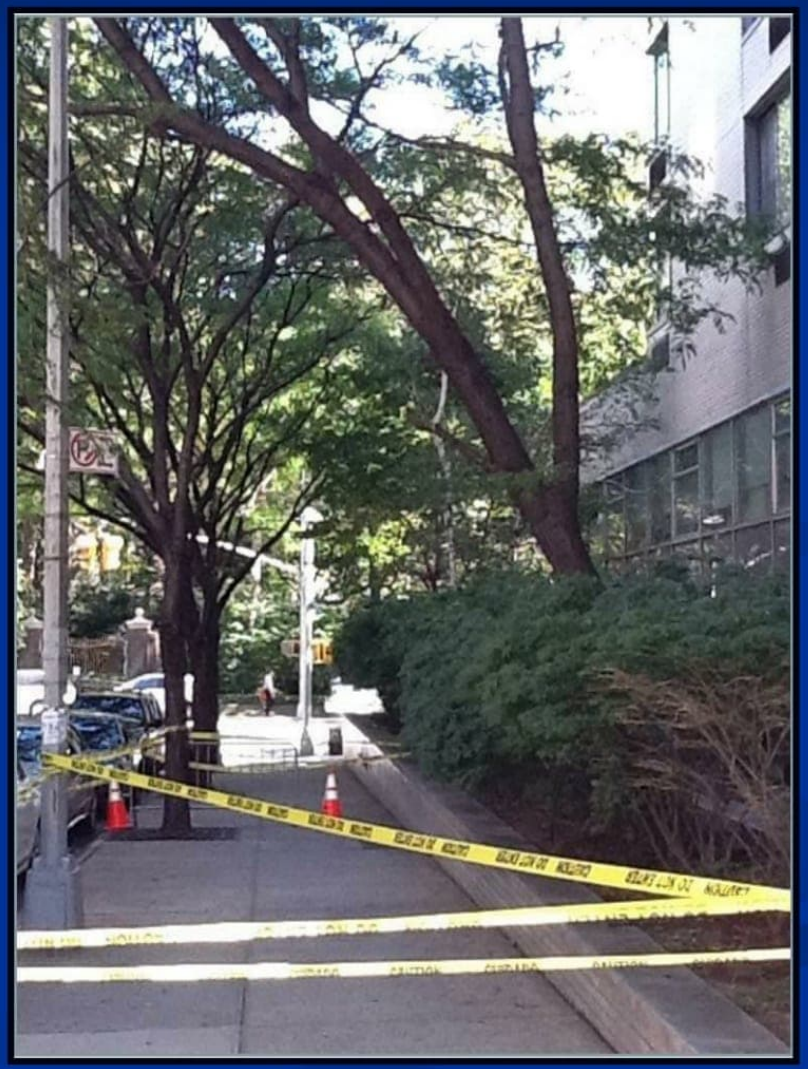
Calculates Residual Risk

- **IF** you follow my recommendations for mitigation, your **residual risk** will be:
  - Extreme
  - High
  - Moderate
  - Low



Client is Provided:

- Verbal Report &/or Written report with assessment & recommendations

Purpose:

- Inform client
- Scheduling work
- Legal protection

Client/Manager Determines:

- Their risk tolerance
- Work (mitigation) that is to be done and when

Data Collection & Analysis

ISA Basic 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: Target within drip line	Target within 1x Ht.	Target within 1.5x Ht.	Occupancy rate (1–rare 2–occasional 3–frequent 4–constant)	Practical to move target?	Restriction practical?
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 ____%
Dead twigs/branches ☐ ____% overall Max. dia. ____
Broken/Hangers Number _____ Max. dia. ____
Over-extended branches ☐
Pruning history
Crown cleaned ☐ Thinned ☐ Raised ☐
Reduced ☐ Topped ☐ Lion-tailed ☐
Flush cuts ☐ Other _____
Cracks ☐ _____ Lightning damage ☐
Codominant ☐ _____ Included bark ☐
Weak attachments ☐ _____ Cavity/Nest hole ____% circ.
Previous branch failures ☐ _____ Similar branches present ☐
Dead/Missing bark ☐ Cankers/Galls/Burls ☐ Sapwood damage/decay ☐
Conks ☐ Heartwood decay ☐ _____
Response growth _____
Main concern(s) _____
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

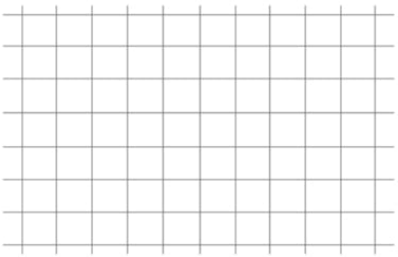
Condition number	Tree part	Conditions of concern	Part size	Fall distance	Target number	Target protection	Likelihood: Failure: Improbable	Failure: Possible	Failure: Probable	Failure: Imminent	Impact: Very Low	Impact: Low	Impact: Medium	Impact: High	Failure & Impact (from Matrix 1): Unlikely	Somewhat	Likely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

Matrix 1. Likelihood matrix.

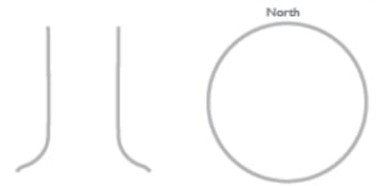
Likelihood of Failure	Likelihood of Impacting Target: Very Low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

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 ☐ 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

- **Not provided to client:**
  - ♦ inability to understand
  - ♦ desire to manipulate
- **Client receives report**
- **Always discoverable**

Advantage of TRAQ to Malaysia

- Demonstrates that you have a **systematic process** for assessing risk from tree failures
- Retain trees for their environmental benefits

- Allows you to **document** changes in risk over time
- Put risk from tree failures **into context** with other risks associated with urban life.

Advantage of TRAQ to Malaysia

- Systematic process
- Document changes
- Retain beneficial trees
- Puts risk into context
- **Standard for the global arboricultural profession**

TRAQ Cannot:

- Guarantee that there will never be another tree failure/fatality
- Guarantee absolute safety

"Based on my xx years in the profession and training I have received; in my professional opinion from my investigation, I did not think that the tree would fail."

Hosting TRAQ?

- Chapter /AO model or
- ISA hosting Model

- Details???
  - time-of-year
  - plan ahead! (study books)
  - 2 courses? Share speaker expenses with Singapore?
  - cost???

Interested???

Ms. Wendy Puckett

Credentialing Operations Administrator

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Fear of tree failures:

I am an old man and have known a great many troubles, but most of them never happened.

- Mark Twain

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