

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-401	Appalachian State University - Rest/ Boone Creek Restoration	Watauga	Northern Mountains/Western Piedmont

**Requested Amount:** \$500,000

**Score (max 165):** 98

**Total Project Cost:** \$1,252,789

**% Match:** 60%

### **SUMMARY AND WATER QUALITY**

River Basin: New

Stream Name: Boone Creek

Drainage Area (acres): 770

Sediment Reduction (T/yr): 26

Total \$/Ton Sed Reduced: \$48,184

Restoration Level: Priority 2

CWMTF \$/Ton Sed Reduced: \$19,231

Linear Feet: 850

Total \$/Linear Foot: \$1,474

Watershed Stability: mixed

Storm BMP: small wetland

Waterbody Sensitivity: C, Tr, Excellent bioclass, DWS-moderate, NHSA, rare aquatic species

**PROJECT SITE:** Boone Creek on the ASU campus, parallel to Rivers St. from the weir east of Stadium Dr. through 850 LF downstream.

**NOTE:** CWMTF has funded planning and nearby restoration projects on Boone Cr. (2005A-805 and 2007-405). Also, application 2008-408 from NCNR would restore 201 LF of Boone Cr. and install a BMP approx. 1,500' upstream of this project site.

**STREAM CONDITION:** Laterally unstable banks, destructive flooding, scouring, degraded aquatic habitat.

**OBJECTIVES:** Reduce scour and erosion, increase pollutant removal via floodplain connection, improve aquatic habitat, reduce destructive flooding, support education at ASU and public.

### **SCOPE OF WORK**

~Design and permitting (both complete) for restoring the project site, to include eliminating a pedestrian/small-vehicle bridge and adding a small riparian wetland.

~Construct per design; construction contingency, construction administration/observation.

~CEs not required (State property).

### **CONTRACT CONDITIONS**

~30' vegetated buffers, both sides.

~Match from: \$300,000 grant from NCDOT; and \$452,789 cash from ASU.

### **STAFF RECOMMENDATION**

9/14/08:

~Fund the project up to \$500,000 (amount requested).

~Note: Based on a suggestion from CWMTF staff, ASU has included in the proposed project conversion of an existing decorative pond to a stormwater wetland pond that will capture and treat the 1" first-flush runoff from its tributary area. ASU agreed to fully fund this wetland and consider other off-line stormwater BMPs for future projects.

~Note: Construction administration/observation and project administration are in the scope of work, but not in the project budget.

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

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<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-402	Durham SWC District - Rest/ Stirrup Iron Creek Tributary Restoration	Durham	Eastern Piedmont

**Requested Amount:** \$613,800

**Score (max 165):** 82

**Total Project Cost:** \$978,540

**% Match:** 37%

### **SUMMARY AND WATER QUALITY**

River Basin: Neuse

Stream Name: Stirrup Iron Creek

Drainage Area (acres): 960

Impervious Acres: 67

Sediment Reduction (T/yr): 285

% Impervious: 7

Total \$/Ton Sed Reduced: \$3,433

Restoration Level: Priority 1

CWMTF \$/Ton Sed Reduced: \$2,154

Linear Feet: 3,100

Total \$/Linear Foot: \$316

Watershed Stability: developing

Waterbody Sensitivity: HW, C, NSW

**PROJECT SITE:** 3,100 LF of UT to Stirrup Iron Cr. about 1/2 mile north of Chin Page Rd. and 1 mile west of Page Rd.

**STREAM CONDITION:** Laterally and vertically unstable eroded banks, incised bed, headcuts (some to bedrock), tree falls from undercutting.

**OBJECTIVES:** Reduce sediment loading to Crabtree Lake, improve aquatic and riparian terrestrial habitat, improve floodplain connection.

### **SCOPE OF WORK**

~Design and permitting (begin with grant) for restoration of the project site.

~Acquire/prep/record CEs, including legal costs.

~Construct per design; construction admin/observation.

~Monitor WQ pre- and post-construction.

~Monitor CEs annually (budgeted for 25 years).

~Administer the project; project admin in the application budget: \$4,800 CWMTF; \$0 match.

~Construction contingency: none in the budget.

~Matching contributions per the application: \$324,740 value of CEs to be donated by Crosland, Inc.; and \$40,000 value of in-kind monitoring by Durham SWCD.

### **CONTRACT CONDITIONS**

~50' wooded buffers, both sides.

~Durham SWCD to hold CEs.

### **STAFF RECOMMENDATION**

9/14/08:

~Fund the project up to \$136,000 for design, permitting, preparation and recordation of CEs, and project administration.

~Do not fund remaining request (\$477,800) to have been mainly for construction.

~Durham SWCD will provide matching funds of at least \$64,000 to contribute to total project costs (32% match). The amount of matching funds from each source will be provided to CWMTF staff by Durham SWCD after grant award and before the grant contract is executed.

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

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<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-403	Durham SWC District - Rest/Upper Sandy Creek Tributary Restoration	Durham	Eastern Piedmont

**Requested Amount:** \$1,059,300

**Score (max 165):** 100

**Total Project Cost:** \$1,836,700

**% Match:** 42%

### **SUMMARY AND WATER QUALITY**

River Basin: Cape Fear

Stream Name: Tributaries to Upper Sandy Creek

Drainage Area (acres): 1,100

Sediment Reduction (T/yr): 390

% Impervious: 22

Total \$/Ton Sed Reduced: \$4,709

Restoration Level: Priorities 1 and 2

CWMTF \$/Ton Sed Reduced: \$2,716

Linear Feet: 6,190

Total \$/Linear Foot: \$297

Watershed Stability: mostly developed

Storm BMPs: small wetland, small bioretention

Waterbody Sensitivity: C, NSW, DWS-higher, NHSA

**PROJECT SITE:** 2,628 LF of Upper Sandy Cr. between Anderson St. and SR751 and 1,741 LF of three UTs to Upper Sandy Cr. north of Upper Sandy Cr.

**STREAM CONDITION:** Previously straightened, high flows and sediment loads, downcutting with high and steep banks, stream widening, poor connection to floodplain.

**OBJECTIVES:** Reduce sediment and pollutant transport to Jordan Lake, improve aquatic and riparian terrestrial habitat, improve floodplain connection.

### **SCOPE OF WORK**

~Design and permitting (begin with grant) for restoration of the project site, for a stormwater BMP along one of the UTs (a bioretention cell or a small wetland), and for a wetland.

~Construct per design; construction admin/observation; construction contingency.

~Monitor water quality for five years.

~Assess riparian plants and invasive species.

~Conduct research on effects of elevated temperature and flood frequency associated with land use on rates of invasive and native species' interactions in freshwater floodplain wetlands.

~Administer the project.

~Matching contributions per the application: \$97,500 as value of in-kind watershed planning and analysis by Duke University; \$56,575 as value of in-kind wetland/stream monitoring by Duke Wetland Center; \$25,325 as value of in-kind riparian plant and invasive species assessments via USDA; and \$598,000 as value of in-kind research for "Elevated Temperature and Land Use Flood Frequency Alteration Effects on Rates of Invasive and Native Species Interactions in Freshwater Floodplain Wetlands" via a grant from USEPA's Science to Achieve Results (STAR) research program.

### **STAFF RECOMMENDATION WITH CONTRACT CONDITIONS**

9/14/08:

~Fund the project up to \$253,000 for design, permitting, and preparation and recordation of CEs.

~Do not fund remaining request (\$806,300) to have been mainly for construction.

~Grant award is contingent on Duke University agreeing to record permanent conservation easements (or a comparable legal instrument agreeable to CWMTF).

~The conservation easements will permanently protect the following land associated with the features to be designed: a) vegetated riparian buffers with widths of at least 50' on both sides of the restored streams, b) the area of the stormwater BMP, and the area of the wetland.

~The conservation easements will name Durham SWCD or another party acceptable to CWMTF as the easements' holder.

~Durham SWCD will provide matching funds of at least \$183,000 to contribute to total project costs (42% match). The amount of matching funds from each source will be provided to CWMTF staff by Durham SWCD after grant award and before the grant contract is executed.

~Note: Project administration and acquisition/preparation/recordation of CEs are in the scope of work, but not in the project budget.

***COMMITTEE RECOMMENDATION***

9/14/08:

***BOARD DECISION***

9/15/08:

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<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-404	Greensboro, City of - Rest/ South Buffalo Creek Habitat Restoration	Guilford	Eastern Piedmont

**Requested Amount:** \$325,000

**Score (max 165):** 109

**Total Project Cost:** \$678,423

**% Match:** 52%

### **SUMMARY AND WATER QUALITY**

River Basin: Cape Fear

Stream Name: South Buffalo Creek

Drainage Area (acres): 9,830

Impervious Acres: 2,949

Sediment Reduction (T/yr): 6,863

% Impervious: 30

Total \$/Ton Sed Reduced: \$99

Restoration Level: Priorities 1 and 2

CWMTF \$/Ton Sed Reduced: \$47

Linear Feet: 4,100

Total \$/Linear Foot: \$165

Watershed Stability: developed

Waterbody Sensitivity: C, NSW, urban 303(d)

**PROJECT SITE:** 2,300 LF of S. Buffalo Cr. between Farragut St. and Randleman Rd. and approx 1,800 LF of tributaries in this reach of S. Buffalo Cr. (Note: 800 LF of tributaries added since the original application.)

**STREAM CONDITION:** Previously relocated and straightened, incised bed, bank erosion, degraded ecosystem.

**OBJECTIVES:** Reduce sediment and pollutant transport, improve aquatic and riparian terrestrial habitat, improve floodplain connection.

### **SCOPE OF WORK**

~Design and permitting (begin with grant) for restoration of the project site.

~Acquire/prepare/record CEs (already recorded south of S. Buffalo Cr.).

~Administer the project; project administration in the application budget: none.

### **CONTRACT CONDITIONS**

~Minimum 50' wooded buffers, both sides. (Note: Buffers on north side of S. Buffalo Cr. added since the original application.)

~City of Greensboro to hold CEs.

~Matching contribution: \$353,423 as value of CEs to be donated by City of Greensboro.

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$325,000 (amount requested).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

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<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-405	Macon SWC District - Rest/ Little Tennessee Stream and Riparian Restoration Program	Macon	Mountains

**Requested Amount:** \$672,082

**Score (max 165):** 94

**Total Project Cost:** \$1,158,029

**% Match:** 42%

### **SUMMARY AND WATER QUALITY**

River Basin: Little Tennessee

Stream Name: various

Restoration Level: Priorities 2, 3 and 4

Watershed Stability: mixed

Waterbody Sensitivity: C, B, WS III, 303(d), rare aquatic species (S1G1, S2G2, nationally significant aquatic habitat, State significant aquatic habitat, Excellent bioclass, DWS-moderate

**NOTE:** This stream and riparian restoration program would continue similar work begun in 1995 under other grant programs and under CWMTF funding since 1998 (1997A-006B to Southern Appalachian Highlands Conservancy and 2004A-409 to Macon SWCD). Macon SWCD proposes to continue the program at project sites to be selected and, through Little Tennessee Watershed Association, restore three already-identified stream reaches (Bradley Cr., Tellico Cr., and Watauga Cr.)

**PROJECT SITES:** To be selected within the Upper Little Tennessee River subbasin (370 sq. mi.). Ten targeted sites are identified.

**OBJECTIVES:** Restore 3.4 miles of degraded land, including bank stabilization, stream restoration, fencing, and/or riparian buffers.

### **SCOPE OF WORK**

~Design and permitting for habitat restoration, riparian buffer planting, streambank stabilization, stream restoration, and ag BMP projects to be selected.

~Prep/record CEs.

~Construct per designs; construction admin/observation; construction contingency.

~Administer the project; project admin in the application budget: \$75,800 CWMTF; \$247,835 match.

~Matching contributions in the application budget: USFWS, NFWF, Macon SWCD/State of NC, County of Macon, and/or Coweeta Hydrologic Laboratory.

### **CONTRACT CONDITIONS**

~Minimum 50' wooded buffers on the side(s) of the stream where structures are installed.

~Macon SWCD would hold CEs.

### **STAFF RECOMMENDATION**

9/14/08:

~Fund the project up to up to \$420,000, including up to \$20,000 for project administration, for Macon SWCD's continuation of restoration of work along the mainstem of Little Tennessee R., Cullasaja R., and Cartoogechaye Cr. and the riparian buffer program.

~Macon SWCD to provide matching funds of at least \$300,000 to contribute to total project costs (42% match). Amount of matching funds from each source to be provided to CWMTF staff by Macon SWCD after grant award.

~Do not fund remaining request (\$252,082) to have been mainly for restoring the three sites targeted by LTWA for restoration.

~Note: Preparation and recordation of CEs are in the scope of work, but not in the project budget.

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

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<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-406	Mecklenburg County - Rest/ McDowell & Torrence Creek Restoration Phase I	Mecklenburg	Northern Mountains/Western Piedmont

**Requested Amount:** \$750,000

**Score (max 165):** 127

**Total Project Cost:** \$1,500,000

**% Match:** 50%

### **SUMMARY AND WATER QUALITY**

River Basin: Catawba

Drainage Area (acres): 1,235

Sediment Reduction (T/yr): 435

Total \$/Ton Sed Reduced: \$3,448

CWMTF \$/Ton Sed Reduced: \$1,724

Total \$/Linear Foot: \$193

Waterbody Sensitivity: WS IV, urban 303(d), rare aquatic species (S3G4), DWS-higher, NHSA, EEP watershed plan

Stream Names: McDowell Creek and Torrence Creek

Impervious Acres: 289

% Impervious: 23

Restoration Level: Priority 1

Linear Feet: 7,776

Watershed Stability: developing

**PROJECT SITE:** 7,776 LF of Torrence Creek UT #2 between I-77 and Torrence Creek.

**STREAM CONDITION:** Previously straightened for ag, sparse habitat, invasive species, buffers partially intact, degraded channel, steep and eroding/scouring banks, tree falls, channel disconnected from floodplain, several sanitary sewer crossings.

**OBJECTIVES:** Re-introduce a natural channel and educate the public about surface water resources.

### **SCOPE OF WORK**

~Design and permitting (in progress) for restoration of the project site.

~Construct per design; construction administration/observation; construction contingency.

~Administer the project; project admin in the application budget: \$14,000 CWMTF, \$0 match.

