



**RADWAY  
DESIGN  
ASSOCIATES**  
CHAPEL HILL, NC

December 19, 2006

**MEMORANDUM**

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To: Phil Mason  
From: Scott Radway  
Subject: Stormwater Management Basin Design  
Answer to Council Member Inquiry

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In response to the Council and Staff inquiry about the location of a new stormwater management basin on site rather than the use of the existing basin, the applicant provides the following information and response.

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The applicant for The Residences at Chapel Hill North has proposed to develop on-site stormwater management facilities rather than attempt to use the existing detention basin at Chapel Hill North. There are several reasons.

First, because of the bedrock conditions on the site, the existing basin is constructed to a depth approximately three feet shallower than the original design and therefore has a smaller storage capacity. The original design was for the entire site, however, the revised [constructed] design for the basin is only for the impervious surface that is currently in place. Although the existing basin can handle additional stormwater from a small amount of new development, it does not have sufficient capacity to treat the stormwater from the proposed residential development without performing a significant amount of work on the facility.

Second, the 2006-stormwater quantity and quality requirements are different. For example, the current standards require that designs be capable of handling 1-year, 2-year, and 25-year storm events, rather than 10-year events.

Third, the only area available for expansion and reconstruction of the existing basin is east of the basin, the location proposed for stormwater management facilities by the applicant.

While some have speculated that using the existing basin would result in less site disturbance of the applicant's site, that appears to be an incorrect conclusion. Expanding & reconstructing the existing stormwater basin will probably result in as much disturbance to the applicant's site, maybe more. Because the existing basin has a much lower elevation than the applicant's site, the extension of the existing basin would result in the need for significant recovery grades along the east slope of any enlarged basin on the applicant's site and would probably result in significant rock removal as part of the grading exercise. As well, the outlet structure of the existing facility would require reconstruction to meet the new standards.

With the proposed design, the applicant can meet all of the current town stormwater management requirements for both quantity and quality of discharged stormwater and believes that the entire Chapel Hill North development is better served by two stormwater management basins.

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