the presentation on the NC Ecosystem Enhancement Program Stream Restorations in Durham.

SDBE Summary

There are no SDBE requirements associated with this item.

Attachments

Memo – Status of Durham/NC Ecosystem Enhancement Program Restoration Projects.
Presentation