



**TOWN OF OCCOQUAN**  
Circa 1734 • Chartered 1804 • Incorporated 1874

314 Mill Street  
PO BOX 195  
Occoquan, VA 22125  
(703) 491-1918  
[www.OccoquanVA.gov](http://www.OccoquanVA.gov)  
[info@occoquanva.gov](mailto:info@occoquanva.gov)

---

**Occoquan Town Council**  
**Regular Meeting**  
**November 4, 2015 | 7:00 p.m.**

1. **Call to Order**
2. **Pledge of Allegiance**
3. **Citizens' Time** - Members of the public may, for three minutes, present for the purpose of directing attention to or requesting action on matters not included on the prepared agenda. These matters shall be referred to the appropriate town official(s) for investigation and report. Citizens may address issues as they come up on the agenda if advance notice is given during 'Citizens' Time'.
4. **Approval of Minutes**
  - a. October 6, 2015 Regular Meeting Minutes
  - b. October 20, 2015 Work Session Meeting Minutes
5. **Councilmember Reports**
6. **Mayor's Report**
7. **Staff Reports**
  - a. Town Attorney
  - b. Town Engineer
  - c. Building Official
  - d. Town Manager
  - e. Chief of Police
  - f. Boards and Commissions
8. **Regular Business**
  - a. Request to Approve Proposal to Remove Hazardous Trees from Occoquan Heights Development's Resource Protection Area (RPA)
  - b. Request to Approve Bond Release Request a One-Year Maintenance Agreement with Elm Street Development (Occoquan Heights)

**Portions of this meeting may be held in closed session pursuant to the Virginia Freedom of Information Act.**  
*A copy of this agenda with supporting documents is available online at [www.occoquanva.gov](http://www.occoquanva.gov).*

- c. Request to Award Snow Removal Contract for FY 2016 and Set Not-To-Exceed Amount
- d. Request to Approve a Not-To-Exceed Amount for the Town's Annual Holiday Party
- e. Request to Approve a Not-To-Exceed Amount for Installation and Removal of Lighted Decorations on Dominion Poles
- f. Request for Council Action on Business Guild of Occoquan Request for Funding
- g. Request to Approve Town Council 2016 Meeting Schedule

**9. Closed Session**

**10. Adjournment**



**OCCOQUAN TOWN COUNCIL**  
**Regular Meeting Minutes - DRAFT**  
**Town Hall - 314 Mill Street, Occoquan, VA 22125**  
**Tuesday, October 6, 2015**  
**7:00 p.m.**

**Present:** Mayor Liz Quist, Vice Mayor Pat Sivigny, Joe McGuire, Jim Drakes, J. Matthew Dawson, and Tyler Brown  
Staff: Kirstyn Jovanovich, Town Manager; Chief Sheldon Levi, Town Sergeant/Chief of Police; Martin Crim, Town Attorney; Bruce Reece, Town Engineer; Abigail Breeding, Town Treasurer; Krista Forcier, Craftshow Director; Greg Holcomb, Town Clerk.

**Absent:** None

**1. Call to Order**

Mayor Quist called the meeting to order at 7:00 p.m.

**2. Pledge of Allegiance**

**3. Citizen's Time**

Ms. Brenda Seefeldt, 309 Commerce St., noted that she has been a resident for 18 years and this year's Fall Arts and Crafts Show was wonderful. She stated that the turnaround time of moving vendors out of town after the show was fast, volunteer involvement was the best she has seen, and she heard a lot of comments regarding how well the show went.

Ms. Carol Turner, 106 Poplar Lane, stated that there has been an increase in water in her backyard coming from the Woodlee Terrace Apartments retaining wall project. She asked if there was an erosion issue or new drainage going in.

Mr. Reese responded that he has not seen the results from the rainfall, however, the Assistant Zoning Administrator has and they believe it is a temporary problem. He further noted that by Town Code the developer is not required to submit a drainage plan due to the size of the project. He stated that the Town will continue to monitor the project.

**4. Approval of Minutes**

It was moved to approve the minutes of the September 1, 2015, Regular Meeting and Public Hearing minutes and the September 15, 2015 Special Meeting minutes.

**A motion was made by Councilmember McGuire, seconded by Councilmember Brown that the Action Item be approved. The motion carried by poll vote, unanimous.**

**5. Council Member Reports**

None

## 6. Mayor's Report

Mayor Quist reported that she had recently attended the second meeting of the Convention and Visitors Bureau (CVB) Visitors Center Task Force, . She asked Ms. Jovanovich to place the topic on the October work session to have a further discussion with the Council. She noted that the CVB had identified funding to keep the Visitors Center operational through February 2016.

## 7. Staff Reports

**Report of Town Attorney:** Mr. Crim, Town Attorney, reported on the following:

1. He noted that he will be presenting at a conference regarding the Town of Gilbert Supreme Court Case regarding restrictive signage. He noted that he will be using the Town's interim ordinance as an example and a template for other communities to use.

**Report of Town Engineer:** Mr. Reese, Town Engineer, reported on the following activities:

1. Land Disturbance Report:
  - a. Occoquan Heights
  - b. Vistas of Occoquan
2. Working with the Department of Conservation and Recreation (DCR) to update the Town Code regarding the floodplain ordinance to bring the Town into further compliance with FEMA.
3. We may have our Chesapeake Bay ordinance reviewed. This happens every few years.
4. Have a meeting scheduled with the Occoquan Heights Developer regarding bond release and other issues with the project.
5. River Mill Park Update:
  - a. Phase I is ongoing. The utility trench is complete, the temporary utility pole has been installed.
  - b. The foundation work will begin soon and the wall is being reviewed.
  - c. There are ongoing conversations with Fairfax Water regarding Phase II. There are issues with the weight limits on the site and a structural engineer is reviewing the situation. We should have a report by the end of the month to determine if a pickup truck can be driven on the site for periodic maintenance.

Mayor Quist asked Mr. Reese asked if there would be any preparation work needed by staff to assist with the Chesapeake Bay ordinance review. He stated he would not be surprised if activities came up due to the review.

Mayor Quist also asked if there were concerns regarding the pavilion weight on the site as well. He stated that the review covers all weight loads on the site.

Vice Mayor Sivigny asked if he believed there would be any push back from Occoquan Heights regarding the bond release. Mr. Reese stated that there will likely be some, however, they will want to get off bond and finish the project.

**Report of Town Manager:** Ms. Kirstyn Jovanovich, Town Manager, submitted a manager's report and held further discussion on the following:

1. Ms. Jovanovich added that the conversation regarding load limits on the new park site also includes the restriction of construction equipment needed to construct the pavilion facility on the site.
2. Discussed the canoe and kayak ramp grant. She noted that it is an 80/20 matching grant that Town has to pay up front and be reimbursed. She stated that the total project cost would be about \$145,000. She said there could be additional funding to cover costs over the grant amount and DCR staff would assist with identifying and securing those additional funds; however, that is not guaranteed.

Mr. McGuire asked how much the Town is receiving for the project. Ms. Jovanovich responded that the grant is for \$100,000. He further asked about the study that has held up the grant up to this point. Ms. Jovanovich stated that the grantor is stating we need the study and the Corp of Engineers states we do not. However, we are starting from the beginning and will provide the grantor with the proper information. She further noted that the Town has a permit for the project but it expires at the end of this year. She asked the Council if they wanted to pursue the project. There were no objections.

3. Ms. Jovanovich requested \$125 in travel reimbursement for Ms. Abigail Breeding, Town Treasurer to attend the VaCO/ VML conference in Richmond regarding the investment pool.

It was moved to approve a not to exceed amount of \$125 for Ms. Breeding to attend the conference.

**A motion was made by Councilmember Drakes, seconded by Councilman McGuire. The motion carried by poll vote, unanimous.**

4. Vice Mayor Sivigny asked if the residents at Gaslight Landing were satisfied with their meeting with her.

Ms. Jovanovich stated that she believed they were disappointed with a few things, but understood the issues. She further stated that she offered to assist them with the ARB process once they determine the type of signage they want to install. She stated that there was some disappointment regarding the fencing they wished to place across the entrance from the development on to the boardwalk, which is an easement for Town maintenance and emergency response. Mr. Crim stated that this was an ingress/egress easement and they can limit public access to the development, but not to the boardwalk.

Mayor Quist asked if the Town is responsible to limit access to their development. Mr. Crim stated we would only have to respond to a request for police if someone calls because of trespassing. Mayor Sivigny also asked if we have addressed their concern with the end of the boardwalk ending abruptly and having people climbing over the railing to jump onto private property. Mr. Crim stated we can address that as a police matter. He further stated that appropriate signage may be required, such as a no exit beyond this point.

Ms. Jovanovich also stated that the residents were concerned with lighting as well. She stated that she is working on a lighting solution.

**Report of Chief of Police:** Chief Levi presented his September 2015 report.

**Report of Building Official:** Mr. Barbeau submitted his September 2015 report.

**Architectural Review Board Report:** Councilmember Dawson, provided a report on the ARB:

1. There were three signs approved and one exterior elevation approval.

**Planning Commission Report:** No report.

## **8. Regular Business**

### **8 A. Request to Accept FYE 2014 Financial Audit**

It was moved to accept the FYE 2014 Financial Audit.

**A motion was made by Councilmember McGuire, seconded by Vice Mayor Sivigny. The motion carried, unanimous.**

### **8 B. Request to Adopt an Ordinance Amending Chapter 62 of the Town Code Relating to Snow Emergency Routes.**

It was moved to adopt an ordinance to amend Chapter 62 of the Town Code relating to snow emergency routes. It was further moved to approve the purchase of Snow Emergency Route Signage in an amount not to exceed \$1,500.

**A motion was made by Councilmember Drakes, seconded by Councilmember Dawson. The motion carried, unanimous.**

### **8 C. Request to Award Contract for a Document Management System**

It was moved to approve the purchase of Treneo Software as the Town's document management system for an amount not to exceed \$6,000.

**A motion was made by Councilmember McGuire, seconded by Vice Mayor Sivigny. The motion carried by poll vote, unanimous.**

#### **8 D. Request to Award Contract for Town Hall Roof Replacement**

It was moved to award a contract not to exceed \$15,000 for Town Hall Roof Replacement from FY 2016 CIP - Public Works. It was further moved to allow the Town Manager to choose the contractor.

**A motion was made by Vice Mayor Sivigny, seconded by Councilmember Drakes. The motion carried by poll vote, unanimous.**

#### **9. Adjournment**

The meeting was adjourned at 8:11 p.m.

\_\_\_\_\_  
Greg Holcomb  
Town Clerk

DRAFT



**OCCOQUAN TOWN COUNCIL**  
**Work Session Minutes - DRAFT**  
**Town Hall - 314 Mill Street, Occoquan, VA 22125**  
**Tuesday, October 20, 2015**  
**7:00 p.m.**

**Present:** Mayor Liz Quist, Vice Mayor Pat Sivigny, Tyler Brown, Jim Drakes, J. Matthew Dawson and Joe McGuire.  
Staff: Kirstyn Jovanovich, Town Manager; Greg Holcomb, Town Clerk; Sheldon Levi, Chief of Police/Town Sergeant

**Absent:** None

**1. Call to Order**

Mayor Quist called the meeting to order at 7:00 p.m.

**2. Regular Items**

**A. Visitor Center Status Update**

Mayor Quist reported to Council on the two meetings the Convention and Visitor's Bureau (CVB) task force has held. She stated that the meetings did not have agendas and no minutes were taken for the first meeting. She noted that there did not seem to be a willingness of CVB taskforce members to work with the Town's representatives. Due to these occurrences, Mayor Quist advised the Council that they needed to start looking at the long term prospects of the Visitor's Center. She stated that the center is funded through February 2016 by the CVB. She believes we can absorb contractual costs that the center has, which amount to around \$2,300. Mayor Quist further stated that at the last meeting the task force sent the CVB President back to the board to see if they could find the additional \$8,000 needed to keep the Visitor's Center fully open seven days a week for the remainder of the fiscal year.

Mayor Quist stated that she will be attending the October 26, 2015 meeting of Discover Prince William and Manassas to discuss the issue further.

Councilmember McGuire believes the Town should reach out to other County Supervisors to discuss the issue further. He noted that they need to be informed when Discover Prince William submits their budget request to the county that the Visitor's Center is not part of that request.

Councilmember Brown discussed a recent trip he took. He stated that the visitor's center he visited had a gift shop and did hotel bookings to bring in revenue for the center. He thought this was a good idea to research for our center.

Councilmember Drakes asked Mayor Quist if she believed that taskforce members see the Visitor's Center as an "Occoquan Visitors Center" as opposed to a regional center. Mayor Quist responded that they do believe it only benefits Occoquan and is only used

for the restrooms. Mr. Drakes asked the Council if they thought there could be a higher value to the property other than a Visitor's Center.

Vice Mayor Sivigny was concerned about adding additional staff duties to Town staff to manage the project should the Town take over the responsibility of the Visitors Center long-term.

Mayor Quist stated that she would keep the Council informed on the status of the Visitor's Center.

### **B. Public Safety Priorities- Continued from September 15, 2015**

Ms. Jovanovich began the conversation by presenting information that she and Chief Levi compiled at the request of Town Council. She asked Council to provide her with direction on public safety priorities.

The Council discussed what they believed were issues in Town. They agreed that traffic control and enforcement, protection of public property, late night disturbances and night and weekend patrols were the top issues.

There was further discussion on what could be done to increase patrolling. They discussed hiring administrative staff to open up more time for Chief Levi to patrol. In addition, they discussed the benefits of hiring off duty police officers during important events and on nights and weekends. Chief Levi and Ms. Jovanovich stated that current grant funding could be used for these activities.

In summary, the Council agreed by consensus to hiring off duty police to assist in night and weekend patrolling. They agreed that they would like to see time spent on traffic control and enforcement, and protection of public property.

Councilmember Brown asked about the status of implementing body cameras the Chief.

Chief Levi stated that he is working with Prince William County Police to have Occoquan included as part of their body camera program.

### **3. Adjournment**

The meeting adjourned at 8:04 p.m.

---

Greg Holcomb  
Town Clerk



# TOWN OF OCCOQUAN

*Circa 1734 • Chartered 1804 • Incorporated 1874*  
 314 Mill Street • PO Box 195 • Occoquan, Virginia 22125  
 (703) 491-1918 • Fax (703) 491-4962 • info@occoquanva.gov  
 www.occoquanva.gov

**TOWN COUNCIL**  
 Elizabeth A. C. Quist, Mayor  
 Patrick A. Sivigny, Vice Mayor  
 Tyler C. Brown  
 J. Matthew Dawson  
 Jim Drakes  
 Joe McGuire

**TOWN MANAGER**  
 Kirstyn Barr Jovanovich

**BUILDING OFFICIAL**  
 Joseph E. Barbeau, Jr.

## OCTOBER 2015 REPORT TO THE TOWN COUNCIL BUILDING OFFICIAL REPORT

### PERMITS ISSUED

No permits Issued.

### CERTIFICATES OF OCCUPANCY ISSUED

October 1, 2015 - Issued Permanent Certificate of Occupancy to Good Day Hair Salon (308 Mill Street) to close out all permits for this project.

### INSPECTIONS

| Date          | Activity  |
|---------------|---|
| Oct. 3, 2015  | Performed Final Inspection for the deck installed at 1447 Occoquan Heights. The work passed inspection, and the permit is closed.   |
| Oct. 7, 2015  | Walk thru with owner's representative at Bar J Rest., to discuss accessibility issues discovered during demolition work, and proposed options relating to these issues.                               |
| Oct. 12, 2015 | Performed footing excavation inspections with Project Engineer at the retaining wall project at Woodlee Terrace, 12525 Gordon Boulevard. This work is progressing well and the inspection was passed. |
| Oct. 12, 2015 | Performed Final Inspections for the work to renovate the Master Bathroom at 449 Fortress Ave. This work was approved and the permits were closed.   |
| Oct. 14, 2015 | Performed Plumbing Inspection for the addition of a Water Service to the bathrooms being constructed at 380 Mill St. This work was approved.  |
| Oct. 19, 2015 | Performed Footing Inspections at the retaining wall project at Woodlee Terrace, 12525 Gordon Boulevard. This work is progressing well and the inspection passed.                                      |
| Oct. 19, 2015 | Performed Inspection for the Footings being constructed at 380 Mill St. This work was approved.   |
| Oct. 22, 2015 | Performed Deck Footing Inspection at 1431 Occoquan Hgts. Ct., This work was approved.   |
| Oct. 22, 2015 | Footing Inspections at the retaining wall project at Woodlee Terrace, 12525 Gordon Boulevard. This work is progressing well and the inspection passed.  |
| Oct. 29, 2015 | Performed Final Deck Inspection at 1431 Occoquan Heights Ct.; work was approved.  |

**DOCUMENT REVIEW**

No documents are currently under review.

