

AGRICULTURAL WATER RESOURCES ASSISTANCE PROGRAM
§ 139-60
FISCAL YEAR 2012 ANNUAL REPORT
January 2013

The North Carolina Agricultural Water Resources Assistance Program was authorized through Session Law 2011-145, and became effective on July 1, 2011. This program, referred to as AgWRAP, was established to assist farmers and landowners in doing any one or more of the following:

- Identify opportunities to increase water use efficiency, availability and storage;
- Implement best management practices (BMPs) to conserve and protect water resources;
- Increase water use efficiency;
- Increase water storage and availability for agricultural purposes.

AgWRAP is administered by the North Carolina Soil and Water Conservation Commission and implemented through local soil and water conservation districts. The commission is required to meet with stakeholders annually to gather input on AgWRAP's development and administration. This year, the AgWRAP Review Committee was created and numerous agencies, organizations, and partners that participate in this committee are meeting regularly to develop recommendations for commission consideration for this program. AgWRAP was allocated \$1,000,000 in FY2012 and \$500,000 in FY2013 in non-recurring state appropriations, of which up to 15% of funds can be used by the Division of Soil and Water Conservation and districts to provide technical and engineering assistance, and to administer the program.

Demand for this program is significant. In FY2012, districts requested over \$4.3 million in funding for AgWRAP conservation practices, and in FY2013, the request was over \$4.7 million.

Fiscal Year 2012 Annual Goals

I. Determine best management practices for the program.

a. Approve BMP standards and specifications.

The commission approved the following six AgWRAP practices in FY2012:

- (1) Agricultural water supply pond: Constructing agricultural ponds for water supply for irrigation or livestock watering. Benefits may include water supply, erosion control, flood control, and sediment and nutrient reductions from farm fields. The minimum life expectancy is 10 years.
- (2) Agricultural pond sediment removal: Remove sediment from existing agricultural ponds to increase water storage capacity. Benefits may include water supply, erosion control, flood control, and sediment and nutrient reductions from farm fields. The minimum life expectancy is 1 year. Cooperators are ineligible to reapply for assistance for this practice for a period of 10 years; unless the sedimentation is occurring due to no fault of the cooperator.
- (3) Agricultural pond repair/retrofit: Repair or retrofit of existing agricultural pond systems. Benefits may include water supply, erosion control, flood control, and sediment and nutrient reductions from farm fields. The minimum life expectancy is 10 years.

- (4) Conservation Irrigation Conversion: Modifies an existing overhead spray irrigation system to increase the efficiency and uniformity of irrigation water application. The minimum life expectancy is 10 years.
- (5) Micro-irrigation System: An environmentally safe system for the conveyance and distribution of water, chemicals and fertilizer to agricultural fields for crop production. A micro-irrigation system is for frequent application of small quantities of water on or below the soil surface: as drops, tiny streams or miniature spray through emitters or applicators placed along a water delivery line. This practice may be applied as part of a conservation management system to efficiently and uniformly apply irrigation water and maintain soil moisture for plant growth. The minimum life expectancy is 10 years.
- (6) Well: Constructing a drilled, driven or dug well to supply water from an underground source. The minimum life expectancy is 10 years.

b. Develop an average cost list for approved BMPs.

The commission adopted the FY2012 AgWRAP average cost list on January 8, 2012. Please refer to appendix A for the average cost list.

II. Conduct a competitive state allocation for new agricultural water supply ponds

a. Fund a minimum of one pond per geographic area: Coastal Plain, Piedmont, Mountains

In FY2012, ponds were funded in each geographic area of the state:

- Coastal Plain: 8 ponds
- Piedmont: 12 ponds
- Mountains: 1 pond

b. Fund a minimum of 15 ponds with this year's appropriated funding.

In FY2012, the commission conducted a statewide request for applications for building new agricultural water supply ponds. With the funding available, 21 of the 41 applications received for new ponds were approved, and design and construction of these water supplies is underway.

c. Distribute funding for ponds among the following agricultural sectors identified in the Protecting Agriculture Water Resources in North Carolina Strategic Plan (February 2011): aquaculture, field crops, forestry, fruit and vegetable, green industry, livestock and poultry (and forages and drinking water for same).

