Sidewalk Conflicts with Trees

Council Policy C09-011 Trees on City Property establishes protocols to “protect, preserve and perpetuate the health, beauty and safety of the City’s urban forest for the enjoyment of its citizens, past, present and future”. Furthermore, it ensures that all trees on City property are “adequately protected from unnecessary destruction, loss and damage” stating that trees that are healthy, sound, and over 15 cm (6”) dbh (diameter at breast height) are not to be removed. The policy also sets out a fee structure for establishing compensation for damage to or loss of a tree on City property. According to section 4.2 (b) of the policy, if a tree is larger than 15 cm in diameter and must be cut down, the cost is approximately $1,500 (including labour, equipment and materials). Using this figure as an estimate, the cost to remove the trees could be up to 15% of the entire project cost in some locations. Requests for removal, cutting, pruning, or relocating a tree must be approved by the Parks Manager. A copy of the policy can be found at https://www.saskatoon.ca/sites/default/files/documents/city-clerk/civic-policies/C09-011.pdf.

According to Urban Forestry, a tree is considered in conflict if the trunk falls within 1.5 m of the edge of the sidewalk. In cases where the tree is located within this 1.5 m buffer from the back of the sidewalk but not in direct conflict with the path, options may be available to mitigate the conflict. If the tree is young and less than 6” dbh, the tree may be able to be relocated. For mature trees, mitigation techniques are explored as a first course of action to preserve and support the healthy growth of the tree. Unfortunately, these mitigation techniques are not always feasible. For example, sidewalks may be able to be curved around a tree to accommodate the required offset from the root plate however, significant right-of-way must be available to make this a viable option. A discussion of possible mitigation techniques is included on page 3.

In many cases, the proposed sidewalk and existing trees are in direct conflict. In these locations, the trees would need to be removed to provide sufficient space for the installation of the sidewalk. Removal of these trees would be in conflict with Urban Forestry’s mandate to preserve Saskatoon’s urban forest. Some examples of sidewalk infill locations that impact trees follow.

Bedford Road

Queen Street

In some cases, there may be adequate space to build the sidewalk into the roadway rather than in the boulevard space, allowing the trees to remain. Costs for construction of a sidewalk into the roadway will be substantially higher due to modifications required to change the street cross-section, including changes to drainage and storm water management and potential loss of on-street parking.

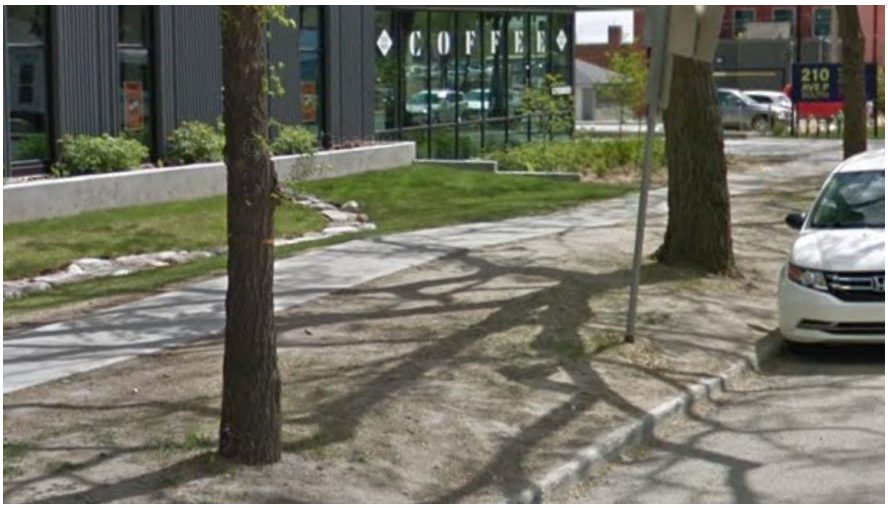
Historically, the Sidewalk Infill Program has used a ‘conflict avoidance’ approach, focusing on installing sidewalk at locations that have minimal tree conflicts. This approach, while convenient, does not place an emphasis on the needs of the sidewalk network or the safety of the pedestrian. As the Sidewalk Infill Program has generally had little funding, selecting high-need locations that were not in conflict with trees was a feasible approach. As the program looks to install more sidewalk, a new approach to addressing sidewalk conflicts with trees is required.

