

TOPICS AND PRESENTERS

WILL CLIMATE CHANGE IMPACT OUR URBAN FORESTS? WHAT CAN BE DONE?

Gary Johnson, *University of Minnesota*

THE FUTURE OF THE TWIN CITIES URBAN HEAT ISLAND

Patrick Hamilton, *Science Museum of Minnesota*

2018 LEGISLATIVE SESSION UPDATES

Gary Carlson, *League of MN Cities* and Patricia Nauman, *Metro Cities*

UPDATE FROM GREATER MSP

Peter Frosch, *GREATER MSP*

PRESENTATIONS

WILL CLIMATE CHANGE IMPACT OUR URBAN FORESTS? WHAT CAN BE DONE?

LINK

GARY JOHNSON, PROFESSOR, UNIVERSITY OF MINNESOTA

Changes are happening already

- Declining health of native forest species.
- More invasive pests, diseases.
- More stress-predisposed trees that struggle to survive "weird" weather flukes like our current winter.
- Sugar maples and balsam fir pushed further north.

How these changes play out varies across species and depends on many factors

- Popular, familiar species like bur oak and paper birches are experiencing shorter lifespans.
- Higher frequency of "loading events" (high wind speed) causing more tree blow downs. It only takes 30 MPH winds to take down weakened trees, and we experience 10X as many 30 MPH events compared to the 1950s.
- Boulevard trees impact—and are impacted by—sidewalks. Roots get severed, weakening trees. They become 2.4X more likely to fall and nearly 5X more likely to fall for big trees.
- More frequent ice storms – just ¼ inch of ice will take down vulnerable species.
- The urban heat island is getting hotter and harder, hurting trees.
- Emerging pests and diseases include Asian Long-horned Beetle and Thousand Cankers Disease of Walnut.

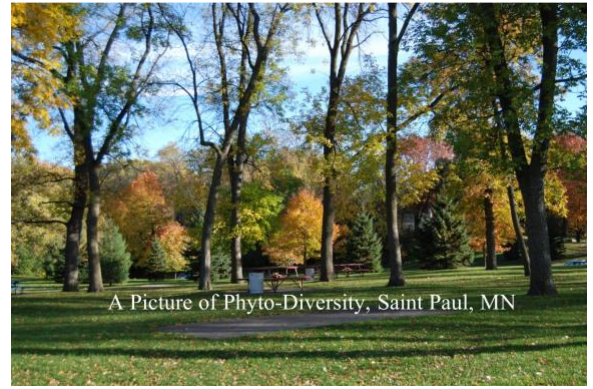
Plant community succession is a normal process

- Edaphic (soil characteristics) changes and climatic changes lead to succession.
- Changed sites favor different communities than we know today.
- It's necessary to acknowledge change will happen and look for replacements that have the "chops" to survive and thrive rather than clinging to old/existing trees that no longer work.

What can we do?

- **Disregard political boundaries.** "native to Minnesota" is meaningless. Evaluate "native" differently. Anything in North American can be considered native. Look for species that are native to prairies and rivers or specific growing zones.
- **Preserve existing mature trees when possible.** Protect boulevard trees by relocating infrastructure like sidewalks. Use an "Air Knife" to dig around roots. Treat trees that are vulnerable to disease if they are big and beautiful. They are more expensive to replace than to treat, and they take decades to mature.

- **Engineer planting sites in tough areas.** Trees need moisture and oxygen, not dirt. Techniques like suspended pavement, “structural” soils (all mineral), and pervious ground covers and pavements can allow trees to thrive.
- **Stay out of the woods:** Don’t use forest trees in urban areas. No sugar maples, red oaks, white birches, basswoods.
- **No poorly built trees allowed.** No American elms, for example. It costs a lot of time and money to prune and care for bad trees that are not positioned to thrive.
- **Diversity is the best protection.** Use the 15:10:5 percentage rule. No more than 15% of trees from the same family, 10% from the same genus, and 5% from the same species. Avoid monocultures (boulevard lined with ash trees). Plant trees closer together than 40 feet on center and create minimum of 8-10-foot-wide boulevards.