In FY2012, ponds were funded in the following agricultural sectors:

- Aquaculture: 2 ponds
- Field crops: 5 ponds
- Forestry: 0 (no applicants)
- Fruit and vegetable: 10 ponds
- Green industry: 2 ponds
- Livestock and poultry: 2 ponds

III. Allocate funds to soil and water conservation districts for all other BMPs

a. Award funds to all districts requesting an allocation.

The commission allocated funds to 69 districts requesting a FY2012 AgWRAP application on January 8, 2012.

b. Allocate funds to districts from all geographic areas of the state.

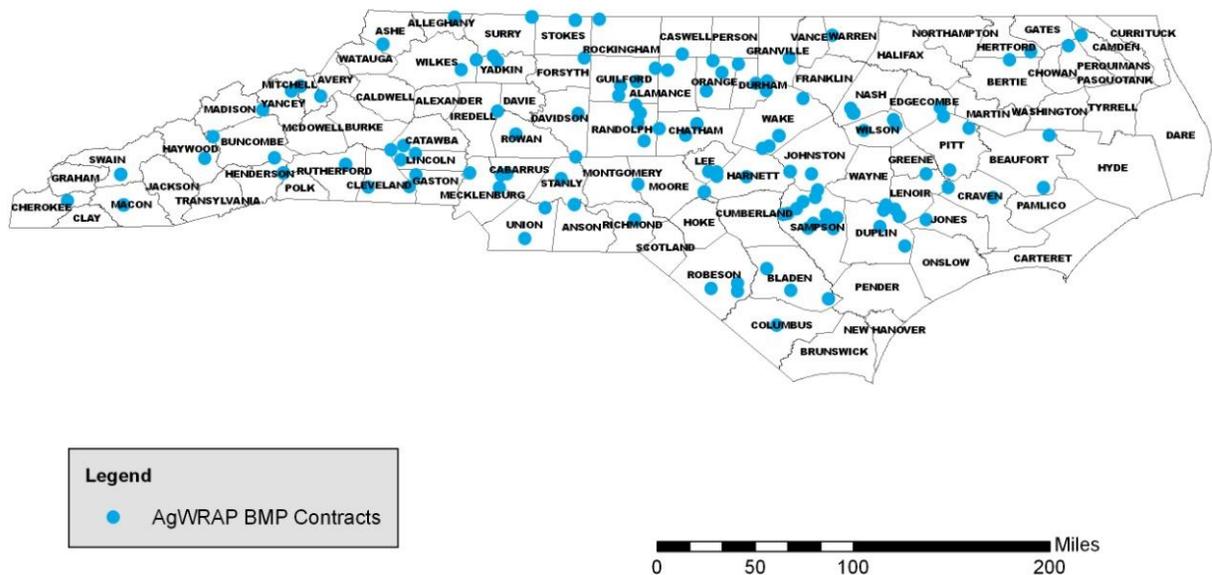
The FY2012 AgWRAP allocation provided funds to districts in all geographic areas of the state. Please refer to appendix B for the AgWRAP allocation.

c. Encumber contracts for conservation practices in all agricultural sectors as described above.

FY2012 AgWRAP district contracts were encumbered for projects on the following operations: field crops, fruit and vegetable, green industry, and livestock and poultry. Due to limitations with the cost share database, there is not a way to query whether any contracts were encumbered for forestry or aquaculture operations using district funds.

Figure 1 depicts the contracts encumbered using FY2012 AgWRAP funding.

Figure 1: FY2012 Agricultural Water Resources Assistance Program Contracts



IV. Develop a Job Approval Authority Process for AgWRAP BMPs

a. Create job approval categories.

In FY2012, the following job approval categories were approved and implemented. These categories include:

- Pond site assessment
- Sediment removal planning and certification
- Water needs assessments

To date, 23 conservation partnership employees representing 13 districts have obtained job approval authority for one or more of the categories above.

b. Construct and maintain a job approval database.

The Division of Soil and Water Conservation has developed and is maintaining a job approval database that includes the categories described above.

