



**Jackson County Board of Commissioners
Planning Retreat
January 21, 2014**

Agenda Item: Mountain and Hillside Development Ordinance Revisions

Presenter: Gerald Green

At their meeting January 9, 2014 the Jackson County Planning Board approved proposed revisions to the County's Mountain and Hillside Development Ordinance (MHDO) and scheduled a public hearing for the February 13 meeting of the Board. The Board's approval of the proposed revisions is the culmination of a thorough review of the ordinance that lasted almost a year. During the review process, the Board considered the steep slopes ordinances of other jurisdictions; heard from experts on the topics of landslides, water recharge, and hydrology; and directed staff to provide information addressing a variety of questions related to development on steep slopes. Comments from the public were invited at all meetings and via an email list serve and were received and considered by the Board as they discussed the proposed revisions. The work of the Planning Board in reviewing the MHDO resulted in a number of proposed revisions to the ordinance. The more substantial proposed revisions are listed below:

Definition of Protected Mountain Ridge revised as follows: All mountain ridges whose elevation is at least ~~2,500~~ 3,000 feet and whose elevation is ~~400~~ 500 feet or more above the elevation of an adjacent valley floor. (Revised definition now matches definition in NC and Jackson County Protected Mountain Ridge Ordinances.)

Threshold for application of ordinance standards revised from average slope of 30% to average slope of 35%. (Information presented to Planning Board indicated that many problems associated with development of steep slopes, such as severe erosion, landslides, and slope failure, began with slopes of 35%)

Family subdivisions no longer exempt from requirements for verification of soil suitability, geotechnical analysis, and hydrology plan. (Board determined that was a safety issue and all subdivisions should meet safety measures)

Soils report no longer required for subdivisions. (Planning Board determined that the required geotechnical analysis and report provided the information required in the soils report and requiring both was redundant.)

Requirement for a written general assessment of subdivisions deleted. (There were no standards for the assessment and the Board determined that without standards for its preparation, such an assessment was meaningless.)

Rather than requiring a soils report to be reviewed by the Board and/or staff, the recommendation is for certification of soil stability/suitability by a registered professional engineer.)

Recommended requirement for benching of cut and fill slopes greater than 20' in vertical height required at 10' intervals, unless design and construction certified by registered professional engineer. Current requirement is for slopes in excess of 35' to be benched at 35' intervals.

Density limits have been deleted. (Board determined that density limits addressed aesthetics, not safety.)

Formula for calculating average slope of property changed to formula used by Henderson, Watauga, Buncombe, and Polk Counties, and municipalities of Sylva, Waynesville, and Asheville. (Recommended formula is more accurate and more objective. Consistent formula would make it easier for those working with slope ordinances of different jurisdictions.)

Standards addressing grade, surface, and travelway width recommended for driveways exceeding 250' in length. Cut and fill slopes resulting from construction of driveways to comply with standards for compaction, size, and benching unless designed and certified by registered professional engineer. (Board felt this addressed safety of driveways)

Recommend that disturbed area limits be revised from 10,000 SF for single family homes to the following for any use:

Existing Slope	Maximum Area of Site Disturbed
35% - 39%	20%
40% - 44%	15%
45%+	10%

Recommend that impervious surface limit (not including driveways) be revised from 6,000 SF for single family homes to the following for any use:

Land Use	Lot Size	Maximum Allowable Impervious Surface
Any	¼ - 1.0 acres	7,000 SF
Any	1.01 – 2.0 acres	10,000 SF
Any	2.01 – 5.0 acres	12,000 SF
Any	5.01 – 10 acres	14,000 SF
Any	10+ acres	15,000 SF

(Board felt these limits on disturbed areas and impervious surfaces addressed safety without adversely impacting ability of property owners to build on their property. Impervious surface limits match those in the Water Recharge ordinance.)

Recommend revising height limit for buildings on ridges as follows: The height of any building shall not extend ~~closer than 20 feet to the uppermost point~~ more than 35' above the crest of any protected mountain ridge, as that term is defined herein, on which said building is constructed. (Standard matches that in the Mountain Ridge Protection Ordinance)

Recommend requirement that building pads exceeding 1500 SF in area be compacted and that cut and fill slopes created in the process of providing the building pad meet the compaction, benching, and height requirements set forth in the ordinance. (Board felt these standards assured safety of the building pad and thus the structure.)

Requirement recommended that top of cut banks be setback 5' from property line and that toe of fill slopes be setback 10' from property lines. (Board felt these setbacks helped assure safety of abutting property.)

Directed that the recommendations in Section 18 be removed from the ordinance. (As recommendations, these provisions cannot be enforced and are confusing to people who may think they are mandatory. The Board directed that these recommendations be placed in a best practices manual that would be widely distributed in the County.)

Recommended revising Sections 25.7 and 25.8 to reference the standard County ordinance addressing penalties for violation.

