



City of Raleigh
North Carolina

To: Ruffin Hall, City Manager

From: Rich Kelly, PE, Engineering Services Director

Date: February 7, 2017

Re: Grant Award- NC Clean Water Management Trust Fund for Stream Restoration

At the January 19, 2016 meeting, the City Council authorized staff to apply to the North Carolina Clean Water Management Trust Fund (CWMTF) for funds to be applied to restoring a stream in the northwest corner of Millbrook Exchange Park and evaluating the effectiveness of an innovative method for restoring streams. The City submitted the grant application on February 8, 2016 and has received notification of award of this grant in an amount up to \$240,000 (CWMTF award letter dated November 2, 2016, attached).

Staff submitted this grant application under CWMTF's Innovative Stormwater program through which CWMTF seeks projects that will advance practices in stormwater-quality management and develop and apply new technical information. Staff worked with experts at North Carolina State University's Stream Restoration Program in conceiving this project and preparing the grant application, and we are preparing to contract for their technical support for implementing this project.

Project site. This stream is an unnamed tributary to Perry Creek that passes through Millbrook Exchange Park (see attached map). It receives stormwater runoff from a 167-acre largely developed drainage area, including much of the area of the park. As a result of an erosion process known as incision (also as degradation), this stream's bed has dropped several feet below its natural bed level, and the stream channel now is as deep as 12 feet, with vertical banks. The length of the main stream channel through the park is approximately 800 feet, and 100 to 200 feet of side channels in the park also are incised to some extent.

Reason for the project and the grant. Incised stream channels are common in urban areas, the result of development in the stream's drainage area that removes natural vegetation, constructs impervious surfaces (buildings and pavements), and increases stormwater runoff to streams. Stream bed

degradation is a common characteristic of urban streams that have been designated “impaired for biological integrity” by the North Carolina Department of Environmental Quality (DEQ). Stream flows of incised streams rarely can leave their stream channels and spread into their floodplains, and their stream beds lack composition needed to support aquatic plants and animals associated with healthy streams.

The degraded stream channel in Millbrook Exchange Park is an excellent candidate for the City to restore and for CWMTF to fund under this grant program. Part of the mission of the City’s Stormwater Management Program, as well as an obligation under our stormwater discharge permit with DEQ and state Neuse Nutrient Sensitive Waters rules, is to implement projects that improve stream water quality and stream health. In addition to numerous other actions that improve streams, the City Stormwater Program routinely identifies and evaluates streams that are degraded and good candidates for restoration. In identifying projects, staff emphasizes the drainage basin of Perry Creek and two other basins that DEQ has designated as impaired.

Project Description. CWMTF’s Innovative Stormwater program exists to stimulate creative solutions through implementing and evaluating projects on the ground and disseminating the findings to practitioners and decision makers to apply statewide. Staff believes CWMTF will find this project attractive for funding because it will implement and evaluate an innovative approach for raising the level of a severely incised stream bed, allowing high stream flows to again spread into the stream’s floodplain and improving the stream as a habitat for wildlife. Staff and NCSU experts believe this innovative approach will, relative to conventional methods, cost significantly less and disrupt less of the stream corridor, removing many fewer mature trees that are an attractive feature of the park.

Noteworthy aspects of this project include:

- Scope of work including these activities:
 - Plan and coordinate among City operations, NCSU experts, CWMTF, State and Federal regulators, and property owners and residents near the project site
 - Survey the site, prepare design plans, specifications, and bid documents, solicit construction bids, and award a construction contract
 - Prepare a plan for evaluating the restoration’s effectiveness
 - Apply for and obtain environmental permits
 - Construct the stream restoration
 - Evaluate the restoration’s effectiveness and disseminate the findings
 - Administer the requirements of the CWMTF grant contract
- Co-funded project budget, based on 80% by CWMTF and 20% by the City:

\$240,000	CWMTF funds, to be reimbursed
<u>60,000</u>	City Stormwater Program CIP funds
\$300,000	Total project budget
- Three-year project duration:
 - One year for planning, design, permitting, design, construction bidding and award, and construction
 - Two years for evaluating the effectiveness of the restoration and documenting and disseminating findings

Staff recommendation. Accept the grant and authorize the following budget amendments and transfers.

Increase Revenue:

470-7225-513140-93317-GRT00-83720002	\$240,000
Millbrook Exchange Park	

Increase Expense:

470-7225-792010-93317-GRT00-83720002	\$100,000
470-7225-792020-93317-GRT00-83720002	<u>\$140,000</u>
Millbrook Exchange Park	\$240,000