Additional Job Approval Authority processes completed

c. Define Job Approval Authority Process

In FY2012, the Job Approval Authority (JAA) Process was defined and coordinated to be the same for all eligible commission cost share programs. This process also identified who would be eligible to receive JAA, including division employees. The transparent process is posted on the division website and thus far has been well received.

d. Accepting Job Approval Authority from private entities

Planning and implementing practices such as micro-irrigation and conservation irrigation conversion became a challenge due to the limited expertise of district and NRCS staff. To address this issue the policy of eligible persons to sign for job approval authority was expanded. In addition to district and NRCS staff, NC licensed irrigation contractors, technical specialists with irrigation designation, a person with design certification by National Irrigation Association or professional engineers were approved to design these practices.

V. Develop a water balance tool to assist districts in conducting site assessments

a. Work with technical experts to create the tool.

The Division of Soil and Water Conservation contracted with NC State University Department of Biological and Agricultural Engineering to develop the Water Needs Assessment Tool for NC. This tool was released in August 2012, and has been well utilized by districts during FY2013. Revisions and updates are continually being made to this tool to increase its usability for all types of agricultural operations in the state.

b. Provide training and support to districts once tool is available.

While the tool was not available in FY2012, training was done after its release. On August 16, 2012, as part of the Conservation Employees Training, a three hour session was held titled *Completing an Agricultural Water Use Assessment*. This training was led by the tool's developer, Dr. Garry Grabow, Associate Professor and Department Extension Leader in

Biological and Agricultural Engineering at NC State University. Additional training is being planned for the upcoming year.

VI. **Conduct programmatic training for districts**

a. Provide an orientation for districts on the new program.

The division held three webinars on January 17 and 18, 2012 to provide an orientation to districts on AgWRAP. The agenda focused on a review of the new website and associated resources, and included the following topics:

- Purpose and goals of the program
- Cooperator requirements for eligibility
- Allocations
- Cost share forms
- District best management practices
- State application process for new pond construction
- Process for requesting technical assistance
- Job approval authority
- Questions

These trainings were well attended, and a majority of the districts in the state participated in one of the webinars. The training was also made available online, and division staff provided follow up support to districts on a one-on-one basis as requested.

b. Work with districts to answer frequently asked questions for the program.

The division regularly communicated with districts with questions about the program through phone calls, emails and in person meetings. Many of the questions and suggestions helped revise best management practice policies and program information through the AgWRAP Review Committee. FY2012 was a dynamic year, and many improvements were made while piloting this first program year.

c. Maintain the AgWRAP website with all relevant information.

The division continues to maintain the AgWRAP website, and related pages with pertinent information on the program. At the end of PY2012, all division web pages were reformatted. The new programmatic page can be found at:

<http://www.ncagr.gov/SWC/costshareprograms/AgWRAP/index.html>

There are also web pages dedicated to the design tools available for the program, including the Water Needs Assessment Tool for NC described above, BMP policies, and information about the AgWRAP Review Committee.

VII. Additional Activities

a. Agricultural Sediment Removal Training

The Wilson Soil and Water Conservation District staff hosted an Agricultural Sediment Removal Training. Participants were able to conduct a basic survey of a pond to determine sediment accumulation, discuss considerations for planning this practice and regulations to consider.

There were 21 participants, of which 9 have already obtained job approval authority for this practice. Portions of the training were recorded and placed on the division's website for future reference.

b. Micro-irrigation Checklist and Outreach

Through a cooperative effort between division engineers, NRCS Staff and NCSU a micro-irrigation checklist for designers to utilize was drafted. This checklist was developed to ensure that designs would meet the NRCS standard.

In addition to the checklist, two trainings were held to discuss the basic requirements of the NRCS standard. On August 14, 2012, as part of the Conservation Employees Training, a 2 ½ hour session was held titled *Irrigation Design Introductory Class*. This training was led by Terri Ruch, NRCS State Engineer and Hamid Farahani, NRCS Water Management Engineer.

On November 7th, 2012, as part of the 48th Annual Irrigation Conference, the following topics were covered as an additional outreach effort to address the design requirements of micro-irrigation systems:

- *Cost Share Programs for Micro-irrigation Systems in North Carolina Micro-irrigation Checklist; Terry Ruch, NC NRCS, Hamid Farahani, NRCS*
- *Design of Micro-irrigation Systems to Meet Cost-Share Requirements; Erwin Newell, Keith Sawyer, and Dave Elliot, BB Hobbs Company, Inc.*
- *Micro-irrigation for Fruits and Vegetables; David and Jason Graham, Gra-Mac Distributing Company*
- *Variable Rate Irrigation with Center Pivots; Ken Stone, Coastal Plains Soil, Water, and Plant Research Center*

