### **ENGINEERING STAFF REPORT**

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Agenda Date March 14, 2019

Title Division Street NE Tree Removal

TO: Salem Parks and Recreation Advisory Board (SPRAB)

FROM: Kristin Retherford, Urban Development Director

Allen Dannen, P.E., Assistant City Engineer

SUBJECT: Removal of Street Trees on 400 block of Division Street NE

ISSUE: Shall the Salem Parks and Recreation Advisory Board (SPRAB) allow the removal of existing

street trees on the 400 block of Division Street NE between Liberty Street NE and High Street NE for construction of transportation improvements associated with the new Salem

Police Station?

RECOMMENDATION: Allow the removal of 16 of the existing 20 street trees on the 400

block of Division Street NE between Liberty Street NE and High Street NE for construction of transportation improvements associated with

the new Salem Police Station.

SUMMARY: Riverfront Downtown Urban Renewal funds have been appropriated

through the City's capital improvement planning and budget process for construction of traffic, pedestrian, bicycle, lighting, streetscape, and community space improvements in the vicinity of the new Salem Police Station. These improvements will support and enhance the Police

Station and the surrounding neighborhood.

Proposed improvements on the 400 block of Division Street NE between Liberty Street NE and High Street NE will convert existing parallel parking on both sides of the street to angle parking. The conversion of the parking spaces will require the removal of 16 of the existing 20 street trees on the block. Eleven new street trees will be added and four

of the existing trees will be protected during construction.

Background:

- Transportation improvements associated with the new Police Station project are planned in order to provide visitor parking, accommodate access to the new facility, and enhance the local neighborhood by improving pavement, lighting, landscaping, pedestrian, and bicycle facilities. Improvements include converting existing streets to two-way traffic on Liberty Street NE between Division Street NE and Marion Street NE and on Division Street NE between Commercial Street NE and Liberty Street NE (See Attachment 1). These traffic changes will be accompanied by a new traffic signal at the intersection of Liberty Street NE and Division Street NE and signal modifications at the intersections of Commercial Street NE with Division Street NE and Liberty Street NE with Marion Street NE.
- New designated bike lanes will be added to both sides of Liberty Street NE between
  Union Street NE and the Mill Creek Bridge, resulting in a reduction of available onstreet parking on that portion of Liberty Street NE. The proposed transportation
  improvements also include changes to convert existing parallel parking on Division
  Street NE between Commercial Street NE and High Street NE to angle parking.
  These parking revisions would require the removal of existing street trees. Existing

street trees adjacent to the Police Station site on the north side of Division Street NE and west side of Liberty Street NE have already been removed in accordance with SRC Section 86.090.d in order to accommodate construction of the new building and make room for parking revisions that will provide visitor parking for the Police Station.

• On December 14, 2018, City Staff presented the proposed offsite improvements to SPRAB. In response to Staff's presentation, the Board expressed concerns regarding the removal of the existing street trees on the 400 block of Division Street NE between Liberty Street NE and High Street NE. Staff conveyed the Board's concerns to the design team and changes were made to the proposed design which identified four of the existing street trees for protection during construction of the improvements. SPRAB was updated as to the design changes during a follow-up presentation on January 10, 2019. In light of the concerns raised by SPRAB and other members of the public, the Public Works Director has decided to refer the matter of street tree removal on Division Street NE between Liberty Street NE and High Street NE to be decided by SPRAB at this public meeting. An information report on this matter was also provided to City Council on January 28, 2019.

## Applicable Regulations:

- SRC Section 86.050(c) allows the Public Works Director to refer decisions relating to permitting to SPRAB at his sole discretion. The Director informed staff on January 2, 2019, that the issue of removal of the existing street trees on the 400 block of Division Street NE between Liberty Street NE and High Street NE would be referred to SPRAB. SRC Section 86.090(d)(3) states that no appeals of decisions related to removal by the City shall be allowed. Therefore, SPRAB's decision on this matter will be final.
- Regulation of removal of trees on City property is provided by SRC 86, the City Tree Code. Section 86.050(b) considers City projects to be in compliance with the permitting requirements provided in the chapter if they comply with applicable design standards and input sought by the City Urban Forester according to City Administrative Rules.
- City of Salem Public Works Administrative Rule 109.500.002.3(f) provides that City
  projects be designed to protect and preserve City trees to the maximum extent
  practicable; the City Urban Forester shall be contacted on a case-by-case basis to
  make recommendations for City projects.

#### Discussion:

- The proposed transportation improvements associated with the new Police Station
  project include a number of changes to the existing parking configuration on
  Division Street NE and Liberty Street NE. The police facility will not have any onsite
  visitor parking.
- Cumulatively, there are approximately 58 on-street parking spaces on the blocks
  where the proposed parking improvements are planned. The current design would
  accommodate 68 on-street parking spaces for a net gain of 10 spaces. 31 angle
  parking spaces on Division Street NE between Commercial Street NE and Liberty
  Street NE will be available for use by visitors to the new Police Station within close
  proximity of the facility. If the proposed parking changes on Division Street NE
  between Liberty Street NE and High Street NE are not implemented, there will be a

net loss of one parking space in the vicinity of the new Salem Police Station when the project is complete.

- In order to accommodate the proposed improvements on the 400 block of Division Street NE between Liberty Street NE and High Street NE, 16 out of 20 existing street trees (tree nos. 1-4, 8 and 9, and 11-20 as numbered on Attachment 2) will need to be removed. The most current version of the landscaping plans for the project include tree wells and landscaped bulb-out areas to accommodate the protection of four existing street trees (tree nos. 5, 6, 7, and 10) and the planting of 11 new street trees.
- The City's downtown is seeing a significant amount of new development, including new housing. Downtown zoning requires one parking space for each housing unit. More than 200 residential units are proposed, and due to site constraints and costs, developers will be looking to the City's downtown parking resources to assist in meeting the increased parking requirements. In addition, a hotel development and redevelopment opportunities for the vacant Nordstrom Building and Saffron/UGM properties may increase the demand for parking resources in the area. These changes in our downtown landscape will bring hundreds of regular new visitors and residents to our downtown and significantly increase demand for existing parking spaces.
- The boundary for the Downtown Parking District is just south of the new police facility, but within the Riverfront-Downtown Urban Renewal Area (RDURA). As the location of the new police station is outside of the Downtown Parking District, it is precluded from using the Marion Parkade as a solution for the development's parking needs. Businesses within the Parking District boundary pay an annual parking tax to support free customer parking and partially fund the maintenance and operations of the parking garages in the district. Parking regulations are different in the downtown with 3-hour time restrictions and regulations that prohibit employees, volunteers, and jurors from parking on-street. Individuals not wanting to purchase parking permits often park on-street in the proximal areas outside of the Parking District, which includes Division Street NE. As downtown redevelopment continues, the neighborhood will not necessarily be able to rely on the Marion Parkade, or other facilities, to ease the local parking demand.
- The improvements on Division Street NE between Liberty Street NE and High Street NE are being designed to protect and preserve City trees to the maximum extent practicable while balancing the aforementioned considerations for the proposed transportation improvements (Attachment 2). The proposed streetscape improvements including sidewalks, pedestrian lighting, and planting areas are being designed to maintain consistency with the current and proposed streetscape standards for the neighboring downtown area. The proposed street trees will be selected from the City's Street Tree List, linearly spaced, and located away from existing and proposed utilities and infrastructure in accordance with Division 006 of the City's Design Standards.
- The existing street trees have multiple branches lower than six feet above ground level, include species that are inappropriately located beneath overhead utility lines and are inadequately spaced according to the Streets Design Standards set forth in

Division 006. One existing tree (tree no. 12) on the north side of the 400 block of Division Street NE is located within five feet of an underground gas line and three of the other existing trees (tree nos. 18, 19 and 20) are located within 10 feet of the existing sanitary sewer line on the northeast end of the block. Planting areas where the new street trees will be located will exceed the minimum area outlined in the proposed standards. The existing trees are inadequately spaced to accommodate adequate pedestrian lighting. The proposed new trees and lighting will be spaced according to standards. The existing sidewalks on the 400 block of Division Street NE are four feet wide, which is narrower than the five-foot minimum required in SRC 803 and the six foot minimum recommended in the streetscape standards. The new sidewalks on Division Street will meet or exceed the recommended six-foot standard.

 The City Urban Forester provided an initial assessment of the condition of the existing street trees affected by the project. The following is a summary of the Urban Forester's assessment:

There are twenty existing street trees (tree nos. 1-20) on the 400 block of Division Street NE between Liberty Street NE and High Street NE. Six of these trees are in an irreversible state of decline (tree nos. 5, 8, 9, and 18-20). The sixteen Hornbeam trees (tree nos. 1-10 and 15-20) are mature with little evidence of crown expansion with some evidence of senescence. The three Zelkova (tree nos. 11, 13, and 14) fronting the MAPS Credit Union are young and are of a variety that will not likely grow into the overhead power lines.

Of the ten existing trees (tree nos. 1-10) on the south side of the 400 block of Division Street NE, there are three Hornbeam trees (tree nos. 5, 8, and 9) that are in fair – poor condition with either crown dieback or the impact of power line clearance stress. None of these trees pose an imminent risk of whole tree failure. As these three trees continue to decline, they will most likely lose internal scaffold limbs one at a time.

Of the ten existing trees on the north side of the 400 block of Division Street NE (tree nos. 11-20), the three trees on the easternmost end (tree nos. 18, 19, and 20) are either fair – poor or poor. While they do not pose a high risk, they are in an irreversible state of decline. The Green Ash (tree no. 12) at the west end (fronting MAPS Credit Union) has been topped for power line clearance. However, the Ash will be repeatedly topped for line clearance as the water sprouts continue to grow toward the powerlines.

• In order to supplement the initial assessment provided by the City's Urban Forester, the Public Works Director directed staff to retain a certified arborist to provide a more detailed assessment of all 20 trees on the 400 block of Division Street NE between Liberty Street NE and High Street NE. The complete report from Mountain View Tree Service of Salem is attached (Attachment 3). In summary, the Mountain View Report indicates that the majority of mature trees on the south side of Division Street NE (tree nos. 1-10) have an estimated risk time frame of three to seven years. The arborist describes weak limbs and trunk unions among other contributing factors to the declining health of the trees. Pruning is recommended to

maintain the health of nearly all trees on both the north and south sides of Division Street NE, and in four cases (tree nos. 2, 5, 8, and 20), complete tree removal is recommended due to various reasons including poor health, improper size for the allotted space (tree no. 5), and damage to the trunk and stems of one particular tree (tree no. 8) that has caused significant decay to the overall structure of the tree.

## Alternative Designs:

- Because it is preferable not to remove large, mature street trees where possible, the project team studied design alternatives that might allow more of the existing street trees to be preserved. The addition of angle parking requires construction of a new curb on both sides of Division Street. The required width of vehicle travel lanes and parking areas would locate the new curb near the center of the existing street trees on both sides of the street. While it might be possible to shift the position of the curb a few feet north or south within the existing street right-ofway, the construction of the new curb would still be too near the trees for them to survive the construction. Three other design alternatives were also evaluated:
  - 1) adding angle parking on only one side of the street;
  - 2) shortening the proposed improvement to only providing angle parking on the western half of the block between Liberty Street NE and the mid-block alley entrances; or
  - 3) Constructing the new curb around the existing street trees so that they could be preserved in place with angle parking only provided in the spaces between the trees.
  - a. Limit Improvements to One Side of the Street: In this option, angle parking would be provided on the north side of the street and parallel parking would be preserved in its current configuration on the south side. This option would still require the removal of ten existing street trees (tree nos. 11-20) on the north side of the street with ten (tree nos. 1-10) on the south side preserved. With new angle parking on the north side of the street and existing parallel parking on the south side of the street, there would be a total of 27 parking spaces available on the block for a net gain of six spaces. One advantage of the proposed design to provide angle parking on both sides of the street allows construction of the new curbs at an elevation where new pavement can be laid over the existing concrete street. However, maintaining the existing curb location on the south side of the street eliminates the ability to effectively overlay the existing concrete section and would require removal and replacement at a substantial cost in order to restore the driving surface to an adequate condition.
  - b. Limit Improvements to the Western Half of the Block: This option would provide angle parking only on the western half of the block between Liberty Street NE and the mid-block alley entrances. Eight of the 20 existing street trees (tree nos. 1-4 and 11-14) would be removed with this option and a total of 28 parking spaces would be available for a net gain of seven spaces. As with the previous option, maintaining the existing curb location east of the alley would prevent restoration of the existing concrete street without substantial additional cost for removal and replacement.

c. Limit Angle Parking Improvements to Allow Preservation of Existing Trees: This option would essentially meander the curbline between the existing and proposed locations to preserve all of the existing trees and allow angle parking where it fits in between. In order to preserve all existing trees, there would only be room for approximately 15 angle parking spaces for a net loss in parking. In addition, this option would be more costly due to similar issues with improving the existing concrete street section and the additional length of curb required.

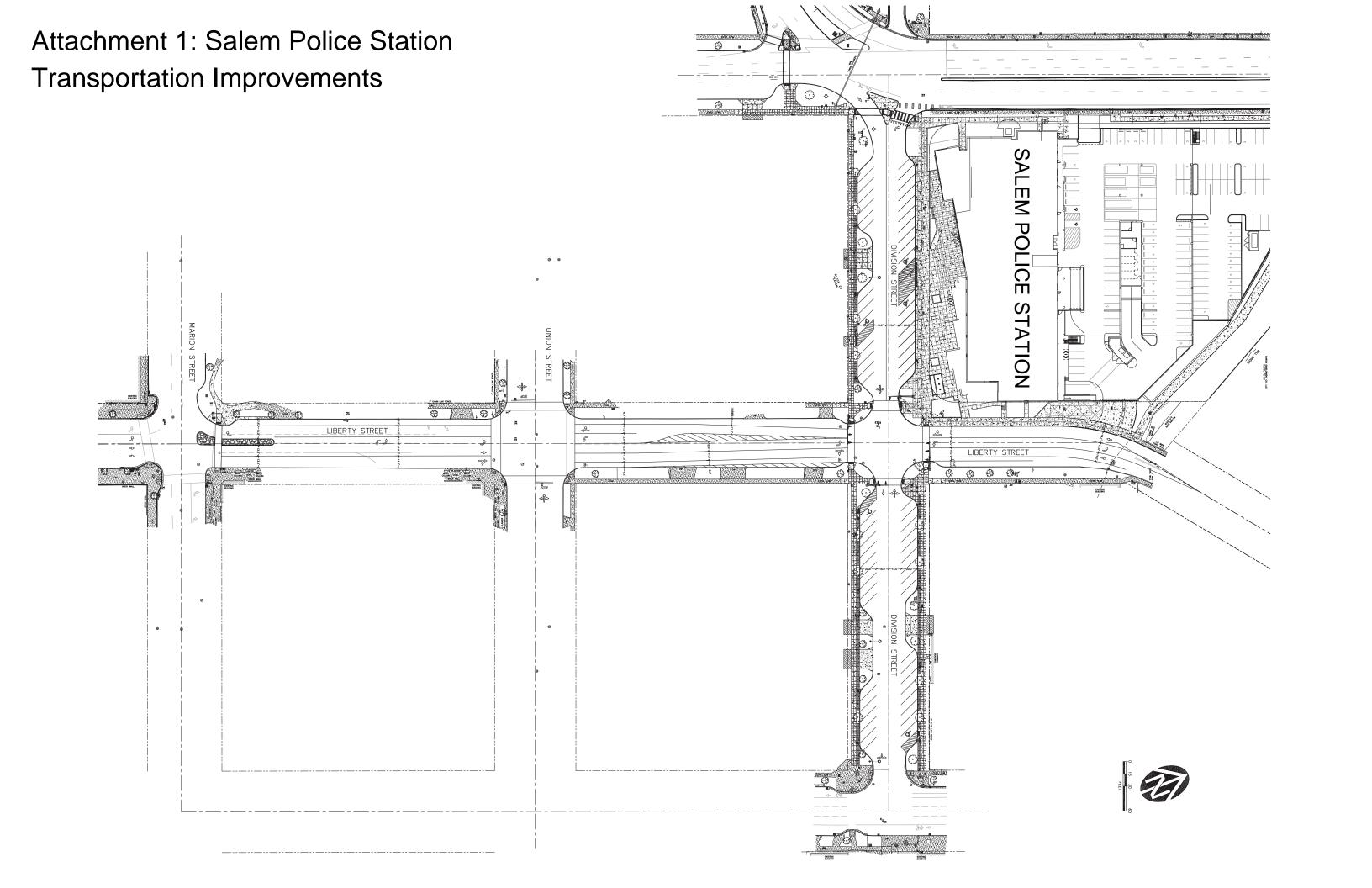
ATTACHMENTS:

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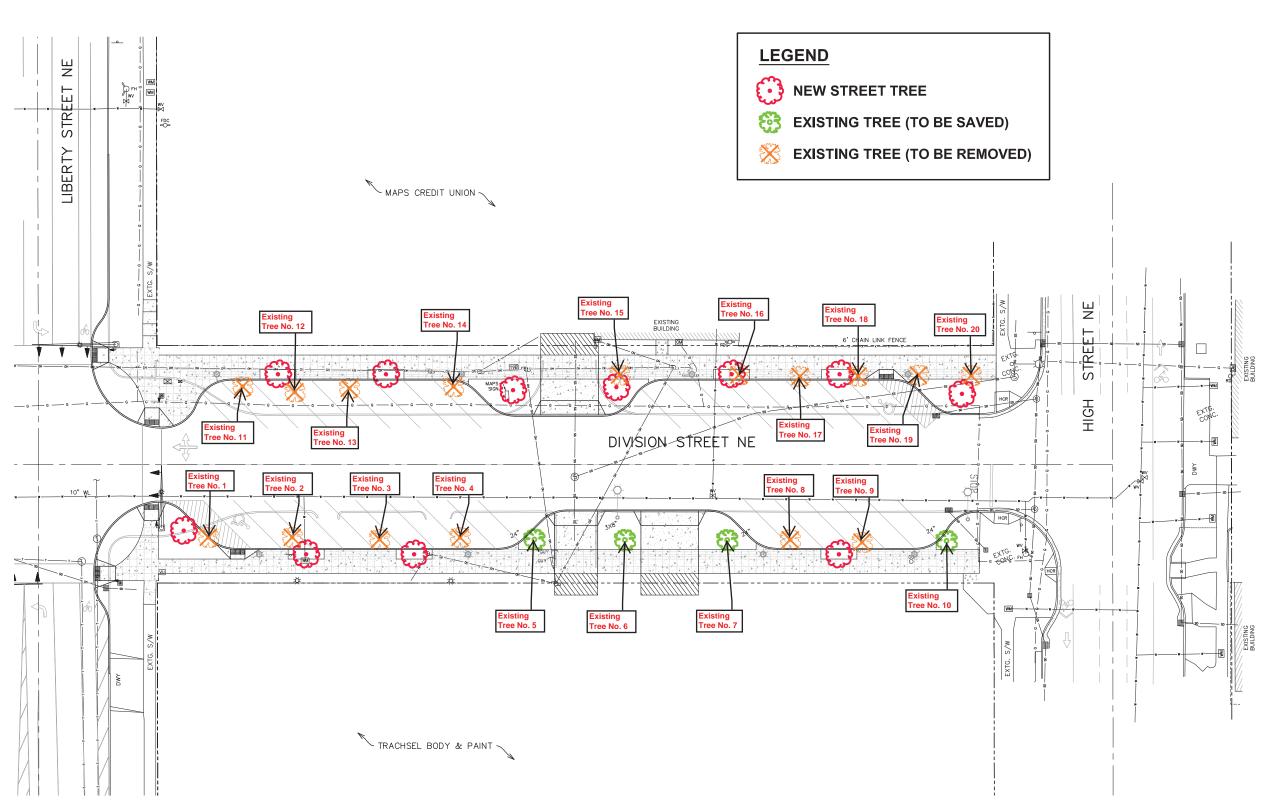
- 1. Salem Police Station Transportation Improvements
- 2. 400 block of Division Street NE between Liberty and High Street NE
- 3. Tree Assessment Reports

SUBMITTED BY:

Luke Gmazel, PE, Project Manager



# Attachment 2: 400 block of Division Street NE between Liberty and High Street NE





### <u>Division Street Tree Assessment Summary\* - 400 Block of Division Street NE between Liberty Street NE and High Street NE</u>

### Prepared by: Luke Gmazel, PE, City of Salem, Public Works – Engineering Division

Date Prepared: 3-8-19

Tree Number	Species	City Urban Forester's General Condition Assessment	Certified Arborist's Description Notes/Risk Time Frame	Certified Arborist's Recommendation	Woody Duke's Inspection Report
1	Hornbeam, Upright	Fair; Deadwood, wet-wood	Deadwood, weakly attached limbs/3-5 years	Risk mitigation pruning, crown cleaning and crown/weight reduction pruning.	Tree T: A small center stem of 7-inches in diameter is dead but the rest of the tree is unaffected.
2	Hornbeam, Upright	Fair; Deadwood	Deadwood, weakly attached limbs, weak stem union/5-6 years	Weight reduction and possible cabling to reduce risk of weakly attached stem. Complete removal if pruning is insufficient.	Tree S: Many inside dead stems to 3-inches but no major stems are negatively affected.
3	Hornbeam, Upright	Fair; Deadwood	Deadwood, weakly attached limbs, weak stem union/3-5years	Weight reduction and risk mitigation pruning.	Tree R: See notes for Tree P. Many inside dead stems to 3-inches but no major stems are negatively affected.
4	Hornbeam, Upright	Fair; Deadwood	Deadwood, weakly attached limbs, decay in large cut wounds/3-5years	Weight reduction and risk mitigation pruning.	Tree Q: See notes for Tree P. Many inside dead stems to 4-inches but no major stems are negatively affected.
5	Hornbeam, Upright	Fair – Poor; Deadwood, powerline clearance, decay in trunk	Decay from utility pruning cuts, over- weighted, decay and weak attachment at trunk/5-10 years	Weight reduction pruning. Removal should be considered due to improper tree size for space and poor health.	Tree P: Trees P, Q, and R are planted close enough together that their crowns are blended. They are okay if left alone but the removal of any exposing one or more that may remain will leave misshaped trees. Tree has been severely pruned for clearance of power lines. Tree should be retained even though it has been pruned this way.
6	Hornbeam, Upright	Fair; Deadwood	Deadwood, conflicting limbs, ivy/3-7 years	Ivy removal, crown cleaning/risk mitigation pruning.	Tree O: Unable to measure diameter due to ivy. Carefully remove ivy.
7	Hornbeam, Upright	Fair; Deadwood	Deadwood, weakly attached limbs, weak attachment/union at the trunk, ivy/3-5 years	Weakly attached trunk should have crown and weight reduction pruning performed. Risk mitigation pruning should be performed in remaining crown.	Tree N: See notes for Tree K. Unable to measure diameter due to ivy. Carefully remove ivy.
8	Hornbeam, Upright	Fair – Poor; Dieback and deadwood	Vandalism and poor pruning have caused wounds with decay, dead/weakly attached limbs, trunk wound decay, ivy/3-5 years	Damage to trunk and stems has caused significant decay to structure. Crown reduction and risk mitigation pruning should be performed. Removal should be considered if risk remains unacceptable.	Tree M: See notes for Tree K. Many areas of dead bark and stem injuries. Deadwood in center-north portion of the crown with broken stubs and missing bark. Tree is the second-worse condition on the block. Tree condition is fair with 40% affected by these problems. Removal and replanting recommended due to poor health.
9	Hornbeam, Upright	Fair- Poor; Dieback and deadwood	Peeling/dying bark, deadwood, poorly attached limbs, weak stem attachment, ivy/3-7 years	Risk mitigation, weight reduction pruning and ivy removal.	Tree L: See notes for Tree K. Unable to measure diameter due to ivy. Deadwood to 5-inches diameter in upper center of tree with no central leaders affected. Carefully remove ivy.
10	Hornbeam, Upright	Fair; Deadwood	Conflicting limbs, deadwood, soil compaction, decay at scaffold limb removal/3-7 years	Soil de-compaction and/or mulch, ivy removal.	Tree K: Trees K, L, M and N are planted close enough together that their crowns are blended. They are okay if left alone but the removal of any exposing one or more that may remain will leave misshaped trees. Carefully remove ivy.
11	Zelkova	Good	Bark inclusion/15 years	No mitigation needed at this time.	Tree A: Difficult to determine condition, dormant buds at time of inspection, approximately 20% thinning required.
12	Ash, Green	Fair; Line Clearance Topped – Many Sprouts	Utility pruning has stressed tree producing water sprouts and large wounds/5-10 years	Weight reduction pruning, restoration pruning.	Tree B: Removal recommended due to violation of SRC Chapter 86.
13	Zelkova	Good	Over-weighted, weakly attached limbs, co- dominant union in the trunk/5-10+ years	Structural and weight reduction pruning.	Tree C: Difficult to determine condition, dormant buds at time of inspection, approximately 20% thinning required.
14	Zelkova	Good	Deadwood, poorly attached limbs, co- dominant stems/10+ years	Risk mitigation and weight reduction pruning, cabling.	Tree D: Difficult to determine condition, dormant buds at time of inspection, approximately 20% thinning required.
15	Hornbeam, Upright	Fair; Deadwood and cavity with decay	Deadwood, weakly attached limbs, cavity in trunk/10 years	Risk mitigation, weight reduction and line-clearance pruning, monitor trunk cavity.	Tree E: Trees F, G, H and I are planted close enough together that their crowns are blended. They are okay if left alone but the removal of any exposing one or more that may remain will leave misshaped trees.
16	Hornbeam, Upright	Fair; Deadwood and cavity with decay	Deadwood and conflicting limbs, weak trunk union/7-10 years	Risk mitigation, weight reduction and line-clearance pruning.	Tree F: See notes for Tree E. Roots have lifted one abutting edge of one sidewalk panel 2-inches.
17	Hornbeam, Upright	Fair; Tight limb attachment, weeping, cavity	Deadwood, weakly attached limbs, cavity in trunk/5-10 years	Risk mitigation and weight reduction pruning.	Tree G: See notes for Tree E. Roots have lifted one abutting edge of one sidewalk panel 1-inch.
18	Hornbeam, Upright	Fair – Poor; Deadwood and cracks in scaffolds joints	Deadwood, dead/weak limb attachments, weak stem union, dying bark/5 years	Risk mitigation pruning, bracing.	Tree H: See notes for Tree E.
19	Hornbeam, Upright	Fair – Poor; Deadwood, decay in trunk, cracks in scaffolds joints	Deadwood, dead/weak limb unions, weak stem union/5-7 years	Risk mitigation pruning, bracing.	Tree I: See notes for Tree E.
20	Hornbeam, Upright	Poor; Advanced center dieback, trunk decay	Dieback in crown, dead/weak limb unions, dying/weak stem union/3 years	Risk mitigation pruning. Significant dieback in crown indicates poor health, removal should be considered.	Tree J: Tree is 90% dead. Almost no live buds are evident and there are stems that have broken off and bark is being shed. There is no indication as to why this tree died. Removal and replanting recommended due to poor health.

<sup>\*</sup>All information compiled from City's Urban Forester's assessment report, Woody Dukes' Inspection Report and ISA Basic Tree Risk Assessment Forms provided by Mountain View Tree Service LLC

### **City Urban Forester's Division Street Tree Assessment**

Number	Direction	Location	Placement	Species	<b>General Condition</b>	Comments
	1 South side	400 blk	1st Tree W - E	Hornbeam, upright	Fair	Deadwood, wetwood
2	2 South side	400 blk	2st Tree W - E	Hornbeam, upright	Fair	Deadwood
3	3 South side	400 blk	3st Tree W - E	Hornbeam, upright	Fair	Deadwood
4	4 South side	400 blk	4st Tree W - E	Hornbeam, upright	Fair	Deadwood
	5 South side	400 blk	5st Tree W - E	Hornbeam, upright	Fair - Poor	Deadwood, Powerline clearance, decay in trunk
(	6 South side	400 blk	6st Tree W - E	Hornbeam, upright	Fair	Deadwood
	7 South side	400 blk	7st Tree W - E	Hornbeam, upright	Fair	Deadwood
8	8 South side	400 blk	8st Tree W - E	Hornbeam, upright	Fair - Poor	Dieback and deadwood
9	9 South side	400 blk	9st Tree W - E	Hornbeam, upright	Fair - Poor	Dieback and deadwood
10	0 South side	400 blk	10st Tree W - E	Hornbeam, upright	Fair	Deadwood
1:	1 North Side	400 blk	1st Tree West to East	Zelkova	Good	
13	2 North Side	400 blk	2nd Tree W - E	Ash, Green	Fair	Line Clearance Topped - Many Sprouts
13	3 North Side	400 blk	3rd Tree W - E	Zelkova	Good	
14	4 North Side	400 blk	4th Tree W - E	Zelkova	Good	
1!	5 North Side	400 blk	5th Tree W - E	Hornbeam, Upright	Fair	Deadwood & cavity with decay
16	6 North Side	400 blk	6th Tree W - E	Hornbeam, Upright	Fair	Deadwood & cavity with decay
1	7 North Side	400 blk	7th Tree W - E	Hornbeam, Upright	Fair	Tight limb attachment, weeping, cavity
18	8 North Side	400 blk	8th Tree W - E	Hornbeam, Upright	Fair - poor	Deadwood & cracks in scaffolds joints
19	9 North Side	400 blk	9th Tree W - E	Hornbeam, Upright	Fair - poor	deadwood, decay in trunk, cracks in scaffolds joints
20	0 North Side	400 blk	10th Tree W - E	Hornbeam, Upright	Poor	Advanced center dieback, trunk decay

**Basic Tree Risk Assessment Form** Date 2/12/19 Time 12:30 Address/Tree location Division Street, South Side, First from Liberty Tree no. | Sheet | of Ze dbh 30" Height 40' Crown spread dia. Tree species Lornbeam Assessor(s) IV/MK Tools used Dimmeter tape Time frame 3-54V Target Assessment Target number Practical to move target? Target within 1 x Ht. Target within 1.5 x Ht. Target within drip line rate 1-rare Target description Target protection 2 - occasional 3 - frequent Pedestrians None 2 None Vehicles 3 None -ence 4 Site Factors History of failures NONL Site changes None ☑ Grade change ☐ Site clearing ☐ Changed soil hydrology ☐ Root cuts ☐ Describe \_ Soil conditions Limited volume Saturated Shallow Compacted Pavement over roots 65 % Describe Road, Sidewalk, Parking Prevailing wind direction W 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/Biotic None Abiotic None Species failure profile Branches ☑ Trunk ☑ Roots ☐ Describe Welk Limb and Trunk Whion 5 Load Factors Relative crown size Small ☐ Medium ☐ Large ☒ Wind exposure Protected ☐ Partial ☐ Full ☒ Wind funneling ☐ Crown density Sparse ☐ Normal ☐ Dense ☑ Interior branches Few ☐ Normal ☑ Dense ☐ Vines/Mistletoe/Moss ☐ Tree Defects and Conditions Affecting the Likelihood of Failure — Crown and Branches — Cracks & Newstal Plane Flactures Lightning damage Unbalanced crown Dead twigs/branches 🖾 Codominant ☑ Included bark □ Broken/Hangers Number Weak attachments 
Cavity/Nest hole % circ. Over-extended branches Previous branch failures □ Similar branches present □ Pruning history Dead/Missing bark ☐ Cankers/Galls/Burls ☐ Sapwood damage/decay ☐ Crown cleaned Thinned □
Topped □ Raised Heartwood decay □ Conks Lion-tailed □ Reduced Response growth \_\_\_\_\_ Flush cuts Other \_ weakly attached Denduood Condition (s) of concern \_ Part Size \_\_1-3" Fall Distance 6 - 20 Part Size \_ Fall Distance \_ Load on defect N/A ☐ Minor ☒ Moderate ☐ Significant ☐ Load on defect N/A 🗆 Minor ☐ Moderate☐ Significant ☐ Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐ Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐ - Roots and Root Collar --Trunk -Dead/Missing bark □ Abnormal bark texture/color □ Collar buried/Not visible ☐ Depth Stem girdling □ Codominant stems M Included bark 🗵 Cracks Dead Decay 🗷 Conks/Mushrooms □ Sapwood damage/decay ☐ Cankers/Galls/Burls ☐ Sap ooze Ooze Cavity % circ. Lightning damage ☐ Heartwood decay ☐ Conks/Mushrooms ☐ Cracks □ Cut/Damaged roots ☑ Distance from trunk I Cavity/Nest hole % circ. Depth\_\_\_\_\_ Poor taper Root plate lifting □ Soil weakness Lean \_\_\_\_\_° Corrected? \_\_\_\_\_ Response growth \_\_\_\_ Condition (s) of concern None Condition (s) of concern None Part Size \_\_\_\_ Fall Distance -Part Size \_\_\_\_\_ Fall Distance \_\_\_\_ Load on defect N/A 🗵 Minor ☐ Moderate☐ Significant ☐ Load on defect N/A 🖾 Minor □ Moderate □ Significant □ Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐ Likelihood of failure Improbable □ Possible □ Probable □ Imminent □

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**Basic Tree Risk Assessment Form** Date 2/12/2019 Time 1:15 Address/Tree location Division ST, Sowth Side, Selond From Liberty Tree no. \_ 2 Sheet 2 of 20 Tree species Horn bewin dbh\_ 32" Height \_ '40' \_ Crown spread dia. 40' Tools used Diameter tape Time frame 5-60 yr Assessor(s) **Target Assessment** Target zone **Target number** Occupancy Practical to move target? Target within 1x Ht. Target within 1.5 x Ht. rate 1-rare Restriction practical? Target description Target protection Target v 3 - frequent 4 - constant PERESTIANS None 2 2 Veniclas None 3 4 **Site Factors** History of failures None \_ Topography Flat ☑ Slope ☐ % Aspect Site changes None ☐ Grade change ☐ Site clearing ☐ Changed soil hydrology ☐ Root cuts ☐ Describe Sidewalk, Found Soil conditions Limited volume ☐ Saturated ☐ Shallow ☐ Compacted ☐ Pavement over roots ☒ └/ひ % Describe \_\_\_\_\_ Prevailing wind direction V 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/Biotic\_/Vome Pests/Biotic //one

Species failure profile Branches Trunk Roots Describe Weak Limb/ War unions 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 expected change in load factors \_\_/VO Tree Defects and Conditions Affecting the Likelihood of Failure — Crown and Branches — LCR 02% Unbalanced crown □ Cracks Lightning damage □ Dead twigs/branches Codominant 🗵 Included bark X Broken/Hangers Number Weak attachments ☒ North Sid ② Cavity/Nest hole \_\_\_ % circ. Over-extended branches Previous branch failures ☐ Similar branches present ☐ Pruning history Dead/Missing bark ☐ Cankers/Galls/Burls ☑ Sapwood damage/decay ☐ Crown cleaned □ Thinned Raised Conks Heartwood decay □ Reduced Topped □ Lion-tailed Flush cuts П Other \_ Response growth \_\_\_\_ Dendwood Condition(s) of concern — Part Size \_ 1 - W Fall Distance \_ 6 - 10 ' Part Size \_ Fall Distance \_ Minor ☐ Moderate☐ Significant ☐ Load on defect N/A 🗷 N/A ☐ Minor ☐ Moderate ☐ Significant ☐ Load on defect Likelihood of failure Improbable ☐ Possible ☐ Probable ☒ Imminent ☐ Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐ -Trunk -- Roots and Root Collar -Dead/Missing bark □ Abnormal bark texture/color □ Collar buried/Not visible □ Depth Stem girdling □ Codominant stems Included bark 🗵 Cracks Dead Conks/Mushrooms □ Sapwood damage/decay ☐ Cankers/Galls/Burls ☐ Sap ooze Ooze Cavity ☐ % circ. Lightning damage ☐ Heartwood decay ☐ Conks/Mushrooms ☐ Cracks ☐ Cut/Damaged roots ☐ Distance from trunk Cavity/Nest hole 10 % circ. Depth 3" Poor taper □ Root plate lifting □ Soil weakness □ Lean \_\_\_\_\_ ° Corrected? \_\_\_\_ Response growth -Response growth \_\_\_ Condition (s) of concern Mine Condition (s) of concern Weak STEM UNION Part Size \_\_ Fall Distance \_\_\_\_\_ Load on defect N/A Minor □ Moderate □ Significant □ Load on defect N/A 🗆 Minor □ Moderate □ Significant □ Likelihood of failure Improbable ☐ Possible ☒ Probable ☐ Imminent ☐ Likelihood of failure Improbable ☐ Probable ☐ Imminent ☐

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**Basic Tree Risk Assessment Form** Date 0213 Client CITY Of Savem Date OUIS Time 1:50

Address/Tree location Division STrees, south side: Third from Liberty Tree no. 3 Sheet 3 of Tree species Horn beam dbh 25" Height Ho' Crown spread dia. Tools used Diameter Tape Time frame 3-5 Yr Assessor(s) 1V/MK **Target Assessment** Target zone Occupancy Practical to move target? number Target within 1 x Ht. Target within 1.5 x Ht. within Restriction practical? rate 1-rare Target description Target protection 2 - occasional Target 1 Target 3 - frequent 4 - constant 1 None Pedestrians None None None **Site Factors** History of failures None Site changes None ☐ Grade change ☐ Site clearing ☐ Changed soil hydrology ☐ Root cuts ☐ Describe Soil conditions Limited volume Saturated Shallow Compacted Pavement over roots 2 25 % Describe ford Sidewalk, Prevailing wind direction W \_\_\_ Common weather Strong winds □ Ice □ Snow □ Heavy rain □ Describe Tree Health and Species Profile None (dead) ☐ Normal % Chlorotic % Necrotic % Vigor Low □ Normal ☑ High □ Foliage None (seasonal) Abiotic Non 2 Pests/Biotic Nine: Species failure profile Branches ☐ Trunk ☐ Roots ☐ Describe\_\_\_ Load Factors Relative crown size Small ☐ Medium 🖸 Large ☐ Wind exposure Protected ☐ Partial A Full ☐ Wind funneling ☐ Crown density Sparse □ Normal □ Dense ☑ Interior branches Few □ Normal ☑ Dense □ Vines/Mistletoe/Moss □ \_\_\_\_\_\_ Recent or expected change in load factors Tree Defects and Conditions Affecting the Likelihood of Failure Crown and Branches Lightning damage □ Cracks Unbalanced crown Codominant 🔯 \_\_\_\_\_ Dead twigs/branches \_\_\_\_\_Included bark 💆 Number 6 Broken/Hangers Cavity/Nest hole % circ. Weak attachments N Over-extended branches Previous branch failures 🗆 \_\_\_\_\_ Similar branches present 🗆 Pruning history Dead/Missing bark ☐ Cankers/Galls/Burls ☐ Sapwood damage/decay ☐ Thinned Crown cleaned Conks Heartwood decay □ Topped □ Reduced Lion-tailed Response growth \_\_\_\_\_ Other \_ Flush cuts Dead wood and weakly artached condition(s) of concern \_ Part Size 1-3 Fall Distance \_ 6 - 20' Fall Distance \_ Part Size \_ Minor □ Moderate □ Significant □ Load on defect N/A D Minor □ Moderate □ Significant □ Load on defect N/A 🗆 Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐ Likelihood of failure Improbable ☐ Possible ☐ Probable ☒ Imminent ☐ - Roots and Root Collar --Trunk -Abnormal bark texture/color □ Collar buried/Not visible □ Depth Stem girdling □ Dead/Missing bark Included bark 🕱 Cracks Conks/Mushrooms □ Codominant stems 📓 Dead Decay □ Cavity □ % circ. Sap ooze Sapwood damage/decay ☐ Cankers/Galls/Burls ☐ Ooze Lightning damage ☐ Heartwood decay ☐ Conks/Mushrooms ☐ Cracks ☐ Cut/Damaged roots ☑ Distance from trunk 1'-2 Cavity/Nest hole % circ. Depth Root plate lifting | 1/4 - 1/2"
Response growth Soil weakness Lean \_\_\_\_\_° Corrected? \_\_\_\_\_ Condition (s) of concern Nonl Response growth \_\_\_\_ Condition (s) of concern West SVMK We way attacked Part Size ~ 1 > Part Size \_\_\_ Fall Distance \_\_\_ Minor ☐ Moderate☐ Significant ☐ Load on defect N/A 🖫 Minor □ Moderate □ Significant □ Likelihood of failure Improbable ☑ Possible ☐ Probable ☐ Imminent ☐ Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐

**Risk Categorization** Likelihood Consequences Failure & Impact Failure Impact (from Matrix 1) Target Condition(s) Tree part (Target number Risk Somewhat Negligible Significant of concern Imminent Probable Very low or description) Medium Unlikely Possible rating Minor (from Low Matrix 2) Dead/weaky Limbs artaches wenkly Trunk Matrix I. Likelihood matrix. Likelihood of Impact Likelihood of Failure Medium High Very low Low Imminent Unlikely Somewhat likely Likely Very likely Somewhat likely Likely Probable Unlikely Unlikely Possible Unlikely Unlikely Unlikely Somewhat likely Unlikely Improbable Unlikely Unlikely Unlikely Matrix 2. Risk rating matrix. Consequences of Failure Likelihood of Failure & Impact Significant Negligible Minor Severe Very likely Low Moderate High Extreme High Likely Low Moderate High North Somewhat likely Low Low Moderate Moderate Low Unlikely Low Low Notes, explanations, descriptions
Dend wood and weakly artached himbs spould be removed. Weight reduction Princing Showld be Performed to reduce NISK of Failure. Mitigation options 1. Weight Veduction Pruning Residual risk \_\_\_\_ 2. Risk mitigation Priming Residual risk Residual risk Residual risk Low ■ Moderate □ High □ Extreme □ Overall tree risk rating Recommended inspection interval Overall residual risk None □ Low ☒ Moderate □ High □ Extreme □ Data ☐ Final ☑ Preliminary Advanced assessment needed ☑ No ☐ Yes-Type/Reason \_

Inspection limitations 

☑None □Visibility □Access □Vines □Root collar buried Describe \_\_\_\_

Trop location 111/15/01/57/PRT. Sowih Jide, to	Date DL	no.					20
ess/Tree location <u>DIVISION STREET</u> , Sowth Side, For	Height _ 니	,.	Crov	vn spr	Sheet ead dia e frame	40	i i
species Horn beaut	ed Diameter tap	e		Time	e frame	3	57
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Pedestrians	None	Y	Į.Ÿ.	.Y	2	10	10
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Power and Communication lines	None	Y	Y	Y	4	10	N
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ory of failures None	Topograph	y Flat	Slop	e□ _	%	Aspec	t
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dress/ free location <u>Division Silver</u> , Sanh Side, Fifth From	Tree	no	2	acaz sini	Sheet	2_ of	20
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Basic Tree Risk Assessment Form Date 02/13/19 Time 3:00 Striem Address/Tree location Di Vision STREET, South Side, Sixth from libertyTree no. 6 Sheet 6 dbh12/4/8/13/10 Height 351 Crown spread dia. Tree species Hombeam Tools used DBH TELPE Assessor(s) AVIMK Time frame Target Assessment Target zone Occupancy **Farget number** Practical to move target? rget within 1.5 x Ht. Target within 1 x Ht. rate Restriction practical? line 1-rare Target description Target protection 2 - occasional drip Target Target 4 - constant Noni 1 Pedestians 200 2 NEUR COMMUNICATION 4 Site Factors Topography Flat ☑ Slope ☐ % Aspect History of failures Nonte Site changes None ☐ Grade change ☐ Site clearing ☐ Changed soil hydrology ☐ Root cuts ☐ Describe \_ Soil conditions Limited volume Saturated Shallow Compacted Pavement over roots 5 65 % Describe Acad Side walk, Prevailing wind direction W Common weather Strong winds □ Ice □ Snow □ Heavy rain □ Describe \_\_\_\_\_ Tree Health and Species Profile Foliage None (seasonal) Vigor Low ☐ Normal ☑ High ☐ % Chlorotic % Necrotic None (dead) ☐ Normal \_ Abiotic \_ /Vine Pests/Biotic\_TVY Species failure profile Branches ☐ Trunk ☐ Roots ☐ Describe\_ Wind exposure Protected ☐ Partial ☒ Full ☐ Wind funneling ☐ Relative crown size Small ☐ Medium A Large ☐ Crown density Sparse ☐ Normal ☒ Dense ☐ Interior branches Few ☐ Normal ☒ Dense ☐ Vines/Mistletoe/Moss ☐ Tree Defects and Conditions Affecting the Likelihood of Failure — Crown and Branches — Lightning damage □ Cracks □ Unbalanced crown □ Codominant □ Included bark Dead twigs/branches Broken/Hangers Number Weak attachments 
Cavity/Nest hole \_\_\_\_% circ. Over-extended branches Previous branch failures 🗆 \_\_\_\_\_\_ Similar branches present 🗖 **Pruning history** Dead/Missing bark ☐ Cankers/Galls/Burls ☐ Sapwood damage/decay ☐ Thinned 2 Raised Crown cleaned 🛛 Heartwood decay □ \_\_\_\_\_ Conks □ Lion-tailed Topped □ Reduced Response growth \_\_ Other -Flush cuts Deard wood Condition (s) of concern Part Size 1-2 Part Size \_ Fall Distance \_ Fall Distance \_\_\_ Minor ☐ Moderate☐ Significant ☐ Load on defect N/A 🗆 N/A Minor 

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I Load on defect Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐ Likelihood of failure Improbable ☐ Probable ☐ Imminent ☐ - Roots and Root Collar --Trunk -Collar buried/Not visible Stem girdling 🗀 Abnormal bark texture/color □ Depth Dead/Missing bark Cracks Dead Decay □ Conks/Mushrooms □ Codominant stems \( \square Included bark Cavity □ \_\_\_\_ % circ. Sap ooze □ Sapwood damage/decay ☐ Cankers/Galls/Burls ☐ Ooze Lightning damage ☐ Heartwood decay ☐ Conks/Mushrooms ☐ Cracks ☐ Cut/Damaged roots ☐ Distance from trunk \_\_\_\_ Cavity/Nest hole % circ. Poor taper Root plate lifting □ Soil weakness Lean \_\_\_\_\_ ° Corrected? \_\_\_\_ Response growth -Condition (s) of concern Ivy covered, competing Response growth \_\_\_\_ Condition (s) of concern Periodia 305 CWBd Part Size \_ Fall Distance -Part Size \_\_\_\_ Fall Distance -Minor □ Moderate □ Significant □ N/A 🗆 Load on defect Minor □ Moderate □ Significant □ Load on defect N/A B Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐ Likelihood of failure Improbable ☑ Possible ☐ Probable ☐ Imminent ☐

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T		laiget Asse	Essinent	Ta	rget zo	ne			
					-		Occupancy rate	et?	  -
	Target descri	ption	Target protection	twith	t wit	×	1-rare 2 - occasional	ical t	ictio
, 5				arget	Target within 1x Ht.	Target within 1.5 x Ht.	3 – frequent 4 – constant	Practical to move target?	Restriction
Pedestria	an 5		None	V	7	IV	2	N	1
Vehicles			None	y	y	V	4	N	A
Structu	7.		None	IN	Ý	y	4	1/	10
3110010	( ( Delland)		10 cree		1	1-		10	10
1		Site Fac	tors	1	_			_	-
story of failures	None.		Topograph	v Flat	Slop	eП	%	Aspect	t
	Grade change ☐ Site clear	ring Changed soil hydrolog			•				
	nited volume   Saturated				cribe	Was	KWAY. VO a	di di	vev
	rection_W Common we								
		Tree Health and							
gor Low 🕅 No	rmal 🔲 High 🖂 . Foliage	None (seasonal) No	one (dead)□ Normal	% (	Chloro	tic	% Ne	crotic	
sts/Biotic I	ly redesivians	Ab	biotic None						
ecies failure pro	file Branches ☑ Trunk ☑ Ro	ots□ Describe_Neau	Llimb & Tlunk u	nion	5				
cent or expecte		cent Thinning (1		2000	****	-			_
ecent or expecte		efects and Conditions Affe	ecting the Likelihood of Fai	2000					_
Unbalanced cro	Tree D	efects and Conditions Affe	ecting the Likelihood of Fai	2000	y • • • ×				e 🗆
Unbalanced cro	own ☐ LCR 76 on ones ☐ 15 % overall	efects and Conditions Affe — Crown and I  Max. dia. 2	ecting the Likelihood of Fai Branches —	2000	79.00		Lightning		
Unbalanced cro Dead twigs/bra Broken/Hanger	Tree D  own □ LCR 76 overall  nches □ 15 % overall  s Number 2	— Crown and	ecting the Likelihood of Fai Branches — Cracks 🗆	lure			_ Lightning Include	damag ded bar	k 🗆
Unbalanced cro Dead twigs/bra Broken/Hanger Over-extended	Tree D  own   LCR 76  nches   15 % overall  s Number 2  branches	efects and Conditions Affe — Crown and I  Max. dia. 2	Branches — Cracks □ Codominant □ Weak attachments □ Previous branch failures □	lure		_ Cav _ Sim	Lightning Includity/Nest hole	damago ded bar 2% s presen	k 🗆 circ. nt 🗆
Unbalanced cro Dead twigs/bra Broken/Hangers Over-extended Pruning history	Tree D  own   LCR 76  nches   15 % overall  s Number 2  branches	Max. dia. 211 Max. dia. 211	Branches — Cracks □ Codominant □ Weak attachments □ Previous branch failures □ Dead/Missing bark □ Canke	lure	s/Burls	_ Ca\ _ Sim	Lightning Includivity/Nest hole nilar branches pwood dama	damag ded bar e% s presen ge/deca	circ.
Unbalanced cro Dead twigs/bra Broken/Hangers Over-extended <b>Pruning history</b> Crown cleaned Reduced	Tree D  own □ LCR 76  nches □ 15 % overall  s Number 2  branches □  Thinned □  Topped □	Max. dia. 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Branches —  Cracks □ Codominant □ Weak attachments □ Previous branch failures □ Dead/Missing bark □ Canke	lure ers/Galls	s/Burls	_ Ca\ _ Sim	Lightning Includivity/Nest hole nilar branches pwood dama	damag ded bar e% s presen ge/deca	circ. nt 🗆
Unbalanced cro Dead twigs/bra Broken/Hanger: Over-extended Pruning history Crown cleaned Reduced	Tree D  own □ LCR 76  nches □ 15 % overall  s Number 2  branches □  Thinned □  Topped □	Max. dia. 2 Nax. dia. 2 Nax. dia. 1 Nax. dia. dia. 1 Nax. dia. dia. dia. dia. dia. dia. dia. dia	Branches —  Cracks □  Codominant □  Weak attachments □  Previous branch failures □  Dead/Missing bark □ Canke  Conks □ Hea	lure ers/Galls	s/Burls I decay	_ Ca\ _ Sim □ Sa	Lightning Include vity/Nest hole nilar branches pwood dama	damag ded bar e% s presen ge/deca	circ.
Unbalanced cro Dead twigs/bra Broken/Hanger Over-extended Pruning history Crown cleaned Reduced Flush cuts	Tree D   Max. dia. 2 Max. dia. dia. dia. dia. dia. dia. dia. dia	Branches —  Cracks □  Codominant □  Weak attachments □  Previous branch failures □  Dead/Missing bark □ Canke  Conks □  Response growth  of concern — Dead A.	lure ers/Gallsertwood	s/Burls I decay	_ Cav _ Sim □ Sap	Lightning Includivity/Nest hole nilar branches pwood dama	damag ded bar % s presen ge/deca	k   circ.	
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Unbalanced cropped twigs/bra Broken/Hangen Over-extended Pruning history Crown cleaned Reduced Flush cuts Vanda Cowled Part Size	Tree D  own  LCR 76  nches  15 % overall  s Number 2  branches  Thinned  Topped  Other  Sorr Pruning	Max. dia. 2 Max. dia. 2 Condition Condition (s)	Branches —  Cracks □  Codominant □  Weak attachments □  Previous branch failures □  Dead/Missing bark □ Canke  Conks □ Hea	lure ers/Galls ertwood	s/Burls I decay	_ Cav _ Sim D Sap	Lightning Includivity/Nest hole nilar branches pwood dama	damag ded bar e% s presen ge/deca	k   circ. nt   ay
Unbalanced cro Dead twigs/bra Broken/Hangen Over-extended Pruning history Crown cleaned Reduced Flush cuts Vanda  Part Size Load on defect	Tree D   Max. dia. 2 Max. dia. 2 Condition Condition (s)	Branches —  Cracks □  Codominant □  Weak attachments □  Previous branch failures □  Dead/Missing bark □ Canke  Conks □ Hea  Response growth  of concern _ Dead A  Part Size 2	lure ers/Galls ertwood	S/Burls I decay	_ Cav _ Sim _ Sap 	Lightning Includivity/Nest hole nilar branches pwood dama	damag ded bar e% s presen ge/deca	circ. at  ay  ay  ant  ay  ant  ant  ant  ant  ant  ant  ant  ant	
Unbalanced cro Dead twigs/bra Broken/Hangen Over-extended Pruning history Crown cleaned Reduced Flush cuts Vanda Part Size Load on defect	Tree D   Max. dia. 2 Max. dia. 2 Condition Condition (s)	Branches —  Cracks □  Codominant □  Weak attachments □  Previous branch failures □  Dead/Missing bark □ Canke  Conks □ Hea  Response growth  of concern _ Dead L.  Part Size 2  Load on defect N/A	lure ers/Galls ertwood	Minor Possibl	Cav Sim Sap Fall D Fall D P	Lightning Includivity/Nest hole nilar branches pwood dama  Mhld Lightning Vistance	damag ded bar e% s presen ge/deca	circ. at  ay  ay  ant  ay  ant  ant  ant  ant  ant  ant  ant  ant	
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Unbalanced cro Dead twigs/bra Broken/Hanger: Over-extended Pruning history Crown cleaned Reduced Flush cuts Vanaa  Part Size Load on defect Likelihood of fa	Tree D  Tree D  Thinned Q  Topped    Thinned Q  Topped    Other  Lisin & Poor Prunin  Fall Dis  N/A Minor    illure Improbable Possible    Trunk —  bark \ Abnorm	Max. dia. 2 Max. dia. 2 Condition (s)  Raised Lion-tailed Condition (s)  Stance MA  Moderate Significant Probable Imminent Condition (s)	Branches —  Cracks □ Codominant □ Weak attachments □ Previous branch failures □ Dead/Missing bark □ Canke Conks □ Hea Response growth of concern _ Dead L.  Part Size Z Load on defect N/A ☑ Likelihood of failure Improb	ers/Gallsartwood	Minor Possible Room	Cav Sim Sap Fall D Fall D Fall C	Lightning Include vity/Nest hole nilar branches pwood dama  Whed in istance brobable is istance Voderate is istance is istance is istance is istance. Stem	damag ded bar 2 % s presen ge/deca Wibs Significa Imminer	circ. circ. ay
Unbalanced cro Dead twigs/bra Broken/Hanger Over-extended Pruning history Crown cleaned Reduced Flush cuts Variable Part Size Load on defect Likelihood of fa	Tree D  Tree D  Thinned Q  Topped    Thinned Q  Topped    Other  Lisin & Poor Prunin  Fall Dis  N/A Minor    illure Improbable Possible    Trunk —  bark \ Abnorm	Raised Lion-tailed Condition (s)  Raised Lion-tailed Condition (s)  Stance N/A  Moderate Significant Probable Imminent Condition (s)  Cracks Cracks Condition (s)	Branches —  Cracks □  Codominant □  Weak attachments □  Previous branch failures □  Dead/Missing bark □ Canke  Conks □ Hea  Response growth  of concern _ Dead A  Part Size 2  Load on defect N/A B  Likelihood of failure Improb  — Roots  Collar buried/Not visible B  Dead □ Dead	ers/Gallsartwood	Minor Possible Room	Cav Sim Sap Fall D N e F	Lightning Includivity/Nest hole nilar branches pwood dama  Muld iv  istance brobable is in  Ilar —  Stem Conks/Mus	damag ded bar % s presen ge/deca Wibs Significal Imminer	circ.  nt   circ.  nt   nay   nnt    nnt    nnt    nnt    nnt    nnt    nnt    nnt    nnt    nnt    nnt    nnt    nnt    nnt    nnt    nnt    nnt    nnt    nnt
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Unbalanced cro Dead twigs/bra Broken/Hangen Over-extended Pruning history Crown cleaned Reduced Flush cuts Vanda Part Size Load on defect Likelihood of fa  Dead/Missing Codominant st Sapwood dam Lightning dam	Tree D  Thinned I   Thinned I   Topped I   Thinned I   Topped I   Topped I   Thinned I   Topped I   Topped I   Thinned I   Topped I   Thinned I   Topped I   Thinned I   Topped I   Topped I   Thinned I   Topped I   Topped I   Thinned I   Topped I   T	Raised Lion-tailed Conditions (s)  Stance NA  Moderate Significant Probable Imminent Cracks Called Cracks Condition (s)  Probable Sap ooze Conks/Mushrooms	Branches —  Cracks □	ers/Galls artwood wew able  s and Deecay	Minor Possible Roo	Cav Sim Sap Fall D P t Co	Lightning Include Vity/Nest hole Initial branches pwood dama Vistance Vistance Vistance Vistance Vistance Vistance Vistance Conks/Mus Cavity	damagded bare% s presenge/decase	k   circ.
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Unbalanced cro Dead twigs/bra Broken/Hangen Over-extended Pruning history Crown cleaned Reduced Flush cuts Variable Part Size Load on defect Likelihood of fa  Dead/Missing Codominant st Sapwood dam Lightning dam Cavity/Nest ho Lean Response grov Condition (s) of	Tree D  Thinned I Service	Raised Lion-tailed Conditions Afferd Crown and Conditions Afferd Conditions Afferd Condition (s)  Raised Lion-tailed Condition (s)  Stance N/A  Moderate Significant Probable Imminent Condition Condition Condition (s)  Stance N/A  Moderate Significant Condition Condition Condition (s)  Probable Significant Condition Condition Condition (s)	Branches —  Cracks □ Codominant □ Weak attachments □ Previous branch failures □ Dead/Missing bark □ Canke Conks □ Hea Response growth of concern Part Size Load on defect	lure  ers/Galls artwood  Wew  able   s and  droots	Minor Possible Roo	Cav Sim Sal Sal Fall D P t Co	Lightning Includity/Nest hole nilar branches pwood dama  Whed in istance Sorobable In Conks/Mus Cavity Cavi	damagoded bares present ge/decast signification in girdling shroom%	k
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(Target no or descrip	OF CALCULATION AND ADDRESS OF THE PARTY OF T	Tree	part		of concern			Possible	Probable	Imminent	Very low	Low	Medium	High	Unlikely	Somewhat	Likely	Very likely	Negligible	Minor	Significant	Severe	Risk rating (from Matrix 2
1		Liv	Mbs	3	Dead, weakly attained				Χ			X			X					X			L
2		- Tr	MK.		Week attachment				X			X		X	X		X			X	X		L
3					ullgara			25	X					X			X			X			M.
							F																
																				3			
Matrix I . Likel Likelihood	ihood mat	rix.	Likelih	ood of	f Impact				-											t			
of Failure	Very low	_			Medium High																		
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Natrix 2. Risk	-				, , , , , , , , , , , , , , , , , , , ,																		
Total See T.		u i.v.	Conc	oauon	cos of Failur	•				1			T			T	Ŧ			1	7		
Likelihood Failure & Im		legligible	Min		ces of Failur Significant		$\dashv$		-	+			+	-	_	-	+		-	+	-		-
Very like	A-0-2	Low	Mode		High	Extreme	-																
Likely		Low	Mode		High	High							1			1							
Somewhat		Low	Lov		Moderate		e													N	orth		
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Overall resid	علمته لجرياه	Man - B	হা ৷	. 3	Madareta	l High □ E	W+ra-	mal		0-		M	$n \sim -$	d in	cnoc		1 1100						

Client	tion Divisio	in STREET	Solothe Side	Niner	th From Li	Date <u>Ö</u>	no 6	7		Sheet 9	of	20
ree species H	orin bearin	,, ,,,,,,	200 W 21518	dbh 10/	10/8/6/10	Height 25	5,	Crov	vn spr	ead dia.	36	,
Assessor(s) Ji				Tools use	ed Tui	re measi	W.E		Time	frame	3-7	year.
			Ta	arget Asses	ssment							
								get zoi		A. C. Cotanian		
Target number	Target description  Target description  Site  Si		Та	rget protection	Target within drip line	Target within 1 x Ht.	Target within 1.5 x Ht.	rate 1-rare 2-occasional 3-frequent 4-constant	Practical to move target?	Restriction practical?		
1 Pedestri	ins				1	vone	Y	Y	Y	2	N	N.
2 Venice					1	vone	Y	У.	У	4	N	N.
3 STYNET		ding)			Λ	lone	Y	Y	Y'	4	N	N
4	1							2 1	1		l de	
				Site Facto	ors							
Prevailing wind di	rection W Co	ommon weath	ner Strong wind Tree He	ds Ice I ealth and S Non	I Snow□ He Species Profi ne (dead)□	eavy rain D	escribe % C					
Pests/BioticV Species failure pro	<u> </u>	Frank D. Dooto	and the second	ADI	ιοπς Ινν	rie Wio	54.1	-				
Crown density Sp	rotected █ Partial arse □ Normal ᡚ	□ Full□ Wi Dense□ In ctors <u></u> しんか	nd funneling nterior branche	Load Factorial Section 1	otors Normal□ Dei	Relati nse 図 Vines/ 3 ソルギ	ve crow					
Crown density Sp	rotected █ Partial arse □ Normal ᡚ	□ Full□ Wi Dense□ In ctors <u></u> しんか	nd funneling Daterior branche N VAISE dects and Condi	Load Factorial Sections Affections Affections	ctors  Normal □ Del  TLY (~1-	Relatinse 圏 Vines/ 3 ソルギン elihood of Fai	ve crow					
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Targe	t				Condit	ion(s)		Failu	ure			Imp	act			ure 8			COI	.63			
(Target no or descrip	ımber	Tree	part		of cor	Improbable	Possible	Probable	Imminent	Very low	Low	Medium	High	Unlikely	Somewhat	Likely	Very likely	Negligible	Minor	Severe	Risk rating (from Matrix 2		
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3		Trunk			weak union			X						X	X	X					X		L
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of Failure	Very lov				ledium	High																	
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Failure & In	-	Negligible	Min		Significant	Seve	re																
Very like		Low	Mode		High	Extre							7			1			1	1			
Likely		Low	Mode		High Moderate	High														No	orth		
Somewhat Unlikel		Low	Lo		Low	Moder								ī								-	
	union wood, d lim	With Coni	LICTI ad be	ren i	imps, a	ney Fail Med Pooxil Inealth	4		i.						\								
	MITIS	Inction																_ F		dual	risk	_	Lon
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				4							_		-				-	- '	resio	ıual	LISK	-	-
Overall tree	risk rat	ing	Lov	D	Moderate 🛭	¶ High □	Extre	me [												-	)	1.	در دار
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**Basic Tree Risk Assessment Form** \_\_\_\_Time 1:30 Date 02/14 Client Tree no. 10 Sheet 10 of Address/Tree location Height 30' Crown spread dia. 36' Tree species Horn beam Tape musine Time frame\_ Assessor(s) Target Assessment Practical to move target? Occupancy number Target within 1 x Ht. within Restriction practical? within rate 1-rare Target protection Target description 2 - occasional Target Target 3 - frequent None 1 Perestians N None None STILLTURE (Building) 4 **Site Factors** History of failures Nove 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 20 % Describe Side work; Vocas Tree Health and Species Profile Vigor Low ☐ Normal High ☐ Foliage None (seasonal) ☐ None (dead) ☐ Normal Chlorotic % Pests/Biotic\_TVY Abiotic News Species failure profile Branches Trunk Roots Describe Weak Limb and Wank unions Load Factors Relative crown size Small ☐ Medium Large ☐ Wind exposure Protected ☐ Partial Full ☐ Wind funneling ☐ \_ Crown density Sparse ☑ Normal □ Dense □ Interior branches Few □ Normal ☑ Dense □ Vines/Mistletoe/Moss □ Recent or expected change in load factors Thinning / (aising M-3 years ago) Tree Defects and Conditions Affecting the Likelihood of Failure - Crown and Branches -Lightning damage □ Cracks Unbalanced crown □ Dead twigs/branches 😂 Codominant S Included bark Broken/Hangers Weak attachments 
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Significant □ Load on defect N/A 🗆 N/A II Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐ Likelihood of failure Improbable ☐ Possible ☑ Probable ☐ Imminent ☐ - Roots and Root Collar --Trunk -Collar buried/Not visible Depth\_\_\_\_\_ Stem girdling □ Dead/Missing bark □ Abnormal bark texture/color □ Codominant stems Included bark X Cracks Dead Decay □ Conks/Mushrooms Sapwood damage/decay ☐ Cankers/Galls/Burls ☑ Cavity □ \_\_\_\_\_ % circ. Sap ooze Ooze Distance from trunk 101 Lightning damage ☐ Heartwood decay ☐ Conks/Mushrooms ☐ Cracks ☐ Cut/Damaged roots 🖸 Cavity/Nest hole % circ. Poor taper Soil weakness Root plate lifting □ Lean \_\_\_\_\_ ° Corrected? \_\_\_\_ Response growth -Condition (s) of concern Soil Compaction Try Compaction Response growth \_\_\_ Condition (s) of concern Scaffold Limb removed Part Size N/A Part Size \_ 5.5" Minor ☐ Moderate☐ Significant ☐ Minor □ Moderate □ Significant □ Load on defect N/A E Load on defect Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐ Likelihood of failure Improbable 

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**Basic Tree Risk Assessment Form** Date 2/19/2019 Time 9:50 am Address/Tree location Division Street North Side Closest to Liberty Tree no. 11 Sheet 11 of 20 Tree species Zelkova
Assessor(s) JV/MK dbh 8/6" Height 18' Crown spread dia. 21' Tools used Diameter tape Time frame 15 yrs Target Assessment Target zone Occupancy farget number Practical to move target? Target within 1x Ht. within **Farget within** Restriction practical? line 1-rare Target description Target protection Target drip I occasional 3 - frequent 4 - constant 1 Pedestrians No 2 Parked Vehicles 3 4 Site Factors History of failures NO Topography Flat⊠ Slope□ Site changes None ☐ Grade change ☐ Site clearing ☐ Changed soil hydrology ☐ Root cuts ☐ Describe \_ Soil conditions Limited volume | Saturated | Shallow | Compacted | Pavement over roots | 20 % Describe Side walk, Road Prevailing wind direction W 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/Biotic\_None \_ Abiotic None Species failure profile Branches ☑ Trunk ☐ Roots ☐ Describe Weals branch union S 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 expected change in load factors \_\_ None\_ Tree Defects and Conditions Affecting the Likelihood of Failure — Crown and Branches — Unbalanced crown 🖾 Cracks Lightning damage Dead twigs/branches Max dia. Codominant 🛱 \_\_\_\_\_ Included bark 🗵 Broken/Hangers Number Weak attachments 
Cavity/Nest hole % circ. Over-extended branches Previous branch failures ☐ \_\_\_\_\_\_ Similar branches present ☐ Pruning history Dead/Missing bark ☐ Cankers/Galls/Burls ☐ Sapwood damage/decay ☐ Crown cleaned Thinned Raised Heartwood decay □ Reduced Topped □ Lion-tailed Flush cuts Other \_ Response growth \_\_\_\_ None Condition (s) of concern \_\_\_ Fall Distance \_ Part Size \_ Fall Distance \_ Part Size \_ Load on defect N/A 🗆 Minor ☐ Moderate ☐ Significant ☐ Load on defect N/A 🗆 Minor ☐ Moderate☐ Significant ☐ Likelihood of failure | Improbable ☑ | Possible □ | Probable □ | Imminent □ Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐ -Trunk -— Roots and Root Collar — Dead/Missing bark □ Abnormal bark texture/color □ Collar buried/Not visible ☐ Depth Stem girdling Codominant stems Included bark M Cracks Dead Decay □ Conks/Mushrooms □ Sapwood damage/decay ☐ Cankers/Galls/Burls ☐ Sap ooze Ooze Cavity ☐ % circ. Lightning damage ☐ Heartwood decay ☐ Conks/Mushrooms ☐ Cracks ☐ Cut/Damaged roots ☐ Distance from trunk 1' Cavity/Nest hole % circ. Depth Root plate lifting □ Soil weakness Lean 5° Corrected? \_\_\_\_\_ Response growth -Response growth \_\_\_\_\_ Condition(s) of concern \_\_\_\_ Condition (s) of concern Stem Union Fall Distance 4'- 18' Part Size 8/6" Part Size \_\_\_\_ Fall Distance \_\_\_ Load on defect N/A Minor ☐ Moderate Significant ☐ Load on defect N/A 🖎 Minor ☐ Moderate☐ Significant ☐ Likelihood of failure Improbable ☑ Possible □ Probable □ Imminent □ Likelihood of failure Improbable ■ Possible □ Probable □ Imminent □

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**Basic Tree Risk Assessment Form** Date 2/19/2019 Time 10:45 Address/Tree location Division Street, North Side, Second to Liberty Tree no. 12 Sheet 12 of 20 Tree species ASh dbh 15" Height 28' Crown spread dia. 30' Tools used Diameter tape \_\_\_\_\_ Time frame\_\_ 5-10 Assessor(s) JV /MK **Target Assessment** Target zone Occupancy number Practical to move target? Target within 1x Ht. within Restriction practical? rate line 1-rare Target protection Target description 2 - occasional drip Target Target 3 – frequent 4 – constant None 1 Pedestrians 2 None Vehicles 3 4 Site Factors Topography Flat Slope □ % Aspect History of failures No Site changes None ☑ Grade change ☐ Site clearing ☐ Changed soil hydrology ☐ Root cuts ☐ Describe \_ Soil conditions Limited volume Saturated Shallow Compacted Pavement over roots 30 % Describe Sidewalk Road Prevailing wind direction W Common weather Strong winds □ Ice □ Snow □ Heavy rain □ Describe \_\_\_\_\_ Tree Health and Species Profile Foliage None (seasonal) None (dead) ☐ Normal % Chlorotic Vigor Low □ Normal ☑ High □ Abiotic None Pests/Biotic None Species failure profile Branches ☐ Trunk ☐ Roots ☐ Describe None Load Factors Relative crown size Small ☑ Medium ☐ Large ☐ Wind exposure Protected ☐ Partial ☑ Full ☐ Wind funneling ☐ Crown density Sparse ☐ Normal ☑ Dense ☐ Interior branches Few ☐ Normal ☐ Dense ☑ Vines/Mistletoe/Moss ☐ \_\_\_\_\_\_ Recent or expected change in load factors Partial topping for power line Clearance Tree Defects and Conditions Affecting the Likelihood of Failure — Crown and Branches — LCR 55 % Cracks Lightning damage Unbalanced crown M Dead twigs/branches □ O\_% overall Max. dia. \_\_ Included bark □ Codominant 🗷 Number Max. dia. Broken/Hangers Weak attachments 
Cavity/Nest hole % circ. Over-extended branches Previous branch failures □ \_\_\_\_\_ Similar branches present □ Pruning history Dead/Missing bark ☐ Cankers/Galls/Burls ☐ Sapwood damage/decay ☐ Thinned Raised Crown cleaned Heartwood decay Lion-tailed □ Reduced Topped D Response growth water Sorouts Other Utility Flush cuts Condition (s) of concern \_ and large wounds Fall Distance \_ Part Size \_ Fall Distance \_ Part Size N/A 🗆 Minor ☐ Moderate☐ Significant ☐ Load on defect Load on defect N/A Minor ☑ Moderate ☐ Significant ☐ Likelihood of failure | Improbable □ | Possible □ | Probable □ | Imminent □ Likelihood of failure Improbable ☑ Possible □ Probable □ Imminent □ - Roots and Root Collar --Trunk -Stem girdling Collar buried/Not visible □ Depth Dead/Missing bark Abnormal bark texture/color □ Conks/Mushrooms □ Included bark Cracks Dead Codominant stems 🖾 Decay □ Cavity □ \_\_\_\_ % circ. Sapwood damage/decay ☐ Cankers/Galls/Burls ☐ Sap ooze □ Ooze 🗆 Lightning damage ☐ Heartwood decay ☐ Conks/Mushrooms ☐ Cracks ☐ Cut/Damaged roots ☑ Distance from trunk \_2'\_\_ Cavity/Nest hole % circ. Root plate lifting □ Soil weakness Lean \_\_\_\_\_ Corrected? \_\_\_ Response growth -Response growth \_\_\_\_ Condition (s) of concern None Condition (s) of concern \_None Fall Distance \_\_\_\_\_ Part Size \_\_ Part Size \_\_\_ Fall Distance -Minor ☐ Moderate☐ Significant ☐ Load on defect N/A 🛛 Load on defect N/A M Minor □ Moderate □ Significant □ Likelihood of failure Improbable ☐ Probable ☐ Imminent ☐ Likelihood of failure Improbable ☑ Possible ☐ Probable ☐ Imminent ☐

**Risk Categorization** Likelihood Consequences Failure & Impact Failure Impact (from Matrix 1) Target Condition(s) (Target number Tree part Risk Improbable of concern Somewhat Very likely Significant Imminent Negligible Probable Very low or description) Possible Unlikely rating Minor (from WO. High Matrix 2) X low Decay, water limbs X X 2 low Sprout weight low 1 1.0-dominant Trunk low Matrix I. Likelihood matrix. Likelihood of Impact Likelihood of Failure Medium High Very low Low Somewhat likely Likely Very likely Imminent Unlikely Likely Unlikely Somewhat likely Probable Unlikely Somewhat likely Unlikely Possible Unlikely Unlikely Unlikely Improbable Unlikely Unlikely Unlikely Matrix 2. Risk rating matrix. Consequences of Failure Likelihood of Failure & Impact Negligible Minor Significant Severe Very likely Low Moderate High Extreme High Moderate High Likely Low North Somewhat likely Low Low Moderate Moderate Low Unlikely Low Low Low Notes, explanations, descriptions Vigorous water sprouts and large wounds may lead to limb and for stem failure. culterity low risk of Failuren Mitigation options Residual risk 10 W 1. Weight reduction pruning Residual risk WW Restolation Pruning Residual risk Residual risk

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

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

Overall tree risk rating

Overall residual risk

Low ☑ Moderate ☐ High ☐ Extreme ☐

None □ Low ☑ Moderate □ High □ Extreme □ Recommended inspection interval 3 yrs

**Basic Tree Risk Assessment Form** client City of Salem Date 2/19/2019 Time 11:15 Address/Tree location Division Street, North Side Third from Liberty Tree no. 13 Sheet 13 of 20 dbh 13" Height 20' Crown spread dia. 35' Tree species Zelkova Tools used Diameter tax Time frame 5-10+ yrs Assessor(s) JV / MK **Target Assessment** Target zone Occupancy Practical to move target? Target number Target within 1 x Ht. farget within within Restriction practical? rate Target protection Target description 2 - occasional Target of 3 – frequent 4 – constant No Pedestrians 1 None 2 No None Vehicles 3 4 Site Factors Topography Flat

Slope

% Aspect History of failures No. Site changes None ☐ Grade change ☐ Site clearing ☐ Changed soil hydrology ☐ Root cuts ☐ Describe \_ Soil conditions Limited volume | Saturated | Shallow | Compacted | Pavement over roots | 30 % Describe Sidewalk Road Prevailing wind direction ✓ Common weather Strong winds ☐ Ice ☐ Snow ☐ Heavy rain ☐ Describe \_\_\_\_\_ Tree Health and Species Profile None (dead) ☐ Normal % Chlorotic % Necrotic Vigor Low □ Normal □ High ☑ Foliage None (seasonal) Pests/Biotic Nove Abiotic Nove Species failure profile Branches ☑ Trunk ☐ Roots ☐ Describe weak branch Union S 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 expected change in load factors None Tree Defects and Conditions Affecting the Likelihood of Failure — Crown and Branches — LCR 70 % Cracks Lightning damage □ Unbalanced crown Dead twigs/branches □ % overall Max. dia. Codominant 🖾 Included bark M Max. dia. \_ Broken/Hangers Number Weak attachments ₺ \_\_\_\_\_ Cavity/Nest hole \_\_\_% circ. Over-extended branches Previous branch failures □ Similar branches present Pruning history Dead/Missing bark ☐ Cankers/Galls/Burls ☐ Sapwood damage/decay ☐ Thinned Raised Crown cleaned Heartwood decay □ Lion-tailed Reduced П Topped □ Response growth \_ Other\_ Flush cuts \_ Condition(s) of concern <u>several Co-dominant</u> limbs with included bark Fall Distance 7-18 Part Size 2 -Part Size \_ Fall Distance \_ Load on defect N/A□ Minor ☐ Moderate ☐ Significant ☐ Load on defect N/A 🗆 Minor ☐ Moderate Significant ☐ Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐ Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐ -Trunk -- Roots and Root Collar -Dead/Missing bark □ Abnormal bark texture/color □ Collar buried/Not visible ☐ Depth\_ Stem girdling Codominant stems Included bark Cracks Dead Decay Conks/Mushrooms □ Sapwood damage/decay ☐ Cankers/Galls/Burls ☐ Sap ooze Cavity □ % circ. Ooze Lightning damage ☐ Heartwood decay ☐ Conks/Mushrooms ☐ Distance from trunk 3-4 Cracks ☐ Cut/Damaged roots ☑ Cavity/Nest hole % circ. Response growth 1/4 - 1/2 Soil weakness □ Lean \_\_\_\_\_ ° Corrected? \_\_\_\_ Response growth \_\_\_\_\_ Condition (s) of concern \_\_\_\_ Condition (s) of concern None Fall Distance \_\_\_ Part Size \_\_ Fall Distance \_\_\_ Part Size \_\_\_\_ Minor ☐ Moderate A Significant ☐ Load on defect N/A M Minor ☐ Moderate ☐ Significant ☐ Load on defect N/A

Likelihood of failure Improbable ☐ Probable ☐ Imminent ☐

Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐

**Risk Categorization** Likelihood Consequences Failure & Impact Failure Impact (from Matrix 1) Target Condition(s) (Target number Tree part Improbable of concern Somewhat Risk Very likely Significant Negligible or description) Probable Very low Possible Medium rating Likely Minor (from Low Matrix 2) over weighted) OW Limbs 1 weak attachnet wo low co-dominant Trunk low union Matrix I. Likelihood matrix. Likelihood Likelihood of Impact of Failure Very low Low Medium High Unlikely Imminent 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. Consequences of Failure Likelihood of Failure & Impact Negligible Minor Significant Severe Very likely Low Moderate High Extreme Likely Low Moderate High High Somewhat likely North Low Low Moderate Moderate Unlikely Low Low Low Notes, explanations, descriptions Poor Structure on North side of crown From included bark and redundant limbs could lead to limb failure. Mitigation options Structural Proning Residual risk 10W Residual risk \_\_\_\_\_ Residual risk \_\_\_\_\_ Residual risk

Low ☑ Moderate ☐ High ☐ Extreme ☐

None □ Low ☑ Moderate □ High □ Extreme □

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

Inspection limitations ☐ None ☐ Visibility ☐ Access ☐ Vines ☐ Root collar buried Describe

Overall tree risk rating

Overall residual risk

Recommended inspection interval

**Basic Tree Risk Assessment Form** Date 211912019 Time 1:15pm Division Street North Side Fourth from Liberty Tree no. Sheet 14 of 20 Address/Tree location Height \_ 25' Tree species Zelkova Crown spread dia. 35 \* Assessor(s) JV /MK Tools used Diameter Tape Time frame 10+ vis **Target Assessment** Target zone Target number Occupancy Practical to move target? Target within 1xHt. Target within 1.5 x Ht. Target within drip line rate Restriction practical? 1-rare Target description Target protection 3 – frequent 4 – constant 1 No Pedestrions None 2 Vehicles None 3 4 **Site Factors** History of failures No % Aspect Site changes None ☐ Grade change ☐ Site clearing ☐ Changed soil hydrology ☐ Root cuts ☐ Describe \_ Soil conditions Limited volume | Saturated | Shallow | Compacted | Pavement over roots | 30 % Describe Sidewalk: Pood Prevailing wind direction W 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 Pests/Biotic None Sp W Cre Re

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Tree Defects and Conditions Affe	ecting the Likelihood of Failure
Unbalanced crown  Dead twigs/branches  Broken/Hangers Number  Swoverall Max. dia.  Wax.	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
Part Size	of concern Pearly Attached Linds  Part Size 1"-2" dia Fall Distance 10'-15'  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 Condition (s) of concern Stews Service Service Service Service Service Service Service Service Significant □ Likelihood of failure Improbable □ Possible ☑ Probable □ Imminent □	— Roots and Root Collar —  Collar buried/Not visible □ Depth Stem girdling   Dead □ Decay □ Conks/Mushrooms □ Cavity □ % circ.  Cracks □ Cut/Damaged roots □ Distance from trunk □ Soil weakness □  Response growth □ Soil weakness □  Response growth □ Condition (s) of concern Possible Stem gird ling  Part Size 2"+ Fall Distance □ Load on defect N/A   Minor □ Moderate □ Significant □ Likelihood of failure Improbable □ Probable □ Imminent □

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**Basic Tree Risk Assessment Form** Date 2/19/2019 Time 1:50 pm Address/Tree location Division Street North Side, Fifth from Liberty Tree no. 15 Sheet 15 of 20 Tree species HOVA beam dbh 26" Height 35' Crown spread dia. 38' JV/MK Assessor(s) Tools used Diameter Tape Time frame 10 urs **Target Assessment** Target zone number Occupancy Practical to move target? within within arget within drip line Restriction practical? rate Target description Target protection 2 - occasional Target Target get 3 - frequent 4 - constant 1 Pedestrians None 2 Vehicles None 4 3 Structure Alo None 4 Power line **Site Factors** History of failures\_ No Topography Flat Slope \\ \text{Slope} \\ \text{Sspect} Site changes None ☑ Grade change ☐ Site clearing ☐ Changed soil hydrology ☐ Root cuts ☐ Describe Soil conditions Limited volume Saturated Shallow Compacted Pavement over roots 70 % Describe Sidewalk Road Driveway 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/Biotic None Abiotic None Species failure profile Branches & Trunk & Roots Describe Weak limb and trunk Unions 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 expected change in load factors No Tree Defects and Conditions Affecting the Likelihood of Failure — Crown and Branches — LCR 77% Unbalanced crown Cracks Lightning damage □ 5 % overall Max. dia. 2" Dead twigs/branches 🖾 Codominant 🖾 Included bark Broken/Hangers Number Max. dia. Weak attachments 🛱 \_\_\_\_\_ Cavity/Nest hole \_\_\_\_% circ. Over-extended branches Previous branch failures Similar branches present Pruning history Dead/Missing bark ☐ Cankers/Galls/Burls ☐ Sapwood damage/decay ☐ Thinned Crown cleaned Raised Conks □ Heartwood decay □\_\_\_\_ Topped □ Reduced Lion-tailed Flush cuts  $\Box$ Other \_ Response growth\_ Limbs with Weak attach went 5 Condition (s) of concern Fall Distance 6-20' Part Size 1'-2" dia Part Size \_1"-4" die Fall Distance 6'-20' Load on defect N/A DX Minor □ Moderate □ Significant □ Load on defect N/A 🗆 Minor ☐ Moderate ☑ Significant ☐ Likelihood of failure Improbable ☐ Possible ☐ Probable ☑ Imminent ☐ Likelihood of failure Improbable ☐ Possible ☒ Probable ☐ Imminent ☐ —Trunk — — Roots and Root Collar — Dead/Missing bark □ Abnormal bark texture/color □ Collar buried/Not visible □ Depth Stem girdling Codominant stems Included bark Cracks Dead Decay □ Conks/Mushrooms □ Sapwood damage/decay ☑ Cankers/Galls/Burls □ Ooze 🗆 Cavity □ % circ. Lightning damage ☐ Heartwood decay ☒ Conks/Mushrooms ☐ Cracks ☐ Cut/Damaged roots ☐ Distance from trunk Cavity/Nest hole 4 % circ. Depth\_3 Poor taper □ Root plate lifting □ Soil weakness □ Lean \_\_\_\_\_ Corrected? \_ Response growth -Response growth \_\_\_\_\_ Condition (s) of concern None Condition (s) of concern 2 cavities in trunk bark indusion Fall Distance 3'- 35' Part Size \_\_\_ Fall Distance -Load on defect N/A Minor □ Moderate □ Significant 🖾 Load on defect N/A X Minor ☐ Moderate ☐ Significant ☐

Likelihood of failure Improbable ☐ Possible ☑ Probable ☐ Imminent ☐

Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐

**Risk Categorization** Likelihood Failure & Impact Consequences Failure Impact (from Matrix 1) Target Condition(s) (Target number Tree part Improbable of concern Somewhat Significant Risk Very likely Negligible or description) Probable Very low Possible Medium rating Likely Minor High (from Low Matrix 2) Dead, weak 100 Limbs attachments OW OW weak attachment Trunk 2 4 Matrix I. Likelihood matrix. Likelihood of Impact Likelihood of Failure Very low Low Medium High Imminent Unlikely Somewhat likely Likely Very likely Probable Unlikely Unlikely Somewhat likely Likely Possible Unlikely Unlikely Unlikely Somewhat likely Unlikely Unlikely Unlikely Improbable Unlikely Matrix 2. Risk rating matrix. Consequences of Failure Likelihood of Failure & Impact Negligible Minor Significant Severe Very likely Low Moderate High Extreme Likely Low Moderate High High North Somewhat likely Moderate Moderate Low Low Unlikely Low Low Low Low Notes, explanations, descriptions ae Trimmed deadwood should Cavity in trank should be monitored. Mitigation options Residual risk Residual risk Residual risk Residual risk Overall tree risk rating Low □ Moderate ☑ High □ Extreme □ Overall residual risk None □ 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

**Basic Tree Risk Assessment Form** Date 2/19/2019 Time 2:30 pm Address/Tree Tocation Division Street, North Side, Sixth From LibertyTree no. 16 Sheet 16 of 20 \_\_dbh\_\_25/1/1 " Height \_\_\_\_ 35' Crown spread dia. 36' Tree species HOM beam Tools used <u>Diameter Tape</u> Time frame 7-10 yrs Assessor(s) JV/MK **Target Assessment** Target zone Occupancy Practical to move target? Target within 1x Ht. number within within Restriction practical? rate 1-rare 2 - occasional Target protection Target description Target Target 3 - frequent 4 - constant Nove. 1 Perlestrians 2 Vehicles None 3 Structure 4 Priver line **Site Factors** History of failures No Site changes None ☑ Grade change ☐ Site clearing ☐ Changed soil hydrology ☐ Root cuts ☐ Describe\_ Soil conditions Limited volume | Saturated | Shallow | Compacted | Pavement over roots | 40 % Describe | Sidewalk Road Pavement over roots | 40 % Describe | Sidewalk Road Pavement over roots | 10 % Describe | Sidewalk Road Pavement over roots | 10 % Describe | Sidewalk Road Pavement over roots | 10 % Describe | Sidewalk Road Pavement over roots | 10 % Describe | Sidewalk Road Pavement over roots | 10 % Describe | Sidewalk Road Pavement over roots | 10 % Describe | Sidewalk Road Pavement over roots | 10 % Describe | Sidewalk Road Pavement over roots | 10 % Describe | Sidewalk Road Pavement over roots | 10 % Describe | Sidewalk Road Pavement over roots | 10 % Describe | Sidewalk Road Pavement over roots | 10 % Describe | Sidewalk Road Pavement over roots | 10 % Describe | Sidewalk Road Pavement over roots | 10 % Describe | Sidewalk Road Pavement over roots | 10 % Describe | Sidewalk Road Pavement over roots | 10 % Describe | Sidewalk Road Pavement over roots | 10 % Describe | Sidewalk Road Pavement over roots | 10 % Describe Prevailing wind direction W Common weather Strong winds ☐ Ice ☐ Snow ☐ Heavy rain ☐ Describe \_\_\_\_ Tree Health and Species Profile Necrotic Vigor Low □ Normal ☒ High □ Foliage None (seasonal) None (dead) ☐ Normal \_\_\_\_ % Chlorotic Abiotic Nane Pests/Biotic None Species failure profile Branches \$\ Trunk \$\ Roots □ Describe Weak limb and trunk unions Load Factors Relative crown size Small ☐ Medium 🗗 Large ☐ Wind exposure Protected ☐ Partial ☑ Full ☐ Wind funneling ☐ \_\_\_\_ Crown density Sparse ☐ Normal ☐ Dense ☒ Interior branches Few ☐ Normal ☐ Dense ☒ Vines/Mistletoe/Moss ☐ \_\_\_\_\_ Recent or expected change in load factors No Tree Defects and Conditions Affecting the Likelihood of Failure — Crown and Branches — Lightning damage □ Cracks Unbalanced crown □ Dead twigs/branches 🖾 Included bark 🛎 Codominant 🖾 Number Broken/Hangers Weak attachments 
☐ Cavity/Nest hole \_\_\_ % circ. Over-extended branches Previous branch failures Similar branches present **Pruning history** Dead/Missing bark ☐ Cankers/Galls/Burls ☐ Sapwood damage/decay ☐ Thinned Raised Crown cleaned Heartwood decay □\_\_\_\_ Topped □ Lion-tailed Reduced Response growth \_ Other \_ Flush cuts and Conflicting links Condition (s) of concern Limbs with weak attachments Part Size \_1"-4" cl. a Fall Distance 8'-20' Part Size \_ 1"-2" dia Fall Distance 8'-20' Minor ☐ Moderate Significant ☐ N/A Minor ☑ Moderate ☐ Significant ☐ Load on defect Load on defect Likelihood of failure Improbable ☐ Possible ☒ Probable ☐ Imminent ☐ Likelihood of failure Improbable ☐ Possible ☐ Probable ☒ Imminent ☐ - Roots and Root Collar --Trunk -Dead/Missing bark @ Abnormal bark texture/color □ Collar buried/Not visible □ Depth\_ Stem girdling □ Codominant stems 🖾 Included bark 🖾 Cracks Dead Decay Conks/Mushrooms □ Cavity \( \square\) % circ. Sapwood damage/decay ☐ Cankers/Galls/Burls ☐ Sap ooze Ooze Lightning damage ☐ Heartwood decay ☐ Conks/Mushrooms ☐ Distance from trunk 3' Cracks ☐ Cut/Damaged roots ☒ Depth 3" Cavity/Nest hole 5 % circ. Poor taper Root plate lifting M Soil weakness Lean \_\_\_\_\_ ° Corrected? \_\_\_\_ Response growth -Response growth \_ Condition (s) of concern None Condition (s) of concern iNeak trunk union missing bark Fall Distance 3'-35' Part Size \_ Fall Distance \_\_ Minor ☐ Moderate☐ Significant ☐ N/A R N/A 🗆 Minor ☐ Moderate☐ Significant x Load on defect Load on defect Likelihood of failure Improbable 🛱 Possible 🗆 Probable 🗀 Imminent 🗆

Likelihood of failure Improbable ☐ Possible ☑ Probable ☐ Imminent ☐

**Risk Categorization** Likelihood Consequences Failure & Impact Failure Impact (from Matrix 1) Target Condition(s) (Target number Tree part Improbable of concern Negligible Risk Somewhat Very likely or description) Imminent Very low Possible Probable rating Unlikely Likely Minor Low (from Matrix 2) Dead, weak OW Limbs attachments X 4 X OW Weste Trunk X ow attachments X Moderat Matrix I. Likelihood matrix. Likelihood of Impact Likelihood of Failure High Very low Low Medium Somewhat likely **Imminent** Unlikely Likely Very likely Probable Unlikely Unlikely Somewhat likely Likely Possible Unlikely Unlikely Unlikely Somewhat likely Unlikely Unlikely Unlikely Unlikely Improbable Matrix 2. Risk rating matrix. Consequences of Failure Likelihood of Failure & Impact Negligible Minor Significant Severe Very likely Low Moderate High Extreme Likely Moderate Low High High North Somewhat likely Low Low Moderate Moderate Unlikely Low Low Low Low Notes, explanations, descriptions Poorly attached limbs / stems weight reduction performed of failure : Crown should line clearance and deadwood should removed. Cavity in frunk should be monitored Mitigation options Risk Mitigation Pruning Residual risk 100 Residual risk 100 Residual risk Overall tree risk rating Low □ Moderate ☒ High □ Extreme □ Recommended inspection interval 2 yrs Overall residual risk None □ Low Ø Moderate □ High □ Extreme □

**Basic Tree Risk Assessment Form** Client City of Salem

Date 2/19/2019 Time 3:15

Address/Tree location Division Street, North Side, Seventh From Liberty Tree no. 17 Sheet 17 of 20

Tree species Horn beam dbh 16/12/8/11/11" Height 35' Crown spread dia. 32'

Assessor(s) JV / MK Tools used Diameter Tape Time frame 5-10 yr **Target Assessment** Target zone number Occupancy Practical to move target? Target within 1×Ht. within farget within rate Restriction practical? Target protection Target description Target v drip li 2 - occasional Target 4 - constant Pedestrians None 2 Vehicles Mone 3 Prover line Site Factors History of failures NO Site changes None ☑ Grade change ☐ Site clearing ☐ Changed soil hydrology ☐ Root cuts ☐ Describe \_ Soil conditions Limited volume - Saturated - Shallow - Compacted - Pavement over roots 19 40 % Describe Sidewalk, Road parking Prevailing wind direction W Common weather Strong winds ☐ Ice ☐ Snow ☐ Heavy rain ☐ Describe \_\_\_\_\_ Tree Health and Species Profile Foliage None (seasonal) Vigor Low □ Normal ☑ High □ None (dead) ☐ Normal \_\_\_\_\_ % Chlorotic \_\_\_\_\_ % Necrotic \_\_\_\_\_ % Pests/Biotic None Abiotic None Species failure profile Branches Trunk A Roots Describe Weak Limb and frunk unions 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 expected change in load factors No Tree Defects and Conditions Affecting the Likelihood of Failure — Crown and Branches — LCR 83 % Unbalanced crown □ Cracks Lightning damage □ 10 % overall Max. dia. 3 Dead twigs/branches X Codominant Included bark Number\_\_\_\_\_ Broken/Hangers Max. dia. Weak attachments ₩ \_\_\_\_\_ Cavity/Nest hole \_\_\_% circ. Over-extended branches Previous branch failures 

Similar branches present Pruning history Dead/Missing bark ☐ Cankers/Galls/Burls ☐ Sapwood damage/decay ☐ Crown cleaned Thinned Raised Conks Heartwood decay □ Reduced Topped □ Lion-tailed □ Flush cuts Other \_\_\_\_ Response growth\_ Condition (s) of concern Limbs with weak attachments Part Size 1-3" dia Fall Distance 8'-20' Fall Distance 8'- 20' N/A'⊠. Minor □ Moderate□ Significant □ Minor ☎ Moderate ☐ Significant ☐ Load on defect N/A 🗆 Likelihood of failure Improbable ☐ Possible ☐ Probable ☒ Imminent ☐ Likelihood of failure | Improbable □ | Possible □ | Probable □ | Imminent □ -Trunk -- Roots and Root Collar -Dead/Missing bark □ Abnormal bark texture/color □ Collar buried/Not visible □ Depth Stem girdling Codominant stems Included bark Cracks Dead Decay □ Conks/Mushrooms □ Sapwood damage/decay ☐ Cankers/Galls/Burls ☐ Ooze Cavity □ % circ. Lightning damage ☐ Heartwood decay ☐ Conks/Mushrooms ☐ Cracks ☐ Cut/Damaged roots ☐ Distance from trunk Cavity/Nest hole \_ 2 % circ. Depth 3 " Poor taper □ Root plate lifting X Soil weakness Lean \_\_\_\_\_ ° Corrected? \_\_\_ Response growth -Response growth \_\_\_\_ Condition (s) of concern Nove Condition(s) of concern 18" cavity on south side Fall Distance 2'-30' Part Size \_\_\_ Fall Distance \_\_\_\_ Minor ☐ Moderate Significant ☐ Load on defect N/A 🗆 Load on defect Minor ☐ Moderate☐ Significant ☐

Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐

Likelihood of failure Improbable ♥ Possible □ Probable □ Imminent □

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**Basic Tree Risk Assessment Form** Date 2/19/2019 Time 3:35 pm Address/Tree location Division Street North Side Eighth From Liberty Tree no. 18 Sheet 18 of 20 Tree species \_ Horn beam dbh 12"/13"/12"Height 25 Crown spread dia. 30' Tools used Diameter Tape Time frame 5 yrs Assessor(s) JV /MK **Target Assessment** Target zone **Farget number** Occupancy Practical to move target? Target within 1x Ht. within within rate 1-rare Target description Target protection drip li 2 - occasional Target Target 4 - constant None 1 *fedestrians* 2 None Vehicles 4 3 None Site Factors History of failures NO Topography Flat Slope ≤ % Aspect Site changes None M Grade change □ Site clearing □ Changed soil hydrology □ Root cuts □ Describe \_ Soil conditions Limited volume | Saturated | Shallow | Compacted | Pavement over roots | 40 % Describe Sidewalk Read, Darking of Prevailing wind direction W Common weather Strong winds □ Ice □ Snow □ Heavy rain □ Describe \_\_\_\_\_ Tree Health and Species Profile Vigor Low X Normal □ High □ Foliage None (seasonal) None (dead) ☐ Normal Chlorotic Pests/Biotic\_None Abiotic NONE Species failure profile Branches I Trunk Roots Describe weak limb and trunk Load Factors Relative crown size Small ☐ Medium ☑ Large ☐ Wind exposure Protected ☐ Partial ☒ Full ☐ Wind funneling ☐ Crown density Sparse ☑ Normal ☐ Dense ☐ Interior branches Few ☑ Normal ☐ Dense ☐ Vines/Mistletoe/Moss ☐ Recent or expected change in load factors No Tree Defects and Conditions Affecting the Likelihood of Failure — Crown and Branches — Unbalanced crown □ LCR 68 % Cracks Lightning damage □ Max. dia. Dead twigs/branches 🖾 15 % overall Codominant 🗹 Included bark Max. dia. 1" Broken/Hangers Number / Weak attachments 🖾 \_\_\_\_\_ Cavity/Nest hole \_\_\_% circ. Over-extended branches Previous branch failures Similar branches present Pruning history Dead/Missing bark ☑ Cankers/Galls/Burls ☑ Sapwood damage/decay □ Crown cleaned Thinned Raised Heartwood decay □ Lion-tailed Topped □ Reduced Flush cuts Other \_ Response growth \_ Condition (s) of concern \_\_\_ Part Size \_\_ 1 " - 3 " Fall Distance 7-15 Part Size . Fall Distance. N/A 🕱 Load on defect Minor □ Moderate□ Significant □ Load on defect N/A 🗆 Minor ☐ Moderate☐ Significant ☐ Likelihood of failure | Improbable □ | Possible □ | Probable □ | Imminent □ Likelihood of failure Improbable ☐ Possible ☐ Probable ☑ Imminent ☐ -Trunk -- Roots and Root Collar -Dead/Missing bark 🗵 Abnormal bark texture/color □ Collar buried/Not visible □ Depth Stem girdling Codominant stems Included bark 🖾 Cracks Dead Decay □ Conks/Mushrooms □ Sapwood damage/decay ☐ Cankers/Galls/Burls 🖾 Cavity □ \_\_\_\_ % circ. Ooze 🗆 Lightning damage ☐ Heartwood decay ☐ Conks/Mushrooms ☐ Cracks ☐ Cut/Damaged roots ☐ Distance from trunk Cavity/Nest hole 5 % circ. Depth 30" Poor taper Root plate lifting □ Soil weakness Lean \_\_\_\_\_ Corrected? \_ Response growth -Response growth \_\_3" Condition (s) of concern None Condition (s) of concern Weak Stem union, dying bark Part Size \_ Fall Distance \_\_\_ Load on defect N/A Minor ☐ Moderate☐ Significant 🗖 Load on defect N/A TX Minor ☐ Moderate☐ Significant ☐

Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐

Likelihood of failure Improbable Possible Probable Imminent □

**Risk Categorization** Likelihood Failure & Impact Consequences Failure Impact (from Matrix 1) Target Condition(s) (Target number Tree part Improbable of concern Risk Negligible Somewhat Very likely or description) Imminent Very low Probable Medium Unlikely rating Possible Minor Likely High (from Low Matrix 2) Dead, weak low Limbs low attachments 3 low Weak union X OW 3,4 OW Matrix I. Likelihood matrix. Likelihood Likelihood of Impact of Failure Medium Very low Low Hìgh Unlikely Somewhat likely Imminent Likely Very likely Probable Unlikely Unlikely Somewhat likely Likely Possible Unlikely Unlikely Unlikely Somewhat likely Unlikely Unlikely Improbable Unlikely Unlikely Matrix 2. Risk rating matrix. Consequences of Failure Likelihood of Failure & Impact Negligible Minor Significant Severe Very likely Low Moderate High Extreme Likely Low Moderate High High North Somewhat likely Moderate Moderate Low Low Unlikely Low Notes, explanations, descriptions eventually fail some canker is found on areas of trunk. Deadwood, conflicting be removed. Mitigation options 1. Risk mitsaction armina Residual risk 10W Residual risk \_ low 2. Bracina Residual risk Residual risk

Recommended inspection interval 3 yrs

Overall tree risk rating

Overall residual risk

Low ☑ Moderate ☐ High ☐ Extreme ☐

None □ Low 🔯 Moderate □ High □ Extreme □

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

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

**Basic Tree Risk Assessment Form** Time\_ Address/Tree location Devision Street, North Side, nineth From Liberty Tree no. 19 Sheet 19 of 25 Crown spread dia. \_ dbh 13/12/12 Height Tree species Wornham Tools used Diametel Take \_\_\_\_\_ Time frame\_\_\_\_\_ Assessor(s) JV /MK **Target Assessment** Target zone Practical to move target? Occupancy Target number Target within rget within drip line within Restriction practical? rate 1-rare Target protection Target description 2 - occasional Target Target 3 - frequent 4 - constant None 1 Pedestrians None 2 Vehicles No None. tence 4 **Site Factors** History of failures Now Site changes None ☑ Grade change ☐ Site clearing ☐ Changed soil hydrology ☐ Root cuts ☐ Describe\_ Soil conditions Limited volume Saturated Shallow Compacted Pavement over roots 2 40% Describe Sidewalk, Four Parking Lot Prevailing wind direction W Common weather Strong winds □ Ice □ Snow □ Heavy rain □ Describe \_\_\_\_ Tree Health and Species Profile % Chlorotic \_\_\_\_\_ % Necrotic \_\_\_\_ Vigor Low ☑ Normal ☐ High ☐ Foliage None (seasonal) ☑ None (dead) ☐ Normal Abiotic None Pests/Biotic //Ding Species failure profile Branches Trunk Roots Describe Weak limb which Load Factors Relative crown size Small ☐ Medium ☑ Large ☐ Wind exposure Protected ☐ Partial ☒ Full ☐ Wind funneling ☐ \_\_\_ Crown density Sparse Normal □ Dense □ Interior branches Few ☑ Normal □ Dense □ Vines/Mistletoe/Moss □ Recent or expected change in load factors \_\_/\/D Tree Defects and Conditions Affecting the Likelihood of Failure — Crown and Branches — Lightning damage □ Cracks Unbalanced crown Dead twigs/branches Codominant 🖾 Included bark A Broken/Hangers Number Weak attachments 🗷 Cavity/Nest hole \_\_\_\_% circ. Over-extended branches Previous branch failures ☐ Similar branches present ☐ **Pruning history** Dead/Missing bark 

Cankers/Galls/Burls □ Sapwood damage/decay □ Crown cleaned Thinned  $\square$ Raised Heartwood decay □ Conks Topped □ Lion-tailed Reduced Response growth. Other . Flush cuts Denswood Week limb Condition(s) of concern \_\_ Part Size 1-5 " Part Size 1-3:1 Fall Distance 7-20 Fall Distance -N/A 🗵 Minor □ Moderate□ Significant □ Minor ☐ Moderate ☑ Significant ☐ Load on defect Load on defect N/A Likelihood of failure Improbable ☐ Possible ☐ Probable ☒ Imminent ☐ Likelihood of failure Improbable ☐ Possible ☒ Probable ☐ Imminent ☐ - Roots and Root Collar --Trunk -Stem girdling Collar buried/Not visible ☐ Depth Dead/Missing bark Abnormal bark texture/color □ Conks/Mushrooms □ Cracks Codominant stems A Included bark Dead Decay Sapwood damage/decay ☐ Cankers/Galls/Burls ☐ Sap ooze Cavity □ % circ. Ooze Lightning damage ☐ Heartwood decay ☐ Conks/Mushrooms ☐ Distance from trunk 1.5 Cracks ☐ Cut/Damaged roots ☒ Cavity/Nest hole 3 % circ. Poor taper 🗆 Root plate lifting □ Soil weakness Response growth 1/2" Lean \_\_\_\_\_ ° Corrected? \_\_\_ Response growth \_ Condition (s) of concern Noire Condition (s) of concern werk stem union Part Size \_12/26" Fall Distance \_\_\_ Part Size \_ Minor ☐ Moderate ☑ Significant ☐ Minor □ Moderate□ Significant □ Load on defect N/A 🗵 Load on defect Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐ Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐

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**Basic Tree Risk Assessment Form** 2/19/2019 Time\_ Tree no. 20 Sheet 26 of 20 Address/Tree location dbh 16/10/14 Height 20 Crown spread dia. 33 Tree species Horn beam Diameter Tape Time frame Assessor(s) JIII MK **Target Assessment** Practical to move target? Occupancy **Farget number** Target within 1xHt. Target within drip line within Restriction practical? 1-rare Target protection Target description 2 - occasional 3 - frequent NO None Redestriuns None 2 None 4 None **Site Factors** History of failures \_ N DND Site changes None ☒ Grade change ☐ Site clearing ☐ Changed soil hydrology ☐ Root cuts ☐ Describe Soil conditions Limited volume ☐ Saturated ☐ Shallow ☐ Compacted ☒ Pavement over roots ☒ 70 % Describe Sidewalk, Food Prevailing wind direction W Common weather Strong winds □ Ice □ Snow □ Heavy rain □ Describe\_\_\_\_\_\_ Tree Health and Species Profile Vigor Low X Normal ☐ High ☐ Foliage None (seasonal) 🖾 None (dead) ☐ Normal % Chlorotic \_\_\_\_\_ % Necrotic \_\_\_\_\_ % Abiotic None Pests/Biotic None Species failure profile Branches 
Trunk 
Roots □ Describe Week which Load Factors Relative crown size Small 

Medium □ Large □ Wind exposure Protected ☐ Partial ☐ Full ☐ Wind funneling ☐ \_\_\_ Crown density Sparse ▼ Normal □ Dense □ Interior branches Few □ Normal □ Dense ▼ Vines/Mistletoe/Moss □ Tree Defects and Conditions Affecting the Likelihood of Failure — Crown and Branches — Lightning damage □ Cracks Unbalanced crown Dead twigs/branches X Codominant 🖾 Included bark 🗷 Broken/Hangers Number Weak attachments 🗸 \_\_\_\_\_ Cavity/Nest hole \_\_\_\_% circ. Previous branch failures □ \_\_\_\_\_ Similar branches present □ Over-extended branches Pruning history Dead/Missing bark ☐ Cankers/Galls/Burls ☐ Sapwood damage/decay ☐ Thinned Raised Crown cleaned Conks Heartwood decay □ Topped □ Lion-tailed □ Reduced Response growth \_ Other \_ Flush cuts \_ Condition(s) of concern \_ Weak limb unions Fall Distance 10-70 Part Size 1-34 Part Size 1-4 10-20 Fall Distance \_ N/A ☑ Minor ☐ Moderate ☐ Significant ☐ Minor □ Moderate ☑ Significant □ Load on defect Load on defect Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐ Likelihood of failure Improbable ☐ Possible ☒ Probable ☐ Imminent ☐ - Roots and Root Collar --Trunk -Collar buried/Not visible 

Depth Stem girdling □ Dead/Missing bark Abnormal bark texture/color □ Included bark 🖾 Cracks Codominant stems Dead Decay Conks/Mushrooms □ Sapwood damage/decay ☑ Cankers/Galls/Burls □ Sap ooze □ Cavity ☐ % circ. Ooze Lightning damage ☐ Heartwood decay ☐ Conks/Mushrooms ☐ Cracks □ Cut/Damaged roots □ Distance from trunk Cavity/Nest hole 5 % circ. Root plate lifting □ Soil weakness Lean ° Corrected? \_\_\_\_ Response growth — Response growth \_\_ Condition (s) of concern \_\_\_\_\_\_\_\_ Condition (s) of concern Dying bodic Work Syem union
Part Size 10-24"
Fall Distance 2-20; Part Size 10 - 24" Part Size \_\_\_ Fall Distance \_\_\_\_\_ N/AX Minor ☐ Moderate☐ Significant ☐ Minor □ Moderate □ Significant ☑ Load on defect Load on defect Likelihood of failure Improbable ♣ Possible ☐ Probable ☐ Imminent ☐ Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐

**Risk Categorization** Likelihood Consequences Failure & Impact Impact Failure (from Matrix 1) Target Condition(s) (Target number Tree part Risk Somewhat Negligible of concern Imminent Very low or description) Unlikely rating (from Low Matrix 2) Blanch Dand /
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union Matrix I. Likelihood matrix. Likelihood of Impact Likelihood of Failure Medium High Very low Low Somewhat likely Very likely Likely **Imminent** Unlikely Somewhat likely Likely Probable Unlikely Unlikely Unlikely Somewhat likely Possible Unlikely Unlikely Unlikely Unlikely Unlikely Improbable Unlikely Matrix 2. Risk rating matrix. Consequences of Failure Likelihood of Failure & Impact Minor Significant Severe Negligible High Extreme Moderate Very likely Low High Moderate High Likely Low North Somewhat likely Low Low Moderate Moderate Unlikely Low Notes, explanations, descriptions
5:94 Factor die back in Work indicates
Powinewsh & hemover from be con-· Sidered. Wenkly outliked Think which i may eventually Fair Mitigation options
1. BISK MITIGATION Pluning Residual risk \_ Low Residual risk LOW Residual risk Residual risk Low ☑ Moderate ☐ High ☐ Extreme ☐ Overall tree risk rating None □ Low ☑ Moderate □ High □ Extreme □ Recommended inspection interval 6 Manage Overall residual risk Data ☐ Final ☐ Preliminary Advanced assessment needed ☐ No ☐ Yes-Type/Reason \_

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