**ACTIONS**

No new actions are underway at this time.

**RECOMMENDATIONS**

No recommendations at this time.

**OTHER**

None.

**End of Report, submitted on October 29, 2015.**



# TOWN OF OCCOQUAN

*Circa 1734 • Chartered 1804 • Incorporated 1874*  
314 Mill Street • PO Box 195 • Occoquan, Virginia 22125  
(703) 491-1918 • Fax (703) 491-4962 • [info@occoquanva.gov](mailto:info@occoquanva.gov)  
[www.occoquanva.gov](http://www.occoquanva.gov)

**TOWN COUNCIL**  
Elizabeth A. C. Quist, Mayor  
Patrick A. Sivigny, Vice Mayor  
Tyler C. Brown  
J. Matthew Dawson  
Jim Drakes  
Joe McGuire

**TOWN MANAGER**  
Kirstyn Barr Jovanovich

## **Town Manager's Report Town Council Meeting - November 4, 2015**

### **Delinquencies**

Meals Tax Delinquencies: Pink Bicycle (August and September), Occoquan Inn (August and September), Wolfe & Beene (August and September) and Riverside Coffee and Mini Mart (September). Continuing to work through VFW meals tax issue.

### **E-Newsletter**

Established e-newsletter for the business community, as well as a general e-newsletter for anyone interested in Town activities. The public can subscribe to both lists from the Town's website at [www.occoquanva.gov](http://www.occoquanva.gov). This will not replace the monthly hard copy newsletter.

### **Discover Prince William**

Met with representatives from sales and marketing with Discover Prince William. Discussed options to ensure website is up-to-date with business information and activities, as well as ensuring communication between the Town and Discover PW.

Attended the CVB Board Meeting on October 26, 2015. Requested CVB FY2017 budget submission to Prince William County be provided to the Town.

### **Farmers Market**

Met with Jean Janssen of SmartMarkets to discuss implementing a farmers market within the town beginning in the spring of 2016. Discussed preliminary plans and potential partners; follow up to occur after January 1, 2016.

### **Canoe/Kayak Ramp**

Continuing to research permitting process. Sent communication to DCR representative regarding next steps; awaiting response.

### **VDOT Washington Street Sidewalk Project**

The VDOT Washington Street sidewalk project is expected to be completed within the next two weeks.

### **Tree Lighting**

The tree lighting ceremony will be held on November 20, 2015 at 8 p.m. following the Guild's Open House event from 4 p.m. to 8 p.m. The Polka Dot Divas have donated decorations for the tree and Virginia Lawn Service is donating its services to assist the town in hanging the lights and decorations on the tree.

**Document Management**

Town Clerk has begun to work with Treeno to develop the Town's document management system. Once the system has been set up, staff will need to identify additional resource needs to begin migrating documents into the system.

**Town Hall Roof**

The Town has contracted with Sunshine Contracting to replace the Town Hall roof. Staff is working to schedule the work.

**FOTO Cleanup**

Participated in annual FOTO Cleanup Day on October 17, 2015.

**Leadership Prince William**

Attended Leadership Prince William session on October 15, 2015. The session's focus was on local history and government. Began work on class project. Next session is November 12, 2015.

**WinterFest - December 12, 2015**

Participating on the 2015 Santa's Lake Ridge Parade committee and coordinating the Town's participation as part of WinterFest on December 12, which includes the parade at 11 a.m., a Holiday Market at Tackett's Mill from 12 p.m. to 4 p.m., shopping and dining in Historic Occoquan from 4 p.m. to 7 p.m. and the Second Saturday Art Walk at the Workhouse Art Center from 6 p.m. to 9 p.m. In addition, fireworks will be on display from Prince William Marina and viewable from the town and the Occoquan Regional Park. The Town is coordinating with businesses, OWL, Historic Occoquan and other partners to bring in strolling carolers, safe fire pits, historic demonstrations and musicians. More information will be forthcoming.

-END-



# TOWN OF OCCOQUAN

*Circa 1734 • Chartered 1804 • Incorporated 1874*  
314 Mill Street • PO Box 195 • Occoquan, Virginia 22125  
(703) 491-1918 • Fax (703) 491-4962 • info@occoquanva.gov  
www.occoquanva.gov

**TOWN COUNCIL**  
Elizabeth A. C. Quist, Mayor  
Patrick A. Sivigny, Vice Mayor  
Tyler C. Brown  
J. Matthew Dawson  
Jim Drakes  
Joe McGuire

**Chief of Police; Town Sgt.**  
Sheldon E. Levi

## October Report to the Town Council - 11/04/2015

- Responded to a merchant report of a pair of shoplifters in Town. I went to the business they were in and saw them. I waited outside the business for them to exit, at which time I was able to get their ID. No actual shoplifting took place, so there was no detention.
- Attended an Emergency Operations storm planning meeting to ensure preparations were in place for the Nor'easter and potential hurricane that was predicted to come through our area.
- Worked the night of the storms. Storm drains that typically cause problems were cleaned out prior to the start of the heavy rains, and there were no issues to report.
- Dispatched to the Service Authority pump station for an unlocked gate. Upon arrival I discovered the gate wide open. SA had workers there that day, and the building was secured. I secured the gate and cleared.
- I have been on Occoquan Heights Court on several occasions for Fire Lane violations; resulting in parking tickets being issued. We are able to issue parking tickets for Fire Lane violations on private property, but no other parking violations without HOA approval.
- Had complaints of a fox running around in the area of Mill Street near the River Mill Park. I was able to locate the fox, and it was walking in the area of the park and Fairfax Water. The fox, while appearing to be mangy, did not exhibit any behavior that would lead one to believe it was rabid, and it did not appear to have any disabling injuries. PWC sent an officer as well, but we concluded there was no danger to the public and we just let it disappear into the woods on its own. It has since been seen several other times.
- Responded to a merchant complaint of solicitors being on Mill Street. I was able to locate them (2), verify their ID, and advised them of the solicitation ordinances in Town. They were told they had to leave the Town immediately, and they complied.
- Responded to a violent domestic dispute on Dara Drive. I responded because the report was there was an active fight between several individuals and I would be able to get there first. The combatants had separated by the time I arrived. PWC, once on the scene, handled the domestic. Charges are pending for unlawful entry and assault.

- Attempted Suicide; on the afternoon of 10/17/2015 I was dispatched to an attempted suicide, initially sending me to the foot bridge. The individual was in fact on the Rte. 123 Bridge. Upon arrival there was an individual threatening to jump in the river. I was able to intercede and get the individual away from the jersey wall, and keep them from jumping until additional help arrived. The individual was taken into custody and eventually committed to a mental health facility. The individual came to Town Hall later that week to thank me for my assistance and compassion during the incident.
- At my own expense and time I attended the National Shomrim Society and International Association of Chiefs of Police (IACP) annual conventions in Chicago. These conventions provided training and networking opportunities.



**TOWN OF OCCOQUAN**  
**TOWN COUNCIL MEETING**  
 Agenda Communication

|   |                                       |
|---|---------------------------------------|
| <b>8. Regular Business</b>  | <b>Meeting Date:</b> November 4, 2015 |
| <b>8 A:</b> Request to Approve Proposal to Remove Hazardous Trees from Occoquan Heights' Resource Protection Area (RPA) |                                       |

**Explanation and Summary:**

In December of 2013 and in May of 2015, the Town contracted with an arborist to review the health and quality of several trees located within the Occoquan Heights Resource Protection Area (RPA) and provide a report to the Town of Occoquan.

On June 11, 2015, the Town Manager sent a letter to Elm Street Development to request a plan of action to address trees that were located within the RPA and identified as hazardous by the arborist. In addition to the Town's contracted arborist, Elm Street Development hired an arborist to review the health and quality of the trees in the RPA.

The Town Manager, Town Engineer and Joe Jacobs of Elm Street Development met in October to discuss the tree situation and next steps. As a result of this meeting and based on the arborist reports provided by the Town and Elm Street Development, Mr. Jacobs has provided a plan to cut down and leave in place five trees (T-4, T-6, T-12, T-13, and T-19 as identified on the arborist's map) identified as being hazardous with potential impact to property or life.

In addition, within the report provided by Elm Street Development, the arborist details the need for the RPA area to be maintained in order to ensure its health and safety. Maintenance of the RPA will be the responsibility of the Occoquan Heights Homeowner's Association (HOA).

**Engineer's Recommendation:** Recommend approval.

**Town Attorney's Recommendation:** Recommend approval.

**Town Manager's Recommendation:** Recommend approval.

**Cost and Financing:** N/A

**Account Number:** N/A

**Proposed/Suggested Motion:**

"I move to approve Elm Street Development's plan to cut down and leave in place five trees (T-4, T-6, T-12, T-13, and T-19) within the RPA area on the Occoquan Heights Development."

OR

Other action Council deems appropriate.

**Attachments: (4)**

1. Arborist Map - Tree Identification/Location
2. Letter to Elm Street Development, 6/11/2015
3. Wetland Studies and Solutions Arborist Report (7/15/2015) - Elm Street Development Arborist Report
4. TNT Environmental Arborist Report (5/28/2015 & 12/23/2013) - Town of Occoquan Arborist Reports





# TOWN OF OCCOQUAN

*Circa 1734 • Chartered 1804 • Incorporated 1874*  
314 Mill Street • PO Box 195 • Occoquan, Virginia 22125  
(703) 491-1918 • Fax (703) 491-4962 • [info@occoquanva.gov](mailto:info@occoquanva.gov)  
[www.occoquanva.gov](http://www.occoquanva.gov)

**TOWN COUNCIL**  
Elizabeth A. C. Quist, Mayor  
Patrick A. Sivigny, Vice Mayor  
Tyler C. Brown  
J. Matthew Dawson  
Jim Drakes  
Joe McGuire

**TOWN MANAGER**  
Kirstyn Barr Jovanovich

June 11, 2015

Elm Street Development Inc.  
Mr. Joseph Jacobs, Vice President  
1355 Beverly Road, Suite 200  
McLean, VA 22101

Dear Mr. Jacobs,

In December 2013, the Town contracted a Certified Arborist to perform an evaluation that focused on 22 trees located within and immediately adjacent to a mapped Resource Protection Area (RPA) on the Occoquan Heights property. The purpose of this work was to evaluate the health and condition of the trees within this area as the Town was concerned with the state of the trees and their potential impact on the development and neighboring homes. During the December inspection, the arborist stated that in general, most of the trees within the specified area were in poor and/or fair condition, with several dead trees located throughout.

Since that time, the Town has expressed its concerns to you regarding the condition of the trees and has requested that you as the property owner and project developer take action to remove the hazardous trees.

On May 27, 2015, the certified arborist conducted a follow up site visit to assess the current condition of the trees within and adjacent to the RPA on the property. During this evaluation, the arborist noted that four of the trees identified in the original review had been removed and one tree has fallen and remains within the area. In addition, the arborist states that most of the trees located within the area remain in poor and/or fair condition, with several dead trees located throughout.

In addition, the report states that clearing and grading for the installation of utility lines on the site occurred very close to the trunks of several trees. It is unknown if root pruning occurred and if so, whether or not it was performed under the supervision of a Certified Arborist as required on Sheet 24 of the site plan.

Please provide a hazardous tree removal and replacement plan and proposed timeline to remedy the issue of hazardous trees existing on the Occoquan Heights property within 14 days of the date of this letter. In addition, please provide information on whether or not root pruning was performed and if so, that it was done under the supervision of a Certified Arborist as required on Sheet 24 of the site plan.

Mr. Joseph Jacobs  
June 11, 2015  
Page 2

Please note that the Town Code requires under Chapter 46, Section 143, Tree Protection, that trees four caliper inches or larger that are removed, must be replaced by appropriate native vegetation and/or appropriate native trees. Please identify the variety of native tree and/or vegetation that will replace removed trees as part of the replacement plan.

For your information, I have enclosed the report prepared by TNT Environmental dated May 28, 2015. The report details the location and condition of the trees that have been identified as hazardous.

If a removal and replacement plan and timeline is not received by the Town within the above requested time frame, the Town will follow the procedures outlined in Chapter 30, Section 30-1, Dangerous Conditions, to remedy the hazardous situation.

The above referenced code sections are available online at [www.occoquanva.gov](http://www.occoquanva.gov).

Please let me know if you have any questions. Thank you for your prompt attention to this matter.

Sincerely,



Kirstyn Barr Jovanovich  
Town Manager

Enclosure (1)

cc: The Honorable Mayor and Town Council  
Martin Crim, Town Attorney  
Ned Marshall, Zoning Administrator  
Bruce Reese, Town Engineer



## MEMORANDUM

**TO:** Joseph Jacobs- Elm Street Development Inc.

**FROM:** Chris Cowles, Senior Urban Forestry Consultant

**CC:** Mark Headly- WSSI, Ben Rosner- WSSI, Cary Hulse, WSSI

**RE:** Tree Risk Assessment Summary Report – Occoquan Heights  
WSSI #21814.01-F

**DATE:** July 15, 2015; revised July 22, 2015

---

At your request Wetland Studies and Solutions Inc., (WSSI) conducted a site assessment of several trees in question at the Occoquan Heights project in and around the Resource Protection Area (RPA) on July 7, 2015. The purpose of the assessment was to thoroughly assess, document, and assign risk factors to each tree for its propensity to fail structurally with potential to cause damage, based upon our knowledge of the tree and site conditions at the time of the evaluation<sup>1</sup>. Secondly a comment on the invasives and long-term health of the RPA is included.

The tree locations were depicted on site documents prepared by christopher consultants, ltd., dated January 17, 2012 with revisions July 2, 2012 and entitled: "Existing Conditions". Since that time some trees have been removed (#1, 2, 7, & 8) and one (#18) has fallen in place. A total of 17 trees were included, all numbered per the aforementioned plan for reference.

### **Methodology-**

A level 2 basic visual assessment was performed on this property. The methodology used for this assessment is from the Tree Risk Assessment Manual (TRAQ) with the forms for documentation, published by the International Society of Arboriculture (ISA) 2013. Copies of the field forms are attached at the back of this report as Appendix A. In addition representative photographs of the trees were taken and are included in Exhibit B.

The process of a visual assessment considers the following elements for a complete assessment for both health and structural factors:

- Site conditions affecting health and structural integrity
- Roots and root flare
- Trunk
- Scaffold (primary) limbs
- Branching and twigs
- Foliage (if present)

### **Summary and Recommendations-**

Our recommendations are summarized as follows:

- Of the 17 standing trees, five are recommended for Removal including two for Priority Removal.
- Six are recommended to remain as is.
- Four are recommended to allow the owner to choose to retain or remove as they are likely to fail at some future point, but there is no recognizable target.
- Two are recommended to monitor regularly or remove.

A summary table of findings and recommendations is provided as Exhibit A for a quick reference and summary. Refer to the attached ISA Tree Risk Assessment field forms (Attachment A) for back up information from the field.

### **Alien Invasives and Long Term Health of the RPA-**

As mentioned in the prior arborist's report several species of invasive vines and shrubs are heavily concentrated on the ground and in the trees here. This is cause for long term concern for two reasons: One is the mass of vines within the top or crown of trees (especially forest grown, narrow crowned trees) which more readily catches the brunt of wind storms, ice, snow, and rain thus increasing its "sail potential" and likelihood of breakage or failure. Secondly, the thick carpet of vines on the ground subdue much natural regeneration of native forbes, vines, shrubs, and tree seedlings as well decrease the vigor of small and medium sized trees. A long term healthy forest has all these types of natives growing together. This is made more difficult to succeed in developing communities due to the fragmentation of remnant forest that increases the light availability allowing rapid growth and reproduction of invasives and the lack of shade cover which helps out compete the invasive species. A quick review of young trees (which become the future dominant trees) only found about half a dozen 1"-6" trees such as tulip poplar, hackberry, and red maples. In order to begin on the road to a healthier and "safer" forest the following are recommended for your consideration: identify and protect any young native species in the area; mechanical (hand tools) and targeted herbicide spray for invasives 2-3 times per growing season; apply wood chip mulch after a season of invasive control; planting a few native shrubs and trees to increase future canopy and incline the area to a visual asset rather than a liability.

Adjacent forested areas, especially the edges, do contain populations of similar invasive plants. The level of invasives in the adjacent areas are probably not as high as in small areas of remnant forest, such as this one. In areas that have an abundance of sunlight, the situation is exacerbated. Since there is an area of maintained turf between the adjacent forest and this RPA, the spread from one area to another is somewhat limited. However, "nature does find a way", and in time, the invasive species will likely spread to adjacent areas of suitable habitat. It is likely that, if the adjacent areas are left untreated, the invasive species will eventually spread from neighboring areas into the RPA.

