

# Agenda

## Trees and Forests Advisory Committee

The 6th Meeting of the Trees and Forests Advisory Committee

July 28, 2021, 12:15 PM

Advisory Committee Virtual Meeting - during the COVID-19 Emergency

The City of London is committed to making every effort to provide alternate formats and communication supports for Council, Standing or Advisory Committee meetings and information, upon request. To make a request related to this meeting, please contact [advisorycommittee@london.ca](mailto:advisorycommittee@london.ca)

	Pages
<b>1. Call to Order</b>	
1.1. Disclosures of Pecuniary Interest	
<b>2. Consent</b>	
2.1. 5th Report of the Trees and Forests Advisory Committee	2
2.2. Letter of Resignation - R. Mannella	5
<b>3. Sub-Committees and Working Groups</b>	
3.1. Education and Outreach Sub-Committee Update	6
<b>4. Items for Discussion</b>	
4.1. Urban Forestry Communications Strategy - Update - RESUBMITTED	
Note: For additional information, please refer to the document from the Trees and Forests Advisory Committee, February 26, 2020 Agenda, which is available on this page - <a href="https://pub-london.escribemeetings.com/filestream.ashx?DocumentId=71505">https://pub-london.escribemeetings.com/filestream.ashx?DocumentId=71505</a>	
4.2. City's Tree Watering Strategy - Update - RESUBMITTED	
4.3. Creating Ecosystems - Update - RESUBMITTED	
a. Staff Presentation - L. McDougall, Landscape Architect, Parks Planning and Design	13
4.4. London Hydro Tree Planting Guidelines - T. Arnost	27
Note: Additional information regarding landscaping and pruning near electrical distribution systems is available on this page - <a href="https://esasafe.com/safety/powerline-safety/landscaping-and-tree-pruning/">https://esasafe.com/safety/powerline-safety/landscaping-and-tree-pruning/</a>	
<b>5. Adjournment</b>	

Next Meeting Date: August 25, 2021

# **Trees and Forests Advisory Committee**

## **Report**

The 5th Meeting of the Trees and Forests Advisory Committee  
June 23, 2021

Advisory Committee Virtual Meeting - during the COVID-19 Emergency

Attendance                   PRESENT: A. Morrison (Chair), A. Cantell, M. Demand, A. Hames, J. Kogelheide, R. Mannella, P. Nicholson, and A. Valastro; A. Pascual (Committee Clerk).

ABSENT: S. Thapa

ALSO PRESENT: A. Beaton, T. Meyers, M. Schulthess, J.A. Spence, and S. Stafford.

The meeting was called to order at 12:15 PM; it being noted that the following Members were in remote attendance: A. Cantell, M. Demand, A. Hames, J. Kogelheide, R. Mannella, A. Morrison, P. Nicholson, and A. Valastro.

### **1. Call to Order**

#### 1.1 Disclosures of Pecuniary Interest

That it BE NOTED that no pecuniary interests were disclosed.

### **2. Consent**

#### 2.1 4th Report of the Trees and Forests Advisory Committee

That it BE NOTED that the 4th Report of the Trees and Forests Advisory Committee, from its meeting held on May 26, 2021, was received.

#### 2.2 Municipal Council resolution with respect to the 3rd Report of the Trees and Forests Advisory Committee

That it BE NOTED that the Municipal Council resolution from its meeting held on May 25, 2021, with respect to the 3rd Report of the Trees and Forests Advisory Committee, was received.

### **3. Sub-Committees and Working Groups**

#### 3.1 Educational Initiatives and Outreach Sub-Committee Update

That it BE NOTED that the Trees and Forests Advisory Committee received a verbal update from the Educational Initiatives and Outreach Sub-Committee.

### **4. Items for Discussion**

#### 4.1 Review of Implementation Tasks - Urban Forest Strategy Implementation Plan - RESUBMITTED

That it BE NOTED that the document as appended to the agenda from A. Cantell, entitled "Draft Recommendations Regarding Urban Forestry Metrics for City-Owned Trees", was received.

4.2 City of London Tree Planting - Tree Varieties - RESUBMITTED

That it BE NOTED that the submission as appended to the added agenda from A. Valastro, with respect to the City of London Tree Planting - Tree Varieties, was received.

4.3 Urban Forestry Communications Strategy - Update - RESUBMITTED

That the matter, with respect to the Urban Forestry Communications Strategy - Update, BE DEFERRED to the next Trees and Forests Advisory Committee meeting.

4.4 Advisory Committee Review - TFAC Recommendations

That the following actions be taken with respect to the Advisory Committee Review - TFAC recommendations:

- a) the ~~attached~~ document entitled "Recommendations Regarding Trees and Forests Advisory Committee Status and Classification" BE FORWARDED to the Governance Working Group and Civic Administration for consideration; and,
- b) the Governance Working Group BE REQUESTED to grant delegation status to a representative of the Trees and Forests Advisory Committee (TFAC) at a future meeting to provide an overview of the TFAC recommendations with respect to this matter.

4.5 2021 TreeME Neighbourhood Grant Program

That it BE NOTED that the verbal presentation from J.A. Spence, Manager, Urban Forestry, with respect to the 2021 TreeME Neighbourhood Grant Program, was received.

4.6 Removal of Tree Rings on City Trees

That Civic Administration BE REQUESTED to create educational material for the City's website with respect to the proper materials to be used as tree trunk protectors;

it being noted that a communication from J. Kogelheide, with respect to this matter, was received.

**5. (ADDED) Deferred Matters/Additional Business**

5.1 (ADDED) Municipal Council resolution with respect to the 4th Report of the Trees and Forests Advisory Committee

That it BE NOTED that the Municipal Council resolution from its meeting held on June 15, 2021, with respect to the 4th Report of the Trees and Forests Advisory Committee, was received.

5.2 (ADDED) City's Tree Watering Strategy - Update

That the matter, with respect to the City's Tree Watering Strategy - Update, BE DEFERRED to the next Trees and Forests Advisory Committee meeting.

5.3 (ADDED) Creating Ecosystems - Update

That the matter, with respect to the Creating Ecosystems - Update, BE DEFERRED to the next Trees and Forests Advisory Committee meeting.

**6. Adjournment**

The meeting adjourned at 2:13 PM.

**From:** Roberto Mannella  
**Sent:** Tuesday, April 13, 2021 10:20 AM  
**To:** Pascual, Audrey <[apascual@london.ca](mailto:apascual@london.ca)>  
**Subject:** [EXTERNAL] RE: Advisory Committee Review - Update

Audrey:

I was not planning on staying on past the current term, so I am not interested in extending to the end of the calendar year.

Please let me know how you would like me to proceed in formally stepping down from the committee.

Thanks.

Roberto

**From:** Pascual, Audrey  
**Sent:** Tuesday, April 13, 2021 10:51 AM  
**To:** Roberto Mannella  
**Subject:** RE: Advisory Committee Review - Update

Good morning Roberto,

Thank you for confirming.

Furthermore, thank you as well for your contributions and the commitment that you have made to the community through your role as a Member of the Trees and Forests Advisory Committee.

I've been advised by the Deputy City Clerk that this notice is sufficient. I will let you know if we require anything further from you.

Regards,  
Audrey



**Audrey Pascual (she/her)**  
Committee Clerk  
City Clerk's Office  
City of London

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P: 519.661.2489 x 5417 | Fax: 519.661.4892  
[apascual@london.ca](mailto:apascual@london.ca) | [london.ca](http://london.ca)

As part of our ongoing efforts to stop the spread of COVID-19, the City of London has made changes to many City services. Visit our [website for the latest information about City services and COVID-19](#).

# URBAN FOREST STRATEGY COMMUNICATION STRATEGY

## QUESTIONS & DISCUSSION ITEMS FROM THE TFAC EDUCATION SUB-COMMITTEE

**Date:** July 19, 2021

### OVERVIEW

The creation of a communication strategy is an important strategic action under the “Engage the Community” strategic direction within the Urban Forest Strategy (UFS):

*17.5 Develop and implement a comprehensive communication strategy. Ensure that the strategy is coordinated by Corporate Communications and all City departments participate in its development so that initiatives are coordinated and can be rolled out smoothly in the appropriate season (e.g., green-waste recycling in the fall, water conservation during the summer months, tree cutting permit to avoid the bird nesting season, etc.).*

The TFAC Education & Outreach Sub-Committee has been leading the TFAC effort to contribute to education and outreach activities under the UFS. At our committee’s July meeting, we hope to gain a better understanding of the current state of the Communications Strategy, the process for its development, and how TFAC can best contribute to that process.

To that end, the sub-committee has prepared the following questions in advance for the presenters:

#### 1. General Questions

- 1.1 What staff/how many are going to be working on the Communications Plan for the Urban Forest Strategy, and from which departments?
- 1.2 What budget has been allocated to the Communications Plan, so that our recommendations are at the right scale?
- 1.3 What is the project timeline?
- 1.4 How does info move from “content” to “design”? (Does Forestry provide the info and then Communications turn into a communications piece?)

## 2. TFAC Participation in the Communications Plan Development Process

2.1 As TFAC, how can we be most useful in contributing to the Communications Strategy development process? Are there specific sections Communications would like to see TFAC contribute towards?

The Education & Outreach Sub-Committee so far has on our radar:

- Scan of successful communication and marketing strategies being used for urban forestry in other communities
- Developing ideas for messaging
- Developing a list of proposed promotional pieces
- Proposing partnership, event, and other opportunities specific to London

2.2 What is the message and graphic design development process like at the City? Is there a way for TFAC to be involved in that?

### WEBSITE FEEDBACK

In the same vein, the TFAC Education & Outreach Sub-Committee have been providing detailed but piecemeal feedback on the Trees section of the City website on a monthly basis for the last couple of months. This has been done in support of strategic action 17.6:

*“Make the City website and staff directory more accessible/navigable to make it easier for the public to contact staff with questions or concerns about the urban forest.”*

As members of the broader public, we see TFAC as having much to offer as a fresh set of eyes reviewing the website content. However, we would like to ask staff:

1. Is there a better way to do this? Is there someone specific our feedback should be directed to?

Noting that we’ve found so far that we value having ability to provide a mix of detailed, “big picture”, and technical feedback, which may go to different people or departments depending.