~Acquire/prep/record CEs: none in the budget.

### **CONTRACT CONDITIONS**

~Minimum 50' vegetated buffer, both sides, except for a 2,795-LF that would have a 14' vegetated buffer on one side.

~Match from: \$750,000 cash from MCSWS.

~MCSWS or Huntersville will hold CEs.

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$740,000 (amount requested except for \$10,000 for project administration).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

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<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-407	National Committee for the New River - Rest/Elk Creek Restoration	Ashe	Northern Mountains/Western Piedmont

**Requested Amount:** \$188,980

**Score (max 165):** 86

**Total Project Cost:** \$198,980

**% Match:** 5%

### **SUMMARY AND WATER QUALITY**

River Basin: New

Stream Name: Elk Creek

Drainage Area (acres): 1,295

Impervious Acres: <130

Sediment Reduction (T/yr): 38

% Impervious: <10

Total \$/Ton Sed Reduced: \$5,236

Restoration Level: Priority 1

CWMTF \$/Ton Sed Reduced: \$4,973

Linear Feet: 1,072

Total \$/Linear Foot: \$186

Watershed Stability: developing

Waterbody Sensitivity: HW, C, Tr, rare aquatic species (S2G4), DWS-moderate

**PROJECT SITES:** 575 LF of UT to Elk Creek on property owned by Enzmann and Sternal and 497 LF of UT to Elk Creek owned by Elk Creek Mountain Development.

**STREAM CONDITION:** 575 LF in concrete culvert; 497 LF previously straightened, laterally unstable, lacks vegetated buffer.

### **SCOPE OF WORK**

~Design and permitting (begin with grant) restoration of the project site, including daylighting 575 LF.

~Acquire/prep/record CEs, including legal costs.

~Construct per the design; construction admin/observation.

~Administer the project; project administration in the application budget: \$2,300 CWMTF; \$0 match.

~Construction contingency: none in the budget.

### **CONTRACT CONDITIONS**

~Minimum 50' wooded buffers, both sides.

~NCNR will hold CEs.

~Match from: value of donated CEs (\$5,000, Enzmann/Sternal).

### **STAFF RECOMMENDATION**

9/14/08: Do not fund the project because of the short length of project, the low matching contribution, and the isolated project location. Encourage the applicant to work with property owners to extend the project length, include preservation of adjacent wetlands in the project, and re-apply for funding.

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-408	National Committee for the New River - Rest/Jimmy Smith Park, Boone Cr.	Watauga	Northern Mountains/Western Piedmont

**Requested Amount:** \$54,084

**Score (max 165):** 97

**Total Project Cost:** \$72,124

**% Match:** 25%

### **SUMMARY AND WATER QUALITY**

River Basin: New

Stream Name: Boone Creek

Drainage Area (acres): 723

Sediment Reduction (T/yr): 17

Total \$/Ton Sed Reduced: \$4,243

Restoration Level: Priority 2

CWMTF \$/Ton Sed Reduced: \$3,181

Linear Feet: 201

Total \$/Linear Foot: \$359

Watershed Stability: mixed

Storm BMP: rain garden

Waterbody Sensitivity: C, Tr, Excellent bioclass, DWS-moderate, NHSA, rare aquatic species

**PROJECT SITE:** Boone Cr. from Depot St. through 201 LF downstream (parallel to Rivers St. and adjacent to Boone's Jimmy Smith Park) and adjacent areas of ASU campus to the north.

**NOTE:** CWMTF has funded planning and nearby restoration projects on Boone Cr. (2005A-805 and 2007-405). Also application 2008-401 from ASU would restore 850 LF of Boone Cr. and install a BMP approx. 1,500' downstream of this project site.

**STREAM CONDITION:** Laterally unstable, incised, eroding banks, previously straightened. Project identified as top priority in CWMTF-funded planning study 2005A-805.

### **SCOPE OF WORK**

~Design and permitting (begin with grant) for restoring the project site and installing one small riparian rain garden.

~Construct per design; construction admin/observation.

~Administer the project; project admin in the application budget: \$1,005 CWMTF; \$151 match.

~Construction contingency: none in the application budget.

~CEs not required (State property).

### **CONTRACT CONDITIONS**

~30' vegetated buffers, both sides.

~Match from: \$14,000 cash from ASU; and \$8,040 as value of in-kind labor and equipment from ASU.

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$55,000 (amount requested). [Comment: Although this project length is short, the project will be highly visible for public education (signage included) and has value for academic education (being studied by ASU water resources students).]

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-409	National Committee for the New River - Rest/ NRSP Oliver Tract, South Fork New R.	Alleghany	Northern Mountains/Western Piedmont

**Requested Amount:** \$151,400

**Score (max 165):** 108

**Total Project Cost:** \$165,100

**% Match:** 8%

### **SUMMARY AND WATER QUALITY**

River Basin: New

Stream Name: South Fork New River

Drainage Area (acres): 218,240

Impervious Acres: 4,500

Sediment Reduction (T/yr): 57

% Impervious: 2

Total \$/Ton Sed Reduced: \$2,896

Restoration Level: Priority 2

CWMTF \$/Ton Sed Reduced: \$2,656

Linear Feet: 1,385

Total \$/Linear Foot: \$109

Watershed Stability: slowly developing

Waterbody Sensitivity: B, ORW, Tr, rare aquatic species (S1G3, S1G4, S1G5, S2G1, S3G3G4), Nationally significant aquatic habitat, NHSA

**PROJECT SITE:** 1,385 LF of South Fork New River approx 1½ miles upstream of its confluence with the New River in New River State Park.

**STREAM CONDITION:** Laterally unstable, vertical banks, right bank lacks riparian vegetation.

**OBJECTIVES:** Create habitat diversity under low- and moderate-flow conditions, protect vulnerable streambanks from scour and erosion.

### **SCOPE OF WORK**

~Design (complete) and permitting (begin with grant) for restoration of the project site.

~Construct per the design; construction admin/observation; construction contingency.

~Administer the project; project administration in the application budget: \$8,400 CWMTF; \$0 match.

~CEs not required (State property).

### **CONTRACT CONDITIONS**

~Match from: \$1,500 cash from New River State Park; and \$12,200 as cash from NCNR for project design.

~Minimum 50' enhanced buffer, right side only (facing downstream).

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$152,000 (amount requested).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-410	NC Coastal Federation - Rest/Hyde County - Alligator River Growers Project, Pamlico Sound	Hyde	Northern Coastal Plain

**Requested Amount:** \$79,913

**Score (max 165):** 124

**Total Project Cost:** \$105,001

**% Match:** 24%

### **SUMMARY AND WATER QUALITY**

River Basin: Tar-Pamlico Stream Names: Swan Lake, Swan Creek, and Alligator River  
Waterbody Sensitivity: shellfish, waterbodies include: SA, 303(d), Alligator R=conditionally approved for harvest, PNA

**NOTE:** This application is for a planning project.

**PROJECT SITE:** 10,000 acres of farm and forest land north of Englehard between Lake Mattamuskeet, Pamlico Sound, and the Alligator River, part of the 44,000 acres of Mattamuskeet Drainage District.

**SITE CONDITIONS:** Mattamuskeet Drainage District operates a system of ditches and canals that collect excess agricultural drainage water from 44,000 acres that naturally would flow to Swan Lake and Alligator R., but instead is diverted to Pamlico Sound via Long Shoal R. and Otter Cr. These streams are classified for shellfish harvesting, but now are closed to shellfish harvesting. This diversion of excess agricultural drainage apparently also causes Swan Lake, Swan Cr., and Alligator R. to be more saline than would occur naturally, altering aquatic habitat and ecology.

**OBJECTIVES:** The ultimate objective for the drainage project is to replicate natural drainage patterns within a 10,000-acre watershed so as to greatly reduce surface discharges that are impairing water quality in Pamlico Sound and Alligator R. and restore freshwater drainage to Swan Lake, Swan Cr., and Alligator R. If implemented, the ultimate project would restore lower-elevation farmland to wetlands conditions that would store and absorb drainage from farm land, eliminating pumping to Pamlico Sound. Some stored water would be used for irrigation and the rest would infiltrate to groundwater or flow by gravity to Swan Lake, Swan Cr., and Alligator R. The objective of this planning project is to evaluate potential impacts of the new/restored drainage system on the hydrology on three properties adjacent to the 10,000-acre watershed, of which one property is Alligator River Wildlife Refuge and provide data that will help in establishing parameters for the system's design and operation.

### **SCOPE OF WORK**

- ~Convene a group of stakeholders who will evaluate modeling inputs and outputs and help develop design parameters for the ultimate drainage system.
- ~Develop a preliminary design for the ultimate drainage system to serve as a basis for modeling.
- ~Develop a hydrologic model of the project site and three adjacent properties based on DRAINMOD (NCSU BAE Dept).
- ~Evaluate potential impacts of the ultimate drainage system on the hydrology on three properties using the hydrologic model.
- ~Provide a range of hydraulic loading rates that will benefit both the restored wetlands (now the lower-elevation farmland) and the three adjacent properties.
- ~Provide cost estimates for final analyses and for design, construction, and operation of the ultimate drainage system.
- ~Evaluate water quality and ecological impacts that would result on the three properties from implementation of the ultimate drainage system.
- ~Document stakeholders' reviews of modeling results and analyses.
- ~Administer the project; project admin in the application budget: \$23,720 CWMTF; \$7,388 match.

### **CONTRACT CONDITIONS**

~Matching contributions: \$10,000 cash from Mary Flagler Cary Charitable Trust via NCCF (already spent for partnership identification and project development); \$7,388 as value of in-kind participation of advisors and stakeholders; and \$7,700 as value of in-kind professional services by Dr. Mike Burchell, NCSU BAE Dept.

### **STAFF RECOMMENDATION**

9/10/08: Fund the project up to \$80,000 (amount requested).

***COMMITTEE RECOMMENDATION***

9/14/08:

***BOARD DECISION***

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-412	NC Div. Coastal Management - Rest/ Buckridge Coastal Reserve, Alligator R.	Tyrrell	Northern Coastal Plain

**Requested Amount:** \$304,113

**Score (max 165):** 109

**Total Project Cost:** \$382,818

**% Match:** 21%

### **SUMMARY AND WATER QUALITY**

River Basin: Pasquotank

Stream Name: Alligator River

Waterbody Sensitivity: shellfish, SC, SW, ORW, DCM exceptional wetlands, NHSA

**NOTE:** PROJECT 1997B-006 provided \$3,958,500 to DCM to help fund acquisition, monitoring, and restoration for 26,862 acres that became part of Buckridge Reserve, part of Alligator River/Pocosin Lakes Megasite, connecting Alligator R. and Pocosin Lakes National Wildlife Refuges. Funds from this grant also were used to prepare a best management practices manual for hydrologic restoration of NC peatlands.

**PROJECT SITE:** Locations for two proposed tide gates and a series of nine flashboard risers.

**BACKGROUND:** Buckridge Reserve has been extensively drained by canals and ditches for logging for over a century, interrupting groundwater and surface water flow, degrading water quality, and facilitating saltwater intrusion. A Restoration Advisory Council prioritized recommendations from a 2006 Reserve Restoration Plan: a) Phase I – Monitor canal water quality and install a pilot tide gate (completed); b) Phase II – Install two additional tide gates and flashboard risers (addressed in this application to CWMTF) and monitor hydrologic restoration; and c) various activities pertaining to species management and outreach.

**OBJECTIVES:** Restore fundamental hydrologic function and prevent saltwater intrusion into a priority conservation area with complex hydrogeology and sensitive peat soils.

### **SCOPE OF WORK**

~Design (complete) and permitting (begin with grant) for two additional tide gates and a series of nine flashboard risers, all of which will allow passage of fish.

~Construct per the design, construction admin/observation; construction contingency.

~Administer the project; project admin in the application budget: \$0 CWMTF; \$65,355 match.

### **CONTRACT CONDITIONS**

~Match from: \$65,355 cash from DCM (½ of Site Manager's salary and fringe for 3 years); and \$13,350 cash from APNEP (spent in 2007 for purchase and installation of another tide gate as a pilot project).

~CEs not required for this project (on State or Federal property).

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$303,000 (amount requested except for \$2,000 for design, which is complete).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-413	NC State University - Storm/Town Lake Initiative, Robeson Creek	Chatham	Eastern Piedmont

**Requested Amount:** \$546,562  
**Total Project Cost:** \$1,078,962  
**% Match:** 49%

**Score (max 165):** 99

### **SUMMARY AND WATER QUALITY**

River Basin: Cape Fear	Stream Name: Robeson Creek
Drainage Area (acres): 5,200	Impervious Acres: <520
Linear Feet: 2,400	% Impervious: <10
Total \$ / Linear Foot: \$450	Watershed Stability: developing
Storm BMPs: marsh areas	
Waterbody Sensitivity: WS-IV, NSW, urban 303(d), DWS-higher	

**NOTE:** Project 2004B-808 contributed up to \$78,000 to a feasibility study that recommended the former lake bed be passively converted to a stream and a wetland with a natural ecosystem.

**PROJECT SITE:** Town Lake, a 15-acre impoundment on Robeson Creek.

**STREAM CONDITION:** A former water-supply lake with a damaged spillway, part of a Pittsboro public park. The creek/former lake bed is biologically impaired, is impaired for aquatic weeds, and has had violations for chlorophyll a.

**OBJECTIVES:** Improve water quality, remove the creek from 303(d) list.

### **SCOPE OF WORK**

~Design (50% complete) and permitting (20% complete) for modifying the lake spillway, removing sediment from the mouth of the lake, facilitating passive reforming of the stream channel with deep pools and marsh areas.

~Acquire/prepare/record CE for the restored stream and buffers.

~Construct per the design; construction admin/observation; construction contingency.

~Administer the project.

~“Indirects (15%)” in the application budget (which includes project administration): \$71,291 CWMTF; \$0 match.

### **CONTRACT CONDITIONS**

~Match from: \$470,000 grant from DWQ 319 Program; and \$62,400 as value of CE to be donated by Town of Pittsboro (former lake + 3 acres).

~State to hold CE.

