Case Study 2: Construction Site Stormwater Runoff Control

Cooperative Erosion Control Enforcement and Compliance

The City of Charlotte and the County of Mecklenburg (CharMeck) have collaborated to develop an effective erosion and sediment control enforcement program that employs frequent inspections, notices of violation, fines, and an appeal process to effectively and fairly require compliance. Inspections are conducted approximately once every two weeks, and fines of up to $3,000 per day are possible. The program is also working to evaluate the effectiveness of the erosion control program by monitoring streams to assess reductions in total suspended solids.

The City of Charlotte passed a Soil Erosion and Sedimentation Control Ordinance in 1976. Mecklenburg County passed its first erosion control ordinance in 1974. In 1999 the Mecklenburg County Board of Supervisors adopted a Surface Water Improvement and Management Plan (SWIM) that included steps to try to reduce sediment, a major pollutant in the county’s waterways. One of the efforts initiated was an increase in inspection and enforcement activities and coordination efforts between city and county agencies involved in erosion control. SWIM also required a water quality focus for all erosion control activities and monitoring of erosion control efforts to determine a reduction of sediment levels in area streams.

The City of Charlotte’s and Mecklenburg County’s Land Development and Water Quality programs work cooperatively to ensure compliance with the erosion control ordinance. The city has eight erosion control inspectors and seven plan review engineers working on erosion control issues. The county has three plan review engineers and five erosion control inspectors.

The City of Charlotte's land development staff performs engineering reviews for land development activities inside the city and its extra-territorial jurisdiction (ETJ), including the review of erosion and sediment control plans. Once approved, these plans are provided to city staff, who perform erosion control inspection activities (for the city and ETJ) until the project is completed and all disturbed areas are stabilized. Mecklenburg County performs plan review and inspections for six small towns that surround Charlotte. The city and county share the appeals board and collaborate to ensure that ordinances are identical. The city’s land development staff provides engineering services throughout the duration of the project, and staff members are available to answer questions regarding any engineering aspects of the project.

Several mechanisms are in place to ensure that erosion and sediment control is used effectively on construction sites. Disturbing land without a permit results in a fine of $5,000 per day. Before any land disturbance, a form naming the person “financially responsible” is completed for each project. The financially responsible party is on record as the party to accept any Notices of Violation or related documents for any noncompliance with the City of Charlotte’s Soil Erosion and Sedimentation Ordinance.
Once a grading permit is issued, inspectors conduct weekly to biweekly inspections for each construction site of one acre or more. Each inspector averages 200 active sites, so inspections occur about once every two weeks. Inspectors correct problems by issuing a Notice of Violation (NOV), which gives operators two to seven days to correct the problem. If the developer is a repeat offender, the violation must be rectified immediately. After the deadline, inspectors revisit the site. If the problem has not been addressed, they issue a "continuing NOV." In 2003 inspectors issued over 200 NOVs.

Fines range from $250 to $3,000 per day depending on whether off-site sedimentation has occurred. Inspectors have collected fines of over $100,000 per year. After the initial development (infrastructure) in a subdivision is complete, the developer or builder must sign a Sediment Basin Agreement that stipulates what is to be done with the sediment basin on-site and whether and how it should be maintained.

The goal of the program is to achieve a 25 percent reduction in total suspended solids loads in streams with established in-stream storm water monitoring sites. For streams where no sites have been established, the goal is to prevent turbidity levels from increasing more than 25 percent downstream of the construction site. If it is determined that turbidity levels have increased more than 25 percent, the city increases its inspections. Data are maintained in an inspector logbook, and a report is provided at the end of each quarter. These reports are then provided to staff during water quality meetings at the beginning of each quarter. Based on the reports, action plans are developed to enhance measures, such as inspection and enforcement activities, to achieve water quality goals.

Several streams have shown a reduction in sediment levels since the program began in 1999. Additional monitoring is needed to establish long-term trends.

Source: EPA Website