Mitigation Approaches for Construction Near Trees

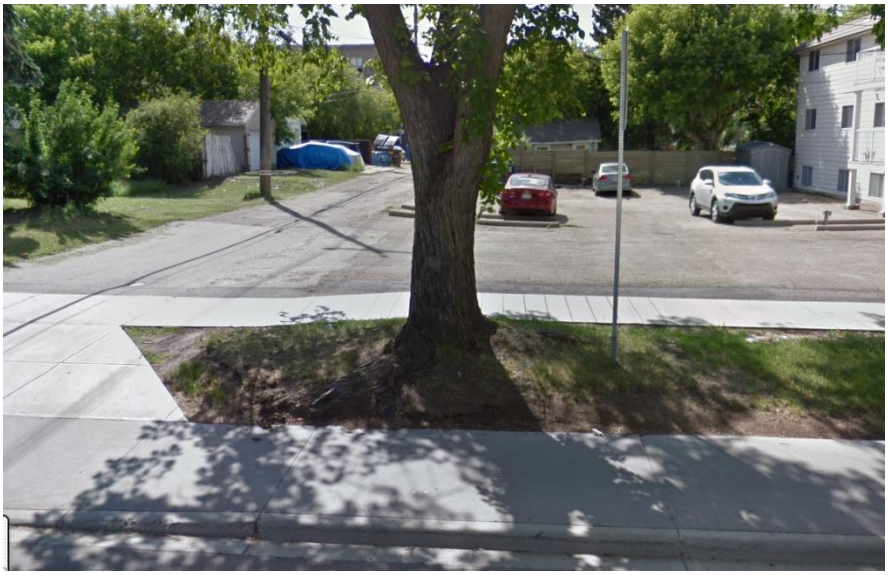
Method: Bridging (raising the grade)

Description: Raising the grade of the sidewalk to “hump” over tree roots too large to cut. Additional sidewalk panels and less distance between concrete cuts might be required.

Examples:



210 Avenue P South, Saskatoon (used by asset preservation in some situations to rehabilitate sidewalks)



10703 135 St NW, Edmonton

Pros:

- Avoids cutting large roots which can harm the tree

Cons:

- Can create accessibility issues if grades are excessive
- Can create ponding/icing issues depending on grades

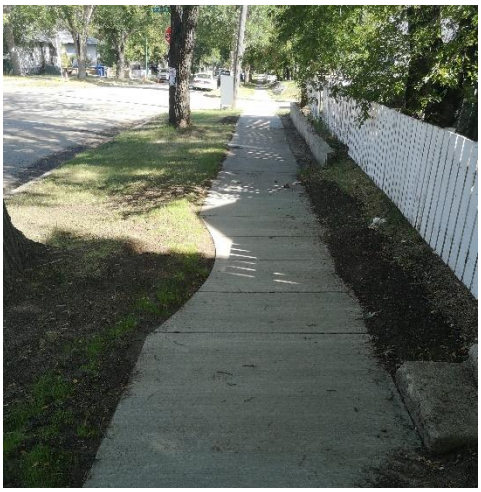
Method: Curving or creating a pinch point (placing sidewalk outside of root plate)

Description: Decreasing the width of a section of sidewalk or curving around the tree to avoid large roots.

Examples:

Pinch Point: 1402 Avenue H North

Pinch Point: 1432 Avenue H North



(Used by asset preservation in some situations to rehabilitate sidewalks)

Curved around root plate:

Source: https://shadetreeexpert.com/sidewalks-and-tree-roots

Source: https://www.bartlett.com/resources/sidewalk-repair-near-trees.pdf

Pros:

- Creating a radius around the base of the tree will provide room for sidewalk replacement and future root growth.

Cons:

- Significant right-of-way may be required to accommodate offset.
- Costly if property acquisition is required to accommodate required offset.
- Harder to navigate for low-vision pedestrians
- Pinch points can create accessibility issues

Method: Street Reconstruction

Description: Building the sidewalk into the roadway rather than in the boulevard space.

Example:
Victoria Avenue

Before:

After:

Pros:

- Trees are preserved.
- Narrows streets that are unnecessarily wide, reducing crossing distances at intersections (also may provide a traffic calming function).

Cons:

- Costs for construction of a sidewalk into the roadway will be substantially higher due to modifications required to change the street cross-section, including changes to drainage and storm water management.
- Would require waiting until street is scheduled for reconstruction as the additional reconstruction costs would be beyond the scope of the Sidewalk Infill Program to address.
- May remove curb lane (parking lane) in some instances.