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$476,000 (the amount requested except for the \$71,291 “Indirects” line item).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-414	Pilot View RC&D - Rest/Lake Hills Restoration	Forsyth	Northern Mountains/Western Piedmont

**Requested Amount:** \$1,394,807

**Score (max 165):** 83

**Total Project Cost:** \$1,744,807

**% Match:** 20%

### **SUMMARY AND WATER QUALITY**

River Basin: Yadkin-Pee Dee

Stream Name: Mill Creek

Drainage Area (acres): 4,032

Restoration Level: Priority 1

Linear Feet: 3,157

Total \$/Linear Foot: \$553

Watershed Stability: developing

Storm BMPs: wetlands, lake

Waterbody Sensitivity: C, DWS-higher

**NOTE:** Project 2005B-406 contributed up to \$292,000 toward design, permitting, and establishing CEs. This work is nearing completion.

**PROJECT SITE:** Mill Cr. No. 3 from its confluence with Muddy Cr. to 3,157 LF upstream.

**SITE CONDITIONS:** Bed of a former 8-acre recreation/residential lake with dam damaged by storms.

Former lake bed is vertically and laterally unstable, storm runoff is eroding a new channel in the lake bed, transporting sediment downstream, little riparian vegetation present.

**OBJECTIVES:** Restore stream form and function, reduce sediment erosion, and restore aquatic and riparian terrestrial habitat.

### **SCOPE OF WORK**

~Restore or stabilize the project site, construct a smaller (3.2-acre) lake, construct 8.5 acres of wetlands, and establish 25'-wide wooded buffers and 25'-wide grassed/herbaceous buffers; construction admin/observation; construction contingency.

~Administer the project; project admin in the application budget: \$30,000 CWMTF; \$60,000 match.

### **CONTRACT CONDITIONS**

~Matching contributions: \$50,000 cash from Lake Hills Homeowners Association; and \$300,000 cash from NC DWR.

~Wooded buffer of 25', both sides, then herbaceous/grass buffer of 25', both sides.

~CEs to be held by Resource Institute, Inc.

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$1,395,000 (amount requested).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-415	Pilot View RC&D - Rest/Linville River Watershed Restoration, Phase III	Avery	Mountains

**Requested Amount:** \$238,000

**Score (max 165):** 103

**Total Project Cost:** \$478,500

**% Match:** 50%

### **SUMMARY AND WATER QUALITY**

River Basin: Catawba

Stream Name: Linville River and tributary

Drainage Area (acres): 3,849

Impervious Acres: <192

Sediment Reduction (T/yr): 201

% Impervious: <5

Total \$/Ton Sed Reduced: \$2,381

Restoration Level: Priorities 1, 2 and 3

CWMTF \$/Ton Sed Reduced: \$1,184

Linear Feet: 4,800

Total \$/Linear Foot: \$100

Watershed Stability: developing

Storm BMPs: 5 small wetlands

Waterbody Sensitivity: HW, C, Tr, rare aquatic species (S1G3), DWS-higher, Good bioclass

**PROJECT SITE:** Linville R. from SR 145 to 4,000 LF downstream; and UT to Linville R. from 2,250 LF west of Hospital Dr. downstream to 1,200 LF east of Hospital Dr.

**SITE CONDITIONS:** Linville R. is fairly straight and overly wide. Lower reaches of the UT have bank erosion caused by head cuts moving upstream and the bed is degrading. The bed of upper reaches of the UT are aggrading by sediment and debris from a nearby solid waste facility.

**OBJECTIVES:** Enhance hydrological, geomorphological, and biological functions; reduce near-bank stress; create bed scour and deep-water habitats; improve aeration; stop diversion of flow to 2 lakes; and restore wetland/bog habitats.

### **SCOPE OF WORK**

~Design and permit (begin with grant) for Linville R.: restoration or enhancement of the downstream-most 2,700 LF of the Linville R., converting two small riparian ponds (2.6 acres) to wetlands, and enhancing three small areas of existing riparian wetlands (1.5 acres).

~Design and permit (begin with grant) for the UT: restoration or enhancement of the upstream-most 2,600 LF of the UT.

~Acquire/prepare/record CEs for the project site. [Note: The project site includes reaches that would neither be restored nor enhanced. These reaches (the upstream-most 1,300 LF of Linville R. and the downstream-most 850 LF of the UT) would be protected in their present stable condition by CEs.]

~Steward and monitor easement areas in perpetuity; stewardship and monitoring of CEs in the application budget: \$14,000 CWMTF; \$5,500 match.

~Administer the project; project admin in the application budget: \$0 CWMTF, \$25,000 match.

~Matching contributions per the application budget: \$30,500 cash from Linville Resorts, Inc.; and \$214,000 as value of CEs to be donated by Linville Resorts, Inc.

### **CONTRACT CONDITIONS**

~Minimum 50' wooded buffer, both sides, and wider where needed to include wetlands.

~State will hold CEs.

### **STAFF RECOMMENDATION**

9/14/08:

~Fund the project up to \$224,000 (all except \$14,000 for "Stewardship for holding and monitoring easements" because monitoring of CEs need start only after restoration is complete).

~Pilot View RC&D to provide matching funds of at least \$235,000 to contribute to total project costs (51% match). Amount of committed matching funds from each source to be provided to CWMTF staff by Pilot View RC&D after grant award.

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-416	Pitt SWC District - Rest/Animal Waste Lagoon Closeout, Chicod Creek	Pitt	Northern Coastal Plain

**Requested Amount:** \$387,000

**Score (max 165):** 60

**Total Project Cost:** \$543,645

**% Match:** 29%

### **SUMMARY AND WATER QUALITY**

River Basin: Tar-Pamlico

Stream Name: Chicod Creek

Drainage Area (acres): 6

Waterbody Sensitivity: C, NSW, 303(d), NHSA

**PROJECT SITE:** 6-acre area 1,700' SW of intersection of Galloway Rd. and Black-Jack Grimesland Rd.

**SITES CONDITIONS:** Abandoned 6-acre, 12.7-million-gal. lagoon holding poultry waste. About 600' from Chicod Cr. Not used since 1996. Concern is possible groundwater contamination or breaching and associated effects on water quality.

**OBJECTIVES:** Remove concerns about possible effects on water quality.

### **SCOPE OF WORK**

~Design (estimated completion 11/08) to close the lagoon, land-apply the solids, and create a freshwater pond on the site.

~Implement the design; construction admin/observation.

~Acquire/prep/record land-use restriction, including legal costs.

~Administer the project; project administration in the application budget: none.

~Application budget does not include construction contingency.

~Matching contributions in the application budget: \$75,000 cash from USDA/NRCS EQIP; \$50,000 cash from NC Foundation of Soil & Water; \$5,985 as value of CE to be donated by land owner Lynn Hudson; and \$5,500 value of in-kind services by staff of Pitt SWCD.

### **CONTRACT CONDITIONS**

~State to hold right of enforcement of land-use restriction.

### **STAFF RECOMMENDATION**

9/14/08: Do not fund the project because of insufficient water quality benefit.

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-417	Polk SWC District - Rest/North Pacolet River Restoration - Reach 3	Polk	Mountains

**Requested Amount:** \$1,817,500

**Score (max 165):** 95

**Total Project Cost:** \$2,893,000

**% Match:** 37%

### **SUMMARY AND WATER QUALITY**

River Basin: Broad

Stream Name: North Pacolet River

Drainage Area (acres): 31,980

Sediment Reduction (T/yr): 975

Total \$/Ton Sed Reduced: \$2,967

Restoration Level: Priority 4

CWMTF \$/Ton Sed Reduced: \$1,864

Linear Feet: 19,400

Total \$/Linear Foot: \$149

Watershed Stability: developing

Waterbody Sensitivity: C, Tr, Riparian Corridor Plan

**NOTE:** Project 2007-414 provided up to \$196,000 toward site assessment, design, permitting, and CE acquisition/prep/recording of some of the CEs needed for stabilizing this reach. This project is part of a long-term watershed-management plan to be implemented through 2011. The plan addresses four reaches totaling 18 river miles. This reach would be the first to go to construction.

**PROJECT SITE (Reach 3):** 1.8 miles of North Pacolet R. from Morgan Chapel Rd. (SR1516) downstream to Hunting Country Rd. (SR1501).

**STREAM CONDITION:** Laterally and vertically unstable with collapsing, vertical, non-vegetated banks, incised, and large depositional bars, apparently caused by runoff from agriculture, logging, and impervious surfaces and cutting and mowing of riparian vegetation.

**OBJECTIVES:** Reduce streambank erosion by stabilizing streambanks.

### **SCOPE OF WORK**

~Acquire/prep/record remaining CEs.

~Construct per the design from project 2007-414, to include relocation of fencing and a horse manure-

recycling structure to locations outside the buffer; construction admin/observation; construction contingency.

~Administer the project; project administration in application budget: \$135,000 CWMTF; \$0 match.

### **CONTRACT CONDITIONS**

~50' wooded buffers, both sides, with exceptions and possible encroachments as follow: a) <50' buffer where road ROWs are within 50' of the streambank; b) one existing private bridge crossing; and c) an existing fair-weather equestrian trail within 50' of the streambank along much of the project site (maintained by Foothills Area Equestrian Association).

~Matching contributions: \$1,040,500 as value of CEs to be donated by 11 riparian property owners; and \$35,000 cash for costs of CE preparation by 11 riparian property owners.

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$1,708,000 (amount requested except Project Administration reduced from \$135,000 to \$25,500).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-418	Polk SWC District - Rest/ North Pacolet River Restoration - Reach 4	Polk	Mountains

**Requested Amount:** \$93,000

**Score (max 165):** 95

**Total Project Cost:** \$108,000

**% Match:** 14%

### **SUMMARY AND WATER QUALITY**

River Basin: Broad

Stream Name: North Pacolet River

Drainage Area (acres): 35,910

Sediment Reduction (T/yr): 600

Total \$/Ton Sed Reduced: \$180

Restoration Level: Priority 4

CWMTF \$/Ton Sed Reduced: \$155

Linear Feet: 12,700

Total \$/Linear Foot: \$9

Watershed Stability: developing

Waterbody Sensitivity: C, Riparian Corridor Plan

**PROJECT SITE (Reach 4):** 1.2 miles of North Pacolet R. from Hunting Country Rd. (SR1501) downstream to the NC/SC state line. (Project site is immediately downstream of Reach 3, project 2007-414 and application 2008-417.)

**STREAM CONDITION:** This project is part of a long-term watershed-management plan to be implemented through 2011. The plan addresses four reaches totaling 18 river miles. This reach would be the second to go to design. It is laterally and vertically unstable with collapsing, vertical, non-vegetated banks and is incised, apparently caused by runoff from agriculture, logging, and impervious surfaces and cutting and mowing of riparian vegetation.

**OBJECTIVES:** Reduce streambank erosion by stabilizing streambanks.

### **SCOPE OF WORK**

~Design and permitting (begin with grant) for a combination of stream restoration, enhancement, and stabilization on the project site.

~Prep/record CEs.

~Administer the project; project administration in the application budget: \$3,000 CWMTF; \$5,000 match.

### **CONTRACT CONDITIONS**

~50' wooded buffers, both sides.

~Matching contributions: \$14,000 value of in-kind services by Polk SWCD for surveys and legal support associated with donation of CEs; and \$5,000 value of in-kind services to be provided by Polk SWCD and Altamont Environmental, Inc.

~CEs to be held by the State.

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$93,000 (amount requested).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-419	Resource Inst., Inc - Rest/Big Creek Restoration, Phase II	Surry	Northern Mountains/Western Piedmont

**Requested Amount:** \$204,200

**Score (max 165):** 92

**Total Project Cost:** \$228,626

**% Match:** 11%

### **SUMMARY AND WATER QUALITY**

River Basin: Roanoke

Stream Name: Big Creek

Drainage Area (acres): 3,840

Impervious Acres: <192

Sediment Reduction (T/yr): 507

% Impervious: <5

Total \$/Ton Sed Reduced: \$451

Restoration Level: Priorities 2 and 3

CWMTF \$/Ton Sed Reduced: \$403

Linear Feet: 3,800

Total \$/Linear Foot: \$60

Watershed Stability: stable

Waterbody Sensitivity: C, Tr, rare aquatic species (S3G4), DWS-higher

**NOTE:** Project 2006A-414 is contributing up to \$736,000 toward design, permitting, and construction for Phase I, is immediately upstream of this project. Construction on Phase I should begin in late 2008.

**PROJECT SITE (Phase II):** 3,800 LF of Big Creek from the upstream property line of the Polk property downstream to the downstream property line of the Tilley property.

**STREAM CONDITION:** Laterally and vertically unstable, historically channelized, narrow and sparsely wooded riparian buffers, incised.

**OBJECTIVES:** Reduce bank erosion, improve sediment transport, enhance riparian buffer.

### **SCOPE OF WORK**

~Design and permitting (begin with grant) for restoration of the project site. (Design will be incorporated into a Level IV stream-restoration training course on the site to be instructed by Dave Rosgen.)

~Acquire/prep/record CEs, including legal costs.

~Administer the project; project admin in the application budget: \$14,000 CWMTF; \$0 match.

### **CONTRACT CONDITIONS**

~25' wooded buffers, both sides, then 25' herbaceous vegetation, both sides.

~Matching contributions: \$24,426 value of CEs to be donated by property owners James Polke and Bruce Victor Tilley.

~CEs to be held by the Surry SWCD.

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$205,000 (amount requested).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-420	Resource Inst., Inc - Rest/ Pine Orchard Creek Restoration	Watauga	Northern Mountains/Western Piedmont

**Requested Amount:** \$387,350

**Score (max 165):** 90

**Total Project Cost:** \$459,962

**% Match:** 16%

### **SUMMARY AND WATER QUALITY**

River Basin: New

Stream Name: Pine Orchard Creek

Drainage Area (acres): 9,032

Impervious Acres: <452

Sediment Reduction (T/yr): 147

% Impervious: <5

Total \$/Ton Sed Reduced: \$3,129

Restoration Level: Priority 1

CWMTF \$/Ton Sed Reduced: \$2,635

Linear Feet: 2,942

Total \$/Linear Foot: \$156

Watershed Stability: developing

Waterbody Sensitivity: C, Tr, rare aquatic species (S1G3, S2G4), HQW, DWS-moderate, NHSA

**NOTE:** Project 2007-418 is contributing up to \$146,000 toward design, permitting, and preparing and recording CEs for this site.

