ATTACHMENT - F (1 of 4)

North Glen Hills
(Lot 21, Block 7)
#12925 Circle Drive

Arborist Report

A field inspection was performed on November 16, 2004 with the purpose of evaluating the existing condition of the 61" diameter White Ash (*Fraxinus Americana*). This report also specifically addresses the potential for retaining the tree with regard to the planned demolition of the existing two-story wood frame home and construction of a new home. The report is to serve not only as an assessment of the tree's current condition, but also to identify the potential impacts to the health and structural integrity of the tree including preventative stress reduction measures.

The tree was previously identified on the Natural Resource Inventory / Forest Stand Delineation (No. 4-98090) as Tree No. 44 (59" diameter White Ash). The Maryland National Park & Planning Commission (M-NCPPC) approved the NRI/FSD on November 17, 1997. The NRI/FSD was prepared along with a Forest Conservation Plan to satisfy requirements of the 1998 subdivision of former Parcel 528 into two lots. The disturbance and traffic associated with construction of the home on Lot 20 was far removed from the root zone of the 61" diameter White Ash and had no impact upon its health. The tree was listed as being in good condition at the time of the initial inventory and is still in reasonably good condition considering its age. The specimen White Ash (Tree No.44) is identified as being protected under a Category II Conservation Easement (L.13178 F. 421) on the Plat of Subdivision. As stated in the easement, "***Diseased or hazardous Trees or Tree limbs may be removed to prevent personal injury or property damage after a minimum of ten business days notice to the Planning Director, unless such notice is not practical in an emergency situation***."

If the 2" diameter increase in girth over 7 years is a representative average, the tree would be about 213 years old. This equates to a growth rate of 0.2857" per year. Many of the years in the last ten years (this year not included) have been drought or near drought years, therefore a better gauge of the tree's growth rate might be somewhere in the 0.30" to 0.35" per year range. This would yield an age between 174 years and 203 years. Growth rates vary with a number of factors and the low branching and spreading habit of this tree is indicative of a very open environment with no limitations for sunlight. Trees growing up within forest environments have a slower growth rate due to the greater competition for resources including sunlight, nutrients, and water. There are many pruned branches and one sediment filled cavity as noted on the Tree Save Plan dated 11/16/04. The tree is in fair to good condition with some dieback in the canopy but no signs of fungal fruiting bodies, oozing sap (slime flux), or rot along the root flare or base of trunk. The numerous pruning scars and the presence of epicormic growth (also known as watersprouts) arising out of major limbs testify that the tree has been (and may currently be) undergoing stress. "Ash decline" is the terminology used to describe the slow process of dieback, branch tip death, and defoliation over the years that lead up to a sparse, unhealthy appearance. Ash

decline typically involves many factors and the stresses are often nonpathogenic. The canopy dieback of the 61" diameter White Ash on-site is not so severe as to be irreversible and several means to reduce stress could go a long way in contributing to its recovery

The site is located in Maryland's Piedmont Physiographic Province. The bedrock on-site is mapped as the Upper Pelitic Schist formerly known as the Wissahickon Formation. This rock is now believed to be Upper Cambrian or Lower Ordovician (480 to 520 million years) in age rather than Precambrian as once thought. The common quartz intrusions are likely much younger and large quartz boulders outcrop on-site. This rock underlies the Blocktown channery silt loam (Soil Survey Mapping Unit 116C). The larger quartz boulders are several square feet in size and soil depth is typically 21 inches to bedrock. The existing home was built in 1900 according to the Maryland Department of Taxation and Assessments. The home has no basement but does have a earthen crawl space of about 4.5 feet in depth below the adjacent ground surface. A very cursory look into the crawl space area did not reveal any apparent foundation damage or intrusion of roots into the crawl space. The tenant said she is not aware of any foundation damage but there are some cracks in the upper walls of the house. The adjacent ground elevation at the western side of the tree at the edge of the house is 459.0. The tree and the home are in a well-drained upland position with slopes of about 6% draining to the east. Poor drainage is definitely not a problem. If anything, the area may be somewhat excessively drained.

The 61" diameter White Ash is centered about 4 feet off the eastern side of the house and a major branch of about 24 inches in diameter actually rubs against the house at about 10 foot height. A second White Ash of 35" diameter is located nearby at the northeastern corner of the house. This tree (No.43) was listed as being in fair condition on the 1998 NRI/FSD. This tree is located about 21 feet away from the larger White Ash and has also experienced some decline. Although the two trees share a portion of canopy area and, in so doing, buffer each other from damaging winds, the smaller tree is less healthy and has a much weaker structure. Due to the poor health and poor form of the smaller tree, it is recommended that this tree be removed. Some of the large trees just off-site adjacent to the western property line are also of concern due to fair to poor health. It is recommended that the owners of Parcel 530 be contacted to arrange pruning and removal of selected trees that pose a significant hazard risk to the current and future occupants of 12925 Circle Drive. A 48" diameter Chestnut Oak is of particular concern. This tree is near the existing garage and is located in a field of large quartz boulders. The tree has a hollow base with a large fungal mass at the base. Significant die-back in the canopy also attests to the poor condition of this tree. The off-site Chestnut Oak is a potential hazard given its proximity to both the existing and future homes. Several other off-site large trees in this area (mostly Chestnut Oaks) are in fair condition and are in need of pruning, if not removal.

