



DURHAM CITY-COUNTY PLANNING DEPARTMENT
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January 6, 2006

To: Jeff N. Hunter, Colvard Farms Development Company, LLC
Through: Frank M. Duke, AICP, City-County Planning Director *FD*
From: Keith M. Luck, AICP, Planning Supervisor *KL*
Subject: Jordan Reservoir Watershed Overlay Interpretation

Summary

In August 2005, you submitted a request for an interpretation of the location of the Jordan Reservoir normal pool and the associated half-mile and one mile watershed protection overlay boundaries. Your request included ground survey points identifying the location of the 216 foot MSL normal pool. The Planning Director has determined that the survey points represent better information about the normal pool location than the information on which the present watershed protection overlays were mapped.

Background

You submitted a request for the Planning Director to make an interpretation about the location of the Jordan Reservoir normal pool and the watershed protection area boundaries in the area between the Reservoir and NC 751. The Watershed Overlay provision of the Unified Development Ordinance (UDO) establish the normal pool elevation for the Jordan Reservoir is 216 feet mean sea level. You provided surveys prepared by S. D. Puckett and Associates that locate the 216 contour line on the eastern side of Jordan Reservoir. You requested that a) nine surveyed points be used to delineate a portion of the Jordan Reservoir normal pool and b) the one-half and one mile arcs for purposes of identifying watershed protection areas be measured from those points. The attached map, titled "Jordan Reservoir Watershed Overlay Interpretation" and dated January 3, 2006, shows the present and proposed delineation of the normal pool and associated watershed protection overlays.

The Unified Development Ordinance authorizes the Planning Director to make interpretations of the Ordinance (Section 2.9.4 Powers) and of the Watershed Overlay boundaries (Section 4.11.3 Rules for Interpretation of Overlay Boundaries). The Durham Zoning Ordinance had similar provisions in Section 5.5.4.

Issues

I have reviewed the information you submitted and concur with the contention that the ground surveys represent better and more accurate information than Durham previously used to locate the Jordan Reservoir normal pool and, therefore, watershed protection boundaries. This new and more accurate information presents several issues:

Matching to the Present Delineation. Since the 1980s, the Jordan Reservoir watershed protection overlays have been based on the location of the reservoir as shown on USGS 7.5 minute topographic maps. The Jordan normal pool and arcs representing one-half, one and five mile distances are shown on a set of paper maps known as "Watershed Districts Parcels Maps." The maps show only an approximation of the location of the normal pool because of the techniques used to generate the maps. However, the Watershed Districts Parcels Maps represented the best information that was available at the time they were created.

Matching the new survey information for the location of the normal pool with the Watershed Districts Parcels Maps set is a challenge. To address this, I created several new GIS files:

- A shapefile which is a sketch of the normal pool depicted on the USGS 7.5 minute Green Level Quad and shown on the Watershed Districts Parcels Maps. This is what was used to establish the distance arcs for watershed protection area.
- A shapefile which includes a one-half, one, and five mile arcs from the normal pool sketch. These arcs were used to establish which parcels were included in the Critical and Protected Areas.
- A shapefile which is a modification of the normal pool sketch to reflect the survey points provided by Mr. Hunter.
- A shapefile which includes the one-half, one, and five mile arc from the modified normal pool sketch.

The result shows how the F/J-A and F/J-B boundaries, as well as the one-half mile arc, would change if the new survey points are accepted.

Impact of the Proposed Change on F/J-A. The change would be significant for the properties at the one-mile arc, or at the edge of the F/J-A. Fourteen parcels would change from being either in or partially in the F/J-A to being out or mostly out. These include:

0717-03-21-5153	0717-03-24-9770
0717-03-30-1620	0717-03-30-2148
0717-03-31-1481	0717-03-31-5796
0717-03-31-9909	0717-03-33-9131
0717-03-41-2354	0717-03-41-5783
0717-03-41-9127	0717-03-44-0386
0717-03-44-1076	0717-04-40-5292

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Conclusion

Based on the material submitted and utilizing provisions of the UDO, Sections 2.9.4 and 4.11.3, the Planning Director has determined that the location of the normal pool for Jordan Reservoir should be as shown on the attached map. This becomes the basis for an adjustment to the F/J-A boundary, the half-mile area boundary, and the Suburban Tier boundary (also the Urban Growth Area boundary). This change would also alter the Urban Growth Area boundary in this area. The Research and Information staff will be directed to adjust the Tiers Map and Future Land Use Map of the Durham Comprehensive Plan, and the Durham Zoning Atlas.

To: *John N. Hunter, Unified Permit Development Company, LLC*

Through: *Frank M. Dale, AICP, City-County Planning Director*

Cc: **T. E. Austin, Research and Information Section**

From: *Kath M. Lark, AICP, Planning Supervisor*

Subject: *Jordan Reservoir Watershed Overlay Interpretation*

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