**PROJECT SITE:** 1,381 LF of Pine Orchard Cr. immediately upstream of its confluence with Elk Cr.; 731 LF of a UT to Pine Orchard Cr. immediately upstream of its confluence with Pine Orchard Cr.; and 830 LF of Elk Cr. immediately downstream from Pine Orchard Cr.

**STREAM CONDITION:** Excessive channel slope, lateral instability, entrenched channels, head cuts, bank erosion, and elevated water temperature.

**OBJECTIVES:** Reduce streambank erosion, enhance wildlife and aquatic habitat, reduce sediment contribution, and improve sediment and nutrient removal.

### **SCOPE OF WORK**

~Construct per the design prepared under project 2007-418: a) restoration: 586 LF of Pine Orchard Cr. and 731 LF of UT, and b) enhancement: 795 LF of Pine Orchard Cr. and 830 LF of Elk Cr.

~Construction admin/observation; construction contingency; as-built plans.

~Acquire/prepare/record CEs.

~Administer the project; project administration in the application budget: \$16,224 CWMTF; \$0 match.

### **CONTRACT CONDITIONS**

~50' wooded buffers, both sides.

~Matching contributions: \$58,875 as value of CEs to be donated by property owners Hornblower, Canter, Trivette, and Moretz; and \$15,918 paid by Watauga/Ashe SWCD as 75% share of ag BMP costs.

~CEs to be held by the State if stewardship request of \$14,000 is not funded and by Resource Institute, Inc. if the stewardship request is funded.

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$374,000 (amount requested except for \$14,000 for Resource Institute to hold and monitor CEs for the project).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-421	Resource Inst., Inc - Rest/ Upper Kings Creek Watershed Restoration	Cleveland	Mountains

**Requested Amount:** \$441,592

**Score (max 165):** 72

**Total Project Cost:** \$971,592

**% Match:** 55%

### **SUMMARY AND WATER QUALITY**

River Basin: Broad

Stream Names: Upper Kings Creek, South Creek, tribs

Drainage Area (acres): 2,132

Impervious Acres: 320

Sediment Reduction (T/yr): 27

% Impervious: 15

Total \$/Ton Sed Reduced: \$35,985

Restoration Level: Priority 1

CWMTF \$/Ton Sed Reduced: \$16,355

Linear Feet: 10,720

Total \$/Linear Foot: \$53

Watershed Stability: developing

Waterbody Sensitivity: HW, C, Good bioclass

### **PROJECT SITE:**

~South Cr.: 5,360 LF immediately upstream of its confluence with Kings Cr.

~Kings Cr.: 1,730 LF southeast of the I-85 ROW and 2,200 LF northwest of the I-85 ROW.

~UT1: from its confluence with Kings Cr. 4,360 LF upstream (including a 890-LF channel downstream of the dam).

~UT2: from its confluence with South Cr. 1,090 LF upstream.

### **SCOPE OF WORK**

~Design and permitting (begin with grant) for:

a) stream restoration: 4,010 LF of South Cr. and 1,620 LF of UT1.

b) dam removal: on South Cr. 300 LF upstream of its confluence with Kings Cr., and on UT1 2,200 LF upstream of its confluence with Kings Cr.

c) stream enhancement: removing concrete weirs at five locations and enhancing the channel for a length of 200 LF at each weir location (total of 1,000 LF of stream enhancement).

~Acquire/prepare/record CEs for the project site, including CEs for 9,110 LF of stream that does not need to be restored or enhanced (1,350 LF of South Cr., 3,930 LF of Kings Cr., 2,740 LF of UT1, and 1,090 LF of UT2).

~Administer the project; project administration in the application budget: \$0 CWMTF; \$50,000 match.

~Matching contributions per the application budget: \$50,000 cash from property owners Chemtall Foote Corporation and heirs of Sally Weir; and \$480,000 as value of CEs to be donated by the same property owners.

### **CONTRACT CONDITIONS**

~50' wooded buffers, both sides.

~CEs to be held by Resource Institute.

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$442,000 (amount requested).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-422	RiverLink - Rest/Dingle Creek Restoration	Buncombe	Mountains

**Requested Amount:** \$771,515

**Score (max 165):** 74

**Total Project Cost:** \$1,561,515

**% Match:** 51%

### **SUMMARY AND WATER QUALITY**

River Basin: French Broad

Stream Name: Dingle Creek

Drainage Area (acres): 2,011

Impervious Acres: 603

Sediment Reduction (T/yr): 136

% Impervious: 30

Total \$/Ton Sed Reduced: \$11,482

Restoration Level: Priority 2

CWMTF \$/Ton Sed Reduced: \$5,673

Linear Feet: 3,400

Total \$/Linear Foot: \$459

Watershed Stability: rapidly developing

Waterbody Sensitivity: C, Tr

**NOTE:** About 1,000' upstream of this project site, application 2008-701 by City of Asheville proposes to restore (construct) 800 LF of Dingle Cr. west of Hendersonville Rd. and construct a 1+ acre area north of the stream.

**PROJECT SITE:** 540 LF of Turtle Cr. immediately upstream of its confluence with Dingle Cr.; 360 LF of Pebble Cr. immediately upstream of its confluence with Dingle Cr.; and 2,500 LF of Dingle Cr. westward from the US Route 25 ROW.

**STREAM CONDITION:** Possible past straightening or dredging, significant bank erosion and habitat degradation, laterally and vertically unstable, collapsing banks, past failed attempts to stabilize with gabions.

### **SCOPE OF WORK**

~Design and permitting (begin with grant) for restoring the project site.

~Acquire/prep/record CEs.

~Construct per the design; construction admin/observation; construction contingency.

~Administer the project; project admin in the application budget: \$26,515 CWMTF; \$0 match.

### **CONTRACT CONDITIONS**

~CEs to be held by RiverLink.

~Matching contributions: \$780,000 as value of CEs to be donated by Crowfields Condominiums; and \$14,000 as value of volunteer labor for plantings.

~Average 50' wooded buffers, both sides.

### **STAFF RECOMMENDATION**

9/14/08:

~Fund the project up to \$115,000 for design, permitting, preparation and recordation of CEs, and project administration.

~Do not fund remaining request (\$656,515) to have been mainly for construction.

~RiverLink will provide matching funds of at least \$120,000 to contribute to total project costs (51% match).

The amount of matching funds from each source will be provided to CWMTF staff by RiverLink after grant award and before the grant contract is executed.

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-423	Southwestern RC&D - Rest/ Richland and Hominy Creeks Restoration	Haywood	Mountains

**Requested Amount:** \$298,283

**Score (max 165):** 91

**Total Project Cost:** \$738,440

**% Match:** 60%

### **SUMMARY AND WATER QUALITY**

River Basin: French Broad

Stream Name: Richland Creek and Hominy Creek

Drainage Area (acres): 8,152

Impervious Acres: <408

% Impervious: <5

Linear Feet: 2,883

Total \$/Linear Foot: \$256

Watershed Stability: rapidly developing

Waterbody Sensitivity: various streams: HW, C, B, 303(d), Good bioclass, Tr

**PROJECT SITES:** a) Kimel farm: 1,221 LF of Raccoon Cr. about 1,500' south of US Route 276; b) Dickenson farm: 222 LF of Plott Cr. about 200' north of SR 1173; c) Haywood EMC: 1,220 LF of Raccoon Cr. west of US Route 23; and d) Skinner farm: 220 LF of Hominy Cr. north of Newfound Rd.

### **SCOPE OF WORK**

~Design and permitting (begin with grant) for stabilizing and enhancing riparian buffers of the project sites and installing 1,221 LF of livestock fencing at the Kimel cattle farm site.

~Acquire/prep/record CEs, including legal costs.

~Construct per the design; construction admin/observation; construction contingency.

~Reintroduce several darter and minnow species.

~Resource Assessment for Mountainside Development.

~Monitor VWIN, stormwater, benthic macro, sediment, fish, and fecal coliform bacteria and manage data.

~Education and outreach.

~Administer the project; project administration in the application budget: \$14,200 CWMTF; \$0 match. (Per the application, "The \$14,200 for Direct Administrative Costs must be included in this grant award if Southwestern NC RC&D Council is to be able to accept a grant award by the CWMTF Board.")

### **CONTRACT CONDITIONS**

~Wooded riparian buffers, both sides of streams: a) Kimel farm: 15'; b) Dickenson farm: 50'; c) Haywood EMC: 50'; and d) Skinner farm: 30'.

~Matching contributions (total \$440,157): \$250,000 cash from WaDE Program; \$12,000 cash from TVA; \$39,900 as value of CE to be donated by property owner Haywood EMC; \$26,540 as value of CEs to be donated by property owners Kimel, Dickenson, and Skinner; \$43,680 as value of in-kind monitoring by Haywood Waterways Association; \$12,537 as value of in-kind stormwater monitoring; \$9,000 as value of in-kind fish and data management by TVA; \$1,500 as value of monitoring for fecal bacteria; \$20,000 and \$14,000 cash ag cost share contributions by USDA/NRCS; \$3,500 cash contribution by Resource Assessment for Mountainside Development; and \$11,400 cash contribution by Haywood Waterways Association.

~CEs to be held by Haywood SWCD.

### **STAFF RECOMMENDATION**

9/14/08: Do not fund the project at this time. Keep the application eligible for the Board's consideration in November 2008.

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-424	Western NC Alliance - Rest/Watauga River Restoration	Watauga	Mountains

**Requested Amount:** \$1,989,000

**Score (max 165):** 76

**Total Project Cost:** \$2,026,000

**% Match:** 2%

### **SUMMARY AND WATER QUALITY**

River Basin: Watauga

Stream Name: Watauga River

Drainage Area (acres): 2,048

Impervious Acres: <205

Sediment Reduction (T/yr): 100

% Impervious: <10

Total \$/Ton Sed Reduced: \$20,260

Restoration Level: Priorities 2 and 4

CWMTF \$/Ton Sed Reduced: \$19,890

Linear Feet: 1,500

Total \$/Linear Foot: \$1,351

Watershed Stability: mixed

Waterbody Sensitivity: B, Tr, HQW, Wild Trout, Excellent bioclass, rare aquatic species (S3, S3G5)

**NOTE:** Project 2007-424 is providing up to \$84,000 toward site assessment, design, permitting, and acquisition/prep/recording of some of the CEs needed for restoring this reach.

**PROJECT SITE:** 1,500 LF of Watauga R., about 800 LF upstream of the Rime Frost Rd. bridge and about 700 LF downstream of the bridge.

**STREAM CONDITION:** Vertically and laterally unstable with vertical and high banks; high rate of bank erosion, sloughing of high banks into stream, and sediment transport; native trout spawning stream.

**OBJECTIVES:** Reduce contribution of sediment to the stream and improve aquatic and riparian terrestrial habitat.

### **SCOPE OF WORK**

~Acquire remaining CEs.

~Construct per the design to be completed under PROJECT 2007-424; construction admin/observation.

~Administer the project; project admin in the application budget: \$3,000 CWMTF; \$5,000 match.

### **CONTRACT CONDITIONS**

~Construction contingency: none in application budget.

~Project administration: \$0 CWMTF; \$7,000 match.

~50' wooded buffers, both sides.

~Matching contributions: \$30,000 as value of CEs to be donated by property owners Davis, Carpenter, Clark, Foxx, and Warren; and \$7,000 as value of in-kind labor for plantings and project administration by Western North Carolina Alliance.

~CEs to be held by Western North Carolina Alliance.

### **STAFF RECOMMENDATION**

9/14/08: Do not fund the project at this time. Keep the application eligible for the Board's consideration in November 2008.

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-701	Asheville, City of - Storm/ Constructed Wetland and Dingle Creek Restoration	Buncombe	Mountains

**Requested Amount:** \$334,744

**Total Project Cost:** \$441,744

**% Match:** 24%

**Score (max 165):** 94

**SW Common Criteria Score:** 23

**(max 40)**

### **SUMMARY AND WATER QUALITY**

River Basin: French Broad

Drainage Area (acres): 1,492

Impervious Acres: 313

% Impervious: 21

Restoration Level: Priority 4

Linear Feet: 800

Watershed Stability: rapidly developing

Waterbody Sensitivity: C, Tr

Stream Name: Dingle Creek

Total \$/Acre Drainage: \$154

Sediment Reduction (T/yr): 80

Total \$/Ton Sed Reduced: \$5,522

CWMTF \$/Ton Sed Reduced: \$4,184

Total \$/Linear Foot: \$266

Storm BMP: wetland

### **NOTES:**

~Project 2005B-701 provided up to \$133,000 to Asheville toward design and permitting for a 1-acre riparian wetland, enhancing 400 LF of Dingle Cr., stabilizing another 400 LF of Dingle Cr., and conducting a feasibility study for stormwater BMP retrofits in the most developed parts of the watershed.

~About 1,000' downstream of this project site, application 2008-422 from RiverLink would restore (design/construct) 3,400 LF of Dingle Cr. and tributaries.

**PROJECT SITE:** 800 LF of Dingle Cr. W of Hendersonville Rd. and a 1+ acre area north of the stream.

### **SCOPE OF WORK**

~Additional permitting beyond project 2005B-701.

~Construct per the design completed under project 2005B-701; construction admin/observation; construction contingency.

~Maintain and repair the restored and stabilized stream and the wetland.

~Administer the project.

### **CONTRACT CONDITIONS**

~20' wooded buffers, both sides of restored and stabilized stream.

~50,000 square feet of land-use protection on and around the wetland.

~Matching contributions (total \$147,000): \$67,000 cash from City of Asheville; \$30,000 value of CEs to be donated by property owner The Ramble Subdivision; and \$14,000 as value of in-kind repairs and maintenance by Asheville.

~CEs to be held by Asheville.

### **STAFF RECOMMENDATION**

9/14/08:

~Fund the project up to \$335,000 (amount requested).

~Note: Project administration is in the scope of work, but not in the project budget.

