

DIVISION OF LAND RESOURCES

REPORT OF ANNUAL ACCOMPLISHMENTS

2006

The three sections of the Division of Land Resources – the Geodetic Survey, Geological Survey and Land Quality Section have done much during this past year to enhance the quality of life, economic welfare and safety of the citizens of the state. Additionally, each section has had a significant outreach effort this year to help the citizens utilize the information that the section provides. The Division's web page has been revised to include additional information and be more useful.

Geodetic Survey

The Geodetic Survey primary initiatives this past year were maintaining a high tech survey base system, resurveying the boundary between North Carolina and South Carolina and between counties upon request, and providing quality control survey points for the State Floodplain Mapping Program. The Geodetic Survey conducted seven technical workshops this year to help users utilize the advantage of the latest advances in survey work.

The Geodetic Survey continues to be nationally recognized for being a leader in utilizing the National Height Modernization System and Continuous Operating Reference System (CORS) and other state of the art methods of precise positioning in establishing and maintaining the state's survey base. The section placed 378 geodetic monuments and established six more CORS stations. These new references stations save the Department of Transportation, contractors and surveyors, and hence the taxpayer and consumers, thousands of dollars each year.

The boundary survey work conducted under the direction of the North Carolina and South Carolina geodetic surveys resulted in the North Carolina/South Carolina Boundary Commission approving 54 miles of boundary from Transylvania to Polk County. The Boundary Commission also approved the start of survey work for the NC/SC boundary from Polk to Mecklenburg County during the upcoming year. Eighty-five miles of county boundaries were also resurveyed this past year.

The section continued to provide valuable support to the Floodplain Mapping Program by surveying 1163 reference quality control points. These reference points better ensure the accuracy of the aerial surveys and delineation of flood prone areas.

Geological Survey

The major initiatives for the Geological Survey for this past year were geological mapping under contract from the USGS and National Park Service, coastal studies and landslide mapping. However, the outreach effort of the Geological Survey was

particularly noteworthy this year. Public interest in a variety of geological hazards, such as arsenic, radon gas, earthquakes and landslides sparked numerous media inquiries to the section. The Public Television series "North Carolina Now" featured two segments on landslides. The geology and mineral resources of the state were showcased to a national and international audience when the Geological Survey co-hosted the 42nd Forum on the Geology of Industrial Minerals in Asheville in May. Representatives attended the Forum from 27 states and nine foreign countries. Personnel from the survey also led organized field trips this past year for the southeast meeting of the Geological Society of America and the Carolina Geological Society. A number of presentations were made to professional, governmental and school groups.

The survey produced an open-file geologic map of the Madison County area, and completed geological mapping of the Efland Quadrangle, northern portion of Oxford and southeast quarter of Middleburg quadrangles. The geologists also assisted researchers from Duke University in an ongoing statistical analysis of naturally occurring arsenic in the Piedmont. A geological map, including geologic hazards, produced for the southern segment of the Blue Ridge Parkway and Carl Sandberg Home in a GIS format for the National Park Service.

The coastal studies effort completed and released two open-file reports on subsurface data from cores drilled between Corolla and Ocracoke, completed a geomorphic map for Cape Hatteras National Seashore, delivered a final report and GIS data layers to the Division of Emergency Management for a pilot project to show where the NC coast is most vulnerable to overwash from storm events. A project for the Department of Transportation was started to delineate sand resources offshore from Hatteras and Ocracoke islands, and continued the study of shallow aquifer system of the Coastal Plain.

The Landslide Mapping Program completed the mapping of Macon County and presented the maps of high-risk areas to county officials. Mapping in Buncombe and Watauga Counties was initiated. The staff has responded to numerous requests from local government for assistance in evaluating potentially dangerous slope stability situations. The staff were also invited to make a number of presentations to public interest groups, local government and developers.

Land Quality Section

The Land Quality Section administers three regulatory programs: Sedimentation Control, Safety of Dams and Mine Reclamation. The Sedimentation Control Program accomplished a major step in protecting the state's water quality this year by revising and distributing its Sedimentation Design Manual. The manual was updated and revised by a blue-ribbon panel of experts in the field to incorporate state of the art best management practices in erosion and sedimentation control. The manual provides a valuable guidebook to design professionals. The new techniques in the revised manual will improve erosion and sedimentation control. In addition to revising and distributing the manual, four workshops were conducted to acquaint the design professional with the

latest technology reflected in the revised manual. Land disturbing activity within the state remains at a very high level, the Sedimentation Control Program reviewed erosion and sedimentation control plans for 3374 projects this year that disturbed over 40,000 acres in FY 05-06. Personnel made 16471 site inspections. Work continues on an internet based, statewide database.

The Dam Safety Program made a major revision of its manual for dam owners. The manual contains vital information in layman's terms on the requirements to permit a dam, dam maintenance and operation and emergency actions. The manual is available on the Division's website. The Dam Safety Program served on the emergency operations team during the periods of heavy rainfall from tropical storms this year. The program approved 163 permits to construct, modify, repair or breach a dam and made 1556 inspections of dams. The program continues to secure emergency action plans (EAPs) for high hazard and significant hazard potential dams.

The Mining Program

The Mining Program reviewed 304 applications to open, modify, renew or release mines. A number of the applications required analysis of hydrogeology, blasting, endangered species or erosion and sedimentation control. Public hearings were held on for four applications for mining permits. Personnel made 529 inspections. There are now over 900 mines under permit, affecting approximately 39,000 acres. 1,023 acres were reclaimed and released.