

Council Committee Meeting – October 28, 2019

Re: private/public tree by-law, tree protection standards, strategic plan
This is informational for you and asks questions of you.

Benefits of trees to community health.

1. Oxygen

- Dr Andrew Weill, author and well known physician has stated that oxygen is the single most important ingredient to our overall health and well-being.
- Plants releases oxygen through the process called photosynthesis and it occurs in the leaves of plants which are on deciduous trees ½ of the year in most of Canada. So oxygen is not released by trees from late fall through to mid spring.
- Oxygen is released in the daytime for us to breathe and carbon dioxide is sequestered throughout the night.
- Carbon sequestering and oxygen release is maximized when the tree is mature although trees grow throughout their life therefore cutting down mature trees is counterproductive to the release of oxygen into the air for us to breathe in and therefore detrimental to the health of the citizens of Burlington.
- Newly planted trees are too small to make a difference in oxygen levels and take anywhere upwards of 10 years depending on the tree to release significant oxygen into the air. Therefore, keeping the mature trees we have is a very high priority.

2. Phytoncides are antimicrobials produced and released by trees that have anti-bacterial and anti-fungal benefits to the tree and people increasing the effectiveness of our immune system by increasing the number of white blood cells known as Natural Killer (NK) cells.

3. Shade

- Mature trees can reduce the temperature in the shade they produce by as much as 2 degrees C.
- More of a problem in cities as they tend to have their own microclimate due to a lack of trees and an increase in substances that increase air temperatures as well as having a concentration of industry that results in increases in temperatures.
- Heard from lots of people in new subdivisions that they have no trees and cannot use their backyard in the summer as there is no shade anywhere.

- Newly planted trees have no positive effect on the moderation of temperature as they are too small and would be for a number of years.

4. Air quality

- Air born particles cling to leaves and so are taken out of the air. Depending on the tree, 7-24% of particulates can be removed from the air.
- Volatile Organic Compounds are also removed from air by trees and different trees take out different proportions of VOC's. These cause numerous health problems, too many to list here, and are produced by burning wood on mass, coal and natural gas.

5. Soil Erosion

- Root systems hold soil in place through their root systems. Different trees have different types of root systems and that needs to be taken into consideration when planting.
- High trees reduce soil erosion caused by heavy rain, hail and flooding streams that both cause property damage.
- Low plants, ground cover, protect from soil loss when its windy.
- It is important to note that worldwide, there is an extremely high loss of fertile soil through wind and loss of the biota that produces fertile soil in the first place as there is nothing to stop the heat of the sun from killing the decomposers that live in the soil. These reasons are also why clear-cutting is very harmful but done as it minimizes the cost of cutting trees thus saving the logging industry money or in the case of the quarry, 9000 trees were clear cut only because the quarry wanted them cut. It is to be noted that this will highly affect air quality in that area.

Fungi

Where trees are undisturbed, fungi form an "internet" between trees. They act as a conduit facilitating communication between trees and provide nutrients to the trees that need it. This system, vital to the health of trees, is destroyed when the soil is disturbed. (See Suzanne Simard's work).

Last Thought

The UN recently released (May, 2019) a report stating that one of the most destructive things we are going to ecosystems is mass planting of trees. Usually what happens is that the diversity of trees planted is very low leaving forest or woodland ecosystems very vulnerable to destruction. I do not know what goes into the planting of trees in Burlington but just considering whether a tree is native or not does not even come close to being good enough.

Questions for Council

1. Re development. I noticed two very healthy trees on city property on a New Street residential site were cut down prior to building. I walked past those trees often and knew they were healthy. I phoned the city to ask about it. I was told that the trees were unhealthy and there were dead branches on the trees so they were cut down. Under no circumstances was this true. I do not know why I was lied to and what the purpose was to cut them down. Clearly they were healthy mature trees and there was no reason to cut them down.
2. I see healthy trees on city property being cut down all the time and wonder what is the rational for that.
3. Have you considered the pretreatment of ash trees for emerald ash borer using an insecticide containing acephate along the drip line so the tree roots absorb the insecticide and kill the ash borer?
4. Is development and industrial considered more important than having trees? I have never seen a residential development save more than one-two trees and that is rare. Usually none are saved. I was told at one intro meeting about a development by a planner that all the trees would go and that was just the way it was. Given the vital importance of trees in countering climate changes and in keeping the community so much healthier, why are they given so little importance?
5. It is troubling to me that trees are seen as “assets” and “resources” as spelled out in the Private tree by-law experimental plan. This really shows a lack of understanding of the importance of trees to community.
6. We have a tendency to think we are smarter than the individuals in ecosystems who for millions of years more than we have been around have figured out how to create ecosystems that together helps keep Earth habitable. I consider this rather egotistical.

It would cost Burlington infinitely less money if they let nature do what it knows how to do best and minimize our direct involvement to situations where our direct intervention is needed. I recognize that the % of tree cover is half what it should be and so a significant amount of intervention is needed but it must be intervention that directly benefits both plants and animals by meeting their needs to allow the ecosystem we are a part of to function at its best. Looking at ecosystems differently opens new pathways for more effective, highly beneficial action to protect urban forest ecosystems.

Education is badly needed here to change the way we think to change the way we act.

Have you thought of educating the community so that they see the value for themselves of keeping their trees? How would you change the massive cutting down of trees on public city land to preserve minimum 10-year old trees in particular if you had new eyes?