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<b>Project</b>	<b>Applicant</b>	<b>County</b>	<b>Region</b>
2008-702	Charlotte, City of - Storm/ Campbell Creek Watershed Restoration	Mecklenburg	Northern Mountains/Western Piedmont

**Requested Amount:** \$218,047  
**Total Project Cost:** \$2,056,546  
**% Match:** 89%

**Score (max 165):** 114  
**SW Common Criteria Score:** 30  
**(max 40)**

### SUMMARY AND WATER QUALITY

River Basin: Catawba	Stream Names: Muddy Creek, Campbell Creek, and tribs
Drainage Area (acres): 64	Total \$/Acre Drainage: \$32,184
Storm BMPs: 4 wetlands	
Waterbody Sensitivity: HW, C, EEP watershed plan, urban 303(d)	

**NOTE:** Project 2006B-702 provided up to \$125,000 toward design, permitting, and acquisition/prep/recording CEs for Sites 4, part of Site 9, and Site 14.

**OBJECTIVES:** Mitigate pollution sources in headwaters streams tributary to McAlpine Cr.

Site	Location	Site Conditions	Scope of Work
<i>BMP sites (to be funded 50% by CWMTF and 50% by matching funds)</i>			
4	0.21-acre wetland in Cedarwood Park.	Non-native exotic plant species.	Construct a weir outlet to regulate the hydrology of the wetland, remove non-native exotic species, and stabilize trails to reduce erosion.
9	Riparian land near Executive Center Parkway.	Straightened, unstable banks, inadequate capacity.	Enhance and stabilize the stream and construct two extended detention wetlands (0.5 acres and 1.2 acres) and treatment swale.
14	Small pond adjacent to Site 6.	Pond with no apparent outlet, will be enhanced as a wetland.	Convert the pond to a 1.1-acre extended detention wetland.
<i>Restoration sites (to be funded 100% by matching funds)</i>			
1	Large breached dam/pond system near source of Muddy Cr.	Dam failed in 1980s, pond became a braided wetland.	Convert 1,225 LF of pond bed to a meandering stream, adding 300 LF to length.
2	2.6-acre wetland near source of Muddy Cr.	Impaired wetland habitat and invasive plant species.	Enhance the wetlands, improve terrestrial habitat, remove invasive species.
3	1,225 LF of Muddy Cr. immediately downstream of Site 1.	Severely incised.	Restore 1,225 LF of stream, adding up to 245 LF to length.
5	Two metal culverts in Muddy Cr. at Reddman Rd.	Culverts undersized, resulting in flooding.	Replace the culverts with a steel-beam bridge to reduce flooding.
6	1,200 LF of Muddy Cr. immediately downstream of Site 5.	Flooding because of inadequate capacity.	Bench the floodplain and adjust the bed profile of 200 LF and restore 600 LF.
7	775 LF of Muddy Cr. at its confluence with Campbell Cr.	Channelized.	Restore 775 LF of stream, adding up to 180 LF to length.
8	3.1-acre wetland in the right floodplain of Campbell Creek between Marlbrook Dr. and Country Walk Dr.	Functioning wetland to be preserved.	Preserve the wetland with CEs and remove non-native and exotic species.
9	2,900 LF of Eastland Branch and adjacent riparian land near Executive Center Parkway.	Straightened, unstable banks, inadequate capacity.	Restore the stream.

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-702	Charlotte, City of - Storm/ Campbell Creek Watershed Restoration	Mecklenburg	Northern Mountains/Western Piedmont

### ***SCOPE OF WORK***

~Construction, construction admin/observation, and construction contingency per the table.

~Administer the project; project administration in the application budget: \$14,563 CWMTF; \$75,847 match.

### ***CONTRACT CONDITIONS***

~Matching contributions: \$1,760,589 cash from City of Charlotte SWS; and \$77,914 as value of in-kind professional labor by staff of City of Charlotte SWS.

~CEs for Sites 4, 9, and 14 to be held by City of Charlotte (CEs acquired/prepared/recorded under 2006B-702). CWMTF does not require CEs for the other sites (work fully funded by match).

### ***STAFF RECOMMENDATION***

9/14/08: Fund the project up to \$219,000 (amount requested).

### ***COMMITTEE RECOMMENDATION***

9/14/08:

### ***BOARD DECISION***

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-703	Emerald Isle, Town of - Storm/Outfall Removal, Bogue Sound	Carteret	Southern Coastal Plain

**Requested Amount:** \$97,000  
**Total Project Cost:** \$133,000  
**% Match:** 27%

**Score (max 165):** 100  
**SW Common Criteria Score:** 30  
**(max 40)**

### **SUMMARY AND WATER QUALITY**

River Basin: White Oak	Water Body Name: Bogue Sound
Drainage Area (acres): 93	Total \$/Acre Drainage: \$1,430
Storm BMPs: 17 infiltration systems	
Waterbody Sensitivity: elimination of stormwater outfall to ocean, SA, ORW, NHSA	

**PROJECT SITES:** 17 stormwater outfalls in Emerald Isle, all in Town rights-of-way.

**SITE CONDITIONS:** Numerous direct discharges of stormwater from developed areas, NCDOT highways, and Town streets to Bogue Sound.

**OBJECTIVES:** Reduce direct stormwater discharges to Bogue Sound.

### **SCOPE OF WORK**

~For eight of the 17 stormwater outfalls, design and permitting for eliminating the outfalls and installing stormwater BMPs. Approaches to include: remove poorly functioning drainage devices, divert runoff to existing BMPs, install erosion-control devices, and install new underground and above-ground infiltration BMPs. (Design and permitting for BMPs for the remaining nine outfalls has been completed outside of this project.)

~Construct BMPs at 17 outfalls per designs in this project and designs conducted outside this project.

~Administer the project.

~Preparation and recordation of CEs are not addressed in the application.

### **CONTRACT CONDITIONS**

~Matching contribution: \$36,000 as value of in-kind labor by the Town of Emerald Isle.

~Construction admin/observation and construction contingency: none in application budget; possibly included in construction line-item budget.

### **STAFF RECOMMENDATION**

9/14/08:

~Fund the project up to \$97,000 (amount requested).

~Waive the requirement for CEs on the land of the BMPs (areas are small and per-BMP cost is low).

~Note: Project administration is in the scope of work, but not in the project budget.

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-704	Kure Beach, Town of - Storm/ Stormwater Management Project, Atlantic Ocean	New Hanover	Southern Coastal Plain

**Requested Amount:** \$803,250  
**Total Project Cost:** \$4,076,750  
**% Match:** 80%

**Score (max 165):** 118  
**SW Common Criteria Score:** 21  
**(max 40)**

### **SUMMARY AND WATER QUALITY**

River Basin: Cape Fear	Water Body Name: Atlantic Ocean
Drainage Area (acres): 0.5	Total \$/Acre Drainage: \$8,881,808
Impervious Acres: 0.5	% Impervious: 100
Storm BMPs: bioretention areas, overflow basins, sediment traps	
Waterbody Sensitivity: Elimination of stormwater outfall to ocean, SB, 303(d)	

**PROJECT SITE:** 0.46-acre property northwest of the Kure Beach pier, formerly site of Rolling Surf Motel.

**OBJECTIVES:** Reduce runoff of pollutants in stormwater pollutants to the Atlantic Ocean.

### **SCOPE OF WORK**

~Design and permitting (in progress) for the Town's Oceanfront Park stormwater improvements project, consisting of a public passive park incorporating stormwater BMPs, including: a system of bioretention areas, overflow basins, and sediment traps, and then discharging through a storm chamber system, an existing catch basin, and storm drain to a new dune filtration system to be constructed east of the project site. The park also will provide additional public parking and beach access.

~Construct per the design.

~Administer the project; project administration in the application budget: \$8,250 CWMTF; \$24,000 match.

~Acquire a 0.46-acre property for the project site (completed).

~Demolish the former motel building and remove impervious surfaces (completed).

### **CONTRACT CONDITIONS**

~Construction admin/observation and construction contingency: none in the application budget.

~Matching contributions (\$3,273,500 total): \$95,000 cash from Town of Kure Beach for demolishing Rolling Surf Motel and removing impervious surfaces (completed); and, for acquisition of the property: \$378,500 cash from Town of Kure Beach, \$500,000 cash from County of New Hanover, \$300,000 cash from NC Division of Water Resources, \$500,000 from NC Division of Coastal Management, \$500,000 cash as a direct Federal appropriation, \$500,000 cash from the Parks and Recreation Trust Fund, and \$500,000 from the NC Natural Heritage Program.

### **STAFF RECOMMENDATION**

9/14/08:

~Fund the project up to \$204,000 (only the stormwater portion of the proposed project).

~Do not fund the acquisition portion of the proposed project (\$600,000).

~Note: A CE for the project site has been drafted through the NC Natural Heritage Trust Fund and is pending with the NC Council of State. CWMTF staff will review this CE and may accept its conditions as protective of CWMTF's investment in the project or may require additional conditions prior to executing a grant contract.

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-705	Leland, Town of - Rest/Lanvale Trace Restoration and Stormwater Management	Brunswick	Southern Coastal Plain

**Requested Amount:** \$641,050

**Score (max 165):** 92

**Total Project Cost:** \$798,050

**SW Common Criteria Score:** 18

**% Match:** 20%

**(max 40)**

### **SUMMARY AND WATER QUALITY**

River Basin: Cape Fear

Stream Name: Jackey's Creek tributary

Drainage Area (acres): 120

Total \$/Acre Drainage: \$3,437

Impervious Acres: 36

Sediment Reduction (T/yr): 30,000

% Impervious: 30

Total \$/Ton Sed Reduced: \$27

Restoration Level: Priority 2

CWMTF \$/Ton Sed Reduced: \$21

Linear Feet: 1,000

Total \$/Linear Foot: \$386

Watershed Stability: developing

Storm BMP: wetland

Waterbody Sensitivity: HW, C, Sw, rare aquatic species (S3G5)

**PROJECT SITE:** A 2-acre area south of an existing pond at Lanvale Trace and 1,000 LF of UT to Jackey's Cr. downstream of the pond.

**SITE CONDITIONS:** Existing residential subdivision drains to a pond that floods during high-volume storm events. Flat slopes and small culverts in the stream downstream of the pond exacerbate flooding. Downstream of the culvert, the stream channel is incised and scour contributes sediment to the stream and undercutting and collapse of streambanks.

**OBJECTIVES:** Reduce local flooding of street and residential properties, reduce pollutant runoff from the residential development, and reduce scour and erosion of streambanks.

### **SCOPE OF WORK**

~Design and permitting (begin with grant) for a 1½-acre stormwater wetland detention area and restoration of 1,000 LF of the UT immediately downstream of the detention area.

~Acquire/prep/record CEs, including legal costs.

~Construct per the designs; construction admin/observation; construction contingency.

~Administer the project (cost to be covered by the Town outside of project budget).

### **CONTRACT CONDITIONS**

~50' woody species buffer, both sides.

~2 acres on and around the BMP and about 2 acres of riparian buffer to be protected by CE.

~Prep/record CEs.

~Matching contribution: \$157,000 cash from Leland.

~CEs to be held by Leland.

### **STAFF RECOMMENDATION**

9/14/08:

~Fund the project up to \$66,000 for design, permitting, and preparation and recordation of CEs.

~Do not fund remaining request (\$575,050) to have been mainly for construction.

~Town of Leland will provide matching funds of at least \$16,000 to contribute to total project costs (20% match). The amount of matching funds from each source will be provided to CWMTF staff by the Town after grant award and before the grant contract is executed.

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-706	Lumberton, City of - Polecat Branch Drainage Improvements	Robeson	Southern Coastal Plain

**Requested Amount:** \$299,700

**Score (max 165):** 71

**Total Project Cost:** \$399,900

**SW Common Criteria Score:** 18

**% Match:** 25%

**(max 40)**

### **SUMMARY AND WATER QUALITY**

River Basin: Lumber

Stream Name: Polecat Branch

Drainage Area (acres): 384

Total \$/Acre Drainage: \$1,041

Impervious Acres: 13

% Impervious: 35

Storm BMP: pond restoration

Waterbody Sensitivity: HW, C, Sw

**PROJECT SITE:** MacLean's Pond (about 5 acres) and adjacent buffer area.

**SITE CONDITIONS:** Until November 2006 when its outlet structure washed out, MacLean's Pond was an impoundment of Polecat Branch that functioned as a stormwater detention device, reducing flood flows downstream of the pond and capturing sediment. The pond since has drained, exposing a pond bed of accumulated sediment.

**OBJECTIVES:** Restore function of the pond for stormwater detention and removal of pollutants from Polecat Branch and Meadow Branch.

### **SCOPE OF WORK**

~Design (begin with grant) and permitting (in process) for replacing the pond's outlet control structure, removing accumulated sediment from the pond bed, and repairing the dam such that the pond would be restored, collecting sediment carried in runoff and stream flow to the pond.

~Acquire/prep/record CEs.

~Construct per the design; construction admin/observation; construction contingency.

~Administer the project; project admin in the application budget: none.

~Acquisition/prep/recording of CEs: not included in the application budget.

~Matching contributions in the application budget: \$25,000 cash from City of Lumberton; and \$75,200 as value of in-kind City of project administration and incidental construction-related work (drainage, grading, and erosion control) measures.

### **CONTRACT CONDITIONS**

~Ownership of the land area of the pond will be transferred from Lockness Homeowners' Association to Lumberton.

~50' woody species buffer around the pond, except for the dam.

~Roughly 8 acres of land on and around the pond to be protected by CEs.

~CEs to be held by the State.

### **STAFF RECOMMENDATION**

9/14/08:

~Do not fund the project as proposed.

~While the restored pond would collect sediment to some extent and reduce the sediment load in Polecat Branch downstream of the pond, the pond should not be considered a stormwater BMP and should not be a priority for CWMTF funding. MacLean's Pond was constructed as an impoundment of Polecat Branch, a natural stream. DWQ staff advise that DWQ and EPA do not allow new stormwater BMPs to be placed within natural streams (called "in line" treatment) and would not now permit the pond as a stormwater BMP if it were proposed for new construction. (Because the pond already exists, DWQ would consider the proposed project to be repair to an existing impoundment and would not have jurisdiction in its permitting.)

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-707	Mecklenburg SWC District - Storm/ Urban Cost-Share Program, McAlpine Cr.	Mecklenburg	Northern Mountains/Western Piedmont

**Requested Amount:** \$100,000

**Total Project Cost:** \$145,000

**% Match:** 31%

**Score (max 165):** 99

**SW Common Criteria Score:** 30

**(max 40)**

### **SUMMARY AND WATER QUALITY**

River Basin: Catawba

Stream Name: McAlpine Creek and tributaries

Drainage Area (acres): 99,459

Impervious Acres: 26,854

% Impervious: 27

Storm BMPs: rain barrels, cisterns, riparian buffers, critical planting areas, rain gardens, grassed waterways, nutrient management, pet waste receptacles, removal of invasive plants and replacement with native plants

Waterbody Sensitivity: C, urban 303(d), EEP SA, watershed plan

**PROJECT SITE:** Portions of watersheds of Briar Cr., Irwin Cr., McAlpine Cr., and Little Sugar Cr. that are in Mecklenburg County.

