

February 18, 2010

To: The Macon County Planning Board

From: The Slope Development Strategies Subcommittee

Subject: Recommendations regarding Construction and Development in
Macon County

Background

The Slope Development Strategies Subcommittee was authorized by the Macon County Planning Board in the Spring of 2009, and began meeting in June. The committee has seven members as follows: John Becker, realtor; Barry Clinton, Coweeta scientist; Susan Ervin, concerned citizen; Stacy Guffey, former county planner and consultant; Reggie Holland, builder and realtor; Paul Shuler, grading contractor; and Al Slagle, hydrogeologist. We have also had very valuable input and assistance from county employees Matt Mason, Jack Morgan and Derek Roland.

Since being formed, the committee has met 10 times, including a field excursion during which we visited the Wildflower Development. Rick Wooten, geologist with the N. C. Geological survey gave a presentation at one meeting on the Macon County Slope Movement Hazard Maps. During meetings we have discussed ordinances from other counties regarding development on slopes, and consulted various publications and documents. At other times, members of the committee have talked with regulators from other counties, professionals in the fields of engineering, geology and soil science, and fellow Macon County citizens.

During the first two meetings, the committee determined that our approach to the issues would be toward protecting public safety and attempting to minimize property damage. It was also determined that the recommendations would be as technically and scientifically based as possible.

The committee has worked together very professionally, and although there have been differences of opinion, we have concurred unanimously on the findings and recommendations that follow.

Findings

The committee discussed the issue of property rights on several occasions and has strived to balance property rights of developers, property owners, homeowners, potential homebuyers, and other affected citizens. It was determined that property owners should have the right to use their property to the “highest and best use”, provided however the use does not infringe on or adversely affect the property rights of adjacent or downslope properties or endanger public safety.

The committee believes development on slopes greater than 30%, without using proper construction methods, presents an array of potential problems that can lead to property damage, public safety issues, and potential loss of life. The committee further believes it is extremely important that the county develop a technically based ordinance to minimize the detrimental effects of such development.

There are other issues facing Macon County that are as important as construction and development on slopes. The committee addressed only slopes greater than 30%, however, we believe stormwater runoff management and construction standards for all projects are extremely important.

Concern was expressed from committee members and the citizens we have talked with that ordinances and regulations must be uniformly and fairly administered. The committee believes adequate funding for personnel, a system for tracking projects, and consistent support from elected officials and higher levels of county government are necessary for addressing these concerns. Most professionals in trades involving construction and development are more than willing to follow the requirements of various codes, regulations and ordinances, however they feel they are at a disadvantage in bidding a job if other contractors do not bid based on the same requirements.

Macon County was the first county in the state to have Slope Movement Hazard Maps. These maps were the direct result of the Peek’s Creek debris flow in 2004 which resulted in both loss of life and tremendous property damage. Since Peek’s Creek there are numerous examples of slope failures in Macon County and the region, most of which can be related back to some form of slope modification. The maps are very valuable tools and should be utilized in county planning and in developing a Slope Development Ordinance to minimize the probability of future development-related slope failures.

Recommendations

1. The committee recommends that the County Planning Board be authorized by the Macon County Board of Commissioners to begin work immediately on an ordinance governing construction and development on slopes which are over 30% at the commencement of construction and are in the proposed disturbed area. We further recommend that the County Commissioners adopt the resulting ordinance as quickly as possible. Attached is an outline of the principles we recommend in developing an ordinance. We believe it is important that the ordinance be based on the principles outlined in the attached document.
2. It is recommended the County regulate all construction involving land disturbance for residential and commercial construction in the following ways:
 - a. The County should incorporate construction standards into the existing subdivision ordinance and erosion and sedimentation control ordinance, as well as in a new ordinance dealing with slope development. The standards should regulate cut slopes over 8 feet in vertical height which are steeper than 1 ½:1; and fill slopes over 5 feet in vertical height which are steeper than 2:1. All constructed slopes over 30 feet in vertical height should be regulated.
 - b. Placement of fill material should meet the following minimum criteria:
 - i) The area upon which the fill is to be placed should be stripped and grubbed, and all vegetative matter should be removed.
 - ii) A bench should be constructed at the toe of the fill.
 - iii) The fill material should be free of organic material and vegetative matter.
 - iv) Fill material should be placed in lifts not greater than 8 inches in thickness, and compacted to a minimum of 90% Standard Proctor Density.
3. It is recommended the county develop a stormwater runoff management ordinance which applies to all construction projects. This could be developed in conjunction with a slope development ordinance, or could be a separate ordinance. The committee recommends the consolidation of ordinances relating to construction and development, although it may be necessary to have a separate Erosion and Sedimentation Ordinance.

