

DEPARTMENT OF TRANSPORTATION

EROSION AND SEDIMENTATION CONTROL PROGRAM



Report to NC Sedimentation Control Commission

FEBRUARY 2008

EXECUTIVE SUMMARY

	Fiscal Year <u>2004</u>	Fiscal Year <u>2005</u>	Fiscal Year <u>2006</u>	Fiscal Year <u>2007</u>
<u>Erosion Control Plans</u>				
<i>Contract Construction</i>				
Total Field Inspections Attended	76	95	105	85
Total Clearing and Grubbing Plans	84	98	58	65
Total Intermediate/Final Plans	85	103	60	68
Percent Clearing and Grubbing of Final Plans	99%	95%	97%	96%
<i>Maintenance/Force Account Projects</i>				
Total Bridge Maintenance Plans Prepared	44	118	40	119
Total Maintenance Plans Prepared	853	321	414	443
Total Maintenance Plans Reviewed	401	327	296	360
Percent Reviewed	47%	75%	71%	64%
<u>Disturbed Acreage</u>				
*Contract Construction (acres)	5015	4017	3860	4375
*Maintenance/Force Account (acres)	4789	1802	1045	1107
<u>Monitoring</u>				
<i>Contract Construction</i>				
Inspections Accomplished	2241	2662	2557	1719
ICAs Issued	43	27	18	15
Number of Projects Receiving ICAs	20	19	15	6
Projects Receiving Sequential ICAs	9	8	3	9
<i>Maintenance/Force Account Projects</i>				
Inspections Accomplished	3361	4514	3433	4124
ICAs Issued	9	1	0	3
Number of Projects Receiving ICAs	9	1	0	3
Projects Receiving Sequential ICAs	0	0	0	0
Total NOVs Received	1	0	0	0
<u>Certification</u> (Number Certified as of 12/31/2007)				
Level I: Erosion & Sediment Control/Storm water Inspector/Installer				836
Level II: Erosion & Sediment Control/Stormwater Site Management				1878
Level III A: Design of Erosion and Sediment Control Plans				288
Level III B: Design of Reclamation Plans				325

* estimated

The North Carolina Department of Transportation (NCDOT) for the 2007 fiscal year has continued its commitment to protect the environment. This year's efforts can be displayed in many areas such as design, research, education, and overall environmental stewardship. The mission for the department has been clearly identified by the Secretary of Transportation to accelerate our efforts at minimizing the impact that the State's transportation system has on the environment.

The Roadside Environmental Unit (REU) has worked over the past year to implement and improve the Departments delegated Erosion and Sedimentation Control program. Our efforts are reflected in the program changes and training that has occurred in the past year.

NOTE: This report is created as a brief overview of the North Carolina Department of Transportation's Sediment and Erosion Control Program and only represents a summarization of a portion of the program's overall content.

OVERVIEW

The Department of Transportation has implemented changes this year to improve its delegated Erosion and Sedimentation Control Program. These changes have resulted from recommendations from Land Quality and from the research that the Department is currently involved in. These areas included improvements in plan design, research, contract administration and training.

PLAN DESIGN

The Department continues to evolve its current design methods to comply with the requirements for sediment basin design as outlined in “Erosion and Sedimentation Control Design Manual.” Constructability issues with the increased basin sizes for those projects located in urban areas as well as projects with mountainous terrain continue to create challenges for the Department. Further efforts have been placed on reducing the amount of time an erodible surface is exposed by utilizing more rolled erosion control products to minimize subsequent repair seeding operations.

Revisions to erosion control plans are being documented by field forces and reviewed by Roadside Environmental Staff to ensure that proper design techniques are being utilized. Certification efforts are also addressing the changes in plan design to both NCDOT personnel as well as private engineering firms. This is further evident with the increase in the amount of erosion control plans reviewed by the Roadside Environmental Unit staff. The Unit has reviewed 64% of the plans submitted by Division Maintenance, which exceeds the mandatory goal of 50% reviewed as set forth in the 2006 delegation review.

MONITORING

The Roadside Environmental Unit made 5,843 total inspections during fiscal year 2007. Contract construction had 1,719 inspections and Maintenance/Force Account projects had 4,124 inspections. A total of 18 ICAs were issued during this same period. There were 15 ICAs issued for Contract Construction and 3 ICAs issued for Maintenance/Force Account projects. Also, during this fiscal year there was no Notice of Violations issued by the Land Quality staff for NCDOT projects.

The reduced number of contract construction inspections is a result of the Departments reduced construction program over the past several years. Coupled with unseasonable dry weather has also accelerated many projects resulting in early completions. Project spending for contract construction is expected to increase in the 2008 and 2009 fiscal years.