THE FUTURE OF THE TWIN CITIES URBAN HEAT ISLAND

[LINK](#)

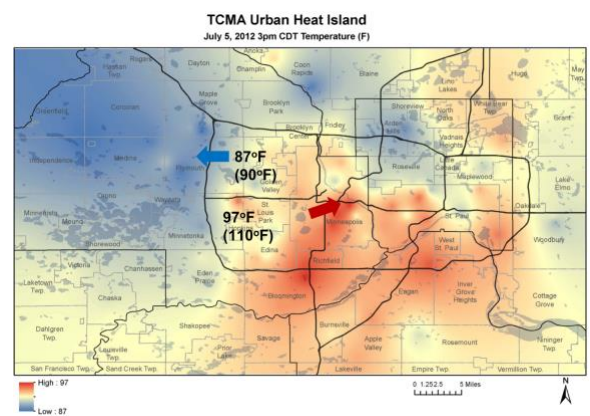
PATRICK HAMILTON, DIRECTOR, SCIENCE MUSEUM OF MINNESOTA

The Minneapolis-Saint Paul metro is getting hotter.

- On top of a generally warming climate, cities warm faster because of their landscapes. This is where the term “urban heat island” comes from.
- Energy from sunlight can be reflected, turned into “latent heat” or turned into “sensible heat.” Latent heat is energy that the system can absorb (e.g. through vegetation) without increasing the temperatures we feel. Sensible heat is energy that results in increased temperatures, and it is what makes us uncomfortable.
- Urban landscapes are less reflective, absorb more heat (on asphalt, rooftops, sidewalks), and produce more waste heat (cars, buildings). As a result, they produce more sensible heat.

A project to greatly expand the number of temperature sensors in the metro helped map the heat island.

- As expected, it revealed significant differences between suburban and rural locations compared to urban areas.
- **Example:** On July 5th, 2012, sensors in Plymouth measured 87°F with a 90°F heat index. Downtown Minneapolis at the same time measured 97°F with a 110°F heat index – a 20° difference across just a few miles. (see picture).
- Areas that experience the urban heat island effect also take longer to cool down. Urban areas may not fully cool at night and are then susceptible to a cumulative effect when hot weather stretches together for several days.
- Mapping the urban heat island revealed strong correlations to areas of poverty. This compounds the problem because poorer areas are less likely to have access to air conditioning, contain more impervious surfaces and have less vegetation.



Courtesy Dr. Peter Snyder, University of Minnesota

What can be done to increase cooling?

- **More reflective surfaces.** White membrane roofs can reflect more heat and keep temps lower.
- **Create more latent heat** by increasing vegetation and tree cover. Replanting urban forests is crucial, and it’s important that more people take ownership and responsibility for urban forestry. Community gravel beds—planting trees in boxes of gravel—can help. They increase the likelihood of successfully transplanting a growing tree.
- **Generate less waste heat through gains in efficiency.** The economic incentives for this are already helping. Energy efficiency saves money and creates jobs in addition to improving quality of life. The Science Museum of Minnesota has cut its peak cooling demands by around 100,000 hours in July and August.

2018 LEGISLATIVE SESSION UPDATES

GARY CARLSON, INTERGOVERNMENTAL RELATIONS DIRECTOR, LEAGUE OF MINNESOTA CITIES

PATRICA NAUMAN, EXECUTIVE DIRECTOR, METRO CITIES

“Six weeks until the start of the special session.”