**OBJECTIVES:** Provide an alternative to the Agricultural Cost Share Program in this urbanized county for encouraging property owners to protect quality and conserve resources. Mecklenburg SWCD pays 80% of cost, and property owner pays 20%. (This program began with CWMTF funding up to \$30,000 under 2003A-706.)

### **SCOPE OF WORK**

~Select sites and stormwater BMPs based on an existing water-quality-based scoring system and execute agreements with property owners. Types of BMPs proposed to be eligible are: compost bins, critical area planting (steep slopes with high erosion or conditions averse to conventional planting practices), grassed waterways (swales), invasive plant removal, nutrient management, pet waste receptacles, rain barrels, cisterns, rain gardens, riparian buffer enhancement, and tree/shrub establishment.

~Prepare designs and obtain permits, if and as needed, for selected BMPs projects.

~Construct or install selected BMPs.

~Administer the project; project administration in the application budget: \$30,000 CWMTF; \$20,000 match.

### **CONTRACT CONDITIONS**

~CEs not required for small BMPs under this program.

~Matching contributions: \$30,000 cash from City of Charlotte; \$15,000 cash from Mecklenburg County.

### **STAFF RECOMMENDATION**

9/14/08:

~Fund the project up to \$70,000 (amount requested except for \$30,000 for project administration).

~Only the following types of stormwater BMPs are to be eligible for CWMTF funding: critical area planting (steep slopes with high erosion or conditions averse to conventional planting practices), grassed waterways (swales), invasive plant removal, nutrient management, pet waste receptacles, rain gardens, riparian buffer enhancement, and tree/shrub establishment.

~The following types of BMPs are not to be eligible for CWMTF funding: compost bins, rain barrels, and cisterns.

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-708	NC Aquarium - Storm/ Nags Head Stormwater, Roanoke Sound	Dare	Northern Coastal Plain

**Requested Amount:** \$2,327,500

**Total Project Cost:** \$4,661,960

**% Match:** 50%

**Score (max 165):** 111

**SW Common Criteria Score:** 35

**(max 40)**

### **SUMMARY AND WATER QUALITY**

River Basin: Pasquotank

Water Body Name: Roanoke Sound

Total \$/Acre Drainage: \$284,516

Drainage Area (acres): 5

Impervious Acres: 4

% Impervious: 93

Storm BMPs: permeable pavement, rain gardens, retention and infiltration basins, cisterns, on-site re-use of harvested water

Waterbody Sensitivity: SA, 303(d), SAV

**PROJECT SITE:** Parcels between Croatan Hwy. and Virginia Dare Tr. And parcels between Atlantic Ocean and Virginia Dare Tr., both west of the site of the future North Carolina Aquarium Pier at Nags Head.

### **SCOPE OF WORK**

~Design and permitting for: a) rainwater collection, storage (cisterns), and treatment systems (filters and ozone units) to capture and treat roof rainwater runoff from the pier house and bath house such that the treated water can be used for potable applications in the pier house and bath house; b) stormwater collection and storage (infiltration pits under parking areas) systems and application of the water to infiltration landscape areas and/or reuse in gray water applications in the pier house and the bath house; and c) collection and treatment of sewage from the pier house and the bath house in a membrane treatment plant and reuse of the final treated water in gray water applications in the pier house and the bath house.

~Construct per the design; construction admin/observation; construction contingency.

~Provide educational displays and interpretive panels that will inform visitors about the function and benefit of the systems.

~Administer the project; project administration in the application budget: none.

### **CONTRACT CONDITIONS**

~CEs not required for this project (on State property).

~Matching contributions: \$96,760 cash from NC Aquarium Admission Fund; \$500,000 cash from NC Rural Economic Development Center; \$1,500,000 funds from WAMI; \$165,950 from NCA Society; and \$71,750 funds from NC Aquarium.

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$2,328,000 (amount requested).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-709	NC Div Soil and Water Conservation - Rest/Agricultural BMPs, Yadkin River Watershed Improvement	Regional	Statewide/Regional

**Requested Amount:** \$544,148

**Score (max 165):** 101

**Total Project Cost:** \$959,014

**% Match:** 43%

### **SUMMARY AND WATER QUALITY**

River Basin: Yadkin-Pee Dee

Stream Name: Yadkin River and tributaries

Storm BMPs: livestock exclusion fencing, water tanks, riparian buffer protection/ enhancement, stream crossings, waste feed structures, sod-based rotations, cropland conversion

Waterbody Sensitivity: HW, Tr, 303(d), HQW, WS I, WS II, WS III, WS IV

**PROJECT SITE:** Watersheds tributary to High Rock Lake (about 4,400 square miles), which include areas covered by the following 13 SWCDS: Alexander, Caldwell, Davidson, Davie, Forsyth, Iredell, Randolph, Rowan, Stanly, Stokes, Surry, Wilkes, and Yadkin.

**OBJECTIVES:** Implement Watershed Implementation Plans for the upper Yadkin R. watershed, the south Yadkin R. watershed, and the lower Yadkin R. watershed, which were developed under a rapid watershed assessment grant funded by NRCS. The program will pay 75% or 85% of BMP implementation costs, depending on the type of BMP, and property owners will pay the rest.

### **SCOPE OF WORK**

~Select sites and stormwater BMPs and execute agreements with property owners. Types of BMPs proposed to be eligible include, but are not limited to: livestock exclusion fencing, water tanks, riparian buffer protection and enhancement, stream crossings, waste feed structures, sod-based rotations, and cropland conversion.

~Prepare designs and/or provide technical assistance for selected BMPs projects.

~Construct or install BMPs.

~Administer the project; project administration in the application budget: \$0 CWMTF; \$20,000 match.

### **CONTRACT CONDITIONS**

~30-year maintenance agreements will be required for BMPs under this program (which is longer than is standard for similar SWCD programs). CEs will not be required.

~Matching contributions: \$81,622 cash and/or as value of in-kind services from individual property owners as 20% share for implementing BMPs; \$183,244 as value of in-kind services by staff of 13 SWCDs and NC DSWC for administering the project, promoting the program, providing technical assistance, and planning and designing BMPs; and \$600,000 cash from EQIP and/or ACSP allocations anticipated to be available during the project. (Note: EQIP funding is Federal funding that fluctuates quarterly and therefore cannot be assured to be available for this project.)

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$545,000 (amount requested).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-710	NC State University - Storm/Peace College Rain Harvest System, Pigeon House Branch	Wake	Eastern Piedmont

**Requested Amount:** \$750,000

**Score (max 165):** 99

**Total Project Cost:** \$1,183,000

**SW Common Criteria Score:** 35

**% Match:** 37%

**(max 40)**

### **SUMMARY AND WATER QUALITY**

River Basin: Neuse

Stream Name: Pigeon House Branch

Drainage Area (acres): 11.5

Total \$ / Acre Drainage: \$102,870

Impervious Acres: 5

% Impervious: 45

Storm BMPs: stormwater retention (cistern) and re-use of harvested water

Waterbody Sensitivity: HW, C, NSW, urban 303(d), DWS-Higher

**PROJECT SITE:** Approx 1-acre area on Peace College campus, north of E. Franklin St.

**OBJECTIVES:** Reduce volume of runoff from the 20-acre campus by about 50% and reduce nitrogen loading to tributaries of the Neuse R.

### **SCOPE OF WORK**

~Design and permitting (begin after grant) for a stormwater harvesting system that will: a) convey stormwater runoff from the interior of campus to cisterns, b) capture the runoff, store it in underground cisterns (volume about 300,000 gal.), and c) modify the campus' landscape irrigation system, including filters, pumps, piping, and sprinklers of other application devices for applying the water to irrigate approx 3.2 acres of landscape.

~Construct per the design; construction admin/observation; construction contingency.

~Evaluate performance of the system in terms of reducing runoff volume and nitrogen loading by monitoring quantity and quality of stormwater runoff from at least 20 storms upstream and downstream of the system using flow-paced automatic samplers coupled with calibrated flow-measurement weirs.

~Use design data and performance data to help calibrate NCSU's Rainwater Harvest Model, a tool developed to help predict and validate performance of stormwater BMPs.

~Administer the project.

~Acquisition/prep/recording of CEs are not addressed in the application.

### **CONTRACT CONDITIONS**

~Matching contribution: \$433,000 cash from Peace College.

### **STAFF RECOMMENDATION**

9/14/08:

~Fund the project up to \$750,000 (amount requested).

~NCSU will arrange for Peace College to record a declaration of covenants that will run for an initial term of 30 years and thereafter automatically be renewed for successive 30-year terms in perpetuity unless the parties agree otherwise in writing. The declaration may contain the right for Peace College to relocate the cisterns, with prior written consent of CWMTF.

~Note: Project administration is in the scope of work, but not in the project budget.

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-711	Pilot View RC&D - Storm/ Town of Sparta BMPs and Master Plan	Alleghany	Northern Mountains/Western Piedmont

**Requested Amount:** \$314,121

**Score (max 165):** 95

**Total Project Cost:** \$401,545

**SW Common Criteria Score:** 21

**% Match:** 22%

**(max 40)**

### **SUMMARY AND WATER QUALITY**

River Basin: New

Stream Name: Bledsoe Creek

Drainage Area (acres): 120

Total \$/Acre Drainage: \$3,343

Impervious Acres: 30

% Impervious: 25 (aggregate)

Storm BMPs: wet detention pond, 3 wetlands, grassed swale, bioretention area

Waterbody Sensitivity: C, Tr, rare aquatic species (S3G3), EEP watershed plan

**NOTE:** Project 2006A-819 provided up to \$27,000 for a stormwater study for Sparta.

**PROJECT SITE:** Six locations in Sparta.

**OBJECTIVES:** Improve the quality and reduce the quantity of stormwater runoff to Bledsoe Cr., a high-quality stream in a watershed under development.

### **SCOPE OF WORK**

~Design and permitting (begin with grant) for six stormwater BMPs: #2 is a wet detention pond; #26 is a grassed swale and bioretention area; "Skate Park BMP" is a bioretention area; and #21, #29, and #30 are stormwater wetlands.

~Acquire/prepare/record CEs or other appropriate restriction, including legal costs.

~Relocate an overhead power line near one of the BMPs.

~Prepare a stormwater master plan for Sparta.

~Administer the project; project admin in the application budget: \$19,121; \$0 match. (Note that the application budget shows \$35,000 as match for project administration, but this match will be used by Town of Sparta staff for preparing the stormwater master plan and coordinating with local property owners.)

### **CONTRACT CONDITIONS**

~ Approx 3 acres of land on and around the six BMPs to be protected by CEs.

~Matching contributions: \$52,424 as value of CEs to be donated by property owners; and \$35,000 as value of in-kind Town of Sparta staff time for preparing the stormwater master plan and coordinating with local property owners.

~CEs to be held by Town of Sparta.

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$310,000 (amount requested except for \$5,000 for relocation of an overhead electric line, which should be part of the construction phase, rather than the design phase).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-712	Resource Inst., Inc - Storm/Griffith Lakes Stormwater Initiative	Mecklenburg	Northern Mountains/Western Piedmont

**Requested Amount:** \$2,778,960

**Score (max 165):** 90

**Total Project Cost:** \$4,974,129

**SW Common Criteria Score:** 21

**% Match:** 44%

**(max 40)**

### **SUMMARY AND WATER QUALITY**

River Basin: Yadkin-Pee Dee

Stream Name: Mallard Creek

Drainage Area (acres): 614

Total \$/Acre Drainage: \$8,101

Impervious Acres: 123

% Impervious: 20

Storm BMPs: bioretention areas, wetlands, detention ponds, dam retrofits

Waterbody Sensitivity: HW, C, EEP watershed plan

**PROJECT SITE:** 404-acre property southeast of intersection of W.T. Harris Blvd. and Old Statesville Rd.

**BACKGROUND:** Proposed Griffith Lakes development is to be mixed-use with single-family, multifamily, and commercial, planned to be implemented in three or more phases through 2014 or later. Because most of this new development is not subject to City of Charlotte's Post-Construction Control Ordinance that went into effect July 1, 2008, the City would require only modest stormwater controls. The developer proposes to include more extensive and effective stormwater controls in the development plans and protect open spaces with conservation easements. After development, 34% of the property will be impervious surfaces. Over three phases of development, the developer proposes to install stormwater BMPs at 35 locations, including pervious pavement, green roofs, bioretention basins, treatment wetlands, grassed swales, and water reuse for irrigation, and placing 50' to 100' conservation easements on buffers around three existing ponds (pond areas totaling 23 acres) and along 1.4 miles of streams. The developer requests CWMTF assistance with costs for features that are beyond those the City is requiring for this development.

**OBJECTIVES:** Provide detention and treatment of stormwater runoff and conservation of open space to protect water quality of on-site ponds and Mallard Cr.

### **SCOPE OF WORK**

~Design and permitting (estimated completion late 2008 for Phase 1) for improving three pond dams and installing 35 stormwater BMPs (listed and described in appendix of the application), none of which is required by the City of Charlotte.

~Acquire/prepare/record CEs.

~Construct per the design; construction admin/observation; construction contingency.

~Operate and maintain the stormwater controls and monitor water quality.

~Administer the project; project admin in the application budget: \$75,000 CWMTF; \$0 match.

~ Land to be protected by CEs (3 development phases): approx 6.6 acres on/around 35 BMPs; approx 23 acres of ponds; and approx 32 acres of buffers along perennial and intermittent streams and three ponds.

### **CONTRACT CONDITIONS**

~Matching contributions: \$528,461 cash from Harris Woods, LLC; \$1,560,000 as value of CEs to be donated by Harris Woods, LLC; and \$61,708 cash from Harris Woods, LLC for one year of water quality monitoring and operation and maintenance.

