

**ADDITIONAL  
INFORMATION**

## Karen DeMaria

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**From:** Gary Volenec  
**Sent:** Monday, February 6, 2023 8:00 AM  
**To:** Ronald Ramsingh; Karen DeMaria  
**Cc:** Todd C. Stoughton; Patti McLauchlin; Raj Ramsingh  
**Subject:** RE: City Mahogany tree removal 1701 Von Phister

Ron and Karen,

I was contacted by telephone last week by the owner regarding the Mahogany tree and my previous email statements to you on the matter. During our conversation he reaffirmed his strong concerns of the tree impacts to his foundation/property. He informed me that he was a 38-year resident there. He expressed his love of trees, and that requesting removal is a difficult thing for him. I received an email from him Sunday whereby he requested I clarify my position on the matter.

Following my conversation with the owner and his email, I decided to conduct some research into general Mahogany tree roots. In my readings I found the following in response to a question in Lee County regarding Mahogany tree impacts pertinent to our situation.

*“Q: We have some large old mahogany trees tearing up the asphalt of the parking lots. We are concerned that they will continue to do more damage. What options do we have?”*

*“A: There are several options for remediation of hardscape damaged by tree roots. For large trees, the least desirable is cutting the roots and installation of root barriers. Many municipalities have tried this or use it as a short-term strategy. If root pruning is done too close to older trees, they are more likely than younger trees to become stressed and eventually die. Old trees that are leaning should not be root pruned. Other options include bridging, redesign around the tree or contacting your local government for a vegetative removal permit.” (Stephen Brown is a horticulture agent with the Lee County Extension Service.)*

As I consider my main responsibility is to the tree impacts to the right-of-way and City infrastructure, I may not have been as sympathetic to the homeowner’s plight as I should have been. I was repeating what sounded to me in my discussion with Karen like a sound solution – root pruning and a barrier wall. I am not an arborist and have little experience with root pruning of so large a tree. But, as far as roots of a large tree on our cap rock and the viability of them being pruned as close to the tree as would be necessary sounds like it would cause long term damage to the tree. Additionally, the tree has a slight lean toward the street and cutting the roots would appear to me as a layman to impact stability of the tree. Based on this information and noting I am not an Arborist, I believe that this action (root pruning and barrier wall) would not be the solution I previously thought it would be.

Please let me know if you have any questions.

Gary

*Gary J. Volenec, P.E.*  
City Engineer / Interim Director  
Engineering Department  
City of Key West  
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# UPDATED STAFF REPORT

DATE: February 7, 2023

RE: **1701 Von Phister ROW (permit application # T2022-0462)**

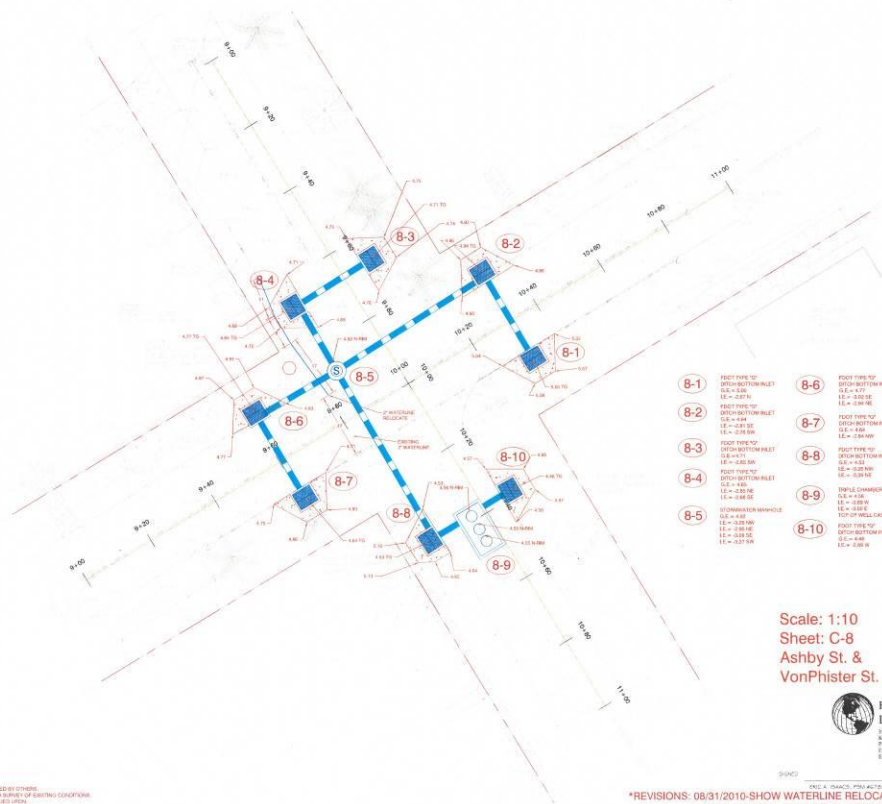
FROM: Karen DeMaria, City of Key West Urban Forestry Manager

This updated report is being put together to provide documentation related to comments that came up at the January 2023 Tree Commission meeting and received emails regarding the tree and the structure.

