

ATTACHMENT A

A RESOLUTION AUTHORIZING STAFF TO APPLY FOR AND PERFORM THE
FUNCTIONS AND OBLIGATIONS OF THE CLEAN WATER MANAGEMENT
TRUST FUND STORMWATER MINI-GRANT RECIPIENT AS SET OUT IN A
GRANT AGREEMENT THAT MAY RESULT FROM SAID GRANT APPLICATION

Resolution No. 33/2006-07

WHEREAS, the Carrboro Board of Aldermen have pledged as much support to the Bolin Creek Watershed Restoration Team as fiscal conditions allow;

WHEREAS, BCWRT has been working to identify funding opportunities to enhance Bolin Creek's water quality, that could remove the creek from the 303d list, and that are consistent with the goals of our ongoing NPDES program and pending Jordan Lake rules;

WHEREAS, the Clean Water Management Trust Fund Stormwater Mini-grant Program presents an opportunity to collect data on likely stormwater retrofit and stream restoration locations and strengthen subsequent grant requests for support in conducting stormwater retrofits or stream restoration;

NOW, THEREFORE BE IT RESOLVED by the Carrboro Board of Aldermen that the Aldermen authorizes staff to apply for and perform the functions and obligations of the Clean Water Management Trust Fund Stormwater Mini-grant recipient as set out in a grant agreement that may result from this grant application.

North Carolina Clean Water Management Trust Fund

STORMWATER MINI-GRANT APPLICATION

Please mail to:

CWMTF

1651 Mail Service Center
Raleigh, NC 27699-1651

Telephone:
(919)733-6375

GOALS

To encourage local government entities that are **not** covered by an NPDES Phase I Stormwater Permit to become active in improving stormwater quality.

REQUIREMENTS AND LIMITATIONS

1. Application Package Must Include The Following Items To Be Considered For Funding:

- a. CWMTF stormwater mini-grant application
- b. Map of project area- 8-1/2"x11" map in color (suitable for photocopying) delineating the project area

2. Funding Issues

- a. Grantee to provide 10% **cash** match
- b. Funding caps

Budget Item	CWMTF Funds
Overall mini-grant	\$50,000
Mapping	\$25,000
Water quality monitoring	\$5,000
Public education, awareness, and involvement programs	\$5,000

- c. Grantee limited to one stormwater mini-grant every two years
- d. A future application for a capital improvement project will be linked to the grantee's success in implementing the recommendations from the mini-grant

3. Timeframe

- a. Grantee will have one year to complete the specified work

4. Reporting

- a. Grantee must provide a detailed final report, documenting what was actually accomplished compared to what was specified in the contract

5. Relationship To Other Programs

- a. The mini-grant can **not** be used simply for **compliance** with regulatory requirements such as the NPDES Phase II Stormwater Rules, Neuse River Rules, etc., but must be used to further stormwater management goals over and beyond these baseline requirements.
- b. Any mapping funded by the mini-grant must comply with the standards of the NC Geographic Information Coordinating Council (NCGICC)

SUMMARY OF APPLICATION SUBMITTAL AND REVIEW PROCESS

1. **CWMTF Accepts Applications** - Applications are accepted by CWMTF throughout the year.
2. **Field Representative Visits Site** - The appropriate CWMTF Field Representative will contact the applicant and visit the potential project site with the applicant to gather additional information about the proposed project.
3. **CWMTF Board Of Trustees Conducts Their Review** - After the CWMTF Field Representative has visited the site, the Board will review each project at the next available Restoration and Stormwater Committee and Board meeting. At this review, three outcomes are possible:
 - a. The final review is favorable and the project is given **final approval** for funding up to a specified amount. The project will be placed on a priority list for contract preparation.
 - b. The final review is not favorable and the project is **denied** funding.
 - c. The project remains **deferred** until the next cycle or until required information is submitted to the Board.

