



North Carolina Department of Environment and Natural Resources

Division of Water Quality  
Coleen H. Sullins  
Director

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Regulatory Branch  
Dee Freeman  
Secretary

Beverly Eaves Perdue  
Governor

November 10, 2011

University of North Carolina at Chapel Hill  
300 South Building  
Chapel Hill, NC 27599

Re: **Carolina North, Orange County**  
**DWQ #20110260; USACE Action ID. No. SAW-2010-10840**  
**Crow Branch Creek [030606, 16-41-1-15-2-2, B, NSW]**  
**APPROVAL of 401 Water Quality Certification with Additional Conditions - REVISED**

Dear Sir or Madam:

Attached hereto is a copy of Certification No. 3870 issued to the University of North Carolina at Chapel Hill, dated November 10, 2011. This letter shall also act as your approved Authorization Certificate for impacts to the protected riparian buffers per 15A NCAC 2B .0267. **This Certification Approval and Buffer Authorization replace the Certification Approval and Buffer Authorization issued October 27, 2011.** In addition, you should get any other federal, state or local permits before you go ahead with your project including (but not limited to) Solid Waste, Sediment and Erosion Control, Stormwater, Dam Safety, Non-discharge and Water Supply Watershed regulations.

If we can be of further assistance, do not hesitate to contact us.

Sincerely,

Coleen H. Sullins

CHS/kah/ijm

Attachments: Certificate of Completion  
NCDWQ 401 WQC Summary of Permanent Impacts and Mitigation Requirements

cc: Becky Fox, EPA, 1307 Firefly Road, Whittier, NC 28789  
Andy Williams, USACE Raleigh Regulatory Field Office  
Lauren Witherspoon, DWQ Raleigh Regional Office  
DLR Raleigh Regional Office  
File Copy  
Ren Ivins, Orange County Planning, 200 South Cameron Street, P.O. Box 8181, Hillsborough, NC 27278  
Sue Burke, PE, CFM, Town of Chapel Hill, 208 N. Columbia Street, Chapel Hill, NC 27514  
Kevin Nunnery, Biohabitats, Inc., 8218 Creedmoor Road, Suite 200, Raleigh, NC 27613

Filename: 110260CarolinaNorth(Orange)401\_JBR\_IC\_Revised

## NORTH CAROLINA 401 WATER QUALITY CERTIFICATION

**THIS CERTIFICATION** is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Quality (DWQ) Regulations in 15 NCAC 2H, Section .0500 and approved authorization for impacts to the protected riparian buffers per 15A NCAC 2B .0267, to the University of North Carolina at Chapel Hill, who have permission to fill or otherwise impact 2.412 acres of 404/Wetland and 622 linear feet of stream (378 linear feet of permanent impact to stream, 70 linear feet temporary impact to stream, and 174 of permanent impact to ephemeral stream, and 23,605 square feet of Zone 1 Jordan Lake protected riparian buffers and 14,637 square feet of Zone 2 Jordan Lake basin protected riparian buffers to construct the proposed Carolina North project (an expansion of the University of North Carolina at Chapel Hill campus), which is located within the northwest and southwest quadrants of the intersection of Martin Luther King, Jr. Boulevard and Estes Drive, in the Towns of Chapel Hill and Carrboro, Orange County, North Carolina, pursuant to an application dated March 18, 2011, and received by the DWQ on March 22, 2011, and by Public Notice issued by the USACE on April 8, 2011, and received by the DWQ on April 8, 2011, and by additional information received on June 6, 2011, June 29, 2011, July 1, 2011, and September 21, 2011.

The application and supporting documentation provides adequate assurance that the proposed work will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application, the supporting documentation, and conditions hereinafter set forth.

This approval is for the purpose and design submitted in the application materials and as described in the Public Notice. If the project is changed, prior to notification a new application for a new Certification is required. If the property is sold, the new owner must be given a copy of the Certification and approval letter and is thereby responsible for complying with all conditions of this Certification. Any new owner must notify the Division and request the Certification be issued in their name. Should wetland or stream fill be requested in the future, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). If any plan revisions from the approved site plan result in a change in stream or wetland impact or an increase in impervious surfaces, the DWQ shall be notified in writing and a new application for 401 Certification may be required. For this approval to be valid, compliance with the conditions listed below is required.