- 1. Job of Urban Forestry Manager:** The Urban Forestry Manager's role is to protect and monitor the trees on private and publicly owned properties and enforces ordinances and regulations governing the trees and plants. They also serve as professional staff to the City Tree Commission processing permit applications as per the city ordinances and provides appropriate documentation to the Commissioners regarding the applications.
- 2. Storm drains:** It was mentioned at the January 2023 Tree Commission meeting that numerous storm drains exist near this mahogany tree. Google Aerial maps show the location of existing drainage wells in the area. The wells collect water which is sent down a well (copy of as built drawing is below). Information received from the City Utilities department states that the wells help to create a dryer area by helping to remove standing water.



Aerial photo showing locations of street drains.



- 8-1 FOOT TIRE OF  
DITCH BOTTOM/WALLET  
DE = 3.00  
TE = 2.07 FT
- 8-2 FOOT TIRE OF  
DITCH BOTTOM/WALLET  
DE = 3.00  
TE = 2.07 FT
- 8-3 FOOT TIRE OF  
DITCH BOTTOM/WALLET  
DE = 3.00  
TE = 2.07 FT
- 8-4 FOOT TIRE OF  
DITCH BOTTOM/WALLET  
DE = 3.00  
TE = 2.07 FT
- 8-5 TO CORNER OF WHOLE  
DE = 3.00  
TE = 2.07 FT
- 8-6 FOOT TIRE OF  
DITCH BOTTOM/WALLET  
DE = 3.00  
TE = 2.07 FT
- 8-7 FOOT TIRE OF  
DITCH BOTTOM/WALLET  
DE = 3.00  
TE = 2.07 FT
- 8-8 FOOT TIRE OF  
DITCH BOTTOM/WALLET  
DE = 3.00  
TE = 2.07 FT
- 8-9 10" DIAMETER DUCTILE IRON  
TOP OF WELLS CEMENT-EDC  
DE = 3.00  
TE = 2.07 FT
- 8-10 FOOT TIRE OF  
DITCH BOTTOM/WALLET  
DE = 3.00  
TE = 2.07 FT

Scale: 1:10  
 Sheet: C-8  
 Ashby St. &  
 VonPhister St. **AS-BUILTS**  
**07/13/2010**



\*REVISIONS: 08/31/2010-SHOW WATERLINE RELOCATES  
 09/20/2010-ADD WATERLINE DIMENSIONS

NOTES:  
 ALL LOCATIONS AND DATA SHOWN HEREON WERE SUPPLIED BY OTHERS.  
 FIELD MAY CHECK THIS DATA REPRESENTS AN ACTUAL FIELD SURVEY OF EXISTING CONDITIONS.  
 ALL DATA SHOWN ON THIS PLAN IS BASED ON THE INFORMATION PROVIDED.



Copy of property appraiser map showing dimensions of properties.

**3. Time-line regarding conversations with Mr. Denhart regarding tree:** In June 2019, Mr. Denhart requested that the City trim the Mahogany tree. In August 2019, the City solicited estimates to trim the tree (reduction pruning over house and road and an evaluation of the canopy). Kenneth King-Golden Bough Tree Service, was awarded the contract by the Tree Commission to trim the tree and the work was done in September 2019.



Standing on Ashby Street looking toward Von Phister Street, photo of tree prior to trimming.

In September 2020, Mr. Denhart trimmed the roots along the structure/house.

In April 2022, after several requests from Mr. Denhart and after the hiring of a City foreman with tree trimming experience, the City trimmed the street side of the tree canopy. Mr. Denhart also requested trimming work over the house. In June 2022, after requesting estimates from professional tree companies, a request was made to Community Services to contract with Sean Creedon-Treeman, to trim the tree over the house. Once a purchase order was created and approved, the tree was trimmed in August 2022.



March 2022

Standing on Ashby Street looking toward Von Phister, photo of tree prior to trimming.



