Attachment "A"

A RESOLUTION SUPORTING A GRANT APPLICATION UNDER SECTION 319 OF THE CLEAN WATER ACT
Resolution No. 85/2007-08

WHEREAS, the Town of Carrboro is an active participant in the Bolin Creek Watershed Restoration Team, and;

WHEREAS, the Town has been pursuing watershed restoration opportunities for many years, and;

WHEREAS, the Town submitted a grant application to the CWMTF to identify restoration opportunities, and is committed to pursuing the highest priority opportunities identified by the BCWRT and to restoration efforts which will take many years, and;

WHEREAS, the Town of Chapel Hill has agreed to submit a grant application to North Carolina Department of Environment and Natural Resources under Section 319 of the Clean Water Act, and invited the Town of Carrboro to participate in the submittal via a Memorandum of Agreement.

NOW, THEREFORE BE IT RESOLVED by the Carrboro Board of Aldermen that the Aldermen approve Town staff to enter into a Memorandum of Agreement with Chapel Hill for participation in the submission of this grant application:

BE IT FURTHER RESOLVED by the Board of Aldermen that staff continue to work with the BCWRT to identify watershed restoration opportunities in the Bolin Creek Watershed

This is the 15th day of January in the year 2008.

ATTACHMENT B-1

TOWN OF CARRBORO

NORTH CAROLINA

TRANSMITTAL **PLANNING DEPARTMENT**

DELIVERED VIA: ☒ *HAND* ☐ *MAIL* ☐ *FAX* ☐ *EMAIL*

To: **Steve Stewart, Town Manager**
Patricia McGuire, Planning Administrator
Roy Williford, Planning Director
Mayor and Board of Aldermen

From: **Randy Dodd, Environmental Planner**

Date: **January 11th, 2008**

Subject: **Bolin Creek Watershed Restoration Team Update and 319 Grant Submittal**

Background and Summary

Local, State and EPA staff have joined efforts to form the Bolin Creek Watershed Restoration Team (BCWRT). The BCWRT is working to improve water quality and physical conditions in Bolin Creek, and ultimately to remove the creek from the 303(d) list of Impaired Waters. The objective of this multi-year effort is to restore biological health and a more natural hydrology to the Bolin Creek watershed as a whole.
This report summarizes the results of the recent study contracted by the BCWRT, and the resulting grant proposal BCWRT plans to submit for assistance through the EPA 319 grant program. This grant program provides assistance to address nonpoint sources of pollution through water quality restoration, and has a strong emphasis on measurable results. EPA expects dedicated participation from local agencies or groups participating in the Watershed Restoration Program. Participation in the 319 grant program is a highly desirable demonstration of watershed restoration commitment.

Earth Tech 2007 Geomorphic Assessment

In early 2007, the BCWRT was awarded a Clean Water Management Trust Fund mini-grant of $50,000 and Earth Tech was contracted through a competitive bid process to conduct a geomorphic assessment of the entire watershed. Earth Tech, with assistance

from EPA, DWQ, and local staff and volunteers, walked all perennial and intermittent streams in the Bolin watershed, as well as most ephemeral streams (about 90 miles). They looked for and described areas of geomorphic instability such as erosion, deposition, channel incision or alteration, of which they catalogued approximately 100 sites. They looked for sources of problems where visible (such as problems with outfalls, land use, riparian cover, etc.), and prescribed methods to alleviate or correct the problems for about 50 sites. They found widespread impacts including sewer line impacts, culverts and railroad crossings, stream channelization and modification, direct stormwater discharges to channels, and thin or missing riparian cover.

Earth Tech went through a prioritization process to identify a final list of 32 sites that were highlighted and thoroughly documented in a Project Atlas. Restoration opportunities were prioritized for sites that had the highest instability, cost/benefit ratio, ease of correction and feasibility. The project deliverables described each problem, estimated the sediment and nutrient contributions to downstream reaches, provided preliminary conceptual drawings of BMPs and stream restoration/stabilization, estimated the reduction in sediment and nutrients, and estimated the construction costs. Projects were prioritized based on construction cost, cost per ton of sediment removed, project visibility, construction access, and likelihood of future degradation. Earth Tech presented these findings to the BCWRT in the fall of 2007. Chapel Hill and Carrboro staff have spent time reviewing and following up on these recommendations for some of the highest priority sites and projects, using local knowledge and consultation to supplement Earth Tech's findings.