### Conditions of Certification:

#### 1. Impacts Approved

The following impacts are hereby approved as long as all of the other specific and general conditions of this Certification (or Isolated Wetland Permit) are met. No other impacts to wetlands, streams, and/or buffers, are approved including incidental impacts:

Type of Wetland	Amount Approved (Units)	Plan Location or Reference
<b>Phase #1</b>		
404/Wetlands – riparian	0.005 (acres)	Application
Stream	41 [(linear feet) 31 linear feet permanent impact and 10 linear feet temporary impact]	Application
Buffers Zone I	0.00 (square feet)	Application
Buffers Zone II	0.00 (square feet)	Application
<b>Phase #2</b>		
404/Wetlands – riparian	2.407 (acres)	Application

Stream	581 [(linear feet) 374 linear feet permanent stream impact, 60 linear feet temporary stream impact and 174 linear permanent ephemeral stream impact]	Application
Buffers Zone I	23,605 (square feet)	Application
Buffers Zone II	14,637 (square feet)	Application

Sediment and Erosion Control:

2. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to protect surface waters standards:
  - a. The erosion and sediment control measures for the project must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*.
  - b. The design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.
  - c. Sufficient materials required for stabilization and/or repair of erosion control measures and stormwater routing and treatment shall be on site at all times.
3. No waste, spoil, solids, or fill of any kind shall occur in wetlands, waters, or riparian areas beyond the footprint of the impacts depicted in the 404/401 Permit Application. All construction activities, including the design, installation, operation, and maintenance of sediment and erosion control Best Management Practices, shall be performed so that no violations of state water quality standards, statutes, or rules occur;
4. Sediment and erosion control measures shall not be placed in wetlands or waters without prior approval from the Division. If placement of sediment and erosion control devices in wetlands and waters is unavoidable, design and placement of temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or stream beds or banks, adjacent to or upstream and down stream of the above structures. All sediment and erosion control devices shall be removed and the natural grade restored within two (2) months of the date that the Division of Land Resources or locally delegated program has released the project;
5. Protective Fencing - The outside buffer, wetland or water boundary and along the construction corridor within these boundaries approved under this authorization shall be clearly marked with orange warning fencing (or similar high visibility material) for the areas that have been approved to infringe within the buffer, wetland or water prior to any land disturbing activities;

Continuing Compliance:

6. The University of North Carolina at Chapel Hill shall conduct construction activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with section 303(d) of the Clean Water Act) and any other appropriate requirements of State law and federal law. If the Division determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, the Division may reevaluate

and modify this Certification to include conditions appropriate to assure compliance with such standards and requirements in accordance with 15A NCAC 2H.0507(d). Before modifying the Certification, the Division shall notify the University of North Carolina at Chapel Hill, and the US Army Corps of Engineers, provide public notice in accordance with 15A NCAC 2H.0503 and provide opportunity for public hearing in accordance with 15A NCAC 2H.0504. Any new or revised conditions shall be provided to the University of North Carolina at Chapel Hill in writing, shall be provided to the United States Army Corps of Engineers for reference in any Permit issued pursuant to Section 404 of the Clean Water Act, and shall also become conditions of the 404 Permit for the project;

Mitigation:

7. Compensatory Mitigation Using the Ecosystem Enhancement Program (EEP)

Mitigation must be provided for the proposed impacts as specified in the table below. We understand that you wish to make a payment to the Wetlands Restoration Fund administered by the NC Ecosystem Enhancement Program (EEP) to meet this mitigation requirement. This has been determined by the DWQ to be a suitable method to meet the mitigation requirement. Until the EEP receives and clears your check (made payable to: DENR – Ecosystem Enhancement Program Office), no impacts specified in this Authorization Certificate shall occur. The EEP should be contacted at (919) 716-1921 if you have any questions concerning payment into a restoration fund. **The mitigation will be phased as shown in the table below:**

<u>Type of Wetland</u>	<u>Compensatory Mitigation Required</u>	<u>River and Sub-basin Number</u>
<b>Phase #1</b>		
404/Wetlands – riparian	0.005 (acres)	Cape Fear/03030002
Stream (perennial)	31 (linear feet)	Cape Fear/03030002
Buffers Zone I	0.00 (square feet)	Cape Fear/03030002
Buffers Zone II	0.00 (square feet)	Cape Fear/03030002
<b>Phase #2</b>		
404/Wetlands – riparian	2.407 (acres)	Cape Fear/03030002
Stream (perennial)	347 (linear feet)	Cape Fear/03030002
Buffers Zone I	70,815 (square feet)	Cape Fear/03030002
Buffers Zone II	21,956 (square feet)	Cape Fear/03030002