March 2022

Standing at corner of Ashby and Von Phister looking toward Washington Street, photo of tree prior to trimming.



Standing at corner of Ashby and Von Phister looking toward Washington Street, photo of tree after street side trimming by City.



Standing at corner of Ashby and Von Phister looking toward Washington Street, photo of tree after trimming on house side of tree.

The tree canopy is currently in a lopsided shape due to the trimming that has been done in the past year. Standard trimming practices recommend not trimming more than 30% of a canopy in one calendar year. The continued plan is to trim the tree in 2023 to balance and reduce the canopy.

**4. Tree Roots:** The main issue with this mahogany tree appears to be the root system and its impacts to the property (house, porch, deck, and pool). In arboriculture and urban forestry documents there are numerous articles regarding tree protection zones and critical root zones. Most people think the critical root zones are the dripline of a tree however, the dripline can be a very irregular area. Science has been increasingly looking at measuring a critical root zone based on the diameter of a tree as being a more accurate representation but can still vary depending on overall size of the tree, soil quality, water table, species, and other related factors. No information could be found regarding critical root zones in tropical tree species or in a tropical zone.

A critical root zone is that area extending out from the tree trunk where roots required for future tree health and survival are located. The values most commonly used is either 1, 1.5 or 2 ft for every 1 inch of trunk diameter. FDOT plans use a 1.5 to 2 ft standard. Using these values a 10 inch diameter tree would have a critical root zone of 10-20 ft radius around the tree.

Critical Root Zone or a tree protection zone is not defined in the City code. Copies of sections of the city code that do mention tree roots is attached below (section #6). It is not reasonable to apply the above stated procedure in Key West due to the proximity of structures, road, and trees. It has been the general policy of the urban forestry manager's office that a critical root zone review regarding permitting and development in an area is 10 ft out from the base of a tree. There are numerous trees, especially large, old mahogany trees in Key West along Simonton and Southard Streets, whose roots have been compromised as per the critical root zone scientific procedures, but who are stable and healthy. The City does allow for select root pruning.

Root management to include pruning and barrier placements to direct root growth are accepted standard practices as per the American National Standards for Tree Care Operations-Tree, Shrub, and Other Woody Plant Management Standard Practices (Root Management), ANSI A300 (Part 8).

**5. Tree Health:** Overall, the Mahogany tree is in good condition. Canopy health and overall structure appears to be good. The tree has multiple trunks which all appear to have good "U" crotch areas. Included bark or codominant trunks were not noted as being observed on the tree. The tree has an extensive root ridge area.

A. Cabling: Mr. Denhart had asked that the City cable the tree trunks. Reviewing standards for cabling or bracing trees, primary purposes of installing a cabling or bracing system is to add strength and support to weak or compromised trees, to help stabilize a growing tree, to save a healthy tree with a storm-damaged split trunk thus preventing it from completely splitting apart, and to provide support systems for heavy branches growing awkwardly. Tree limbs with splits in the wood and bark, included bark in main trunks and branches, v-crotch stems, and overextended branches with excess weight on the limbs, are also possible indications of the need for cabling or bracing. Cables and braces are also used to help distribute weight and provide the trunk with the support it needs to thrive.



Review of the tree, discussions with arborists, and research on cabling techniques indicate that this mahogany tree does not exhibit an immediate need for cabling. The canopy trunk and branch system is not overly weighted at the limbs and the canopy is able to "breathe". Future trimming to reduce and balance the canopy can alleviate any potential need for future bracing on this tree.

- B. Tree risk assessment: Mr. Denhart submitted additional information that included copies of the Tree Risk Assessment form with highlighted areas.

A tree risk assessment is done to determine the potential failure of a tree. The International Society of Arboriculture (ISA) administers this program and it is intended for use by Tree Risk Assessment Qualified (TRAQ) Arborists. As of December 2022, there was only 1 certified arborist that routinely works in Key West that is TRAQ certified, Sean Creedon-Treeman.

Tree Risk Assessment looks at the potential failure of a tree in a 1-5 year time frame. The assessment reviews the health of the tree canopy, structural flaws and defects in the branching, trunks, and root areas, if the tree was to fail, what are the strike zones, adjacent site factors, and whether there are alternatives available that would alleviate the risk.

The tree is located approximately 7 ft away from a structure in a right of way area with public parking and immediately next to a paved, public roadway area. It is a large, multitrunked, old tree that appears to be in good health with no known structural defects or failures in the canopy or trunk.