PY2012 Agricultural Water Resources Assistance Program (AgWRAP) Average Cost List

Component	Unit Type	AREA 1 Unit Cost	AREA 2 Unit Cost	AREA 3 Unit Cost	Maximum Cost Share 75 Percent	Maximum Cost Share 90 Percent	Cost Type
AGRICULTURAL WATER SUPPLY POND	Job	Cost Share percent of actual amount not to exceed			\$ 15,000.00	\$ 18,000.00	Actual
AGRICULTURAL WATER SUPPLY POND - Engineering	Job	Cost Share percent of actual amount not to exceed			\$ 7,500.00	\$ 9,000.00	Actual
AGRICULTURAL POND RESTORATION/REPAIR	Job	Cost Share percent of actual amount not to exceed			\$ 10,000.00	\$ 12,000.00	Actual
AGRICULTURAL POND RESTORATION/REPAIR - Engineering	Job	Cost Share percent of actual amount not to exceed			\$ 5,000.00	\$ 6,000.00	Actual
AGRICULTURAL POND SEDIMENT REMOVAL	Job	Cost Share percent of actual amount not to exceed			\$ 5,000.00	\$ 6,000.00	Actual
CONCRETE-non-reinforced <= 5 CuYd	CuYd	\$ 330.00	\$ 330.00	\$ 330.00	\$ -	\$ -	Average
CONCRETE-non-reinforced > 5 CuYd	CuYd	\$ 247.50	\$ 247.50	\$ 247.50	\$ -	\$ -	Average
CONCRETE-reinforced	CuYd	\$ 423.50	\$ 423.50	\$ 423.50	\$ -	\$ -	Average
CONSERVATION IRRIGATION - Conversion from High Pressure to Drop Nozzles	LinFt	\$ 5.20	\$ 5.20	\$ 5.20	\$ 10,000.00	\$ 12,000.00	Average
CONSERVATION IRRIGATION - Conversion from High Pressure to Low Nozzles	LinFt	\$ 4.45	\$ 4.45	\$ 4.45	\$ 10,000.00	\$ 12,000.00	Average
CONSERVATION IRRIGATION - Conversion from Overhead to Drop Nozzles	LinFt	\$ 11.00	\$ 11.00	\$ 11.00	\$ 10,000.00	\$ 12,000.00	Actual
CONSERVATION IRRIGATION - Conversion from Overhead to Low Pressure System	LinFt	\$ 9.00	\$ 9.00	\$ 9.00	\$ 10,000.00	\$ 12,000.00	Actual
CONSERVATION IRRIGATION - Conversion from Traveling Gun to Center Pivot Drop Nozzle or Low Pressure System	Acre	\$ 250.00	\$ 250.00	\$ 250.00	\$ 10,000.00	\$ 12,000.00	Actual
CONSERVATION IRRIGATION - End Gun Shutoff	Each	\$ 1,600.00	\$ 1,600.00	\$ 1,600.00	\$ 1,600.00	\$ 1,920.00	Actual
CONSERVATION IRRIGATION - Booster Pump w/ Endgun Shut-off	Each	\$ 2,541.00	\$ 2,541.00	\$ 2,541.00	\$ 1,905.75	\$ 2,286.90	Average
FILTER CLOTH-geotextile fabric	SqYd	\$ 2.25	\$ 2.25	\$ 2.25	\$ -	\$ -	Average
MICROIRRIGATION - Drip Tape - Pressure Compensating	Acre	\$ 243.60	\$ 243.60	\$ 243.60	\$ 10,000.00	\$ 12,000.00	Average