Thus far, some of our overarching / “big picture” feedback includes:

### **1) Context is needed**

Many sections of the website seem to provide information without context, which makes it much harder for the general public to understand. A good example is the “Private Trees” page:

<https://london.ca/living-london/water-environment/trees/privately-owned-trees>

The first paragraph of that page reads:

The City of London Municipal Council approved the new **City of London Tree Protection By-law C.P.-1555-252** at its November 24, 2020 meeting with it going into effect March 1, 2021. Residents, industry experts, prior users of the permitting system and the Trees & Forests Advisory Committee were consulted as part of the crafting of the by-law.

It provides no overview for Londoners before getting into the by-law, even a simple statement like “Many privately owned trees in London are protected under the new City of London Tree Protection By-Law”.

Text on the website tends to go straight into technical detail without context. Our sub-committee would recommend that copy on the website should be written with the general public in mind, and recognize that they may not have as much technical expertise as the City or as much starting familiarity with these topics. Generally speaking, a lot of the City’s website language is more reminiscent of staff reports submitted to council or the standing committees than copy that has been written specifically *for* the general public.

### **2) Pictures are needed**

The combination of a lack of pictures and technical language makes the City of London website very cold and unfriendly looking. Is there a reason for this? It is particularly surprising to us in light of the lens used for the creation of the London Plan, which was very much focused on being “general public” friendly.

### **3) Lack of cross-linking makes information hard to find**

Many people might ask a question about a topic coming from two different directions. For example, some people wanting to get a memorial tree planted in a park might first think of them in terms of “trees”, while others might think of them in terms of “parks”.



Currently, memorial trees on the City website are located under “Parks” instead of “Trees”. This makes it hard for folks looking under “Trees” to find them.

More importantly, when a person sees that there is no information on the topic they care about on the section of the website they think it should be, they might just give up. The impulse is to assume that if what they are looking for was something the City had content on, it would be mentioned. So things like memorial trees (called commemorative trees on the website) should really be linked from both listing pages (“Parks” and “Trees”).

See:

Trees Listing Page (no commemorative trees mentioned): <https://london.ca/living-london/water-environment/trees>

Parks & Facilities Listing Page (commemorative trees mentioned): <https://london.ca/living-london/parks-facilities>

Tree-based funding programs are another good example of this. The City has a section of its website for funding programs, and a section for Trees. Which one should it appear under? People might look for it under either. If we look at the community funding program page and do not see funding programs for trees (e.g. TreeMe) listed, we may not think the program exists at all. That’s a missed opportunity to promote it.

But if your house is under the funding page alone, folks visiting the “Trees” section of the website – those who are probably most likely to have a tree-related project in mind – will never hear about it! (And more importantly – be likely to assume it simply does not exist).

So it really needs to be mentioned under both.

See:

Trees Listing Page (TreeMe mentioned): <https://london.ca/living-london/water-environment/trees>

Community Funding Listing Page (no mention of funding programs for trees): <https://london.ca/living-london/community-services/community-funding>

TFAC Education and Outreach Sub-committee  
**Website Feedback Regarding Reporting a Tree Issue**  
July 20, 2021

**Comments on the “Report a problem with a tree” page (form)**

<https://service.london.ca/service-requests/report-forestry-issue/>

**Comments on Context and Applications:**

- There is no context when the “Report a Tree Issue” form is first opened, and it is not clear what all it can do.
  - In particular, it is not immediately clear that a tree can be requested, based on the heading being “Report a Tree Issue”. Londoners may not look so far as the drop-down menu upon reading the title – they would just assume it’s the wrong spot to request a tree be planted.
  - Requesting a tree to be planted should probably be an entirely separate form for clarity’s sake.
- When you open the “Report a Tree Issue” page, the map doesn’t specify that the dots on the map are city-owned trees, and there is no text explaining that only city-owned trees are included on the map.
  - There needs to be text explaining how will a person know if a tree is City-owned. This is another example of a City page lacking context.
- Only after selecting an option in the drop-down menu “Issue Details” is some context given. It is not obvious to a new user to the site that the context needed won’t appear until they try entering data into the form. The form needs to be more user friendly for the general public, most of whom will have never used it before.

**Potential Map-Related Issues:**

- The map has no legend! This makes it very hard for the general public to know what to do with it. What are the yellow boxes with tree icon inside? What are the purple lines? Purple dots?
- What if someone has a tree they think is the City's but it does not appear on this map? Who do they contact with questions?
- Unclear whether City accepts reports of issues *on* public property arising from privately-owned trees (e.g. tree has fallen on sidewalk, etc.).

- Dots (trees) are not linked to the GIS information, only to the address, making it hard to tell if it's the right tree (e.g. species is missing, which would be helpful for a lot of folks).
  - The City's tree inventory is on a completely separate part of the website, but it provides information on the species, size, etc. therefore this information isn't at hand even though it exists elsewhere (See the City's tree inventory at: <https://london.maps.arcgis.com/apps/webappviewer/index.html?id=ee42a0053fc84b6198fb95dc80cbff7>).

**Additional Concerns:**

- If you select "Request a Tree to be Planted" under the "Tree Issue" drop down, it directs the user to the page on tree maintenance and watering page, which then directs the user back to the report a tree issue page (circular reference!)
  - Consequently, it appears there is currently no way to request a tree to be planted on the City of London website?

**SUGGESTIONS:**

- 1) Add context, legends and instructions for the user on both map pages (<https://service.london.ca/service-requests/report-forestry-issue/> and the tree inventory, <https://london.maps.arcgis.com/apps/webappviewer/index.html?id=ee42a0053fc84b6198fb95dc80cbff7>)
- 2) To make requesting a tree more accessible, create a different tree request form or change the name of the existing page (e.g. to "Report a Tree Issue or Request a Tree")
- 3) Clarify on map that dots only reflect city-owned trees, and what to do if the tree isn't found
  - E.g. if the user thinks a tree is the City's but it does not appear on map, or a privately-owned tree has fallen onto City property
- 4) It would be beneficial to have an ID number (such as the Object ID that ArcMap requires for each object/point in the main Tree Inventory shape file) so people can indicate which tree the issue pertains to, since some properties have multiple trees
  - Use the data in the tree inventory so that clicking on green dots will yield more information
  - also import existing information basics about each Commemorative Tree (they are pink)
- 5) Eliminate circular reference (under "Request a tree" drop-down option) by creating a separate form for tree requests

6) Add the tree inventory to the Trees and Forest webpage for people who are interested in learning more about the city's trees



London  
CANADA

# Naturalization Initiatives in London

Presentation to the Trees and Forest Advisory Committee  
July 28, 2021 by Parks Planning and Design



## THE LONDON PLAN

EXCITING. EXCEPTIONAL. CONNECTED.

CONSOLIDATED MAY 23, 2019  
COUNCIL ADOPTED, JUNE 23, 2016  
MINISTER APPROVED, DECEMBER 28, 2016

Policies subject to LPAT Appeal PL170100 - May 23, 2019

The **London Plan** emphasizes **growing inward and upward** with policies that better address and **avoid threats to biodiversity** from:

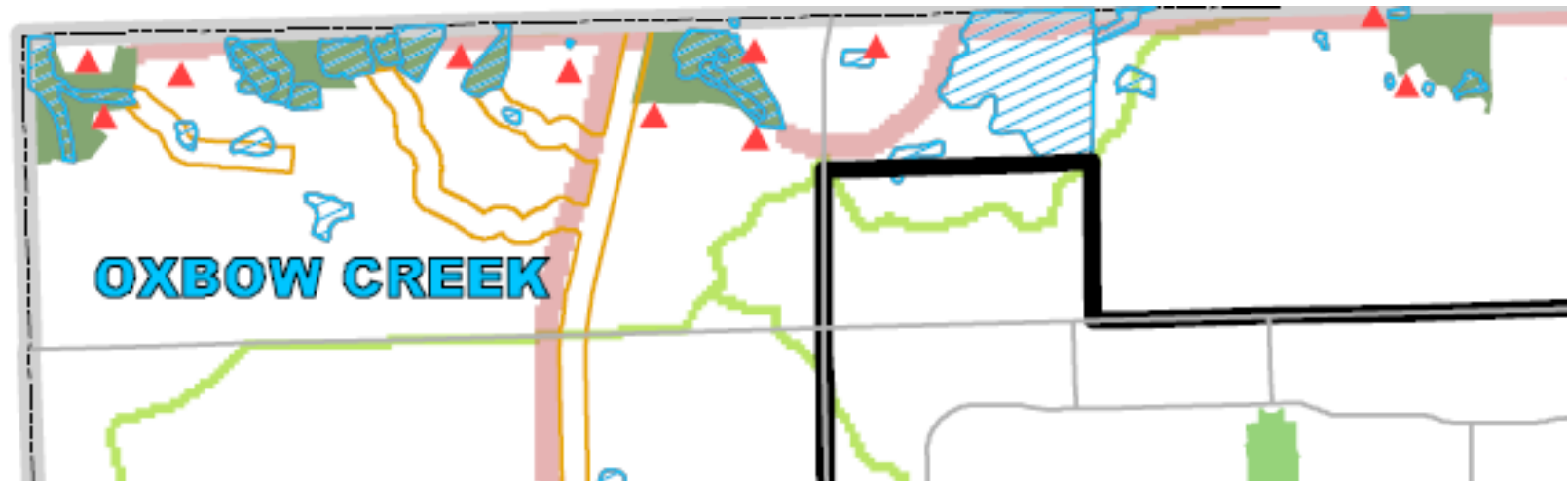
- habitat loss
- alien invasive species
- population growth
- pollution
- unsustainable use
- climate change






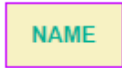

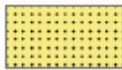




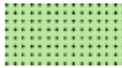
# London Plan

1301\_ The diversity and connectivity of natural features and areas, and **the long-term ecological function and biodiversity of Natural Heritage Systems, will be maintained, restored or, where possible, improved,** recognizing linkages between and among natural heritage features and areas, surface water features and groundwater features...