CWMTF STORMWATER MINI-GRANT APPLICATION

FOR OFFICE USE: APPLICATION NUMBER: _____

APPLICANT INFORMATION:

Organization Name:	Town of Carrboro
Federal. Tax ID#:	56-6001194
Fiscal Year End Date:	June 30, 2007

CONTACT INFORMATION:

Name of Contact Person	D. Will Autry
Title of Contact Person	Environmental Planner
Mailing Address	301 W. Main Street
City	Carrboro, NC
Zip Code	27510
Phone	919-918-7326
Fax	919-918-4454
E-mail	wautry@townofcarrboro.org

FUNDING LEVEL AND DURATION:

Funding sought from CWMTF:	\$50,000.00
Total Cost of Project (refers to the specific project to which CWMTF funds will be applied. Please include all funding sources and matching funds.):	

LOCATIONAL INFORMATION:

County	Orange
River Basin	Cape Fear

RECEIVING WATER INFORMATION: As Reported By Division Of Water Quality*

<i>Name of Receiving Water</i>	<i>DWQ Stream Index Number</i>	<i>Stream Classification</i>	<i>Use Support Rating</i>	<i>Cause of Impairment</i>	<i>Source of Impairment</i>
Bolin Creek (Hogan Lake)	16-41-1-15-1-(0.5)b	C-NSW	Impaired biological integrity		
Jones Creek	16-41-1-15-1-1	C-NSW			
Buckhorn Branch	16-41-1-15-1-1-1	C-NSW			
Jolly Branch	16-41-1-15-1-2	C-NSW			
Tanbark Branch	16-41-1-15-1-3	C-NSW			
Bolin Creek	16-41-1-15-1-(4)	WSIV-NSW			

CWMTF REGION: (Please check one regional box. See description of regions in the instructions.)

CWMTF Stormwater Minigrant Application
April 2006

Central Piedmont and Southern Coastal Plain	X
Eastern Piedmont and Central Coastal Plain	
Mountains	
Northern Coastal Plain	
Western Piedmont	

NARRATIVE DESCRIPTION: In the box below, please provide a **concise** narrative description of the proposed project and a discussion of the need for the project, local stormwater management actions that compliment this project, and how outputs from this project will be directly used by the local jurisdiction to benefit water quality.

Concise Narrative Description:

Bolin Creek is listed as impaired from the vicinity of Pathway Drive in Carrboro downstream to Hwy 501 near its confluence with Booker Creek to form Little Creek. Results from watershed assessments conducted on Bolin Creek (and the surrounding area) indicate that habitat degradation and toxicity are both potential causes/stressors of impairment. Because toxicity identification can be complicated, the Bolin Creek restoration effort will first try to improve aquatic habitat by decreasing streambed scour, bank erosion, and catastrophic flow through the reduction of discharge rates from impervious surfaces in the watershed. Although existing watershed studies recommend some potential BMPs and their locations, the Bolin Creek Watershed Restoration Team decided a more thorough and complete investigation is necessary to pinpoint BMP locations which will provide the most cost-effective benefits to water quality. This grant would help fund a geomorphic analysis of those sub-basins with the greatest risk of erosion (based on stream power and shear stress – derived from impervious surface data) and the highest stormflow peaks.

Geomorphic analysis results would enable the Bolin Creek Watershed Restoration Team to focus our efforts on small sub-basins (<200 acres) in which BMPs would be most effective. These results would then be used to inform the process leading to the identification of some specific BMP locations. Since BMP retrofits are not required by the Phase II permits, their implementation goes beyond permit requirements to improve water quality.

As NPDES Phase II communities, both Carrboro and Chapel Hill have active stormwater management programs which would compliment this project through a number of activities, including but not limited to the following:

1. Stream buffer and floodplain land use regulations
2. Developing and ongoing public education, involvement, and outreach programs
3. Developing illicit discharge detection & elimination programs
4. Ongoing maintenance of storm sewer network mapping
5. More than ten years of water quality monitoring data
6. Water supply watershed programs that are more stringent than NC minimum standards
7. Stormwater management requirements for new development activities
8. Delegated local erosion control program (Orange County)
9. Stormwater utility as funding source (Chapel Hill Only)

Stormwater public education and communication efforts would continue, with some specifics on the Bolin Creek Watershed Restoration Team's effort, in an attempt to induce landowners who would be willing to accommodate a BMP on their property.[0]

ELIGIBLE ACTIVITIES: The following activities are eligible for funding under this mini-grant program. Please complete the budget (requested CWMTF funds and matching funds) for **one type of minigrant** (for example, a small drainage basin study, **or** detailed analysis of a BMP, **or** mapping) that you wish to apply for funding.

