

Board of Public Works
Meeting of December 14, 2022
Agenda #6, Legistar 74926

Transportation Commission
Meeting of December 14, 2022
Agenda #9, Legistar 74926

The Complete Green Streets Guide ("Guide") provides little guidance regarding retrofit trees. Yet the oldest areas of the City are some of the areas most impacted by heat island effects and in need of continuing canopy coverage. These areas often have terraces under 6' and thus, per the table in the Guide, would be limited to narrow replacement trees.

Retrofit Table

The retrofit table on page 27 of the Guide requires clarification.

1. What is the meaning of "overhead utility conflicts?" The table for high priority canopy areas define overhead utility conflicts as "higher voltage electric overhead line(s)" but there is not a definition in the retrofit table.
2. What are "higher voltage electric overhead line(s)?" Are they only the high voltage transmission lines? Or are distribution lines also included (since those have a higher voltage than telecommunication lines)? Forestry told the Plan Commission that the primary distribution system would prevent planting canopy trees. That would be a major departure from current practice, where it is only the high voltage power lines that prevent planting of canopy trees.
3. What types of streets can make use of suspended pavement in retrofit areas? The table for high priority canopy areas defines where suspended pavement can be used, the retrofit table does not.

Retrofit trees on 4-6 foot terraces

The table only allows for narrow trees on 4-6 foot terraces. Forestry told Plan Commission that the City would not plant a large canopy tree in a 4-6 foot terrace because there would not be adequate soil volume to support that tree, so the tree would not thrive, and because conflicts could be created with pedestrians, the sidewalk, parked cars, and perhaps traffic traveling down the road.

The issue of soil volume and thriving can be addressed through the use of suspended pavement, such as silva cells. Conflicts could be avoided through proper pruning. There are many instances in the Marquette neighborhood of large, mature, trees on 5' terraces, including Williamson Street (which is becoming a community main street) and Oakridge Avenue.



Google Maps, October 2021, Williamson Street



Google Maps, October 2016, Oakridge Avenue

Undergrounding

The report prepared Stand Associates, *Complete Green Streets: Enhanced Distributed Green Infrastructure and Tree Canopy Guidance* states: "This report does not provide any recommendations regarding undergrounding of overhead utilities as this is already covered in

the City's adopted Undergrounding Policy and in the Urban Forestry Task Force Report." Nor does the Guide address undergrounding.

The Urban Forestry Task Force Report, under Street Design Recommendations (page 22), has two recommendations related to undergrounding:

4. The Undergrounding of Overhead Utility Lines policy criteria should be amended to account for the impact of overhead utility lines on city terrace trees. The criteria should include but may not be limited to: ability to underground, terrace width, availability of space for private trees adjacent to the right-of way, ability to improve canopy coverage, availability of cost-share funding source (e.g., TIF), potential for place-making, etc.
5. Appropriate annual funds for full or partial underground projects as a separate budget line item.

Since the Guide is about street design, it would be appropriate to include undergrounding and establish criteria.

Even partial undergrounding, just of the high voltage power lines, would allow for planting of canopy trees. In 2018, the Finance Committee added a budget amendment to do partial undergrounding of the high voltage wires on part of Jenifer Street. (The project was to be funded with TIF money, but, unfortunately, no amendment was put forth to apply the ½ mile rule.) That amendment said:

"The undergrounding of utility wires will enable larger canopy trees to be planted on the street medians. The model proposed by this amendment is a pilot for partial undergrounding. The goal of the pilot is to remove high voltage power lines from electrical poles and redirecting them underground with a pneumatic bore, while retaining the secondary power lines and cable and telephone above ground. Having high voltage wires underground, canopy trees can be planted safely under the lines without the need for pruning. The goal of piloting this approach is to determine if this is a cost effective solution for maintaining the City's tree canopy without pursuing full undergrounding."

I urge you to modify the Guide to address undergrounding, or partial undergrounding. If undergrounding is not added to the Guide, it will not even be considered as streets are redesigned.

Respectfully Submitted,
Linda Lehnertz

From: [Linda](#)
To: [Board of Public Works; Transportation Commission](#)
Subject: Legistar 74926 comment letter addendum
Date: Wednesday, December 14, 2022 2:50:46 PM
Attachments: [Street Tree Planting Procedures 2016.pdf](#)
[Street Tree Planting Procedures 2018.pdf](#)

Caution: This email was sent from an external source. Avoid unknown links and attachments.

I sent a comment letter earlier today, which discussed how it is only the high voltage power lines that prevent planting of canopy trees, and that prohibiting canopy trees under all distribution lines would be a major departure from current practice. I would like to clarify that statement since I cannot attest to current practice. However, as late as 2018 the practice was to prohibit canopy trees where there are overhead *high voltage* lines. Attached are two "Street Tree Planting Procedures" as used by Forestry in 2016 and in 2018. Both documents state: "Where there are overhead high voltage lines (MGE/Alliant/ATC) trees should not have a mature height greater than 25 (twenty-five) feet."

The 2016 document, as used by the Urban Forestry Taskforce, can be found also as document #2 of this link.