# Map 5 - Natural Heritage - Potential Naturalization Areas



## NATURAL HERITAGE SYSTEM

	Provincially Significant Wetlands		Name	Areas of Natural and Scientific Interest
	Wetlands		NAME	Environmentally Significant Areas (ESA)
	Unevaluated Wetlands			Potential ESAs
	Significant Woodlands			Upland Corridors
	Woodlands			Potential Naturalization Areas
	Significant Valleylands			Unevaluated Vegetation Patches

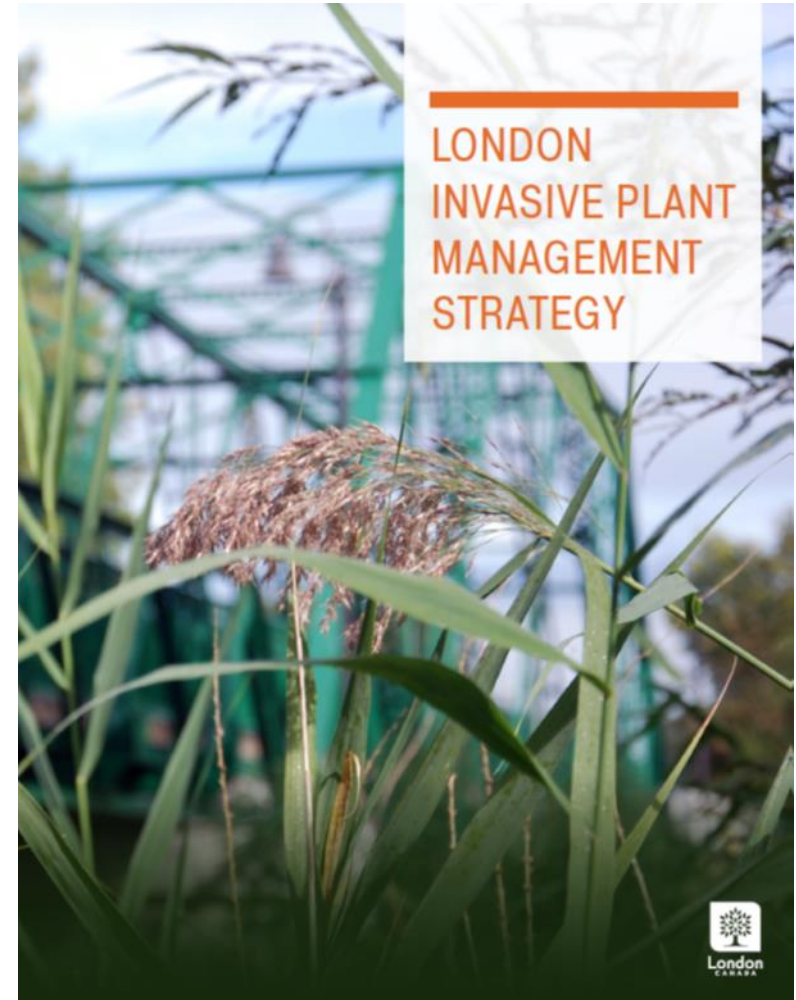


# Leaders in Invasive Species Management

The national Invasive Species Centre commended the City for excellent work completed under the London Invasive Plant Management Strategy (LIPMS):

“London is the first municipality in Ontario to create, approve and implement an invasive species strategy.”

“Beyond the tremendous ecological benefits of this strategy, London is enabling community-led engagement around invasive species control.”





# Leaders in Invasive Species Management

Westminster Ponds ESA – Ecological restoration of 4+ hectare area that was 80% non-native invasive buckthorn and dead ash trees in 2016.

**St. Williams NURSERY & ECOLOGY CENTRE**

**WHY NATIVE PLANTS?**  
Indigenous native plants:  
• are critical to creating and maintaining healthy functioning natural ecosystems  
• provide wildlife habitat and maintain important food webs (for example, bird populations depend on healthy native plant communities and the insects they feed on)  
• provide important ecological services including:  
o air and water purification  
o helping to conserve water supplies  
o preventing erosion and topsoil loss  
o provide habitat for crop pollinators  
• and because they are beautiful plants that truly connect us with the diverse places we live on this Earth.

**SAVE TIME AND MONEY AND HELP THE ENVIRONMENT**  
Using native plants often reduces the cost and energy of landscape maintenance by requiring less mowing and watering while also preventing the spread of probable invasive species. Native plants can save you time and money.

**HOW YOU CAN HELP**  
You can play your role by ensuring that you are purchasing plant products that belong in the Ontario ecosystem, and that they were sourced in Ontario. Ask your supplier to identify the seed source of their product, and ensure that it is suitable for your application.

**ABOUT THIS PROJECT**  
St. Williams Nursery and Ecology Centre (SWNEC) was retained by the City of London to prepare and implement the ecological restoration plan for a 4 hectare area in the Westminster Ponds / Pond Mills Environmentally Significant Area (ESA). The City was generously awarded with a Canada 150 Community Infrastructure grant for the implementation of the accessible trails in the ESA. SWNEC's ecological restoration plan focuses on managing invasive exotic vegetation, primarily Common Buckhorn (*Rhamnus corymbosa*) to allow for the re-establishment of healthy native plant communities. SWNEC will continue to monitor and adaptively manage the area to achieve successful restoration outcomes. More details on the restoration plan are available from City of London Ecologist, Linda McDougall  
© 519-661-2489 x 6494 lmcDougall@london.ca.

**ABOUT ST. WILLIAMS NURSERY AND ECOLOGY CENTRE**  
We are committed to protecting, conserving, and restoring natural biodiversity in Ontario landscapes. We take a scientific approach to producing top quality, Ontario source identified native seed and plants necessary for ecosystem restoration and sustainable land use management.

**St. Williams NURSERY & ECOLOGY CENTRE**  
stwilliamsnursery.com



Canada 150 Grant from Federal Government helped fund project which began in 2017 with wintertime mulching of the buckthorn and many standing dead ash trees. Project is successful and native species are now dominant.

Drone photo by UTRCA

# Tree Planting Strategy

- ✓ Enhancing the urban forest is key to enhancing biodiversity, and, London Plan's Direction #4: Become one of the greenest cities in Canada.
- ✓ Council's target is to increase London's tree canopy cover to 34%.
- ✓ Fast tracking the **Tree Planting Strategy** is recommended in the [Climate Emergency Action Plan](#)



# Dingman Creek Wetland - 18 Hectares Naturalized

**COVID-19**

More ▾

London

## There are signs south London's 'cutting edge' wetland is working

A nesting pair of blue-winged teal ducks were spotted in Dingman Creek last summer

[Colin Butler](#) · CBC News · Posted: Feb 26, 2020 4:00 AM ET | Last Updated: February 26





# Park Naturalization Programs

Hundreds of successful projects over last 20 years with “Adopt a” groups, ReForest London, UTRCA & many others.



2015

21

**Coves ESA Before and After**



2018

# Park Naturalization Programs

ReForest London led 17 naturalization projects in 2019-20 & more on-track for 2021 supported by City and community volunteers.



Southcrest Ravine  
Fall 2019  
150 Trees and  
Shrubs, with 110  
volunteers from 8  
organizations



**ReForest London**  
planting the future today



# Naturalization Initiatives in London and Region

- **UTRCA** coordinates many naturalization projects on public and private lands in London every year with support from the City and volunteers
- **LTVCA, KCCA, ALUS Middlesex, Pollinator Pathways Project** and many others coordinate additional naturalization projects across the region
- City's **Neighborhood Decision Making** program funds additional naturalization projects
- **Carolinian Canada's Go Wild Grow Wild** events with support from the City raise awareness about naturalizing at home (90% of City is private land)

# Naturalization Initiatives In London

- 65% of London's parkland is now naturalized (35% is manicured)
- Area of naturalized parkland is up 5% from 5 years ago, demonstrating City's commitment to naturalization
- Mowing will be further reduced over next 5 years and beyond to continue this positive trend and improve sustainability





# POLLINATOR UPDATE

City of London - A leader in Pollinator Habitat Protection and Enhancement

🦋 **NeighbourGood London** programs including **TreeMe** and the **Neighbourhood Decision Making** (NDM) program, empower residents to plant trees, shrubs and pollinator gardens. The City has funded over half a million dollars in pollinator habitat projects since 2015. NDM winners include many Bee Pollinator Gardens and the **Pollinator Pathways Project**.

🦋 London's urban forest is a key element in the provision of habitat and food for pollinators. The City's **Tree Planting Strategy** outlines the long term plan to increase London's tree canopy cover from 24% to 34% by 2065. **Reforest London** is empowering the community with the **Million Tree Challenge**.

🦋 The Council approved **London Invasive Plant Management Strategy** improves the ecological integrity of our natural areas and restoration plantings improve the diversity of native species for pollinators.

🦋 London City By-laws permit naturalizations, perennial gardens and wildflower gardens on private property.

🦋 **London Community Gardens** – There are 17 community gardens on City property with a simple process for residents to start a new one.



Photo by Ben Porchuk

🦋 **The Urban Agriculture Strategy** is one of the many related plans, policies, and strategies for pollinator protection in London and includes a section on Urban Pollinators.

🦋 **Active & Green Communities and Rain Garden** programs promote environmental awareness and stewardship on private property through community engagement.

🦋 The City's **Adopt-a-Park, Adopt-a-Street, Adopt an ESA** and **Adopt-a-Pond** programs engage communities to plant trees, shrubs and gardens that include milkweed on City property.


🦋 11% of the City (inside the Urban Growth Boundary) is publicly owned parkland, and over 65% of that area is managed as naturalized, non-mowed areas. This area increases every year.




Photo by Morgan Lemieux





 The City of London was recognized with the **Lee Symmes Municipal Award by Ontario Nature**. The Award recognizes municipalities that demonstrate community leadership and exceptional achievement in planning or implementing programs that protect and regenerate the natural environment within a community. Ontario Nature commended the City of London for ensuring a natural legacy for future generations.

 Many government agencies, Conservation Authorities and others are leading additional pollinator habitat initiatives in London, primarily on private property. **Carolinian Canada Coalition In the Zone** program promotes biodiversity action for local wildlife, climate resilience and healthy neighbourhoods.



### Simple ways to make a difference:

- Plant pollinator friendly species like Milkweed.
- Request a boulevard tree at **Service.London.ca**.
- Visit **NeighbourGoodLondon.ca** & **London Environmental Network** to enhance local habitat with your community.



**For more information please contact:**

**NeighbourGood London**

519-661-5336

neighbourgood@london.ca

www.neighbourgoodlondon.ca



# POWERLINE SAFETY



# LOOK UP LOOK OUT

Watch out for  
**Overhead Powerlines**

[esasafe.com](http://esasafe.com)



**Electrical  
Safety  
Authority**



# LOOK FOR and point out overhead powerline to family, friends, and contract workers...



**Ladders**

## **What is the Risk**

One in five non-worker deaths from electrocution are associated with ladders contacting overhead powerlines. Aluminum ladders, or ladders with aluminum parts, will act as conductors of electricity if they contact overhead powerlines.