1. **Small Drainage Basin Study:** Drainage basin size should be between 25 and 200 acres. Deliverables would include report summarizing findings of the study.

Basin Study Deliverables	Requested CWMTF Funds (\$)	Matching Funds (\$)*	Source Of Matching Funds	Total Project Cost**
General hydrologic analysis of the basin	\$30,000	\$5,000	Carrboro & Chapel Hill	\$35,000
Identification of pollutant source(s)				
Identification of potential BMP retrofit locations	\$15,000			\$15,000
Identification of locations for regional water quality improvements and detention facilities				
Identification of waters of special interest to protect and improve				
Total Cost	\$45,000	\$5,000		\$50,000

* Matching Funds must equal 10% of the total project cost and must be a **cash** match.

** Total Project Cost= Requested CWMTF Funds + Matching Funds

2. **Detailed Analysis of One or Two Regional Facilities or BMP Retrofits:** Deliverables would include report containing results of the funded items below.

Detailed Analysis Deliverables	Requested CWMTF Funds (\$)	Matching Funds (\$)*	Source Of Matching Funds	Total Project Cost**
Investigate and document property ownership and owner willingness to sell/donate property				
Investigate and document permitting steps and obstacles; meet with permitting agencies				
Conduct wetlands delineation and Phase I Environmental Site Assessment to ensure viability of the site				
Develop preliminary engineering design				
Develop detailed cost estimates				

for land, design, permitting and construction				
Total Cost				

* Matching Funds must equal 10% of the total project cost and must be a **cash** match.

** Total Project Cost= Requested CWMTF Funds + Matching Funds

3. **Mapping/GPS of streams, wetlands, and stormwater outfalls with identification of any of the following items.** Deliverables would include stream system maps with potential sites for stormwater infrastructure located. Please note that any mapping funded by the mini-grant must comply with the standards of the NC Geographic Information Coordinating Council (NCGICC).

Mapping Deliverables	Requested CWMTF Funds (\$)	Matching Funds (\$) *	Source Of Matching Funds	Total Project Cost**
Potential BMP retrofit locations				
Potential regional water quality improvements and detention facility locations				
Waters of special interest to protect and improve				
Total Cost				

* Matching Funds must equal 10% of the total project cost and must be a **cash** match.

** Total Project Cost= Requested CWMTF Funds + Matching Funds

IN ORDER FOR YOUR APPLICATION TO BE CONSIDERED FOR FUNDING, YOU MUST READ AND COMPLETE THE FOLLOWING:

I have examined this application and accompanying instructions, and to the best of my knowledge, they are accurate and complete. The undersigned acknowledges that he/she has the authority to enter into a grant agreement that may result from this grant application.

Signature of applicant: _____.

Typed or printed name: _____.

Title: _____.

Date: _____.

Please attach the following to this application:

- For local governments or other political subdivisions of the State of North Carolina, or a combination of such entities, attach authorization from the governing board or other appropriate authority to perform the functions and obligations of the Grant Recipient as set out in a grant agreement that may result from this grant application.
 - For non-profit corporations, attach a certified copy of corporate resolutions authorizing the officers of the Grant Recipient to execute and to perform the obligations of the Grant Recipient as set out in a grant agreement that may result from this grant application.
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Draft

STATE OF NORTH CAROLINA
COUNTY OF ORANGE

ATTACHMENT C

MEMORANDUM OF AGREEMENT

TOWN OF CHAPEL HILL AND TOWN OF CARRBORO

BOLIN CREEK WATERSHED RESTORATION TEAM, CLEAN WATER MANAGEMENT TRUST FUND STORMWATER MINI-GRANT

THIS AGREEMENT, made and entered into between the Town of Chapel Hill, North Carolina, a North Carolina municipal corporation, 405 Martin Luther King Jr. Blvd., Chapel Hill, NC 27514 (hereinafter referred to as "Chapel Hill"), and the Town of Carrboro, North Carolina, a North Carolina municipal corporation, 301 West Main Street, Carrboro NC 27510 (hereinafter referred to as "Carrboro"), for a joint project for the application, administration, and funding of a Stormwater Mini-grant from the Clean Water Management Trust Fund (hereinafter referred to as "Mini-grant"):

