

# 8747 Brook Road McLean, Virginia

RPA ENCROACHMENT EXCEPTION #3276-WRPA-003-1 & WATER QUALITY IMPACT ASSESSMENT #3276-WQ-004-4  
SECTION 118-6-9, GENERAL RESOURCE PROTECTION AREA ENCROACHMENT REQUEST

APPLICANT REPRESENTED BY TNT ENVIRONMENTAL, INC.



# Project Discussion

- ▶ Request to add a new turnaround to the driveway
  - ▶ 330 square feet (sq. ft.) of RPA disturbance;
  - ▶ No disturbance within the seaward 50-foot of RPA;
  - ▶ Approximately 184 SF of new impervious area (pervious paving).
  - ▶ Impervious 3-foot-high retaining wall
  - ▶ Net increase of 0.5% impervious area
- ▶ Proposed RPA encroachment shall be mitigated per CBPO 118-3-3(f)



Approx. location of proposed turn around

# Project History

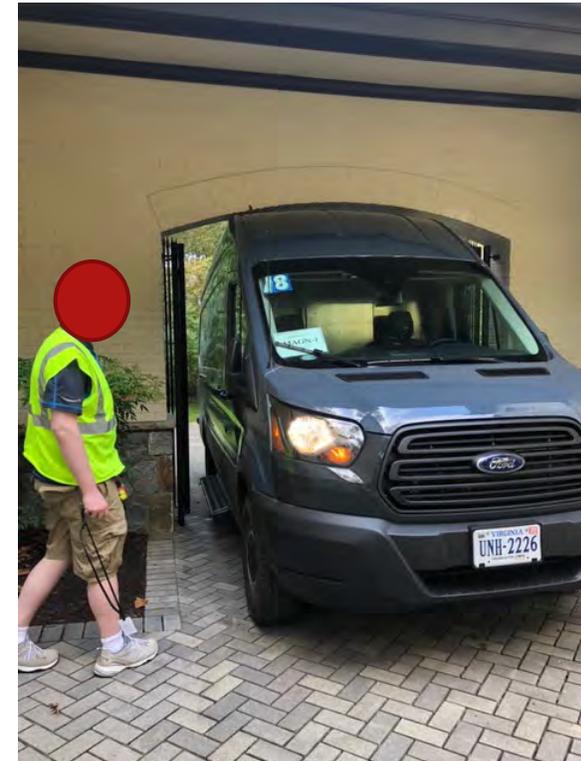
- Lot Created 1952, Re-subdivided 1995
- The existing primary structure, guesthouse, and paved courtyard located within the RPA were approved to be built in 2012 by Fairfax County (#3276-WRPA-002-1 and #3276-WQ-002-1,).
- Mr. Edwin (applicant) purchased the property in 2011.
- Total existing impervious of the property is 9,217 sq feet (approx. 19.7% of property).



# Staff Report Discussion

## 118-6-6.a – Is the Minimum Necessary to Afford Relief

- Staff Comment: The currently requested driveway turn-around was not included in the original exception application and is therefore not the minimum necessary to afford relief.
  - The need for the turn around was not envisioned in 2012
    - USPS delivery across USA has increased from 3.5 billion in 2012 to 7.3 billion (207% growth) in 2020 (statistics pre-Covid pandemic)\*
    - Amazon 2019 annual delivery was 1.9 billion packages compared to 750 million in 2018 (255% growth)\*\*
    - FedEx Ground between the fiscal years of 2016 and 2021 has grown from 1.93 to 3.13 billion (162% growth)\*\*\*
  - As is, delivery trucks are required to reverse 165-feet down the driveway and to back up on to Brook Road
  - Brook Road – ~1,250 vehicles per day (VDOT Daily traffic Estimate for 2020)



\*<https://facts.usps.com/table-facts/>

\*\* <https://www.statista.com/statistics/1178979/amazon-logistics-package-volume-united-states/>

\*\*\* <https://www.statista.com/statistics/878581/fedex-ground-total-annual-package-volume/>