## **How to Avoid Risk**

Look Up! Always be aware of overhead powerlines when using ladders. Ladders should always be carried horizontally when moving them from point A to point B.

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**Tree Pruning**

## **What is the Risk**

Check to ensure that trees are not contacting powerlines – if they are, notify your Local Distribution Company. Contacting powerlines results in 6% of nonworker electrocutions with powerlines.

## **How to Avoid Risk**

Look Out! Be aware of overhead powerlines that run across your property. Never touch powerlines and never attempt to prune trees around powerlines – only trained and experienced workers should prune trees around powerlines.

---

**Pruning trees back from Hydro lines is dangerous. CONTACT your Local Electric Utility to clear tree growth around powerlines.**

## Maintaining the Electrical Equipment on Your Property

If you have an overhead powerline on your property, you may own the assets. You are legally responsible to maintain the electrical equipment on your property – such as poles and overhead wires – in a safe manner and in compliance with the Ontario Electrical Safety Code.

This includes safely maintaining tree growth and plant material around overhead powerlines to avoid potential electrical hazards. If you're not sure how to determine ownership of the powerlines and related equipment, contact your Local Distribution Company for more information.

### Electrical Hazards Near Powerlines

#### DIRECT CONTACT

Contact with overhead powerlines can happen when using tools such as ladders, pole top pruners and other pruning equipment to prune or remove trees. Branches and limbs caught in the powerlines may become conductive.


#### INDIRECT CONTACT

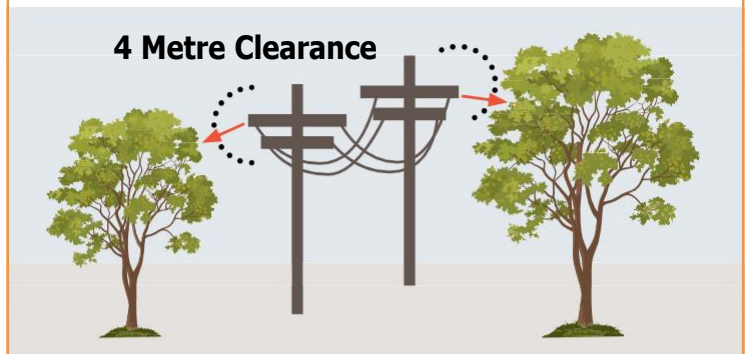
During tree pruning and maintenance activity, branches, people and equipment in close proximity to the overhead powerlines can conduct electricity. You don't even need to touch a powerline to receive a potentially deadly shock. Electricity can arc (jump) to you and your tools if you get too close.

#### DOWNED POWERLINES

Energized powerlines can be pulled down by broken branches and limbs. Anyone standing near the downed powerlines is at risk. Always stay at least 10 metres(33 feet) from a downed wire.



 Getting too close to a powerline can have lethal consequences.



### Understanding Code Requirements

Rule 75-712 of the Code requires owners of privately-owned powerlines to prune and maintain all trees and woody growth so that a minimum clearance of four metres is around the powerlines.

Follow these steps to safely prune trees near powerlines:

- It is strongly recommended that tree-pruning maintenance be completed by a Utility Arborist who has been trained to prune trees around powerlines.
- If you plan to hire someone other than a Utility Arborist to prune or remove trees near the powerlines, it is strongly recommended to make arrangements with the Local Distribution Company to have the powerlines safely disconnected at the source prior to starting work and while the work is being performed.

### Planting New Trees – Plan Ahead

- Avoid planting trees under or around powerlines and electrical equipment. Plan ahead by determining the tree's height and width at maturity based on the Plant Hardiness Index and Plant Hardiness Geographical Map. For more details see the "Tree Pruning Guidelines" in the Resources section at [www.esasafe.com/treepruning](http://www.esasafe.com/treepruning).

# Planting Under or Around Powerlines & Electrical Equipment



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## **LEGAL DISCLAIMER**

This document contains AWARENESS ONLY material to assist members of the Public and Industry Professionals to select the correct tree and location to avoid conflicts with the overhead and/or underground powerlines.

This document does not have the force of the law. Where there is a conflict between this document and any Municipal, Regional and/or Township by-laws, legislation or regulation which may apply, the relevant law prevails.

Contact the local Municipality, Regional and/or Township offices to determine if permits are required to plant trees.

Contact your *Local Distribution Company (LDC)* to determine their requirements to plant trees and/or shrubs under or around powerlines and electrical equipment.

# Introduction

The “Planting Under or Around Powerlines and Electrical Equipment” Guideline responds to the number of reports of powerline contact incidents associated with the pruning or removal of trees, shrubs and vines.

This is one of two guidelines produced by the Electrical Safety Authority with the support of Ontario’s Local Distribution Companies (LDC) and Corban and Goode Landscape Architecture and Urbanism to reduce electrical contact incidents and other electrical hazards when:

- Planting Under or Around Powerlines and Electrical Equipment
- Vegetation Management Around Powerlines

These guidelines provides information and insights to support landscape and arborist trades workers, maintenance workers, and homeowners. The guidelines share important information on potential electrical risks, how to avoid these risks, provincial standards, and best practices that, if followed, can decrease electrical incidents.

This guideline includes sections on:

- Electrical Issues and Hazards
- Avoiding Potential Hazards
  - Planning
  - Planting

A companion guideline has been created that focuses on avoiding electrical issues and hazards when pruning or removing of trees and/or shrubs under or around overhead powerlines and electrical equipment.

We would like to acknowledge the insights and contributions of Corban and Goode Landscape Architecture and Urbanism. Through sharing their insights we have worked to produce easy to use Guidelines for audiences engaging in landscape planning.



# Electrical Issues and Hazards – Planting Under or Around Powerlines & Electrical Equipment

Individuals engaged in planning and/or planting under or around powerlines and electrical equipment, such as Landscape Architects, Landscapers, Municipalities or the public need to be aware of the electrical hazards associated with planting in the vicinity of powerlines or electrical equipment.

## Trees

Some species grow at a rapid rate and at a height which directly interferes with overhead powerlines. Planting the wrong tree under or around overhead powerlines create hazards to members of the public and workers. These include:

### ➔ Potential Hazard or Electrocutation from:

- direct contact – when playing in or working around trees where powerlines are hidden by foliage.
- energized objects – branches and limbs caught in the powerlines may unexpectedly become conductive.
- contact with powerlines – during tree maintenance, pruning or removal, including direct contact by unqualified individuals and contact through tree pruning tools.
- downed powerlines – when energized powerlines are pulled down to the ground by broken branches and limbs.



➔ **Potential Fires** – branches and limbs in close proximity to powerlines can lead to electrical arcing that can create fires.

➔ **Power interruptions** – resulting when branches and limbs that break damaging powerlines during storms or from disease.

When selecting trees for planting, it is important to consider location of overhead powerlines, the growth rate for specific varieties based on the environment and placement.

Qualified **Utility arborists** should do maintenance on trees near overhead powerlines. Any other Landscaper, Arborist, or homeowner should contact the LDC to arrange for power to be disconnected prior to starting work.

## Shrubs

Planting shrubs and other plant material near electrical equipment can:

- ➔ cause an obstruction for powerline maintenance workers;
- ➔ disguise potential hazards;
- ➔ cause damage to underground powerlines;
- ➔ contact energized components through the roots possibly becoming energized.

## Vines

Planting vines at the base of a powerline pole or guy wire will eventually creep and come into contact with energized overhead powerlines or electrical equipment. Vines in contact with powerlines can become energized and be a hazard to the public, cause power interruptions, or fires.



Obstruction around a transformer



Pole growth contacting electrical equipment & powerlines



Guy-wire growth contacting electrical equipment & powerlines

# Getting Started – Planning & Planting to Avoid Potential Electrical Hazards

Trees, shrubs and plant materials help homeowners and business owners create a property that they can enjoy and benefit from. Before starting, it is important to locate overhead and underground powerlines, and to understand the impact of landscape plans on the electrical infrastructure and electrical equipment. Up-front consideration of electrical powerlines and equipment can avoid potential electrical hazards that can occur from contact between trees, shrubs and roots, and electrical powerlines and equipment.

## ➔ Before you start any landscape planning, check for:

- ✓ Municipal, Regional or Township By-Laws that specify preferred tree species and locations for planting.
- ✓ LDC requirements regarding planting under or around the overhead powerlines or around underground equipment including underground powerlines.
- ✓ Easements that may be on the property. Easements may contain underground and/ or overhead powerlines and electrical equipment which allows the LDC the legal right to access properties to install and maintain electrical services to the property and/or neighbourhood. A land title search will identify if there are existing easements.

## Underground Powerlines

Underground powerlines exist in rural, urban and industrial environments and can be compromised when excavating if these powerlines have not been located prior to excavating. All excavations require a locate to be done to identify underground services such as electrical, gas, water, etc.

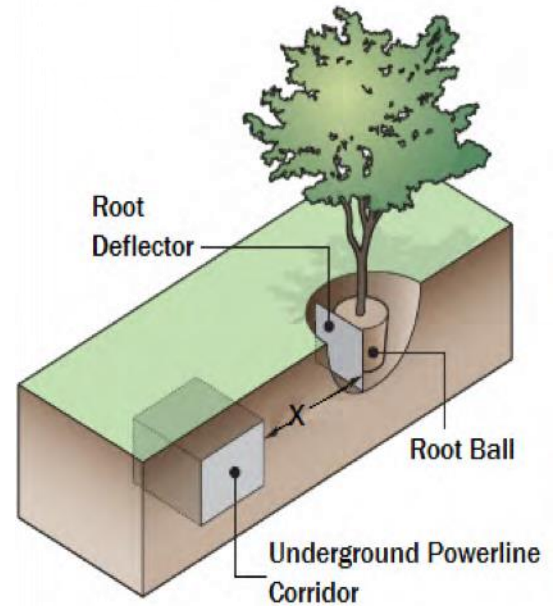
Contact Ontario One Call to request a locate.

**Note: All** locates must be received prior to excavation.

Utilities will only locate utility owned underground services. It is the responsibility of the property owner or excavator/landscaper to locate non utility owned services.

Note: driving stakes in the ground for tree support also requires locates also to be done.