Because of the emphasis on measurable results, and from BCWRT experience with other projects, projects were preferred for this initial phase of following up on Earth Tech recommendations where the probability of detecting improvements is relatively high. Good, visible project successes are considered to be the most help in securing the attention and support of the general public, particularly because of the multi-year effort and cost that will be required to achieve the long term goals. Sites or projects that are less complicated, smaller in scope, have less uncertainty in success, or otherwise deemed as the most feasible and highest immediate payoff were prioritized, as were sites that were publicly-owned or where private landowner cooperation has been established. Sites that would require granting drainage easements or land acquisition were considered less favorable. The presence of potential regulatory floodplain issues was considered a complicating factor, as well as where the project might impact a nearby utility line or infrastructure. These sites would require close cooperation with other parties and would be less suitable for the first set of projects and the quick turnaround needed for the 319 schedule.

After extensive site reconnaissance and consideration of the above factors, the Team settled on projects located in two small subwatersheds (Tanyard Branch tributaries draining through Baldwin Park, and a tributary to Mill Race of Hillsborough Street in Chapel Hill) and a detailed analysis of a third subwatershed (Tanyard Branch headwaters draining downtown Chapel Hill and Northside neighborhood). Two of these

subwatersheds are located entirely in Chapel Hill's jurisdiction, and are therefore not discussed below. These projects along with developing a Watershed Restoration Plan and watershed monitoring comprise the scope for which the Team is seeking 319 grant assistance.

Baldwin Park Project

A small stream traversing Baldwin Park, flowing into Tanyard Branch, was highlighted as one of the 32 high priority projects in the Earth Tech report (Site 19). This stream was estimated by Earth Tech to contribute 28.3 tons of sediment per year (estimate made using the BANCS model). The upper portion of the stream drains downtown Carrboro and has been piped. Site reconnaissance identified an adjacent tributary to the east that has scour at the upper end where runoff drains from the street. Both tributaries have instream scour and erosion, poor instream habitat, minimal to no vegetation on the banks except close-cut grass (Carrboro side) and a few trees (Chapel Hill side) with the exception of the confluence area which is almost entirely privet. See Figure 1 for the location of these streams.

The conceptual restoration plan for this site involves a combination of the Earth Tech recommendations and further additions recommended by NC State's Water Quality Group. Stream restoration, including changes in channel cross-section, reducing bank slopes, creating a bankfull bench, improving riffle and pool habitats, and bank stabilization/revegetation would be pursued for each of these tributaries. 3 stormwater BMPs for handling street runoff would be placed at the upper ends of the streams to prevent degradation of the restored channels. Invasive vegetation (privet) removal is also being considered.

Monitoring would include monthly base flow and storm flow water quality samples just below the confluence of the streams and would analyze for suspended sediment, nitrogen series, and possibly fecal coliform. Bank pins and scour chains would be installed to monitor instream scour. Annual monitoring would include cross-section and longitudinal surveys, check on vegetation survivorship, and benthic habitats.

Costs for this project, including engineering design, construction, and monitoring are estimated to be $167,120. This project straddles the Carrboro – Chapel Hill border and the costs would be split between the two Towns. Engineering and technical support would be provided by NCSU.

Develop a Watershed Restoration Plan

Since a Watershed Restoration Plan is required by the EPA in order to get continued 319 funding, this grant application includes the development of a Plan for the Bolin Creek Watershed. The Bolin Creek Watershed Restoration Plan will be focused on the stressors identified in previous watershed studies. Existing watershed studies already contain a

considerable amount of information that can be compiled to meet EPA's 9 required elements of a watershed restoration plan.

In addition to the addressing these 9 elements, the plan will include an analysis of development scenarios, an evaluation of local ordinances and capabilities, and be coordinated with other planning efforts such as the NSAPIRC efforts, greenways planning, and the 2020 and Downtown Vision reports. Detailed studies of individual subwatersheds may be needed to refine the plan where there are complex conditions identified. Stakeholder involvement is strongly encouraged by EPA, and with some issues it will be necessary in order to solve problems. In particular, OWASA, UNC, Orange County, the Chapel Hill-Carrboro School System, Duke Energy, and the Federal Railroad Administration will be involved in order to meet their concerns and include their planned activities that may affect the Bolin Creek watershed.

