

N.C. Wastewater Discharge Elimination Program

**2010 Annual Report to the
North Carolina General Assembly**

October 15, 2010

North Carolina Department of Environment and Natural Resources
Division of Environmental Health
On-site Water Protection Section
Wastewater Discharge Elimination (WaDE) Program

Program Goals and Description

The North Carolina Wastewater Discharge Elimination (WaDE) Program is based in Asheville and serves 23 western North Carolina counties. The primary goals of the program are to survey watersheds to identify straight pipes and failing septic systems, and work with county health departments to resolve violations found during surveys. WaDE activities protect public health and the environment by repairing failing systems and directing straight pipe flow back into septic systems. As a result, the quality of surface waters in potable or recreational watersheds is enhanced. The WaDE program also acts as a conduit for education about the importance of properly functioning septic tank systems to public health and the environment.

The program operates within the On-site Water Protection Section of DENR's Division of Environmental Health and was established pursuant to S.L. 1996-18es2, Section 27.26, and assigned to DENR to identify and eliminate discharges from straight pipes and failing septic systems. Funds currently appropriated by the N.C. General Assembly support two staff to address the straight pipe and failing septic system issues in certain watersheds in western North Carolina.

Additional financial support has been secured through grants from the N.C. Clean Water Management Trust Fund (CWMTF) in 2002 and 2005 and U.S. Environmental Protection Agency 319 Non-point Source Program in 2003. These funds have been used to hire additional staff and to provide limited financial assistance to aid low-income property owners in correcting straight pipes and failing septic systems. This financial assistance to property owners who need septic system repairs is in the form of grants and deferred loans, provided by CWMTF. These monies are distributed by WaDE through regional councils of government or local non-profit community action agencies.

Survey work in watersheds with impaired water quality is prioritized through collaborative efforts with the Division of Water Quality and Public Water Supply Section of the Division of Environmental Health. The WaDE Program also relies on information from local health departments to identify other watersheds that present potential threats to public health. Community development agencies, the public, various media and environmental groups are also involved in determining where to conduct surveys and provide assistance. This collaborative effort assures that priority is given to streams used as public water supplies and for recreational purposes. These are the most important to public health and the economic vitality of the region.

The program's surveyors visit homes along designated streams to locate straight pipes and failing systems. Information about problem systems is forwarded to the local health department in the county where the survey is occurring. These local health departments take this information and use it to issue repair permits to the property owners to eliminate straight pipes or repair failing septic systems.

The WaDE Program provides public education concerning septic tank systems and the impacts of improperly functioning systems on public and environmental health. This information is distributed to the public through public service announcements, community meetings in survey areas, door-to-door visits by trained WaDE surveyors, local newspaper articles, teachers' guides and videos for school children, outreach to the N.C. Real Estate Commission on property disclosure requirements, and slide show presentations geared toward local, state and national audiences.

Program Accomplishments (1997-2010)

During the first four years of the WaDE Program, the WaDE staff assisted four independent surveys in Watauga/Alleghany/Ashe Counties (Appalachian Health District), Jackson County, Madison County and Avery/Mitchell/Yancey Counties (Toe River Health District). These independent county projects were funded by the CWMTF, N.C. Department of Commerce's Division of Community Assistance (DCA), Appalachian Regional Commission and N.C. Rural Communities Assistance Project (NCRCAP).

In 1998 the WaDE team directed its own survey project in Buncombe County on the Ivy River Watershed in collaboration with the Buncombe County Health Center, the Town of Weaverville and Land of Sky Council of Government. With participating agency input from the first four years and the experience gained from the Ivy Watershed Project, the WaDE team proposed an improved model for achieving the goals of the program. This model was approved and funded in 2002 for three years by the CWMTF (\$1.2 million over three years) and the EPA 319 Non-point Source Program (\$500,000 over three years). This new funding enabled the WaDE Program to add temporary surveyors to the original two-person staff, who assisted homeowners with their on-site wastewater systems. A second grant of \$1.5 million was awarded to the WaDE Program from CWMTF for 2006-2009. In January of 2009, CWMTF granted the WaDE Program a one year extension from May 31, 2009, to May 31, 2010. In May 2010, the program was granted an extension to January 31, 2011.

