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**To:** PEC <[pec@london.ca](mailto:pec@london.ca)>

**Subject:** [EXTERNAL] addition to Oct.3 agenda - Included 2023-10-23 PEC Reg Agenda

To : The Chair and Members of the Planning and Environment Committee

Please add the document below to to the Oct. 3 agenda as a comment on the ReThink Zoning initiative .  
I'm also requesting the opportunity to attend the meeting and speak to the proposal, with the permission of the committee.

Thank You

Angus Johnson

Please confirm email receipt

To the Chair and Members of the Planning and Environment Committee

A Vegetation Zoning Concept for London Ontario

Executive Summary

The proposal here is that the City of London should develop a comprehensive plan to protect and improve vegetation in the city. This proposal offers a suggestion as to how a type of zoning could be incorporated in such a plan.

It would be hard to overstate the importance of protecting the existing vegetation cover of our planet. Cities, like London, are just one piece of that puzzle and all cities have a heightened responsibility in this regard as so much of the emissions that are causing global warming are generated in cities.

In cities the response to the responsibility for reducing emissions takes different forms. Many cities focus on housing as a key to emissions reduction. Some have banned styles of housing believed to contribute to global warming. Others have effectively banned sprawl in favour of infill trying to stop the proliferation of emission spewing traffic. ( In London, sprawl has increased emissions by increasing traffic but it has also reduces the amount of vegetation which in principal could have reduced those emissions.) Four of the world's largest cities are banning diesel vehicles as of 2025. London, England has achieved considerable success in reducing emissions by charging higher emitting vehicles daily fees, cars (21£) and trucks (100£) for entering the city. Cities are making unprecedented efforts to grow canopy and protect vegetation, using vegetation as a first line of defense against the massive amount of emissions that cities produce. The City of Houston conducts controlled burns in extensive urban forests before fire season to protect them from wildfires and improve regeneration. Toronto has budgeted \$70 million annually to increase its urban forest canopy to 40% by 2050.

While London is not unique in its responsibility to protect vegetation, it has an almost unique advantage in the development of a plan of protection. London could well become a model city with a system of protection that others could emulate, with zoning as the framework of the system.

Angus Johnson

Greenspace Alliance

## Emissions and Vegetation

Globally the extent of emissions produced by burning fossil fuels, is 50 billion tonnes annually, and the amount of the reduction of those emissions by vegetation is 30%. The world's oceans reduce the amount by another 15%. Which means that 55% of emissions produced largely by our species, is our residual responsibility for the heating of the planet.

So first, how is the vegetation of the world doing ? What are the chances it will be able to keep up its emission reduction rate? In "A Trillion Trees"<sup>1</sup> Fred Pearce gives a remarkably comprehensive assessment of the present state and future of the world's forests. Unsurprisingly, the Amazon forests are an ongoing concern. Scientists are constantly assessing the rate of savannization of those tropical forests. But remarkably, in most of the rest of world, vegetation cover is increasing as it has been for many years. The reason for this restoration and the means by which it is happening will surprise many. The forests of the world are essentially recovering and growing because of the process of urbanization. Essentially, almost the world over, generations of farmers are leaving farmland and moving to cities. And nature is essentially reforesting the abandoned farmland.

Going forward we will be relying considerably on our forests and oceans to maintain those levels of emission reduction, if there is to be any hope of controlling the overheating of our planet. But in theory, if we could somehow reduce emissions at source, it would help the situation considerably and could lessen our dependence on plants and our oceans.

What then are the chances of emissions being reduced by other means in the coming years? That possibility I would suggest is squarely in the hands of the world's two largest emitters. Consider first the emission reduction prospects of the U.S.A. One analyst's summary

*"The United States is within reach of cutting its carbon pollution in half by 2035 — if it's able to install a massive number of renewable energy projects. Or the nation could fall far short of its international climate promises and reduce emissions by as little as 29 percent in 2030 — if fossil fuel prices remain low, economic growth surges and clean electricity installations stumble"*<sup>2</sup>

While Joe Biden continues to stress his commitment to massive infrastructure spending as the key to emission reduction, there is ongoing concern about the actual extent to which Americans will embrace electric vehicles. Surveys on consumer behaviour generate little optimism. Consistently, consumers who even admit to being worried about climate change say they are not willing to accept the increased cost of electric cars and trucks. As a personal observation, I just returned from the U.S. and the cost of gas was half Ontario's price. It seems very likely that

<sup>1</sup>Greystone Books, Vancouver, 2022

<sup>2</sup><https://www.eenews.net/articles/biden-boosted-climate-action-but-u-s-emissions-goals-still-in-doubt/#:~:text=Biden%20has%20committed%20to%20cutting,next%20target%20is%20after%20that.>

<sup>3</sup><https://www.theglobeandmail.com/business/commentary/article-china-paris-accord-net-zero-commitments/>

cheap gas will keep Americans driving gas cars and trucks, in the face of climate change worries. And in the U.S., any government that allows gas prices to rise does so at their peril.

Unlike the U.S.A. there are not a lot of ifs in China's current emissions picture. In summary: *China's emissions rose 4 percent year over year in the first three month of 2023. China has already approved 110 gigawatts of new coal plants - roughly 100 large plants. Ironically, much of this electricity is needed to run air conditioners for overheated families as temperatures rise. Massive amounts of cheap fossil fuel energy is also used to feed world-beating Chinese industries. China has yet to state credibly how it will achieve net zero 37 years from now.* <sup>3</sup>

The advantage of plants is they are genetically programmed to process emissions, in a sense, plants have no choice in the matter. Any way you look at it, planting any vegetation at this point seems a more reliable means of reducing emissions than hoping the public or governments will ultimately rise to the challenge. Abandoning plans to protect ourselves with vegetation while we face a looming climate crisis, seems an imprudent bet at best.

In what follows, I will attempt to explain how a concept of zoning could be used to protect vegetation in London and why London is so well-suited to the project. I want to emphasize that what I will describe is a concept, an overview, an idea for zoning vegetation. I will sketch as best I can how I think it could work but admit that there are administrative hurdles to overcome and operational details that would need to be worked out before it could be implemented. It's my hope that others more talented than I will be enthusiastic enough about the concept to complete the task.

The key to that special opportunity to protect and hopefully improve London's existing growing vegetation is information about emissions that was produced by Dr. Daniel Rainham and his team from Dalhousie University who chose London as one of the thirty subjects for their environmental quality study completed last year.

The key pieces of information from the study are a comparison table showing levels of emissions and a map correlated to the table. The map shows London in areas of different colours and the table below indicates what the colours represent. <sup>4</sup>

	0–30	30–39	40–49	50–59	60–69	70–79	80 - 100
<b>PM<sub>2.5</sub> (µg/m<sup>3</sup>)</b>	8.3 (5.5, 9.2)	7.9 (4.7, 11.2)	7.8 (3.3, 11.1)	7.4 (2.3, 10.8)	7.1 (2.2, 10.6)	6.9 (2.3, 9.6)	6.6 (4.5, 8.4)
<b>NO<sub>2</sub> (ppb)</b>	9.3 (6.9, 12.8)	9.1 (4.4, 13.0)	8.8 (1.8, 14.9)	7.7 (0.7, 14.9)	6.1 (0.2, 12.9)	5.3 (0.1, 9.8)	4.9 (0.8, 7.9)

<sup>4</sup><https://www.sciencedirect.com/science/article/pii/S0160412022005608>

This table shows amounts of two important emissions that cause global warming, particulate matter and nitrous dioxide, in varying, actually decreasing, amounts. The amounts of the emissions decrease going from left to right. The map for London (Map L)<sup>5</sup> that accompanies this table shows the location of areas of the city that actually have these amounts or levels of emissions.

Looking at the rows from left to right the top row (0-30, 30-39 etc.) the ranges of numbers correspond to areas on the maps. For example, the (70-79) area is shown on the map with a lighter green colour. What the table shows is that the level of particulate matter in that area is 6.9 ( $\mu\text{g}/\text{m}^3$ ) and the level of nitrous dioxide is 5.3 (ppb).

The two rows of emissions show, for the purposes of the study, information related to air quality. Both emissions pose significant health hazards, related to respiratory diseases, including cancer. The higher amount of emissions is reflected in lower environmental health scores. As the amount of the emissions decrease, the areas get 'healthier'.

But again, the tables also show information about important emissions that contribute to global warming. Nitrous dioxide is one of the three main greenhouse gases along with methane and carbon dioxide. It is produced in the smallest quantities (6%) (Methane 16%, CO<sub>2</sub> 72%) but of the three, it is the most potent contributor to global warming, with 300 times the heating potential of carbon dioxide.

Particulate matter is also a significant contributor to global warming. It warms the atmosphere by absorbing incoming and scattered heat from the sun. The most conservative estimates of its effect place it at two thirds the effect of carbon dioxide and greater than methane. Recent studies argue that it may have an even greater effect than carbon dioxide.<sup>6</sup> These index maps can then be viewed as an emissions report card, each colored area on the map showing differing amount of emissions, or differing levels of success in dealing with global warming.

On the maps of the thirty cities there are no areas anywhere, above 90. The highest fall in the (80-90) range. In those ranges are the best air quality scores and those measurements for particulate matter stop at 6.6 and for nitrous oxide at 4.9. Hence there is no area measured in any of the thirty cities that is entirely free from these emissions.

The lowest actual measurement of particulate matter occurred in the (60-69) region and that was 2.2  $\mu\text{g}/\text{m}^3$ . The lowest number of nitrous oxide occurred in the (70-80) area and that was 0.1ppg a very small amount, but not zero. London's highest amounts of these emissions are in a (40-49) area and the lowest are in the (80-90) darker green category.

<sup>5</sup><https://ars.els-cdn.com/content/image/1-s2.0-S0160412022005608-mmc3.pdf>

<sup>6</sup><https://www.theguardian.com/environment/2013/jan/15/black-carbon-twice-global-warming#:~:text=Soot%20warms%20the%20atmosphere%20by,surface%20of%20snow%20and%20ice.>

In London, there are eight areas with these lowest emission amounts in patches around the city. So in terms of the EQ study they are the "healthiest" areas of the city. Seven are located in protected natural areas (like ESAs): Meadowlily Woods, Pond Mills, Kilaly Meadows, Medway Valley, Springbank Park and Warbler Woods. The eighth is in part of the Greenhills Golf Club property in Lambeth.<sup>7</sup> But, in addition to being healthy, these areas are best in mitigating global warming since here the two emissions are reduced to the lowest levels.

Viewed from above, the areas are entirely covered by vegetation. That vegetation has stomata which processes emissions, and stomata, that most growing plants have, are uniquely responsible for this processing and reduction of emissions. One mature tree which can have millions of stomata can remove 50 lb. of GHG a year. Growing grass removes approximately 400 lb. of emissions per acre, annually. But so remarkable a job as vegetation does in dealing with human produced emissions, there is currently not enough of it to remove more than 30% of emissions, globally.

So, the Dalhousie team's coloured maps show in London, colour by colour the amount of those two emissions that remain unprocessed by vegetation. Moving away from these natural areas with lowest emissions and looking at other areas, the amount of vegetation covering the land decreases, the proportion of buildings and infrastructure covering land increases and the amount of emissions measured in the areas increases. The EQ index map then shows area by area, colour by colour, the extent to which vegetation is processing emissions and it is London's good fortune to have a map that shows a pattern this clearly. In addition to showing how successfully vegetation is reducing emissions, the map can be used to help show how to protect and improve the vegetation that London has. Fundamentally vegetation needs to be considered by cities, where most vehicle emissions are produced, as a resource that needs protection and where possible, improved so that it can better mitigate the effect of emissions.

### Variations in Vegetation and Contributions to its Protection

Looking at the substantial differences in the reduction of emissions that vegetation is responsible for, it is hard to ignore the significant resource that owners of areas of vegetation are providing, and doing so without compensation for the maintenance and risks involved in the stewarding of vegetation especially trees, and costs associated with those risks. For example, if the city decides that the tree you own is a hazard, the responsibility for the cost of removing that hazard is yours. As approximately eighty percent of the land in London is in private hands, the largest part of the vegetation that is removing emissions in London is privately owned. Cities who manage vegetation resources like parks and recreation areas also deserve some recognition for managing and protecting these resources because everyone who is essentially sharing the air, benefits. Although those costs are generally covered by municipal taxes to which everyone contributes.

Essentially, private landowners who care for the vegetation on their property deserve recognition for providing a resource that in the long run may have a significant effect on our ability to mediate the effects of global warming. While, in some areas of the city, significantly smaller amounts of vegetation can only contribute as the pattern of the Rainham study shows, much less.

<sup>7</sup><https://www.google.com/maps/search/Transit+stations/@42.9932647,81.2037,654m/data=!3m1!1e3?entry=ttu>

Improving vegetation throughout the city could then also be viewed as an effort to spread out responsibility. The most substantial beneficiaries of the vegetation are of course, residents who own and drive gas vehicles the source of most of these emissions.

Of course the great majority of residents of the city who own trees and drive cars and trucks have gas burning vehicles so they are in fact reducing emissions that they are also creating. They just happen to be contributing more towards the reduction than residents who don't own trees. And it is certainly worth noting that residents who own trees and don't own cars or drive electric vehicles may actually come close to covering their own carbon footprint.

It is also fair to attempt to understand the consequences and responsibilities of removing vegetation particularly in the case of removing trees when housing is being developed. Typically that housing will result in bringing additional emissions to the city, if the residents of the housing drive cars and didn't live here already. So removing trees to build housing means simultaneously removing the most significant means of reducing the emissions and having the effect of further tipping existing imbalance in contribution to the reduction of emissions.

The removal is generally justified as the necessary sacrifice to create needed housing. Typically this characterization seldom corresponds to reality. Some form of housing can usually be placed without removing trees. More typically, trees are removed to increase the space available for more housing and/or to conform to the aesthetics of design employed by the builder. In light of the growing concern for our ability to deal with a climate crisis, it is appropriate to point out that requests to remove trees generally portrayed as reasonable and necessary are often actually outrageous.

The question of proportionate responsibility aside, the most important observation to make from the information derived from the Rainham study is that the vegetation as it is in London is only capable of removing a portion of the two emissions, nitrous dioxide and particulate matter, and the amount that is being removed reduces with decrease in vegetation. Even the areas of densest vegetation remove a substantial amount of emissions but not all. Clearly, a program needs to be put in place to protect existing vegetation mediating the effects of global warming and where possible improve the amount of vegetation so that it can better remove emissions.

### Zoning Protected Vegetation

A way to protect vegetation so that it can perform this vital important function would be to zone it so that it is protected from harm or removal. The area that the vegetation grows on gets zoned, but actually the vegetation gets the protection. In natural areas, clearly deserving candidates for protection, it would seem just a matter of deciding what their borders are, something that may be marked on a map already, locating them on a Vegetation Zone Map and labelling the areas "Protected Vegetation". All that's needed is for the appropriate municipal body to adopt the concept "Protected Vegetation", draw the lines and apply the labels accordingly.

### Other Areas

Recognizing the importance of the emission processing resource, vegetation, should warrant

identifying many other areas of vegetation also performing that function, beyond the strictly 'natural' areas. These should not be difficult areas to identify and delineate either.

Thinking of fairly large areas of vegetation that deserve inclusion, the list should include all parks, sports fields, cemeteries, golf courses, etc. These vegetation areas as a group, are processing a great deal of emissions across the city and should be protected. Some care would be needed to avoid including buildings, parking lots, paved roadways, etc as protected areas.

A good example of this vegetation-infrastructure mix is Labatt Memorial Baseball Park. Here the playing field and surrounding treed area would be protected but the area with the clubhouse, parking areas and other buildings would not. This entire area is also currently protected as a designated historical site, which protects the entire area including the infrastructure.

A historical/cultural designation was used to protect a golf course from development in a case before the Ontario Municipal Board.<sup>8</sup> Significantly this was a situation where the owner planned to build high density apartment buildings over the vegetation. The City of Oakville opposed the planned development of the Glen Abbey golf course by the owner ClubLink and used that historical/cultural designation as the argument to prevent the proposed development. The hearing for the final determination by the tribunal was supposed to begin in Aug. of 2021. ClubLink withdrew the appeal before that happened. In short, in a case where the tribunal would have to choose between competing visions for the use of the property, no decision was ultimately required.

London could be a city with a powerful, comprehensive commitment to the mitigation of global warming by zoning vegetation. This vision could be an effective defense if the need arose in a tribunal hearing where the protection of vegetation from removal was being challenged.

There should not be extensive cost to the city in any of these changes, essentially it's a matter of creating definitions, labelling and mapping, possibly with the preparation of an inventory, at least insofar as it involves, existing, relatively easy to identify areas of vegetation.

### Dual Responsibility of Improvement Committees

In dealing with the creation of "Planned for Improvement" areas, a committee would be tasked first to identify areas where vegetation needs improvement. The development of a plan for improvement and the implementing of the plan for each area should chiefly be the responsibility of a committee made up of residents of the area. In addition to these responsibilities this improvement committee should be mandated to examine any plans development to assess how they might affect vegetation in the area and to determine whether the plans would actually affect an improvement to the vegetation in the area concerned.

As these plans are being developed it would seem appropriate to publicize this dual nature of the

<sup>8</sup><https://www.oakville.ca/town-hall/news-notices/2021-news-releases-archive/historic-glen-abbey-property-saved-from-redevelopment/>



committees with all parties who work in the development of land in the city. It could be emphasized that everyone in the community, including industries that build and develop in the community has an ongoing obligation to protect vegetation. It could even be indicated that approval of plans would be contingent on the extent to which plans effect an actual improvement of vegetation.

### Zoning: "Planned for Improvement"

The committee could also be tasked with preparing organizational maps used to keep track of the work completed by the groups. The costs will depend largely upon whether this organizational team is paid or not. Potentially if an advisory committee or some other committee were willing to take this on, the costs might be quite low.

This decision-making process would be dealing with a vegetation continuum from neighbourhoods with substantial amounts of vegetation, where actual space for improvement was an issue to areas with much less. Many vegetation owners in the former have invested years in protecting their trees, lawns, and gardens and the planning for these areas should be more about protect than improve.

The science is indicating that to this point, London, Ontario has only received a taste of the brew that is coming like cycles of drought, flood, fire, blight, invasive insects and species. A plan for protecting their investments in vegetation could relate to the protection from the potential effects of climate change itself.

Research and intervention needs to focus on dealing with them as the future unfolds. One scenario suggests that our climatic area in twenty years will resemble that of Washington D.C. today. This could mean that different species should be planted now to survive in that particular environment. Growing cycles could become longer. Which might actually make it easier to grow more vegetation as the growing year extends. But this whole uncertain future only emphasizes the need on the part of the city for ongoing careful planning, cataloging and managing the vegetation as is, and providing communication to vegetation owners.

In the protected areas discussed earlier, that zoning label could carries the implication that the area is to be protected from adding infrastructure that would displace vegetation. While that's an issue everywhere and certainly it would be a normal concern of owners in these denser vegetation neighbourhoods, the zoning label could have a different connotation.

If the vegetation in these neighbourhoods was referred to as "Supported", it could convey the message that there was a tacit approval for the amount of vegetation here and the way it is being managed by its owners and that the city (double meaning) viewed itself as a supporting, sharing partner in the protection of the vegetation. And at some point in drawing distinctions between one area and its plan from another may call for an actual measurement of the density of the vegetation so as to compare one area with another. For example in selecting these "supported" areas it may be necessary to define the area as one with vegetation density x. Technical resources are now available free to the public to assist with this kind of project. An example of a project that utilizes these resources is "Inequalities of Urban Greenness" by Kyeezu Kim.<sup>9</sup> It is a good starting place for anyone looking to learn about measuring vegetation in urban area. Particularly useful here are the tools the study utilized in the NASA Earthdata package.<sup>10</sup> Google Street View referred to

earlier is also an excellent resource for identifying vegetation differences in land covering. It's useful in actually locating the areas being defined.

The organization of the teams for the planning could actually be by emission areas. Using the EQ index map as a guide it would be a matter of identifying an area on the map of basically one colour to guide the grouping. It may need some explanation to get across the backstory of all this. i.e. everyone actually lives in the area where the levels of the two emissions are such and such and the general idea is to try and introduce more vegetation in the area which should reduce the emission level and help mitigate global warming, but overall it's important to communicate that emissions-wise the group living in this area are in the same boat.

The invitation to be part of the group charged with developing the plan should be extended to anyone who lives or owns property in the designated area and initially their task would be to meet as a group and develop ideas for things that could be done to add vegetation to the area.

### Two Factors Affecting Identification of Improvement Areas

#### Vegetation Maturity

Basically there are two ways in which the amount of vegetation can increase. Existing vegetation can grow or new areas of vegetation can be added to the complement. Improvement committees will generally be looking for opportunities to accomplish the latter but they will need of course to account in their plans for the growth to be expected in the vegetation that's already there. London has large areas across the city of relatively recent development with immature trees that were planted after the building of housing was completed. The strategy employed in most of the developments was to scour the earth of existing vegetation, place the infrastructure on the moonscape and then plant grass and trees. In too many areas of new development across the city the percentage of infrastructure covering the land is so high that there is for practical purposes little room to add new vegetation. Even when the planted trees mature the total amount of vegetation will have little proportionate ability to reduce emissions

But across the city, there is actually substantial variation in the density of young trees in areas of newer development. In places where the growth will substantially improve emission reduction that will need to be accounted for and adjustments made in any planning for added vegetation. Once the zoning for protecting vegetation is in place it will be established that scouring the earth prior to development is inconsistent with the protection of vegetation in all three zones as improvement committees will need to have an opportunity to assess existing vegetation prior to assessing development plans that may be offered for consideration.

#### Diesel Emissions

The area with the highest level of emissions in London, is shown with a 'sandy' colour on the

<sup>9</sup><https://www.science.org/doi/10.1126/sciadv.adf8140>

<sup>10</sup><https://search.earthdata.nasa.gov/search>

Rainham EQ map. It is made up of a patch concentrated in an area between a line running East to West slightly north of Central Ave. that marks the northern extent of the C.P. Railyard and in the south to Hamilton Rd. and East to West between Highbury Ave. and Adelaide St. The other large portion of rail yard is owned by CN Rail. A small chunk of the area left of centre is lower emissions beige and yellow, an 'older' residential area. Slightly east of this the rail areas are connected by a strip of the sandy colour.

The rail areas are separate sections 21 and 22 rails wide. Around this area is an eclectic mix of six auto repair shops, three car dealerships, Fed Ex, a custom cabinetry, a salvage yard, a window and door supplier, a pet groomer, a designer shop, a plumbing supplier and one truck repair shop. Overall the area is an industrial/commercial residential mix. The Fed Ex business is probably the largest source of diesel truck traffic close by. Otherwise this area would have tow truck, light truck and van and car traffic. Overall, the area is not densely residential and has some vegetation. There is actually a small greenspace, Silverwoods Park, immediately beside the CN railyard.

Although it is clearly the area in the city with the highest level of emissions. While the nitrous oxide level here is almost twice the level of the lowest emission areas, it is clearly not the area in the city with the lowest amount of vegetation. There are in fact areas in the city with substantially less vegetation and lower levels of emissions. This is probably the area of the city with the highest level specifically of diesel emissions. Diesel burning directly produces large amounts of particulate while the burning of gasoline does not usually produce amounts of particulate matter.

And while burning gasoline and diesel both produce nitrous oxides, diesel burning produces it in much larger amounts, eight to eleven times as much. It is estimated that diesel burning is responsible for 85% of all nitrous oxides from moving vehicles.

If this area is being considered as potentially "Planned for Improvement" the high probability that diesel emissions are skewing the emissions level up, should be taken into account.

A representative from the city could act as a moderator, or serve as resource, if they are familiar with city plans and policies that members may need to consult. But their responsibility, when the group has decided that the plan is done, would be to inform council, or whoever is responsible for recording zoning that the area can be labelled on the map "Planned for Improvement". (Another option would be to zone the area "Planning for Improvement" as soon as the group meets and starts planning, and so the liaison rep could be responsible for delivering that message and change it "Planned" when complete.)

While the time frames should be in their hands, two fundamental facts should be conveyed to stimulate some sense of urgency in what they are trying to accomplish. When growing vegetation is established, it begins to reduce emissions as soon as it has green leaves and for the foreseeable future there is a desperate, time sensitive need to reduce those emissions we are producing.

The 'invitation' map should include a level of emissions per area and every area of the city should be accounted for on the map. In contrast to areas of the city that have enough vegetation to be effective in processing emissions, there are areas with very little vegetation, like the central downtown area of the city. Hopefully there will be a turn out of downtown dwellers with many

wonderful ideas about how to vegetate the core area. What is clearly important is the input from residents who actually live in the area along with the voices of property owners.

### Vegetation Zoning and Development of the Urban Canopy

The city of London currently has a canopy cover of app. 26% and there has been discussion of the possibility of increasing the canopy to 35% by 2065. So in the future there may be the possibility of two plans in operation with the general intention of adding vegetation to the city. While both plans will involve adding vegetation there will be differences in the priorities of the plans. The first priority of an urban canopy plan will be to specifically increase the canopy tree cover by planting trees. The first priority of plans to improve vegetation is to increase the density of vegetation in areas of the city zoned "Planned for Improvement" and these improvements planned could involve the introduction of a wider variation of vegetation like grasses, ferns, bushes, vines, flowers, 'weeds', etc. but possibly trees also.

The rationale behind the latter is that while trees are obviously extremely important in the complement of a city's vegetation and long term plans to improve vegetation certainly need to involve trees, trees take a minimum of twenty years or so to get to the point where they are mature enough to significantly reduce emissions. Virtually all types of vegetation process emissions and faster growing vegetation will do it sooner, and when it comes to reducing emissions in the current environment of global warming, the sooner the better.

A typical improvement project might involve the restoration of a degraded parking lot where the plan is hopefully, in twenty or thirty years it will mature into an urban mini forest. But in its initial stages it is planted with a variety of cover vegetation, like grasses, other plants, shrubs, etc. and of course, young trees. At first blush, the sensible preference for trees would seem to be ones that produce dense cover and grow quickly. At least that would seem to make sense of given, what this vegetation is intended to do, namely reduce emissions.

In all likelihood in the same time frame as this plan emerges there is the possibility that an urban forest canopy plan will appear with possibly its own agenda regarding locations, timelines, and theories about the types of trees that should be planted to expand the canopy. Conceivably creating a situation where two different groups are arguing about the when, where and what of the planting of a tree. When there is so much in common in the agenda of both groups, who would both like to see an expanded canopy to help protect the city from global warming, it would be unfortunate if some means of co-ordinating the interests of the two groups could not be found. It may very well mean that some compromising will be required, hopefully with the result that groups can partner in such a way as to achieve both goals more effectively.

### Costs and Funding for Protecting Vegetation

The legal contest that the city of Oakville and ClubLink are engaged in has not been without

substantial costs on both sides and the potential legal costs involved in protecting vegetation deserves consideration. However, the decision to take a leadership role here, might have potential advantages in terms of acquiring funding to support projects that protect vegetation. There may be

granting opportunities for the creation of parks. Provincial funding may be available from federal transfers for projects that incorporate climate adaptation efforts, from a Natural Infrastructure Fund.<sup>11</sup> In terms of accessing needed financial resources, this may be just the right time for the city to pursue support for a program of vegetation protection.

<sup>11</sup>[https://publications.gc.ca/collections/collection\\_2022/eccc/En4-469-2022-eng.pdf](https://publications.gc.ca/collections/collection_2022/eccc/En4-469-2022-eng.pdf)

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