➔ Powerlines may be directly buried, or in conduit, and can be located at different depths depending on grade changes that may have occurred. When planting in the vicinity of underground powerlines, the minimum clearance required from the edge of the root ball to the edge of the underground powerline corridor is 1.0m (3 ft). The LDC can provide their clearance requirements from the underground powerlines to the root ball. If the determined distance cannot be achieved, the LDC may require the installation of a root deflector against the root ball.



ACKNOWLEDGEMENT-HYDRO OTTAWA

## Electrical Equipment – above ground mounted or underground chamber

Depending on the LDC, electrical equipment such as a transformer or switchgear, may be above ground mounted on a concrete pad foundation (pad mounted) or in an underground chamber. Pad mounted electrical equipment, are typically green in color. Obstructions such as structures, fences, trees, shrubs or other vegetation should not be placed near the equipment. Clearance is required around the pad mounted equipment and underground cables for your safety and the safety of Utility workers who require access at all times.



Pad mounted transformer

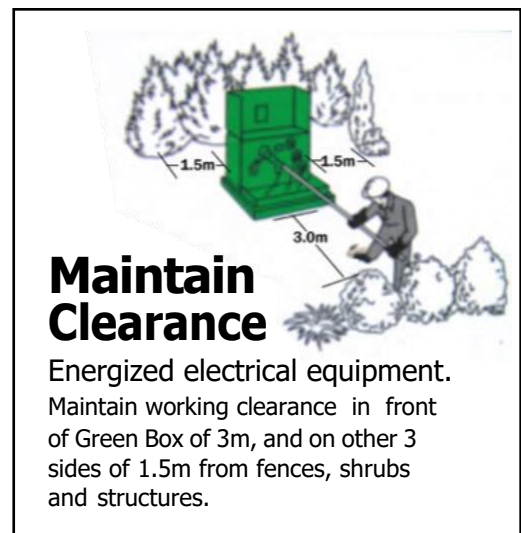


Pad mounted switchgear



Underground Chamber

- ➔ Typically the LDC requires a minimum of 3.0 m (10 ft) in front of the pad mounted transformer door(s) and 1.5 m (4.9 ft) around the sides and back. The door(s) can be identified by the padlock. Pad mounted switchgears however requires a minimum of 3.0m (10 ft) in the front and at the back doors of the unit and 1.5 m (4.9 ft) at the sides.
- ➔ You should also be aware of the presence of a buried 'ground loop' that is installed approximately 1.0 m (3 ft) around the perimeter of the foundation and the minimum of 2 ground rods located at the outside corners of this 'ground loop'. The 'ground loop' protects the public and workers from potential hazards associated with **step and touch** potential that can exist from fault conditions.



## Overhead Powerlines

- ✓ Considering overhead powerlines is critical in the planning and planting of large trees and shrubs. The LDC can assist in identifying the type of powerline:
  - ➔ Primary distribution and transmission powerlines – these are typically non-insulated **bare** conductors and carry high voltage power.
  - ➔ Secondary distribution powerlines – these may be insulated and carry low voltage power.
- ✓ Planting under or around powerlines requires caution to ensure:
  - Delivery of Plant Materials – trees that are being planted should not be delivered under or around the powerlines. Delivery equipment such as a boom truck can come into contact with the overhead wires. The same for digging with equipment such as a high hoe, the equipment can also come into contact with the overhead wires.
  - Trees do not come in contact with overhead powerlines when unloading.
- ✓ A careful review of the tree planting zone in which your landscape project is in will assist in determining the type of trees that can be considered. Tree planting is categorized in 3 different zones; Low, Medium and Tall. Factoring these zones into landscape plans will ensure that the tree at full maturity doesn't come into contact with the overhead powerlines, and will not compromise powerlines if branches and limbs are broken during extreme weather.

- ✓ To ensure accuracy determining the height and width at maturity, it is important to consider the Plant Hardiness Index accompanied with the *Plant Hardiness Geographical Map* (Appendix A). This will confirm where you can plant the specie of tree in proximity to overhead powerlines.

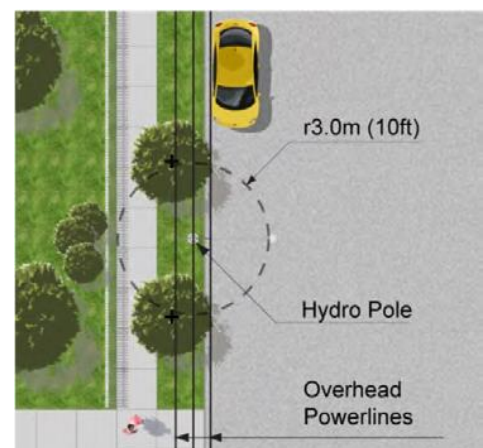


**Low Zone** – is the area under the power lines and extends to 4.5 m (15 ft) on either side. Trees and/or shrubs planted in this zone should have a maximum mature height and spread of 4.5 m (15 ft).

**Medium Zone** – extends from the edge of the outer edge of the Low Zone to a distance of 7.6 m (25 ft) on either side of the power line. The maximum mature height and spread of trees planted in this zone should be 7.6 m (25 ft).

**Tall Zone** – extends from the outer edge of the Medium Zone extending greater than 7.6 m (25 ft) from the power lines. Any strong and healthy tree may be planted in this zone.

**Base Zone near the Hydro Pole** – Trees and/or shrubs should not be placed closer than 3.0 m (10 ft) from the base of a hydro pole.



# Appendix A: Plant Hardiness index

														LOW ZONE – SMALL TREES			
Geographical Area														Latin Name	Common Name	SPREAD	HEIGHT
0a	0b	1a	1b	2a	2b	3a	3b	4a	4b	5a	5b	6a	6b			(m)	(m)
				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	<i>Acer ginnala</i> , Amur Maple		4.5	4.5
								✓	✓	✓	✓	✓	✓	<i>Amelanchier laevis</i> Allegheny Serviceberry, Tree Form		4.0	4.5
								✓	✓	✓	✓	✓	✓	<i>Cornus kousa</i> , Chinese Flowering Dogwood Tree Form		3.5	4.5
										✓	✓	✓	✓	<i>Cornus florida</i> 'Rubra', Pink Flowering Dogwood Tree Form		4.5	4.5
								✓	✓	✓	✓	✓	✓	<i>Magnolia Stellata</i> , Star Magnolia Tree Form		4.0	3.0
								✓	✓	✓	✓	✓	✓	<i>Malus cultivars</i> , Crab Apple varieties		2.5-4.0	4.5
				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	<i>Prunus virginiana</i> 'Schubert', Schubert Chokecherry Tree Form		4.0	4.5

														MEDIUM ZONE – MEDIUM TREES			
Geographical Area														Latin Name	Common Name	SPREAD	HEIGHT
0a	0b	1a	1b	2a	2b	3a	3b	4a	4b	5a	5b	6a	6b			(m)	(m)
				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	<i>Acer ginnala</i> , Amur Maple 'Flame'		7.0	7.0
						✓	✓	✓	✓	✓	✓	✓	✓	<i>Aesculus glabra</i> , Ohio Buckeye		7.0	7.5
								✓	✓	✓	✓	✓	✓	<i>Amelanchier canadensis</i> , Shadblow Serviceberry/Juneberry, Treeform		3.0	7.5
								✓	✓	✓	✓	✓	✓	<i>Amelanchier x grandiflora</i> 'Autumn Brilliance' (PP5717), Tree Form		5.0	7.5
										✓	✓	✓	✓	<i>Cercis Canadensis</i> , Eastern Redbud Tree Form		7.0	7.5
						✓	✓	✓	✓	✓	✓	✓	✓	<i>Crataegus phaenopyrum</i> , Washington Hawthorn Tree Form		7.0	7.5
												✓	✓	<i>Koelreauteria paniculata</i> , Golden Rain Tree		7.0	7.5
								✓	✓	✓	✓	✓	✓	<i>Malus cultivars</i> , Crab Apple varieties		5.0-7.0	7.0
								✓	✓	✓	✓	✓	✓	<i>Malus</i> 'Robinson', Robinson Crab Apple		7.5	7.5
								✓	✓	✓	✓	✓	✓	<i>Malus</i> 'Selkirk', Selkirk Crab Apple		7.5	7.5
								✓	✓	✓	✓	✓	✓	<i>Malus</i> 'Winter Gold', Winter Gold Crab Apple		6.0	7.5
								✓	✓	✓	✓	✓	✓	<i>Prunus sargentii</i> 'Rancho', Columnar Sargent Cherry		3.0	7.5
										✓	✓	✓	✓	<i>Prunus serrulata</i> 'Kwanzan', Kwanzan Oriental Cherry		5.0	7.0
										✓	✓	✓	✓	<i>Pyrus calleryana</i> 'Aristocrat' (PP3193), Aristocrat Callery Pear		7.0	7.5
				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	<i>Syringa reticulata</i> 'Ivory Silk', Ivory Silk Tree Lilac		5.0	7.5
				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	<i>Viburnum lentago</i> , Nannyberry Tree Form		7.5	7.5

\* Malus cultivars come in a variety of species. Select the specie's maximum height for the specific planting zone equipment.

