



## Request for City Council Committee Action from the Department of Public Works

**Date:** February 3, 2015

**To:** Honorable Kevin Reich, Chair Transportation & Public Works Committee

**Subject:** **Report on Findings of the Tree Failure Study Conducted by the University of Minnesota Following the Windstorm of June 2013**

**Recommendation:**

Receive and file report.

**Previous Directives:**

None

**Department Information:**

Prepared by: Michael D. Kennedy, Director, Transportation Maintenance & Repair  
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Approved by: \_\_\_\_\_  
Steven A. Kotke, P.E., Director of Public Works

Presenters in Committee: Michael D. Kennedy, Director, Transportation Maint. & Repair  
Gary Johnson, Professor, University of Minnesota

**Financial Impact**

No financial impact

**Community Impact**

- City Goals
  - Great Places: Natural and built spaces work together and our environment is protected. We manage and improve the city's infrastructure for current and future needs.

## Supporting Information

On June 21, 2013, severe wind storms that began west of the Twin Cities moved eastward into Minneapolis in the early evening. These winds were accompanied by a torrential rainfall that reached up to two and one-half (2.5) inches in some areas of the city. Private and public boulevard tree damage caused by the storm was quite extensive. Damaged trees interrupted above ground electrical services. Many streets, sidewalks and alleys were blocked for several days.

Anecdotal evidence suggested a higher than normal frequency of total tree failures involving boulevard trees in Minneapolis. These tree failure incidents, called windthrows in forestry terminology, are where trees are uprooted or partially tipped. Observations suggested these failures may have been related to pre-existing factors such as recent sidewalk or street improvement activities that severed tree root systems in the process.

The University of Minnesota, Department of Forest Resources' Urban Forestry Outreach, Research and Extension lab was contracted by the Minneapolis Park & Recreation Board (MPRB) Forestry Department to fully investigate this phenomenon. The investigation sought to determine what if any pre-existing factors may have contributed to the rate of tree failures during this wind-loading event. Funding for the study came from the MPRB and the Mississippi Watershed Management Organization.

Study results reported a high correlation between windthrows and recent sidewalk repair work, and offered recommendations for remedial action in the future. Since the release of the report, Public Works and MPRB Forestry have been collaborating to evaluate existing policies and practices related to tree failures and infrastructure construction and repair, as well as the recommendations presented in the report.

Actions taken by Public Works include:

- Reviewed the 2004, City of Minneapolis Urban Forest Policy report to see if it is still current regarding best practices regarding protection of trees from storm damage.
- Reestablished close communication and collaboration in the field with MPRB Forestry's Acting Forestry Preservation Coordinator (FPC)
- Held a field meeting with Centerpoint Energy, their contractor, MPRB FPC, and Public Works staff to discuss underground excavation near trees. Outcomes included:
  - A better understanding of the criteria for working near trees
  - Included MPRB in excavation permit review process
  - Invited Forestry's FPC to attend the Capital Project Task Force meetings to be part of early construction plan review.
  - Discussed alternative excavation techniques such as a hydro-excavator which is less invasive and minimally damaging to tree roots.
- Started work with the FPC to become increasingly involved in the Public Works design process of infrastructure improvements.

Public Works will continue to collaborate with the MPRB to find ways to minimize the effect of construction and maintenance activities and increase tree resistance to storm damage from wind loading.

Attachment: U of M Powerpoint Presentation