Since January 2002 the use of CWMTF and EPA grant funds, in addition to appropriated funds, has enabled survey projects to be conducted by WaDE staff in 28 separate survey areas across western North Carolina. Appendix A is a map of the WaDE Program’s survey project areas and their importance to western North Carolina. During this time, 13,379 homes were visited and 2,016 violations were identified in these survey areas. Table 1 contains the WaDE Program statistics for January 2002 through October 2010. Currently, more than 60 percent of all violations identified since 2002 have been corrected including the additional 34 out of the 72 violations that were discovered in the past year.

Table 1. January 2002 – September 2010

Repair Results	
Total Homes Visited	13,379
Completed Surveys	8,733
Violations	2,016
Violations Corrected	
Repairs Completed	1,326
Repairs with WaDE Financial Assistance	237
Total WaDE Financial Assistance	\$723,124

The WaDE Program continues to channel financial assistance for septic system repairs in participating survey areas throughout western North Carolina. Financial assistance is being provided through a grant from CWMTF with additional assistance at times being arranged with U.S. Department of Agriculture’s Rural Development Program and DCA. Of the 1,326 repairs completed since 2002, 237 of them received financial assistance. The average cost for correction of these straight pipes or repair of a failing septic systems has been \$3,051. The WaDE program assists county officials and homeowners in locating other sources of funding whenever possible.

Environmental Impact of Violations

The septic system repairs completed as a result of the WaDE program are environmentally significant. The 1,326 violation corrections from Table 1 (at a design standard of 240 gallons of wastewater per day per two bedroom house) have returned 318,240 gallons of wastewater per day to proper subsurface treatment, or about 116,157,600 gallons per year. The violation rate of the 8,733 homes where surveys were completed in western North Carolina was just over 23 percent.

2009-20010 Program Activity

The WaDE Program is largely supported by grant funds from Clean Water Management Trust Fund (CWMTF) and, at times, the EPA 319-NPS Program. The WaDE Program did receive a \$15,000 grant from the Pigeon River Fund to support WaDE GIS/database administrative costs for the remainder of 2010. Due to dwindling grant funds, the WaDE Program has had to eliminate grant-funded positions by 50 percent and has allowed contracts for paying county septic repair fees to expire as of May 31, 2010. From Oct. 1, 2009 to May 31, 2010, the WaDE Program paid health departments \$40,450 for septic repair fees. Once these fees were paid to the health department, the respective health department would waive a repair permit fee from the homeowner. This practice has ceased for the latter part of 2010, thereby passing costs of repairs permits fees on to the property owners in need of septic repair or straight pipe removal. However, measures have been taken to preserve as much of the remaining CWMTF grant funds as possible for the financial assistance program that provides the grants and deferred loans for low-income homeowners in need of septic system repair and/or straight pipe removal.

For 2009-2010, the WaDE staff continued to focus on correcting outstanding violations from earlier surveys and on visiting homes and identifying new violations with new and ongoing surveys. Three new survey areas were started in Buncombe, Jackson and Macon counties for the reporting period 2009 to 2010. Table 2 lists the combined activities of WaDE surveyors and county environmental health specialists for the following 15 counties of Buncombe, Burke, Madison, Transylvania, Henderson, McDowell, Rutherford, Haywood, Jackson, Macon, Graham, Yancey, Watauga, Wilkes and Ashe.

Table 2. October 2009 - 2010

Repair Results (WaDE and counties combined)	
Total Homes Visited	465
Completed Surveys	338
Violations	72
Violations Corrected	
Repairs Completed	168
Repairs with WaDE Financial Assistance	55
Total WaDE Financial Assistance	\$193,192

A brief description of the WaDE Program’s involvement in various projects is presented below.