# Appendix A: Plant Hardiness index-cont'd

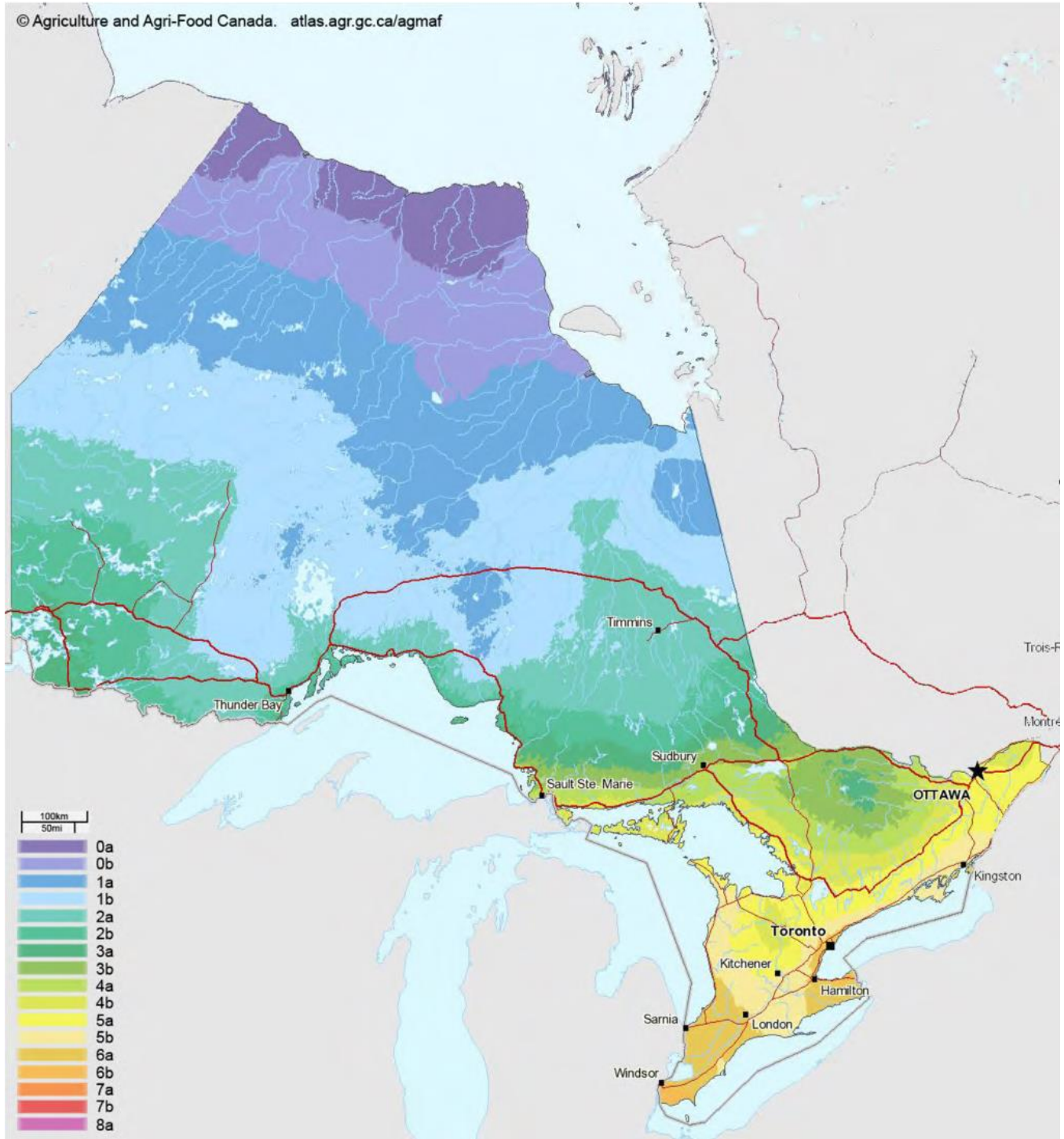
														TALL ZONE – TALL TREES				
Geographical Area														Latin Name	Common Name	SPREAD	HEIGHT	
0a	0b	1a	1b	2a	2b	3a	3b	4a	4b	5a	5b	6a	6b			(m)	(m)	
										✓	✓	✓	✓	<i>Acer campestre</i> , Hedge Maple			10.0	10.0
						✓	✓	✓	✓	✓	✓	✓	✓	<i>Acer x freemanii</i> 'Armstrong', Armstrong Maple			8.0	15.0
								✓	✓	✓	✓	✓	✓	<i>Acer x freemanii</i> 'Jeffersred' (PP4864), Autumn Blaze Maple			13.0	16.0
								✓	✓	✓	✓	✓	✓	<i>Acer x freemanii</i> 'Celzam' (PP7279), Celebration Maple			8.0	15.0
								✓	✓	✓	✓	✓	✓	<i>Acer x freemanii</i> 'Scarsen', Scarlet Sentinel Maple			8.0	15.0
				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	<i>Acer negundo</i> , Manitoba Maple			15.0	13.0
								✓	✓	✓	✓	✓	✓	<i>Acer nigrum</i> , Black Sugar Maple			12.0	15.0
										✓	✓	✓	✓	<i>Acer platanoides</i> , Norway Maple			10.0	13.0
											✓	✓	✓	<i>Acer pseudoplatanus</i> , Sycamore Maple			8.0	13.0
						✓	✓	✓	✓	✓	✓	✓	✓	<i>Acer rubrum</i> , Red Maple			15.0	16.0
								✓	✓	✓	✓	✓	✓	<i>Acer rubrum</i> , 'Karpick', Karpick Red Maple			7.0	12.0
					✓	✓	✓	✓	✓	✓	✓	✓	✓	<i>Acer saccharinum</i> , Silver Maple			15.0	18.0
										✓	✓	✓	✓	<i>Aesculus hippocastanum</i> , Common Horse Chestnut			16.0	18.0
										✓	✓	✓	✓	<i>Carpinus betulus</i> , European Hornbeam			13.0	20.0
										✓	✓	✓	✓	<i>Carpinus betulus</i> 'Fastigiata', Pyramidal European Hornbeam			4.0	12.0
								✓	✓	✓	✓	✓	✓	<i>Catalpa speciosa</i> , Northern Catalpa			6.0	12.0
										✓	✓	✓	✓	<i>Cladrastis lutea</i> , Yellowwood			10.0	12.0
								✓	✓	✓	✓	✓	✓	<i>Crataegus crus-galli</i> var. <i>inermis</i> , Thornless Cockspur Hawthorn Tree Form			10.0	10.0
				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	<i>Celtis occidentalis</i> , Common Hackberry			18.0	20.0
										✓	✓	✓	✓	<i>Celtis occidentalis</i> 'Prairie Pride', Prairie Pride Hackberry			12.0	12.0
								✓	✓	✓	✓	✓	✓	<i>Cercidiphyllum japonicum</i> , Katsura Tree			7.0	15.0
										✓	✓	✓	✓	<i>Corylus colurna</i> , Turkish Hazel			8.0	15.0
								✓	✓	✓	✓	✓	✓	<i>Fagus grandifolia</i> , American Beech			20.0	30.0
								✓	✓	✓	✓	✓	✓	<i>Fagus sylvatica</i> , European Beech			12.0	15.0
								✓	✓	✓	✓	✓	✓	<i>Ginkgo biloba</i> , Maidenhair Tree			11.0	17.0
								✓	✓	✓	✓	✓	✓	<i>Ginkgo biloba</i> 'Autumn Gold', Autumn Gold Maidenhair Tree			10.0	10.0
								✓	✓	✓	✓	✓	✓	<i>Ginkgo biloba</i> 'JFS-UGAZ', Golden Colannade™ Maidenhair Tree			8.0	15.0
								✓	✓	✓	✓	✓	✓	<i>Ginkgo biloba</i> 'Princeton Sentry', Princeton Sentry Maidenhair Tree			5.0	13.0



# Appendix A: Plant Hardiness index-cont'd

														TALL ZONE – TALL TREES			
Geographical Area														Latin Name	Common Name	SPREAD	HEIGHT
0a	0b	1a	1b	2a	2b	3a	3b	4a	4b	5a	5b	6a	6b			(m)	(m)
								✓	✓	✓	✓	✓	✓	<i>Gleditsia triacanthos var. inermis</i> , Common Thornless Honeylocust		13.0	17.0
								✓	✓	✓	✓	✓	✓	<i>Gleditsia triacanthos var. inermis</i> "Impcole", Imperial Honeylocust		10.0	10.0
								✓	✓	✓	✓	✓	✓	<i>Gymnocladus dioicus</i> , Kentucky Coffee Tree		13.0	17.0
										✓	✓	✓	✓	<i>Liquidambar styraciflua</i> , Sweetgum		12.0	15.0
										✓	✓	✓	✓	<i>Liriodendron tulipifera</i> , Tulip Tree		15.0	25.0
										✓	✓	✓	✓	<i>Liriodendron tulipifera</i> 'Fastigiatum', Columnar Tulip Tree		5.0	15.0
								✓	✓	✓	✓	✓	✓	<i>Magnolia x galaxy</i> , Galaxy Magnolia Tree Form		6.0	12.0
								✓	✓	✓	✓	✓	✓	<i>Magnolia x loebneri</i> 'Merrill', Merrill Magnolia Tree Form		10.0	13.0
						✓	✓	✓	✓	✓	✓	✓	✓	<i>Nyssa sylvantica</i> , Black-Gum		10.0	16.0
								✓	✓	✓	✓	✓	✓	<i>Phellodendron amurense</i> , Amur Cork Tree		9.0	13.0
										✓	✓	✓	✓	<i>Platanus x acerfolia</i> 'Bloodgood', London Plane Tree		13.0	16.0
										✓	✓	✓	✓	<i>Pyrus calleryana</i> 'Bradford', Bradford Callery Pear		7.0	13.0
										✓	✓	✓	✓	<i>Pyrus calleryana</i> 'Capital', Capital Callery Pear		4.0	11.0
						✓	✓	✓	✓	✓	✓	✓	✓	<i>Quercus macrocarpa</i> , Burr Oak		13.0	18.0
								✓	✓	✓	✓	✓	✓	<i>Quercus palustris</i> , Pin Oak		13.0	25.0
										✓	✓	✓	✓	<i>Quercus robur</i> , English Oak		13.0	18.0
								✓	✓	✓	✓	✓	✓	<i>Quercus rubra</i> , Red Oak		15.0	16.0
						✓	✓	✓	✓	✓	✓	✓	✓	<i>Robina pseudoacacia</i> 'Bessoniana', Bessoniana Black Locust		6.0	10.0
								✓	✓	✓	✓	✓	✓	<i>Robina pseudoacacia</i> 'Frisia', Frisia Black Locust		8.0	13.0
						✓	✓	✓	✓	✓	✓	✓	✓	<i>Tilia americana</i> , Basswood		13.0	25.0
								✓	✓	✓	✓	✓	✓	<i>Tilia americana</i> 'Redmond', American Linden		10.0	20.0
						✓	✓	✓	✓	✓	✓	✓	✓	<i>Tilia cordata</i> 'Greenspire', Greenspire Littleleaf Linden		12.0	16.0
								✓	✓	✓	✓	✓	✓	<i>Tilia tomentosa</i> , Silver Linden		15.0	23.0
						✓	✓	✓	✓	✓	✓	✓	✓	<i>Ulmus Americana</i> 'Princeton', Princeton Hybrid Elm		16.0	23.0
										✓	✓	✓	✓	<i>Ulmus</i> 'Frontier', Frontier Hybrid Elm		10.0	13.0
										✓	✓	✓	✓	<i>Ulmus parvifolia</i> , Chinese Elm or Lacebark		10.0	13.0
								✓	✓	✓	✓	✓	✓	<i>Ulmus x 'Pioneer'</i> , Pioneer Hybrid Elm		15.0	25.0
										✓	✓	✓	✓	<i>Zelcova serrata</i> , 'Musashino' Zelcova		5.0	15.0
										✓	✓	✓	✓	<i>Zelcova serrata</i> , Green Vase Zelcova (PP5080)		13.0	16.0

# Appendix A: Plant Hardiness Geographical Map



# Definitions

**Easement** – a right granted to a LDC on property owned by others to use their property to support the distribution of electricity. Easements may contain underground and/or overhead powerlines and electrical equipment which requires the LDC to have legal access to property for maintenance and installation of electrical services.