DOCUMENTATION

The Department continues to use electronic inspection reports that are distributed via email. This system known as ErCon has been very effective in notifying project personnel and Department management of projects with deficiencies.

RESEARCH

The Department continues to incorporate information gleaned from the research projects that have occurred over the past five years.

The research project that began in the mountains in 2004 to evaluate the improved methods to control erosion and sedimentation adjacent to trout streams has shown that the use of Polyacrylamides applied to wattles anchored in the roadway ditchlines has improved the efficiency of the traditional devices. The wattles with PAM are currently being field tested to better understand its application on highway construction projects.

Finally, the Department completed its research on the US 70 Clayton Bypass that revealed the overall efficiency of current basin technologies. The information is being incorporated in design criteria for NCDOT designers when selecting the appropriate device for erosion and sediment control plans.

CONTRACT ADMINISTRATION

The Department continues to modify and improve construction contracts to ensure that all aspects of environmental compliance is adequately covered. Further changes are being made to current incentives that should adequately compensate contractor costs when associated with the quick and frequent response to stabilize erodible areas.

NCDOT TRAINING INITIATIVES

Accomplished

December 2007	Roadside Vegetation Conference
Jan.-Feb. 2007	Contractors/NCDOT Construction Conference
Jan-Mar 2007	Division Erosion Control Workshops
Year Round 2007	Level I, Level II and Level III Certification Training
Feb-Mar 2007	NCDENR Erosion Control Workshops
Quarterly (2007)	Roadside Environmental Field Operations Engineer/Regional Land Quality Engineers Calibration Training

Proposed

December 2008	Roadside Annual Conference
Mar-May 2008	Division Erosion Control Workshops
Jan-Feb 2008	Division Erosion Control Training Sessions
Year Round 2008	Level I, Level II, and Level III Certification Training
Quarterly (2008)	Roadside Environmental Field Operations Engineer/Regional Land Quality Engineers Calibration Training/Project Reviews

EROSION AND SEDIMENTATION AND STORMWATER CERTIFICATION

The Biological & Agricultural Engineering and Soil Science Departments at North Carolina State University are partnering with NCDOT to offer an Erosion and Sediment Control/Stormwater certification program. The certification program will ensure compliance with erosion and sediment control/stormwater provisions on NCDOT projects and to provide comprehensive training to inspectors, project managers, contractors, and designers.

NCDOT will require all contractors to have a certified supervisor and foreman to oversee operations on NCDOT projects to ensure compliance with environmental regulations.

The certification is broken into three levels.

LEVEL I: 836 Certified (12/31/2007)

Level I: Erosion & Sediment Control/Storm water Inspector/Installer. This course is designed for those who directly supervise crews who install erosion and sediment control on construction sites. The course emphasizes the function and proper installation of best management practices used by NC DOT to minimize or control erosion and sedimentation. Also covered are the basics of soil erosion, vegetation establishment, and stream restoration. Additional subjects will include implementation of erosion/sediment control plans, requirements of various regulatory agencies, and consequences of permit violations. Certification is required as of January 1, 2007.

LEVEL II: 1878 Certified (12/31/2007)

Level II: Erosion & Sediment Control/Stormwater Site Management. This one day course is designed for those who supervise, run or direct grading work, culvert replacement work, and bridge construction work over rivers and streams. This course will cover permit requirements, roles and responsibilities, applicable specifications, and interpretation and best management practices to minimize or control erosion and

sedimentation. Other topics include soil erodibility, turf establishment techniques, grading techniques to minimize erosion, timing of installations, and proper installation of best management practices. Also covered will be implementation of the erosion/sediment control plan, requirements of various regulatory agencies, and consequences of permit violations.

LEVEL III:

Level III A: Design of Erosion and Sediment Control Plans 325 Certified (12/31/2007)

Level III B: Design of Reclamation Plans 288 Certified (12/31/2007)

The workshop for Level III is a two-day fast paced class for engineers and advanced level technicians who design or prepare elements of the erosion and sediment control plans. Level III A will focus on designing erosion control plans for all types of projects while the Level III B will focus on reclamation plans. New engineering analysis methods for erosion prediction and design will be presented as well as hydrologic and hydraulic engineering principles. The implementation date for Level III is January 2008 and plans submitted after that date would be accompanied with the Level III certification number of the designer.

CONCLUSIONS

In conclusion, NCDOT continues to improve its Erosion and Sedimentation Control Program. New challenges continue to arise that must be addressed. New methods of protecting the environment will continue to be explored through our commitment to sound research in the upcoming year. There will be a continued emphasis placed on education and training to help meet the needs of our program. It is NCDOT's goal to continue to improve our Erosion and Sedimentation Control Program and make the necessary changes required to meet the new challenges that face the North Carolina Department of Transportation in the future.