Haywood Waterways Association Collaboration, Haywood County/Hyatt Creek and Richland Creek

During the 2009-2010 reporting period, the WaDE Program continued its work on the Hyatt Creek watershed improvement project in Haywood County in collaboration with the Haywood Waterways Association. The Haywood Waterways Association manages the project, and also collaborates with Haywood Soil and Water Conservation District, Southwestern N.C. Resource Conservation and Development Council, Haywood County Health Department, N.C. DENR Divisions of Water Quality and Soil and Water Conservation, N.C. Environmental Enhancement Project, N.C. Wildlife Resources Commission, Tennessee Valley Authority, U.S. Department of Agriculture’s Natural Resources Conservation Service, N.C. Department of Transportation, N.C. State University, University of Tennessee-Knoxville, EPA, and multiple landowners. The major goal of the project has been to remove Hyatt Creek from the EPA’s 303d list of impaired waters. The N.C. Division of Water Quality reports that Hyatt Creek was removed from the 303d list in 2010.

The Hyatt Creek project started three years ago with almost all the surveying occurring in the first year (2005-2006), so the number of homes visited did not change much, but the number of violations corrected and homeowners given financial assistance did increase since 2005-2006. Thus far, WaDE staff have surveyed 204 homes, identified 40 violations and helped repair 34 failing septic systems or straight-pipes. Nine violations in the Hyatt Creek Project area have been corrected with financial assistance from the WaDE Program since the project began. One point to note if examining numbers from the 2008 report: WaDE staff discovered a duplicate entry for a site surveyed last year. Since no additional homes were surveyed this year, the number was reduced from 2008 to 2009 by one.

The WaDE Program also initiated a survey on the larger Richland Creek watershed in Haywood County which includes Hyatt Creek. This, again, is in collaboration with Haywood Waterways Association and the above mentioned partners. Richland Creek activities are also reflected in Table 3 below. The Haywood County Health Department also responded to 31 complaints during this reporting period in the Richland Creek watershed and used WaDE financial assistance in seven of 22 corrections that were completed. As a side note, the Haywood Waterways Association nominated the WaDE Program to receive the Pigeon River Award. The WaDE Program received the award in November 2009 for its work on this project. For a more detailed description of the Program's work on both the Hyatt Creek and Richland Creek projects, please see Table 3 below.

Table 3. Hyatt Creek and Richland Creek Survey Activity – Current to Sept. 30, 2010

Project Status		
Total Homes Visited	Hyatt Creek	359
	Richland Creek	119
Completed Surveys	Hyatt Creek	204
	Richland Creek	58
Violations discovered	Hyatt Creek	40
	Richland Creek	11
Violations corrected	Hyatt Creek	34
	Richland Creek	4
Homes assisted with financial assistance	Hyatt Creek	9
	Richland Creek	1
Financial Assistance distributed	Hyatt Creek	\$25,100
	Richland Creek	\$400
	Haywood referrals	\$30,260
Haywood HD referral visits		31
Haywood HD completed surveys		31
Haywood HD violations		31
Haywood HD corrections		22
Haywood Correction w/ WaDE financial assistance		7

WaDE Program Partners with Youth Volunteers

The WaDE Program participated again this year in another multi-organization effort coordinated by N.C. Rural Communities Assistance Project, involving septic system corrections for low-income homes in western North Carolina. Church-sponsored middle school, high school and college-aged volunteers from across the nation came and helped correct septic violations by digging trenches for new septic system lines. Septic system product vendors also donated materials for the projects. Projects like this one using volunteer labor helps extend grant-funded financial assistance funds and promotes environmental issues awareness.