**Limits of Approach** – specifies the required distance between workers and equipment to energized overhead electrical lines and conductors with a nominal phase-to-phase voltage rating set. The LDC should be contacted to define the voltage rating for overhead powerlines where work is being done.

**Local Distribution Company (LDC)** – A Distributor who is licensed under the Ontario Energy Board (OEB) responsible for transmitting electricity to municipal infrastructure including general public and public area.

**Locates** – Requesting of information from a facility owner identifying all their underground facilities by the use of surface markings such as coloured spray paint or flag identifiers, maps or drawings.

**Pad mounted Equipment** – Electrical equipment approved to be installed above ground on a concrete foundation.

**Plant Hardiness Index** – is a geographically defined area in which a specific category of plant life is capable of growing, as defined by climatic conditions, including its ability to withstand the minimum temperatures of the geographical area.

**Root Deflector** – Is a mechanical barrier placed between the tree roots and the electrical cables to prevent damage to the cables. A root deflector can be made from 6.5 mm (1/4") rigid plastic, fibreglass or non-degradable material.

**Step Potential** – Is the voltage entering a person from one foot through the body and exiting the other foot standing near an energized ground object.

**Touch Potential** – Is the voltage entering a person and exiting the body through the feet while contacting an energized object.

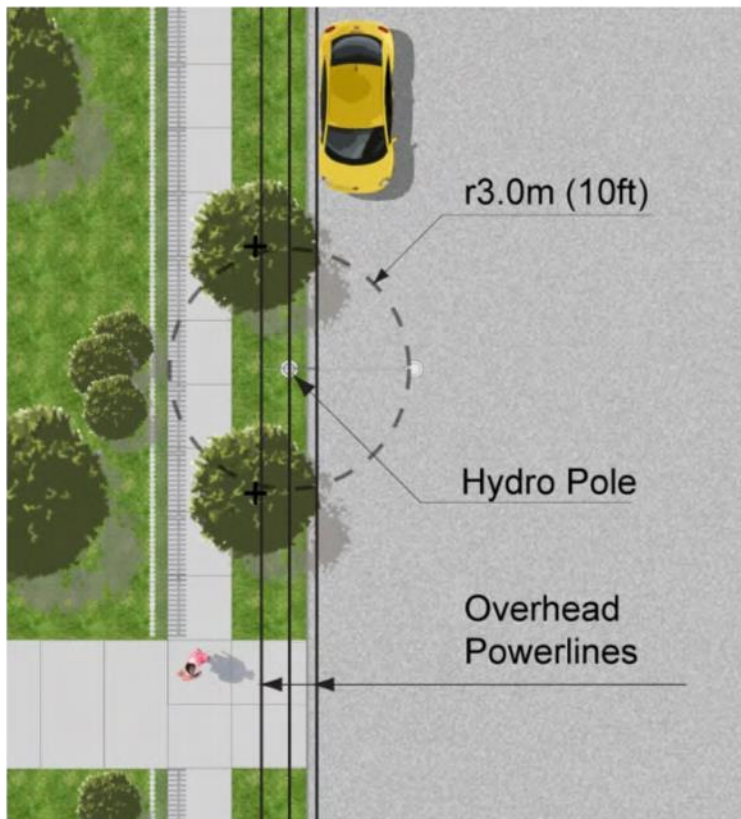
**Utility Arborist** – Arborists who are 444B Certified that are authorized to prune, clear vegetation, fell or remove trees within the Ont. OH&S Act defined '**limits of approach**'.

# Reference Chart A: Tree Planting Zones

## Reference Chart B: Base Zone Near Hydro Poles



**Tree Planting Zones**



**Base Zone Near Hydro Poles**

# Quick Reference Guide: Landscape & Arborist Trades

## 'Look Up! Look Out!' to avoid potential electrical hazards

✓ Locate overhead powerlines and follow Ont. OH&S Act's Limits of Approach

✓ Locate all underground services prior to excavating

### Contact Ontario One Call to obtain all underground locates

Utilities will only locate underground services which they own. It is the responsibility of the property owner or excavator/landscaper to locate non utility owned services.

✓ Check Municipal, Regional and Township By-Laws for specifications

✓ Check with the *LDC* for their planting requirements under or around powerlines and electrical equipment including underground powerlines

✓ Select landscape materials and designs that meet clearance requirements under or around powerlines and electrical equipment, specifically:

✓ **Underground Powerlines** – the minimum clearance required from the edge of the root ball to the edge of the underground powerline corridor is 1.0 m (3ft.)

✓ **Electrical Equipment** – when planting near *pad mounted equipment*:

• **Transformers** – 3.0 m (10 ft.) is required in front of the door(s) and 1.5M (4.9 ft.) on the sides and back

• **Switchgear** – 3.0 m (10 ft.) is required in the front and back doors and 1.5M (4.9 ft.) on the sides

➔ **Overhead Powerlines** – 'look up! look out!'

1. Consider required distances between powerlines and trees or shrubs when selecting species.

• **LOW ZONE** – is the area under the power lines and extends to 4.5 m (15 ft) on either side. Trees and/or shrubs planted in this zone should have a maximum mature height and spread of 4.5 m (15 ft).

• **MEDIUM ZONE** – extends from the outer edge of the low zone to a distance of 7.6 m (25 ft) on either side of the power line. The maximum mature height and spread of trees planted in this zone should be 7.6 m (25 ft).

• **TALL ZONE** – extends from the outer edge of the medium zone extending greater than 7.6 m (25 ft) from the power lines. Any strong and healthy tree may be planted in this zone.

• **BASE ZONE NEAR HYDRO POLES** – Trees and/or shrubs should not be placed closer than 3.0 m (10 ft) from the base of a hydro pole.

2. Delivery of plant materials – Unloading of the tree(s) is not to be done under or around the overhead powerlines. Delivery equipment such as a boom truck can come into contact with the overhead wires. The same for digging with equipment such as a high hoe, the equipment can also come into contact with the overhead wires.

# Quick Guide & Contact Information: Homeowners

## 'Look Up! Look Out!' to avoid potential electrical hazards

- ✓ **Locate Overhead Powerlines** – avoid potential electrical risks from:
  1. **DIRECT CONTACT** – when working around trees where powerlines are hidden by foliage
  2. **ENERGIZED OBJECTS** – branches and limbs caught in the powerlines may unexpectedly become conductive
  3. **PLANTING TREES AND SHRUBS TOO CLOSE TO POWERLINES** – when selecting species, a landscape professional can provide advice on indentifying the best species of trees or shrubs for landscape projects near powerlines.
  4. **DELIVERY OF PLANT MATERIALS** – unloading of the tree(s) is not to be done under or around the overhead powerlines. Delivery equipment such as a boom truck can come into contact with the overhead wires. The same for digging with equipment such as a high hoe, the equipment can also come into contact with the overhead wires.

- ✓ **Locate Underground Powerlines** prior to digging or excavating to plant trees.the minimum clearance required from the edge of the root ball to the edge of the underground powerline corridor is 1.0 m (3ft.)

### **Contact Ontario One Call to obtain all underground locates**

Utilities will only locate underground services which they own. It is the responsibility of the property owner or excavator/landscaper to locate non utility owned services.

- ✓ **Electrical Equipment** – minimum clearance when planting near pad mounted equipment:
  - **TRANSFORMERS** – 3.0 m (10 ft.) is required in front of the door(s) and 1.5M (4.9 ft.) on the sides and back
  - **SWITCHGEAR** – 3.0 m (10 ft.) is required in the front and back doors and 1.5M (4.9 ft.) on the sides
- ✓ **Check Municipal, Regional and Township By-Laws for specifications**
- ✓ **Check with the LDC for their planting requirements under or around overhead powerlines and electrical equipment including underground powerlines**

Check with the *LDC* to identify easements that might apply

GUIDELINES FOR

# Vegetation Management Around Powerlines



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## **LEGAL DISCLAIMER**

This document contains AWARENESS ONLY material to assist members of the Public and Industry Professionals to avoid conflicts with the overhead and/or underground powerlines while pruning trees and the removing trees, stumps and roots.

This document does not have the force of the law. Where there is a conflict between this document and any Municipal, Regional and/or Township by-laws, legislation or regulation which may apply, the relevant law prevails.

Contact the local Municipality, Regional and/or Township offices to determine if permits are required to plant trees.

Contact your Local Distribution Company (LDC) to determine their requirements to prune or remove trees around powerlines and electrical equipment. This will also include removal of tree stumps and roots.



# Introduction

The “Vegetation Management around Powerlines” Guideline responds to the increased number of reports associated with contacting energized overhead powerlines while pruning or removing trees.

This is one of two guidelines produced by the Electrical Safety Authority with the support of Ontario’s *Local Distribution Companies (LDC)* to reduce electrical contact incidents and other electrical hazards when:

- Performing Vegetation management Around Powerlines
- Planting Under or Around Powerlines and Electrical Equipment

These guidelines provide information and insights to support landscape and arborist trades workers, maintenance worker, and homeowners. These Guidelines share important information on potential electrical risks, how to avoid these risks, provincial standards, and best practices that, if followed, can decrease electrical incidents.

This guideline includes sections on:

- Electrical Issues and Hazards
- Identifying and Avoiding Potential Hazards
- Requirements for contacting the LDC

A companion guideline has been created that focuses on avoiding electrical issues and hazards when planting trees and/or shrubs under or around overhead and underground powerlines and electrical equipment.