Joseph Jacobs  
Tree Risk Assessment  
July 15, 2015  
WSSI #21814.01-F  
Page 3 of 3

The enhancement of wildlife diversity is found to increase when more natural forest conditions are allowed to persist. For instance, instead of mowed turf and manicured trees, simply allowing felled trees to remain on the ground and decay naturally is common practice as long as they are free from highly invasive insects or diseases. Logs cut between four and six foot lengths and left to decay, allows the logs to lay flat on the ground and not to seem intrusive or an impediment to walking through the area. Branches can either be chipped as mulch and put back into the area or cut up into small piles or spread out, creating additional habitat. This approach should be acceptable, as long as the treatment is aesthetically acceptable.

Feel free to contact our office should you have further questions.

L:\21000s\21800\21814.01\CADD\05-ENVR\Tree Risk Assessment 2015\21814.01-F Risk Assessment Summary 2015-07-15.docx

---

<sup>i</sup> Arborist's Disclaimer:

This assessment was performed from only a visual, non-invasive, inspection of each tree from ground level. No sub-surface or aerial inspections were performed at this time. Every effort was made to thoroughly inspect each tree. However, trees are often very large objects and some defects, particularly decay, can and do remain unseen, hidden from sight. As trees are living biology every tree will grow and fail someday. Trees are always changing, normally very slowly, but can change very quickly due to environmental or man induced trauma or stress. As such the health and structural condition can and does change as soon the assessment is completed. The only way to make every trees totally safe is to remove all trees. To live with trees is to live with some inherent risk.

## TREE RISK ASSESSMENT SUMMARY

| TREE NO. | DIAM. (@4.5') | SPECIES      | HEALTH / VIGOR | STRUCTURE / DEFECTS | TARGET  | RISK     | CONCERNS/ COMMENT  | RECOMMENDATION (Monitor, Remove, Remain) |
|----------|---------------|--------------|----------------|---------------------|---|----------|--|--|
| 3        | 17            | Red Maple    | Fair           | Fair                | Townhouse/ Deck                                 | Low      | Long term washout of cut roots.                                    | Monitor every 6 months or remove.        |
| 4        | 18            | Red Maple    | Poor           | Fair- Poor          | Townhouse/ Deck                                 | Moderate | Lean and cambium damage will bring wood decay to trunk over time.  | Remove                                   |
| 5        | 21            | Tulip Poplar | Poor           | Poor                | Storm Drain Easement- possible landscape worker | Low      | Top gone- Over time tree will decline.                             | Monitor annually                         |
| 6        | 16            | Red Maple    | Poor           | Poor                | Townhouse/ Deck                                 | High     | Excessive lean and dead cambium on top.                            | Priority Removal                         |
| 9        | 24            | Red Maple    | Good           | Good                | RPA   | Low      | None   | Remain                                   |
| 10       | 22            | Tulip Poplar | Good           | Good                | Townhouse/ Deck                                 | Low      | None   | Remain                                   |
| 11       | 17            | Tulip Poplar | Fair           | Fair                | RPA   | Low      | None   | Remain                                   |
| 12       | 15            | Black Cherry | Poor           | Poor                | Townhouse/ Deck                                 | High     | Top decline + adjacent utility excavation- roots cut.              | Priority Removal                         |
| 13       | 15            | Black Cherry | Poor           | Poor                | Townhouse/ Deck                                 | Moderate | Small deadwood, decline, + adjacent utility excavation- roots cut. | Removal                                  |
| 14       | 9             | Red Maple    | Fair           | Fair                | Storm Drain Easement- possible landscape worker | Low      | None   | Remain                                   |
| 15       | 24            | DEAD         | DEAD           | DEAD                | SD Easement, Rear yard.                         | Low      | High potential for failure- low risk due to lack of target.        | Allow to fail or remove.                 |
| 16       | 34            | Sycamore     | Fair           | Fair                | SWM Area- landscape worker.                     | Low      | None   | Remain                                   |
| 17       | 13            | Sour Cherry  | Fair           | Fair                | None  | Low      | None   | Remain                                   |
| 19       | 28            | Ash          | Poor           | Poor                | Townhouse/ Deck                                 | Moderate | Limited life + adjacent utility excavation- roots cut.             | Remove                                   |
| 20       | 14            | Ash          | Poor           | Poor                | None  | Low      | Limited life.  | Remain or remove                         |
| 21       | 15            | Box Elder    | Poor           | Poor                | None  | Low      | Limited life- heavy vines.   | Remain or remove                         |
| 22       | 12            | Box Elder    | Poor           | Poor                | None  | Low      | Limited life- heavy vines.   | Remain or remove                         |

EXHIBIT B



T- 3 Red Maple adjacent townhomes- healthy with roots severed by SD excavation.



T-4,6 Red Maples- both with initial trunk decline and excessive lean toward town homes.



T-4,6- Close up showing scaly bark on trunk indicating cambial die-off and limited life span.

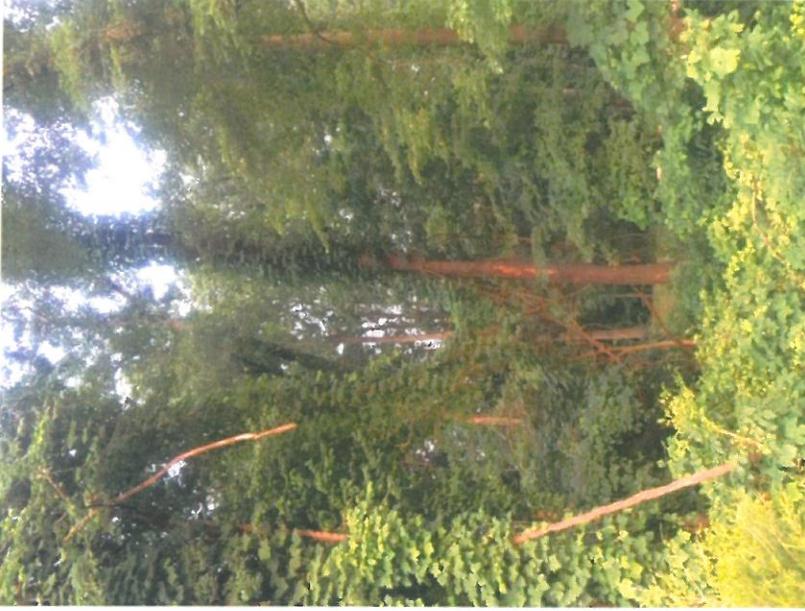
EXHIBIT B



T-5 Tulip Poplar- top gone, limited life, not adjacent town homes.



T-12, 19- Red Maples- decline, limited life.



T-15- Dead with top gone. Center of RPA.

LOW

# ISA Basic Tree Risk Assessment Form

Client ELM STREET DEN. Date 7-7-2015 Time 3:00PM  
 Address/Tree location OCCOQUAN HEIGHTS, VA Tree no. T-3 Sheet 1 of 1  
 Tree species RED MAPLE dbh 15" 17" Height 45' Crown spread dia. 25'  
 Assessor(s) C COWLES Time frame \_\_\_\_\_ Tools used D-TAPE, PROBE

### Target Assessment

| Target number | Target description                 | Target zone             |                       |                         | Occupancy rate<br>1-rare<br>2-occasional<br>3-frequent<br>4-constant | Practical to move target? | Restriction practical? |
|---------------|------------------------------------|-------------------------|-----------------------|-------------------------|--|---------------------------|------------------------|
|               |                                    | Target within drip line | Target within 1 x ht. | Target within 1.5 x ht. |  |                           |                        |
| 1             | Townhouse, Rear deck ADJACENT SITE | Y                       | Y                     | Y                       | 4  | N                         | N                      |
| 2             |                                    |                         |                       |                         |  |                           |                        |
| 3             |                                    |                         |                       |                         |  |                           |                        |
| 4             |                                    |                         |                       |                         |  |                           |                        |

### Site Factors

History of failures ADJACENT DEAD TREES Topography Flat  Slope  6-8 % Aspect E  
 Site changes None  Grade change  Site clearing  Changed soil hydrology  Root cuts  Describe STORM DRAIN 7.5' x 15'  
 Soil conditions Limited volume  Saturated  Shallow  Compacted  Pavement over roots  50 % Describe \_\_\_\_\_  
 Prevailing wind direction NW Common weather Strong winds  Ice  Snow  Heavy rain  Describe MODERATE Tree sheltered by ADJ. BLDGS & TREES  
 Tree Health and Species Profile  
 Vigor Low  Normal  High  Foliage None (seasonal)  None (dead)  Normal 90 % Chlorotic \_\_\_\_\_ % Necrotic \_\_\_\_\_ %  
 Pests N/D Abiotic PROR UTILITY LINE 10' from TRUNK  
 Species failure profile Branches  Trunk  Roots  Describe \_\_\_\_\_

### Load Factors

Wind exposure Protected  Partial  Full  Wind funneling  Relative crown size Small  Medium  Large   
 Crown density Sparse  Normal  Dense  Interior branches Few  Normal  Dense  Vines/Mistletoe/Moss   
 Recent or planned change in load factors NA

### Tree Defects and Conditions Affecting the Likelihood of Failure

#### — Crown and Branches —

Unbalanced crown  LCR 90 %  
 Dead twigs/branches  < 5 % overall Max. dia. 2  
 Broken/Hangers Number 0 Max. dia. \_\_\_\_\_  
 Over-extended branches   
 Pruning history  
 Crown cleaned  Thinned  Raised   
 Reduced  Topped  Lion-tailed   
 Flush cuts  Other \_\_\_\_\_  
 Main concern(s) See below "ROOTS"  
 Cracks  Lightning damage   
 Codominant  Included bark   
 Weak attachments  Cavity/Nest hole \_\_\_\_\_ % circ.  
 Previous branch failures  3" SPLT Similar branches present   
 Dead/Missing bark  Cankers/Galls/Burls  Sapwood damage/decay   
 Conks  Heartwood decay   
 Response growth \_\_\_\_\_  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Trunk —

Dead/Missing bark  Abnormal bark texture/color   
 Codominant stems  Included bark  Cracks   
 Sapwood damage/decay  Cankers/Galls/Burls  Sap ooze   
 Lightning damage  Heartwood decay  Conks/Mushrooms   
 Cavity/Nest hole \_\_\_\_\_ % circ. Depth \_\_\_\_\_ Poor taper   
 Lean \_\_\_\_\_ ° Corrected? \_\_\_\_\_  
 Response growth \_\_\_\_\_  
 Main concern(s) \_\_\_\_\_  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Roots and Root Collar —

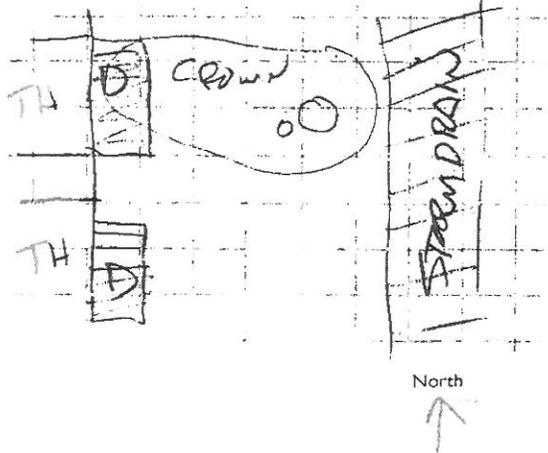
Collar buried/Not visible  Depth \_\_\_\_\_ Stem girdling   
 Dead  Decay  Conks/Mushrooms   
 Ooze  Cavity  \_\_\_\_\_ % circ.  
 Cracks  Cut/Damaged roots  Distance from trunk 6-8'  
 Root plate lifting  Soil weakness   
 Response growth \_\_\_\_\_  
 Main concern(s) MINOR EROSION DOWN SLOPE AT EDGE OF UTILITY WORK  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

Risk Categorization

| Condition number | Tree part | Conditions of concern          | Part size | Fall distance | Target number | Target protection | Likelihood |          |          |          |          |     |        |      | Consequences                     |          |        |             | Risk rating of part (from Matrix 2) |
|------------------|-----------|--------------------------------|-----------|---------------|---------------|-------------------|------------|----------|----------|----------|----------|-----|--------|------|----------------------------------|----------|--------|-------------|-------------------------------------|
|                  |           |                                |           |               |               |                   | Failure    |          |          |          | Impact   |     |        |      | Failure & Impact (from Matrix 1) |          |        |             |                                     |
|                  |           |                                |           |               |               |                   | Improbable | Possible | Probable | Imminent | Very low | Low | Medium | High | Unlikely                         | Somewhat | Likely | Very likely |                                     |
| 1                | ALL       | MINOR ROOT WASH DUE TO EROSION | 18' 45"   | 1             | NA            | X                 |            |          |          |          | X        | X   |        |      |                                  | X        | Low    |             |                                     |
| 2                | BRANCHES  |                                | 6-10 30   | 1             | NA            | X                 |            |          |          | X        |          | X   |        |      |                                  | X        | Low    |             |                                     |
| 3                |           |                                |           |               |               |                   |            |          |          |          |          |     |        |      |                                  |          |        |             |                                     |
| 4                |           |                                |           |               |               |                   |            |          |          |          |          |     |        |      |                                  |          |        |             |                                     |

Matrix 1. Likelihood matrix

| Likelihood of Failure | Likelihood of Impacting Target |                 |                 |                 |
|-----------------------|--------------------------------|-----------------|-----------------|-----------------|
|                       | Very low                       | Low             | Medium          | High            |
| Imminent              | Unlikely                       | Somewhat likely | Likely          | Very likely     |
| Probable              | Unlikely                       | Unlikely        | Somewhat likely | Likely          |
| Possible              | Unlikely                       | Unlikely        | Unlikely        | Somewhat likely |
| Improbable            | Unlikely                       | Unlikely        | Unlikely        | Unlikely        |



Matrix 2. Risk rating matrix

| Likelihood of Failure & Impact | Consequences of Failure |          |             |          |
|--------------------------------|-------------------------|----------|-------------|----------|
|                                | Negligible              | Minor    | Significant | Severe   |
| Very likely                    | Low                     | Moderate | High        | Extreme  |
| Likely                         | Low                     | Moderate | High        | High     |
| Somewhat likely                | Low                     | Low      | Moderate    | Moderate |
| Unlikely                       | Low                     | Low      | Low         | Low      |

Notes, explanations, descriptions \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Mitigation options MAINTAIN SOIL FROM WASHING OFF ROOT AREA Residual risk \_\_\_\_\_  
 Residual risk \_\_\_\_\_  
 Residual risk \_\_\_\_\_  
 Residual risk \_\_\_\_\_

Overall tree risk rating Low  Moderate  High  Extreme   
 Overall residual risk Low  Moderate  High  Extreme   
 Data  Final  Preliminary  Advanced assessment needed  No  Yes-Type/Reason \_\_\_\_\_  
 Inspection limitations  None  Visibility  Access  Vines  Root collar buried Describe \_\_\_\_\_

MOD LEAN

# ISA Basic Tree Risk Assessment Form

Client 21M STREET DEVELOPMENT Date 7-7-2015 Time 3 PM  
 Address/Tree location OCCOQUAM HTS. VA Tree no. T-4 Sheet      of       
 Tree species RED MAPLE dbh 18 Height 60 Crown spread dia. 35  
 Assessor(s) CCOWLES Time frame      Tools used D-TAPE, PROBE

### Target Assessment

| Target number | Target description               | Target zone             |                      |                        | Occupancy rate<br>1-rare<br>2-occasional<br>3-frequent<br>4-constant | Practical to move target? | Restriction practical? |
|---------------|----------------------------------|-------------------------|----------------------|------------------------|--|---------------------------|------------------------|
|               |                                  | Target within drip line | Target within 1x Ht. | Target within 1.5x Ht. |  |                           |                        |
| 1             | Town House with DECK ON ADJ SITE | N                       | Y                    | Y                      | 3-4  | N                         | N                      |
| 2             |                                  |                         |                      |                        |  |                           |                        |
| 3             |                                  |                         |                      |                        |  |                           |                        |
| 4             |                                  |                         |                      |                        |  |                           |                        |

### Site Factors

History of failures Dead Trees Topography Flat  Slope 6-8 % Aspect E  
 Site changes None  Grade change  Site clearing  Changed soil hydrology  Root cuts  Describe STORM DRAIN  
 Soil conditions Limited volume  Saturated  Shallow  Compacted  Pavement over roots  Describe EXCAVATION  
 Prevailing wind direction NW Common weather Strong winds  Ice  Snow  Heavy rain  Describe     