During the summer of 2010, the WaDE Program, NCRCAP, Land-of-Sky Regional Council (LOS), ReCreation Services (ReS) and the Emmanuel Lutheran Church of Asheville (ELCA) worked on 13 low-income homes with failing septic systems or straight-pipes. The initiative partners provided the following items:

- WaDE – Site selection, limited homeowner financial assistance, labor safety training, labor, labor supervision, technical oversight and funding for septic system repair and safety materials/equipment;
- NCRCAP – project coordination, repair permitting and oversight, logistical support and labor;
- ReS and ELCA – labor, labor housing and transportation, and home rehabilitation materials;
- LOS and Mountain Projects Inc. – financial assistance qualification and fund disbursement through WaDE; and
- Madison, Buncombe, Yancey and Jackson County Health Departments – permitting support and final inspections.

Other 2009-2010 WaDE Program Activities

The WaDE Program has had more requests for door-to-door surveying by various watershed groups and local and state agencies. This year, the program's staff completed a small door-to-door survey in a Buncombe County neighborhood at the urgent request of the Buncombe County Health Department and the Greater Brookwood Homeowners Association.

New surveys are ongoing in 2009-2010 reporting period at the request of the Division of Environmental Health's Public Water Supply Section on the Cartoogechey River, which is the public water supply for the Town of Franklin in Macon County. Another survey has been initiated by the WaDE Program in Jackson County at the request of the DWQ to improve a 303d-listed stream impaired by bacteria. Another survey is underway in Graham County to identify straight pipes and failing septic systems in an area known for wastewater infractions.

Future Goals and Needs

Based on the 1990 and 2000 U.S. Census data, approximately one half of the state's wastewater infrastructure is reliant on on-site wastewater disposal systems. Although the WaDE Program is performing well within its mandate and scope, additional funding must be maintained in order for the program to continue to locate problems and assist with repairs.

Executive Summary

The WaDE Program has continued to focus efforts on addressing existing septic system violations found during surveys conducted from 2002 to 2010. The WaDE staff has also focused on visiting additional homes and identifying violations for the reporting period 2009 to 2010 in close collaboration with other agencies and organizations.

The WaDE Program is unique in that it is the only agency in western North Carolina that organizes door-to-door surveys in watersheds to identify straight pipes and failing septic systems. Many of these drainage basins extend through multiple counties. The WaDE Program staff also tracks wastewater violations discovered by door-to-door surveys and county referrals, and assists county health departments in coordinating repairs. This program provides septic repair financial assistance to qualified homeowners in

survey areas throughout the western North Carolina and operates a financial assistance program with low administrative costs in relation to what individual county governments can achieve. The program collaborates with federal, state, regional, county and local agencies and organizations to improve watersheds for the betterment of the environment and public health.

WaDE staff continued its work on the Hyatt Creek and Richland Creek watershed project during the 2009-2010 reporting period. While the number of homes visited did not change much, the number of violations corrected and homeowners given financial assistance did increase during the 2009-2010 reporting period. The WaDE staff surveyed 204 homes, identified 40 violations and helped repair 34 failing septic systems or straight-pipes. Financial assistance from the WaDE Program aided in 16 repairs in Hyatt Creek and Richland Creek projects. The WaDE Program received the Pigeon River Award in November 2009 for its work on this project. The N.C. Division of Water Quality reports that Hyatt Creek was removed from the 303d list in 2010.

This year, the WaDE Program continued its participation in a multi-organization effort coordinated by N.C. Rural Communities Assistance Project, involving septic system corrections using volunteers for homes with straight-pipes or failing septic systems at low-income homes in western North Carolina. Its staff also provided septic survey assistance in several watersheds at the request of several local health departments, Public Water Supply Section in the Division of Environmental Health, and Division of Water Quality.

The WaDE Program is closely aligned with the state's and DENR's strategic goals. With the elimination of failing septic systems and straight pipes, the WaDE Program protects public health and public water supplies, improves the environment of the streams, and helps ensure the economic sustainability for the tourist industry in western North Carolina by protecting recreational watersheds.