# Electrical Issues and Hazards – Pruning Trees

Proper maintenance of trees and plant material growing around overhead powerlines is required to avoid potential electrical hazards and power interruptions. Overgrown trees that cover powerlines can create a number of electrical hazards, including:

## ➔ Potential Hazard or Electrocutation from:

- **direct contact** – when playing in or working around trees where powerlines are hidden by foliage.
- **energized objects** – branches and limbs caught in the powerlines may unexpectedly become conductive.
- **contact with powerlines** – during tree maintenance, pruning or removal, including direct contact by unqualified individuals and contact through tree pruning tools.
- **downed powerlines** – when energized powerlines are pulled down to the ground by broken branches and limbs.

➔ **Injuries or Fires** – branches, ladders, pole top pruners and other pruning equipment can create an electrical arc when in close proximity to powerlines resulting in potential injury or fire.

➔ **Power interruptions** – resulting when branches and limbs that break damaging powerlines during storms or from disease.

Reported incidents of overhead powerline contact during tree pruning and tree removal increased from 2001 to 2011. These contacts and near misses involved Arborists, Landscapers and members of the Public who were directly or indirectly **working too close to energized powerlines**. During this period, the Ministry of Labour and Electrical Safety Authority have reported 176 contacts with energized electrical powerlines associated with the pruning or removal of trees. This resulted in two fatalities.

Members of the public should not prune or remove trees and other plant material around overhead powerlines and electrical equipment – they should contact the LDC for assistance.

Arborists and Landscapers are not qualified to work in the vicinity of energized powerlines and must follow the **'limits of approach'** defined by the Ontario Occupational Health and Safety Act (Ont. OH&S Act) Ont Reg 213/91 Section 188(2) for tools, ladders and other equipment capable of conducting electricity. These requirements apply to climbing trees, tree pruning, felling trees and/or removing branches or vines.

Utility Arborists who 444B Certified are authorized to prune, clear vegetation, fell or remove trees within the Ont. OH&S Act defined **'limits of approach'**.

Electrical Work performed on or near electrical transmission or distribution systems shall be performed in accordance with the current document entitled "Electrical Utility Safety Rules" published by the Infrastructure Health and Safety Association in Ont. OH&S Act Ont. Reg. 213/91 Section 181(1).

# Identifying and Avoiding Potential Electrical Hazards

Proper maintenance of trees and plant material growing around overhead powerlines is required to avoid potential electrical hazards and to power interruptions. Overgrown trees that cover powerlines can create a number of electrical hazards.

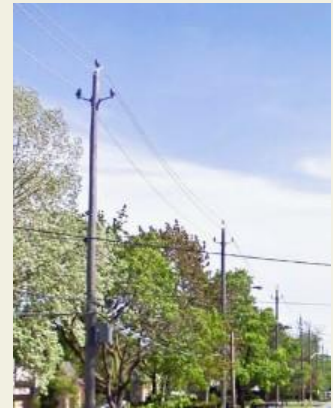
Tools and equipment used to prune trees around powerlines can conduct electricity resulting in electrocution, shock or fire. This equipment does not need to touch a powerline to conduct electricity. Electricity can arc to conductive tools and equipment that come in close proximity to them.



Overgrown vines around electrical equipment





Utility Arborist



## Working Around Powerlines – Required Limits of Approach

Ont. OH&S Act, Ont. Reg. 213/91 Section 188(2), 'limits of approach' specifies no object shall be brought closer to an energized overhead electrical conductor with a nominal phase-to-phase voltage rating set. The LDC should be contacted to define the voltage rating for overhead powerlines where work is being done.

Electrical Voltage – Nominal phase to phase voltage rating	Minimum required working distance
<p><b>750 or more volts, but no more than 150,000 volts</b></p> <p><b>PRIMARY DISTRIBUTION</b>            Primary distribution lines carry high voltage power and are installed on poles located in the front of properties along the right of way or at the back of properties. Primary distribution lines maybe owned and maintained by the LDC or the customer and are typically bare conductors.</p> 	<p>3 metres</p>
<p><b>more than 150,000 volts and 250,000 volts</b></p> <p><b>TRANSMISSION LINES</b>            Transmission lines carry higher voltage and are installed on transmission structures which are typically located in the utility corridor and are also bare conductors.</p> 	<p>4.5 metres and 6 metres</p>

## Residential and Small Commercial/Industrial/Institutional Services

Overhead services to these facilities include primary lines (defined above in the chart) and secondary distribution lines that can be on the same pole.

### Secondary Distribution

Secondary distribution lines carry lower voltages and are typically insulated. These lines are installed on poles located along the right-of-way in the front or back of properties. These lines run from the supply transformer at the pole to a point of attachment on a building. Caution: insulation on these lines and conductors can deteriorate exposing energized components creating a shock hazard.

It is recommended a clearance of 3.0m (10 FT.) should be maintained at all times from tools and secondary lines.



# Contacting the Local Distribution Company:

- *Local Distribution Company (LDC) owned Powerlines* – the *LDC* has the legal responsibility to prune trees around their assets. In these cases the first point to arrange to have trees pruned should be the *LDC who uses Utility Arborists* who have been trained to prune trees around powerlines.

*LDC's* currently operate vegetation management programs that identify tree pruning cycles that range from 2 to 8 years. Tree growth rate ranges for different species and will require different pruning cycles to maintain a 1.0m (3 FT.) clearance between branches and secondary powerlines, and a 3.0m (10 FT.) clearance from branches and primary powerlines.

- *Privately owned Powerlines* – where trees have overgrown on customer-owned powerlines, and a *Utility Arborist* is not being used, the *LDC* should be contacted in order to disconnect the powerlines at the incoming feed into the property.

Note: Most *LDC's* require advanced notice to schedule crews to attend the site. Contact the *LDC* in the area for more information.

- *Removing Trees around Powerlines* – climbing trees and using chainsaws, large equipment and chippers associated with tree removal should only be operated in line with the Ont. OH&S Act '**limits of approach**' to protect workers and the public.

*Removing Tree Stumps & Roots* - large equipment should only be operated in line with the Ont. OH&S Act defined '**limits of approach**' to protect workers and the public. In addition any excavation requires a locate to be done to identify underground services such as electrical, gas, water, etc.

Contact Ontario One Call to request a locate.

- Note: **All locates must be received prior to excavation.**  
Utilities will only locate utility owned underground services. It is the responsibility of the property owner or excavator/landscaper to locate non utility owned services.

# Definitions

**Arborist** – or (less commonly) arboriculturist, is a professional in the practice of arboriculture, which is the cultivation, management, and study of individual trees, shrubs, vines, and other perennial woody plants. Arborists are not trained to work near powerlines and must follow the Ont. OH&S Act '**limits of approach**'. Additional training is required for arborist to work near powerlines, or they need to be Certified Line Clearance maintainers or Utility Arborists.

**Landscaper** – is a professional in the practice of horticulture, which is the cultivation, management and study of plants. Landscape Trades are not trained to work near powerlines and must follow the Ont. OH&S Act '**limits of approach**'.

**Limits of Approach** – specifies the required distance between workers and equipment to energized overhead electrical lines and conductors with a nominal phase-to-phase voltage rating set. The LDC should be contacted to define the voltage rating for overhead powerlines where work is being done.

**Local Distribution Company (LDC)** – A Distributor who is licensed under the Ontario Energy Board (OEB) responsible for transmitting electricity to municipal infrastructure including general public and public areas.

**Locates** – Requesting information from a facility owner identifying all their underground facilities by the use of surface markings such as coloured spray paint or flag identifiers, maps or drawings.

**Utility Arborist** – Arborists who are 444B Certified that are authorized to prune, clear vegetation, fell or remove trees within the Ont. OH&S Act defined '**limits of approach**'.



# Quick Reference Guide: Landscape & Arborist Trades

## 'Look Up! Look Out!' to avoid potential electrical hazards

- Locate overhead powerlines and follow the Ontario Health and Safety Act safe limits of approach to maintain a safe distance to protect workers from electrical shock and arc flash hazards
- Locate underground powerlines prior to excavating and removing tree trunks

### Contact Ontario One Call to obtain all underground locates

Utilities will only locate underground services which they own. It is the responsibility of the property owner or excavator/landscaper to locate non utility owned services.



**Look Up!** – always be aware of overhead powerlines when using ladders. Ladders should always be carried horizontally when moving them from point A to point B.



**Look Up!** – identify overhead powerlines that run through trees. Ensure that tools are kept the required distance from powerlines following the 'limits of approach' defined in the Ont. OH&S Act.



**Look Up!** – check for overhead powerlines and ensure clearance when operating aerial lift equipment and bucket trucks. Always follow the 'limits of approach' defined in the Ont. OH&S Act.



**Look Up!** – check for overhead powerlines when operating back hoes and other equipment. Always follow the 'limits of approach' defined in the Ont. OH&S Act when operating equipment.

**Look Out!** – when excavating and removing tree roots always obtain all underground locates by contacting Ontario One Call.

**Utility Arborists who are 444B Certified are authorized** to prune, clear vegetation, fell or remove trees within the Ont. OH&S Act defined '**limits of approach**'.

Electrical Work performed on or near electrical transmission or distribution systems shall be performed in accordance with the current document entitled "Electrical Utility Safety Rules" published by the Infrastructure Health and Safety Association in Ont. OH&S Act Ont. Reg. 213/91 Section 181(1).

# Quick Guide & Contact Information: Homeowners

## 'Look Up! Look Out!' to avoid potential electrical hazards

- Locate overhead powerlines before pruning trees
- Always maintain a minimum of 3.0m (10 FT.) from all overhead wires
- Contact your LDC to remove, prune trees and trim shrubs around overhead powerlines.
  - ➔ Your LDC has the legal responsibility to prune trees around their assets and uses *Utility Arborists* who have been trained to prune trees and trim shrubs around powerlines.
- Look Up! when doing tree and property maintenance
- Look Out! stay clear of overhead powerlines



**Look Up!** – always be aware of overhead powerlines when using ladders. Ladders should always be carried horizontally when moving them from point A to point B.



**Look Up!** – identify overhead powerlines near trees and ensure you keep tools and equipment a minimum of 3.0m (10ft.) from powerlines.

- Locate underground powerlines prior to excavating and removing tree trunks and/or roots

### **Contact Ontario One Call to obtain all underground locates**

Utilities will only locate underground services which they own. It is the responsibility of the property owner or excavator/landscaper to locate non utility owned services.