



## County of Fairfax, Virginia

### MEMORANDUM

**DATE:** February 28, 2007

**TO:** Valerie Tucker, Engineer III  
Site Review Division,  
Land Development Services  
Department of Public Works and Environmental Services

**FROM:** Don Lacquement, Engineer III  
Stormwater Planning Division  
Department of Public Works & Environmental Services

**SUBJECT:** Proposed Demolition and Construction of New Dwelling at 8130 Stacy Road  
TM 102-1-0012-0009

I have reviewed the attached information and find no need for a formal floodplain study to be submitted. However, it is not the hydraulic or hydrologic computations on the attached plan that have led me to that conclusion. You will see, in fact, that neither the hydrologic nor the hydraulic computations meet the requirements of the PFM (i.e. the Rational Method is used for a shed over 200 acres and Manning's formula is used rather than the standard step method).

The two things that make me comfortable with the proposed house construction are:

1. This is a plan to replace an existing house, which is currently in the floodplain and the footprint of the proposed house (and fill) is less of a hydraulic obstruction than the existing house.
2. The floodplain elevations which the engineer has derived using the Rational Method and Manning's Equation have yielded a 100-yr water surface elevation that is noticeably higher than both the adopted Massey study values and FEMA's study done by Bernard Johnson for the effective FIRM. (see attached backup information from these two studies). This has resulted in a conservative lowest floor elevation.

The only concern I have is that the existing driveway entrance, which will serve as the entrance to the proposed house as well, is subject to flood depths of greater than 1', per the 100-yr water surface elevation on the effective FEMA flood insurance rate map. If the builder addresses this (i.e. via relocation of the entrance/grading), along with the standard requirements for venting, and for elevating both the ductwork and the mechanical equipment above the BFE, this proposed house would be acceptable. I would appreciate it if the grading plan could be approved, "as noted", stating what the adopted floodplain elevation is, and that his Rational/Manning computations were not used for our review purposes.

Department of Public Works and Environmental Services  
Stormwater Planning Division  
12000 Government Center Parkway, Suite 449  
Fairfax, VA 22035-0052  
Phone: 703-324-5500, TTY: 711, FAX: 703-802-5955  
[www.fairfaxcounty.gov/dpwes](http://www.fairfaxcounty.gov/dpwes)



---

Valerie Tucker, Engineer III  
Proposed Demolition and Construction of New Dwelling at 8130 Stacy Road  
TM 102-1-0012-0009  
Page 2 of 2

This demolition and reconstruction are proposed within a FEMA Special Flood Hazard Area (SFHA), a Zone AE to be specific. The owner and his engineer should be told that a LOMR-F will be required and that they therefore must assure that they verify that the lowest floor (including the garage) elevations are per the plan and that the lowest adjacent grades and limits of fill are exactly what were shown on the approved grading plan. They should be advised to do this as construction is occurring to avoid the extremely costly complications that would result if they are shown to have impacted the 100-yr water surface elevation due to too much fill. I have been trying to get a determination from FEMA on whether, since the net area of obstruction of flow is decreasing with the proposed house and grading, only an elevation certificate might be required, in lieu of a full study, but I have still not heard back. Consequently, I think it's better to brace the owner for the worst and in the meantime, see if FEMA will require less than a full study for this particular scenario.

This plan also proposes a "crawlpace". Because this is within a SFHA, this crawlpace will have to adhere to the criteria in the "Interim Guidance on the Construction of Crawl Spaces in SFHA's", Technical Bulletin 11-01, dated November 2001. In addition to assuring that the lowest grade inside the foundation wall is at or above the lowest adjacent grade external to the structure, this guidance requires that a system to dewatering the "crawlpace", should it be flooded thru the vents, must be installed. I have confirmed that this guidance is still in effect.

Let me know if you have any questions or concerns.

Attachments: As Noted

cc: Donald R. Demetrius, Chief, Watershed Planning and Implementation Branch,  
Stormwater Planning Division, DPWES