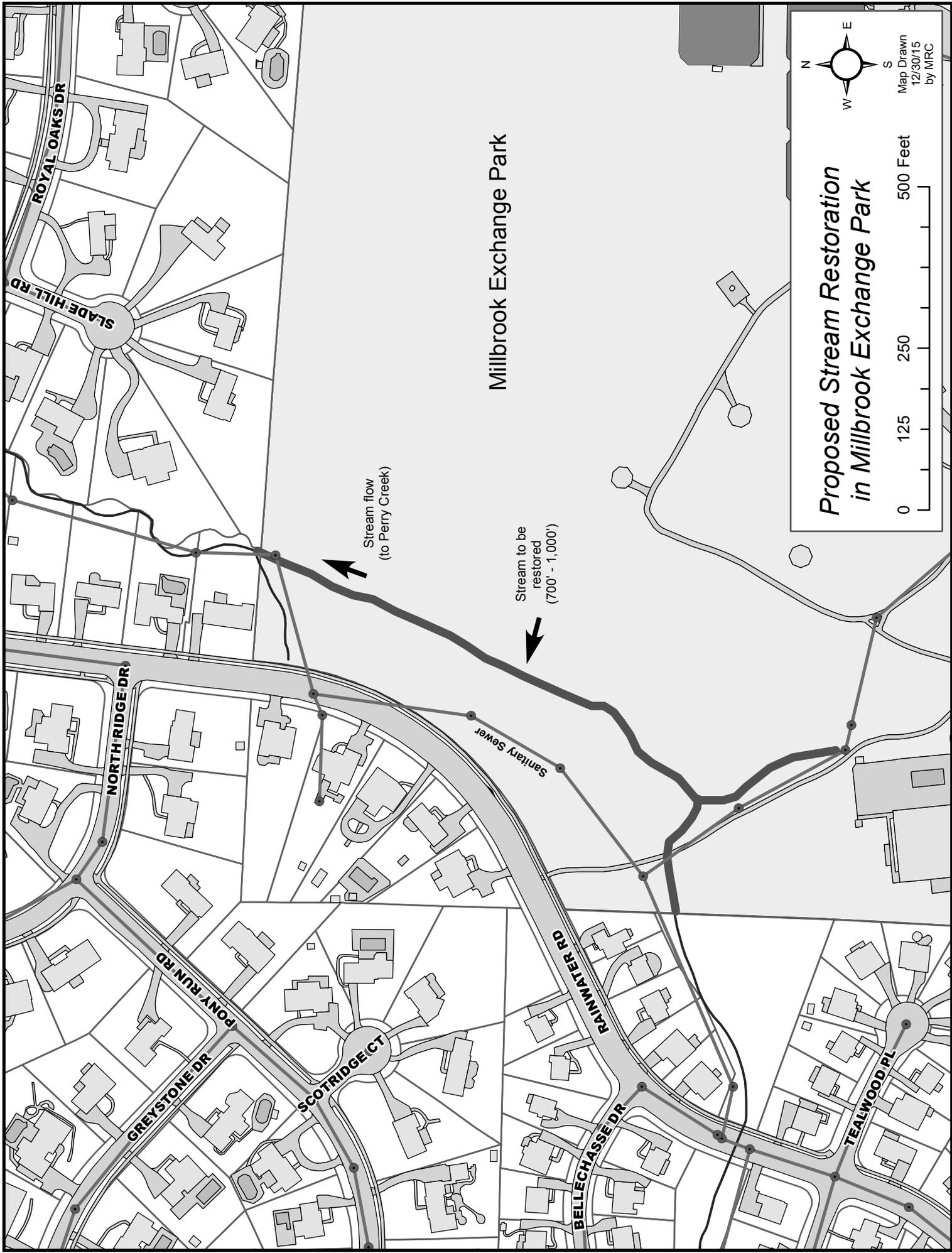
Transferred From:

470-2240-792020-975-CIP05-80860180	\$ 60,000
TMDL Streams Water Quality	

Transferred To:

470-7225-792020-975-GRT00-83720002	\$ 60,000
Millbrook Exchange Park	

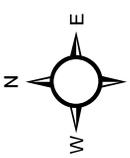
Attachments: Project site map and CWMTF grant award letter



**Proposed Stream Restoration
in Millbrook Exchange Park**

0 125 250 500 Feet

Map Drawn
12/30/15
by MRC



Millbrook Exchange Park

Stream flow
(to Perry Creek)

Stream to be
restored
(700' - 1,000')

ROYAL OAKS DR
SLADE HILL RD
NORTH RIDGE DR
PONY RUN RD
GREYSTONE DR
SCOTTRIDGE CT

SANTARY SEWER
RAINWATER RD
BELLECHASSE DR
TEALWOOD PL



Bryan M. Gossage
Executive Director
Clean Water Management Trust Fund

November 2, 2016

Mr. Kevin Boyer
City of Raleigh
PO Box 590
Raleigh NC 27602-0590

Re: 2016-1006 Raleigh, City of - ISW/ Innovative Grade Controls

Dear Mr. Boyer,

Congratulations! I am writing on behalf of the Clean Water Management Trust Fund (CWMTF) Board of Trustees to advise you that your project referenced above has been approved and funded.

Grant funds in the amount of up to \$240,000 will be available for the project.

In the near future, CWMTF staff will be in contact with you regarding the next steps in the grant contracting process.

Our partnership to safeguard our state's water supplies, natural heritage, military mission and cultural & historic resources is critical to protect North Carolina's environment and economic vitality. Thank you for your hard work to help us accomplish our mission and reach these shared goals.

If you have any questions or need additional information, please do not hesitate to contact me or your local CWMTF field representative.

Sincerely,
Bryan M. Gossage
Executive Director

Clean Water Management Trust Fund



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