# Staff Report Discussion

## 118-6-6.a – Is the Minimum Necessary to Afford Relief

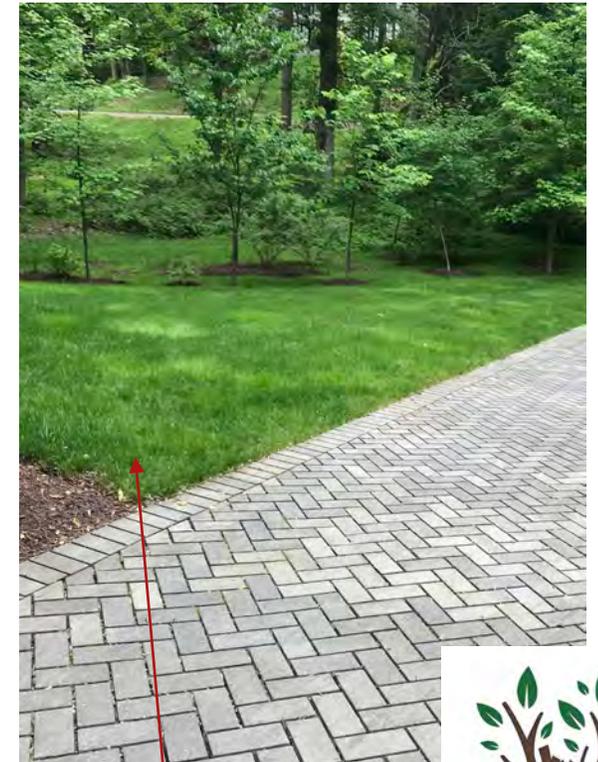
- There was also to be a rain garden/infiltration trench between Brook Road and the trench basins that can handle runoff from Brook Road. See The Final Meeting Minutes October 3, 2012, Attachment C1. The need for the turn around was not envisioned in 2012.
  - Per approved Water Quality Waiver Conditions Analysis, alternatively, the applicant could provide a “Vegetated buffer area containing at least 10,000...[to] meet the density requirements per CBPO 118-3-3(f).
  - The proposed 330 square feet (sq. ft.) of RPA disturbance occurs within the footprint of the 2012 exemption request for RPA disturbance;



# Staff Report Discussion (cont.)

## 118-6-6.b – Will Not Confer a Special Privilege

- It is staff's opinion that the exception for a driveway itself would not confer a special privilege. However, if approved, the "serial exception" nature of this exception request is itself a special privilege.
  - The applicant is not requesting a "serial exception". This is only the second request for exemption on this property, the first occurring over 9 years prior.
  - Serial implies the applicant is requesting exemptions in instalments to avoid public hearing.
    - 2012 ERC approved exception to allow for the construction of a dwelling, guesthouse, and pervious paved courtyard
    - 2020 exception request to ERC for installation 3-point turn around extension of the driveway to meet unforeseen needs concerning safety of exiting vehicles along Brook Road.