### Tree Health and Species Profile

Vigor Low  Normal  High  Foliage None (seasonal)  None (dead)  Normal      % Chlorotic      % Necrotic      %  
 Pests      Abiotic       
 Species failure profile Branches  Trunk  Roots  Describe     

### Load Factors

Wind exposure Protected  Partial  Full  Wind funneling  Relative crown size Small  Medium  Large   
 Crown density Sparse  Normal  Dense  Interior branches Few  Normal  Dense  Vines/Mistletoe/Moss   
 Recent or planned change in load factors     

### Tree Defects and Conditions Affecting the Likelihood of Failure

#### — Crown and Branches —

Unbalanced crown  LCR 90+ %  
 Dead twigs/branches  2.5 % overall Max. dia.       
 Broken/Hangers Number      Max. dia.       
 Over-extended branches   
 Pruning history  
 Crown cleaned  Thinned  Raised   
 Reduced  Topped  Lion-tailed   
 Flush cuts  Other       
 Cracks   
 Codominant  Lightning damage   
 Weak attachments  Included bark   
 Previous branch failures  Cavity/Nest hole      % circ.  
 Dead/Missing bark  Similar branches present   
 Cankers/Galls/Burls  Sapwood damage/decay   
 Conks  Heartwood decay   
 Response growth 1  
 Main concern(s) SUNSCALD ON TRUNK + SCAFFOLD LIMBS WEST SIDE OVER TIME CAUSING BREAKAGE.  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Trunk —

Dead/Missing bark  Abnormal bark texture/color   
 Codominant stems  Included bark  Cracks   
 Sapwood damage/decay  Cankers/Galls/Burls  Sap ooze   
 Lightning damage  Heartwood decay  Conks/Mushrooms   
 Cavity/Nest hole      % circ. Depth      Poor taper   
 Lean 5-7° Corrected? N  
 Response growth       
 Main concern(s) ROT + TRUNK DECAY UNDER  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Roots and Root Collar —

Collar buried/Not visible  Depth      Stem girdling   
 Dead  Decay  Conks/Mushrooms   
 Ooze  Cavity      % circ.  
 Cracks  Cut/Damaged roots  Distance from trunk 6-8'  
 Root plate lifting  Soil weakness   
 Response growth       
 Main concern(s)       
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent



Low

# ISA Basic Tree Risk Assessment Form

Client ELM STREET DEV. Date 7-7-2015 Time 3:00 PM  
 Address/Tree location Occoquan Hts, VA Tree no. T-5 Sheet      of       
 Tree species TULIP POPLAR dbh 21 Height 35' Crown spread dia. 10'  
 Assessor(s) CCOWLES Time frame      Tools used DBH TAPE + PROBE

### Target Assessment

| Target number | Target description | Target zone             |                      |                        | Occupancy rate<br>1-rare<br>2-occasional<br>3-frequent<br>4-constant | Practical to move target? | Restriction practical? |
|---------------|--------------------|-------------------------|----------------------|------------------------|--|---------------------------|------------------------|
|               |                    | Target within drip line | Target within 1x ht. | Target within 1.5x ht. |  |                           |                        |
| 1             | <u>SD EASEMENT</u> | N                       | N                    | Y                      | 1  | N                         | N                      |
| 2             |                    |                         |                      |                        |  |                           |                        |
| 3             |                    |                         |                      |                        |  |                           |                        |
| 4             |                    |                         |                      |                        |  |                           |                        |

### Site Factors

History of failures ADJACENT DEAD TREES FALLEN Topography Flat  Slope  6-8 % Aspect E  
 Site changes None  Grade change  Site clearing  Changed soil hydrology  Root cuts  Describe       
 Soil conditions Limited volume  Saturated  Shallow  Compacted  Pavement over roots  % Describe       
 Prevailing wind direction NW Common weather Strong winds  Ice  Snow  Heavy rain  Describe     

### Tree Health and Species Profile

Vigor Low  Normal  High  Foliage None (seasonal)  None (dead)  Normal      % Chlorotic      % Necrotic      %  
 Pests      Abiotic TOP DIED + BROKE OFF  
 Species failure profile Branches  Trunk  Roots  Describe     

### Load Factors

Wind exposure Protected  Partial  Full  Wind funneling  Relative crown size Small  Medium  Large   
 Crown density Sparse  Normal  Dense  Interior branches Few  Normal  Dense  Vines/Mistletoe/Moss   
 Recent or planned change in load factors TOP LONE

### Tree Defects and Conditions Affecting the Likelihood of Failure

#### — Crown and Branches —

Unbalanced crown  LCR 10 %  
 Dead twigs/branches  % overall Max. dia.       
 Broken/Hangers Number      Max. dia.       
 Over-extended branches   
 Pruning history  
 Crown cleaned  Thinned  Raised   
 Reduced  Topped  Lion-tailed   
 Flush cuts  Other       
 Main concern(s)       
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Trunk —

Dead/Missing bark  Abnormal bark texture/color   
 Codominant stems  Included bark  Cracks   
 Sapwood damage/decay  Cankers/Galls/Burls  Sap ooze   
 Lightning damage  Heartwood decay  Conks/Mushrooms   
 Cavity/Nest hole      % circ. Depth      Poor taper   
 Lean      ° Corrected?       
 Response growth       
 Main concern(s) LOWER 20' of TRUNK ALIVE WITH LOWER 20' DEAD NO LIMBS  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Roots and Root Collar —

Collar buried/Not visible  Depth      Stem girdling   
 Dead  Decay  Conks/Mushrooms   
 Ooze  Cavity  % circ.       
 Cracks  Cut/Damaged roots  Distance from trunk 8-10'  
 Root plate lifting  Soil weakness   
 Response growth       
 Main concern(s)       
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent



HIGH

# ISA Basic Tree Risk Assessment Form

Client ELM STREET DEN Date 7.7.2015 Time 3 PM  
 Address/Tree location 0 COQUAN HTS, VA Tree no. T-6 Sheet      of       
 Tree species RED MAPLE dbh 16 Height 45' Crown spread dia. 50'  
 Assessor(s) CCOWLES Time frame      Tools used D TAPE, PROBE

### Target Assessment

| Target number | Target description          | Target zone             |                       |                         | Occupancy rate<br>1-rare<br>2-occasional<br>3-frequent<br>4-constant | Practical to move target? | Restriction practical? |
|---------------|-----------------------------|-------------------------|-----------------------|-------------------------|--|---------------------------|------------------------|
|               |                             | Target within drip line | Target within 1 x Ht. | Target within 1.5 x Ht. |  |                           |                        |
| 1             | TOWNHOUSE + DECK, ADJ. SITE | Y                       | Y                     | Y                       | 4  | N                         | N                      |
| 2             |                             |                         |                       |                         |  |                           |                        |
| 3             |                             |                         |                       |                         |  |                           |                        |
| 4             |                             |                         |                       |                         |  |                           |                        |

### Site Factors

History of failures ADJ. DED TREES Topography Flat  Slope  6-8 % Aspect   
 Site changes None  Grade change  Site clearing  Changed soil hydrology  Root cuts  Describe       
 Soil conditions Limited volume  Saturated  Shallow  Compacted  Pavement over roots  % Describe       
 Prevailing wind direction NW Common weather Strong winds  Ice  Snow  Heavy rain  Describe       
**Tree Health and Species Profile**  
 Vigor Low  Normal  High  Foliage None (seasonal)  None (dead)  Normal 95 % Chlorotic      % Necrotic      %  
 Pests      Abiotic       
 Species failure profile Branches  Trunk  Roots  Describe     

### Load Factors

Wind exposure Protected  Partial  Full  Wind funneling  Relative crown size Small  Medium  Large   
 Crown density Sparse  Normal  Dense  Interior branches Few  Normal  Dense  Vines/Mistletoe/Moss   
 Recent or planned change in load factors     

### Tree Defects and Conditions Affecting the Likelihood of Failure

#### — Crown and Branches —

Unbalanced crown  LCR 95 %  
 Dead twigs/branches  5 % overall Max. dia. 1"  
 Broken/Hangers Number      Max. dia.       
 Over-extended branches   
 Pruning history  
 Crown cleaned  Thinned  Raised   
 Reduced  Topped  Lion-tailed   
 Flush cuts  Other       
 Cracks  Lightning damage   
 Codominant  Included bark   
 Weak attachments  Cavity/Nest hole      % circ.  
 Previous branch failures  Similar branches present   
 Dead/Missing bark  Cankers/Galls/Burrs  Sapwood damage/decay   
 Conks  Heartwood decay   
 Response growth     

Main concern(s) EXCESSIVE LEAD + BARK PEELING ON UPPER SIDE

Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Trunk —

Dead/Missing bark  Abnormal bark texture/color   
 Codominant stems  Included bark  Cracks   
 Sapwood damage/decay  Cankers/Galls/Burrs  Sap ooze   
 Lightning damage  Heartwood decay  Conks/Mushrooms   
 Cavity/Nest hole      % circ. Depth      Poor taper   
 Lean 30° Corrected?     

Response growth       
 Main concern(s) DYING CAMBIUM ON UPPER SIDE OF TRUNK + ROOT DISTURBANCE OPPOS. LEAN

Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Roots and Root Collar —

Collar buried/Not visible  Depth      Stem girdling   
 Dead  Decay  Conks/Mushrooms   
 Ooze  Cavity       % circ.  
 Cracks  Cut/Damaged roots  Distance from trunk 10-12'  
 Root plate lifting  Soil weakness

Response growth       
 Main concern(s) SATURATED SOILS, SNOW OR ICE LOAD OR UPHEAVAL

Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent



LOW

# ISA Basic Tree Risk Assessment Form

Client ELM STREET DEN, Date 7-7-2015 Time 3 PM  
 Address/Tree location OCCOQUAN HB, VA Tree no. 1-9 Sheet      of       
 Tree species RED MAPLE dbh 24 Height 55 Crown spread dia. 40  
 Assessor(s)      Time frame      Tools used DBH TAPE, PROBE

### Target Assessment

| Target number | Target description | Target zone             |                       |                         | Occupancy rate<br>1-rare<br>2-occasional<br>3-frequent<br>4-constant | Practical to move target? | Restriction practical? |
|---------------|--------------------|-------------------------|-----------------------|-------------------------|--|---------------------------|------------------------|
|               |                    | Target within drip line | Target within 1 x Ht. | Target within 1.5 x Ht. |  |                           |                        |
| 1             | LANDSCAPED RPA     | Y                       | Y                     | Y                       | 1  | N                         | N                      |
| 2             |                    |                         |                       |                         |  |                           |                        |
| 3             |                    |                         |                       |                         |  |                           |                        |
| 4             |                    |                         |                       |                         |  |                           |                        |

### Site Factors

History of failures ADD DEAD TWIGS Topography Flat  Slope  4 % Aspect E  
 Site changes None  Grade change  Site clearing  Changed soil hydrology  Root cuts  Describe       
 Soil conditions Limited volume  Saturated  Shallow  Compacted  Pavement over roots  % Describe       
 Prevailing wind direction NW Common weather Strong winds  Ice  Snow  Heavy rain  Describe     

### Tree Health and Species Profile

Vigor Low  Normal  High  Foliage None (seasonal)  None (dead)  Normal      % Chlorotic      % Necrotic      %  
 Pests      Abiotic       
 Species failure profile Branches  Trunk  Roots  Describe     

### Load Factors

Wind exposure Protected  Partial  Full  Wind funneling  Relative crown size Small  Medium  Large   
 Crown density Sparse  Normal  Dense  Interior branches Few  Normal  Dense  Vines/Mistletoe/Moss  VINES ON TRUNK  
 Recent or planned change in load factors     

### Tree Defects and Conditions Affecting the Likelihood of Failure

#### — Crown and Branches —

Unbalanced crown  LCR 95 %  
 Dead twigs/branches  % overall      Max. dia. 2"  
 Broken/Hangers Number      Max. dia.       
 Over-extended branches   
 Pruning history  
 Crown cleaned  Thinned  Raised   
 Reduced  Topped  Lion-tailed   
 Flush cuts  Other       
 Main concern(s) NONE  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Trunk —

Dead/Missing bark  Abnormal bark texture/color   
 Codominant stems  Included bark  Cracks   
 Sapwood damage/decay  Cankers/Galls/Burls  Sap ooze   
 Lightning damage  Heartwood decay  Conks/Mushrooms   
 Cavity/Nest hole      % circ. Depth      Poor taper   
 Lean      ° Corrected?       
 Response growth       
 Main concern(s) NONE  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Roots and Root Collar —

Collar buried/Not visible  Depth      Stem girdling   
 Dead  Decay  Conks/Mushrooms   
 Ooze  Cavity       % circ.  
 Cracks  Cut/Damaged roots  Distance from trunk       
 Root plate lifting  Soil weakness   
 Response growth       
 Main concern(s) NONE  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent



Low

# ISA Basic Tree Risk Assessment Form

Client ELM STREET DEV. Date 7.7.2015 Time 3PM  
 Address/Tree location OCCOQUAN HTS, VA Tree no. T-10 Sheet      of       
 Tree species TULIP PODLAR dbh 22 Height 80 Crown spread dia. 40'  
 Assessor(s)      Time frame      Tools used D-TAPE, PROBE

### Target Assessment

| Target number | Target description           | Target zone             |                     |                       | Occupancy rate<br>1-rare<br>2-occasional<br>3-frequent<br>4-constant | Practical to move target? | Restriction practical? |
|---------------|------------------------------|-------------------------|---------------------|-----------------------|--|---------------------------|------------------------|
|               |                              | Target within drip line | Target within 1x Ht | Target within 1.5x Ht |  |                           |                        |
| 1             | TOWN HOUSE + DECK - ADJ SITE | N                       | Y                   | Y                     | 3  | N                         | N                      |
| 2             |                              |                         |                     |                       |  |                           |                        |
| 3             |                              |                         |                     |                       |  |                           |                        |
| 4             |                              |                         |                     |                       |  |                           |                        |

### Site Factors

History of failures ADJ DEAD TREES Topography Flat  Slope 3-4 % Aspect E  
 Site changes None  Grade change  Site clearing  Changed soil hydrology  Root cuts  Describe       
 Soil conditions Limited volume  Saturated  Shallow  Compacted  Pavement over roots  % Describe       
 Prevailing wind direction NW Common weather Strong winds  Ice  Snow  Heavy rain  Describe     

### Tree Health and Species Profile

Vigor Low  Normal  High  Foliage None (seasonal)  None (dead)  Normal      % Chlorotic      % Necrotic      %  
 Pests      Abiotic       
 Species failure profile Branches  Trunk  Roots  Describe     

### Load Factors

Wind exposure Protected  Partial  Full  Wind funneling  Relative crown size Small  Medium  Large   
 Crown density Sparse  Normal  Dense  Interior branches Few  Normal  Dense  Vines/Mistletoe/Moss  ON TRUNK  
 Recent or planned change in load factors     

### Tree Defects and Conditions Affecting the Likelihood of Failure

#### — Crown and Branches —

Unbalanced crown  LCR 90 %  
 Dead twigs/branches  5 % overall Max. dia. 2"  
 Broken/Hangers Number      Max. dia.       
 Over-extended branches   
 Pruning history  
 Crown cleaned  Thinned  Raised   
 Reduced  Topped  Lion-tailed   
 Flush cuts  Other       
 Main concern(s) NONE  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Trunk —

Dead/Missing bark  Abnormal bark texture/color   
 Codominant stems  Included bark  Cracks   
 Sapwood damage/decay  Cankers/Galls/Burls  Sap ooze   
 Lightning damage  Heartwood decay  Conks/Mushrooms   
 Cavity/Nest hole      % circ. Depth      Poor taper   
 Lean      ° Corrected?       
 Response growth       
 Main concern(s) NONE  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Roots and Root Collar —

Collar buried/Not visible  Depth      Stem girdling   
 Dead  Decay  Conks/Mushrooms   
 Ooze  Cavity       % circ.  
 Cracks  Cut/Damaged roots  Distance from trunk       
 Root plate lifting  Soil weakness   
 Response growth       
 Main concern(s) NONE - NO SOIL DISTURBANCE  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent



LOW

# ISA Basic Tree Risk Assessment Form

Client ELM STREET DEV Date 7-7-2015 Time 4 PM  
 Address/Tree location OCCOQUAN, HB, VA Tree no. T-11 Sheet      of       
 Tree species TULIP POPLAR dbh 17 Height 70 Crown spread dia. 30'  
 Assessor(s) CCOWLES Time frame      Tools used D-TAPE, PROBE