MICROIRRIGATION - Poly Tubing w/ Emitters	Acre	\$ 840.00	\$ 840.00	\$ 840.00	\$ 10,000.00	\$ 12,000.00	Average
MICROIRRIGATION - Poly Tubing w/ Microhoses	Acre	\$ 1,474.20	\$ 1,474.20	\$ 1,474.20	\$ 10,000.00	\$ 12,000.00	Average
MICROIRRIGATION - Micro Pump and Filter	Each	\$ 8,118.75	\$ 8,118.75	\$ 8,118.75	\$ 10,000.00	\$ 12,000.00	Average
PIPE FITTING-Polyvinyl Chloride <=3"	Each	\$ 3.55	\$ 3.55	\$ 3.55	\$ -	\$ -	Average
PIPE-Polyvinyl Chloride 1 1/2" or less	LinFt	\$ 2.07	\$ 2.07	\$ 2.07	\$ -	\$ -	Average
PIPE-Polyvinyl Chloride 2"	LinFt	\$ 2.31	\$ 2.31	\$ 2.31	\$ -	\$ -	Average
PIPE-Polyvinyl Chloride 3"	LinFt	\$ 2.42	\$ 2.42	\$ 2.42	\$ -	\$ -	Average
PIPE-Polyvinyl Chloride, quick coupling 3/4"-1"	Each	\$ 18.92	\$ 18.92	\$ 18.92	\$ -	\$ -	Average
PIPE-water supply/fittings, <=2"	LinFt	\$ 1.71	\$ 1.71	\$ 1.71	\$ -	\$ -	Average
PUMP-housing, fiberglass/site built	Each	\$ 350.00	\$ 350.00	\$ 350.00	\$ -	\$ -	Average
PUMP-solar powered water	Each	Cost Share percent of actual amount not to exceed			\$ 5,000.00	\$ 6,000.00	Actual
PUMP-water supply	Each	Cost Share percent of actual amount not to exceed			\$ 2,000.00	\$ 2,400.00	Actual
STONE-gravel	Ton	\$ 24.20	\$ 24.20	\$ 24.20	\$ -	\$ -	Average
STONE-riprap, cuyd	CuYd	\$ 33.00	\$ 46.75	\$ 41.25	\$ -	\$ -	Average
TANK-temp storage, 1000 gal	Each	\$ 486.00	\$ 486.00	\$ 486.00	\$ -	\$ -	Average
TANK-temp storage, 1500 gal	Each	\$ 599.00	\$ 599.00	\$ 599.00	\$ -	\$ -	Average
TANK-watering (fixed) /Pressurized Waterer	Each	Cost Share percent of actual amount not to exceed			\$ 1,000.00	\$ 1,200.00	Actual
TANK-watering (portable) /Pressurized Waterer	Each	Cost Share percent of actual amount not to exceed			\$ 500.00	\$ 600.00	Actual
VALVE-float, automatic, brass	Each	\$ 24.00	\$ 24.00	\$ 24.00	\$ -	\$ -	Average
WATER METER - Installed on irrigation wells or wells for confined animal operations	Each	Cost Share percent of actual amount not to exceed			\$ 400.00	\$ 533.00	Actual
WELL-construction/head protection	LinFt	\$ 13.00	\$ 13.00	\$ 13.00	\$ -	\$ -	Average
WELL-permit (only where agriculture is not exempt from well permit fees)	Each	Cost Share percent of actual amount not to exceed			\$ 500.00	\$ 600.00	Actual