8. Construction Stormwater Permit NCG010000

Upon the approval of an Erosion and Sedimentation Control Plan issued by the Division of Land Resources (DLR) or a DLR delegated local erosion and sedimentation control program, an NPDES General stormwater permit (NCG010000) administered by DWQ is automatically issued to the project. This General Permit allows stormwater to be discharged during land disturbing construction activities as stipulated by conditions in the permit. If your project is covered by this permit [applicable to construction projects that disturb one (1) or more acres], full compliance with permit conditions including the sedimentation control plan, self-monitoring, record keeping and reporting requirements are required. A copy of this permit and monitoring report forms may be found at: [http://portal.ncdenr.org/c/document\\_library/get\\_file?uuid=d15e7ee8-cb50-443f-9dcf-049b001337ac&groupId=38364](http://portal.ncdenr.org/c/document_library/get_file?uuid=d15e7ee8-cb50-443f-9dcf-049b001337ac&groupId=38364) ;

## 9. Culvert Installation

All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual ([http://www.ncdot.org/doh/operations/BMP\\_manual/download/BMP\\_Manual.pdf](http://www.ncdot.org/doh/operations/BMP_manual/download/BMP_Manual.pdf)) such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water.

Culverts required for this project shall be installed in such a manner that the original stream profiles are not altered. Existing stream dimensions (including the cross section dimensions, pattern, and longitudinal profile) must be maintained above and below locations of each culvert. Culverts shall be designed and installed to allow for aquatic life movement as well as to prevent head cutting of the streams. If any of the existing pipes are or become perched, the appropriate stream grade shall be re-established or, if the pipes installed in a perched manner, the pipes shall be removed and re-installed correctly.

Culvert(s) shall not be installed in such a manner that will cause aggradation or erosion of the stream up or down stream of the culvert(s). Existing stream dimensions (including the cross section dimensions, pattern and longitudinal profile) shall be maintained above and below locations of each culvert.

Placement of any new culverts, as opposed to extensions of existing culverts, and other structures in waters, streams, and wetlands must be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium shall be maintained if requested in writing by DWQ.

The establishment of native, woody vegetation and other soft stream bank stabilization techniques must be used where practicable instead of rip rap or other bank hardening methods. If rip-rap is necessary, it shall not be placed in the stream bed, unless specifically approved by the Division of Water Quality.

Installation of culverts in wetlands must ensure continuity of water movement and be designed to adequately accommodate high water or flood conditions.

Upon completion of the project, the Applicant shall complete and return the enclosed "Certificate of Completion" form to notify NCDWQ when all work included in the §401 Certification has been completed. The responsible party shall complete the attached form and return it to the 401/Wetlands Unit of the NC Division of Water Quality upon completion of the project. *Please send photographs upstream and downstream of each culvert site to document correct installation along with the Certificate of Completion form.*

## 10. Deed Notifications

Deed notifications or similar mechanisms shall be placed on all retained jurisdictional wetlands, waters and protective buffers in order to assure compliance for future wetland, water and buffer impact. These mechanisms shall be put in place at the time of recording of the property, or of individual lots, whichever is appropriate. A sample deed notification can be downloaded from the Wetlands, Buffers, Stormwater, Compliance and Permitting Unit (WeBSCaPe) web site at:

[http://portal.ncdenr.org/c/document\\_library/get\\_file?uuid=ef84d0e1-5fc9-4183-87b5-2f9d7eb152e0&groupId=38364](http://portal.ncdenr.org/c/document_library/get_file?uuid=ef84d0e1-5fc9-4183-87b5-2f9d7eb152e0&groupId=38364). The text of the sample deed notification may be modified as appropriate to suit to this project.