Approx. location of proposed turn around

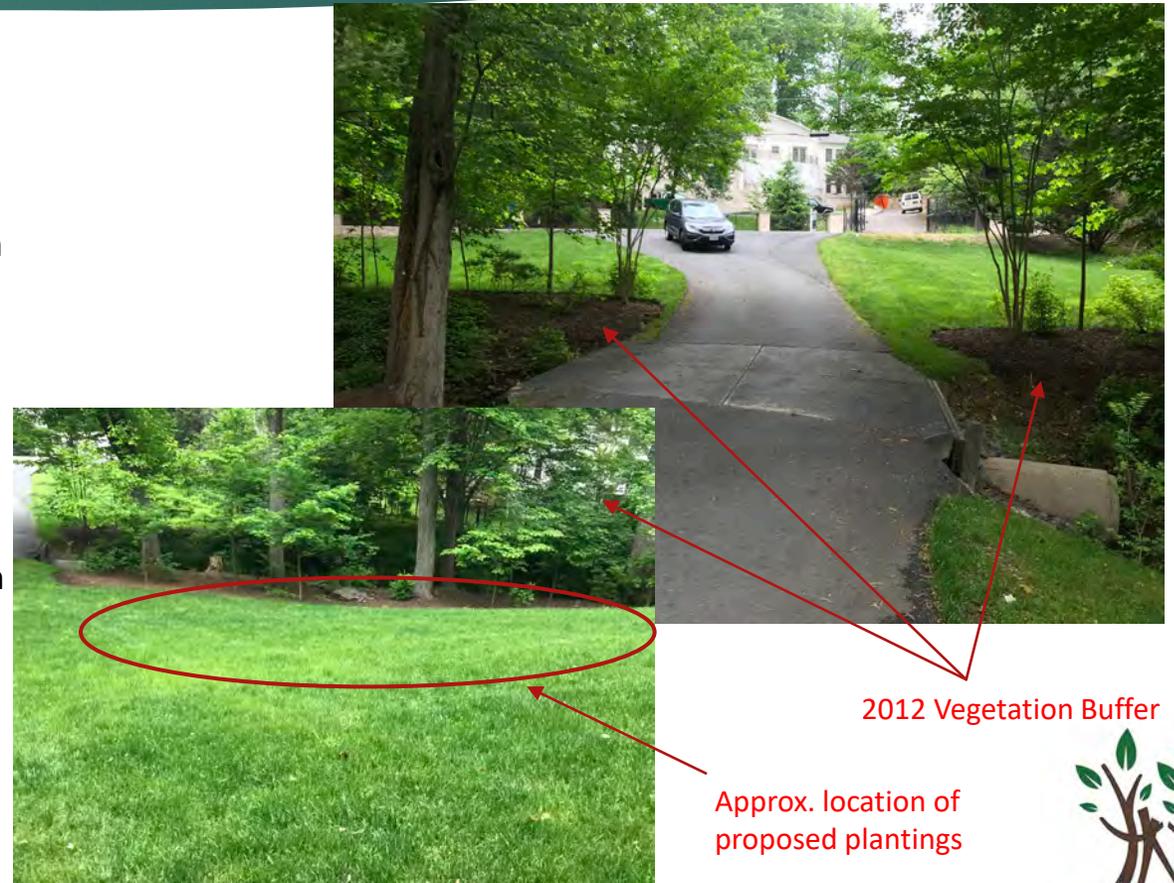


ENVIRONMENTAL

# Staff Report Discussion (cont.)

## 118-6-6.c – Is Not of Substantial Detriment to Water Quality

- The addition of the impervious area under deck is outside of RPA and not pertinent to this application. However, the revised VRRM sheets submitted in April include this area as impervious.
- The applicant is proposing to add an additional area of vegetation between the vegetated buffer required by the 2012 exception and the house. The proposed vegetation is on a slope; large trees should not be planted on slopes per the Public Facilities Manual.
  - Per 12-0505.3 C, staking and guying may be warranted on slopes; however, there is no discussion within the PFM pertaining to the refrainment of large trees on slope
- All changes to the land use based on the land use before the first exception have been mitigated with appropriate vegetation in 2012 (10,000 sq foot vegetated buffer)
- The requested 2020 exception will be mitigated by further revegetation of the RPA.
  - 845 square feet of plantings (515 sq ft more than required of CBPR 118-3-3(f))



2012 Vegetation Buffer

Approx. location of proposed plantings



# Staff Report Discussion (cont.)

## 118-6-6.d – Is Not “Self-created” Or “Self-imposed”

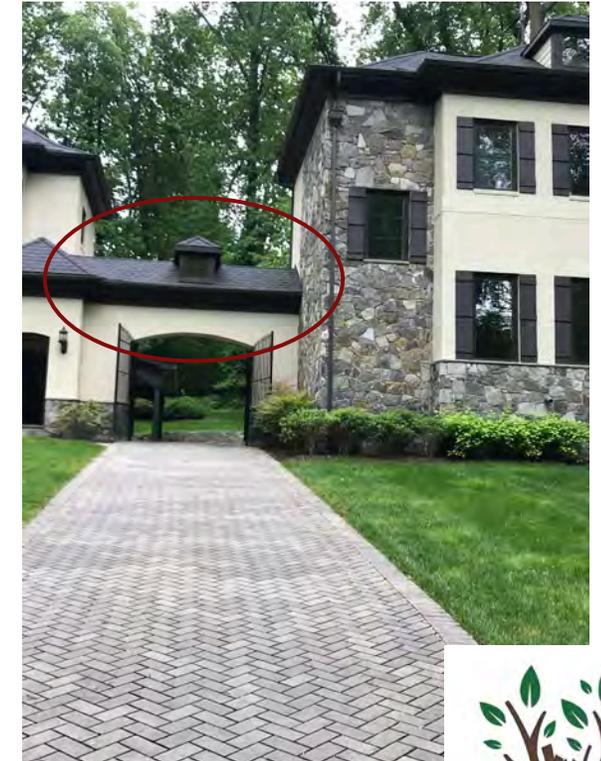
- This request for further encroachment in the RPA beyond and in addition to the previously approved encroachment, and this desire to use more of the RPA is self-created as evidenced by the fact that it was not included in the original application as the minimum encroachment needed.
  - The Virginia Supreme Court makes clear that the language “self-created” or “self-imposed” condition refers to violating the zoning ordinance and then asking for a variance to redress the violation, *Spence v. Board of Zoning Appeals for the City of Virginia Beach*, 255 Va. 116, 496 S.E. 2d 61 (1998).
    - The lack of a turn-around in the 2012 application is not evidence of a violation. The request for this exemption (no violation involved) would itself refute such allegation.
  - The request is to alleviate hazardous back-up conditions for delivery vehicles and others on to Brook Road which has been designed and constructed by others.