### **STAFF RECOMMENDATION**

9/14/08:

~Fund the project up to \$625,000 toward construction, construction admin/observation, construction contingency, and project administration for installing BMPs and establishing CEs associated with Phase 1 and Phase 2 of the proposed development, including up to \$25,000 for project administration. (Note: This funding would provide roughly half of the estimated cost of providing the proposed stormwater controls beyond the controls required by the City.)

~Resource Institute to provide matching funds of at least \$1,000,000 to contribute to total project costs (62% match). Amount of committed matching funds from each source to be provided to CWMTF staff by Resource Institute after grant award.

~Do not fund remaining request (\$2,153,960).

***COMMITTEE RECOMMENDATION***

9/14/08:

***BOARD DECISION***

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-713	Resource Inst., Inc - Storm/Warner Creek Watershed Stormwater	Montgomery	Northern Mountains/Western Piedmont

**Requested Amount:** \$177,400

**Total Project Cost:** \$183,323

**% Match:** 3%

**Score (max 165):** 66

**SW Common Criteria Score:** 23

**(max 40)**

### **SUMMARY AND WATER QUALITY**

River Basin: Yadkin-Pee Dee

Drainage Area (acres): 10

Impervious Acres: 6

Storm BMPs: 2 wetlands, riparian buffers

Waterbody Sensitivity: HW, DWS-moderate, C

Stream Name: Warner Creek

Total \$/Acre Drainage: \$19,196

% Impervious: 62

**NOTE:** PROJECT 2006S-007 provided \$49,000 to Environmental Impact RC&D toward designs for an extended detention wetland, upgrading an existing sediment basin, and enhancing UTs to Warner Creek.

**PROJECT SITE:** 226 Albemarle Rd. in Troy; 162 LF of UT to Warner Cr. on Gainey property south of Rush Ave.; White property between Rush Ave. and W. Spring St.; and acres on Page property N of Rush Ave.

### **SCOPE OF WORK**

~Acquire CEs (being claimed as match for this project; CE prep and recording not in the scope of this project, but have been completed).

~Construct per the designs completed under 2006S-007 (enhance 162 LF of UT to Warner Cr. on Gainey property; retrofit an existing sediment basin into an extended detention wetland on White property; construct an extended detention wetland on Page property) and construct a new stormwater catch basin and 65 LF of storm drain that will direct additional stormwater runoff to one of the BMPs; construction admin/observation; construction contingency.

~Prepare as-built plans.

~Administer the project; project administration in the application budget: \$14,854 CWMTF; \$0 match.

### **CONTRACT CONDITIONS**

~Matching contributions: \$5,923 as value of CEs to be donated White and Gainey.

~Approx 0.45 acres of land on and around the two wetlands and the stream restoration to be protected by CEs; 0.07 acres of easements needed for access only.

~CEs to be held by Town of Troy.

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$158,000 (amount requested except for \$20,307 for as-built plans).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-714	Southwestern RC&D - Storm/ Richland Creek Stormwater Management	Haywood	Mountains

**Requested Amount:** \$107,782

**Score (max 165):** 92

**Total Project Cost:** \$172,079

**SW Common Criteria Score:** 18

**% Match:** 37%

**(max 40)**

### **SUMMARY AND WATER QUALITY**

River Basin: French Broad

Stream Name: tributaries to Richland Creek

Drainage Area (acres): 696

Total \$/Acre Drainage: \$178

Storm BMPs: wetlands, rain gardens, bioretention areas, filter strips, storage infrastructure, riparian improvements

Waterbody Sensitivity: HW, B, Tr, urban 303 (d), Good bioclass

**PROJECT SITE:** UT of Richland Cr., Waynesville Middle School, Mountain Creek Plaza, and Waynesville Plaza.

**OBJECTIVES:** Reduce sedimentation impacts from streambank erosion, provide protection from stormwater pollutants through riparian restoration and innovative stormwater controls, gather monitoring data, provide environmental education opportunities, and advance the implementation of the Watershed Action Plan for the Pigeon R. in Haywood County.

### **SCOPE OF WORK**

~Design and permitting (begin with grant) for stormwater controls to be selected at several commercial and public properties to be selected. Stormwater controls could include: constructed wetlands, rain gardens, bioretention areas, filter strips, rain tanks, or riparian improvements.

~Construct a multiple-barrel 84-inch culvert in to replace an existing undersized 36-inch single culvert; construction contingency.

~Monitor in-stream for stormwater sediment loadings.

~Conduct education and outreach activities.

~Administer the project; project admin in the application budget: \$5,132 CWMTF; \$0 match. (Per the application, "The \$5,132 for Direct Administrative Costs must be included in this grant award if Southwestern NC RC&D Council is to be able to accept a grant award by the CWMTF Board.")

### **CONTRACT CONDITIONS**

~Matching contributions (total \$64,297): \$5,880 cash from Town of Waynesville; as value of in-kind services: \$25,840 from Haywood Waterways Association for VWIN; \$12,537 for renting ISCO samplers; \$4,000 from TVA; \$3,340 from EQIP; \$4,700 from design partners for technical assistance; and \$8,000 from Haywood Waterways Association for E&O.

### **STAFF RECOMMENDATION**

9/14/08: Do not fund the project at this time. Keep the application eligible for the Board's consideration in November 2008.

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-715	Tabor City, Town of - Storm/ Stormwater Retention Basins, Grissett Swamp	Columbus	Southern Coastal Plain

**Requested Amount:** \$686,400

**Total Project Cost:** \$873,300

**% Match:** 21%

**Score (max 165):** 80

**SW Common Criteria Score:** 21

**(max 40)**

### **SUMMARY AND WATER QUALITY**

River Basin: Lumber

Drainage Area (acres): 742

Impervious Acres: 52

% Impervious: 7

Waterbody Sensitivity: HW, B, C, Sw, DCM exceptional wetland

Stream Name: Grissett Swamp

Total \$/Acre Drainage: \$1,177

Storm BMPs: 2 detention basins

**NOTE:** Project 2006S-004 provided up to \$50,000 to Tabor City for identifying sources and causes of stormwater pollution and potential stormwater BMPs to be implemented as additional projects.

**PROJECT SITE:** A 276,000-square-foot area (Basin #1) and a 42,700-square-foot area (Basin #2) northwest of intersection of Sanders St. and Emerson Rd.

**OBJECTIVES:** Reduce peak runoff flows to reduce flooding and improve water quality as stormwater enters Grissett Swamp.

### **SCOPE OF WORK**

~Design and permitting (begin with grant) for two stormwater detention basins.

~Acquire/prepare/record CEs.

~Construct per the design; construction administration/observation; construction contingency.

~Administer the project; project administration in the application budget: \$24,800 CWMTF; \$0 match.

### **CONTRACT CONDITIONS**

~Matching contributions: \$186,900 as cost of fee-simple property acquisition by the Town for Basin #1.

~CEs to be held by Town of Tabor City.

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$157,000 for design, permitting, preparation and recordation of CEs, and project administration.

~Do not fund remaining request (\$529,400) to have been mainly for construction.

~Town of Tabor City will provide matching funds of at least \$42,000 to contribute to total project costs (21% match). The amount of matching funds from each source will be provided to CWMTF staff by the Town after grant award and before the grant contract is executed.

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-808	Hiwassee River Watershed Coalition - Plan/Rest/Persimmon Creek Restoration Plan	Cherokee	Mountains

**Requested Amount:** \$90,000

**Score (max 165):** 115

**Total Project Cost:** \$115,500

**% Match:** 22%

### **SUMMARY AND WATER QUALITY**

River Basin: Hiwassee

Stream Name: Persimmon Creek

Waterbody Sensitivity: C, 303(d), some headwaters are Wild Tr, Good bioclass

**PROJECT SITE:** Watershed of Persimmon Cr. (25 square miles).

**OBJECTIVES:** Target reductions in surface water pollution, restore riparian buffers, and improve aquatic habitat in the Persimmon Cr. watershed by: a) preparing a watershed restoration plan; b) strengthening community support for restoration projects, and c) designing stream restoration for 5,000 LF of stream.

### **SCOPE OF WORK**

~Prepare a watershed restoration plan for the Persimmon Cr. watershed that conforms to EPA's nine-element format and identifies sites that are contributing to aquatic life impairment.

~Select sites for restoration design that are most unstable and eroding and whose owners are willing to allow restoration.

~Prepare preliminary design plans for restoring selected sites, not to exceed a total of 5,000 LF of stream in the watershed.

~Negotiate and execute CE or other appropriate agreements with participating landowners.

~Prepare project web pages and newspaper articles.

~Prepare a PowerPoint presentation to use in publicizing the watershed restoration plan and building public support.

~Administer the project; project admin in the application budget: \$9,000 CWMTF; \$14,000 match.

### **CONTRACT CONDITIONS**

~Matching contributions: \$14,000 as value of contribution from HRWC and Cherokee SWCD for office expenses and overhead; \$15,500 as value of in-kind services from Cherokee SWCD, HRWC, NRCS, and Historic Review Team for project management, technical assistance, and surveying.

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$90,000 (amount requested).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-809	Hiwassee River Watershed Coalition - Plan/Rest/Town Creek Restoration Plan	Clay	Mountains

**Requested Amount:** \$50,000

**Score (max 165):** 94

**Total Project Cost:** \$63,250

**% Match:** 21%

### **SUMMARY AND WATER QUALITY**

River Basin: Hiwassee

Stream Name: Town Creek

Waterbody Sensitivity: HW, WS IV, DWS-moderate

**PROJECT SITE:** Watershed of Town Cr. (1.3 square miles).

**OBJECTIVES:** Bring together diverse partners and build community support for water quality improvement projects in the area, prepare a watershed action plan for the Town Creek watershed, design stream restoration for 2,000 LF of stream, and design retrofit stormwater BMPs at the new Clay County courthouse.

### **SCOPE OF WORK**

~Prepare a watershed restoration plan for the Town Cr. watershed that conforms to EPA's nine-element format and identifies sites that are contributing to aquatic life impairment.

~Prepare preliminary design plans for restoring selected sites, not to exceed a total of 2,000 LF of stream in the watershed.

~Prepare preliminary design plans for retrofit stormwater BMPs on the property of the new Clay County courthouse in Hayesville.

~Prepare educational materials.

~Administer the project; project administration in the application budget: \$7,600 CWMTF; \$5,000 match.

### **CONTRACT CONDITIONS**

~Matching contributions: \$5,000 as value of contribution from HRWC and Clay SWCD for office expenses and overhead; \$8,250 as value of in-kind services from Clay SWCD, HRWC, Clay County Schools, NRCS, and volunteers for project management, technical assistance, and surveying.

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$50,000 (amount requested). Sites selected for preliminary restoration design and stormwater BMPs must be justified in writing to CWMTF staff, and preliminary restoration design may proceed only following written acceptance by CWMTF staff.

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-810	National Committee for the New River - Plan/Rest/Boone Greenway Restoration	Ashe	Northern Mountains/Western Piedmont

**Requested Amount:** \$24,600

**Score (max 165):** 115

**Total Project Cost:** \$74,600

**% Match:** 67%

### **SUMMARY AND WATER QUALITY**

River Basin: New

Stream Name: South Fork New River

Waterbody Sensitivity: WS IV, rare aquatic species (S2G3G4, S3G4), State SAH, DWS-moderate

**PROJECT SITE:** 3,730 LF of S. Fork New R. along 1 mile of the 2-mile Boone Greenway trail and adjacent to the State Farm Fields, a 24-acre complex of sports fields used by ASU.

**STREAM CONDITION:** Severely eroding streambanks, lack of accessible floodplain, lack of vegetated riparian buffer.

**OBJECTIVES:** Reduce erosion, establish functional riparian zone, stabilize streambanks, provide shading of the stream, improve aquatic habitat.

### **SCOPE OF WORK**

~Design (begin with grant) for restoring the project site.

~Administer the project; project administration in the application budget: \$8,000 CWMTF; \$0 match.

### **CONTRACT CONDITIONS**

~Matching contributions: \$50,000 already spent by USACOE for draft design and ESA~50' wooded buffers, both sides.

~CEs not required (State property).

### **STAFF RECOMMENDATION**

10/14/08: Fund the project up to \$25,000 (amount requested).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-811	National Committee for the New River - Plan/Rest/Lambert-Leight Tracts, North Fork New River	Ashe	Northern Mountains/Western Piedmont

**Requested Amount:** \$24,200

**Score (max 165):** 109

**Total Project Cost:** \$45,800

**% Match:** 47%

### **SUMMARY AND WATER QUALITY**

River Basin: New

Stream Name: North Fork New River and Big Horse Creek

Waterbody Sensitivity: C, rare aquatic species (S1G3, S2G4, S3G4). North Fork: State SAH, Excellent bioclass

**PROJECT SITE:** 1,000 LF of N. Fork New R. about 1 mile upstream of the confluence of Big Horse Cr. with N. Fork New R. and 1,000 LF of Millpond Br. about 2,600' E of SR 16.

**STREAM CONDITION:** Severely eroding streambanks, lack of accessible floodplain, lack of vegetated riparian buffer.

**OBJECTIVES:** Reduce erosion, establish functional riparian zone, stabilize streambanks, provide shading of the stream, improve aquatic habitat.

### **SCOPE OF WORK**

~Design (begin with grant) for restoring the project site.

~Acquire/prep/record CEs.

~Administer the project; project administration in the application budget: \$4,000 CWMTF; \$800 match.

### **CONTRACT CONDITIONS**

~CEs to be held by NCNR.

~Matching contributions: value of CEs to be donated by property owners Lambert (\$8,000) and Leight (\$12,000); and \$1,600 as value of in-kind labor by NCNR for negotiations with property owners and preliminary design.

~50' wooded buffers, both sides.

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$25,000 (amount requested).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-812	National Committee for the New River - Plan/Rest/Old Fields Creek Restoration	Ashe	Northern Mountains/Western Piedmont

**Requested Amount:** \$23,600

**Score (max 165):** 107

**Total Project Cost:** \$34,400

**% Match:** 31%

### **SUMMARY AND WATER QUALITY**

River Basin: New

Stream Name: Old Fields Creek

Waterbody Sensitivity: C, Tr, ORW, rare aquatic species (S1S2G4, SCG3G4), Excellent bioclass, DWS-moderate. N Fork: State SAH

**PROJECT SITE:** 1,200 LF of Old Fields Cr. immediately upstream of its confluence with S. Fork New R.

**STREAM CONDITION:** Severely eroding streambanks, lack of accessible floodplain, lack of vegetated riparian buffer.

**OBJECTIVES:** Reduce erosion, provide long-term stability, improve connection to a floodplain, improve habitat, and protect streambanks from livestock.

