



Charlotte Storm Water
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Rezoning Petition Review

To: Tom Drake and Tammie Keplinger, CMPC

From: Matthew Anderson / Doug Lozner

Date of Review: February 14, 2008 **(Revised March 3, 2009)**

Rezoning Petition #: 08-53

Existing Zoning: BP (CD)

Proposed Zoning: MUDD

Location of Property: Approximately 60.30 acres located on the south side of W. Arrowood Rd between I-485 and Whitehall Executive Center Drive

Downstream Complaints and analysis: This site drains to a stream listed as impaired by the NC Division of Water Quality.

Source Citation: A portion of the water quantity and quality comments reference information gained from the "Post-Construction Ordinance Stakeholders' Group Final Report". This report reflects consensus reached during the Council-approved process to include community input on the proposed ordinance language. Other comments, including the environmental permit, stream buffer and some detention requirements reflect existing regulations and ordinances.

Recommendations

Concerning Storm Water: Include the following notes on the petition.

The petitioner acknowledges that other standard development requirements imposed by other city ordinances, standards, policies, and appropriate design manuals will exist. Those criteria, (for example those that regulate streets, sidewalks, trees, storm water, post construction controls, and site development, etc.) will apply to the development site. Conditions set forth in this petition are supplemental requirements imposed on the development in addition to other standards. Where conditions on this plan differ from ordinances, standards, policies, and approaches in existence at the time of formal engineering plan review submission the stricter condition or existing requirements shall apply.

Storm Water Quantity Control

The petitioner shall tie-in to the existing storm water system(s). The petitioner shall have the receiving drainage system(s) analyzed to ensure that it will not be taken out of standard due to the

development. If it is found that development will cause the storm drainage system(s) to be taken out of standard, the petitioner shall provide alternate methods to prevent this from occurring.

Storm Water Quality Treatment – Source: *BMP recommendation taken from “Post-Construction Ordinance Stakeholders’ Group Final Report”*

The development will make use of existing Moody Lake and Johnston Lake for storm water quantity and quality control of the development’s runoff. The following standards shall be met and provided for by the lakes. The following standards are based on the performance of the existing lakes and do not propose improvements to enhance the performance of the lakes.

1. 75% Total Suspended Solids (TSS) removal efficiency shall be provided for the entire post-development runoff volume for a 1” rainfall event. The TSS removal efficiency shall be based on an analysis of pond surface area, design particle size of suspended solids, settling velocity and discharge rate of pond of design storm event. (Calculation acceptable to Engineering and Property Management showing this shall be submitted at the time of plan submittal).
2. Permanent Pool Surface Area shall meet or exceed minimum SA/DA ratio as required by NCDENR-Best Management Practices Design Manual, July 2007.

For portions of the proposed development which do not drain to Moody or Johnston Lake, or cannot be routed to the lakes, those areas shall construct water quality best management practices (BMPs) to achieve 85% Total Suspended Solid (TSS) removal for the entire post-development runoff volume for the runoff generated from the first 1-inch of rainfall. BMPs must be designed and constructed in accordance with the Mecklenburg County BMP Design Manual, July 2007 or North Carolina Division of Water Quality Stormwater Best Management Practices Manual, July 2007. (Design Standards shall be met according to the City of Charlotte Best Management Practices Manual, when available). Use of Low Impact Development (LID) techniques is optional.

Volume and Peak Control – Source: *Volume Control and Peak Control Downstream Analysis taken from “Post-Construction Ordinance Stakeholders’ Group Final Report”*.

The development will make use of existing Moody Lake and Johnston Lake for storm water quantity of the development’s runoff. The following standards shall be met and provided for by the lakes. The following standards are based on the performance of the existing lakes and do not propose improvements to enhance the performance of the lakes.

1. Peak runoff control shall be provided for the 2-year, 10-year, 25-year, 50-year and 100-year, 6-hour design storm events. Release rates for these storm events shall approximate release rates of the undeveloped project site or, for existing site impervious area, an approximation of a 50% wooded, 50% grassed.

For portions of the proposed development which do not drain to Moody or Johnston Lake, or cannot be routed to the lakes, those areas shall control the entire volume for the 1-year, 24-hour storm. Runoff volume drawdown time shall be a minimum of 24 hours, but not more than 120 hours. Those areas shall also match the predevelopment runoff rates for the 10-yr, 6-hr storm and perform a downstream flood analysis to determine whether additional peak control is needed and if so, for what level of storm frequency, or if a downstream analysis is not performed, control the peak for the 10-yr and 25-yr, 6-hour storms.

Stream Buffers

The S.W.I.M. Stream Buffer requirements apply described in the City of Charlotte Zoning Ordinance, Chapter 12. In addition, intermittent and perennial streams within the project boundary

shall be delineated by a certified professional using U.S. Army Corps of Engineers and N.C. Division of Water Quality methodology and shall be shown in the site plan submittal along with all buffer areas.

All perennial and intermittent streams draining less than 50 acres shall have a minimum 30-foot vegetated buffer including a 10-foot zone adjacent to the bank. Disturbance of the buffer is allowed; however, any disturbed area must be re-vegetated and disturbance of the 10-foot zone adjacent to the bank shall require stream bank stabilization using bioengineering techniques as specified in the Design Manual.

All streams draining greater than or equal to 50 acres and less than 300 acres shall have a 35-foot buffer with two (2) zones, including stream side and upland. Streams draining greater than or equal to 300 acres and less than 640 acres shall have a 50-foot buffer with three (3) zones, including stream side, managed use and upland.

Streams draining greater than or equal to 640 acres shall have a 100-foot buffer, plus 50% of the area of the flood fringe beyond 100 feet. This buffer shall consist of three (3) zones, including stream side, managed use and upland.

All buffers shall be measured from the top of the bank on both sides of the stream. The uses allowed in the different buffer zones as described in the S.W.I.M. Stream Buffer requirements in the Zoning Ordinance, Chapter 12, as well as the other provisions of the S.W.I.M. ordinance shall apply (except buffer widths).

Additional Notes:

The following agencies must be contacted prior to construction regarding wetland and water quality permits:

Section 401 Permit	NCDEHNR – Raleigh Office (919) 733-1786
Section 404 Permit	US Army Corps of Engineers (704) 271-4854

Recommendations Concerning Storm Water Due to March 20th

Revision: Remove plan specific Water Quality, Quantity (Peak and Volume), and stream buffer notes and instead include the following notes on the petition.

The petitioner shall comply with the Charlotte City Council approved and adopted Post Construction Controls Ordinance.

The following agencies must be contacted prior to construction regarding wetland and water quality permits:

Section 401 Permit	NCDEHNR – Raleigh Office (919) 733-1786
Section 404 Permit	US Army Corps of Engineers (704) 271-4854

**Recommendations
Concerning Storm Water
Due to January 9th**

Revision: Please show all S.W.I.M. Stream Buffers and Post-Construction Buffers on the plans. In addition under the Storm Water Management Section remove notes 1 and 2 and replace them with the following notes:

The petitioner shall comply with the Charlotte City Council approved and adopted Post Construction Controls Ordinance.

**Recommendations
Concerning Storm Water
Due to February 20th**

Revision: No additional recommendations are needed at this time.