WHEREAS, the parties to this agreement are public bodies, politic and corporate, under the laws of the State of North Carolina; and

WHEREAS, the parties are vested with the power and authority to undertake joint projects for the health safety and general welfare of the citizens; and

WHEREAS, Bolin Creek passes through both Carrboro and Chapel Hill, and as such receives stormwater from both municipalities; and

WHEREAS, Carrboro and Chapel Hill are both members of the Bolin Creek Watershed Restoration Team (BCWRT); and

WHEREAS, as members of the BCWRT, Carrboro and Chapel Hill share the goal of improving water quality in the Bolin Creek Watershed and removing all segments of Bolin Creek from the State's Section 303(d) List; and

WHEREAS, Chapel Hill and Carrboro recognize that the accomplishments achieved by the successful implementation of this Mini-grant will be beneficial to the citizens of both towns:

NOW, THEREFORE, in consideration of the foregoing and of the mutual promises and obligations set forth herein, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. Carrboro and Chapel Hill will jointly undertake a geomorphic analysis of the Bolin Creek Watershed, as shown in the draft scope of work provided as Schedule A, at a projected total cost of no more than \$50,000.
2. Carrboro, through the Town's Planning Department, as the Mini-grant applicant, shall serve as the lead jurisdiction for administration of the Mini-grant and all related contracts (including the agreement with an environmental consultant) needed to conduct the geomorphic analysis. In administering the Mini-grant and any related contracts and financial transactions, staff from the Planning Department of the Town of Carrboro will do so in consultation with staff from the Stormwater Management Program of the Town of Chapel Hill, and other members of the BCWRT, which may also include staff from the NC Department of Environment and Natural Resources (DENR) and US Environmental Protection Agency (EPA).
3. Carrboro will invoice the Town of Chapel Hill for its portion of the project costs, as shown in item 5 below, upon being awarded the Mini-grant by the Clean Water Management Trust Fund (CWMTF).
4. Carrboro will accept the Mini-grant's reimbursement amount of \$45,000 from the CWMTF upon successful completion of the project.
5. Carrboro and Chapel Hill will share the local government percentage of the cost of said project based on the 2004 municipal population estimates from the NC State Demographics Unit, as follows:

• Chapel Hill	74.5%	(projected share, \$3,725)
• Carrboro	25.5%	(projected share, \$1,275)
6. The Project Deliverables and Timetable of Activities shall be as shown in the attached Schedule A, a draft "Scope of Work for Geomorphic Analysis of the Bolin Creek Watershed" and in the Mini-grant agreement to be finalized between CWMTF and Carrboro.
7. This agreement may be amended by mutual written agreement of Chapel Hill and Carrboro.
8. This agreement shall commence upon execution of the Mini-grant, and the obligation for Carrboro and Chapel Hill cost shares shall be contingent upon Mini-grant award. This agreement will be in effect until the Mini-grant is completed and Carrboro has received the reimbursement.
9. This Agreement constitutes the entire Agreement of the parties hereto.

IN WITNESS WHEREOF, the parties to this Agreement have duly and validly approved it and caused it to be executed in their behalf by the undersigned agents.

This, the --- day of _____, 2006.

TOWN OF CHAPEL HILL

Roger Stancil, Town Manager

Attest: Town Clerk

Approved as to form and authorization:

Town Attorney

TOWN OF CARRBORO

Steve Stewart, Town Manager

Attest: Town Clerk

Approved as to form and authorization:

Town Attorney

This Agreement has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.

Town of Carrboro Finance Director

Town of Chapel Hill Finance Director

Scope of Work

Goals

The overall goal of the Bolin Creek Watershed Restoration Project is to improve the ecological health of the basin by alleviating hydrologic changes that have come about in the Bolin Creek watershed in response to urbanization. In order to do this, more detailed information about geomorphic conditions is necessary to enable the design and implementation of new stormwater structures or stormwater retrofits that can help reduce the flashiness and low base flows common to urban streams.