- As in recent years, there is a sense that a special session is a strong possibility.
- There are similar trends to last year regarding bills preempting local control. One involves regulation of “transportation network companies” (TNCs) such as Uber and Lyft. Another involves prohibiting ranked-choice voting and there is also a bill dealing with regulations and fees on housing.
- There is a bill proposing a constitutional amendment that would require automobile registration fees to be used exclusively for transportation purposes (roads and bridges) rather than as General Fund revenue.
- Two Met Council bills: one would expand the size of the Council and require that councilmembers be local officials. The other, supported by Metro Cities, would create staggered terms and make robust changes to the selection process for the Council.

More bills introduced, fewer passed.

- This year eclipsed the record for greatest number of bills introduced in the Senate, but the number of “chapters” (passed bills) has been declining.
- The primary reason for the decline is the expanded use of omnibus bills. Legislators are passing fewer standalone bills and instead are bundling more and more into large omnibus packages.
- A recently passed pension reform bill that increases contributions for police and firefighters shows the consequences of omnibus bills. Last year, the governor vetoed a bill that made similar pension reforms even though he supported those changes because they were packaged into an omnibus bill that included local preemption he did not support.

Addressing federal tax reform

- So far, very little has been done to adapt Minnesota tax law in response to the federal tax reform passed in late 2017.
- The governor has outlined his goals but has not put forth a bill. Neither have the House or Senate.
- This is likely to be the biggest fight for the next six weeks and may spill into a special session.

EXECUTIVE DIRECTOR’S REPORT

UPDATE FROM GREATER MSP

PETER FROSCH, VP STRATEGIC PARTNERSHIPS, GREATER MSP

May 11th: – 2018 Indicators Dashboard release

- Making updates to the metrics. Adding data on affordability, in part due to RCM input.
- Charlotte is being added as a new peer region. Replaces Phoenix.

New Regional Vision

- The RCM provided feedback on a new regional vision statement back in February.
- At the GREATER MSP Investor Meeting in June, the new statement will be revealed.

August 2nd

- GREATER MSP will host its first ever "deals summit."
- Focused on transactions for expansion, retention, and attraction projects.

APRIL 9TH ATTENDEES

MAYORS

James Hovland	City of Edina (co-chair)
Molly Cummings	City of Hopkins (co-chair)
Jim Adams	City of Crystal
Ardell Brede	City of Rochester
Kirt Briggs	City of Prior Lake
Bob Crawford	City of Elko New Market
Jerry Faust	City of Saint Anthony
Kathi Hemken	City of New Hope
Marvin Johnson	City of Independence
Peter Lindstrom	City of Falcon Heights
Chris Lund	City of Hamburg
Dan Lund	City of Newport
Julie Maas-Kusske	City of Maple Plain
Tim McNeil	City of Dayton
Nora Slawik	City of Maplewood
Mike Webb	City of Carver
Lisa Whalen	City of Minnetrista
Brad Wiersum	City of Minnetonka
Ken Willcox	City of Wayzata
Gene Winstead	City of Bloomington

GUESTS

John Adams, University of Minnesota; Curt Johnson; John Breitingner, Cushman & Wakefield; Jonathan Redberg, Target; Tracey Hester, Target; Darin Broton, Tunheim; Patrick Hamilton, Science Museum of Minnesota; Peter Frosch, GREATER MSP; Heather Worthington, City of Minneapolis; Bob Engstrom, Robert Engstrom Cos.; Jessie Houlihan Bingen, Stahl Construction; Russ Stark, City of Saint Paul; Bob Butterbrodt, Wells Fargo; Jamie Verbrugge, City of Bloomington; Ron Orlando, Comcast; Julie Esch, Mortenson; Rich Forschler, Faegre Baker Daniels; Emily Nachitgal, Faegre Baker Daniels; Mark Casey, City of Saint Anthony; Patricia Nauman, Metro Cities; Gary Carlson, League of MN Cities

ULI Minnesota

Aubrey Albrecht, Cathy Bennett, Caren Dewar, David Baur

NEXT MEETING

Monday, May 14th, 2018

11:30 a.m. to 1:30 p.m.

Seattle Room at Dorsey & Whitney, 50 South 6th Street, Minneapolis, MN.