#### 11. Stormwater Management Plan (SMP) Approval Required and Stormwater Approval Phasing

Before the impacts specified in this Certification may occur, the applicant must meet all of the provisions set forth in the document **Protocol for Stormwater Management Plan (SMP) Approval and Implementation**, available at:

[http://portal.ncdenr.org/c/document\\_library/get\\_file?uuid=0c509d61-6dd6-4da8-9342-7079fe478688&groupId=38364](http://portal.ncdenr.org/c/document_library/get_file?uuid=0c509d61-6dd6-4da8-9342-7079fe478688&groupId=38364)

SMP approval and implementation procedures shall be as follows:

- The SMP must be approved in writing by to the Wetlands, Buffers, Stormwater, Compliance and Permitting (WeBSCaPe) Unit or, if the project is subject to another state stormwater program, or may be reviewed by a certified local government, a copy of the approval letter and approved SMP must be submitted before *any* impacts authorized in this certification occur. If a development is phased, then the SMP for each future phase must approved by the Wetlands, Buffers, Stormwater, Compliance and Permitting (WeBSCaPe) Unit or, if the project is subject to another state stormwater program or a certified local government, a copy of the approval letter and approved SMP must be submitted before any impacts associated with that phase may occur.
- The approved SMP must be constructed and operational before any permanent building or other structure is occupied at the site. If a development is phased, then the approved SMP for each future phase must be constructed and operational before any permanent building or other structure associated with that phase is occupied.
- The approved SMP as well as drainage patterns must be maintained in perpetuity.
- The SMP may not be modified without prior written authorization from the SMP approval authority. If the SMP falls under another state stormwater program, then a copy of the approval letter and the modified SMP must be submitted to the 401 Oversight/Express Unit prior to the commencement of the modifications.

A final, written stormwater management plan for each phase of this project shall be submitted to for review and approval. No land disturbance associated with any phase may be conducted until a stormwater management plan for that phase has been submitted to and approved by the DWQ, another State stormwater program or a certified local government. No buildings associated with any phase may be occupied until the stormwater management plan is constructed and operational for that phase.

If submitting your plan to DWQ, the stormwater management plan submittal must include a BMP Supplement Form with all required items. The BMPs must be designed to treat runoff from all impervious surfaces, including the road, and must comply with the version of the NC DENR Stormwater BMP Manual that is in effect on the date of the submittal of the stormwater management plan (SMP). The SMP must meet the requirements in the version of SMP Regulations for non-DOT in effect at the time of submittal.

## 12. Diffuse Flow

All constructed stormwater conveyance outlets shall be directed and maintained as diffuse flow at non-erosive velocities through the protected stream buffers such that it will not re-concentrate before discharging into a stream as identified within 15A NCAC 2B .0267 (5). If this is not possible, it may be necessary to provide stormwater facilities that are considered to remove nitrogen (and phosphorus if in the Tar-Pamlico River Basin). This may require additional approval from this Office.

### Re-opener Clause

13. Mr. Richard Mann and University of North Carolina at Chapel Hill, and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with section 303(d) of the Clean Water Act) and any other appropriate requirements of State law and federal law. Mr. Richard Mann and University of North Carolina at Chapel Hill, shall require its contractors (and/or agents) to comply with all of the terms of this Certification, and shall provide each of its contractors (and/or agents) a copy of this Certification. A copy of this Certification shall be included in the construction contract and available on the job site at all times. If DWQ determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, DWQ may reevaluate and modify this certification to include conditions appropriate to assure compliance with such standards and requirements in accordance with 15A NCAC 02H.0507(d). Before modifying the certification, DWQ shall notify Mr. Richard Mann and University of North Carolina at Chapel Hill, and the US Army Corps of Engineers, provide public notice in accordance with 15A NCAC 02H.0503 and provide opportunity for public hearing in accordance with 15A NCAC 02H.0504. Any new or revised conditions shall be provided to Mr. Richard Mann and University of North Carolina at Chapel Hill, in writing, shall be provided to the United States Army Corps of Engineers for reference in any permit issued pursuant to Section 404 of the Clean Water Act, and shall also become conditions of the 404 Permit for the project.

## 14. Certificate of Completion

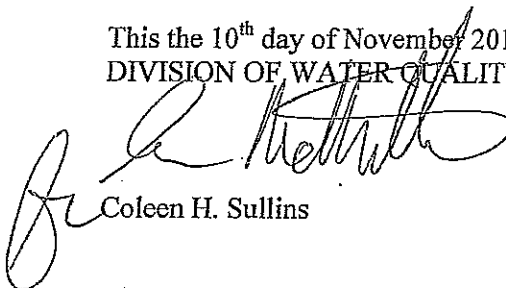
Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return the attached certificate of completion to the Wetlands, Buffers, Stormwater, Compliance and Permitting Unit (WeBSCaPe), North Carolina Division of Water Quality, 1650 Mail Service Center, Raleigh, NC, 27699-1650.