4. The County must fairly and uniformly enforce all regulations involving land disturbance in order to “level the playing field” for contractors and other trades. This will require additional enforcement personnel and a county engineer. It is recommended the County purchase instrumentation to test for density of fill material as Haywood County has done. It is further recommended the County develop policies and/or standard operating procedures which insure uniform enforcement of ordinances.

Respectfully Submitted,

John Becker
Barry Clinton
Susan Ervin
Stacy Guffey
Reggie Holland
Paul Shuler
Al Slagle

Recommendations for a Slope Development Ordinance

Note: These recommendations are meant to apply to slopes either natural or constructed, present at the commencement of construction; and are meant to apply to the area disturbed by construction.

1. 0% Slope to 30% Slope:

No action under a slope development ordinance.

2. 30% Slope to 40% Slope: Attempt to handle thru County Personnel using existing resources. Have clear cut guidelines to define which sites do not require a Design Professional. County could either approve project or require Plans/Specs by a Design Professional.

a. Require Owner to provide a project/site plan showing areas to be graded, cut/fill heights and slopes, areas over 30% slope, and drainage plan. This may be prepared by the property owner or his/her designated representative.

b. Site cannot lie in areas mapped as Lower Threshold, Upper Threshold or Unstable on the Slope Stability Index Map, or in the High or Moderate Relative Downslope Hazard categories on the Downslope Hazard Map, as shown on Slope Movement Hazard Maps of Macon County.

c. Cut slopes over 8 feet in vertical height cannot be steeper than 1 ½:1. Fill slopes over 5 feet in vertical height cannot be steeper than 2:1. No constructed slope can be over 30 feet in vertical height.

d. Site preparation and compaction standards must be met.

e. A minimum setback of 30 feet must be maintained between any stream and a land disturbance activity, with the distance being measured from the stream bank.

Note: This distance is based on studies indicating the area usually affected by debris flows is approximately 30 feet to each side of a stream. The distance varies, however the committee believes 30 feet is a reasonable setback.

f. If the project/site does not meet the above criteria, it should be required that a design professional submit plans/specs for the project.

3. Greater than 40% Slope: Require Plans and Specifications by a Design Professional.
 - a. Plans/Specs must address/contain: Topographic Survey, Soils Report, Hydrology Report, Vegetative Retention, Percent Impervious Surfaces, Environmental Impacts, Public Safety Impacts, Cut and Fill Heights and Slopes (including factor of safety against failure), Compaction Standards, Stormwater Run-off, and Impacts on Adjacent Property.
 - b. The plans/specs must be as stringent or more stringent than County regulations for other land disturbing activities and requirements of Paragraph 2 (above), with the exception of cut and fill slope ratios. Constructed slopes may be steeper if an engineered design is included and factors of safety against failure are provided.
 - c. The Design Professional must certify that the project has been constructed in accordance with the Plans and Specifications.

4. Slope Movement Hazard Maps:
 - a. Any site which is in a Lower Threshold, Upper Threshold, or Unstable, designation on the Stability Index Map, or in the High or Moderate Relative Downslope Hazard category on the Downslope Hazard Map should be required to have plans/specs prepared by a design professional submitted to the County. The plans/specs should address all items listed in # 3 above.

For any construction project, the recommendations apply only to that portion of the project in which the disturbed area is over 30% slope.

An exemption is recommended for any project in which the construction results in a slope less than 30%, even though the initial slope may be over 30%.