### Target Assessment

| Target number | Target description | Target zone             |                       |                         | Occupancy rate<br>1-rare<br>2-occasional<br>3-frequent<br>4-constant | Practical to move target? | Restriction practical? |
|---------------|--------------------|-------------------------|-----------------------|-------------------------|--|---------------------------|------------------------|
|               |                    | Target within drip line | Target within 1 x Ht. | Target within 1.5 x Ht. |  |                           |                        |
| 1             | NA (RP2)           |                         |                       |                         |  |                           |                        |
| 2             |                    |                         |                       |                         |  |                           |                        |
| 3             |                    |                         |                       |                         |  |                           |                        |
| 4             |                    |                         |                       |                         |  |                           |                        |

### Site Factors

History of failures ADD DEAD T.W. Topography Flat  Slope  3-4 % Aspect E  
 Site changes None  Grade change  Site clearing  Changed soil hydrology  Root cuts  Describe       
 Soil conditions Limited volume  Saturated  Shallow  Compacted  Pavement over roots  % Describe       
 Prevailing wind direction      Common weather Strong winds  Ice  Snow  Heavy rain  Describe       
**Tree Health and Species Profile**  
 Vigor Low  Normal  High  Foliage None (seasonal)  None (dead)  Normal      % Chlorotic      % Necrotic      %  
 Pests      Abiotic       
 Species failure profile Branches  Trunk  Roots  Describe     

### Load Factors

Wind exposure Protected  Partial  Full  Wind funneling  Relative crown size Small  Medium  Large   
 Crown density Sparse  Normal  Dense  Interior branches Few  Normal  Dense  Vines/Mistletoe/Moss   
 Recent or planned change in load factors     

### Tree Defects and Conditions Affecting the Likelihood of Failure

#### — Crown and Branches —

Unbalanced crown  LCR      %  
 Dead twigs/branches  5 % overall Max. dia. 3"  
 Broken/Hangers Number      Max. dia.       
 Over-extended branches   
**Pruning history**  
 Crown cleaned  Thinned  Raised   
 Reduced  Topped  Lion-tailed   
 Flush cuts  Other       
 Main concern(s) NONE  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Trunk —

Dead/Missing bark  Abnormal bark texture/color   
 Codominant stems  Included bark  Cracks   
 Sapwood damage/decay  Cankers/Galls/Burls  Sap ooze   
 Lightning damage  Heartwood decay  Conks/Mushrooms   
 Cavity/Nest hole      % circ. Depth      Poor taper   
 Lean      \* Corrected?       
 Response growth       
 Main concern(s) NONE  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Roots and Root Collar —

Collar buried/Not visible  Depth      Stem girdling   
 Dead  Decay  Conks/Mushrooms   
 Ooze  Cavity       % circ.  
 Cracks  Cut/Damaged roots  Distance from trunk       
 Root plate lifting  Soil weakness   
 Response growth       
 Main concern(s) NONE  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent



High

# ISA Basic Tree Risk Assessment Form

Client ELM STREET DEN Date 7-7-2015 Time 4:0 PM  
 Address/Tree location OCLOQUAN HTS, VA Tree no. T-12 Sheet      of       
 Tree species BLACK CHERRY dbh 15 Height 60 Crown spread dia. 30'  
 Assessor(s)      Time frame      Tools used D-TAPE, P.P.A.R.E

### Target Assessment

| Target number | Target description          | Target zone             |                      |                        | Occupancy rate<br>1-rare<br>2-occasional<br>3-frequent<br>4-constant | Practical to move target? | Restriction practical? |
|---------------|-----------------------------|-------------------------|----------------------|------------------------|--|---------------------------|------------------------|
|               |                             | Target within drip line | Target within 1x Ht. | Target within 1.5x Ht. |  |                           |                        |
| 1             | Town House & Deck, ADS SITE | N                       | Y                    | Y                      | 4  | N                         | N                      |
| 2             |                             |                         |                      |                        |  |                           |                        |
| 3             |                             |                         |                      |                        |  |                           |                        |
| 4             |                             |                         |                      |                        |  |                           |                        |

### Site Factors

History of failures ADS DEAD TREES Topography Flat  Slope  3-4 % Aspect E  
 Site changes None  Grade change  Site clearing  Changed soil hydrology  Root cuts  Describe EXCAVATION FOR STORM DR.  
 Soil conditions Limited volume  Saturated  Shallow  Compacted  Pavement over roots  % Describe       
 Prevailing wind direction      Common weather Strong winds  Ice  Snow  Heavy rain  Describe       
**Tree Health and Species Profile**  
 Vigor Low  Normal  High  Foliage None (seasonal)  None (dead)  Normal      % Chlorotic      % Necrotic 50% %  
 Pests      Abiotic       
 Species failure profile Branches  Trunk  Roots  Describe     

### Load Factors

Wind exposure Protected  Partial  Full  Wind funneling  Relative crown size Small  Medium  Large   
 Crown density Sparse  Normal  Dense  Interior branches Few  Normal  Dense  Vines/Mistletoe/Moss   
 Recent or planned change in load factors     

### Tree Defects and Conditions Affecting the Likelihood of Failure

#### — Crown and Branches —

Unbalanced crown  LCR 50%  
 Dead twigs/branches  50% overall Max. dia. 9"  
 Broken/Hangers Number      Max. dia.       
 Over-extended branches   
 Pruning history  
 Crown cleaned  Thinned  Raised   
 Reduced  Topped  Lion-tailed   
 Flush cuts  Other       
 Main concern(s) TOP DEAD  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Trunk —

Dead/Missing bark  Abnormal bark texture/color   
 Codominant stems  Included bark  Cracks   
 Sapwood damage/decay  Cankers/Galls/Burls  Sap ooze   
 Lightning damage  Heartwood decay  Conks/Mushrooms   
 Cavity/Nest hole      % circ. Depth      Poor taper   
 Lean      ° Corrected?       
 Response growth       
 Main concern(s) OVERALL DECLINE  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Roots and Root Collar —

Collar buried/Not visible  Depth      Stem girdling   
 Dead  Decay  Conks/Mushrooms   
 Ooze  Cavity  % circ.       
 Cracks  Cut/Damaged roots  Distance from trunk 3-5'  
 Root plate lifting  Soil weakness   
 Response growth       
 Main concern(s) RECENT UTILITY EXCAVATION  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent





# Basic Tree Risk Assessment Form

MOD  
Lean

Client ELM STREET DEU, Date 7-7-2015 Time 4PM  
 Address/Tree location OCOQUAN HTS, VA Tree no. T-13 Sheet      of       
 Tree species BLACK CHERRY dbh 15 Height 60 Crown spread dia. 25'  
 Assessor(s) CCOWLES Time frame      Tools used D-Tape, PROBE

### Target Assessment

| Target number | Target description | Target zone             |                       |                         | Occupancy rate<br>1-rare<br>2-occasional<br>3-frequent<br>4-constant | Practical to move target? | Restriction practical? |
|---------------|--------------------|-------------------------|-----------------------|-------------------------|--|---------------------------|------------------------|
|               |                    | Target within drip line | Target within 1 x Ht. | Target within 1.5 x Ht. |  |                           |                        |
| 1             | TOWN HOUSE + DECK  | N                       | Y                     | Y                       | 4  | N                         | N                      |
| 2             |                    |                         |                       |                         |  |                           |                        |
| 3             |                    |                         |                       |                         |  |                           |                        |
| 4             |                    |                         |                       |                         |  |                           |                        |

### Site Factors

History of failures ADJ TREES Topography Flat  Slope  2-3 % Aspect SE  
 Site changes None  Grade change  Site clearing  Changed soil hydrology  Root cuts  Describe SD EXCAVATION  
 Soil conditions Limited volume  Saturated  Shallow  Compacted  Pavement over roots  % Describe       
 Prevailing wind direction      Common weather Strong winds  Ice  Snow  Heavy rain  Describe     

### Tree Health and Species Profile

Vigor Low  Normal  High  Foliage None (seasonal)  None (dead)  Normal      % Chlorotic      % Necrotic 25 %  
 Pests      Abiotic       
 Species failure profile Branches  Trunk  Roots  Describe     

### Load Factors

Wind exposure Protected  Partial  Full  Wind funneling  Relative crown size Small  Medium  Large   
 Crown density Sparse  Normal  Dense  Interior branches Few  Normal  Dense  Vines/Mistletoe/Moss   
 Recent or planned change in load factors     

### Tree Defects and Conditions Affecting the Likelihood of Failure

#### — Crown and Branches —

Unbalanced crown  LCR 75 %  
 Dead twigs/branches  25 % overall Max. dia. 3"  
 Broken/Hangers Number      Max. dia.       
 Over-extended branches   
 Pruning history  
 Crown cleaned  Thinned  Raised   
 Reduced  Topped  Lion-tailed   
 Flush cuts  Other       
 Main concern(s) Small deadwood sailing onto deck  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Trunk —

Dead/Missing bark  Abnormal bark texture/color   
 Codominant stems  Included bark  Cracks   
 Sapwood damage/decay  Cankers/Galls/Burls  Sap ooze   
 Lightning damage  Heartwood decay  Conks/Mushrooms   
 Cavity/Nest hole      % circ. Depth      Poor taper   
 Lean 15 ° Corrected?       
 Response growth       
 Main concern(s) WEIGHT OVER T.H.  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Roots and Root Collar —

Collar buried/Not visible  Depth      Stem girdling   
 Dead  Decay  Conks/Mushrooms   
 Ooze  Cavity       % circ.  
 Cracks  Cut/Damaged roots  Distance from trunk 5-8'  
 Root plate lifting  Soil weakness   
 Response growth       
 Main concern(s) SD EXCAVATION  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

**Risk Categorization**

| Condition number | Tree part      | Conditions of concern | Part size | Fall distance | Target number | Target protection | Likelihood |          |          |          |          |     |        |      | Consequences                     |          |        |             | Risk rating of part (from Matrix 2) |            |
|------------------|----------------|-----------------------|-----------|---------------|---------------|-------------------|------------|----------|----------|----------|----------|-----|--------|------|----------------------------------|----------|--------|-------------|-------------------------------------|------------|
|                  |                |                       |           |               |               |                   | Failure    |          |          |          | Impact   |     |        |      | Failure & Impact (from Matrix 1) |          |        |             |                                     |            |
|                  |                |                       |           |               |               |                   | Improbable | Possible | Probable | Imminent | Very low | Low | Medium | High | Unlikely                         | Somewhat | Likely | Very likely |                                     | Negligible |
| 1                | Small BRANCHES | Dead                  | 4         | 30            | 1             | N                 |            | X        |          |          | X        |     | X      |      |                                  |          | X      |             |                                     | Low        |
| 2                | WHOLE TREE     | Root dist.            | 15'       | 30            | 1             | N                 |            |          | X        |          |          | X   | X      |      |                                  |          |        |             | X                                   | Low        |
| 3                |                |                       |           |               |               |                   |            |          |          |          |          |     |        |      |                                  |          |        |             |                                     |            |
| 4                |                |                       |           |               |               |                   |            |          |          |          |          |     |        |      |                                  |          |        |             |                                     |            |

Matrix 1. Likelihood matrix.

| Likelihood of Failure | Likelihood of Impacting Target |                 |                 |                 |
|-----------------------|--------------------------------|-----------------|-----------------|-----------------|
|                       | Very low                       | Low             | Medium          | High            |
| Imminent              | Unlikely                       | Somewhat likely | Likely          | Very likely     |
| Probable              | Unlikely                       | Unlikely        | Somewhat likely | Likely          |
| Possible              | Unlikely                       | Unlikely        | Unlikely        | Somewhat likely |
| Improbable            | Unlikely                       | Unlikely        | Unlikely        | Unlikely        |

Matrix 2. Risk rating matrix.

| Likelihood of Failure & Impact | Consequences of Failure |          |             |          |
|--------------------------------|-------------------------|----------|-------------|----------|
|                                | Negligible              | Minor    | Significant | Severe   |
| Very likely                    | Low                     | Moderate | High        | Extreme  |
| Likely                         | Low                     | Moderate | High        | High     |
| Somewhat likely                | Low                     | Low      | Moderate    | Moderate |
| Unlikely                       | Low                     | Low      | Low         | Low      |

Notes, explanations, descriptions \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Mitigation options \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Residual risk \_\_\_\_\_

Residual risk \_\_\_\_\_

Residual risk \_\_\_\_\_

Residual risk \_\_\_\_\_

Overall tree risk rating    Low     Moderate     High     Extreme

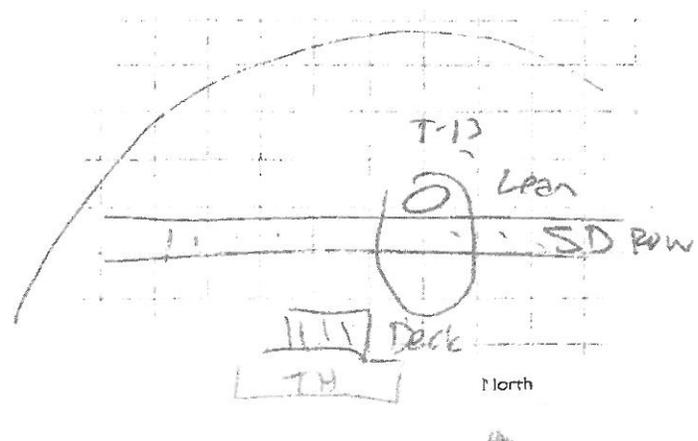
Work priority    1     2     3     4

Overall residual risk    Low     Moderate     High     Extreme

Recommended inspection interval    6 mo

Data  Final  Preliminary    Advanced assessment needed  No  Yes-Type/Reason \_\_\_\_\_

Inspection limitations  None  Visibility  Access  Vines  Root collar buried    Describe \_\_\_\_\_



LOW

# ISA Basic Tree Risk Assessment Form

Client ELM STREET DEV. Date 7-7-2015 Time 4 PM  
 Address/Tree location OCOQUAN HTS, VA Tree no. T-14 Sheet      of       
 Tree species RED MAPLE dbh 9 Height 40 Crown spread dia. 28  
 Assessor(s) CRAWLERS Time frame      Tools used D-TAPE, PRZ#5R

### Target Assessment

| Target number | Target description | Target zone             |                       |                         | Occupancy rate<br>1-rare<br>2-occasional<br>3-frequent<br>4-constant | Practical to move target? | Restriction practical? |
|---------------|--------------------|-------------------------|-----------------------|-------------------------|--|---------------------------|------------------------|
|               |                    | Target within drip line | Target within 1 x Ht. | Target within 1.5 x Ht. |  |                           |                        |
| 1             | <u>NONE</u>        |                         |                       |                         |  |                           |                        |
| 2             |                    |                         |                       |                         |  |                           |                        |
| 3             |                    |                         |                       |                         |  |                           |                        |
| 4             |                    |                         |                       |                         |  |                           |                        |

### Site Factors

History of failures ADJ DEAD TREES Topography Flat  Slope 3 % Aspect E  
 Site changes None  Grade change  Site clearing  Changed soil hydrology  Root cuts  Describe SD EXCAVATION  
 Soil conditions Limited volume  Saturated  Shallow  Compacted  Pavement over roots  % Describe       
 Prevailing wind direction      Common weather Strong winds  Ice  Snow  Heavy rain  Describe     

### Tree Health and Species Profile

Vigor Low  Normal  High  Foliage None (seasonal)  None (dead)  Normal 90 % Chlorotic      % Necrotic      %  
 Pests      Abiotic       
 Species failure profile Branches  Trunk  Roots  Describe     

### Load Factors

Wind exposure Protected  Partial  Full  Wind funneling  Relative crown size Small  Medium  Large   
 Crown density Sparse  Normal  Dense  Interior branches Few  Normal  Dense  Vines/Mistletoe/Moss   
 Recent or planned change in load factors     

### Tree Defects and Conditions Affecting the Likelihood of Failure

#### — Crown and Branches —

Unbalanced crown  LCR 95 %  
 Dead twigs/branches  % overall Max. dia.       
 Broken/Hangers Number      Max. dia.       
 Over-extended branches   
 Pruning history  
 Crown cleaned  Thinned  Raised   
 Reduced  Topped  Lion-tailed   
 Flush cuts  Other       
 Main concern(s) NONE  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Trunk —

Dead/Missing bark  Abnormal bark texture/color   
 Codominant stems  Included bark  Cracks   
 Sapwood damage/decay  Cankers/Galls/Burls  Sap ooze   
 Lightning damage  Heartwood decay  Conks/Mushrooms   
 Cavity/Nest hole      % circ. Depth      Poor taper   
 Lean      ° Corrected?   
 Response growth       
 Main concern(s) NONE  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Roots and Root Collar —

Collar buried/Not visible  Depth      Stem girdling   
 Dead  Decay  Conks/Mushrooms   
 Ooze  Cavity  % circ.       
 Cracks  Cut/Damaged roots  Distance from trunk 3-5 '  
 Root plate lifting  Soil weakness   
 Response growth       
 Main concern(s) NONE  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

**Risk Categorization**

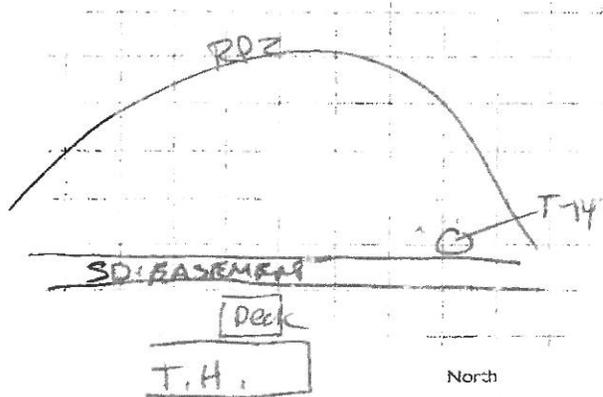
| Condition number | Tree part | Conditions of concern | Part size | Fall distance | Target number | Target protection | Likelihood |          |          |          |          |     |        |      | Consequences                     |          |        |             | Risk rating of part (from Matrix 2) |            |       |             |        |
|------------------|-----------|-----------------------|-----------|---------------|---------------|-------------------|------------|----------|----------|----------|----------|-----|--------|------|----------------------------------|----------|--------|-------------|-------------------------------------|------------|-------|-------------|--------|
|                  |           |                       |           |               |               |                   | Failure    |          |          |          | Impact   |     |        |      | Failure & Impact (from Matrix 1) |          |        |             |                                     |            |       |             |        |
|                  |           |                       |           |               |               |                   | Improbable | Possible | Probable | Imminent | Very low | Low | Medium | High | Unlikely                         | Somewhat | Likely | Very likely |                                     | Negligible | Minor | Significant | Severe |
| 1                | WHOLE     | WIND THRU             | 9         | 40            | 2             | N                 |            | X        |          |          |          |     |        |      |                                  |          | X      |             |                                     |            |       | LOW         |        |
| 2                |           |                       |           |               |               |                   |            |          |          |          |          |     |        |      |                                  |          |        |             |                                     |            |       |             |        |
| 3                |           |                       |           |               |               |                   |            |          |          |          |          |     |        |      |                                  |          |        |             |                                     |            |       |             |        |
| 4                |           |                       |           |               |               |                   |            |          |          |          |          |     |        |      |                                  |          |        |             |                                     |            |       |             |        |

Matrix 1. Likelihood matrix.

| Likelihood of Failure | Likelihood of Impacting Target |                 |                 |                 |
|-----------------------|--------------------------------|-----------------|-----------------|-----------------|
|                       | Very low                       | Low             | Medium          | High            |
| Imminent              | Unlikely                       | Somewhat likely | Likely          | Very likely     |
| Probable              | Unlikely                       | Unlikely        | Somewhat likely | Likely          |
| Possible              | Unlikely                       | Unlikely        | Unlikely        | Somewhat likely |
| Improbable            | Unlikely                       | Unlikely        | Unlikely        | Unlikely        |

Matrix 2. Risk rating matrix.

| Likelihood of Failure & Impact | Consequences of Failure |          |             |          |
|--------------------------------|-------------------------|----------|-------------|----------|
|                                | Negligible              | Minor    | Significant | Severe   |
| Very likely                    | Low                     | Moderate | High        | Extreme  |
| Likely                         | Low                     | Moderate | High        | High     |
| Somewhat likely                | Low                     | Low      | Moderate    | Moderate |
| Unlikely                       | Low                     | Low      | Low         | Low      |



Notes, explanations, descriptions \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Mitigation options \_\_\_\_\_ Residual risk \_\_\_\_\_  
 \_\_\_\_\_ Residual risk \_\_\_\_\_  
 \_\_\_\_\_ Residual risk \_\_\_\_\_  
 \_\_\_\_\_ Residual risk \_\_\_\_\_

Overall tree risk rating Low  Moderate  High  Extreme  Work priority 1  2  3  4   
 Overall residual risk Low  Moderate  High  Extreme  Recommended inspection interval \_\_\_\_\_  
 Data  Final  Preliminary  Advanced assessment needed  No  Yes-Type/Reason \_\_\_\_\_  
 Inspection limitations  None  Visibility  Access  Vines  Root collar buried Describe \_\_\_\_\_

High failure  
Low target

# ISA Basic Tree Risk Assessment Form

Client ELM STREET DEV. Date 7-7-2015 Time 4PM  
 Address/Tree location OCOQUAN Tree no. T-15 Sheet      of       
 Tree species DEAD dbh 24 Height 55 Crown spread dia.       
 Assessor(s) CCOWLES Time frame      Tools used D TAPE, PROBE

## Target Assessment

| Target number | Target description                        | Target zone             |                        |                        | Occupancy rate<br>1 - rare<br>2 - occasional<br>3 - frequent<br>4 - constant | Practical to move target? | Restriction practical? |
|---------------|---|-------------------------|------------------------|------------------------|--|---------------------------|------------------------|
|               |   | Target within drip line | Target within 1.5x Ht. | Target within 1.5x Ht. |  |                           |                        |
| 1             | <u>LANDSCAPED REAR YARD / SD BASEMENT</u> | <u>N</u>                | <u>Y</u>               | <u>Y</u>               | <u>2</u>   | <u>N</u>                  | <u>N</u>               |
| 2             |   |                         |                        |                        |  |                           |                        |
| 3             |   |                         |                        |                        |  |                           |                        |
| 4             |   |                         |                        |                        |  |                           |                        |

## Site Factors

History of failures ADJ DEAD Topography Flat  Slope  % Aspect 1  
 Site changes None  Grade change  Site clearing  Changed soil hydrology  Root cuts  Describe       
 Soil conditions Limited volume  Saturated  Shallow  Compacted  Pavement over roots  % Describe       
 Prevailing wind direction NW Common weather Strong winds  Ice  Snow  Heavy rain  Describe     

## Tree Health and Species Profile

Vigor Low  Normal  High  Foliage None (seasonal)  None (dead)  Normal     % Chlorotic     % Necrotic     %  
 Pests      Abiotic       
 Species failure profile Branches  Trunk  Roots  Describe     

## Load Factors

Wind exposure Protected  Partial  Full  Wind funneling  Relative crown size Small  Medium  Large   
 Crown density Sparse  Normal  Dense  Interior branches Few  Normal  Dense  Vines/Mistletoe/Moss  Very Heavy Vines  
 Recent or planned change in load factors     

## Tree Defects and Conditions Affecting the Likelihood of Failure

### — Crown and Branches —

Unbalanced crown  LCR 0 %  
 Dead twigs/branches  % overall Max. dia.       
 Broken/Hangers Number      Max. dia.       
 Over-extended branches   
 Pruning history  
 Crown cleaned  Thinned  Raised   
 Reduced  Topped  Lion-tailed   
 Flush cuts  Other       
 Main concern(s) TOP IS SAME

Cracks  Lightning damage   
 Codominant  Included bark   
 Weak attachments  Cavity/Nest hole      % circ.  
 Previous branch failures  Similar branches present   
 Dead/Missing bark  Cankers/Galls/Burls  Sapwood damage/decay   
 Conks  Heartwood decay   
 Response growth     

Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

### — Trunk —

Dead/Missing bark  Abnormal bark texture/color   
 Codominant stems  Included bark  Cracks   
 Sapwood damage/decay  Cankers/Galls/Burls  Sap ooze   
 Lightning damage  Heartwood decay  Conks/Mushrooms   
 Cavity/Nest hole      % circ. Depth      Poor taper   
 Lean      \* Corrected?       
 Response growth       
 Main concern(s) TRUNK CHANGE

Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

### — Roots and Root Collar —

Collar buried/Not visible  Depth      Stern girdling   
 Dead  Decay  Conks/Mushrooms   
 Ooze  Cavity      % circ.  
 Cracks  Cut/Damaged roots  Distance from trunk       
 Root plate lifting  Soil weakness   
 Response growth       
 Main concern(s) NA

Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent



Low

# ISA Basic Tree Risk Assessment Form

Client ELM STREET DEV Date 7-7-2015 Time 5PM  
 Address/Tree location OCCOQUAN HTS, VA Tree no. T-16 Sheet      of       
 Tree species SYCAMORE dbh 34 Height 90 Crown spread dia. 60'  
 Assessor(s)      Time frame      Tools used D-TAPE, PRAPR

### Target Assessment

| Target number | Target description  | Target zone             |                      |                        | Occupancy rate<br>1-rare<br>2-occasional<br>3-frequent<br>4-constant | Practical to move target? | Restriction practical? |
|---------------|---------------------|-------------------------|----------------------|------------------------|--|---------------------------|------------------------|
|               |                     | Target within drip line | Target within 1x Ht. | Target within 1.5x Ht. |  |                           |                        |
| 1             | LANDSCAPED SUM AREA | Y                       | Y                    | Y                      | 1  | N                         | N                      |
| 2             |                     |                         |                      |                        |  |                           |                        |
| 3             |                     |                         |                      |                        |  |                           |                        |
| 4             |                     |                         |                      |                        |  |                           |                        |

### Site Factors

History of failures ADD Topography Flat  Slope  % Aspect       
 Site changes None  Grade change  Site clearing  Changed soil hydrology  Root cuts  Describe       
 Soil conditions Limited volume  Saturated  Shallow  Compacted  Pavement over roots  % Describe       
 Prevailing wind direction      Common weather Strong winds  Ice  Snow  Heavy rain  Describe       
**Tree Health and Species Profile**  
 Vigor Low  Normal  High  Foliage None (seasonal)  None (dead)  Normal     % Chlorotic     % Necrotic     %  
 Pests      Abiotic       
 Species failure profile Branches  Trunk  Roots  Describe     

### Load Factors

Wind exposure Protected  Partial  Full  Wind funneling  Relative crown size Small  Medium  Large   
 Crown density Sparse  Normal  Dense  Interior branches Few  Normal  Dense  Vines/Mistletoe/Moss   
 Recent or planned change in load factors     

### Tree Defects and Conditions Affecting the Likelihood of Failure

#### — Crown and Branches —

Unbalanced crown  LCR     %  
 Dead twigs/branches      % overall Max. dia.       
 Broken/Hangers Number      Max. dia.       
 Over-extended branches   
**Pruning history**  
 Crown cleaned  Thinned  Raised   
 Reduced  Topped  Lion-tailed   
 Flush cuts  Other       
 Cracks  Lightning damage   
 Codominant  Included bark   
 Weak attachments  Cavity/Nest hole     % circ.  
 Previous branch failures  Similar branches present   
 Dead/Missing bark  Cankers/Galls/Burls  Sapwood damage/decay   
 Conks  Heartwood decay   
 Response growth     

Main concern(s) Heavy Vines

Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Trunk —

Dead/Missing bark  Abnormal bark texture/color   
 Codominant stems  Included bark  Cracks   
 Sapwood damage/decay  Cankers/Galls/Burls  Sap ooze   
 Lightning damage  Heartwood decay  Conks/Mushrooms   
 Cavity/Nest hole     % circ. Depth      Poor taper   
 Lean     ° Corrected?     

Response growth       
 Main concern(s) Heavy Vines

Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Roots and Root Collar —

Collar buried/Not visible  Depth      Stem girdling   
 Dead  Decay  Conks/Mushrooms   
 Ooze  Cavity      % circ.  
 Cracks  Cut/Damaged roots  Distance from trunk 20'  
 Root plate lifting  Soil weakness

Response growth       
 Main concern(s) None

Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent



LOW

# ISA Basic Tree Risk Assessment Form

Client ELM STREET DEN. Date 7-7-2015 Time 4PM  
 Address/Tree location OCCOQUAN HTS, VA Tree no. T-17 Sheet      of       
 Tree species SOUR CHERRY dbh 13 Height 40 Crown spread dia. 30  
 Assessor(s) CROWLES Time frame      Tools used D-TAPE, PROBE

### Target Assessment

| Target number | Target description | Target zone             |                      |                        | Occupancy rate<br>1-rare<br>2-occasional<br>3-frequent<br>4-constant | Practical to move target? | Restriction practical? |
|---------------|--------------------|-------------------------|----------------------|------------------------|--|---------------------------|------------------------|
|               |                    | Target within drip line | Target within 1x Ht. | Target within 1.5x Ht. |  |                           |                        |
| 1             | <u>NONE</u>        |                         |                      |                        |  |                           |                        |
| 2             |                    |                         |                      |                        |  |                           |                        |
| 3             |                    |                         |                      |                        |  |                           |                        |
| 4             |                    |                         |                      |                        |  |                           |                        |

### Site Factors

History of failures AND DEAD TREES Topography Flat  Slope  % Aspect       
 Site changes None  Grade change  Site clearing  Changed soil hydrology  Root cuts  Describe       
 Soil conditions Limited volume  Saturated  Shallow  Compacted  Pavement over roots  % Describe       
 Prevailing wind direction      Common weather Strong winds  Ice  Snow  Heavy rain  Describe     

### Tree Health and Species Profile

Vigor Low  Normal  High  Foliage None (seasonal)  None (dead)  Normal     % Chlorotic     % Necrotic     %  
 Pests      Abiotic       
 Species failure profile Branches  Trunk  Roots  Describe     

### Load Factors

Wind exposure Protected  Partial  Full  Wind funneling  Relative crown size Small  Medium  Large   
 Crown density Sparse  Normal  Dense  Interior branches Few  Normal  Dense  Vines/Mistletoe/Moss  Heavy Vines  
 Recent or planned change in load factors     

### Tree Defects and Conditions Affecting the Likelihood of Failure

#### — Crown and Branches —

Unbalanced crown  LCR     %  
 Dead twigs/branches  % overall      Max. dia.       
 Broken/Hangers Number      Max. dia.       
 Over-extended branches   
 Pruning history  
 Crown cleaned  Thinned  Raised   
 Reduced  Topped  Lion-tailed   
 Flush cuts  Other       
 Cracks  Lightning damage   
 Codominant  Included bark   
 Weak attachments  Cavity/Nest hole     % circ.  
 Previous branch failures  Similar branches present   
 Dead/Missing bark  Cankers/Galls/Burls  Sapwood damage/decay   
 Conks  Heartwood decay   
 Response growth     

Main concern(s) NONE

Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Trunk —

Dead/Missing bark  Abnormal bark texture/color   
 Codominant stems  Included bark  Cracks   
 Sapwood damage/decay  Cankers/Galls/Burls  Sap ooze   
 Lightning damage  Heartwood decay  Conks/Mushrooms   
 Cavity/Nest hole     % circ. Depth      Poor taper   
 Lean     \* Corrected?     

Response growth     

Main concern(s) NONE

Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Roots and Root Collar —

Collar buried/Not visible  Depth      Stem girdling   
 Dead  Decay  Conks/Mushrooms   
 Ooze  Cavity  % circ.       
 Cracks  Cut/Damaged roots  Distance from trunk       
 Root plate lifting  Soil weakness

Response growth     

Main concern(s) NONE

Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent



MOD  
LONG TERM  
LLS

# ISA Basic Tree Risk Assessment Form

Client FLM STREET DEV. Date 7-7-2015 Time 6PM  
 Address/Tree location OCCOQUAN HTS, VA Tree no. 19 Sheet of  
 Tree species ASIT SPALDIS dbh 28 Height 90 Crown spread dia. 38  
 Assessor(s) CCOWLES Time frame \_\_\_\_\_ Tools used D-TAPE, PROSE

### Target Assessment

| Target number | Target description        | Target zone             |                      |                        | Occupancy rate<br>1-rare<br>2-occasional<br>3-frequent<br>4-constant | Practical to move target? | Restriction practical? |
|---------------|---------------------------|-------------------------|----------------------|------------------------|--|---------------------------|------------------------|
|               |                           | Target within drip line | Target within 1x Ht. | Target within 1.5x Ht. |  |                           |                        |
| 1             | Town House Deck, ADJ SITE | N                       | Y                    | Y                      | 2  |                           |                        |
| 2             |                           |                         |                      |                        |  |                           |                        |
| 3             |                           |                         |                      |                        |  |                           |                        |
| 4             |                           |                         |                      |                        |  |                           |                        |

### Site Factors

**History of failures** \_\_\_\_\_ **Topography** Flat  Slope  % Aspect \_\_\_\_\_  
**Site changes** None  Grade change  Site clearing  Changed soil hydrology  Root cuts  Describe \_\_\_\_\_  
**Soil conditions** Limited volume  Saturated  Shallow  Compacted  Pavement over roots  % Describe \_\_\_\_\_  
**Prevailing wind direction** \_\_\_\_\_ **Common weather** Strong winds  Ice  Snow  Heavy rain  Describe \_\_\_\_\_  
**Tree Health and Species Profile**  
**Vigor** Low  Normal  High  **Foliage** None (seasonal)  None (dead)  Normal \_\_\_\_\_% Chlorotic \_\_\_\_\_% Necrotic \_\_\_\_\_%  
**Pests** \_\_\_\_\_ **Abiotic** \_\_\_\_\_  
**Species failure profile** Branches  Trunk  Roots  Describe \_\_\_\_\_

### Load Factors

**Wind exposure** Protected  Partial  Full  Wind funneling  \_\_\_\_\_ **Relative crown size** Small  Medium  Large   
**Crown density** Sparse  Normal  Dense  **Interior branches** Few  Normal  Dense  **Vines/Mistletoe/Moss**  HV  
**Recent or planned change in load factors** \_\_\_\_\_

### Tree Defects and Conditions Affecting the Likelihood of Failure

#### — Crown and Branches —

Unbalanced crown  **LCR** 50%  
 Dead twigs/branches  50% overall Max. dia. 6'  
 Broken/Hangers Number \_\_\_\_\_ Max. dia. \_\_\_\_\_  
 Over-extended branches   
**Pruning history**  
 Crown cleaned  Thinned  Raised   
 Reduced  Topped  Lion-tailed   
 Flush cuts  Other \_\_\_\_\_  
 Main concern(s) SHORT LIVED  
 Cracks  \_\_\_\_\_ **Lightning damage**   
 Codominant  \_\_\_\_\_ **Included bark**   
 Weak attachments  \_\_\_\_\_ **Cavity/Nest hole** \_\_\_\_\_% circ.  
 Previous branch failures  \_\_\_\_\_ **Similar branches present**   
 Dead/Missing bark  **Cankers/Galls/Burls**  **Sapwood damage/decay**   
 Conks  \_\_\_\_\_ **Heartwood decay**   
 Response growth \_\_\_\_\_  
**Load on defect** N/A  Minor  Moderate  Significant   
**Likelihood of failure** Improbable  Possible  Probable  Imminent

#### — Trunk —

Dead/Missing bark  **Abnormal bark texture/color**   
 Codominant stems  **Included bark**  **Cracks**   
 Sapwood damage/decay  **Cankers/Galls/Burls**  **Sap ooze**   
 Lightning damage  **Heartwood decay**  **Conks/Mushrooms**   
 Cavity/Nest hole \_\_\_\_\_% circ. Depth \_\_\_\_\_ **Poor taper**   
 Lean \_\_\_\_\_ Corrected? \_\_\_\_\_  
 Response growth \_\_\_\_\_  
 Main concern(s) SHORT LIVED  
**Load on defect** N/A  Minor  Moderate  Significant   
**Likelihood of failure** Improbable  Possible  Probable  Imminent

#### — Roots and Root Collar —

Collar buried/Not visible  Depth \_\_\_\_\_ **Stem girdling**   
 Dead  **Decay**  **Conks/Mushrooms**   
 Ooze  **Cavity** \_\_\_\_\_% circ.  
 Cracks  **Cut/Damaged roots**  **Distance from trunk** 12-15'  
 Root plate lifting  **Soil weakness**   
 Response growth \_\_\_\_\_  
 Main concern(s) ONGOING SITUATION  
long term  
**Load on defect** N/A  Minor  Moderate  Significant   
**Likelihood of failure** Improbable  Possible  Probable  Imminent



Low

# ISA Basic Tree Risk Assessment Form

Client FLUM STREET DEU Date 7-7-2015 Time 5PM  
 Address/Tree location Oregon HTB, VA Tree no. T20 Sheet      of       
 Tree species ASH sp. dbh 14 Height 35 Crown spread dia. 20'  
 Assessor(s) CCAWG Time frame      Tools used     

### Target Assessment

| Target number | Target description | Target zone             |                       |                         | Occupancy rate<br>1-rare<br>2-occasional<br>3-frequent<br>4-constant | Practical to move target? | Restriction practical? |
|---------------|--------------------|-------------------------|-----------------------|-------------------------|--|---------------------------|------------------------|
|               |                    | Target within drip line | Target within 1 x Ht. | Target within 1.5 x Ht. |  |                           |                        |
| 1             | <u>None</u>        |                         |                       |                         |  |                           |                        |
| 2             |                    |                         |                       |                         |  |                           |                        |
| 3             |                    |                         |                       |                         |  |                           |                        |
| 4             |                    |                         |                       |                         |  |                           |                        |

### Site Factors

History of failures      Topography Flat  Slope  % Aspect       
 Site changes None  Grade change  Site clearing  Changed soil hydrology  Root cuts  Describe       
 Soil conditions Limited volume  Saturated  Shallow  Compacted  Pavement over roots  % Describe       
 Prevailing wind direction      Common weather Strong winds  Ice  Snow  Heavy rain  Describe     

### Tree Health and Species Profile

Vigor Low  Normal  High  Foliage None (seasonal)  None (dead)  Normal     % Chlorotic     % Necrotic     %  
 Pests      Abiotic       
 Species failure profile Branches  Trunk  Roots  Describe     

### Load Factors

Wind exposure Protected  Partial  Full  Wind funneling  Relative crown size Small  Medium  Large   
 Crown density Sparse  Normal  Dense  Interior branches Few  Normal  Dense  Vines/Mistletoe/Moss  HV  
 Recent or planned change in load factors     

### Tree Defects and Conditions Affecting the Likelihood of Failure

#### — Crown and Branches —

Unbalanced crown  LCR 25 %  
 Dead twigs/branches  % overall      Max. dia.       
 Broken/Hangers Number      Max. dia.       
 Over-extended branches   
 Pruning history  
 Crown cleaned  Thinned  Raised   
 Reduced  Topped  Lion-tailed   
 Flush cuts  Other       
 Main concern(s) None Top gone - minor side lubs

Cracks  Lightning damage   
 Codominant  Included bark   
 Weak attachments  Cavity/Nest hole      % circ.  
 Previous branch failures  Similar branches present   
 Dead/Missing bark  Cankers/Galls/Burls  Sapwood damage/decay   
 Conks  Heartwood decay   
 Response growth     

Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Trunk —

Dead/Missing bark  Abnormal bark texture/color   
 Codominant stems  Included bark  Cracks   
 Sapwood damage/decay  Cankers/Galls/Burls  Sap ooze   
 Lightning damage  Heartwood decay  Conks/Mushrooms   
 Cavity/Nest hole      % circ. Depth      Poor taper   
 Lean     ° Corrected?       
 Response growth       
 Main concern(s)     

Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Roots and Root Collar —

Collar buried/Not visible  Depth      Stem girdling   
 Dead  Decay  Conks/Mushrooms   
 Ooze  Cavity      % circ.  
 Cracks  Cut/Damaged roots  Distance from trunk       
 Root plate lifting  Soil weakness   
 Response growth       
 Main concern(s)     

Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent



Low

# ISA Basic Tree Risk Assessment Form

Client ECM STREET DEV. Date 7-7-2015 Time 5PM  
 Address/Tree location OCCOQUAN HTS, VA Tree no. 7-21 Sheet      of       
 Tree species BOX ELDER dbh 15 Height 28 Crown spread dia. 20'  
 Assessor(s)      Time frame      Tools used D-TAPE, PRUNER

### Target Assessment

| Target number | Target description | Target zone             |                       |                         | Occupancy rate<br>1-rare<br>2-occasional<br>3-frequent<br>4-constant | Practical to move target? | Restriction practical? |
|---------------|--------------------|-------------------------|-----------------------|-------------------------|--|---------------------------|------------------------|
|               |                    | Target within drip line | Target within 1.5 Ht. | Target within 1.5 x Ht. |  |                           |                        |
| 1             | <u>NONE</u>        |                         |                       |                         |  |                           |                        |
| 2             |                    |                         |                       |                         |  |                           |                        |
| 3             |                    |                         |                       |                         |  |                           |                        |
| 4             |                    |                         |                       |                         |  |                           |                        |

### Site Factors

History of failures      Topography Flat  Slope  % Aspect       
 Site changes None  Grade change  Site clearing  Changed soil hydrology  Root cuts  Describe       
 Soil conditions Limited volume  Saturated  Shallow  Compacted  Pavement over roots  % Describe       
 Prevailing wind direction      Common weather Strong winds  Ice  Snow  Heavy rain  Describe     

### Tree Health and Species Profile

Vigor Low  Normal  High  Foliage None (seasonal)  None (dead)  Normal     % Chlorotic     % Necrotic     %  
 Pests      Abiotic       
 Species failure profile Branches  Trunk  Roots  Describe     

### Load Factors

Wind exposure Protected  Partial  Full  Wind funneling  Relative crown size Small  Medium  Large   
 Crown density Sparse  Normal  Dense  Interior branches Few  Normal  Dense  Vines/Mistletoe/Moss  Very heavy  
 Recent or planned change in load factors     

### Tree Defects and Conditions Affecting the Likelihood of Failure

#### — Crown and Branches —

Unbalanced crown  LCR 10 %  
 Dead twigs/branches  % overall Max. dia.       
 Broken/Hangers Number      Max. dia.       
 Over-extended branches   
 Pruning history  
 Crown cleaned  Thinned  Raised   
 Reduced  Topped  Lion-tailed   
 Flush cuts  Other       
 Main concern(s) NONE  
 Cracks  Lightning damage   
 Codominant  Included bark   
 Weak attachments  Cavity/Nest hole     % circ.  
 Previous branch failures  Similar branches present   
 Dead/Missing bark  Cankers/Galls/Burls  Sapwood damage/decay   
 Conks  Heartwood decay   
 Response growth       
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Trunk —

Dead/Missing bark  Abnormal bark texture/color   
 Codominant stems  Included bark  Cracks   
 Sapwood damage/decay  Cankers/Galls/Burls  Sap ooze   
 Lightning damage  Heartwood decay  Conks/Mushrooms   
 Cavity/Nest hole     % circ. Depth      Poor taper   
 Lean      \* Corrected?       
 Response growth       
 Main concern(s) NONE  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Roots and Root Collar —

Collar buried/Not visible  Depth      Stem girdling   
 Dead  Decay  Conks/Mushrooms   
 Ooze  Cavity     % circ.  
 Cracks  Cut/Damaged roots  Distance from trunk       
 Root plate lifting  Soil weakness   
 Response growth       
 Main concern(s) NONE  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent





# Basic Tree Risk Assessment Form

Low

Client ELM STREET DEV. Date 7-7-2015 Time 5PM  
 Address/Tree location OCCOQUAN HTS, VA Tree no. T-22 Sheet      of       
 Tree species BOX ELDER dbh 12 Height 40 Crown spread dia. 25  
 Assessor(s) Crowles Time frame      Tools used D-TAPE PRUNING

### Target Assessment

| Target number | Target description | Target zone             |                       |                         | Occupancy rate<br>1-rare<br>2-occasional<br>3-frequent<br>4-constant | Practical to move target? | Restriction practical? |
|---------------|--------------------|-------------------------|-----------------------|-------------------------|--|---------------------------|------------------------|
|               |                    | Target within drip line | Target within 1 x Ht. | Target within 1.5 x Ht. |  |                           |                        |
| 1             | <u>None</u>        |                         |                       |                         |  |                           |                        |
| 2             |                    |                         |                       |                         |  |                           |                        |
| 3             |                    |                         |                       |                         |  |                           |                        |
| 4             |                    |                         |                       |                         |  |                           |                        |

### Site Factors

History of failures      Topography Flat  Slope  % Aspect       
 Site changes None  Grade change  Site clearing  Changed soil hydrology  Root cuts  Describe       
 Soil conditions Limited volume  Saturated  Shallow  Compacted  Pavement over roots  % Describe       
 Prevailing wind direction      Common weather Strong winds  Ice  Snow  Heavy rain  Describe       
**Tree Health and Species Profile**  
 Vigor Low  Normal  High  Foliage None (seasonal)  None (dead)  Normal     % Chlorotic     % Necrotic     %  
 Pests      Abiotic       
 Species failure profile Branches  Trunk  Roots  Describe     

### Load Factors

Wind exposure Protected  Partial  Full  Wind funneling  Relative crown size Small  Medium  Large   
 Crown density Sparse  Normal  Dense  Interior branches Few  Normal  Dense  Vines/Mistletoe/Moss  Heavy Vines  
 Recent or planned change in load factors     

### Tree Defects and Conditions Affecting the Likelihood of Failure

#### — Crown and Branches —

Unbalanced crown  LCR     %  
 Dead twigs/branches      % overall Max. dia.       
 Broken/Hangers Number      Max. dia.       
 Over-extended branches   
 Pruning history  
 Crown cleaned  Thinned  Raised   
 Reduced  Topped  Lion-tailed   
 Flush cuts  Other       
 Cracks  Lightning damage   
 Codominant  Included bark   
 Weak attachments  Cavity/Nest hole     % circ.  
 Previous branch failures  Similar branches present   
 Dead/Missing bark  Cankers/Galls/Burls  Sapwood damage/decay   
 Conks  Heartwood decay   
 Response growth     

Main concern(s) None

Load on defect N/A  Minor  Moderate  Significant

Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Trunk —

Dead/Missing bark  Abnormal bark texture/color   
 Codominant stems  Included bark  Cracks   
 Sapwood damage/decay  Cankers/Galls/Burls  Sap ooze   
 Lightning damage  Heartwood decay  Conks/Mushrooms   
 Cavity/Nest hole     % circ. Depth      Poor taper   
 Lean     ° Corrected?     

Response growth     

Main concern(s) None

Load on defect N/A  Minor  Moderate  Significant

Likelihood of failure Improbable  Possible  Probable  Imminent

#### — Roots and Root Collar —

Collar buried/Not visible  Depth      Stem girdling   
 Dead  Decay  Conks/Mushrooms   
 Ooze  Cavity      % circ.  
 Cracks  Cut/Damaged roots  Distance from trunk       
 Root plate lifting  Soil weakness

Response growth     

Main concern(s)     

Load on defect N/A  Minor  Moderate  Significant

Likelihood of failure Improbable  Possible  Probable  Imminent

**Risk Categorization**

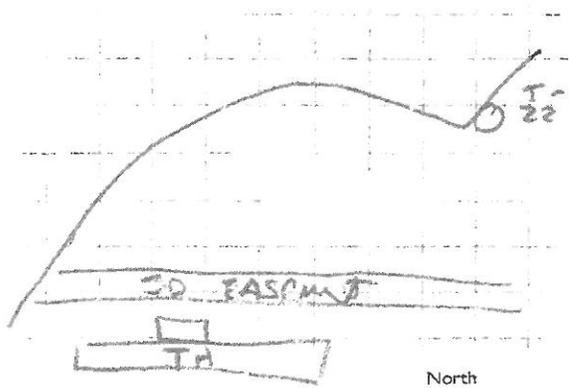
| Condition number | Tree part | Conditions of concern | Part size | Fall distance | Target number | Target protection | Likelihood |          |          |          |          |     |        |      | Consequences                     |          |        |             | Risk rating of part (from Matrix 2) |            |       |
|------------------|-----------|-----------------------|-----------|---------------|---------------|-------------------|------------|----------|----------|----------|----------|-----|--------|------|----------------------------------|----------|--------|-------------|-------------------------------------|------------|-------|
|                  |           |                       |           |               |               |                   | Failure    |          |          |          | Impact   |     |        |      | Failure & Impact (from Matrix 1) |          |        |             |                                     |            |       |
|                  |           |                       |           |               |               |                   | Improbable | Possible | Probable | Imminent | Very low | Low | Medium | High | Unlikely                         | Somewhat | Likely | Very likely |                                     | Negligible | Minor |
| 1                |           |                       |           |               |               |                   |            |          |          |          |          |     |        |      |                                  |          |        |             |                                     | low        |       |
| 2                |           |                       |           |               |               |                   |            |          |          |          |          |     |        |      |                                  |          |        |             |                                     |            |       |
| 3                |           |                       |           |               |               |                   |            |          |          |          |          |     |        |      |                                  |          |        |             |                                     |            |       |
| 4                |           |                       |           |               |               |                   |            |          |          |          |          |     |        |      |                                  |          |        |             |                                     |            |       |

Matrix 1. Likelihood matrix.

| Likelihood of Failure | Likelihood of Impacting Target |                 |                 |                 |
|-----------------------|--------------------------------|-----------------|-----------------|-----------------|
|                       | Very low                       | Low             | Medium          | High            |
| Imminent              | Unlikely                       | Somewhat likely | Likely          | Very likely     |
| Probable              | Unlikely                       | Unlikely        | Somewhat likely | Likely          |
| Possible              | Unlikely                       | Unlikely        | Unlikely        | Somewhat likely |
| Improbable            | Unlikely                       | Unlikely        | Unlikely        | Unlikely        |

Matrix 2. Risk rating matrix.

| Likelihood of Failure & Impact | Consequences of Failure |          |             |          |
|--------------------------------|-------------------------|----------|-------------|----------|
|                                | Negligible              | Minor    | Significant | Severe   |
| Very likely                    | Low                     | Moderate | High        | Extreme  |
| Likely                         | Low                     | Moderate | High        | High     |
| Somewhat likely                | Low                     | Low      | Moderate    | Moderate |
| Unlikely                       | Low                     | Low      | Low         | Low      |



Notes, explanations, descriptions \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Mitigation options \_\_\_\_\_ Residual risk \_\_\_\_\_  
 \_\_\_\_\_ Residual risk \_\_\_\_\_  
 \_\_\_\_\_ Residual risk \_\_\_\_\_  
 \_\_\_\_\_ Residual risk \_\_\_\_\_

Overall tree risk rating Low  Moderate  High  Extreme  Work priority 1  2  3  4   
 Overall residual risk Low  Moderate  High  Extreme  Recommended inspection interval \_\_\_\_\_  
 Data  Final  Preliminary Advanced assessment needed  No  Yes-Type/Reason \_\_\_\_\_  
 Inspection limitations  None  Visibility  Access  Vines  Root collar buried Describe \_\_\_\_\_



December 23, 2013

Mr. Bruce A. Reese, PE, LS  
The Engineering Groupe, Inc.  
13580 Groupe Drive, Suite 301  
Woodbridge, Virginia 22192

TNT Project #: 021

Reference: Arborist Evaluation, Occoquan Heights, Town of Occoquan, Virginia

Dear Mr. Reese,

At your request, a TNT Environmental, Inc. (TNT) Certified Arborist conducted a site reconnaissance on the above-referenced project site in the Town of Occoquan, Virginia on Friday, December 20, 2013. TNT was accompanied by Mr. Pat Sivigny and Mr. Sheldon Levi. The evaluation was conducted at ground level using non-invasive techniques and represents the conditions encountered.