November 10, 2011

**Also, this approval to proceed with your proposed impacts or to conduct impacts to waters as depicted in your application shall expire upon expiration of the 404 or CAMA Permit.**

If this Certification is unacceptable to you, you have the right to an adjudicatory hearing upon written request within sixty (60) days following receipt of this Certification. This request must be in the form of a written petition conforming to Chapter 150B of the North Carolina General Statutes and filed with the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, N.C. 27699-6714. If modifications are made to an original Certification, you have the right to an adjudicatory hearing on the modifications upon written request within sixty (60) days following receipt of the Certification. Unless such demands are made, this Certification shall be final and binding.

This the 10<sup>th</sup> day of November 2011  
DIVISION OF WATER QUALITY



Coleen H. Sullins

3870  
CHS/kah/ijm





North Carolina Department of Environment and Natural Resources

Division of Water Quality

Coleen H. Sullins

Director

Dee Freeman  
Secretary

Iverly Eaves Perdue  
Governor

North Carolina Division of Water Quality  
**401 Water Quality Certification**  
Summary of Permitted Impacts and Mitigation Requirements

In accordance with 15A NCAC 2H.0500, Mr. Richard Mann and University of North Carolina at Chapel Hill, who have permission to fill or otherwise impact 2.412 acres of 404/Wetland and 622 linear feet of stream (378 linear feet permanent impact to stream, 70 linear feet temporary impact to stream, and 174 linear feet permanent impact to ephemeral stream) and 23,605 square feet of Zone 1 Jordan Lake protected riparian buffers and 14,637 square feet of Zone 2 Jordan Lake basin protected riparian buffers to construct the proposed Carolina North project (an expansion of the University of North Carolina at Chapel Hill campus), which is located within the northwest and southwest quadrants of the intersection of Martin Luther King, Jr. Boulevard and Estes Drive, in the Towns of Chapel Hill and Carrboro, Orange County, North Carolina. All activities associated with these authorized impacts must be conducted with the conditions listed in the attached Permit transmittal letter. THIS CERTIFICATION IS NOT VALID WITHOUT THE ATTACHMENTS.

COMPENSATORY MITIGATION REQUIREMENTS, ECOSYSTEM ENHANCEMENT PROGRAM

DWQ PROJECT #: 20110260  
NC EEP NAME: Carolina North  
LOCATION: Chapel Hill  
COUNTY: Orange  
BASIN/ SUB BASIN: Cape Fear/03020002

As required by 15A NCAC 2H.0500, and the conditions of this Certification, you are required to compensate for the above mitigable impacts through the restoration, creation, enhancement or preservation of wetlands, surface waters and riparian buffers as outlined below prior to conducting any activities that impact or degrade the waters of the state.

Note: Acreage requirements proposed to be mitigated through the Ecosystem Enhancement Program must be rounded to one-quarter acre increments and linear foot requirements must be rounded up to the nearest foot according to 15 2R.0503(b).

Impacts	Mitigation
2.412 Acres Riparian Wetlands	2.412 Acres Riparian Wetlands
378 Linear Feet of Stream	378 Linear Feet of Stream
23,605 Square Feet of Buffer	70,815 Square Feet of Buffer
14,637 Square Feet of Buffer	21,956 Square Feet of Buffer

One of the options you have available to satisfy the compensatory mitigation requirement is through the payment of a fee to the Wetlands Restoration Fund per NCAC 2R.0503. If you choose this option, please sign this form and mail the form along with a copy of your 401 Certification or Buffer Approval to the Ecosystem Enhancement Program at the address below. An invoice for the appropriate amount of payment will be sent to you upon receipt of this form. PLEASE NOTE, THE ABOVE IMPACTS ARE NOT AUTHORIZED UNTIL YOU RECEIVE NOTIFICATION THAT YOUR PAYMENT HAS BEEN PROCESSED BY THE ECOSYSTEM ENHANCEMENT PROGRAM.

Signature \_\_\_\_\_ Date \_\_\_\_\_

ECOSYSTEM ENHANCEMENT PROGRAM  
1652 Mail Service Center  
RALEIGH, N.C. 27699-1652  
(919) 715-2219

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