Watershed Restoration Plans address restoration of the water quality of impaired waters through a holistic watershed approach. These plans include identifying causes and sources of impairment, identifying and locating management measures to achieve impairment source reductions, estimating reductions in loads/sources, estimating technical and financial assistance needed, creating an implementation schedule and milestones, defining criteria to measure effectiveness, and monitoring to evaluate effectiveness. Public information, education, and outreach activities must be included in the plan.

Long Term Watershed Monitoring

In order to demonstrate the measurable results that are required by EPA, some amount of watershed monitoring or assessment must be conducted. Concurrent with the development of the Watershed Restoration Plan will be development of a comprehensive monitoring plan (itself one of the 9 elements) to measure improvements in the Bolin watershed. This will include a Quality Assurance Program Plan in order to meet requirements for data quality. Some elements of the monitoring plan are fairly clear, but are only conducted on an annual or semi-annual basis, thus in order to obtain sufficient pre-project data these monitoring elements can be initiated before a comprehensive monitoring plan is complete. Carrboro has been performing benthic macroinvertebrate and water quality monitoring historically. The design of the current monitoring program will be reviewed and modified as needed to maximize the program's effectiveness, cost-effectiveness, and compliance with State and EPA information and data quality requirements.

Because Bolin Creek was rated as impaired based on macroinvertebrate samples, the BCWRT is planning to continue biomonitoring efforts. Details of a coordinated benthic macroinvertebrate monitoring plan are anticipated in 2008. Because one of the goals of the initiative is to restore a more natural hydrology to the watershed, streamflow monitoring is being considered to provide data of sufficient quality to measure hydrology. Costs have not yet been estimated for multi-year biomonitoring.

319 Grant Specifics

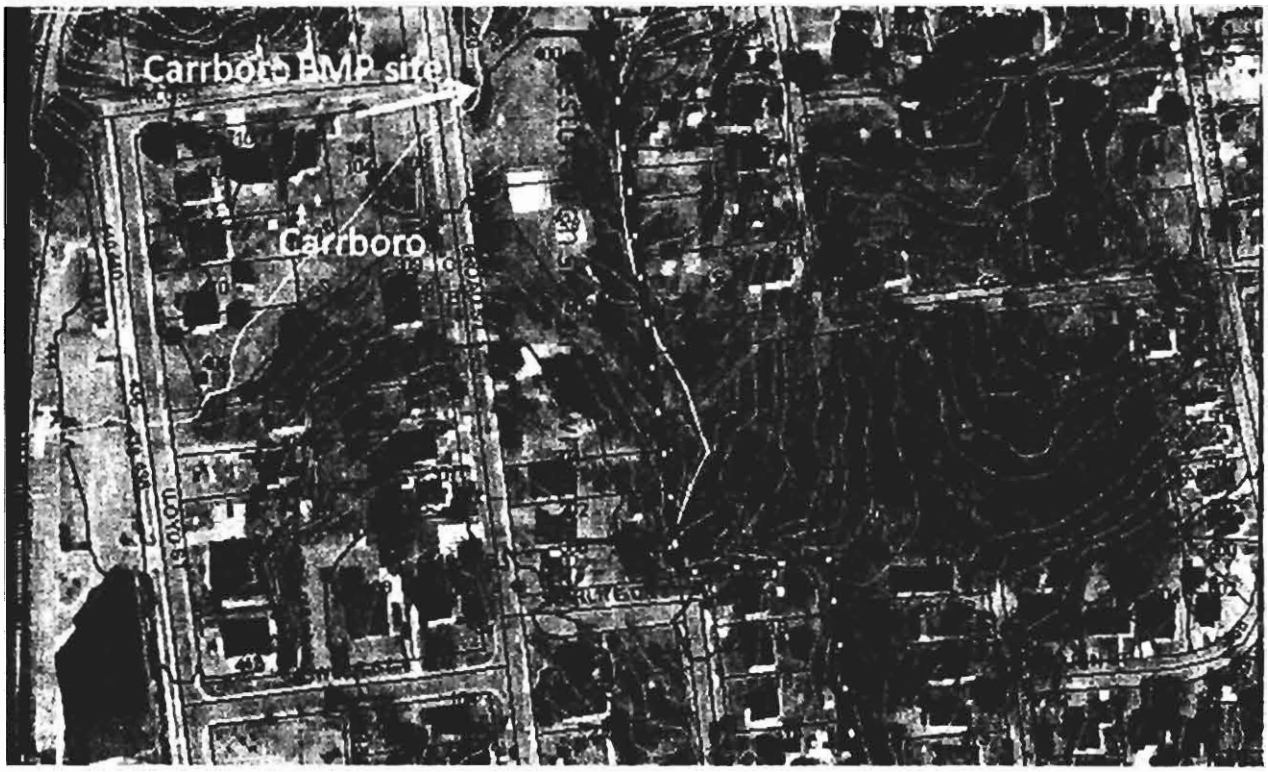
The 319 grant application due date is February 11, 2008. Chapel Hill Town staff will be presenting a summary of the grant application to the Town Council on January 28, 2008 for their approval. The funds requested are to cover a 3-year project period.