Piedmont streams with healthy aquatic communities tend to have variation in depth as step-pools or riffle-pools, hard coarse substrates in riffles, and coarse woody debris. Riparian areas are forested providing shade, bank stability, and allochthonous energy inputs.

An urban hydrologic regime is altered from the natural state by having very low base flows (even drying up regularly) and steep hydrographs with high velocity in response to precipitation. Interstitial spaces in bed materials are often filled with fine materials. This combination provides very little persistent and sufficiently sheltered habitat for benthic macroinvertebrates and fish. In addition to the high velocity, runoff tends to have high temperatures that lead to massive macroinvertebrate and fish emigration due to low dissolved oxygen.

These changes can be alleviated by infiltrating much greater proportions of precipitation and slowing down that precipitation that does run off. It is the goal of this sub-project to improve hydrologic conditions by identifying areas of instability and their sources, and recommending solutions.

Location Description:

Work will take place in the Bolin Creek watershed in the Towns of Carrboro and Chapel Hill. The watershed is approximately 7800 acres in total. Most of the basin is located in the Carolina Slate Belt, with a small section at the lowest end in the Triassic Basin. Bed materials in the Slate Belt are largely cobble, boulder, and bedrock; bed materials in the Triassic Basin are largely sands and finer materials. Urban landuses occupy the lower two thirds of the basin, with the upper third comprised of low density rural residential with occasional agriculture. A map of the basin showing hydrology and cumulative impervious surface is attached.

Work tasks

**Identify and characterize problem areas of geomorphic instability in streams, and
Identify and characterize probable sources/causes.**

Conduct reach-by-reach assessment of geomorphic conditions starting first with the mainstem of Bolin Creek, followed by reach-by-reach assessment of both perennial and intermittent tributaries if significant in subwatershed size or likely sources of geomorphic instability in the Bolin mainstem. Total stream length to assess is estimated at around 30 miles.

Horizontal locations of geomorphic instability and sources of instability will be collected with mapping grade GPS with an accuracy within 1 meter.

Combined with existing analysis of imperviousness, locate areas and suggest BMP types (new to install or existing to retrofit) to address identified sources of geomorphic instability.

Identify potential locations to install new BMPs and identify existing BMPs that could be upgraded or retrofitted to improve their performance. Paired with subwatershed analysis of imperviousness and other available landuse data, prioritize sources of instability and clearly link to suggested new BMPs or BMP retrofits.

In order to allow cost comparison and feasibility analysis, please provide multiple options for addressing identified sources of geomorphic instability where possible. Suggested BMPs should have the aim of treating no more than 200 acres for each structure.

Deliverables

Field work and deliverables should be completed by March 15, 2007 in order to allow incorporation of recommendations into an application for a 319 grant May 1, 2007 and the Board of Aldermen/Town Council approvals of the application.

GIS point and/or line shapefiles(s) of identified locations of geomorphic instability and sources. Shapefile and/or map of suggested BMP project locations. Raw data field sheets or a spreadsheet for the data collected to characterize problem areas and sources.

A summary report of geomorphic conditions, highlighting particularly unstable areas, and prioritizing sources of instability with regard to location in basin (area potentially affected by problem) as well as the severity of the problem.

The report should also include a narrative description of the suggested BMPs with regard to location, estimate of how much area/runoff is treated, what identified problem is addressed by the BMP, type of BMP and aim of treatment, new vs. retrofit, and other potentially limiting or particularly favorable conditions. This report should clearly link identified problems with recommended methods to correct or address them.

Resources for the Contractor

The Towns of Carrboro and Chapel Hill have extensive GIS datasets which the contractor may wish to use in conducting assessment and making BMP recommendations:

- Streams and waterbodies
- 2-foot topography
- 10-foot DEM
- Impervious surfaces
- Aerial photography (from 2003)
- Cadastral data
- Stormwater structures (partial dataset)
- Locations of underground storage tanks and RCRA sites
- Subwatersheds used for cumulative imperviousness analysis