In addition to the root pruning, tree protection fence, and stress reduction measures prescribed by the Tree Save Plan, it is recommended that the 61" diameter White Ash be treated with the growth regulator known as paclobutrazol. Marketed under the trade name "Cambistat", this treatment has proven particularly successful with older trees experiencing dieback in the canopy or under stress due to drought or construction damage. Paclobutrazol actually inhibits cell elongation but in so doing increases the number of fine root hairs, increases drought resistance and restores vigor to slowly declining trees. Additional information regarding this treatment may be found at the following web site: http://www.rainbowscivance.com/framesets/OakTexSet.htm. Some measure of success has been achieved even with younger trees in urban streetscape settings where a major goal is to slow growth of the tree in order to reduce the frequency of pruning maintenance and extend the lifespan of the tree. According to the recommended dosage (see attached), 1,016 ml of Cambistat should be mixed with 11,187 ml water for a basal drench application. At the manufacturers suggested price of $440.00 per gallon (prices vary), one gallon (3,785 ml/gal) could be used to treat several other large trees. Information and instructions for performing a basal drench application are attached.

The following tree maintenance and stress reduction measures are proposed:

- Advise owners of Parcel 530 that trees on their property near the common property line are in fair to poor condition and in need of removal/pruning as previously discussed.
- Tree Protection fencing to be installed to help protect the critical root zone of the 61" diameter White Ash as shown on the Tree Save Plan. Storage/stockpiling of equipment and building materials should be kept out of this area.
- Demolition of existing house should be undertaken with great care to avoid damage to the 61" diameter Ash. Potential root damage is of particular concern during removal of the foundation. An air spade should be used to trench along the outer perimeter of the foundation to locate tree roots. If cutting is necessary, it should be done by hand with a pruner or saw. Upon completion of house demolition, any exposed roots should be backfilled with top soil immediately.
- Root pruning as shown on the Tree Save Plan should be performed along intersection of new basement excavation and critical root zone of White Ash. Upon completion of root pruning, the tree protection fence should be placed as far from tree (as close to the root pruning line) as possible.
- To avoid compaction and abrasion of critical roots during construction, the area between the root pruning line and the tree base should be covered with six inches of mulch. ¾-inch plywood sheets that are fastened to each other should be laid on top of the mulch layer.
- Upon completion of new house construction, remove grass from minimum 7-foot radius around base of tree taking care to avoid damaging shallow roots. Place two to three inches of hardwood bark mulch over exposed area. Leave root flare and trunk free of contact with mulch.
- On-site trees to be preserved shall be pruned. Pruning shall be limited to removal of deadwood within crown that is over 1.5 inches in diameter. Other limbs that are in the way of construction or

are damaged in the construction process may be removed at the discretion of the arborist. Pruning shall conform to ANSI-300 pruning standards.

- The sediment filled cavity on the 61" diameter White Ash is in a vertically aligned stub and should be inspected for rot and be pruned through sound wood, if possible, at an angle to facilitate positive drainage and avoid further accumulation of moisture, leaf litter, and other material.
- Debris from pruning shall be removed from the site or chipped for use as mulch.
- Typically, the prescribed fertilization utilizes an application rate of 1 to 2 pounds of nitrogen per 1,000 square feet of root zone being fertilized. Ideally, the mixture is determined by a soil test for the area. Excess nitrogen can cause more harm to a tree making it more susceptible to disease and insect infestation. Unless a soil test determines that more nitrogen is appropriate, it is recommended that a rate of 1 pound of nitrogen per 1,000 square feet be used during the dormant season. The formulation should be balanced with a majority of nitrogen in slow release form. An approved root stimulant should be included in the fertilization formula.
- Lightning protection per ANSI A-300 standards and Best Management Practices should be installed to help mitigate the risk of tree failure during electrical storms. Typically this involves the installation of two copper cables along the central leader of the tree from the top to the ground on opposite sides of the trunk and anchored to a 10-foot long metal rod buried vertically in the ground at least 10 feet away from the trunk.
- The 61" White Ash poses a moderate hazard risk currently and it should be recognized that even a tree in excellent health is not without risk. Future owners should be willing to accept this level of risk and take appropriate measures to maintain/improve the health of the specimen White Ash. They should closely monitor the tree for signs of decline. Should the health of the tree become such as to increase its hazard risk, it should be removed immediately.
- All of the above arboricultural measures should be performed by or under the direction of an International Society of Arboriculture certified arborist and a Maryland Licensed Tree Expert.

All of measures discussed above including the paclobutrazol treatment are highly advised given the age and signs of decline that currently exist in the 61" White Ash. If these treatments/stress reduction measures pose an unacceptable financial burden, or if unobserved root loss or decay in more than 33% of the buttress roots is discovered, then removal is advised.

Doug Sievers
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Maryland Licensed Tree Expert No.850

Attachment G

Citizen Correspondence (12 pages following this sheet)