### **SCOPE OF WORK**

~Design (begin with grant) for restoring the project site.

~Acquire/prep/record CEs.

~Livestock exclusion and watering devices.

~Administer the project; project administration in the application budget: \$2,000 CWMTF; \$400 match.

### **CONTRACT CONDITIONS**

~CEs to be held by NCNR.

~Matching contributions: \$14,000 as value of CEs to be donated by numerous property owners; and \$800 as value of in-kind labor by NCNR for negotiations with property owners and preliminary design..

~50' wooded buffers, both sides.

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$24,000 (amount requested).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-813	Piedmont Triad COG - Plan/Rest/ Abbotts Creek Watershed Planning	Davidson	Northern Mountains/Western Piedmont

**Requested Amount:** \$102,300

**Score (max 165):** 111

**Total Project Cost:** \$262,494

**% Match:** 61%

### **SUMMARY AND WATER QUALITY**

River Basin: Yadkin-Pee Dee

Stream Name: Abbotts Creek

Waterbody Sensitivity: C, WS IV, B, 303(d) DWS-higher

**NOTE:** PROJECT 2007-806 provided \$121,000 toward a watershed plan for Rich Fork Cr., which is in the upper Abbotts Cr. watershed, defined as the upper Abbotts Cr. watershed upstream of the Lake Tom-A-Lex dam.

**PROJECT SITE:** Lower Abbotts Cr. watershed, about 78 square miles.

**OBJECTIVES:** Identify pollutant sources, conservation priorities, and potential projects to restore streams in the watershed to “supporting” status.

### **SCOPE OF WORK**

~Recruit and convene a stakeholder group and develop a project website.

~Characterize the watershed by compiling, organizing, and evaluating available data and prepare a summary of existing conditions.

~Identify problem areas and sources of pollution and compile into a detailed report.

~Identify sites for restoration, retrofit, or mitigation projects and prepare a Project Atlas with the following for each site: location map, BMP description, design sketch, estimate of pollutant load reduction, and estimates of costs; prioritize sites based on field reconnaissance and update Atlas.

~Select one to three sites for implementation as pilot projects.

~Compile all information into a Local Watershed Plan and prepare a strategy, schedule, milestones, and measures of success for implementing the Plan.

~Administer the project; project admin in the application budget: \$39,650 CWMTF; \$97,149 match.

### **CONTRACT CONDITIONS**

~Matching contributions: \$26,350 cash from PTCOG; \$64,364 grant from DWQ 319 Program; \$45,500 cash from City of Lexington; value of in-kind labor and expenses for assistance with planning, analysis of field work, and stakeholder participation (\$17,500 from County of Davidson; \$2,160 from Central Land Trust of NC; and \$4,320 from City of Lexington).

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$103,000 (amount requested).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-814	Piedmont Triad COG - Plan/Rest/ Smith Creek Watershed Planning	Rockingham	Eastern Piedmont

**Requested Amount:** \$243,758

**Score (max 165):** 112

**Total Project Cost:** \$353,698

**% Match:** 31%

### **SUMMARY AND WATER QUALITY**

River Basin: Roanoke

Stream Name: Smith Creek

Waterbody Sensitivity: Smith R: WS IV, CA: C, 303(d), rare aquatic species (S1G1G2), SNHA. Dan R : WS IV,CA; C; rare aquatic species (S1G1G2, S1G3, S2G4), SNHA, DWS-higher, riparian corridor plan

**PROJECT SITE:** Watersheds of Smith R. and Dan R. in the greater Eden area, about 114 square miles (three 14-digit HUCs that encompass both the Smith R. subbasin and the Dan R. corridor of the City of Eden).

**OBJECTIVES:** Identify pollutant sources, conservation priorities, and potential projects to restore streams in the watershed to “supporting” status.

### **SCOPE OF WORK**

~Recruit and convene a stakeholder group and develop a project website.

~Characterize the watershed by compiling, organizing, and evaluating available data and prepare a summary of existing conditions.

~Identify problem areas and sources of pollution and compile into a detailed report.

~Identify sites for restoration, retrofit, or mitigation projects and prepare a Project Atlas with the following for each site: location map, BMP description, design sketch, estimate of pollutant load reduction, and estimates of costs; prioritize sites based on field reconnaissance and update Atlas.

~Select one to three sites for implementation as pilot projects.

~Compile all information into a Local Watershed Plan and prepare a strategy, schedule, milestones, and measures of success for implementing the Plan.

~Administer the project; project administration in the application budget: \$77,608 CWMTF; \$149,940 match.

### **CONTRACT CONDITIONS**

~Matching contributions: \$43,000 cash from PTCOG; \$30,000 cash from Dan River Basin Association (DRBA); value of in-kind labor and expenses for assistance with planning, analysis of field work, and stakeholder participation (\$14,800 from DRBA; \$17,500 from City of Eden; and \$8,640 from Piedmont Land Conservancy).

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$244,000 (amount requested).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-815	Charlotte, City of - Plan/Storm/ Beaverdam Creek Watershed Plan	Mecklenburg	Northern Mountains/Western Piedmont

**Requested Amount:** \$161,223

**Score (max 165):** 98

**Total Project Cost:** \$556,339

**% Match:** 71%

### **SUMMARY AND WATER QUALITY**

River Basin: Catawba

Stream Name: Beaverdam Creek

Waterbody Sensitivity: HW, C

**PROJECT SITE:** Watershed of Beaverdam Cr. upstream of Lake Wylie, about 4.7 square miles.

**OBJECTIVES:** Evaluate the extent to which existing federal, State, and local watershed-management measures protect surface-water resources in developing and developed watersheds: a) predict changes in the watershed's surface-water chemistry, morphology, and biology as a result of watershed-wide urbanization; b) evaluate whether existing regulations and standards are adequate to protect water resources; and c) assess existing non-standard stormwater BMPs in the watershed for their effectiveness.

### **SCOPE OF WORK**

~By NCSU: Annually for 5 years, evaluate changes in geomorphology along each of seven project reaches: channel dimension at three established locations (survey cross-sections); channel dimension at other selected locations (bank pins, toe pins, and scour chain measurements); channel elevation and slope (survey longitudinal profiles); channel bed particle-size distribution (pebble counts); streambank stability (bank erosion hazard index (BEHI) and near-bank shear stress); and general channel aggradation/degradation, bank erosion, riparian vegetation condition, and other conditions (visual observation and photographs).

~By NCSU: Annually for 5 years, evaluate changes in biological integrity along each of seven project reaches (benthic macroinvertebrate assessment).

~By NCSU: Semi-annually for 5 years, observe and photograph conditions and evaluate changes and discern changes.

~By UNCC: Annually for 5 years, construct water balances for each of five established subwatersheds; develop sediment concentration/discharge relationships for each subwatershed; quantify transport of nutrients from each subwatershed (ortho-P, TP, NO<sub>3</sub>-N, NH<sub>4</sub>-N, ON, TN, and DOC); and locate, measure, map, and quantify changes in land cover.

~Submit an annual report of progress, findings, and preliminary evaluation of the project's objectives.

~Administer the project; project administration in the application budget: not included in the project budget, but will be covered by City of Charlotte outside of the project budget.

### **CONTRACT CONDITIONS**

~Matching contributions: \$395,116 cash from City of Charlotte. (Provides for 50% of NCSU's and NCCU's costs for the first three years and 100% of those costs for the fourth and fifth years.)

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$162,000 (amount requested).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-816	Emerald Isle, Town of - Plan/Storm/ Outfall, BMP Study, Archers Creek	Carteret	Southern Coastal Plain

**Requested Amount:** \$75,000

**Score (max 165):** 90

**Total Project Cost:** \$100,000

**% Match:** 25%

### **SUMMARY AND WATER QUALITY**

River Basin: White Oak

Stream Name: Archers Creek

Waterbody Sensitivity: SA, ORW, 303(d), DCM exceptional wetland, PNA

**PROJECT SITE:** Watershed of Archer's Cr., about 750 acres.

**OBJECTIVES:** Eliminate 19 direct stormwater discharges to Archer's Cr.

### **SCOPE OF WORK**

~Identify alternatives and develop conceptual plans for eliminating 19 direct stormwater discharges to Archer's Cr.

~Produce a comprehensive plan for removing the direct discharges.

~Administer the project; project administration in the application budget: none.

### **CONTRACT CONDITIONS**

~Matching contributions: \$25,000 cash from Town of Emerald Isle.

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$75,000 (amount requested).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-818	NC Coastal Federation - Plan/Storm/ Low Impact Development Planning, Lockwood Folly River	Brunswick	Southern Coastal Plain

**Requested Amount:** \$75,650

**Score (max 165):** 115

**Total Project Cost:** \$103,850

**% Match:** 27%

### **SUMMARY AND WATER QUALITY**

River Basin: Lumber

Stream Name: Lockwood Folly River

Waterbody Sensitivity: SA, 303(d), State SAH, rare aquatic species (S3G5), DCM exceptional wetland, PNA

**PROJECT SITE:** Watershed of Lockwood Folly R., about 140 square miles.

**OBJECTIVES:** Build on existing momentum and partnerships to promote land-use practices that are compatible with water quality goals in the Lockwood Folly watershed. Extend low-impact development (LID) techniques and ordinances recently passed by local government to NCDOT by drawing on experience from engineers with DOTs in other states.

### **SCOPE OF WORK**

~Plan and conduct a LID Linear Transportation Techniques Workshop for NCDOT that includes LID structural design strategies for NCDOT staff.

~ Plan and conduct a design charrette using a local project, such as SR 211 in Brunswick County, a project for which NCDOT soon will be designing major modifications, as a model.

~In concert with LID expert Larry Coffman and engineers from Maryland and Florida with LID highway experience, produce an informational document for use by NCDOT that explains potential and economic benefits associated with using LID practices in road and highway projects in coastal settings.

~ Plan and conduct training sessions on use of a computer spreadsheet model for incorporating LID techniques into stormwater permit applications for new development.

~With input from workshop participants and the project team, recommend changes to Brunswick County's Land Use Plan that would incorporate LID concepts for coastal-highway design.

~Administer the project; project admin in the application budget: \$55,650 CWMTF; \$0 match.

### **CONTRACT CONDITIONS**

~Matching contributions are values of in-kind labor for planning and conducting the charette and the workshop: \$19,200 from NCDOT and \$9,000 from County of Brunswick.

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$76,000 (amount requested).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-819	Newport, Town of - Plan/Storm/ Stormwater Planning, Newport River	Carteret	Southern Coastal Plain

**Requested Amount:** \$56,000

**Score (max 165):** 101

**Total Project Cost:** \$70,000

**% Match:** 20%

### **SUMMARY AND WATER QUALITY**

River Basin: White Oak

Stream Name: Newport River

Waterbody Sensitivity: C, SA, rare aquatic species (S2G4)

**PROJECT SITE:** Town of Newport corporate limits and extra-territorial jurisdiction, about 25 square miles.

**OBJECTIVES:** Reduce localized flooding and nonpoint source pollutant runoff to Deep Cr. and Newport R.

### **SCOPE OF WORK**

- ~Identify locations of consistent flooding.
- ~Identify probable sources of nonpoint source pollutant runoff.
- ~Identify candidate locations for stormwater BMPs.
- ~Identify types of BMPs for candidate locations and prepare preliminary designs.
- ~Estimate initial and annual costs of implementing each candidate BMP.
- ~Rank the candidate BMPs according to cost-effectiveness and ease of implementation.
- ~Prepare a report documenting the evaluation's objectives, methods, findings, conclusions, and recommendations.
- ~Administer the project; project administration in the application budget: none.

### **CONTRACT CONDITIONS**

- ~Matching contributions: \$14,000 cash from Town of Newport.

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$56,000 (amount requested).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08:

## Agenda Item I-B

<i>Project</i>	<i>Applicant</i>	<i>County</i>	<i>Region</i>
2008-820	Pitt County - Plan/Storm/Swift Creek Watershed Stormwater Initiative	Pitt	Northern Coastal Plain

**Requested Amount:** \$167,300

**Score (max 165):** 104

**Total Project Cost:** \$214,300

**% Match:** 22%

### **SUMMARY AND WATER QUALITY**

River Basin: Neuse

Stream Name: Swift Creek

Waterbody Sensitivity: HW, C, Sw, NSW, 303(d)

**PROJECT SITE:** Watershed of upper Swift Cr. and Fork Swamp, about 45 square miles.

**OBJECTIVES:** Manage stormwater runoff from existing developed areas and manage floodplains through strategic conservation easements and selective enhancement.

### **SCOPE OF WORK**

~Within the overall watershed, define 14 to 12 subwatersheds and compile information, identify problem areas, and identify areas worthy of protection in each subwatershed.

~Assess benthic macroinvertebrate habitat at selected subwatershed sites using USEPA's Rapid Bioassessment Protocol.

~Identify potential riparian protection and stream enhancement sites and survey 14 sites.

~Identify up to 30 candidate sites for BMPs and appropriate types of BMPs for the sites, estimate pollutant reduction for each candidate BMP, estimate initial and ongoing costs of implementing each candidate BMP, and rank the candidate BMPs in terms of desirability for implementation.

~Conduct two workshops to educate local officials and public about this project and stormwater management.

~Produce the watershed management plan for upper Swift Cr. and Fork Swamp.

~Administer the project; project admin in the application budget: \$5,500 CWMTF; \$47,700 match.

### **CONTRACT CONDITIONS**

~Matching contributions: \$14,000 cash from County of Pitt, Mid-East RC&D, Towns of Winterville and Ayden, City of Greenville, and Pitt County Drainage Districts 3 and 7; \$18,000 as value of in-kind services from County of Pitt for project administration, GIS support, and educational workshops; \$15,000 as value of in-kind services from Pitt SWCD for landowner canvassing; and \$14,000 as value of in-kind services from County of Pitt for project administration and GIS support.

### **STAFF RECOMMENDATION**

9/14/08: Fund the project up to \$168,000 (amount requested).

### **COMMITTEE RECOMMENDATION**

9/14/08:

### **BOARD DECISION**

9/15/08: