

Agenda Including Addeds
Environmental Stewardship and Action
Community Advisory Committee

3rd Meeting of the Environmental Stewardship and Action Community Advisory Committee

February 7, 2024, 4:30 PM

Committee Room #1

The City of London is situated on the traditional lands of the Anishinaabek (AUh-nish-in-ah-bek), Haudenosaunee (Ho-den-no-show-nee), Lūnaapéewak (Len-ah-pay-wuk) and Attawandaron (Add-a-won-da-run).

We honour and respect the history, languages and culture of the diverse Indigenous people who call this territory home. The City of London is currently home to many First Nations, Métis and Inuit today.

As representatives of the people of the City of London, we are grateful to have the opportunity to work and live in this territory.

The City of London is committed to making every effort to provide alternate formats and communication supports for meetings upon request. To make a request specific to this meeting, please contact advisorycommittee@london.ca.

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Environmental Stewardship and Action Community Advisory Committee Report

The 2nd Meeting of the Environmental Stewardship and Action Community Advisory
Committee
January 3, 2024

Attendance B. Samuels (Chair), I. ElGhamrawy, A. Ford, M. Griffith, A.
Hames, M.A. Hodge, C. Hunsberger, A. Pert, N. Serour and L.
Vuong and H. Lysynski (Committee Clerk)

ABSENT: B. Amendola, R. Duvernoy and C. Mettler

ALSO PRESENT: Councillor J. Pribil; B. Somers and J. Stanford

The meeting was called to order at 4:34 PM; it being noted that I.
ElGhamrawy, A. Ford, M. Griffith, A. Hames, C. Hunsberger, A.
Pert, N. Serour and L. Vuong were in remote attendance.

1. Call to Order

1.1 Disclosures of Pecuniary Interest

That it BE NOTED that no pecuniary interests were disclosed.

1.2 Election of Chair and Vice Chair

That, the following actions be taken with respect to the election of Chair
and Vice Chair for the term ending November 30, 2024:

- a) B. Samuels BE ELECTED as Chair; and,
- b) the position of Vice Chair BE DEFERRED until the membership
vacancies have been filled.

2. Scheduled Items

None.

3. Consent

3.1 The 1st Report of the Environmental Stewardship and Action Community
Advisory Committee

That it BE NOTED that the 1st Report of the Environmental Stewardship
and Action Community Advisory Committee, from its meeting held on
December 6, 2023, was received.

4. Sub-Committees and Working Groups

None.

5. Items for Discussion

5.1 Multi-Year Budget Discussion

That, the following actions be taken with respect to the Climate Action
Change Sub-Committee recommendations with respect to the Multi-Year
Budget Discussion:

a) the attached, revised, draft Climate Action Sub-Committee recommendations BE FORWARDED to the Municipal Council Budget discussions for consideration; and,

b) it BE NOTED that the Environmental Stewardship and Action Community Advisory Committee held a discussion with respect to these matters.

6. Adjournment

The meeting adjourned at 5:58 PM.



P.O. Box 5035
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London, ON
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London
CANADA

January 24, 2024

Chair and Members
Budget Committee

O. Katolyk
Director, Municipal Compliance and Chief Municipal Law Enforcement Officer

I hereby certify that the Municipal Council, at its meeting held on January 23, 2024, resolved:

That the following actions be taken with respect to the 1st and 2nd Reports of the Environmental Stewardship and Action Community Advisory Committee (ESACAC), from the meetings held on December 6, 2023 and January 3, 2024, respectively:

a) with respect to the 1st Report of the ESACAC:

- i) the ESACAC recommendations, as appended to the ESACAC Added Agenda, relating to the Yard and Lot Maintenance By-law BE FORWARDED to the Civic Administration for consideration; and,
- ii) clauses 1.1, 2.1, 3.1 to 3.3, 5.1 and 5.2, BE RECEIVED;

b) with respect to the 2nd Report of the ESACAC:

- i) the following actions be taken with respect to the Climate Action Change Sub-Committee recommendations with respect to the Multi-Year Budget Discussion:

- A) the attached, revised, draft Climate Action Sub-Committee recommendations BE FORWARDED to the Municipal Council Budget discussions for consideration; and,
- B) it BE NOTED that the Environmental Stewardship and Action Community Advisory Committee held a discussion with respect to these matters; and,

- ii) clauses 1.1, 1.2 and 3.1 BE RECEIVED;

it being noted that the verbal delegation from B. Samuels, Chair, ESACAC, with respect to this matter, was received. (3.1/2/CWC)

M. Schulthess
City Clerk
/jb

cc: Chair and Members, Environmental Stewardship and Action Community Advisory Committee

Multi-Year Budget Recommendations

prepared by the City of London Environmental Stewardship and Action Community Advisory Committee (ESACAC)

January 3rd, 2024

ESACAC recommends that business case #P-56 Climate Emergency Action Plan (CEAP) Implementation Support should be funded in full.

The Environmental Stewardship and Action Community Advisory Committee (ESACAC) is pleased to advise Council on the 2024-2027 Multi-Year Budget (MYB) as it relates to our committee's mandate, which includes:

- remedial planning toward the clean-up of contaminated areas;
- waste reduction, reuse and recycling programs;
- water and energy conservation measures;
- climate change mitigation;
- the development and monitoring of London's Urban Forest Strategy;
- Climate Emergency Action Plan and other related policies and strategies;
- the maximization of the retention of trees and natural areas;
- and other aspects of environmental concerns as may be suggested by the Municipal Council, its other Committees, or the Civic Administration.

This report contains four sections:

1. Rationale for fully supporting business case P-56
2. Breakdown of support for components of P-56
3. Support for other business cases
4. Overall feedback on the Multi-Year Budget

ESACAC prepared this report based on its review of information that was included in the draft budget. Due to the short period between when the draft budget was released on December 12 and when our committee was able to submit a report (in time for it to be received by Council) we were unable to convene with staff to discuss the budget. Some of our questions and comments reflect gaps in our knowledge left from reading the business case descriptions and trying to contextualize them with other plans, such as the Mobility Master Plan and the Climate Emergency Action Plan. As an advisory committee, our awareness of the City's operations and internal processes is limited. Nonetheless, we are sharing feedback with Council so that our questions and comments may be addressed in its upcoming budget discussions, and priorities we outline below to the best of our ability will ultimately be supported.

1. Rationale for fully supporting business case P-56: When Council declared that climate change represents an emergency two years ago, it committed to implement a Climate Emergency Action Plan. The successes of this Plan, and the returns on investment it will provide for the City, are linked to this budget funding the Plan's initial implementation. **If there's one message for Council to take from our MYB submission, it's that the medium to long-term costs of "doing nothing" (i.e., not funding climate change mitigation and adaptation at the scale recommended by current science) are far higher and will pose major risks to the City's finances indefinitely.**

Why is funding the Climate Emergency Action Plan important? Primarily, it is vital to protecting Londoners. The Plan is necessary to ensure the City can continue to fulfill its strategic objectives and deliver acceptable levels of service into the future. Our climate is changing quickly and severely as the planet accelerates to soon exceed 1.5° of warming, and we may be on our way to 2° of warming by the 2040s. Every additional fraction of a degree of warming magnifies cascading effects in the environment, turning up the dial on risk of extreme heat, wildfires and flooding. London has a long way to go to ensure we stop actively worsening warming through unnecessary combustion of fossil fuels, and transition to cleaner, less costly alternatives. This is where the Climate Emergency Action Plan focuses on *mitigation*.

The effects of climate change are already causing harm in London and are expected to become more severe in the coming years. This is where the Climate Emergency Action Plan emphasizes *adaptation*. If existing and new vulnerabilities are left unchecked, the cumulative economic, social and environmental costs to the City would be

devastating. The ongoing sudden departure from previously-stable conditions is affecting all life on the planet, including London’s Natural Heritage System, which is already under intense stress. Meanwhile, the City is undergoing significant growth, putting strain on infrastructure and services that are vital to mitigation and our ability to adapt to our “new normal”. If the City does not plan its growth using a climate lens, factors that are causing climate change to worsen (namely, Greenhouse Gas Emissions associated with combustion of fossil fuels in buildings and vehicles) become further entrenched. Without urgent adaptation measures, over time the cumulative risks to the City will become more expensive and difficult to get under control. According to the [IPCC Summary for Policymakers](#), “Adaptation and mitigation are already occurring. Future climate-related risks would be reduced by the upscaling and acceleration of far-reaching, multilevel and cross-sectoral climate mitigation and by both incremental and transformational adaptation.”

To get a sense of the severity of these risks, we encourage Council to review the [Ontario Provincial Climate Change Impact Assessment report](#) published in 2023. The following summary table of current and future risks was adapted from the Executive Summary (page 20). By 2050 (in 26 years, or 6 terms of Council) Southwest Ontario is likely to face “High” to “Very High” risk in most indices, notably including “Very High” risk to the population.

Risk Table Legend		
Risk	Most at Risk Regions Abbreviations ¹	
Low	FN	Far North
Medium	NE	Northeast
High	NW	Northwest
Very High	E	Eastern
	C	Central
	SW	Southwest

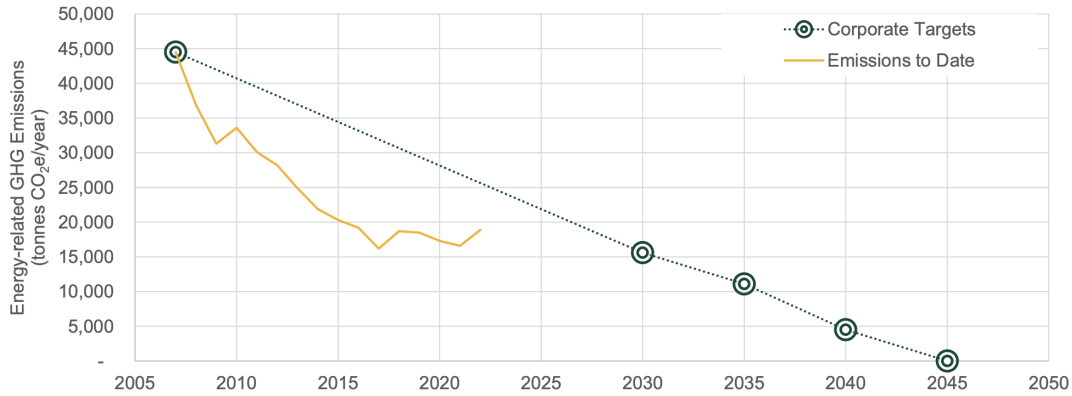
Business and Economy Area of Focus				
Level 1 Categories	Risk			Most at Risk Regions
	Current	2050s	2080s	
Accommodation and Food Services	Yellow	Yellow	Yellow	All
Arts, Entertainment and Recreation	Yellow	Yellow	Yellow	C
Construction	Green	Green	Yellow	C, E, SW, NE, NW
Financial and Insurance	Yellow	Yellow	Yellow	All
Forestry, Fishing and Hunting Economies	Yellow	Yellow	Yellow	All
Information and Cultural Industries	Green	Green	Yellow	All
Manufacturing	Green	Green	Yellow	All
Mining, Quarrying and Oil/Gas Extraction	Yellow	Yellow	Yellow	All
Retail Trade	Green	Green	Yellow	C, E, SW, NE, NW
Transportation Economy	Yellow	Yellow	Yellow	C, E, SW, NE, NW
Utility Services	Yellow	Yellow	Yellow	FN

Food and Agriculture Area of Focus				
Level 1 Categories	Risk			Most at Risk Regions
	Current	2050s	2080s	
Field Crops	Yellow	Yellow	Red	C, E, SW
Fruits and Vegetables	Yellow	Yellow	Red	C, E, SW
Livestock	Yellow	Yellow	Yellow	C, E, SW
Infrastructure Area of Focus				
Level 1 Categories	Risk			Most at Risk Regions
	Current	2050s	2080s	
Buildings	Yellow	Yellow	Yellow	SW, FN
Pipeline Transportation	Yellow	Yellow	Yellow	All
Stormwater Management	Yellow	Yellow	Yellow	All
Transportation	Yellow	Yellow	Yellow	C, E, SW, NE, NW
Utilities	Yellow	Yellow	Yellow	All
Waste Management	Yellow	Yellow	Yellow	C, E, SW, NE, NW
Natural Environment Area of Focus				
Level 1 Categories	Risk			Most at Risk Regions
	Current	2050s	2080s	
Fauna	Yellow	Red	Red	C, SW
Flora	Yellow	Yellow	Red	SW
Aquatic Ecosystems	Yellow	Yellow	Red	C, NE, NW, FN
Terrestrial Ecosystems	Yellow	Yellow	Yellow	All
Regulating Services	Yellow	Yellow	Red	C, NE, FN
Provisioning Services	Yellow	Yellow	Red	C, SW, E
Ecosystem Cultural Services	Yellow	Yellow	Red	NE, NW
People and Communities Area of Focus				
Level 1 Categories	Risk			Most at Risk Regions
	Current	2050s	2080s	
Population	Yellow	Red	Red	C, E, SW
Health Care	Yellow	Yellow	Red	SW
Social Assistance and Public Admin	Yellow	Yellow	Red	E
Indigenous Communities	Yellow	Yellow	Red	All

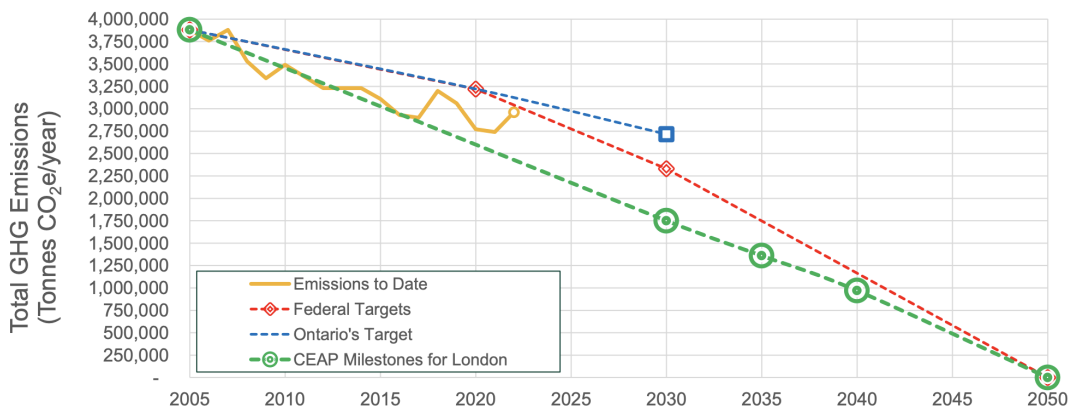
ESACAC anticipates the actions outlined in the CEAP work plans will produce major savings for the City and residents over time, by providing resilience to imminent and potentially catastrophic disruptions at local, regional, provincial, national and global scales. In the medium to long term, the value of these measures will far exceed the current cost of supporting the Plan’s implementation. If Council does not fund CEAP implementation, which encompasses loss-prevention measures, adaptation, capacity building and long-term planning, ESACAC believes the City would sacrifice necessary preparedness and expose itself to greater climate risks likely to impact future budgets.

According to the 2022 Climate Emergency Action Plan Progress Report, the City’s corporate emissions are closer than community emissions to being on-track to meet reduction targets. Therefore, in the next section ESACAC provides recommendations of specific budget items within CEAP that we believe will be most effective at bringing reductions in community emissions into alignment with CEAP objectives.

Corporate GHG Emissions



Community GHG Emissions



2. Breakdown of support for components of P-56: If Council declines to support CEAP in its entirety, ESACAC recommends that the following components of the business case for CEAP highlighted in **Blue** be considered High Priority for inclusion in the Budget. The following table was adapted from pages 679 - 681 of the MYB:

#	Initiative	Total	ESACAC comments
1	Community and Business Support Investment		
1. a)	Home Energy Retrofit Financing Program to leverage funding from the Federation of Canadian Municipalities (FCM) Community Efficiency Financing (CEF) program to support the rollout of a residential building energy retrofit pilot project in 2024/2025 and staff resource to administer the program	\$1,924	ESACAC supports the City's involvement in financing of residential retrofits, and recognizes that in order to meet CEAP emissions reduction targets, Londoners will need to do a lot more than can be covered by small-scale pilot programs focussing on a small percentage of buildings. Selecting buildings strategically to receive retrofitting support can expand the return on investment for the City. ESACAC recommends that if this program is funded, priority access must be given to low-income households, since middle class/wealthier households with good credit can secure financing on their own. Selecting residences that are willing to participate in case study profiles about their retrofit projects could have great educational and demonstrative value for future program advertisements. The federal government had a Greener Homes program that is expected to end in 2024. We heard that a new program may take its place in March, but details are unknown. Has the City evaluated all potential
1. a)	Home Energy Retrofit Financing Program to leverage funding from the Federation of Canadian Municipalities (FCM) Community Efficiency Financing (CEF) program to enable low-interest loans to program participants (tax supported reserve fund contribution to a new climate reserve fund). FCM funding, if an application is approved, could add \$3.0 million to this program and provide \$1.5 million in grant funding to help administer the program.	\$1,500	

			alternative external funding sources for residential retrofits? Can the total in this budget be adjusted without jeopardizing FCM funding?
1. b)	Proactive Communications (Education and Awareness) to enable a wide range of communication techniques to meet the needs of a diverse population.	\$435	A targeted communications strategy should identify and focus on reaching households most likely to benefit from energy retrofits by using available data from utility providers such as London Hydro. Current CEAP communication tools are likely reaching a small proportion of Londoners, and are only accessible to residents fluent in English. As the City grows, low-income households are disproportionately likely to be affected by climate change impacts. Reaching historically-excluded groups will require differentiated approaches to communications for which the City will need to develop capacity.
1. b)	Proactive Communications (Education and Awareness) to invest in new tools that enable a wide range of communication techniques to meet the needs of a diverse population	\$200	
1. c)	Growth of the Transportation Management Association (TMA) - Smart Commute London - Additional investment is required to help grow programs and opportunities to reduce reliance on single occupant vehicle trips, build stronger connections with business parks and emerging employment opportunities outside of London	\$230	This business case is unclear - it does not provide any information on the success of this program, so why spend more money? What is the money for? How are large employers being engaged in participating in recouping costs associated with the TMA? This program appears brand new and yet this investment seems geared towards “growth into more areas of London” – is this premature?
1. c)	Growth of the Transportation Management Association (TMA)- Smart Commute London - to increase bike racks, signage and other commuting amenities	\$40	
2	Community-Led Action Investment		
2. a)	Expansion of London Community Grants Program (with a focus on climate actions and resiliency).	\$1,700	Currently many of London’s environmental nonprofits carrying out CEAP-related work in partnerships with the City depend on multi-year funding for their core operations. Much of the progress to date implementing community-facing parts of CEAP stems from these partnerships. Expansion could help additional organizations to get their footing and grow capacity required to implement CEAP priorities. Is there a way to stretch these funds by introducing a matching program with corporate or other sponsors? ESACAC notes that many recent Neighbourhood Decision Making proposals fall under the City’s climate actions/resiliency objectives, yet they are put in competition with other neighbourhood improvement ideas. Maybe there are synergies to be found between these two programs.
2. b)	Expansion of the Community Connectors Resource Group and Community Liaisons (focus on climate change).	\$950	The City already has community connectors who attend all the festivals, community events etc. ESACAC wonders how this item would actually increase engagement, given connectors and liaisons already provide widespread coverage. A compromise could involve staff intentionally sending out existing resource members to more diverse community events.
2. c)	Creation of a new Neighbourhood Climate Action Champions Program.	\$400	This program description is not well-defined and seems to replicate existing and historic initiatives in the City that have found little success. Few neighbourhoods have existing associations and most are operating at capacity already. We are skeptical that a program like this can be sustained on a basis of volunteerism.
3	Corporate Investment		

3. a)	Accelerate Use of Climate Lens Framework - staff resource and technical funding.	\$450	This is of high priority because the City currently lacks necessary capacity to monitor, assess and manage climate-related risks associated with investments and plans, which constrains evidence-based decision making. For example, the City requires additional technical expertise to develop carbon budgeting/accounting needed for comparing the actual costs of proposals. Parts of the Climate Lens exist but are not applied - why? The Climate Emergency Screening Tool (CEST) was already supposed to be used across all departments and is currently not visibly implemented anywhere. Progress on CEST was described in a report to SPPC in February 2022 (p. 9) <i>“include a standard section in all Standing Committee reports that addresses the Climate Emergency Declaration and, where appropriate, apply the Climate Screening Process (previously called the Climate Emergency Screening Tool – CEET) to the issues that are addressed in each report. This last action is expected to be implemented in the second quarter of 2022.”</i> Next steps for implementing CEST were not mentioned in the 2022 CEAP progress report.
3. a)	Accelerate Use of Climate Lens Framework - technical funding for lifecycle assessment software and investment in collaborative climate lens consulting work with other municipalities	\$300	
3. b)	Climate Change Investment (CCI) Fund (tax supported reserve fund contribution to a new climate reserve fund)	\$16,000	ESACAC supports this in principle and sees potential for strong return on investment and linkages to other CEAP programs, but is unclear how much \$ is required, and what exactly the funding will be used for. Justification for this amount is unclear. If CCI funding is being put towards essential climate change mitigation and adaptation measures, it should be adopted.
3. c)	Facilities energy efficiency and resiliency measures for lifecycle renewal of existing City buildings and development of Net Zero Plan.	\$1,540	The City must lead by example by focussing on adapting its facilities and leading sources of GHG emissions. However, the \$12M seems high - does this include construction of a new City Hall? How is federal and provincial funding being leveraged to facilitate these upgrades? Would potentially be helpful if this funding could be used in conjunction with CCI Funds to incentivize private firms to incorporate energy efficiency in construction or install solar. Partnerships with local vendors could help to showcase solutions. As the City implements climate solutions, it can encourage greater public awareness and participation by communicating and celebrating its successes more.
3. c)	Facilities energy efficiency and resiliency measures for lifecycle renewal of existing City buildings and development of Net Zero Plan (capital investments).	\$12,627	
3. d) i)	Fleet transition to zero emission and clean energy technologies: Implement fuel conservation program through the installation of Telematics on all City vehicles.	\$1,232	“Municipal building and fleet vehicles have the largest share of corporate energy-related emissions” (p. 41 of the 2022 CEAP progress report). These upgrades are necessary to achieve the City’s corporate targets for reducing emissions. At some point, EV costs will decline as demand and supply increase. For fleet vehicles that are used exclusively for short trips, consider using PHEV (plug-in hybrid electric vehicle) as a lower-cost transition instead of full electric.
3. d) ii)	Fleet transition to zero emission and clean energy technologies: Low-Carbon Fuel Switching - Renewable Natural Gas (RNG) delivery for Waste Management trucks.	\$317	
3. d) ii)	Fleet transition to zero emission and clean energy technologies: Power and infrastructure changes for mobile delivery of RNG at EROC	\$500	
3. d) iii)	Fleet transition to zero emission and clean energy technologies: Mechanic training, special tools and test equipment to support electrification.	\$292	
3. d) iii)	Fleet transition to zero emission and clean	\$1334	
			How can the City find operational efficiencies to reduce the total number of vehicles required? How is the total

	energy technologies: Procurement of electric vehicles and equipment.		size and composition of the fleet justified? Unclear how telematics data will be used towards reductions in the overall size of the fleet and transitioning from unnecessary use of large trucks. ESACAC recommends that smaller vehicles should be used for operations purposes wherever possible.
3. d) iii	Electric vehicle and equipment charging infrastructure.	\$4000	ESACAC supports the creation of more charging infrastructure, but is unclear about the intended uses of infrastructure captured in this business case. Is it exclusively for supporting the City's fleet? Is it for use by City employees? We would like to see charging stations at civic facilities including libraries, municipal parking lots, etc. Costs of this infrastructure are coming down, and may be cheaper in future budgets. Are provincial and federal incentives used? (e.g., EV ChargeON program)
3. e) i	Climate-related financial disclosures in the City's annual financial statement reporting-staff resource and consulting to support additional regulatory requirements	\$482	Such disclosures are likely to become regulatory requirements in the near future; this is not really optional. More info
3. e) ii	Review and implement a corporate ESG strategy to guide financial decision-making, enhanced ESG reporting and a carbon accounting/budgeting process.	\$560	Carbon budgeting is a vital component of the climate lens that the City is currently lacking. An upper limit on the amount of carbon that can be "spent" without exceeding CEAP targets, and accounting for the carbon associated with project proposals, are necessary for Council to make decisions that support sustainable growth and not just "business as usual".

3. Support for other business cases: ESACAC recommends the following business cases be prioritized for inclusion in the 2024-2027 Multi-Year Budget.

BC #	Name	Average Tax Levy Impact (%)	2024 to 2027 Total (\$)	ESACAC comments
P-51	LTC - Transit Service Hours Growth	0.47	16,052,000	Minimum levels of transit service need to increase for non-vehicular transportation to be viable in many parts of the city, particularly along busy transit corridors and in new developments where service is absent. Reducing dependence on personal vehicles, by removing barriers for residents to adopt alternatives, is a priority for climate change mitigation.
P-31	Parks Operations Service Delivery Enhancements	0.07	2,332,000	Core park maintenance services need to improve to keep up with increased use and demands of parks. For example, garbage collection service in parks is currently insufficient and results in complaints, trash spills and potential biohazards.
P-61	Ecological Master Planning Funding	0.01	170,000	ESACAC supports fully funding the CMPs, post-development EIS monitoring, and the scheduled reviews of the Environmental Management Guidelines.
P-62	Environmentally Significant Areas Management	0.01	296,000	ESACAC supports this business case recognizing increasing use and strain on the City's ESAs since the pandemic and the need for capacity improvement. Council cut the budget in 2014, which reduced staffing by 1 FTE. Meanwhile the amount of land to be managed has increased.
P-26	Community Gardens Program	0.01	195,000	The existing program is at capacity and cannot meet growing demand. More Londoners are facing food insecurity and as

	Expansion to Support Food Security			density increases, communal areas for urban agriculture are becoming more important. Facilitating agriculture in the City to feed more people reduces pressure on other programs and services.
P-32	Naturalization of Boulevards and Reduced Roadside Cutting	0.00	151,000	ESACAC supports this business case, recognizing the cost savings it would provide in the medium to long term, as well as ecological and social benefits. However, we also encourage the City to be proactive about developing and implementing landscaping standards for boulevard gardens that will maximize biodiversity benefits and limit risks. The business case says the following: <i>“Rather than letting grassed boulevards overgrow in their existing state, targeted roadsides would be re-established with plantings of meadow grasses, wildflowers, shrubs, trees and other landscape features.”</i> ESACAC recommends that the City should require strategic planting of approved NATIVE/INDIGENOUS plant species that are well adapted to roadside settings (e.g., tolerant of salinity, limited height) to improve prospects of plantings’ survival, and to prioritize areas lacking vegetative cover that are susceptible to heat island effects. Where possible, direct community involvement in boulevard naturalization projects should be encouraged. Partnerships with community organizations could help with sourcing native plants and seeds and long-term stewardship. Public information signs will likely be helpful to reduce complaints. ESACAC can assist to develop this approach.

4. Overall feedback on the Multi-Year Budget:

ESACAC recognizes that unfortunately, financial constraints on this budget will require Council to make difficult sacrifices as not every business case can be supported. During our review, we considered alternative ways that the actions outlined in business cases could receive support. Below we provide three pieces of feedback based on our observations.

- a) **We found that many of the business case descriptions lack details about applicable external funding.** ESACAC is concerned that the City is falling short of unlocking all available external funding sources and partnerships to cover climate change expenditures. Existing and new programs from the provincial and federal governments, sustainable finance tools, foundation grants and partnerships with neighbouring municipalities, local community groups and industry could help to alleviate budgetary pressures associated with climate change mitigation and adaptation investments. How does the City prioritize which opportunities to go after? We suspect that some value is being missed, and given limited financial resources available through the tax base, the City could benefit from increasing capacity to develop partnerships and ultimately secure greater external funding.

We are unsure how the City delegates responsibility for finding, applying to and reporting on external funding sources in general. We were unable to identify any business cases that, if supported, would directly improve capacity to access external funding. Other municipalities employ staff whose roles are specialized for securing funding. Institutions like Western University employ dedicated staff in Research Offices who are responsible for fundraising (for example, the research office at the Schulich School of Medicine and Dentistry brings in over \$100 M annually). How can the City be more aggressive in finding complementary sources of funding to support current and emerging demands of the budget?

We recognize the City does have a successful track record at securing external funding, but we are unable to access consolidated information about this. It may be beneficial for transparency to standardize how information about external funding opportunities, awarded funds and program eligibility is shared between divisions of the City and with Council. For example, in future budget preparations, a table could be used to provide details about applicable external funding for individual business cases.

ESACAC proposes the City consider three potential avenues to improve access to external funding:

1. Finance staff could implement a new process to keep track of work completed to date on securing external funding for climate action priorities City-wide. This information could be periodically compiled into a living document to be made available to the public.
 2. The City could contract partners with existing grant writing capacity for a share of the value of the award. For example, UTRCA, Western University and LEN have had great success with securing funding for projects related to climate change adaptation. However, grant writing activities by smaller non-profit organizations can pose a major drain on their resources with unpredictable returns.
 3. The City could expand the existing role of Government Affairs to include monitoring of external opportunities as well as coordinating submissions across divisions to climate change funding programs offered by other levels of government.
- b) **We suspect that pressure on the budget from some of the more expensive business cases could be exacerbated by inefficiencies and structural issues that are deserving of further study.** As service demands are increasing, it is important that additional investments are effective in terms of actually increasing capacity to keep pace. In particular, ESACAC is concerned about the apparent lack of feedback between LTC service expansion and developments occurring outside the existing service area. Without a mechanism to factor long-term transportation services and infrastructure into planning processes for new subdivisions, the City will continue facing growing costs and more Londoners will end up making trips in single-occupancy vehicles. ESACAC recommends that the City uphold its continuous improvement model and, through strategic audits focussing on the largest budget requests, examine sources of operational inefficiencies within and between the City's divisions and commissions, as well as internal structural factors and sources of friction contributing to elevated costs of service delivery.
- c) **The budget includes several items (TS 1348-1 to TS 1348-9) related to Wonderland Road widening projects that we are unsure about.** The bulk of the cost (\$100,460,000) is post-2027 for the Guy Lombardo bridge work that was outlined in the Wonderland Road EA before the project was suspended. Basically, there was not enough room once bike lanes were included for complete streets, and there would be negative impacts to the natural environment. ESACAC has 4 questions about these road expansion projects:
- 1) How are these projects being screened using the climate lens? Didn't Council already do this [back in 2021](#)?
 - 2) Why is this being included in the MYB before the Master Mobility Plan is finalized? (see below under *Current Status*)
 - 3) If the Mode Shift that Council approved for the Master Mobility Plan is 35%, are these widening projects still required? If not, could Council remove these funds from the budget and repurpose them?
 - 4) What do these projects do to the next Development Charge? If it is not in the next DC, where is the money going to come from for these projects?

The following quote is from the Wonderland Road EA:

“Current status

In September 2021, the Wonderland Road Environmental Assessment was suspended at the direction of London City Council after the City completed a screening of current major transportation projects in relation to climate change and the City's declaration of a Climate Emergency.

The role and function of Wonderland Road will be considered as part of London's Mobility Master Plan. This plan is currently being developed and it will determine how London prioritizes transportation and mobility infrastructure, programs and policies for the next 25 years. This plan will also include actions to address traffic congestion areas on Wonderland Road with a focus on transit, high occupancy vehicle use and active transportation.”

Report to Strategic Priorities and Policy Committee

To: Chair and Members
Strategic Priorities and Policy Committee
From: Kelly Scherr, P.Eng., MBA, FEC
Deputy City Manager, Environment & Infrastructure
Subject: 2023 Climate Emergency Action Plan Update Report
Date: January 16, 2024

Recommendation

That, on the recommendation of the Deputy City Manager, Environment & Infrastructure, this report **BE RECEIVED** for information.

Executive Summary

Purpose of this Report

Council directed staff to create an update report for CEAP designed to provide current information and address any new items directed by Council or items of significance to climate change. The update report is in addition to the annual Progress Report that will be submitted in May/June each year. The same five key outcome areas used in the 2022 Progress Report are the foundation for the update:

1. CEAP Actions by Area of Focus
2. Climate Actions by Others in the Community (and Interested Parties)
3. Climate Actions by Other Levels of Government
4. Greenhouse Gas Emissions
5. Weather Trends and Impacts

The update report does not contain details on London's greenhouse gas emissions for 2023 as data for these measurements rely on sources that are only published once per year. These data will be provided in the next Progress Report.

1. CEAP Actions by Area of Focus (Subsection 2.1)

Annual Progress Reports, like the 2022 CEAP Progress Report presented in May 2023, provide a detailed analysis of the progress and completion status of the actions. This update report does not go into the same level of detail, but instead includes highlights of actions and activities for the Areas of Focus.

Use of the Climate Lens Framework on Corporate Projects and Programs

The City's Climate Lens Framework was used to inform decision-making in a number of areas across the enterprise in 2023 and informed changes in processes to ensure that climate change issues were embedded in key areas. Examples include the additional integration of climate considerations in the ReThink Zoning project, the Master Mobility Plan project and others, and processes that evolved with the help of the Climate Lens Framework included the Multi-Year Budget process, the Information Technology Services intake process, and the process to review and revise the Design Specifications and Requirements Manual (DSRM).

Sample of CEAP Actions in 2023

Many activities and initiatives contributed to the advancement of actions in the CEAP in early 2023, including the creation of climate change awareness training modules for staff, completion of the Connected and Automated Vehicle Plan, and finalization of the Transportation Management Association. Tangible improvements to the climate performance of City assets were also made, including deep energy retrofits of the Kinsmen Recreation Centre, which was undertaken with funding support of \$2.19 million (80 per cent of costs) from the Government of Canada's Green and Inclusive Community Buildings Program.

Work also continued on key initiatives like the Mobility Master Plan, climate adaptation plan (Discussion Primer), and the integration of natural assets into corporate asset management planning. In addition, City staff engaged with researchers and participated in knowledge mobilization events for two large-scale, federally funded initiatives led by academics to find innovative solutions to multi-solve the climate, housing, and biodiversity crises, and ensure that emissions reduction projects, policies and programs align with Canada's national reduction commitments.

Details specific to London Hydro and how it continues to support the London's CEAP through a variety of programs and actions are contained in Appendix A.

A Few Upcoming Activities in 2024

Green in the City, an awareness and education initiative focusing on the environment and climate change will proceed from November 2023 to April 2024 by traveling to different libraries and City facilities across London.

Continued deep energy retrofits of City facilities will be prioritized, including work at Earl Nichols Recreation Centre which will proceed with additional Federal funding. Physical flooding resilience measures to bolster the West London Dyke and the Broughdale Dyke will also advance in 2024 with funding support from the Federal Disaster Mitigation and Adaptation Fund.

2. Climate Actions by Others in the Community (Subsection 2.2)

Achieving the goals of the CEAP requires effort from all sectors in London and is influenced by actions of others outside London. Several recent examples in the Businesses and Institutions sectors and Households, Individuals and Community Groups are listed in this SPPC report.

Evidence of continued progress on climate action in the Business and Institutional sectors can be found in the actions of Green Economy London (GEL), Enbridge's continued support of the residential hybrid home heating pilot, the expanded offerings of sustainability-themed courses and support for student-led pilot initiatives addressing climate action at Western University, and London Hydro's continued prioritization of grid resilience improvements and participation in a local microgrid pilot project.

Individuals, Households and Community Groups have similarly been active in climate change action, as evidenced by recent work in London including the London Environmental Network (LEN), ReForest London, Climate Action London and the creation of the new London Greening Health Collaborative. Individual Londoners have shown higher-than-expected interest in the residential Ontario Clean Home Heating Initiative (hybrid heating) and increasing interest in zero emissions vehicles ownership, with a 21 per cent increase in the number of zero emission vehicles registered in London during the first half of 2023.

3. Climate Actions by Other Levels of Government (Subsection 2.3)

Actions taken at the provincial and federal government levels directly or indirectly influence climate change actions and greenhouse gas emissions in London.

In 2023, nine federal and five provincial actions are noted in this SPPC report. Some of these actions are directly related to the City of London, such as the federally funded pilot projects being undertaken by Western University and Comcor Environmental pilot projects for innovative monitoring systems to detect methane emissions at Canadian landfills, using the W12A Landfill as a test site. Reducing methane emissions is a federal priority, given its higher global warming potential.

In November, the Commissioner of the Environment and Sustainable Development from the Auditor General to the Parliament of Canada issued a report that Canada is not on track to meet the 2030 target to reduce Canada-wide greenhouse gas emissions by at least 40 per cent below the 2005 level by 2030.

Ontario still maintains a 2030 greenhouse gas emission reduction target (30 per cent reduction from 2005 levels) that is less ambitious than the target for Canada (40 to 45 per cent reduction from 2005 levels).

Ontario increased its use of natural gas for power generation in 2023 compared to 2022 (as of September) and this is expected to increase further between now and 2030. Actions being taken by the federal government as part of their goal to decarbonize electricity grids Canada-wide by 2035, as outlined in their draft Clean Electricity Regulations, would require the province to accelerate plans to phase out and/or employ carbon capture and storage for the use of natural gas for power generation should this draft regulation be enacted.

4. Greenhouse Gas Emissions (Subsection 2.4)

London's corporate and community greenhouse gas emissions for 2022 were reported on May 30, 2023, as part of the 2022 CEAP Progress Report; corporate energy-related greenhouse gas emissions were 58% lower compared to 2007 and community greenhouse gas emissions were 24% lower than 2005 levels.

London's methodology for reporting community greenhouse gas emissions allows for the presentation of results earlier than other jurisdictions. No other Ontario municipality has reported 2022 community greenhouse gas emissions at the time of writing this report (December 2023). Available details from 11 peer municipalities and 6 selected municipalities and emerging trends with respect to greenhouse gas emission generation in Canada are contained in Appendix B.

5. Weather Trends and Impacts (Subsection 2.5)

As discussed in the previous Progress Report, documenting weather events and trends that will eventually influence the evolution of London's climate is part of Areas of Focus 8, Adapting and Making London More Resilient, and part of the development of the Climate Change Adaptation Discussion Primer. Wind, rain and higher overall temperatures are examples of how severe weather will impact the ability of London to adapt and become more resilient.

Locally, the significant weather events in 2023 were based on extreme variations. January and February were warmer than normal, March and April experienced heavy rains followed by a drought in May and more July rainfall than normal. September and October were both well above average temperatures.

Across Canada the weather was dominated by wildfires with several occurring on both coasts, Alberta and in northern Ontario and Quebec. Wildfire smoke travelled to southern Ontario and Northeastern U.S. creating poor local air quality. Eastern Ontario and Quebec are becoming the new Canadian 'tornado alley' experiencing one-half (being 37) of Canada's tornadoes in 2023.

Third Party Assessments of London's Climate Actions (Subsection 2.6)

The City of London participates in a number of initiatives to help gauge the relative strengths and weaknesses of London's climate actions compared to other municipalities in Canada and around the world. This allows for sharing of best practices, other knowledge transfer, and optimizing the use of human and financial resources. These include the following initiatives:

- Global Covenant of Mayors – In 2023, a preliminary assessment indicates that the City of London is compliant with all mitigation and adaptation requirements as well as two of three requirements related to energy access and poverty.
- CDP Cities – The CDP Cities Score is based around questions on both climate change mitigation and adaptation in the areas of governance, assessment, planning and actions with some detail on sector-specific metrics. In 2023, the City of London received an overall score of A-, with a score of A for adaptation measures and a score of A- for mitigation measures.

- WWF One Planet City Challenge – 2023 is the first year that the City of London has participated in this initiative. For 2023, the City of London received an overall score of 119 out of 150 (79%).
- Corporate Knights Sustainable Cities Index - 2023 is the first year that the City of London has participated in this initiative involving 70 cities world-wide and 10 in Canada. London received a B grade overall and ranked 29th.
- Partners for Climate Protection – Operated by the Federation of Canadian Municipalities and ICLEI Canada, the City of London achieved the final milestone (Milestone 5) in 2013 for both Corporate and Community activities and this milestone remains unchanged.
- National Climate League – Operated by The Climate Reality Project Canada, the London participates in this citizen-led initiative through the volunteer efforts of members from Climate Action London. Information from between 50 and 60 cities is compiled each year by volunteers on a number of climate, sustainability and social justice indicators.

Linkage to the Corporate Strategic Plan

Municipal Council recognizes the importance of climate change mitigation, climate change adaptation, sustainable energy use, related environmental issues and the need for a more sustainable and resilient city in its 2023-2027 Strategic Plan for the City of London. Specifically, London's efforts in both climate change mitigation and adaptation address these areas of the Strategic Plan, at one level or another:

- Reconciliation, Equity, Accessibility and Inclusion
- Housing and Homelessness
- Economic Growth, Culture, and Prosperity
- Mobility and Transportation
- Wellbeing and Safety
- Climate Action and Sustainable Growth
- Well-Run City

Analysis

1.0 Background Information

1.1 Purpose of this Update Report

Council directed staff to create an update report for CEAP designed to provide current information and address any new items directed by Council or items of significance to climate change. The update report is in addition to the annual Progress Report that will be submitted in May/June each year. The same five key outcome areas used in the 2022 Progress Report are the foundation for the update:

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1.2 Previous Reports Related to this Matter

Relevant reports that can be found at www.london.ca under Council meetings include:

- May 30, 2023, 2022 Climate Emergency Action Plan Progress Report, Report to the Strategic Priorities and Policy Committee (SPPC)
- April 5, 2022, Overview of Engagement and Feedback on Draft Climate Emergency Action Plan, Report to the SPPC
- February 8, 2022, Draft Climate Emergency Action Plan Report to the SPPC
- April 27, 2021, Update – Development of the Climate Emergency Action Plan to the SPPC
- August 11, 2020, Climate Emergency Action Plan Update Report to the SPPC
- November 26, 2019, Climate Change Emergency Update Report to the SPPC
- April 23, 2019, Climate Emergency Declared at Municipal Council

1.3 Current Goals and Milestone Targets

This SPPC report covers climate change action updates in 2023 in addition to what was provided in the May 2023 CEAP Progress report. Funding and resources for implementing the CEAP was based on approved budgets for 2022 and 2023. It was recognized that several existing approved projects and programs were able to proceed, while other initiatives need to wait until funding and resources could be considered as part of the 2024-2027 Multi-Year Budget deliberations. No new or additional budget or increased resources were assigned in 2022 or 2023 to CEAP actions.

The CEAP is a community-wide plan that was unanimously approved by Council in April 2022 following the declaration of a climate emergency in 2019. The CEAP sets out actions to drive progress towards these goals:

- Net-zero community greenhouse gas (GHG) emissions by 2050;
- Improved resilience to climate change impacts; and
- Bring everyone along (e.g., individuals, households, businesses, neighbourhoods).

The implementation of the CEAP is guided by milestone greenhouse gas emission targets for both London as a whole and the Corporation of the City of London:

- For London as a whole (community-wide):
 - 55 per cent below 2005 levels by 2030;
 - 65 per cent below 2005 levels by 2035;
 - 75 per cent below 2005 levels by 2040; and
 - Net-zero emissions by 2050.
- For the Corporation of the City of London:
 - 65 per cent below 2007 levels by 2030;
 - 75 per cent below 2007 levels by 2035;
 - 90 per cent below 2007 levels by 2040; and
 - Net-zero emissions by 2045.

The implementation of the CEAP is intended to be a whole community effort, with actions identified for the City, the community, businesses and institutions, and leaders throughout and near London.

1.4 Actions and Areas of Focus in CEAP

The CEAP includes 59 Categories of Actions and contains 200 individual actions, ranging from basic to complex, across ten Areas of Focus. A breakdown of the type of actions within each Area of Focus are included in Table 1. Some actions in the CEAP address specific deliverables or achievements that can be tied to a timeline (e.g., Transforming Buildings and Development's Action 2.a. "Reduce or eliminate parking minimums within the Zoning by-law") while other actions require ongoing efforts and do not have a specific targeted end date (e.g., Transforming Transportation and Mobility's

Action 2.c. “Continue to Support the Active and Safe Routes to School Program”). Table 1 differentiates between these two types of actions and categorizes them as “timeline” actions and “ongoing” actions.

Table 1: Area of Focus Workplan Actions Identified as Timeline or Ongoing

Area of Focus	Total Actions	Timeline Actions	Ongoing Actions
1. Engaging, Inspiring and Learning from People	9	2	7
2. Taking Action Now (Household Actions)	18	6	12
3. Transforming Buildings and Development	22	19	3
4. Transforming Transportation and Mobility	30	22	8
5. Transforming Consumption and Waste as Part of the Circular Economy	21	19	2
6. Implementing Natural and Engineered Climate Solutions and Carbon Capture	15	7	8
7. Demonstrating Leadership in Municipal Processes and Collaborations	44	24	20
8. Adapting and Making London More Resilient	9	4	5
9. Advancing Knowledge, Research and Innovation	9	8	1
10. Measuring, Monitoring and Providing Feedback	23	2	21
Total	200	113	87

1.5 Recent Council Directions

Following the receipt of the 2022 Climate Emergency Action Plan Progress Report by Council on June 6, 2023, direction was provided to staff as follows:

“...That the following actions be taken with respect to the 2022 Climate Emergency Action Plan Progress Report, dated May 30, 2023:

- a) the above-noted report BE RECEIVED; and
- b) the Civic Administration BE DIRECTED to include the following specific actions as part of the implementation of the Climate Emergency Action Plan (CEAP):
 - i) develop and deliver CEAP training to all current and future staff through the onboarding and continued learning processes in a manner consistent with current internal learning and development programs (e.g., Anti-Racism, Anti Oppression) to ensure that all staff members understand how to align their work to CEAP outcomes and make changes in their everyday routine work to align with targets;
 - ii) bring a CEAP update to SPPC twice a year; a comprehensive progress report in May and an update report in the fall;
 - iii) develop a Net-Zero Emission Plan for Corporate Assets to ensure Fleet & Facilities can achieve 2045 corporate targets subject to the approval of appropriate funding in the 2024-2027 Multi-Year Budget;
 - iv) ensure that asset management projects such as retrofits, replacements, renewals, and rehabilitations of City infrastructure make significant and visible efforts to be in line with net zero emission 2045 corporate targets, consistent with CEAP Area of Focus 7, 6a and 6b, while the plan noted above is being developed subject to the approval of appropriate funding in the 2024-2027 Multi-Year Budget. (4.1/16/SPPC) (E02-2023)”

This does not include Council recommendations that are specific to Standing Committee reports where directions support increased climate actions, adaptation and/or resiliency.

2.0 Discussion and Considerations

Reporting progress on CEAP on an annual basis (May/June each year) and the update occurs by examining five key outcome areas (Table 2).

Table 2: Reporting Progress on CEAP

Progress Reporting Outcome Area	Subset of Outcome Area
1. CEAP Actions by Area of Focus	<ul style="list-style-type: none"> • Actions identified in CEAP • Indicators of progress towards 2030 Expected Results
2. Climate Actions by Others in the Community (and Interested Parties)	<ul style="list-style-type: none"> • Business and institutional sectors • Individuals, households and community groups • Others nearby
3. Climate Actions by Other Levels of Government	<ul style="list-style-type: none"> • Provincial • Federal • International
4. Greenhouse Gas Emissions	<ul style="list-style-type: none"> • Corporate greenhouse gas emissions • Community-wide greenhouse gas emissions
5. Weather Trends and Impacts	<ul style="list-style-type: none"> • London and area • Canada • Global

The following subsections, 2.1 to 2.5, provide updates under each of the Outcome Areas and conclude with subsection 2.6 Third Party Assessments and/or Reporting of London's Climate Actions.

2.1 CEAP Actions by Areas of Focus

As noted, the CEAP includes 59 Categories of Actions and contains 200 individual actions. Annual Progress Reports, like the 2022 CEAP Progress Report presented in May 2023, provide a detailed analysis of the progress and completion status of the actions across ten Areas of Focus. This update report does not go into that level of detail. It does include highlights of actions and activities in each Area of Focus.

2.1.1 Use of the Climate Lens Framework on Corporate Projects and Programs

Use of the Climate Lens Framework enterprise-wide is a goal that supports London's climate change goals in the CEAP. The implementation of the Framework supports tangible outcomes but also the evolution of the culture of sustainability within the City. Examples of the use of the Climate Lens Framework in 2023 include:

- The 2024-2027 Multi-year Budget (MYB) process included requirements for staff to address environmental, social and governance (ESG) issues when preparing both business plans and business cases. The set of questions included in each ESG section were identified through the use of the Climate Lens Framework during budget guidance document development. Issues addressed in the ESG sections included whether corporate or community GHG emissions are expected to be affected by the business case or changes to the business plan, and whether community climate change resilience and adaptation capacity will be affected.

- ReThink Zoning, the project focusing on the creation of a new zoning bylaw to implement The London Plan and replace the existing Z-1 zoning bylaw, includes the deliberate consideration of climate change issues throughout. With the City's recent approval of the CMHC Housing Accelerator Fund (HAF), the priority to advance certain housing initiatives have ignited a change to the ReThink Zoning work plan and project schedule, which will result in the implementation of the ReThink Zoning By-law in a series of phases. A first draft of the new by-law is targeted to be presented to Council in the third quarter of 2024.
- The development of the Mobility Master Plan (MMP) includes ongoing input and assessment relating to climate change considerations. As this project advances alongside the ReThink Zoning project, the fundamental connection between the two (including their joint potential impact on GHG emissions) is being collaboratively addressed. One such example is the work currently underway to align high-density zoning with the planned rapid transit routes to ensure that appropriate densification can occur where necessary to support increased active and public transportation infrastructure.
- The Design Specifications and Requirements Manual (DSRM) provides information which is to be utilized for the design of works within London on municipally owned road allowances, municipally owned property and for municipally owned infrastructure on easements. As part of the process to update the DSRM in 2023, the Climate Lens Framework was used to evaluate proposed changes for their potential impact on, or from, climate change.
- Staff in the Parks and Forestry Division employed the Climate Lens Framework to initiate the creation of a multi-component climate change metric that approximates the climate change mitigation and adaptation characteristics of each property. This metric is intended to be used for tracking the progress towards more resilient and productive natural lands in the Corporate Asset Management Plan.
- Starting in March 2023, development application reports presented to the Planning and Environment Committee contained a climate and environmental impact summary appendix where pertinent information to evaluate a proposed development's alignment with London's climate action commitments were made readily available. The presentation of consolidated climate change related information for decision-makers is the first step towards applying a climate lens to development proposals.
- The Technology Investment Strategy intake process now includes a section wherein project proponents must review all potential projects through the Climate Lens Framework and sign-off accordingly.

2.1.2 Sample of Activities in 2023

In addition to the early 2023 activities identified in 2022 CEAP Progress Report, the following additional items have advanced or are in the process of advancing:

- Staff have created a 1-hour training module on climate change awareness, London's climate change targets, the CEAP, and the Climate Lens Framework using the same software and process for development as other internal training programs for City staff. Companion pieces have also been developed for inclusion in new City staff corporate on-boarding training programs. (Area of Focus (AoF) 1 and in response to the June 6, 2023 Council direction)
- London Hydro, Plug 'N Drive, and the City co-hosted a two-day community engagement event at London Hydro's office to promote electric vehicles. Almost every London area automobile dealer was in attendance, offering over 40 vehicles for test drives. (AoF 2)

- Working with the Canadian Home Builders' Association (CHBA) and the London Home Builders' Association (LHBA) to provide training to local renovators for the Towards Cost-Effective Net-Zero Energy Ready Residential Renovations project (AoF 3)
- Finalization and preparation for the launch in early 2024 of a Transportation Management Association, under the name Smart Commute London, to support the mobility needs of Londoners and London's employers. (AoF 4)
- Pilot projects on the use of personally owned electric kick-style scooters and electrically assisted cargo bikes in London were initiated, including the collection of information regarding their use on streets and multi-use pathways. (AoF 4)
- The Connected and Automated Vehicle Plan was approved by Council in June 2023, which will be used by decision-makers who are responsible for the implementation and maintenance of public infrastructure which will be impacted by the emergence of connected and automated vehicles. (AoF 4)
- The Mobility Master Plan process is progressing through Phase 2: "Explore Solutions and Make Connections". Community engagement continues via website feedback forms and surveys, social media, community events, advisory committee, and individual meetings. (AoF 4)
- Supply chain delays have been overcome and the preparation and roll-out of the Green Bin program is occurring for residential source-separated organics collection (households with curbside or common collection service) and management to commence in January 2024. (AoF 5)
- Undertaking deep energy retrofits of the Kinsmen Recreation Centre with funding support of \$2.19 million (80 per cent of costs) from the Government of Canada's Green and Inclusive Community Buildings Program. Measures include heat recovery from the ice pad's refrigeration plant, building automation systems, construction of a new central heat pump plant, and installation of a new modified bitumen roof with structural upgrades for a future solar project. Total estimated energy savings of 43% are expected along with an estimated GHG emissions reduction of over 160 tonnes per year. (AoF 7)
- Future London Fire Department Firehall 15 is currently in the design phase, which includes the requirement that the facility be a net-zero emissions building. (AoF 7)
- City staff are undertaking a Greenhouse Gas Reduction Roadmap and Action Plan (GRRAP) study for up to one million square feet of municipal buildings including administrative offices, community centres, fire halls, and recreation facilities. (AoF 7 and in response to the June 6, 2023 Council direction)
- City staff are undertaking a solar power feasibility study for the Greenway Wastewater Treatment Plant, Adelaide Wastewater Treatment Plant, Pottersburg Wastewater Treatment Plant, Vauxhall Wastewater Treatment Plant, and the Arva Water Reservoir and Booster Pump Station. (AoF 7)
- The City was accepted as a participant in the Natural Asset Management Roadmap Program administered by the Municipal Natural Assets Initiative with funding from the Federation of Canadian Municipalities. The program is an opportunity for local governments to recognize, account for, and ultimately manage natural assets (e.g., wetlands, forests, and rivers) as a part of their formal asset management process. (AoF 7)
- City staff have undertaken a municipal scan of a number of cities that are examining options to reduce, restrict, or phase out landscaping equipment (e.g., lawnmowers, trimmers, leaf blowers) using two-stroke gasoline engines. Due to limited available

information from other municipalities, an update and next steps report is scheduled for the April to June (Quarter 2) 2024. (AoF 2,7)

- The development of a Climate Change Adaptation Discussion Primer is undergoing its final stages of internal review before it is released for broader community engagement in early 2024. (AoF 8)
- City staff continue to engage with researchers and participate in knowledge sharing events for two large-scale, federally funded initiatives:
 - The Residential Development Impact Scorecard for the Environment (RISE) project led by academics at the University of Waterloo and including input and participation from four Ontario municipalities, three environmental non-profit organizations, environmental consultants, several development industry associations and some of Ontario's largest land developers and builders. The project aims to find innovative solutions to multi-solve the climate, housing, and biodiversity crises.
 - The Municipal Net-Zero Action Research Partnership (N-ZAP) project with the main goal of supporting Canadian municipalities to monitor, measure and achieve net-zero emissions goals. The aim of the work is to ensure emissions reduction projects, policies and programs are aligned with Canada's national reduction commitments. London is one of 13 pilot cities across Canada participating in the project. (AoF 9)
- An enterprise-wide team of staff are working with Sustainability Solution Group (SSG) to implement a tailored CityInSight emissions reduction and financial model for climate actions in London to identify the financial impacts of potential community low-carbon pathways. (AoF 10)

2.1.3 Sample of Upcoming Activities in 2024

Many activities either underway and finishing or starting later in 2024 will build upon the initial CEAP implementation progress in 2023. A sample of those items include:

- Green in the City, an awareness and education initiative focusing on the environment and climate change will proceed from November 2023 to April 2024 by traveling to different libraries and City facilities across London. The initiative is an active collaboration between London Public Library, London Environmental Network and the City. (AoF 1)
- Depending upon the outcome of the Multi-Year Budget process, working with the Clean Air Partnership to submit a FCM Community Efficiency Financing Grant and Loan Preliminary Application for the development of a Residential Energy Efficiency Retrofit Pilot Program in London. (AoF 2)
- Developing a bicycle parking plan to guide the build-out of both short-term and secure, longer-term bicycle parking infrastructure as input into the MMP. (AoF 3)
- Updating the Urban Forest Strategy and the associated Tree Planting Strategy is underway and additional information is expected to be presented to the Planning and Environment Committee in Q2 of 2024 outlining the plans for a comprehensive update that will modernize the previous Urban Forest Effects (UFORE) study completed in 2012. Urban Forestry is actively gathering baseline information and will be installing permanent sample plots in City-owned woodlands over the next three years to inform Corporate Asset Management and CEAP. There are challenges to achieving the pace of tree planting required to meet the 2065 tree canopy goal of 34% within the built area boundary that will be considered in the update. Significant City efforts have been made to maximize plantings on City-owned lands, so a primary focus of the forthcoming strategy update is expected to be on enabling, encouraging and supporting tree planting on private property. The former TreeMe

and Tree Canopy Conservation Programs will be refreshed in 2024 to assist in this goal. (AoF 6)

- Finalization of the Biosolids Management Master Plan is expected in 2024 with an expanded scope to include refined analysis of preferred location for sludge digestion and renewable natural gas generation. The potential for digested sludge to be used to create renewable natural gas and the potential use of alkaline stabilization of remaining solids to be used as an approved agricultural fertilizer will be investigated. (AoF 5, 7)
- Undertaking deep energy retrofits of Earl Nichols Recreation Centre with proposed funding support of \$2.35 million (80% of costs) from the Green and Inclusive Community Buildings Program. Measures include heat recovery from the ice pad's refrigeration plant and the replacement of gas-fired heating with heat pumps. (AoF 7)
- Developing the 2024-2027 Corporate Energy Conservation and Demand Management (CDM) Plan, as required by provincial regulations, to outline near-term corporate energy conservation and renewable energy actions in support of the CEAP. (AoF 7)
- Through continued participation in the Canadian Collaboration for Sustainable Procurement (CCSP), City Procurement staff have networked and learned from other municipalities and agencies further along the path of implementing sustainable procurement policies. Information collection continues to inform the development of the City's sustainable procurement initiatives that will be developed in coordination with a review and update of the Procurement of Goods & Services Policy in 2024. (AoF 7)
- Strengthening the protection provided by the Broughdale Dyke, which protects 190 properties north of downtown from Thames River flooding, is expected to move to construction in 2024 in addition to the final stretches of the West London Dyke, each of which is supported by Federal funding from the Disaster Mitigation and Adaptation Fund (DMAF). (AoF 7, 8)
- Federal DMAF funding will also be used in 2024 to move from design to construction of earthen dyke structures to improve resilience to flooding at Greenway and Adelaide Pollution Control Plants. This climate adaptation measure will help keep these key elements of London's wastewater system operational during flooding events. (AoF 7, 8)

2.2 Climate Actions by Others in the Community

Achieving the goals of the CEAP requires effort from all sectors in London and is influenced by actions of others outside London. A few recent examples of climate actions from businesses, institutions, community groups, and individuals are listed below.

2.2.1 Businesses and Institutions

London Hydro started construction on a 1 megawatt (MW) battery storage facility to support a microgrid that will include 9 MW of solar photovoltaic energy generation at Sifton's West 5 development. The neighbourhood-scale microgrid powering West 5 is a federal funding-supported innovation paving the way for future net zero emissions developments. Additional details on London Hydro climate change, sustainability and resiliency activities are contained in Appendix A.

The Upper Thames River Conservation Authority (UTRCA) works with many partners throughout London and the upper Thames River watershed to reduce the impacts of climate change. Examples include:

- partnering with local agricultural producers and rural landowners in sequestering carbon through conservation farming practices, planting trees, creating wetlands, and other projects to mitigate impacts of changing weather patterns;

- working with schools from elementary to post-secondary in London and elsewhere, through in-class learning and on-the-ground projects (examples include GREEN Leaders, STEM, Climate Change - A Hot Issue & Climate Change Helpers);
- updating and maintaining information on flood hazards and the watershed's natural features; and
- working with community groups, landowners, small business, industry, and the City of London to protect, restore, and create natural features through naturalization projects and planning and regulations.

In addition, the UTRCA's large tracts of natural spaces increase resilience to more frequent and severe weather events. The 1,200 hectares at Fanshawe Conservation Area and 172 hectares of flood plain properties within London also lower urban temperatures and provide cooling opportunities for residents.

Green Economy London (GEL) continues to use a collaborative, cost-effective and practical approach when working with small to medium-sized businesses, non-profits, larger companies, and community organizations to set and achieve sustainability targets. Currently GEL has 45 member businesses and another 14 outside of London.

Western University continues to prioritize sustainability and climate action through academic offerings, research, and facilities management. Examples include the support for an initiative called "Thinking Globally, Acting Locally", which is an innovative new pilot program aimed at supporting student-led initiatives that engage with local communities to collaboratively advance sustainability. Western also coordinated and hosted Clean Tech 2023 in November, a multi-partner conference approach to support Canada's clean tech goals. The conference included industry booths, presentations and panels with notable contributions from London organizations including London Hydro, StormFisher, BioNext, London Economic Development Corporation, Ivey Business School, Techalliance, and 3M.

Enbridge Gas continues to be an active partner with the City of London on local climate actions. Bi-monthly meetings are held with Enbridge Gas and City staff to share updates on activities and explore opportunities for collaboration. The hybrid home heating pilot in London is one high-profile example of a project that originated from these regular meetings. Enbridge's conservation programs, such as Home Efficiency Rebate Plus and Savings By Design, form the backbone of many climate actions undertaken by Londoners and London businesses.

2.2.2 Individuals, Households and Community Groups

The London Environmental Network (LEN) has continued collaborations with partners and members to engage Londoners on climate action with events like Green in the City, Earthfest, and Green Drinks - reaching over 15,000 Londoners through events and outreach as of late November 2023. LEN has continued to build capacity in the community for environmental projects and emission reductions, including:

- Distributing funds for Green Economy London members to implement projects such as waste audits, low-flow plumbing fixtures, and energy-efficient HVAC systems (via London Community Recovery Network);
- Distributing rebates for homeowners that have implemented home retrofits such as attic insulation, air source heat pumps, and basement insulation (via London Community Recovery Network);
- Completed over 350 home energy assessments to support household emission reductions; and
- Working with 8 non-profits that provide housing to equity-denied groups to implement clean energy projects in their buildings.

ReForest London (RFL) continued its positive impact on London's urban trees and forests in 2023 with numerous tree planting events, tree giveaways and through advancing ideas, visioning and strategy development for the Westminster Ponds Centre for Sustainability. Due in large part to the collaborative work of RFL and the Million Tree

Challenge partner organizations, over 500,000 trees have been planted in London since January 2011.

Climate Action London, a not-for-profit community group and member of the London Environmental Network, hosted researchers from an international research project titled GOGREEN. The GOGREEN research project is a global initiative led by Roskilde University and funded by the Danish independent Research Council from 2022 to 2026. The project's objective is to identify the range of governance factors driving the successful co-creation of green transitions. City staff, community members and representatives from various environmental non-profit organizations in London participated in interviews to inform the researchers on initiatives and strategies being employed to create and implement the CEAP. London is the only Canadian jurisdiction in the international study.

The London Greening Health Collaborative (LGHC) began to meet in May 2023 following Earthfest and brings together knowledgeable parties with extensive experience in London's healthcare, environmental non-profit, and community health sectors. The LGHC originated in response to the observed activity in academia and the London health ecosystem around the intersection of health, climate and climate change (planetary health). It was observed that the different players in the community often work in isolation and a space where parties could meet to begin to identify and understand who was doing what in the intersection between climate and health would be beneficial. Following initiation and reaching out at senior levels in the London health ecosystem and academia, focus for 2023 was on three areas.

1. London as a National Urban Park;
2. Connecting Londoners to Nature for Healing; and
3. Earthfest 2024.

In terms of actions taken by individual households, a few examples include:

- Enbridge Gas has reported that Londoners participation in Ontario's Clean Home Heating Initiative (hybrid heating) is exceeding expectations. As of November 6, there have been 295 sign ups in London, exceeding the program target of 179 set for London.
- There was a 21 per cent increase in the number of zero emission vehicles registered in London during the first half of 2023 (January to June) compared to the first half of 2022. This pace was slightly faster than Ontario overall (19% increase) but behind the pace seen across Canada (27% increase) during the same period.

2.3 Climate Actions by Other Levels of Government

Canada – Federal Government

In June, Environment and Climate Change Canada launched the National Adaptation Strategy which lays out a framework to reduce the risk of climate-related disasters, improve health outcomes, protect nature and biodiversity, build and maintain resilient infrastructure, and support a strong economy and workers. It also identifies common goals, objectives, and targets to focus the efforts of governments and communities across these key areas and to help ensure future investments are targeted and effective.

In July, Environment and Climate Change Canada announced an investment from the Decarbonization Incentive Program (pollution pricing proceeds) to Western University to undertake critical infrastructure improvements that directly reduce greenhouse gas emissions. Western University will receive \$4,745,000 for a four-year project to replace natural gas boilers with electric steam boilers.

In July, Infrastructure Canada and the Canadian Urban Transit Research & Innovation Consortium announced a joint investment of \$400,000 to plan for the transition to zero emission buses. Through this investment, the London Transit Commission will complete

planning activities, including feasibility, implementation and market studies, to support future procurement and deployment of zero emission buses and related infrastructure.

On August 3, Natural Resources Canada and the Federation of Canadian Municipalities (FCM), announced an investment of \$175,000 to Indwell Community Homes to assess the revitalization of two heritage buildings in the City of London for use as affordable housing.

In August, Natural Resources Canada released Powering Canada Forward, the Government of Canada's vision for transforming Canada's electricity sector and to decarbonize electricity grids by 2035, keep electricity systems reliable and ensure household energy costs are affordable. In support of this, Environment and Climate Change Canada collected feedback on the draft Clean Electricity Regulations. The final regulations are expected to be published in the Canada Gazette, Part II, in 2024.

In September, Environment and Climate Change Canada announced the launch of the Food Waste Prevention and Diversion: Research and Capacity Building Fund. This \$570,000 Fund will help support local government research and capacity-building initiatives to prevent and divert food waste from landfills.

In September, Environment and Climate Change Canada announced funding for five pilot projects for innovative monitoring and automation systems to reduce methane emissions at Canadian landfills, two of which involve the City of London:

- Comcor Environmental Limited received \$49,748 to work to identify methane surface emissions and compare field method approaches and detectors at three Canadian landfills including the City of London's W12A Landfill.
- Western University received \$200,000 to monitor methane emissions from the City of London's W12A Landfill using several emerging technologies. This project is also coordinating activities with the Comcor-led project above.

In September, Natural Resources Canada released Canada's Carbon Management Strategy, which outlines the role of carbon management in Canada's path to a net-zero economy and the federal actions that are being taken to support carbon management technologies to capture carbon dioxide from point sources or the atmosphere to be durably stored or transformed into goods.

In October, the Federal Government announced a pause in the application of its carbon pricing backstop on fuel oil used for home heating due to high global petroleum prices. This will have limited impact in London given that natural gas has replaced fuel oil in those areas that have access to gas lines. The number of homes still using heating oil in London is not known but expected to be very small.

In November, the Commissioner of the Environment and Sustainable Development from the Auditor General to the Parliament of Canada issued a report that Canada is not on track to meet the 2030 target to reduce Canada-wide greenhouse gas emissions by at least 40 per cent below the 2005 level by 2030. It is also noted that Canada has been the worst performer of all Group of Seven countries (Germany, France, Italy, Japan, the United Kingdom, the United States and Canada) for reducing emissions.

The Commissioner noted that Environment and Climate Change Canada has projected that Canada would miss the target for reducing emissions and is currently expected to achieve a 34 per cent reduction in emissions. The Commissioner also noted that the current 2030 Emissions Reduction Plan does not include a target or expected emission reductions for 95 per cent of its measures and that federal government organizations expected only 43 per cent of measures to have some direct impact on emissions. The Commissioner noted the strengths of the current plan including:

- Carbon pricing;
- Regulations related to electricity grids, oil & gas sector, zero emission vehicle mandates, and clean fuels; and

- Some exemptions from carbon pricing and targeted support for groups such as farmers, fishers, and rural residents.

In December, Environment and Climate Change released its latest forecasts for future Canada-wide greenhouse gas emissions showing that, with existing and planned policies and programs, emissions in 2030 are projected to decline to 34 per cent below 2005 levels when including the sequestration contributions of land use and forestry as well as credits purchased under the Western Climate Initiative. It is projected that Canada-wide emissions will reach 40 per cent below 2005 levels (the current reduction target for 2030) by 2035.

Ontario – Provincial Government

Ontario still maintains a 2030 greenhouse gas emission reduction target (30 per cent reduction from 2005 levels) that is less ambitious than the target for Canada (40 to 45 per cent reduction from 2005 levels). Also, Ontario has not formally adopted net-zero emissions' targets, referring only to its 2030 target in its plans.

Enbridge Gas, with the support and funding from the Government of Ontario, expanded the Clean Home Heating Initiative in 2023 to include homeowners in Ajax, Barrie, Pickering, and Whitby after the successful rollout of the initiative last year in London, Sault Ste. Marie, St. Catharines and Peterborough.

In July, the Ministry of Energy released the Powering Ontario's Growth plan, outlining the actions the province is taking to meet the increasing demand for electricity driven by strong economic growth and electrification through the 2030s and 2040s. These actions include new zero-emissions electricity generation (nuclear and renewables), long duration storage, and transmission lines.

Connected to this, the Ministry of Energy is starting pre-development work for the first large-scale nuclear build in over three decades. Bruce Power will start community consultations and conduct the environmental assessment for federal approval to determine the feasibility of siting up to 4,800 megawatts (MW) of new nuclear generation on its current site. In addition, the Ministry of Energy is working with Ontario Power Generation to commence planning and licensing for small modular reactors at the Darlington nuclear site. Once deployed, these four units would produce a total 1,200 megawatts (MW) of electricity.

In August, the provincial government released Ontario's Climate Change Risk Assessment, a comprehensive review of the risks anticipated from the changing climate in the province by 2080 and beyond. The work included detailed regional climate change impact assessments on five themes:

- Infrastructure;
- Food and agriculture;
- People and communities;
- Natural resources, ecosystems, and the environment; and
- Business and the economy.

The assessment included a set of recommended climate adaptation priorities for each theme as well as a series of cross-sectoral considerations relating to food security, energy security, water security, human health, safety and well-being, and community function.

In September, the provincial government reversed a decision to remove nearly 3,000 hectares of protected lands from the Green Belt for urban development as a result of significant pushback from municipalities and members of the public. The lands are expected to be returned to protected status.

Climate Actions by Some Major Environmental Non-Government Organizations

The City of London is an active participant in the Clean Air Council, administered by the Clean Air Partnership, which supports climate action in 41 Ontario municipalities and health units. This organization continues to provide support for the City of London climate actions through activities such as:

- Coordinating municipal feedback on federal and provincial climate actions, such as Independent Electricity System Operator's (IESO's) proposed Clean Electricity Fund, the IESO's Pathways to Decarbonization Study, and the Ministry of Energy's Consultation on the future of natural gas expansion and home heating affordability.
- Providing training and webinars on a wide range of topic such as the Governance, Accountability, and Implementation Series and New Design Resources for Embodied Carbon Targets.
- Providing resources to assist municipal climate action, such as the Briefing Note on Municipal Green Development Standards and the State of Climate Actions in Ontario Municipalities.

The City of London also participates in the Ontario caucus of QUEST Canada, an organization that brings together municipalities, energy utilities, and energy service providers to promote efficient and integrated energy systems that best meet community needs. QUEST Canada often collaborates with other organizations, such as the Clean Air Partnership and Pollution Probe, on the delivery of training and webinar sessions as well as resources.

City staff have been actively participating and contributing to the Regional Public Works Commission of Ontario's (RPWCO's) Climate Change subcommittee in 2023. The subcommittee includes staff from across Ontario's larger municipalities and is a forum for sharing information, best practices and emerging ideas and solutions to climate change. Recent topics and presentations have included the review and assessment of the Ontario Provincial Climate Change Impact Assessment, integrating climate change into municipal asset management, and presentations sharing best practices and challenges from several municipalities including Toronto and Guelph.

2.4 Greenhouse Gas Emissions

London's corporate and community greenhouse gas emissions for 2022 were reported on May 30, 2023, as part of the 2022 CEAP Progress Report:

- Corporate energy-related greenhouse gas emissions were 18,900 tonnes of equivalent carbon dioxide. This is 58% lower compared to 2007, the baseline year for measuring progress.
- Community greenhouse gas emissions were 2.96 million tonnes of equivalent carbon dioxide. This is 24% lower than 2005 levels, the baseline for measuring progress.

City staff prepare an annual report detailing corporate and community emissions which relies on a set of data provided by energy utilities, transportation fuels market analysis, and other related sources. These data are provided to City staff on an annual basis usually by mid-to-late spring of the following year. The 2023 corporate and community greenhouse gas emission data will be reported in the May/June CEAP Progress Report.

London's methodology for reporting community greenhouse gas emissions allows for the presentation of results earlier than other jurisdictions. No other Ontario municipality has reported 2022 community greenhouse gas emissions at the time of writing this report (December 2023). The City of Burlington is the only other peer municipality that has reported corporate greenhouse gas emissions for 2022.

As part of CEAP development, 11 Ontario municipalities were identified as peer municipalities for the purpose of comparing, learning and sharing information on climate action. Another 6 municipalities (5 outside of Ontario) were selected for the same reasons (Table 3). The latest information on emissions estimates from the Ontario peer municipalities are identified in Appendix B.

Table 3: London’s Peer Municipalities in Ontario and Selected Municipalities in Canada

Peer Municipalities in Ontario	Selected Municipalities in Canada
1. City of Burlington	1. City of Calgary
2. Region of Durham	2. City of Edmonton
3. Municipality of Greater Sudbury	3. City of Halifax
4. City of Guelph	4. City of Toronto
5. City of Hamilton	5. City of Vancouver
6. City of Kingston	6. City of Winnipeg
7. City of Mississauga	
8. Town of Oakville	
9. City of Ottawa	
10. Region of Waterloo	
11. City of Windsor	

Initial 2023 Trends in Energy Use

There are partial data for a few indicators that can be used to provide some sense of where 2023 community-wide greenhouse gas emissions may be heading in London. Specifically:

- Ontario’s electricity grid is using more natural gas for electricity generation – Ontario is on track to increase its use of natural gas for power generation in 2023 compared to 2022. As of September 2023, based on data provided by the Independent Electricity System Operator, natural gas power plants have provided 12% of Ontario’s electricity supply over the last 12 months, compared with 10% in 2022. As a result, greenhouse gas emissions from electricity use are expected to be about 15% higher than they were in 2022. This change will likely make community-wide emissions in London almost 1% higher overall than they would have been had Ontario’s electricity supply mix not changed.
- Canada’s gasoline use is increasing – Based on data collected by Statistics Canada, gasoline consumption in Canada in the first half of 2023 (January to June) was 4.7% higher than the first half of 2022. Note that COVID-related measures were still in place in the first half of 2022 which reduced some driving activity. The final percentage change will likely be lower. Increased use of gasoline in London would cause an increase in emissions from this energy source.
- Warmer winter and cooler summer will reduce building energy demand – Compared to 2022, as of October 2023, London is likely to see both lower heating degree-days and lower cooling degree-days in 2023 overall. As a result, natural gas use for heating and electricity use for cooling should be lower compared to 2022 which could decrease household emissions.

2.5 Weather Trends and Impacts

As noted earlier, compared to 2022, as of October 2023, London saw both lower heating degree-days and lower cooling degree-days in 2023 overall. The relatively cooler weather in London is an anomaly compared to record temperatures set around the world in 2023.

The City commissioned a report from Western University climatologists from the Northern Tornadoes Project and Geography Department to provide a synopsis of weather trends in 2023 with a focus on three geographical areas; London and area, provincially and nationally, and globally. The report highlights are:

- **London and area**
The London area experienced low wind events and a warm January/February and September/October. Hot summer days (temperature greater than 30 degrees C.) continued the steady rise in number (2023 = 8 days) as reflected by the historical record for London.

The region received both flooding and drought conditions including heavy March and April rains leading to flooded basements followed by a drought in May and above average rain in July. August 23 saw a major storm causing flooding in Warwick Township and with one fatality triggering the declaration of a local state of emergency.
- **Ontario and Quebec**
These two provinces are grouped together in this description due to their severe and extreme weather often straddling the border. 2023 saw freezing rain and high winds creating the worst power outage since the 1998 ice storm and resulting in 1.3 million people without electrical power. This area is becoming the new ‘tornado alley’ for Canada with 37 tornadoes in 2023 which is half of the tornadoes experienced nation-wide. Wildfires in northeastern Ontario and Quebec in June and the associated smoke created air quality concerns province-wide.
- **Canada**
The national story in 2023 was the record number of wildfires in British Columbia, Alberta, Quebec and Nova Scotia. The west coast wildfires were aided by the Vancouver area and Vancouver Island drought. The prairies saw an unusual lack of tornadoes, while the East Coast experienced wildfires, an atmospheric river, and Tropical Hurricane Lee.
- **Globally**
The predominant weather phenomena globally was excessive heat with 2023 appearing to be the warmest year on record (e.g., July was warmest month in recorded history and August 2nd was the warmest day on record). Warmer sea surface temperatures are creating more hurricanes in the Atlantic Ocean and a stronger El Nino in the Pacific Ocean. Low sea ice concentrations continue to melt the Polar Ice Caps at both Poles.

As of October, 86 days were recorded with temperatures over 1.5°C above pre-industrial levels. September was the hottest recorded month, with global average temperatures 1.8°C above pre-industrial levels. In summary, 2023 is likely to be the warmest year on record to date.

2.6 Third Party Assessments and/or Reporting of London’s Climate Actions

The City of London participates in a number of initiatives to help gauge the relative strengths and weaknesses of London’s climate actions compared to other municipalities in Canada and around the world. These include the following:

- **Global Covenant of Mayors** – The City of London submits information to this global program on an annual basis. In 2023, a preliminary assessment indicates that the City of London is compliant with all mitigation and adaptation requirements as well as two of three requirements related to energy access and poverty (identifying energy poverty exposure and developing a plan to address it). The missing requirement was setting targets related to reducing energy poverty. This item is going to be further examined by City staff.
- **CDP Cities** – The City of London submits information to this global program on an annual basis. The CDP Score is based around questions on both climate change

mitigation and adaptation in the areas of governance, assessment, planning and actions with some detail on sector-specific metrics. In 2023, the City of London received an overall score of A-, with a score of A for adaptation measures and a score of A- for mitigation measures. London's scores were higher than the North American average for participating municipalities (A- and B respectively), but behind those leading Canadian jurisdictions that received the full A score such as Halifax, Toronto, and Windsor.

- WWF One Planet City Challenge – 2023 is the first year that the City of London has participated in this initiative. Their evaluation is based on the data submitted through CDP Cities and each participant is provided a Gaps Report. For 2023, the City of London received an overall score of 119 out of 150 (79%). There is no comparative information available at this time. Topics noted for needing improvement included establishing a consumption-based GHG emissions inventory, establishing city-specific renewable energy targets, and reporting on the status of climate adaptation targets.
- Corporate Knights Sustainable Cities Index - 2023 is the first year that the City of London has participated in this initiative involving 70 cities world-wide and 10 in Canada. London received a B grade overall and ranked 29th out of 70 cities participating.
- Partners for Climate Protection – Operated by the Federation of Canadian Municipalities and ICLEI Canada, the City of London has participated in this program since 1997. In 2013, the City of London achieved the final milestone (Milestone 5 – Monitoring and Reporting Results) for both Corporate and Community activities and this milestone remains unchanged.
- National Climate League – Operated by The Climate Reality Project Canada, London has participated in this citizen-led initiative through the volunteer efforts of members at Climate Action London. Launched in 2018, the program was designed to engage citizens in municipal climate action and provide comparative information, where possible, on climate performance for Canadian municipalities. Information from between 50 and 60 cities is compiled each year by volunteers on a number of climate, sustainability and social justice indicators.

3.0 Financial Impact/Considerations

There are no specific financial impacts or financial considerations tied to this update report. A Climate Emergency Action Plan (CEAP) Business Case is part of the 2024-2027 Multi-Year Budget submission that was released on December 12, 2023, which will be considered by Council as part of 2024-2027 Multi-Year Budget deliberations.

Similar to what has been previously reported, investment in climate action over the full term of the CEAP (to 2050) by the City, businesses and residents is anticipated to be significant. Investments must also come from other levels of government to assist local government. Some of these investments are anticipated to align with and sometimes replace planned future spending. In some cases, investments to achieve CEAP goals may result in opportunities for net savings, though additional up-front capital costs may be required to realize lower lifetime asset costs. Several other short term and longer terms activities are underway at the City including:

- A project for energy, emissions, land-use, and financial scenario modelling to map possible growth and land use scenarios to determine how to reduce emissions, create jobs, and optimize land use to create equitable, decarbonized, healthy communities;
- A project to review and advance City staff estimates for reaching net-zero emissions for Corporate assets (e.g., fleet, facilities, street lights, wastewater, water, landfill);
- Ongoing work on the City's Corporate Assessment Management Plan; and

- The creation of Climate Change Investment and Implementation Plan which plans out potential investments over multiple multi-year budgets, including 10 and/or 20 years capital plans, funding strategies, etc.

4.0 Key Issues and Considerations

One of the key issues driving the pace of climate actions is the awareness and desire to act among businesses, institutions, community groups and Londoners in general. Engaging with potential partners in action and encouraging households and individuals to make changes in their lives that align with the CEAP goals remains a major challenge. Differing and often conflicting media coverage and on-line information, lack of clear understanding of the scope and breadth of the climate crisis, significant political differences, the politics of climate change, and the acute nature of other pressures on Londoners (e.g., affordability, homelessness) makes it difficult to meaningfully engage with residents.

These issues and considerations are not isolated to London. They exist in all provinces in Canada. In addition to the challenge of engaging with Londoners in the current socio-economic and technology climate, additional key issues and considerations have emerged and are noted in the next few subsections.

4.1 Other Municipalities' Climate Action Update – Learning from Others

Significant strides in climate action and sustainability were made in the year 2023 by the City of London's eleven peer Ontario municipalities and six selected municipalities (the same municipalities highlighted in the 2022 CEAP supporting document titled "Learning from Other Municipalities"). From the progressive efforts of Guelph, becoming the first municipality in Canada to achieve a corporate-wide energy management certification, to the innovative programs launched by municipalities like Ottawa, Burlington, and Halifax, local governments demonstrated a commitment to fostering green, more resilient communities.

Of note are the growing number of peer municipalities (7 of 11) who now either have or are in the process of developing a green development standard and the number of municipalities who have launched or are in the process of launching a residential energy retrofit support program (8 of 11). A more detailed overview of the peer municipalities' progress can be found in Appendix C.

4.2 New and Emerging Climate Change Considerations and Issues

Human Health and Climate Change

On October 25, 2023, a group of over 200 leading academic medical and health journals, including the Canadian Medical Association Journal, simultaneously published an article urging national, international and health sector leaders to treat the climate and nature crisis as a global health emergency ([Time to treat the climate and nature crisis as one indivisible global health emergency | The BMJ](#)). This effort emphasizes the growing body of knowledge linking climate change and biodiversity loss to human health impacts and the fundamental interconnection of planetary health.

Household Income and Greenhouse Gas Emissions

A recent research article published in the PLOS Climate Journal entitled "Income-based U.S. household carbon footprints (1990–2019) offers new insights on emissions inequality and climate finance" (August 2023) showed significant and growing consumption-based greenhouse emissions inequality across economic and racial lines in the United States. These findings are also likely applicable to Canada. Specifically:

- People in the bottom 50% income bracket were responsible for about 14% of GHG emissions;
- People in the 50% to 90% income bracket group were responsible for about 42% of GHG emissions; and,
- People in the top 10% income bracket group were responsible for about 45% of emissions.

In addition to direct emissions from home heating and transportation as well as consumption-related emissions from purchasing goods and services used in the study, the calculation included emissions from investments held by people (i.e., if a person owns shares in an oil producer, they also own the emissions associated with their share of that oil producer's emissions).

It is important to note that the recent Ontario Provincial Climate Change Impact Assessment (2023) has identified that the impacts from climate change are not equally distributed, rather, "Climate risks are highest among Ontario's most vulnerable populations and will continue to amplify existing disparities and inequities."

This research offers unique information to help focus the City's climate action and engagement efforts. A stronger focus on promoting adaptation and resilience actions for lower income Londoners and a stronger focus on promoting mitigation actions for upper income Londoners appears to be warranted. City participation and focus of climate action outreach at events like the Lifestyle Home Show and EV test drive events already align with these findings, since events like these tend to draw the higher-consuming, higher-emitting above-median income residents.

This does not take away the importance of addressing the impact of high energy and fuel costs for those Londoners struggling with affordability and directing them towards incentives and other resources to reduce these costs, such as free home insulation and draft-proofing.

The Impact of New Housing and Green Building Policies

In response to the affordable housing crisis, in Fall 2023, the Task Force for Housing & Climate commissioned three distinct greenhouse gas modelling reports to assess the modeling of the greenhouse gas implications of adding 5.8 million new homes Canada-wide under business-as-usual approaches versus the use of aggressive green building policies.

These reports looked at the three largest sources of greenhouse gas emissions associated with new housing: building energy performance; embodied emissions from construction materials and supportive infrastructure; and land use planning decisions. Collectively, these reports showed that:

- With weak policy approaches, adding 5.8 million homes Canada-wide could create as much as 142.7 million tonnes in new annual greenhouse gas emissions by 2030 (Table 4).
- With strong policy approaches, adding 5.8 million homes could generate as little as 43 million tonnes of annual greenhouse gas emissions by 2030 (Table 4).

Table 4: Climate Impacts of Adding 5.8 Million Homes Across Canada by 2030

Area of Action	Weak Policies (million tonnes/year)	Strong Policies (million tonnes/year)
Building Performance	12.9	4.2
Building Materials	94.2	8.0
Land-use Decisions	35.6	30.8
Total	142.7	43.0

Source: Task Force for Housing & Climate (2023, www.housingandclimate.ca)

The reports showed that strong green building policy leadership at the federal, provincial, and municipal levels could prevent almost 100 million tonnes of annual greenhouse gas emissions from new housing, equal to about 34 per cent of Canada's 2030 GHG reduction target. In particular, the choice of building materials used can have a significant impact on emissions (e.g., using mass timber instead of concrete and steel can significantly reduce construction-related emissions for a multi-family building).

Global Progress on Reducing Emissions

In advance of the 2023 COP28 meeting in Dubai in December, the 2023 edition of the Emissions Gap Report from the United Nations Environment Programme (UNEP) noted that global-scale greenhouse gas emissions continued to rise in 2022 and the world's ability to limit global warming to within 1.5°C is rapidly diminishing. Specifically:

- Global greenhouse gas (GHG) emissions increased by 1.2% from 2021 to 2022;
- Similarly, GHG emissions across the G20 countries increased by 1.2% in 2022;
- If mitigation efforts implied by current policies are continued as is, global warming will be limited to 3°C above pre-industrial levels throughout this century;
- In the most optimistic scenario, where all national net zero pledges are met, limiting global-scale temperature rise to 2.0°C could be achieved. However, net-zero pledges are not currently considered credible given that none of the G20 countries are currently reducing emissions at a pace consistent with their net-zero targets; and
- Countries with greater capacity and responsibility for emissions – particularly high income and high-emitting countries among the G20 – will need to take more ambitious and rapid action and provide financial and technical support to developing nations.

Incorporation of Climate Risks in Financial Disclosures

In November 2023, the Institute and Faculty of Actuaries (IFoA) (the UK-based organization regulating and representing over 32,000 members worldwide) released a report entitled “The Emperor’s New Climate Scenarios – Limitations and assumptions of commonly used climate-change scenarios in financial services” adding to the body of knowledge and understanding of climate risk in financial disclosures. In this report, the IFoA and researchers from the University of Exeter emphasize that:

1. Many climate-scenario models in financial services are significantly underestimating climate risk;
2. Carbon budgets may be smaller than anticipated and risks may develop more quickly; and
3. Regulatory scenarios introduce consistency but also the risk of group think, with scenario analysis outcomes being taken too literally and out of context.

The report reveals that “a disconnect exists between climate science and the economic models that underpin financial services climate-scenario modelling,” and that “...real-world impacts of climate change, such as the impact of tipping points (both positive and negative, transition and physical-risk related), sea-level rise and involuntary mass migration, are largely excluded from the damage functions of public reference climate-change economic models.” As a result, many corporate financial disclosures of climate risk paint a misleadingly optimistic picture of future risks and opportunities associated with the impacts of climate change.

These considerations will be key for any municipalities choosing to report sustainability and climate-related disclosures alongside financial reporting requirements. London will benefit as a member of the Municipal Net-Zero Action Research Partnership (N-ZAP) which includes the development of a second-generation guide to Task Force on Climate-related Financial Disclosure (TCFD) reporting for municipalities that builds upon the 2019 guide prepared by Chartered Professional Accountants Canada. The guide development work is currently being conducted and piloted alongside climate budgeting approaches through the N-ZAP in Toronto, Montreal, Vancouver, Edmonton, Mississauga, and Calgary.

Conclusion

To address Council's direction, a second SPPC report referred to as an update report for CEAP has been created. The update report is in addition to the annual Progress Report that will be submitted in May/June each year. The same five key outcome areas used in the 2022 Progress Report are the foundation of the update:

1. CEAP Actions by Area of Focus
2. Climate Actions by Others in the Community (and Interested Parties)
3. Climate Actions by Other Levels of Government
4. Greenhouse Gas Emissions
5. Weather Trends and Impacts

This update report and future Progress Reports and Update Reports fulfill an important interaction with SPPC (all members of Council in a committee) and City staff. It also assists with furthering engagement in the community, with institutions and businesses.

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Appendix A Overview of Recent London Hydro Climate, Sustainability and Resiliency Plans

Appendix B Greenhouse Gas (GHG) Emissions Information from Peer Ontario Municipalities

Appendix C Snapshot of Recent Peer and Selected Municipalities' Climate Actions

- c Lynne Livingstone, City Manager
- Anna Lisa Barbon, Deputy City Manager, Finance Supports
- Kevin Dickins, Deputy City Manager Social Health Development
- Scott Mathers, Deputy City Manager, Planning and Economic Development
- John Paradis, Deputy City Manager, Enterprise Supports
- Cheryl Smith, Deputy City Manager, Neighbourhood and Community-Wide Services
- Tara Pollitt, Deputy City Manager, Legal Services

Appendix A

Overview of Recent London Hydro Climate, Sustainability and Resiliency Plans

London Hydro continues to support the London's Climate Emergency Action Plan through a variety of programs and actions. Overall, London Hydro focuses on prudent continual investment in a resilient and adaptable electricity distribution system that can meet future demands and minimize power interruptions.

Climate Change Resilience and Adaptation

- London Hydro routinely monitors and analyzes the resiliency of the distribution system. A recent study by London Hydro analyzed weather related power interruptions over the past three and a half years (January 2020 – July 2023) and determined the following:
 - The largest contributor and greatest risk to the electrical system in our “Forest City” is related to tree contacts. For example, a tree limb or an uprooted tree that falls on the electrical infrastructure can result in a long duration power interruption to thousands of customers.
 - To reduce the impact of tree contacts (i.e. customer power interruptions, costs associated with vegetation management, repairs, etc.) and to ensure a resilient and reliable electricity grid municipalities can play a role through partnership for a holistic view of tree planting and management practices (e.g. selecting appropriate tree species in proximity to hydro lines, identification of dead trees for early/prompt removal, etc.).
- To address the impact of severe weather, and to adapt and improve grid resiliency, London Hydro plans to enhance five areas. These areas are in line with industry best practices and have been identified to improve resiliency:
 - increased emphasis on vegetation management;
 - targeted insulated conductor installation;
 - targeted undergrounding of infrastructure (e.g. heavily treed backyards, areas with historical issues, accessibility challenges);
 - selected automated devices installation:
 - increases visibility of the grid for system operators;
 - reduces number of customers interrupted from main line faults; and
 - customers can be restored faster in masses; and
 - pole inspection and guying – reducing broken poles under extreme wind/loading conditions.
- London Hydro continues to ensure resilient operations through the following ongoing activities:
 - Contingency planning activities include:
 - increased quantities of safety stock;
 - supplier alliances (includes emergency supply of key components);
 - active members of mutual assistance groups with other utilities across Ontario to share crews and equipment;
 - extensive list of pre-qualified contractors; and
 - annual reviews of our emergency plan, including tabletop exercises of various scenarios such as ice storms, tornados, and floods.
 - Protection, control and automation investments include:
 - fusing radials to improve safety and reduce the number of customers interrupted;
 - installation of reclosers and other automated devices to provide more operational flexibility and improve outage response time; and
 - communicating faulted circuit indicators to locate and restore outages faster.
 - Distribution System Design activities include:
 - overhead rebuilds of older depreciated assets;
 - rebuild depreciated overhead areas in backyards by undergrounding the high voltage system;

- undergrounding new subdivisions; and
- exploring breakaway secondary overhead conductors.
- London Hydro has updated its flood contingency plan to ensure operational continuity, protection of assets and the environment as well as integrated procedures to respond to customer needs during flooding events.

System Planning

- To ensure the electrical system has capacity to accommodate City of London's growth projections and customers' decarbonization and electrification plans, London Hydro developed a Planning Outlook to year 2050, by considering the City of London's Planning and Economic Development group's forecasts, historical consumption and demand trends and latest developments and inquiries from large customers.
- Three future gross demand projection scenarios (i.e. high, medium and low growth) were derived for London Hydro's region. These scenarios range from 0.35% (low growth) to 2.84% (high growth). The most probable projection is the medium growth rate of 1.85%, that is anticipated to add 476 MW of new demand by 2050 which would require additional capacity in the years 2033-2037. However, additional capacity may be required at specific Transformer Station locations sooner depending on the pace and geographic location of the demand growth.
- The potential impacts of new conservation and demand management and distributed generation forecasts are also planned to be included in joint regional planning initiatives with the provincial Independent Electricity System Operator. As well, energy conservation and distributed energy resource installation (i.e. generators, batteries, demand response) in the future can offset the distribution system gross demand needed and may potentially defer additional capacity investments.
- London Hydro is actively working to bring IESO programs to energy consumers in London such as the Strategic Energy Management (SEM) program as well as to help define and potentially deliver future Save on Energy Programs in the coming years. London Hydro will continue to support programs that lead to efficiency, electrification, climate action mitigation projects, and as always, help customers manage their energy wisely and cost effectively.
- London Hydro will continue to monitor system demand trend(s) and reevaluate the complex assumptions that impact all the industry peers and stakeholders, at the next regional planning cycle in 2024.
- In preparation for anticipated load growth due to increased electrification such as electric vehicle adoption, London Hydro has developed:
 - a program to monitor transformer loading leveraging smart meter data from customers to identify overloaded transformers;
 - new standards with higher capacity for servicing new and rebuilt residential neighbourhoods; and
 - Continued investigation into various load control technologies.

Enabling Technology Investments

- London Hydro supports integrating renewable energy into the distribution system. There are currently over 470 generators and grid connected battery energy storage systems connected with a capacity of 112 MW of which 22% is renewable generation. London Hydro continues to connect renewable energy generators through Net Metering connections and has supported customers using the City of London's MyHEAT Solar website.
- London Hydro has replaced aging distribution equipment to reduce the electricity losses thus making the electricity system more efficient.

- London Hydro has worked closely with the West 5 Net Zero Community to connect solar generation and microgrid technology as well as implementing Ontario's first Community Net Metering billing method.
- London Hydro has delivered customer facing energy management applications such as the myLondonHydro portal, the Interval Data Centre, Green Button data API, the Trickle mobile app, and the Property Management Portal to help customers track, report and understand their utility usage.
- London Hydro has supported the Enbridge hybrid heat pump pilot for over 100 London customer installations that has served as a basis for program expansion elsewhere in the province.

Appendix B

Greenhouse Gas (GHG) Emissions Information from Peer Ontario Municipalities

The latest information on greenhouse gas emission targets and available estimates from the Ontario peer municipalities are identified on Table B-1. London GHG targets and 2022 emission data are also noted.

Table B-1: London's Peer Municipalities in Ontario – Available Details on GHG Targets and Progress

Municipality	Emission Reduction Targets	Latest GHG Inventory
London	Community: 55% below 2005 levels by 2030 65% below 2005 levels by 2035 75% below 2005 levels by 2040 Net-zero emissions by 2050 Corporate: 65% below 2007 levels by 2030 75% below 2007 levels by 2035 90% below 2007 levels by 2040 Net-zero emissions by 2045	Community: 2022 - 24% below 2005 levels Corporate: 2022 – 58% below 2007 levels
Burlington	Community: Net carbon neutral by 2050 Corporate: 21% below 2018 levels by 2024 Net carbon neutral by 2040	Community: 2021 – 17% below 2011 levels Corporate: 2022 – 5% below 2018 levels
Durham Region	Community: 5% below 2007 levels by 2015; 20% below by 2020 80% below by 2050 Corporate: 20% below 2019 levels by 2025 40% below by 2030 100% below by 2045	Community: 2022 – 1% above 2015 levels (as per TAF report only) Corporate: 2021 – 14% below 2019 levels
Greater Sudbury	Community: Net zero emissions target by 2050 Corporate: Net zero emissions target by 2050	Community: 2016 – baseline year Corporate: 2017 – 34% below 2011 levels
Guelph	Community: Net zero carbon by 2050 Corporate: City facilities and operations to use 100% renewable energy by 2050	Community: 2020 – 17% below 2018 levels Corporate: 2021 – 10% below 2018 levels
Hamilton	Community: 50% below 2006 levels by 2030 carbon neutral before 2050 Corporate: 50% below 2005 levels by 2030 80% below by 2050	Community: 2019 – 33% below 2006 levels Corporate: 2019 – 43% below 2005 levels (corporate)

Municipality	Emission Reduction Targets	Latest GHG Inventory
Kingston	Community: 30% below 2011 levels by 2030 carbon neutral by 2040 Corporate: 15% below 2018 levels by 2022 30% below by 2030 carbon neutral by 2040	Community: 2021 – 8.5% below 2018 levels Corporate: 2021 – 9.3% below 2019 levels
Mississauga	Community: 40% below 1990 levels by 2030 80% below by 2050 Corporate: 1% below 2018 levels per year from 2019-2023	Community 2021 – 11% below 1990 levels Corporate: 2021 – 2% below 2018 levels
Oakville	Community: Enable transition to a goal of carbon neutrality by reducing greenhouse gas emissions by at least 50% by 2041 Corporate: 30% below 2015 levels by 2024 net zero carbon by 2050	Community: 2016 – baseline year Corporate: 2021 – 33.7% below 2014 levels, excluding fleet
Ottawa	Community: 43% below 2012 levels by 2025 68% below by 2030 96% below by 2040 Net zero carbon by 2050 Corporate: 30% below 2012 levels by 2025 50% below by 2030 Net zero carbon by 2040	Community: 2020 – 15% below 2012 levels Corporate: 2020 – 43% below 2012 levels
Waterloo Region	Community: 30% below 2010 levels by 2030 80% below by 2050 Corporate: 80% below 2010 levels by 2050	Community: 2015 – 5.2% below 2010 levels Corporate: No public report on corporate GHG emissions reduction progress
Windsor	Community: 40% below 2014 levels by 2041 Corporate: 40% below 2014 levels by 2041	Community: 2021 – 20% below 2014 levels Corporate: 2021 – 2.5% below 2014 levels

The Atmospheric Fund (TAF) releases an annual community greenhouse gas emissions inventory for the Greater Toronto-Hamilton Area (GTHA) region including the upper-tier and single-tier municipalities within that area in late November each year. The 2022 report shows that the GTHA region's emissions increased by eight per cent in 2022 from the previous year.

Appendix C

Snapshot of Recent Peer and Selected Municipalities' Climate Actions

Background work conducted to support the creation of the Climate Emergency Action Plan in 2020 and 2021 included the detailed review of progress on climate change action by other municipalities considered to be appropriate peers to London. The analysis was summarized in the supporting document titled “Learning from Other Municipalities”, which is available at [London.getinvolved.ca/climate](https://london.getinvolved.ca/climate). The same group of 11 peer Ontario municipalities and 6 additional selected municipalities in Canada are being followed by staff to continue to learn about and share best practices and emerging trends pertaining to addressing climate change.

Progress information for 2023 for peer and selected municipalities is identified in section A below. Additional details on two key items - Green Development Standards (section B) and Home Energy Retrofits (section C) – are also found in this appendix.

A. 2023 Progress for Peer and Selected Municipalities

Municipality	Sample of 2023 Initiatives and/or Status
Burlington	<ul style="list-style-type: none"> • Received a grant from The Atmospheric Fund (TAF) to install 16 level two charging ports at community facilities by the end of 2023. • In 2023, BurlingtonGreen Eco Hub will showcase heat pump benefits and promote electric mobility with an air source heat pump and EV charging station. • Recognized as a Tree City of the World (April 24, 2023). • Homeowners can now apply for an interest-free loan of up to \$10,000 for the purchase and installation of an air-source heat pump (September 11, 2023). • Created the Urban Forest Master Plan draft report which replaces the City's Urban Forest Management Plan created in 2010 (September 28). • Completed the Plains Road bike facilities and resurfacing project, featuring protected bike intersections, new bikeways, rain garden, road resurfacing, curb/sidewalk replacement, transit stops, hydro pole relocations, and streetlight upgrades (November 3, 2023).
Durham Region	<ul style="list-style-type: none"> • Launched Flood Ready Durham website which provides residents with information and resources on flood risk and resilience (May 10, 2023). • Secured over \$600,000 for 85 new electric vehicle (EV) charging stations by the end of 2024 (June 20, 2023). • Hosted its first annual Environment and Climate Forum (November 7, 2023).
Greater Sudbury	<ul style="list-style-type: none"> • The Community Climate Change Adaptation Plan was developed (June 13, 2023). • Launched its new rideshare program, Smart Commute (June 27, 2023).
Guelph	<ul style="list-style-type: none"> • Introduced the City's first electric bus for Clean Air Day (June 6, 2023). • Launched Greener Homes program offering zero-interest loans (July 31, 2023). • Planted 500 canopy trees using Miyawaki technique, a method designed to create faster growth and a denser forest (September 6, 2023). • Implemented Gold Star program for waste sorting (October 31 2023). • City of Guelph became the first municipality in Canada to earn corporate-wide ISO 50001 energy management certification (November 1, 2023).

Municipality	Sample of 2023 Initiatives and/or Status
Hamilton	<ul style="list-style-type: none"> Hamilton City Council approved \$2.55 million in new climate change initiatives. The City plans to launch of the Better Homes Hamilton home energy retrofit pilot this year. Distributed over 3,500 native trees to homeowners and planted 3,600 trees on City land by volunteers in 2023.
Kingston	<ul style="list-style-type: none"> The Kingston Regional Biosolids and Biogas Facility project proceeded to its next step which included public consultation and vendor engagement (March 14, 2023). Planted 40,000 trees through Tree Canada and Cataraqui Region Conservation Authority partnership (May 1, 2023).
Mississauga	<ul style="list-style-type: none"> Awarded the Forest Stewardship Council® (FSC®) certification for the management of 36 woodlands (April 17, 2023). Mississauga businesses participating in the Mississauga Climate Leaders Program (MCLP) started their GHG Training Program (October 5, 2023).
Oakville	<ul style="list-style-type: none"> Received Oakville Transit's first batch of zero-emission battery-electric specialized buses in January 2023, replacing diesel-run buses.
Ottawa	<ul style="list-style-type: none"> Adopted Budget 2023, which, for the first time, applied a climate lens to capital budget requests, and provided stable, consistent funding of \$5 million annually for the Climate Change Master Plan. Planted 10,000 trees in collaboration with the Government of Canada at Pinhey's Point Park (February 17, 2023). Approved the Wastewater Energy Transfer (WET) system pilot program which will capture thermal energy from wastewater for a low carbon heating and cooling system (March 21, 2023). Funded a free GHG calculator tool to calculate the GHG impacts from capital projects and municipal policies (April 2023).
Waterloo Region	<ul style="list-style-type: none"> Introduced a new e-scooter and e-bike share program, which will include up to 500 e-bikes and 500 e-scooters for community members to rent (April 14, 2023).
Windsor	<ul style="list-style-type: none"> Conducted an urban forest management survey which gave Windsor residents who were worried about the future of tree cover in the city a way to voice their concerns (January 30, 2023).
Calgary	<ul style="list-style-type: none"> Introduced its Clean Energy Improvement Program which offers flexible financing to homeowners looking to reduce utility bills and improve energy efficiency (January 31, 2023). Introduced its first Home Upgrades Program to help homeowners reduce their energy consumption (June 19, 2023). Hosted its 5th annual Calgary Climate Symposium in October 2023.
Edmonton	<ul style="list-style-type: none"> Celebrated 12 Building Owners and Managers Association (BOMA) BEST verifications in 2023. BOMA BEST encourages smart and sustainable solutions for existing buildings, promoting health, efficiency, cost-effectiveness, and low-carbon performance. Introduced its Change for Climate Solar Program (May 8, 2023) for Edmontonians looking to add solar panels to their rooftops. Launched a review of Climate Change marketing plan including a review of what selected cities in Canada have done and propose to do (November 2023).

Municipality	Sample of 2023 Initiatives and/or Status
Halifax	<ul style="list-style-type: none"> • Ranked the 11th most sustainable city in the world in the 2023 Corporate Knights' Sustainable Cities Index. • Plans to plant around 2,500 trees on municipally owned land by November 2023. • Halifax's climate action plan, HalifACT 2050, had its community update in March 2023 and August 2023. • Scheduled the installation of 18 electric vehicle (EV) charging stations across the Halifax region in Spring of 2023.
Toronto	<ul style="list-style-type: none"> • Published the 2022 Annual Report of the TransformTO Net Zero Climate Action Strategy and the Carbon Accountability Report. • Announced PollinateTO Grants recipients, enabling the creation of 110 new gardens. (April 18, 2023). • Announced its Taking Action on Tower Renewal (TATR) program, a financing and grant program for older apartment buildings (May 15, 2023). • Announced grants of up to \$20,000 to support local Indigenous communities in undertaking projects and initiatives that help to address the climate emergency and protect the environment (June 8, 2023). • A report to ban gas-powered leaf blowers to reduce noise and air pollution was endorsed by Council for further input and engagement for action (June 21, 2023). • Launched a new bike pilot program as part of its net zero strategy. The pilot involves 18 refurbished Toronto fleet bicycles and a team of 21 certified bylaw enforcement officers, who will use bicycles at parks and major events to minimize vehicle use (September 22, 2023).
Vancouver	<ul style="list-style-type: none"> • Increased local climate leadership with its fourth annual Women4Climate mentorship program (September 7, 2023). • Opened Canada's first ever zero-carbon firehall (September 6, 2023). • Distributed 250 trees to people living in canopy-deficient areas of Vancouver as part of its Branch Out program (February 13, 2023).
Winnipeg	<ul style="list-style-type: none"> • Opened applications for the Compost Support Program (March 24, 2023). • Began its first phase of public engagement on its Comprehensive Integrated Waste Management Strategy (CIWMS) (October 30, 2023). • Opened applications for the 2024 Home Grown Grant.

B. Green Development Standards (GDS) and Home Energy Retrofit Summary for Peer and Selected Municipalities

- Burlington's Sustainable Building and Development Guidelines (2021) outline which guidelines are voluntary and which are required.
- GDS in the Durham Region are implemented at local level. The lower-tier municipalities: Whitby, Pickering, and Ajax have GDS plans in place. Currently the region and lower-tier municipalities are working on a Region Incentive Program.
- Hamilton is currently carrying out consultations for the development of a Green Development Standard.
- Mississauga came out with its Green Development Standards document back in 2012 which is currently being updated.

- Oakville issued a Sustainable Design Guidelines document in April 2010 which approaches construction and design projects with sustainability as a core principle.
- Ottawa has High Performance Development Standards in place that consists of three tiers of performance: the metrics in Tier 1 are mandatory. Tiers 2 and 3 contain higher-level voluntary standards. Tier 2 will become mandatory in 2026-2027.
- The Regional Municipality of Waterloo is committed to work with lower-tier municipalities to develop a regional GDS and has completed Phase 1 of collaborative development of the standard.
- The Toronto Green Standard (TGS) V4, implemented in 2021, comprises performance tiers, with Tier 1 being obligatory in the planning approval process. The Development Charge Refund Program provides financial incentives for Tier 2, 3, or 4 projects demonstrating high performance and low emissions.

C. Home Energy Retrofit Programs and Local Improvement Charge (LIC)/Property Assessed Clean Energy (PACE) financing programs

- Burlington Better Homes Pilot program provides a finance service to assist Burlington homeowners in installing an air-source heat pump and air-sealing their homes.
- Durham launched its Durham Greener Homes Program in 2022.
- Guelph introduced its Greener Homes program in Spring of 2023 which offers zero-interest loans for homeowners for solar panels and energy efficient upgrades.
- Hamilton is scheduled to launch its Better Homes Hamilton (BHH) program before the end of 2023 to help property owners reduce greenhouse gas (GHG) emissions and improve energy efficiency within their homes.
- Kingston launched its Home Energy Retrofit Program in 2021. This program aims to decrease costs and GHG emissions for homeowners, by retrofitting 25-50% of homes built before 1991 by 2040.
- Mississauga is currently working with the City of Brampton and Town of Caledon as part of the Peel Residential Energy Program to design a home energy retrofits program for single-family homes.
- Ottawa launched their BetterHomesOttawa program in November 2021.
- Windsor provides financial incentives to encourage strategic investments for improvements within a number of core neighbourhoods across the City.
- Calgary has a Clean Energy Improvement Program (CEIP), which helps homeowners in covering initial expenses for energy-efficient and renewable energy improvements. Property owners can access convenient financing options from The City, repaying the costs through their property tax bills.
- Halifax's Solar City, the first PACE program in Canada, provided exclusive financing for solar projects, including direct installation of water conservation measures for all applicants
- Toronto launched dual-stream Residential Energy Retrofit Programs in 2014: the Home Energy Loan Program (HELP) for houses; and the High-rise Retrofit Improvement Support Program (Hi-RIS) for multi-unit residential buildings.

Draft Work Plan for 2024: Environmental Stewardship and Action Community Advisory Committee

February 7, 2024

The following are suggested items to be included in an ESACAC work plan for 2024. The purpose of this document is to outline high-level direction for the advisory committee's focus areas over the calendar year, and to provide transparency and accountability for staff and City Council.

Listed items may be broken up and delegated to working groups of ESACAC as appropriate. Some items may extend beyond 2024 towards longer-term implementation. Items are able to be added or removed from the work plan during the year.

This list was developed based on consultations with community members, staff and members of the Civic Works Committee.

1. **Communications checklist:** ESACAC will work with staff to develop a checklist for creating climate-focused communications, aimed at making communications accessible and applicable to more people (e.g., fitting different "profiles" in the City across demographics, values) and with a focus on reaching equity-denied groups with key information about climate change adaptation. This checklist could be used by City staff to refine and monitor diversity and effectiveness of communications over time. Development of this approach will likely include a background literature review as well as consultations with the Diversity, Inclusion and Anti-Oppression Community Advisory Committee, corporate communications staff and experts from the University and community.
2. **CEAP document reviews:** ESACAC anticipates it will prepare feedback on the [Climate Change Adaptation Discussion Paper](#) in February-March as well as the CEAP Progress Report in May-June. The CEAP working group will organize meetings with staff to exchange information about each item before preparing submissions.
3. **Other document reviews:** ESACAC will review and likely provide feedback on the following documents:
 - [Mobility Master Plan](#) update (est. February-March);
 - [Land needs assessment](#) (est. March);
 - [Site plan control by-law update / Green Development Standards](#) (est. Q3-Q4);
 - Urban Forest Strategy and Tree Planting Strategy updates (est. Q3-Q4);
 - [ReThink Zoning](#) update, climate change considerations (est. Q3);
 - [Design Specification and Requirements Manual](#) update, as it relates to objectives outlined in the Urban Forest Strategy and climate change adaptation (est. Q3).
4. **Naturalization and stewardship:** ESACAC plans to provide feedback to the City with respect to:
 - Implementation of the Naturalization of Boulevards and Reduced Roadside Cutting policy ([Multi-Year Budget Business Case P-32](#), pending approval);
 - Changes to the Yard and Lot Maintenance By-law as it relates to the Naturalized Areas and Wildflower Meadows policy (update expected in Q2);
 - Recommendations for communications to provide public information and encourage naturalization on private land and minimize risk of conflicts;
 - Ideas for improving community engagement and participatory stewardship of naturalization projects on public land through [existing neighborhood programs](#) and Parks Operations while reducing costs;
 - Updating existing resources for recommended/approved plantings (e.g., new Landscape Terms of Reference for Developers, 2014 seeding construction specification list) to support strategic plantings in addition to trees and shrubs;
 - Targeted public education at points of sale about preventing spread of invasive species.

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

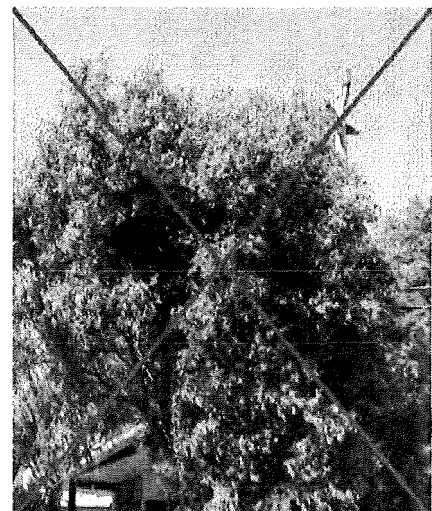
Individuals engaged in planning and/or planting under or around powerlines and electrical equipment, such as Landscape Architects, Landscapers, Municipalities or the public need to be aware of the electrical hazards associated with planting in the vicinity of powerlines or electrical equipment.

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.

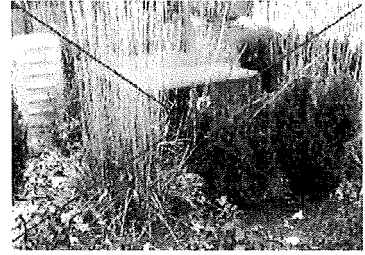
When selecting trees for planting, it is important to consider location of overhead powerlines, the growth rate for specific varieties based on the environment and placement.

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.



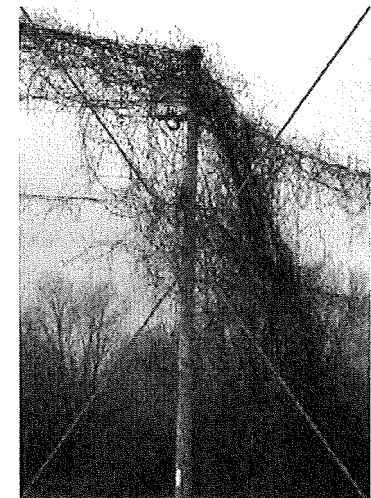
Obstruction around a transformer

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.



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.

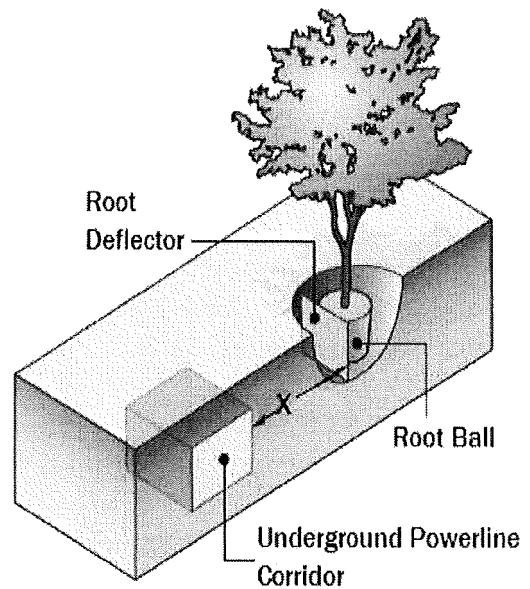
Contact Ontario One Call to request a locate.

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.

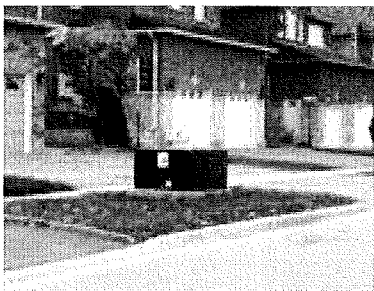
☛ Powerlines may be directly buried, or in conduit, and can be located at different depths depending on grade changes that may have occurred. When planting in the vicinity of underground powerlines, the minimum clearance required from the edge of the root ball to the edge of the underground powerline 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

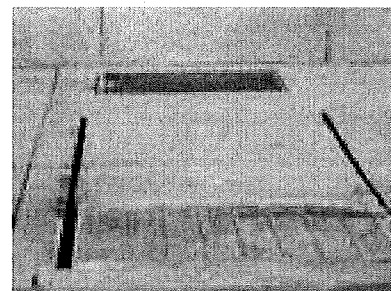
Depending on the LDC, electrical equipment such as a transformer or switchgear, may be above ground mounted on a concrete pad foundation (pad mounted) or in an underground chamber. Pad mounted electrical equipment, are typically green in color. Obstructions such as structures, fences, trees, shrubs or 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

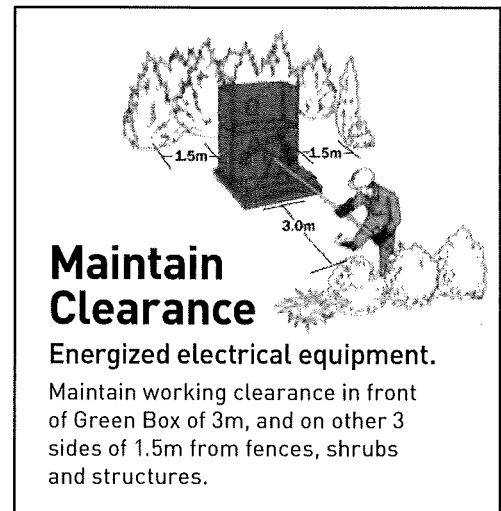


Pad mounted switchgear



Underground Chamber

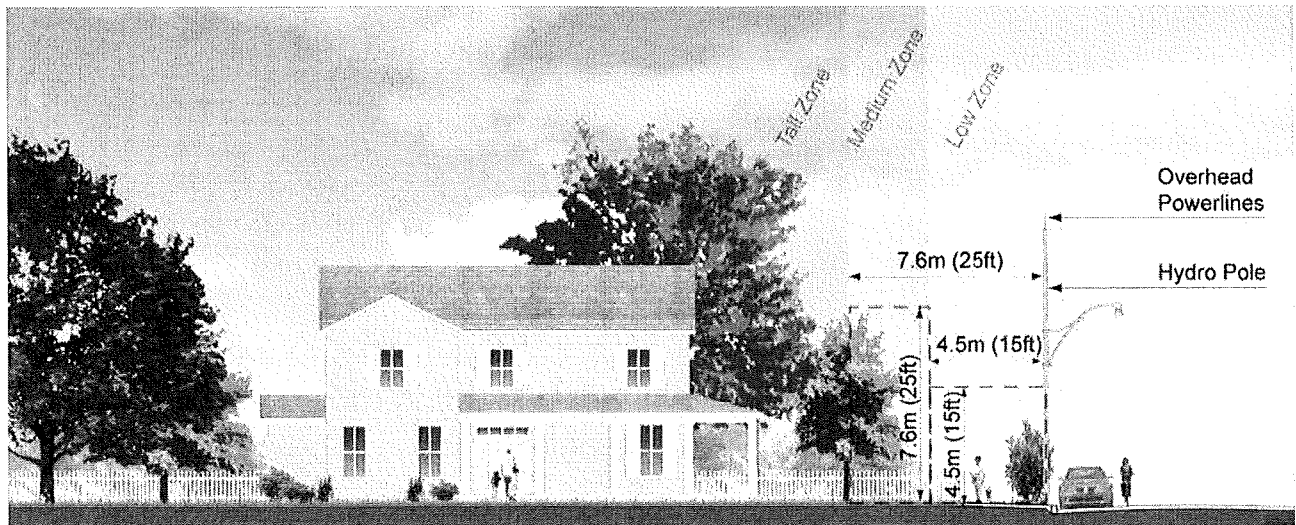
- ➔ Typically the LDC requires a minimum of 3.0 m (10 ft) in front of the pad mounted transformer door(s) and 1.5 m (4.9 ft) around the sides and back. The door(s) can be identified by the padlock. Pad mounted switchgears however requires a minimum of 3.0m (10 ft) in the front and at the back doors of 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.

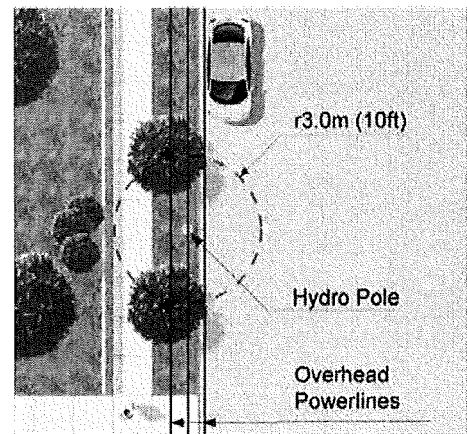


Low Zone – is the area under the power lines and extends to 4.5 m (15 ft) on either side. Trees and/or shrubs planted in this zone should have a maximum mature height and spread of 4.5 m (15 ft).

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 'Rubra'</i> , 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 'Schubert'</i> , 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 'Autumn Brilliance' (PP5717)</i> , 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 'Robinson'</i> , Robinson Crab Apple	7.5	7.5
								✓	✓	✓	✓	✓	✓		<i>Malus 'Selkirk'</i> , Selkirk Crab Apple	7.5	7.5
								✓	✓	✓	✓	✓	✓		<i>Malus 'Winter Gold'</i> , Winter Gold Crab Apple	6.0	7.5
								✓	✓	✓	✓	✓	✓		<i>Prunus sargentii 'Rancho'</i> , Columnar Sargent Cherry	3.0	7.5
										✓	✓	✓	✓		<i>Prunus serrulata 'Kwanzan'</i> , Kwanzan Oriental Cherry	5.0	7.0
										✓	✓	✓	✓		<i>Pyrus calleryana 'Aristocrat' (PP3193)</i> , Aristocrat Callery Pear	7.0	7.5
				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		<i>Syringa reticulata 'Ivory Silk'</i> , 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

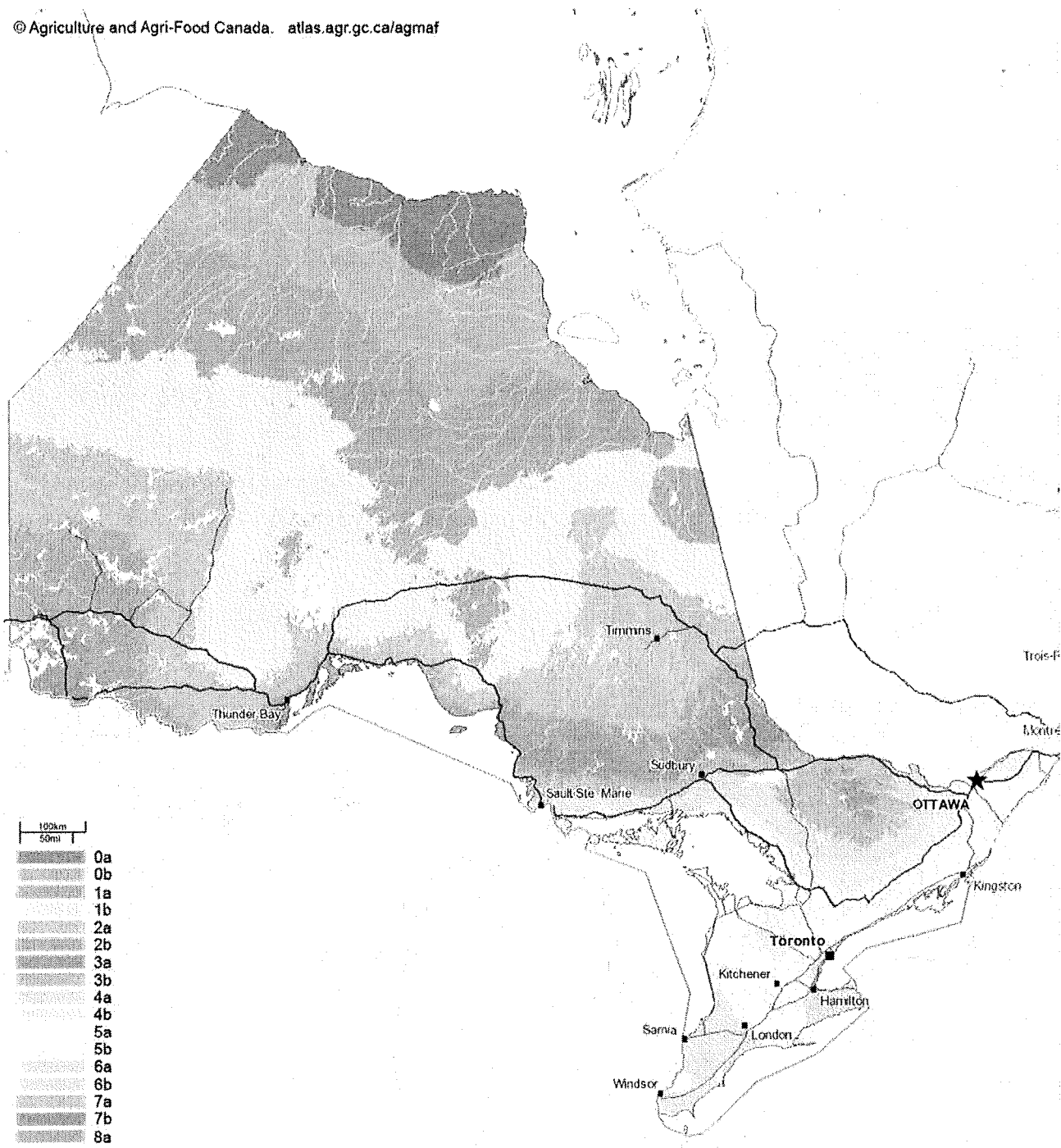
Geographical Area														TALL ZONE - TALL TREES		SPREAD	HEIGHT
0a	0b	1a	1b	2a	2b	3a	3b	4a	4b	5a	5b	6a	6b	Latin Name	Common Name	(m)	(m)
										✓	✓	✓	✓	<i>Acer campestre</i> , Hedge Maple		10.0	10.0
						✓	✓	✓	✓	✓	✓	✓	✓	<i>Acer x freemanii 'Armstrong'</i> , Armstrong Maple		8.0	15.0
								✓	✓	✓	✓	✓	✓	<i>Acer x freemanii 'Jeffersred' (PP4864)</i> , Autumn Blaze Maple		13.0	16.0
								✓	✓	✓	✓	✓	✓	<i>Acer x freemanii 'Celzam' (PP7279)</i> , Celebration Maple		8.0	15.0
								✓	✓	✓	✓	✓	✓	<i>Acer x freemanii 'Scarsen'</i> , 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, 'Karpick'</i> , 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 'Fastigiata'</i> , 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 var. inermis</i> , Thornless Cockspur Hawthorn Tree Form		10.0	10.0
				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	<i>Celtis occidentalis</i> , Common Hackberry		18.0	20.0
										✓	✓	✓	✓	<i>Celtis occidentalis 'Prairie Pride'</i> , 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 'Autumn Gold'</i> , Autumn Gold Maidenhair Tree		10.0	10.0
								✓	✓	✓	✓	✓	✓	<i>Ginkgo biloba 'JFS-UGAZ'</i> , Golden Colonnade™ Maidenhair Tree		8.0	15.0
								✓	✓	✓	✓	✓	✓	<i>Ginkgo biloba 'Princeton Sentry'</i> , Princeton Sentry Maidenhair Tree		5.0	13.0

Appendix A: Plant Hardiness index-cont'd

Geographical Area														TALL ZONE - TALL TREES			
														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' Zelkova		5.0	15.0
										✓	✓	✓	✓	<i>Zelcova serrata</i> , Green Vase Zelkova (PP5080)		13.0	16.0

Appendix A: Plant Hardiness Geographical Map

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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.

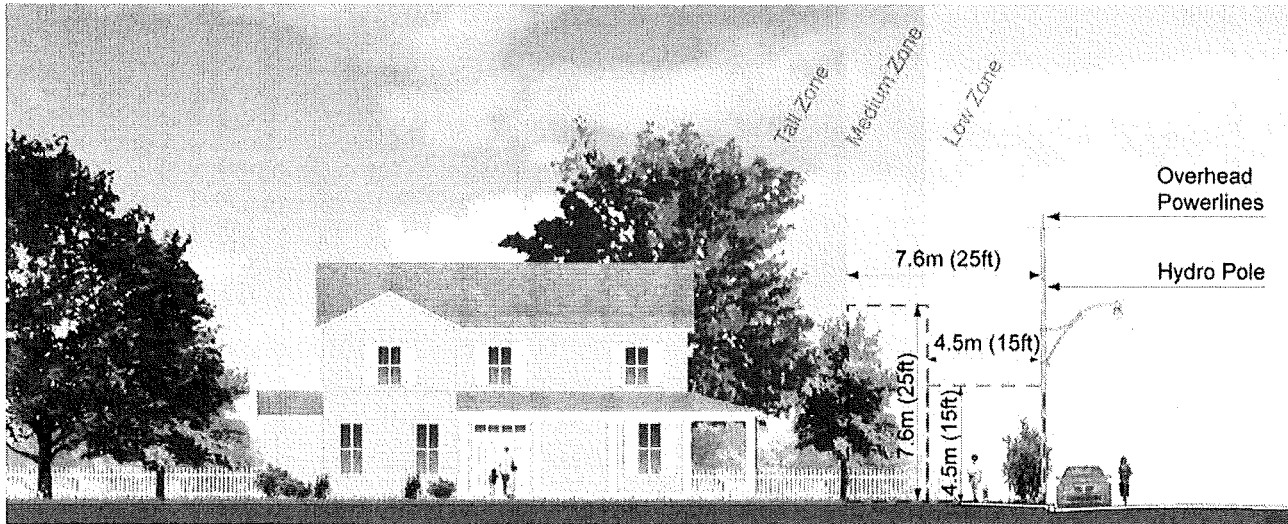
Step Potential – Is the voltage entering a person from one foot through the body and exiting the other foot standing near an energized ground object.

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

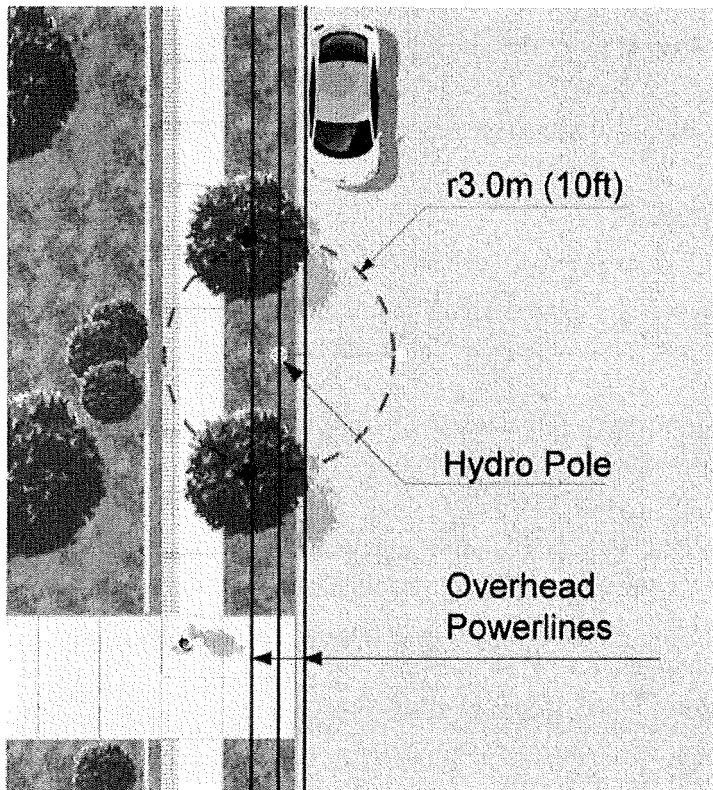
Utility Arborist – Arborists who are 444B Certified that are authorized to prune, clear vegetation, fell or remove trees within the Ont. OH&S Act defined '**limits of approach**'.

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