The Planning Board has scheduled a public hearing on the proposed amendments for their February 13 meeting. In addition to the public hearing, the board will be soliciting comments on the revisions via an email listserve. Following the public hearing and the review of comments received, the Planning Board may direct staff to revise the ordinance further before forwarding it to the Board of Commissioners for review and final action or they may forward it to the Commissioners without further revision. Upon receipt of the proposed revised ordinance, the Commissioners must schedule and hold a public hearing before taking any action to adopt the revisions.

Black – original

Red – remove

Green – additions/changes

Sec 6. - Establishment of the Mountain and Hillside Development District.

The Mountain and Hillside Development District is hereby established, the boundaries and extent of which are depicted on the map entitled “Mountain and Hillside Development District Map” (herein referred to as the District Map), which is hereby adopted as if fully set forth in this ordinance. Said map shall be attached to the County Clerk’s copy of this ordinance upon adoption and shall be available for public inspection in the office of the ~~director~~ Jackson County Planning Department. The District Map identifies all those areas with a slope of 35% or more and is to be used to identify properties on which further analysis is required.

12.6 Erosion and Sedimentation Control Plan

A formal erosion and sedimentation plan shall be submitted for all land disturbing activities involving the disturbance of more than 2,000 square feet on property with an average slope of 35% or more. Such plan shall be reviewed and approved by Jackson County prior to any land disturbing activity.

14.6 Density limits.

Development on lands that are subject to this Ordinance shall meet the density requirements shown in the table below.

Average Slope of Land to Be Developed or Subdivided	Minimum Lot Size (in acres)	Maximum Density (lots per acre)
30-34%	2	.5
35-39%	2½	.4
40-44%	5	.2
45% or more	10	.1

Slope %	Maximum Density Units Per Acre	Minimum Lot in Acres
35	0.500	2.0
36	0.446	2.24
37	0.398	2.51
38	0.356	2.81
39	0.318	3.15
40	0.284	3.52

41	0.253	3.95
42	0.226	4.42
43	0.202	4.95
44	0.180	5.55
45	0.161	6.21
46	0.144	6.96
47	0.128	7.79
48	0.115	8.73
49	0.102	9.77
50 and above	0.100	10.0

NOTE: Minimum lot size may also be expressed in terms of dwelling units per acre. Thus, a two-acre minimum lot size would result in a maximum density of one dwelling per two acres (or one-half dwelling per acre), a two-and-a-half-acre minimum lot size would result in a maximum density of one dwelling per two-and-a-half acres (or four-tenths of a lot per acre), and so forth. This table shall not be construed to impair the clustering of dwellings and lots so long as maximum density is not exceeded.

~~14.7.4. Land slopes shall be calculated based on both (a) the downstream drainage slope from the highest, most remote point within delineated area, and (b) the upstream drainage slope from the lowest, most remote point within the delineated area in accordance with the following requirements.~~

~~14.7.4.1. Land slope based on the highest, most remote point shall be calculated by determining the maximum horizontal length of drainage travel (D) from the highest, most remote point (Elevation H1) within the delineated area in a downslope, drainage direction and perpendicular to topographic contours for the greatest distance to the lowest point (Elevation H2) at which drainage would exit the delineated area. Slope based on the highest, most remote point shall be calculated using the following formula:~~

$$S_a = ((H1 - H2) / D) (100)$$

~~Where:~~

~~S_a = slope expressed as a percentage~~

~~H1 = elevation of highest, most remote point~~

~~H2 = elevation of the lowest point drainage point below H1~~

~~D = is the maximum length of drainage travel between points H1 and H2 expressed as a~~

horizontal measurement (D is not necessarily a straight line distance)

~~14.7.4.2. Land slope based on the lowest, most remote point shall be calculated by determining the maximum horizontal length of drainage travel (D) from the lowest, most remote point (Elevation L2) within the delineated area in an upslope direction and perpendicular to topographic contours for the greatest distance to the highest point (Elevation L1) at which location drainage to point L2 would begin within the delineated area. Slope based on the lowest, most remote point shall be calculated using the following formula:~~

$$S_b = ((L1 - L2) / D) (100)$$

~~Where:~~

~~S_b = slope expressed as a percentage~~

~~L1 = elevation of highest point above drainage point L2~~

~~L2 = elevation of the lowest, most remote point~~

~~D = is the maximum length of drainage travel between points L1 and L2 expressed as a horizontal measurement (D is not necessarily a straight line distance)~~

~~Average slope shall be a weighted average of S_a or S_b based on ratio of drainage travel lengths rounded off to the nearest one percent.~~

14.7.4. The formula for conducting a slope analysis of the property shall be:

$$S = .0023(I)(L)$$

A

Where:

S = Existing grade of parcel in percent

I = Contour interval of map in feet, with said contour intervals to be five feet or less

L = Total length of the contour lines within the parcel in feet

A = Area of the parcel in acres

0.0023 = Product of two constants, one of which converts feet into acres and one of which converts a decimal fraction into a percentage

Once "S" is calculated, it shall be rounded to the nearest whole number.

14.7.5. The Planning Board may, at its discretion, approve other methods for conducting a slope analysis of property subject to this ordinance.

14.7.6. A slope analysis conducted by an NC Professional Land Surveyor, a NC Professional Engineer, or a NC Professional Landscape Architect may be provided in cases where the applicant/property owner does not agree with the slope analysis conducted by Jackson County staff. The alternate slope analysis shall be approved by the Jackson County Planning Board.

Sec. 19. - Submission and Review of Applications.

Upon the filing of a request for approval of a subdivision, land-disturbing activity, development, or building permit, the following procedures shall be required and followed to determine whether the proposed action is governed by provisions of this Ordinance and whether a permit pursuant to this Ordinance is required for a lot, parcel, part of lot, or part of a parcel. The application shall be reviewed by the planning director. Applications for development authorization that are required by the regulations of Jackson County to obtain approval of the Jackson County Board of Commissioners or Planning Board, if any, shall be referred to the appropriate board ~~planning commission and/or Board, as the case may be.~~ Applications which do not require review and approval by the Board of Commissioners or Planning Board shall be administratively processed by the planning director. Development projects to which the provisions of this ordinance are applicable are subject to various review and approval procedures, depending on the project. Development of a single lot subject to the provisions of this ordinance, whether for residential or non-residential purposes, must be evaluated for compliance with this ordinance and approved by the planning director. Minor subdivisions are subject to review and approval by the planning director while major subdivisions are subject to review and approval by the Planning Board. Development projects proposed for one of the zoned areas of the county are subject to the review requirements established by the ordinance for that area and must comply with the procedures set forth in that ordinance. In all cases, the development plans shall be reviewed for compliance with the provisions of this ordinance. The review processes are summarized below.

19.1 Subdivision Review

Tracts of land proposed for subdivision into two (2) or more parcels or lots shall undergo a slope analysis by the planning department as set forth in Section 17.4 of this ordinance to determine the applicability of this ordinance to the subdivision. Tracts with a slope of 35% or more shall be reviewed for compliance with the provisions of this ordinance.

19.1.A. Minor Subdivisions

Subdivisions of tracts of land meeting the definition of minor subdivision as defined in the Jackson County Subdivision Ordinance shall be reviewed by the Planning Department to assure compliance with this ordinance. This review shall be conducted concurrently with the review required by the Jackson County Subdivision Ordinance. Appeals of the decision of the planning director regarding compliance with the standards of this ordinance shall be

heard by the Planning Board provided the appeal is filed with the Planning Department within 30 days of the receipt of the decision.

19.1.B. Major Subdivisions

Subdivisions of tracts of land meeting the definition of major subdivisions as defined in the Jackson County Subdivision Ordinance shall be reviewed by the Planning Board to assure compliance with this ordinance. This review shall be conducted concurrently with the review required by the Jackson County Subdivision Ordinance. Appeals of the decision of the planning director regarding compliance with the standards of this ordinance shall be heard by the Planning Board provided the appeal is filed with the Planning Department within 30 days of the receipt of the decision.

19.1.C. All Other Development Plans

Plans for all other development of property subject to the provisions of this ordinance shall be reviewed by the planning director for compliance with this ordinance as set forth in Section 20 of this ordinance. Upon a finding that the development plan complies with this ordinance, the applicant shall be issued a letter of approval. Plans that do not meet the standards of this ordinance shall be denied as provided in Section 21 of this ordinance. Appeals of the decision of the planning director with regard to the administration of this ordinance shall be filed as set forth in Section 23 of this ordinance.

Sec. 20. - Criteria for Approval of Applications.

No land-disturbing activity, development, building, structure, road, driveway, or other development related activity which requires a permit under the terms of this ordinance or other ordinance of Jackson County shall be permitted unless the **Board of Commissioners**, planning director or planning board, whichever has final authority over said application, has determined that the project as designed and sited meets all of the requirements of this ordinance and substantially conforms to the best management practices set forth in this ordinance.

Sec. 21. - Action on Application.

An application that meets the requirements of this ordinance shall be approved by the **Board of Commissioners, planning board, or planning** director who shall be authorized to place conditions on the land disturbing activity, development, building, structure, use, or other development-related activity to ensure that the minimum requirements and the purposes and intentions of this ordinance are met. Applications that do not meet the standards contained in Section 20, above, shall be denied in writing, stating therein the reasons for denial.

Sec. 22. - Variances.

The purpose of a variance is to provide relief when a strict application of this ordinance would impose practical difficulties or unnecessary hardships on the applicant. Owners of approved lots of record at the time of this regulation shall be given every assistance and consideration to

overcome problems in the application and construction of personal single family dwellings. Requests for variances shall be heard by the Planning Board, which is hereby designated as the board to consider such requests.

22.1 Standards.

A variance from the requirements of this ordinance may be granted by the ~~Board of Adjustment~~ Planning Board if it finds the following: