

Appendix V

Tree Risk Assessment

Tree Risk Assessments should only be performed by International Society of Arboriculture Certified Arborists who have obtained the Tree Risk Assessment Qualification.

Tree Risk Assessment is comprised of three levels. Level 1 is the most basic form of visual inspection, the obvious defects. This is performed within a vehicle traveling at a slow speed looking for hazards in trees. The major advantage of this type of inspection is that a large population can be assessed in a short period of time. Action 3: Systematic Annual Tree Risk Assessment states that this will be performed in two Wards annually in conjunction with the Tree Inventory update. All Level 1 inspections will be recorded and maintained utilizing the Tree Inventory. An annual report of findings will be submitted to the Tree Commission along with the recommended actions.

Level 2 assessments are more involved and require a 360 degree inspection of the tree. This level of assessment does not require any specialized tools and is performed at the ground level only. All Level 2 inspections will be recorded on the City of Akron Tree Risk Assessment Form and maintained utilizing the Tree Inventory.

Level 3 assessments are the most involved and require a 360 degree inspection of the tree. This level of assessment does require specialized tools. The City Arborist will utilize the Resistograph for a Level 3 assessment. Level 3 assessments can be performed at the ground level or in the tree canopy. All Level 3 inspections will be recorded on the City of Akron Tree Risk Assessment Form and maintained utilizing the Tree Inventory.



Tree Risk Assessment Form

Client _____ Date _____ Time _____
 Address/Tree location _____ Tree no. _____ Sheet _____ of _____
 Tree species _____ dbh _____ Height _____ Crown spread dia. _____
 Assessor(s) _____ Time frame _____ Tools used _____

Target Assessment

Target number	Target description	Target zone			Occupancy rate 1 – rare 2 – occasional 3 – frequent 4 – constant	Practical to move target?	Restriction practical?
		Target within drip line	Target within 1 x Ht.	Target within 1.5 x Ht.			
1							
2							
3							
4							

Site Factors

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

Tree Health and Species Profile

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

Load Factors

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

Tree Defects and Conditions Affecting the Likelihood of Failure

— Crown and Branches —

Unbalanced crown LCR _____ % Cracks _____ Lightning damage
 Dead twigs/branches _____ % overall Max. dia. _____ 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
 Crown cleaned Thinned Raised Dead/Missing bark Cankers/Galls/Burls Sapwood damage/decay
 Reduced Topped Lion-tailed Conks Heartwood decay _____
 Flush cuts Other _____ Response growth _____
 Main concern(s) _____

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

— Trunk —

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

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

— Roots and Root Collar —

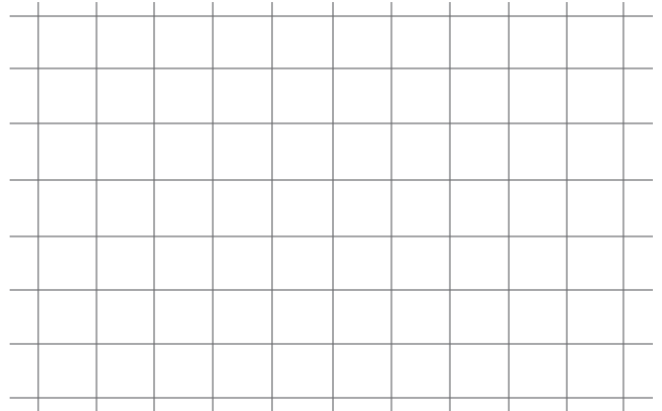
Collar buried/Not visible Depth _____ Stem girdling
 Dead Decay Conks/Mushrooms
 Ooze Cavity _____ % circ.
 Cracks Cut/Damaged roots Distance from trunk _____
 Root plate lifting Soil weakness
 Response growth _____
 Main concern(s) _____

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

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

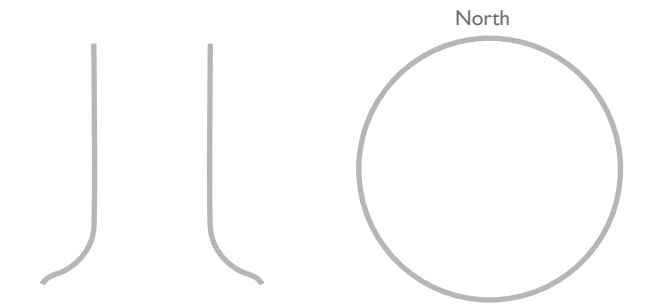
Matrix 1. Likelihood matrix.

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



Matrix 2. Risk rating matrix.

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



Notes, explanations, descriptions _____

Mitigation options _____ Residual risk _____
 _____ Residual risk _____
 _____ Residual risk _____
 _____ Residual risk _____

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