# Staff Report Discussion (cont.)

## 118-6-6.d – Is Not “Self-created” Or “Self-imposed” (cont.)

- The applicant is opting for more impervious area as a self-created situation instead of seeking an alternative solution. For example, the applicant may consider meeting their stated goal of turnaround access for delivery vehicles by raising or razing the archway which separates the existing driveway from the existing turnaround.
  - As discussed above, the proposed 3-point turn-around does not meet the definition of “self-created” or “self-imposed” as there is no violation to ordinance occurring.
  - The proposed encroachment is the Least Damaging Practicable Alternative to RPA encroachment. The applicant initial design was to create larger turning area at the driveway entrance which would have required a larger RPA disturbance to accommodate slope. **This option occurs within the Seaward 50.**
  - Razing or raising the archway would cause unnecessary structural modifications to the existing house and is an impractical solution to the current situation.



# Staff Report Discussion (cont.)

## 118-6-6.e – No Degradation of Water Quality

- It is the opinion of staff that the water quality computations should be revised and based on the pre- (before the new house) and post land use for the entire parcel.
  - We have worked with the County to revise the VRRM sheets numerous times (revisions provided April 21 and April 23) at County request and this is the first time this comment has been conferred.
  - Revising these sheet to include development approved by the 2012 exemption would not be applicable as the 2012 computation and BMP requirements were based on the Northern Virginia BMP Handbook (11/6/1992) using the “Chesapeake Bay Method”.
  - The proposed 330 sq feet of disturbance is contained entirely within the 2012 approved limits of disturbance.

PRE-DEVELOPED PHOSPHORUS LOAD = 0.41 LBS/YR  
POST-DEVELOPED PHOSPHORUS LOAD =  
0.47 LBS/YR - 0.07 LBS/YR (LOAD REMOVED) = 0.40 LBS/YR  
THEREFORE; NO DEGRADATION OF WATER QUALITY WILL OCCUR AS A RESULT OF THE  
DEVELOPMENT AS REQUIRED PER FAIRFAX COUNTY CODE 118-6-6(e).

\*TOTAL ON-SITE IMPERVIOUS AREA TO VEGETATED FILTER STRIP = 8,073 SF,  
TOTAL PROPOSED IMPERVIOUS AREA ON-SITE = 8,253 SF,  
IMPERVIOUS SITE COVERAGE TO VEGETATED FILTER STRIP = 8,073/8,253 = 0.98\*

\*TOTAL OFF-SITE IMPERVIOUS AREA TO VEGETATED FILTER STRIP = 4,420 SF,  
(EXISTING BROOK ROAD = 1,920 SF, EX. HOUSE ON LOT 28 = 2,500 SF, SEE TOPO MAP, THIS SHEET)  
TOTAL PROPOSED IMPERVIOUS AREA ON-SITE = 8,253 SF,  
OFF-SITE IMPERVIOUS COVERAGE TO VEGETATED FILTER STRIP = 4,420/8,253 = 0.53\*

\*\*VEGETATED FILTER STRIP PROVIDES 10% PHOSPHORUS REMOVAL PER  
CHAPTER 3.14 OF THE VIRGINIA STORMWATER MANAGEMENT HANDBOOK.\*\*

# Staff Report Discussion (cont.)

## 118-6-9 – Water Quality Benefit Exceeds the Detriment

- It is the opinion of staff that the water quality computations for the lot should be based on the entire lot and include the additional impervious area added to the lot after approval of the first exception. Staff's opinion is that the calculations provided do not demonstrate that the water quality benefit of the entire site is maintained with this proposal.
  - Per prior slide regarding 118-6-6.e, including impervious approved by the 2012 exemption would not be applicable as the 2012 computation and BMP requirements were based on the Northern Virginia BMP Handbook (11/6/1992) using the "Chesapeake Bay Method".
    - Load requirements were met and exceeded in 2012
  - The proposal is to mitigate the impervious area and land disturbance by turning 845 sq. ft. of turf grass in the RPA to vegetated buffer.
  - Pre-development load = 0.57 lb/yr
  - Post-Development load (with proposed reforestation) = 0.49 lb/yr, thus providing a TP reduction of 0.08 lb/yr.

