City of Minnetonka retains native bur oak following risk assessment of existing conditions, and subsequent storm damage, in 2014.

A two hundred year old bur oak shades the amphitheater grounds for music events at a city campus. Over time small dead wood branch sheds, a lean, and signs of decay inspire a closer look.

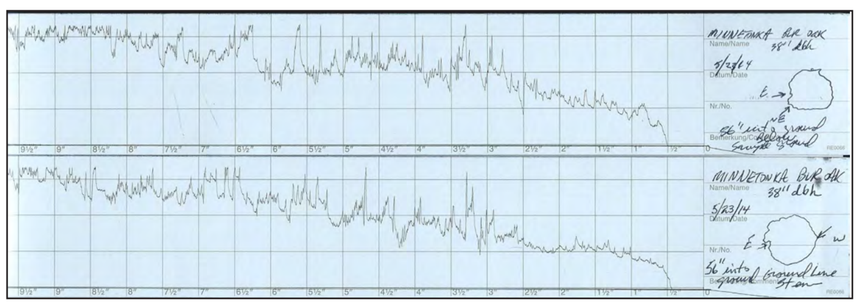
Initial Inspection May 23, 2014; the potential conditions (defects), included the lean, lower stem and or root decay, and weak attachments above given the multiple leads.

Lean: The lean is a natural, corrected, 20% lean to the east.

Wood Decay: There is a positive sign of internal wood decay, the cavity opening.

The oak has a diameter of 38”, (dbh, or diameter at breast height, 4.5’ above ground). However, it enters the ground, (where the decay is of issue), with a diameter of 56”!

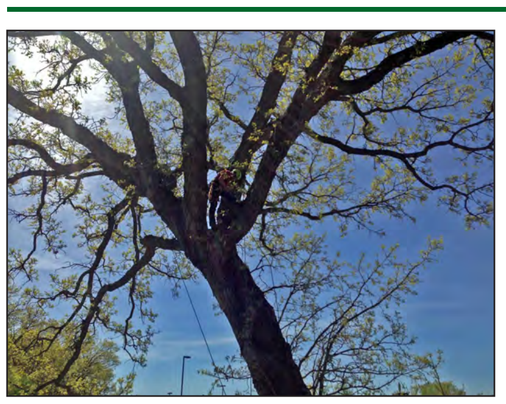
Decay Evaluation: Probing through the opening reveals an internal cavity of at least 30”. Following excavation the lower stem wood entering the ground and above passes a sounding test. Knowing the material strength and decay resistance of this species, the evaluation could have ended here. There was no detection of significant decay, which would have produced a dull vs a sharp sound. To be assured of the results of the sounding, and for documentation given the location of this oak, Resistograph samples were taken.



The two Resistograph samples to the left were stopped at 9.5 to 10” depth. **There was no need to go any further. No wood decay was detected along the sample and the existing internal void was not reached or breeched.** Given a stem diameter of 56” at this level of cross-section, and ½ inch of bark, the stem radius would be about 27”. The sample validates at least a greater than 30% t/R remaining wall. This would easily be 15% of diameter at each sample point. **Given the very large bearing capacity (size), of this cross-section, material strength and decay resistance of this species, and applying years of experience, it would be our opinion; this oak would have been relatively safe with 5” of sound wood or a 20% remaining wall!**

The Risk Rating: Lower stem decay; risk of failure (using the ISA Risk Rating Matrix) from decay; the likelihood of stem failure from internal decay is ***improbable*** (the tree is not likely to fail during normal weather conditions and may not fail in many severe weather conditions). With information gathered from the managers the site occupancy was determined to be low, (the site is used a few times a week between June and September for 5-6 hours). The likelihood of tree failure impacting a specific target is Unlikely. The consequences of failure can be interpreted as minor (low to moderate property damage and small disruptions to people moving to minor injury), given the improbable likelihood, and even with potential *significant consequences*, **the risk rating for this condition is low.**

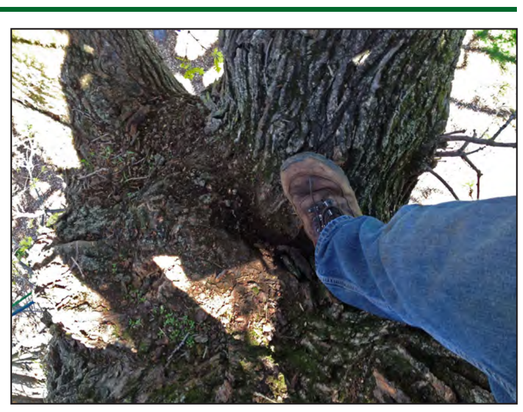
It is your interpretation of the Likelihood of Failure of the Condition or Defect, which sets the stage for the risk rating in the Final Matrix of the ISA TRAQ methodology!



Branch attachments; a stem inclusion high up on the west side, extends out of site into the union to the left.

The aerial inspection finds the inclusion extends into the union and is open, just to the left, (west) of the climber’s right foot (see image to right).

The Risk Rating: Branch attachment, risk of branch failure from inclusion; the likelihood of one of the northwest leads failing is ***possible*** (failure could occur, but is unlikely during normal weather conditions) and with *minor consequences* (low to moderate property damage and small disruptions to people moving to minor injury), ***therefore the risk rating for this target area is low***. Additionally, the likelihood of the branch reaching the road, just west is unlikely. ***This defect now becomes condition # one in the report/findings.***



Two months following the initial inspection the lower northwest lead fails.

On either the late evening of July 11, 2014 or early morning of July 12, 2014 the northwest lead failed during a storm event. Few if any details could be established about the storm. Following this failure the oak was re-evaluated.

While the tree was under re-evaluation the immediate area under the crown was isolated with flagging tape.

Follow-up Inspection July 17, 2014

The Risk Rating: Stem failure compromised by the branch shed. The likelihood stem failure where compromised by the branch shed is **improbable** (the tree is not likely to fail during normal weather conditions and may not fail, in many severe weather conditions), and again, even with potential significant consequences (significant disruption or personal injury) **the risk rating is low.**

Mitigation; *Low-risk trees may not require any mitigation and should be retained and monitored (if appropriate), and at the discretion of the owner.* If mitigation is recommended the priority is low and would be appropriate when budgets, work schedules and other considerations allow. Recommendations were made for a light crown reduction and health care should the city retain the oak.

On August 7, 2014 the Leadership Team of the City of Minnetonka, made a decision to retain the oak with the following conditions: (1) a split rail fence would be installed around the tree. (2) an interpretive sign would detail the oak’s condition and provide cautionary statements.

On October 15, 2014 the oak was treated with Cambistat for long term site stress. Any future Cambistat treatments would need to be based on tree condition over time.

On January 30, 2015 the oak was slightly reduced on the west and east sides and deadwood greater than 2” was removed. The climber on this day was Eric Raven, Renaissance Tree Care.

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