<https://madison.legistar.com/LegislationDetail.aspx?ID=2868493&GUID=82F16EE2-C2CC-41F0-9EE2-981E7B11C648>

The 2018 document, also part of the Urban Forestry Taskforce materials, can be found here:

<https://madison.legistar.com/LegislationDetail.aspx?ID=3317892&GUID=22DFF9E9-AE1B-4C4B-9C36-C158371638CE&Options=ID|Text|&Search=50210>

In 2016, residents in the Jenifer Street area explored partial undergrounding (in connection with street reconstruction) in order to save canopy trees, which resulted in the Finance Committee amendment discussed in my letter. MG&E was amenable to partial undergrounding: "The following parameters apply: poles remain, *overhead services remain*, secondary pole to pole wires remain, communication cables remain, *overhead high voltage* and associated pole-type transformers are removed, fourteen padmounted transformers and three padmounted cabinets are placed on private easements acquired from customers." (emphasis added)

If street tree planting procedures have changed, it was done in the recent past. And, after checking with several people who closely follow the tree issues, apparently without wide public disclosure.

Also, it seems to me that since this policy involves green issues, that a referral to the Sustainable Madison Committee could be beneficial.

Linda Lehnertz

Street Tree Planting Procedures 2016

The following are requirements for selecting a street tree planting site:

- Site will require a terrace width of 4 (four) feet or greater.
- Public safety must not be compromised when planting near intersections. Tree planting at intersections require sight triangles (refer to diagram) for motorist/bicycle safety. Sight triangles are defined by MGO 27.05 (2) (bb) Vision Clearance at Intersection Corners.
 - Trees planted along the terrace to the right or left as you approach an intersection must not impede the vision of pedestrians, bicyclists, drivers of motor vehicles or interfere with signs. When approaching an intersection on a two-way street with a 25 (twenty-five) MPH speed limit, trees planted along the terrace to the driver's right are planted a minimum of 50 (fifty) feet back from the right-hand corner (Point A). This distance is increased proportionately as the speed limit increases at a rate of 5 (five) additional feet for each 5 (five) MPH increment in speed.
 - Trees are planted a minimum of 35 (thirty-five) feet back from the left-hand corner (Point B). This distance is not affected by increased speed limits on two-way streets.
 - Greater line-of-sight distances will have to be provided at railroad crossings (Wisconsin State Statute).
 - Clear sight lines for stop signs, signals, overhead pedestrian crossing lights.
- The greater the mature height of tree will require greater terrace width for a sustainable tree.
- At least 3 (three) feet of soil depth is required.
- Species diversity – at minimum 3 (three) species per block.
- Where there are overhead high voltage lines (MGE/Alliant/ATC) trees should not have a mature height greater than 25 (twenty-five) feet. Right Tree, right place.
- Existing private trees (species type and proximity to potential street tree planting site) needs to be considered to optimize tree health and accommodate future growth of tree for both the city and private tree.
- Maintenance consideration of adjacent structures (buildings, permanent awnings, bus shelters, etc.).

- The style of light is considered. Street lights need to cast a light for public safety reasons and not be impeded by street tree branches as the tree reaches mature height. Trees should be planted at minimum of 20 (twenty) feet from the light.
- Tree shall be planted at least 2 (two) feet from underground utilities (sewer lateral, water lateral, gas lateral, communications, electrical, etc.)
- For public safety reasons trees should be at least 10 (ten) feet from any traffic control signs or placed behind the traffic sign (i.e. school crossing, no parking, speed limit).
- Trees should be placed at least 6 (six) feet from driveways.
- Mature height of the tree will determine minimum spacing between street trees:
 - 25 feet mature height = minimum spacing of 30 feet
 - \geq 25 feet mature height = 40 feet minimum spacing
- Fire Department requires aerial apparatus access to newly built buildings taller than 30 (thirty) feet per fire codes. 50% of the designated Fire Aerial Apparatus Zone needs to be unobstructed by tree canopy.
- Other hardscape items located in the right of way such as utility poles, mail boxes, fire hydrants require trees be planted at a minimum of 10 (ten) feet.
- Disease and insect threats (Dutch Elm disease, emerald ash borer, Asian Longhorned beetle, etc.).
- Overall species make up of the street tree inventory.
- Current species make up on the block.
- View restrictions per development agreement (example: Blackhawk subdivision).
- Type of care and environment the tree needs to grow to mature height (durability, road salt, soil type, watering, presence of heavy metals, drainage, and shade tolerance).
 - Industrial area
 - Downtown
 - Grate and cut out sites
 - Rain gardens

Street Tree Planting Procedures 2018

The following are requirements for selecting a street tree planting site:

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- Public safety must not be compromised when planting near intersections. Tree planting at intersections require sight triangles (refer to diagram) for motorist/bicycle safety. Sight triangles are defined by MGO 27.05 (2) (bb) Vision Clearance at Intersection Corners.
 - Trees planted along the terrace to the right or left as you approach an intersection must not impede the vision of pedestrians, bicyclists, drivers of motor vehicles or interfere with signs. When approaching an intersection on a two-way street with a 25 (twenty-five) MPH speed limit, trees planted along the terrace to the driver's right are planted a minimum of 50 (fifty) feet back from the right-hand corner (Point A). This distance is increased proportionately as the speed limit increases at a rate of 5 (five) additional feet for each 5 (five) MPH increment in speed.
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