For actual cost items, the payment is based on 75 or 90 percent of actual cost, not to exceed the established cost share cap. The cost share cap listed is the maximum amount of cost share reimbursement allowed for that component/BMP.

2012 Requests and Allocated Amounts for AgWRAP by District

County	PY2012 BMP funds requested	Allocation awarded 01/08/2012	County	PY2012 BMP funds requested	Allocation awarded 01/08/2012
ALAMANCE	\$ 25,000	\$ 7,904	JOHNSTON	\$ 100,000	\$ 15,413
ALEXANDER	\$ -	\$ -	JONES	\$ 16,200	\$ 2,707
ALLEGHANY	\$ 10,000	\$ 3,187	LEE	\$ 20,000	\$ 4,278
ANSON	\$ 14,800	\$ 3,825	LENOIR	\$ -	\$ -
ASHE	\$ 100,000	\$ 5,446	LINCOLN	\$ 20,000	\$ 5,715
AVERY	\$ 10,808	\$ 2,433	MACON	\$ 20,000	\$ 2,438
BEAUFORT	\$ 15,000	\$ 8,944	MADISON	\$ 7,000	\$ 1,856
BERTIE	\$ 15,000	\$ 13,403	MARTIN	\$ -	\$ -
BLADEN	\$ 20,000	\$ 19,963	MCDOWELL	\$ -	\$ -
BRUNSWICK	\$ -	\$ -	MECKLENBURG	\$ 10,000	\$ 9,966
BUNCOMBE	\$ 90,000	\$ 8,186	MITCHELL	\$ 20,250	\$ 1,792
BURKE	\$ 22,500	\$ 4,019	MONTGOMERY	\$ -	\$ -
CABARRUS	\$ 10,000	\$ 8,130	MOORE	\$ 30,000	\$ 7,922
CALDWELL	\$ 15,000	\$ 3,826	NASH	\$ 60,000	\$ 10,624
CAMDEN	\$ -	\$ -	NEW HANOVER	\$ -	\$ -
CARTERET	\$ -	\$ -	NORTHAMPTON	\$ -	\$ -
CASWELL	\$ 25,000	\$ 4,576	ONSLow	\$ 10,000	\$ 5,614
CATAWBA	\$ 40,500	\$ 8,445	ORANGE	\$ 636,468	\$ 6,208
CHATHAM	\$ 82,448	\$ 6,473	PAMLICO	\$ -	\$ -
CHEROKEE	\$ 10,000	\$ 1,761	PASQUOTANK	\$ -	\$ -
CHOWAN	\$ 47,500	\$ 3,916	PENDER	\$ -	\$ -
CLAY	\$ -	\$ -	PERQUIMANS	\$ 25,000	\$ 2,580
CLEVELAND	\$ 44,800	\$ 7,538	PERSON	\$ 210,000	\$ 5,237
COLUMBUS	\$ 56,000	\$ 5,962	PITT	\$ 14,500	\$ 12,019
CRAVEN	\$ 17,350	\$ 3,857	POLK	\$ 15,000	\$ 2,115
CUMBERLAND	\$ -	\$ -	RANDOLPH	\$ 37,000	\$ 11,038
CURRITUCK	\$ -	\$ -	RICHMOND	\$ 150,000	\$ 4,205
DARE	\$ -	\$ -	ROBESON	\$ 50,000	\$ 15,139
DAVIDSON	\$ 20,000	\$ 7,182	ROCKINGHAM	\$ 258,000	\$ 8,499
DAVIE	\$ -	\$ -	ROWAN	\$ 80,000	\$ 8,568
DUPLIN	\$ 150,000	\$ 22,348	RUTHERFORD	\$ 6,522	\$ 3,960
DURHAM	\$ 92,000	\$ 10,448	SAMPSON	\$ 195,000	\$ 26,518
EDGEcombe	\$ 15,000	\$ 9,618	SCOTLAND	\$ -	\$ -
FORSYTH	\$ -	\$ -	STANLY	\$ 6,000	\$ 5,791
FRANKLIN	\$ 70,000	\$ 8,351	STOKES	\$ 12,000	\$ 4,905
GASTON	\$ 17,000	\$ 7,759	SURRY	\$ 80,330	\$ 8,698
GATES	\$ 29,000	\$ 2,174	SWAIN	\$ 20,000	\$ 1,500
GRAHAM	\$ -	\$ -	TRANSYLVANIA	\$ -	\$ -
GRANVILLE	\$ 15,000	\$ 6,635	TYRRELL	\$ -	\$ -
GREENE	\$ -	\$ -	UNION	\$ 14,000	\$ 12,921
GUILFORD	\$ 44,500	\$ 13,034	VANCE	\$ -	\$ -
HALIFAX	\$ -	\$ -	WAKE	\$ 127,000	\$ 20,722
HARNETT	\$ 45,000	\$ 8,053	WARREN	\$ 7,350	\$ 3,220
HAYWOOD	\$ 24,000	\$ 4,279	WASHINGTON	\$ 10,000	\$ 3,303
HENDERSON	\$ 221,250	\$ 6,119	WATAUGA	\$ -	\$ -
HERTFORD	\$ 85,000	\$ 4,479	WAYNE	\$ -	\$ -
HOKE	\$ -	\$ -	WILKES	\$ 180,000	\$ 8,032
HYDE	\$ -	\$ -	WILSON	\$ 60,000	\$ 6,421
IREDELL	\$ 86,500	\$ 9,144	YADKIN	\$ 237,500	\$ 6,449
JACKSON	\$ -	\$ -	YANCEY	\$ 27,000	\$ 2,210
			Total	\$ 4,358,076	\$ 510,000