The Occoquan Heights project site consists of an active residential construction site. TNT utilized the existing conditions plan prepared by Christopher Consultants, dated January 17, 2012 during the reconnaissance. The field work focused on approximately 22 trees located within and immediately adjacent to a mapped Resource Protection Area (RPA) located on the subject property.

In general, most of the trees located within the tree save/RPA area are in Poor/Fair condition, with several dead trees located throughout. Many of the trees are covered in English Ivy and the forest floor consists mostly of Japanese Honeysuckle, both of which are invasive species. Further, many of the trees in Poor condition are located in proximity to an existing residential development located to the south and southwest of the tree save/RPA area. The failure of some of these trees may result in damage to these existing structures, thus qualifying them as Hazard Trees.

Based on site conditions encountered, it appears that a utility line was installed between the south-adjacent residential development and the project site. The limits of clearing and grading for this installation are very close to the trunks of several trees. It is unknown as to whether or not root pruning was conducted, and if so, if it was conducted under the supervision of a Certified Arborist, as specified on Sheet 24 of the provided plans.

It is the recommendation of TNT that several trees located within the tree save/RPA area be removed due to their condition and/or hazard potential. Further, it is our recommendation that invasive species be removed per the methods outlined below. Enclosed is a map showing the approximate tree locations, types, conditions, notes and removal recommendations. Due to the removal of previously existing trees and associated grading activities, several of the remaining trees are now subject to direct winds, which tend to prevail from the west. This exposure to winds increases the risk of tree throw.

Any application of environmentally sensitive approved herbicides shall be applied by a Virginia Certified Applicator or Registered Technician.

For English Ivy, remove from trees by cutting all vines at ground level. Vines should be cut again several feet up the trunk. Peel the cut section of ivy off, but care should be taken not to strip the bark off the tree. Pull ground ivy back a few feet from the base of the tree to slow regrowth up the tree trunk. Remove ground ivy by hand pulling, cutting and mulching over top, and/or applying a systemic herbicide like Triclopyr to leaves or freshly cut large stems. Retreatment may be necessary for complete eradication. The English Ivy remnants shall be bagged and removed from the site.

Japanese Honeysuckle shall be removed by hand to minimize site disturbance. During the growing season, an application of an environmentally sensitive approved herbicide may be applied by a Virginia Certified Applicator. To reduce damage to non-target plants, herbicides such as Glyphosate and Triclopyr may be applied to foliate by a Virginia Certified Applicator in autumn, since Japanese Honeysuckle continues to photosynthesize after many other species lose their leaves.

Invasive species control shall be conducted until the plants noted above are no longer in abundance or until bond release, whichever is later.

TNT would like to thank you for the opportunity to provide you with this evaluation. We look forward to assisting you further with this project and other environmental concerns you may have. If you have any questions, please feel free to contact us at any time at (703) 466-5123.

Sincerely,

**TNT ENVIRONMENTAL, INC.**



Avi M. Sareen, PWD, PWS, ISA-CA  
President/Principal  
[Avi@TNTenvironmentalinc.com](mailto:Avi@TNTenvironmentalinc.com)

Enclosures: Photographs & Site Map



May 28, 2015

Mr. Bruce A. Reese, PE, LS  
Legacy Engineering  
1404 Sandy Circle  
Fredericksburg, VA 22401

TNT Project #: 021-A

Reference: Arborist Follow-Up, Occoquan Heights, Town of Occoquan, Virginia

Dear Mr. Reese,

At your request, a TNT Environmental, Inc. (TNT) Certified Arborist conducted a site reconnaissance on the above-referenced project site in the Town of Occoquan, Virginia on Wednesday, May 27, 2015. The evaluation was conducted at ground level using non-invasive techniques and represents the conditions encountered during the time of evaluation.

The Occoquan Heights project site consists of an active residential construction site. TNT utilized the existing conditions plan prepared by Christopher Consultants, dated January 17, 2012 during the reconnaissance. The field work focused on the 22 trees previously evaluated and discussed in our December 23, 2013 letter located within and immediately adjacent to a mapped Resource Protection Area (RPA) located on the subject property.

Since TNT's December 2013 site visit, several trees have been removed from within the study area. Specifically trees 1, 2, 7, and 8 have been removed. Tree 18 has fallen over and remains within the study area. It is unknown as to what removal methods were employed for the aforementioned trees.

In general, most of the trees located within the tree save/RPA area are in Poor/Fair condition, with several dead trees located throughout. Many of the trees are covered in English Ivy and the forest floor consists mostly of Japanese Honeysuckle, both of which are invasive species. Further, many of the trees in Poor condition are located in proximity to an existing residential development located to the south and southwest of the tree save/RPA area. The failure of some of these trees may result in damage to these existing structures, thus qualifying them as Hazard Trees.

Based on site conditions encountered, it appears that a utility line was installed between the south-adjacent residential development and the project site. The limits of clearing and grading for this installation are very close to the trunks of several trees. It is unknown as to whether or not root pruning

was conducted, and if so, if it was conducted under the supervision of a Certified Arborist, as specified on Sheet 24 of the provided plans.

It is the recommendation of TNT that several trees located within the tree save/RPA area be removed due to their condition and/or hazard potential. Further, it is our recommendation that invasive species be removed per the methods outlined below. Enclosed is a map showing the approximate tree locations, types, conditions, notes and removal recommendations. Due to the removal of previously existing trees and associated grading activities, several of the remaining trees are now subject to direct winds, which tend to prevail from the west. This exposure to winds increases the risk of tree throw.

Any application of environmentally sensitive approved herbicides shall be applied by a Virginia Certified Applicator or Registered Technician.

For English Ivy, remove from trees by cutting all vines at ground level. Vines should be cut again several feet up the trunk. Peel the cut section of ivy off, but care should be taken not to strip the bark off the tree. Pull ground Ivy back a few feet from the base of the tree to slow regrowth up the tree trunk. Remove ground Ivy by hand pulling, cutting and mulching over top, and/or applying a systemic herbicide like Triclopyr to leaves or freshly cut large stems. Retreatment may be necessary for complete eradication. The English Ivy remnants shall be bagged and removed from the site.

Japanese Honeysuckle shall be removed by hand to minimize site disturbance. During the growing season, an application of an environmentally sensitive approved herbicide may be applied by a Virginia Certified Applicator. To reduce damage to non-target plants, herbicides such as Glyphosate and Triclopyr may be applied to foliage by a Virginia Certified Applicator in autumn, since Japanese Honeysuckle continues to photosynthesize after many other species lose their leaves.

Invasive species control shall be conducted until the plants noted above are no longer in abundance.

Legacy Engineering  
TNT Project #: 021-A  
May 28, 2015  
Page | 3

TNT would like to thank you for the opportunity to provide you with this evaluation. We look forward to assisting you further with this project and other environmental concerns you may have. If you have any questions, please feel free to contact us at any time at (703) 466-5123.

Sincerely,

**TNT ENVIRONMENTAL, INC.**



Avi M. Sareen, PWD, PWS, ISA-CA  
President/Principal  
[Avi@TNTenvironmentalinc.com](mailto:Avi@TNTenvironmentalinc.com)

Enclosures:

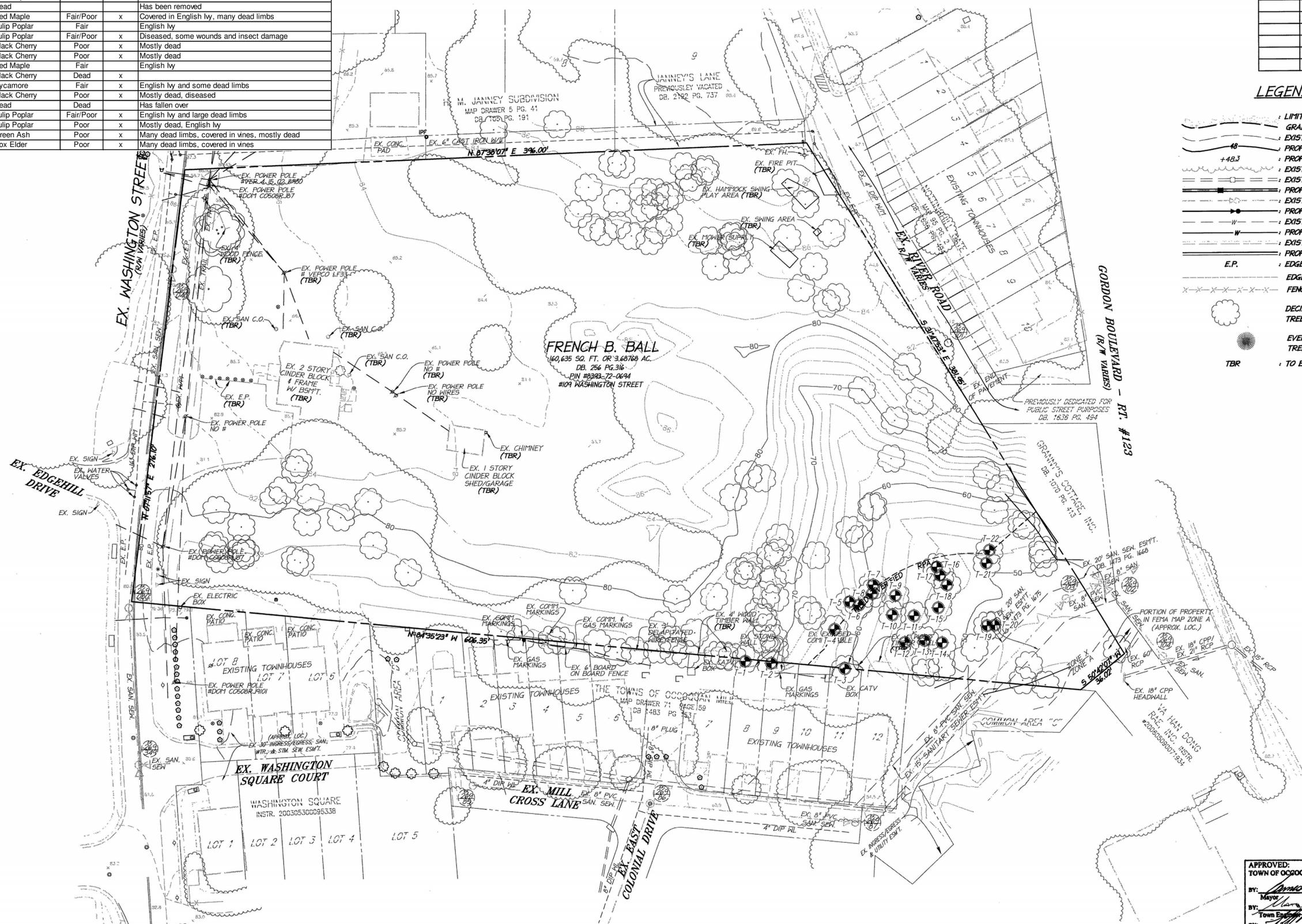
- Site Map

| Tree Number | Common Name  | Condition | Remove | Notes  |
|-------------|--------------|-----------|--------|--|
| 1           | Black Cherry |           |        | Has been removed                               |
| 2           | Black Cherry |           |        | Has been removed                               |
| 3           | Red Maple    | Fair      |        | Some English Ivy, some wounds, slight lean     |
| 4           | Red Maple    | Fair      |        | Slight lean                                    |
| 5           | Tulip Poplar | Poor      | x      | Mostly dead, English Ivy                       |
| 6           | Red Maple    | Fair      |        | Severe lean, hazard tree                       |
| 7           | Red Maple    |           |        | Has been removed                               |
| 8           | Dead         |           |        | Has been removed                               |
| 9           | Red Maple    | Fair/Poor | x      | Covered in English Ivy, many dead limbs        |
| 10          | Tulip Poplar | Fair      |        | English Ivy                                    |
| 11          | Tulip Poplar | Fair/Poor | x      | Diseased, some wounds and insect damage        |
| 12          | Black Cherry | Poor      | x      | Mostly dead                                    |
| 13          | Black Cherry | Poor      | x      | Mostly dead                                    |
| 14          | Red Maple    | Fair      |        | English Ivy                                    |
| 15          | Black Cherry | Dead      | x      |  |
| 16          | Sycamore     | Fair      | x      | English Ivy and some dead limbs                |
| 17          | Black Cherry | Poor      | x      | Mostly dead, diseased                          |
| 18          | Dead         | Dead      |        | Has fallen over                                |
| 19          | Tulip Poplar | Fair/Poor | x      | English Ivy and large dead limbs               |
| 20          | Tulip Poplar | Poor      | x      | Mostly dead, English Ivy                       |
| 21          | Green Ash    | Poor      | x      | Many dead limbs, covered in vines, mostly dead |
| 22          | Box Elder    | Poor      | x      | Many dead limbs, covered in vines              |

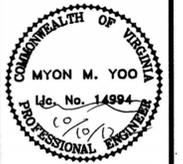
| DATE     | REVISION               |
|----------|------------------------|
| 05-09-12 | PER TOWN, PWCSA, VDOT  |
|          | CLIENT COMMENTS        |
| 06-28-12 | ADDRESS PWCSA COMMENTS |
| 07-02-12 | ADDRESS PWCSA COMMENTS |
|          |                        |
|          |                        |
|          |                        |
|          |                        |
|          |                        |
|          |                        |

**LEGEND**

- LIMITS OF CLEARING AND GRADING
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- EXISTING WOODS LINE
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- EXISTING WATER LINE
- PROPOSED WATER LINE
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- E.P. EDGE OF PAVEMENT
- FENCE (ALL TYPES)
- DECIDUOUS TREE
- EVERGREEN TREE
- TBR TO BE REMOVED



**christopher consultants**  
 engineering · surveying · land planning  
 9417 Innovation Drive, Manassas, VA 20110  
 703.993.9887 · fax 703.993.9876



EXISTING CONDITIONS  
 PLAN

OCCOQUAN HEIGHTS  
 TOWN OF OCCOQUAN, VIRGINIA

APPROVED:  
 TOWN OF OCCOQUAN  
 BY: *[Signature]* DATE: 1/17/12  
 Mayor  
 BY: *[Signature]* DATE: 1/17/12  
 Town Engineer  
 BY: *[Signature]* DATE: 1/17/12  
 Chairman, Planning Comm.

PROJECT NO: 1027.001.00  
 SCALE: 1" = 30'  
 DATE: 1/17/12  
 DESIGN: PEF  
 DRAWN: PEF  
 CHECKED: MY  
 SHEET NO.

ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT  
 TOWN OF OCCOQUAN AND VIRGINIA DEPARTMENT OF  
 TRANSPORTATION STANDARDS AND SPECIFICATIONS.

