Protecting and Managing Stratford's Urban Forest

Sustainability Committee Meeting, December 4th, 2019

Why Protect and Manage Stratford's Urban Forest?

1. Urban forests are beneficial

One of Stratford's greatest natural assets, and one which is currently neither protected nor managed, is its urban forest. Comprised of all trees and shrubs in the Town of Stratford, the urban forest provides many public services to the residents of Stratford. Top of this list are services such as air purification, wind protection, shade, groundwater infiltration, and carbon sequestration. In addition to these services, trees are also esthetically valuable and have benefits to resident mental health and wellbeing and create appeal for a street or neighborhood. The value of these services can be measured in dollar amounts, as has been done by municipalities like the City of Toronto and the Town of Gibsons, but can also be viewed as an irreplaceable asset, which could not be mimicked through built infrastructure.

2. To accomplish the goals of the Strategic Plan and the Community Energy Plan

The Town of Stratford Strategic Performance Management Plan (SPMP) lists "developing a tree preservation and native species planting program" as one of many initiatives planned to decrease natural area degradation. At the resident level, decreasing natural area degradation is directly linked with improved environmental responsibility and improved resident health and safety (goals of the SPMP). Further, tree preservation and planting tie in with many other initiatives in the SPMP, such as pedestrian safety, wellfield protection, climate change adaptation, sustainable urban development, water conservation, resident wellness, active transportation/green corridors, and the creation of a natural areas lens. As well, protecting and planting trees would help achieve the goal of the Community Energy Plan to increase the capacity for carbon sequestration.

3. Tree loss is currently an issue in Stratford

Due to the pressure of a rapidly growing population and increasing demands for land, the urban forest of Stratford is being steadily fragmented, and there are many remaining forested areas that will be subject to development in the coming years. Rough estimates suggest that forest cover in Stratford is approximately 27%, and decreasing. Efforts are made each year to plant new trees in Stratford, however these trees will require decades to reach maturity, and are most often limited to Town-owned properties. Large trees are far more valuable than newly planted trees with respect to nearly every benefit and service they offer. Tree distribution is also important and loss of forest can lead to habitat fragmentation. An unevenly distributed urban forest results in uneven distribution of the benefits it provides. Faced with the reality of a shrinking urban forest and the increasing pressures of climate change, the Town of Stratford will need to take steps to protect existing trees in order to plan for the future of its residents.

4. Urban forests have a good return on investment

Research done by biologists and economist has shown what many people understand intuitively: trees provide innumerable benefits to humans. A study complete by TD Economics found that Toronto's urban forest provides services like carbon sequestration, energy savings, and water transportation that have a yearly value of over $80 million. A study in the Journal of Forestry calculated similar benefits among five

American cities showing financial net benefits to investing in urban tree management at a ratio of 2:1. Various research studies have also shown that large trees in the front yard of a home increase the sales price of the property. There is no question that trees provide services and benefits such as carbon sequestration, air purification, water management, energy savings, increased property value, privacy, wildlife habitat, beautification, and general human well-being. It is also evident that the cost of managing an urban forest is repaid through these irreplaceable services.

5. It is in line with resident feedback

It is clear from the 2019 Resident Survey that residents of Stratford are in favour of using resources to protect the environment (77% indicated it was "very important" and 96% indicated it was "very important" or "somewhat important") and that they actively participate in planting trees on their own properties (50%). Further, residents ranked "natural area protection" as fifth most important capital spending priority. Based on these results it is clear that residents view environmental protection as an important priority for the Town of Stratford. Echoing this, the Stratford Area Watershed Improvement Group has long called for increased protection for trees in Stratford.

6. Many Canadian municipalities are already doing this

Urban forest stewardship is not a new or innovative idea. Most major Canadian cities and many smaller cities and towns are already investing in their urban forest and using policy to protect and manage it. Toronto has long had a by-law that imposes serious fines for killing or injuring both public and private trees over a certain size (and spends a total $25/person/year on trees), and many suburban towns feeling the pressure of population growth have enacted by-laws that limit how many trees can be removed from a prescribed area (Aurora, Gibsons, Coquitlam, Simcoe). The Town of Truro (pop. 12,000) employs a full time urban forester and manages its urban forest through a Tree Committee. The cities of Charlottetown, Halifax, Fredericton, Moncton, and St. John's are all employing preventative measures against invasive insects that threaten their urban trees. Protecting and managing the urban forest would bring Stratford on par with other Canadian municipalities.

How to Protect and Manage Stratford's Urban Forest?

Knowing that there are many reasons we should be protecting and managing Stratford's urban forest, the next step is to identify how best to do this. There are a number of options available to municipalities who want to be leaders in urban forest stewardship. The following table provides a brief summary of common policies, plans, and programs that can be used to manage and protect Stratford's urban forest.

Tool	Description
Urban Forest Management Plan	A document prepared by experts that describes the state of the urban forest and the actions required to manage the health and structure of the forest (tree care, tree planting, species selection, targets for canopy coverage, etc.)
Tree Protection Bylaw	A by-law to restrict the cutting of trees on both private and public property and to require the replacement of trees that are cut. For example, a bylaw might allow cutting a certain percent of trees within a property or restrict cutting 'heritage' trees over 50 cm diameter
Municipal Tree Policy	A policy to direct the actions of staff in order to protect and maintain trees on municipally owned properties, and/or a policy approved by

	council that commits to future steps, such as increased budget or implementation of a by-law
Design Standards for Tree Protection and Planting	Requirements for tree planting in development permits that stipulate how trees will be incorporated into development. For example, standards for tree protection during the construction phase, and/or standards that require x trees planted per unit on the street front
Municipal Tree Planting Plans	Site-specific plans for municipal properties written by staff that detail the number, species, location, and size of trees to be planted.
Public Tree Planting Program	A program offered by a municipality to help residents with the cost of purchasing trees for their property and to educate about the benefits of trees
Incentives For Resident Tree Protection/Planting	Financial incentives for residents to actively protect or manage trees on their property. For example, tax rate directly inverse to property canopy cover or rebates on water bills for each tree over 10cm diameter on a property

What to consider:

- Using a few or all of these tools together would likely have better results than just implementing one alone. When applied together these tools can supplement and support each other to ensure greater success overall
- Some of these options are not encompassing enough to provide sufficient protection and management of the urban forest (e.g. municipal tree planting plans), but can be useful when paired with other tools
- Tree management involves pruning trees, removing diseased or hazardous trees, applying preventative methods against invasive insects and disease, watering young trees, etc. All of these activities are undertaken to improve the health of the urban forest.
- Stratford has the authority to enact a bylaw on private trees under Section 180 of Municipal Government Act
- Unlike many larger cities, the Town of Stratford does not own, and therefore cannot directly manage or protect, trees along the street edge (in the right-of-way). Cities who own these trees can draft management plans for them and thus effectively manage a large portion of the urban forest. In Stratford, most trees are privately owned.
- Under current development pressure, tree loss is the biggest threat to the urban forest in Stratford. More acres are lost each year than are gained.
- The first step for any of these tools will be to gather baseline data about Stratford's urban forest and to engage residents on this issue (e.g. expanding the Naturally Stratford campaign, and including related questions in the resident survey)
- The types of targets/goals for an urban forest might include percent canopy cover (how much forest do we have? Is it increasing?), species diversity (forest monoculture or diverse, resilient forest?), canopy distribution (barren subdivisions and fragmented forest stands?), number of large caliper trees (old growth forest protection, carbon sequestration), etc.
- Large trees provide exponentially more benefits than small trees, which makes tree protection as much a priority as tree planting, if not more so