EPA grants 60% of the requested funds in return for a 40% cash or in-kind match from the partnering agency. In-kind matches can include staff time, or other non-federally-funded projects taking place in the same watershed. NC State University's Water Quality Group will be contracting with the Team for engineering services, construction oversight, and data analysis. They will be able to contribute $45,000 of in-kind match over 3 years.

A Memorandum of Agreement between Chapel Hill and Carrboro was set up for the Clean Water Management Trust Fund grant. A similar MOA will be needed for this grant submittal. Planning staff will coordinate the drafting of this MOA and provide to the Town Manager for review and signature. BOA approval is sought to enter into the MOA with Chapel Hill.

A draft Memorandum of Agreement (MOA) has been prepared, modeled on the one the Towns used for the CWMTF project. The draft MOA estimates that the Carrboro share (25.5%) of the local match costs to be split between Chapel Hill (74.5%) is approximately $20k. Minor adjustment to the final budget may be pursued prior to Town Manager review and signature and final grant submittal.

Figure 1: Baldwin Park Project Location Map



STATE OF NORTH CAROLINA
COUNTY OF ORANGE

MEMORANDUM OF AGREEMENT

TOWN OF CHAPEL HILL AND TOWN OF CARRBORO
BOLIN CREEK WATERSHED RESTORATION INITIATIVE
CLEAN WATER ACT SECTION 319(H) 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 Clean Water Act Section 319(h) Grant from the U.S. Environmental Protection Agency (hereinafter referred to as "319 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 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 303(d) List of Impaired Waters; and

WHEREAS, Chapel Hill and Carrboro recognize that the accomplishments achieved by the successful implementation of this 319 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:
   - The development of a Watershed Restoration Plan
   - the restoration and enhancement of two streams flowing along the border between the towns
   - restoration and watershed monitoring to document improvements and changes to Bolin Creek and tributaries.

2. Chapel Hill, through the Town's Stormwater Management Division of the Engineering Department, as the 319 grant applicant, shall serve as the lead jurisdiction for the administration of the 319 grant and all related contracts. In administering the 319 grant and any related contracts and financial transactions, staff from the Stormwater Management Division of the Town of Chapel Hill will do so in consultation with staff from the Planning Division of the Town of Carrboro, and other members of the BCWRT, including staff from the NC Department of

Environment and Natural Resources (DENR) and the U.S. Environmental Protection Agency (EPA), and other local government and stakeholder representatives.

3. Chapel Hill will invoice the Town of Carrboro for its portion of the project costs, upon being awarded the 319 grant by the EPA.

4. Carrboro and Chapel Hill will share the local government percentage of the grant cost for shared elements of said project based on the 2004 municipal population estimates from the NC State Demographics Unit, as follows:

Chapel Hill	74.5%
Carrboro	25.5%

5. This agreement may be amended by mutual written agreement of Chapel Hill and Carrboro.

6. This agreement shall commence upon execution of the 319 grant, and the obligation for Carrboro and Chapel Hill cost shares shall be contingent upon awarding of the 319 grant by EPA. This agreement will be in effect until the 319 grant is completed and Chapel Hill has received the entire reimbursement.

7. This Agreement constitutes the entire Agreement of the parties hereto.

IN WITNESS THEREOF, 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 _____, 2008.

TOWN OF CHAPEL HILL

_____
Roger L. Stancil, 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 Chapel Hill Finance Director

TOWN OF CARRBORO

_____
Steve Stewart, Town Manager

_____
Attest: Town Clerk

Approved as to form and authorization:

_____
Town Attorney

_____
Town of Carrboro Finance Director