Soil borings done in 2010 when the drain wells were installed indicate the soil is a mixture of sand, shell and white rock from 1-60 ft. At approximately 1.2 ft below grade is the water level (HH). Speaking to a contractor working on a nearby property, there is approximately 12-18 inches of soil in this area.

The full extent (length and depth) of the root system can not be determined. It is assumed that the root system extends under the roadway and under the structure. Roots close to the surface along side of the structure have been cut. The tree does have an extensive root collar area at the surface.

The primary issue with the tree appears to be the impacts of the tree roots to the property. The question is whether root pruning can be done without creating a failure risk of the tree. Select root pruning has already occurred next to the main structure so a root guard in this area might be a reasonable alternative. Impacts to the front porch area could be resolved by selective root pruning with a root guard. It is unknown the actual amount of impact and spread of the roots in the deck/pool area and whether selective root pruning can be done.

- 6. Land Development Regulations:** The land development regulations address the need for permits, approval and denial of permits, proper pruning and tree abuse. Below are sections of the code that pertain to this tree discussion;

**Sec. 110-251. Purpose and intent.**

*The city commission finds that trees on privately and publicly owned property within the city are economic and aesthetic assets to the citizens of the city, because of their important and meaningful contribution to a healthy, beautiful, and safer community, attributable to their carbon dioxide absorption, oxygen production, dust filtration, wind and noise reduction, soil erosion prevention and surface drainage improvement. Therefore, the health and economic welfare of the citizens can be served through protection of the health and growth of the trees and through encouragement of additional tree plantings. The city commission further finds that this public purpose can best be achieved through a city agency having authority and responsibility to accomplish these goals.*

**Sec. 110-327. Approval criteria.**

*The tree commission shall consider its finding of one or more of the following facts as grounds supporting approval of a tree removal permit application:*

- (1) The tree is a hazard to traffic, public utilities, buildings or structures;*
- (2) The tree is injured, diseased or insect infested such that it is a hazard to people, structures or other trees;*
- (3) The tree prevents access to a lot or parcel;*
- (4) The tree will be properly transplanted to another location in the city by the property owner with the consent of the owner of the new location.*
- (5) The tree will be replaced with an equivalent tree planted in a location suitable for healthy growth on the same lot or parcel.*
- (6) The tree will be replaced with an equivalent tree that is:
  - (a) Donated to a non-profit organization approved by the tree commission; and*
  - (b) Guaranteed by the applicant for a minimum of one year after planting; or**
- (7) Funds equivalent to the cost of a Florida #1 canopy tree or palm, will be donated by the applicant to the city for use as provided by section 110-287.*

**Sec. 110-328. Findings of disapproval.**

*The tree commission shall consider its finding of one or more of the following facts as grounds supporting disapproval of a tree removal permit application:*

- (1) The species, size, champion tree status, historical importance and/or condition of the tree make it a unique or rare specimen; or*
- (2) The size or location of the tree makes it substantial in and easily accessible to public view.*

Regarding tree roots, most sections of the land development regulations (City ordinances) relate to tree protection requirements and cutting of girdled roots. The following are City Ordinance sections that pertain to tree root issues;

**Sec. 110-256. - Tree abuse.**

- (b) Prohibited acts. A tree shall be considered abused if a person*

takes an action so that one of the following occurs:

(1) Significant damage has been inflicted upon any part of a tree, including the root system, by machinery, storage of materials, soil compaction, excavation, vehicle accidents, chemical application or change to the natural grade.

(2) Damage inflicted to or cutting upon a tree which permits infection or pest infestation.

(3) Cutting upon any tree which permanently reduces the function of the tree or causes it to go into irreversible decline.

(c) Additional prohibitions.

(1) No private property owner or agent shall damage, cut, or carve any tree or tree root located on the owner's property; or allow any liquid, solid or biological substance that is harmful to trees to be placed within the dripline.

(2) No person shall cut or otherwise damage a root or roots of a tree located on public property without first obtaining a permit from the tree commission.

(3) If a root or roots of a tree on private property migrates into another property, the owner of the tree must consult with the urban forestry manager before commencing any work that will result in severing the root.

(4) Trenching of any kind shall not be done within the dripline of any tree. Only mechanical- or auger-type equipment shall be used to place conduit under a tree root system.

(5) Attachments to trees; excessive cut or fill.

(i) Attachments to trees prohibited. It shall be unlawful to attach anything to a tree trunk or stem having a diameter of six inches or more, other than protective wires, braces or other similar noninjurious materials.

(ii) Excessive cut and/or fill. It shall be unlawful to remove any material or ground within the dripline of a tree which is necessary for the growth of the subject tree.