



1.0 PURPOSE

The Town of Smiths Falls recognizes the importance of the urban forest and greenspaces as vital assets that significantly contribute to the quality of life of our community.

The Town's Official Plan presents a balanced and comprehensive vision for how the community will evolve and develop over the next 20 years and supports the retention and enhancement of greenspaces as contributors to the health of the community. The Plan further prescribes criteria outlining the objectives of landscape plans that form important components of major development approvals. Council's Strategic Plan, adopted in 2019, promotes the expansion of the urban forest as a key quality of life objective. The Tree Canopy and Vegetation Preservation and Enhancement Policy supports Council's recognition of a healthy natural environment as part of Smiths Falls' integral character.

This policy is prepared to provide a roadmap to achieving a **goal of a minimum of 30% Tree Canopy coverage**, which is recommended by Environment Canada ("How Much Habitat is Enough Guideline") and others to allow rivers and lakes within the watershed to maintain a healthy ecological and hydrological function.

A healthy urban forest provides a variety of benefits to the community:

Economic:

- Reduces cost of cooling in the summer and heating in the winter;
- Increases property values;
- Enhances the aesthetic beauty of a streetscape - a draw for new businesses and people;

Community:

- Enhances walkable communities, public spaces and recreational areas;
- Encourages an active lifestyle (ex. walking, jogging and cycling);
- Reduces sun exposure and heat related illness;
- Studies show the presence of trees improves mental well-being, fostering health and healing;
- Improves respiratory health;

Environmental

- Helps manage stormwater run-off, reduces flooding and erosion along creeks, headwater streams and rivers and enhances water quality;
- Creates wildlife habitat for birds, butterflies, pollinators, plants and animals;
- Filters air pollution and provides the vital supply of oxygen.
- Moderates temperature, particularly the impact of heat in the summer;

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Anticipated effects of climate change include heavy rainfall events and unseasonable precipitation, as well as periodic droughts that cause stress for trees and natural areas. Run-off from rainfall and snowmelt in a forested area has been demonstrated to be significantly less compared to a developed or cleared area in both overall volume and peak flow. A healthy forest cover and natural vegetation areas make watersheds more resilient to effects of climate change and on a broader scale, help to sequester carbon. The Rideau Canal waterway connects lakes, rivers and wetlands and is central to the Town's history and geography. The waterway is recognized in the Official Plan as an economic, cultural and natural asset, by the Federal government as a National Historic Site and internationally as a UNESCO World Heritage Site.

A much shared proverb asserts that "the best time to plant a tree is twenty years ago, the second best time is now." For instance, a 75 cm tree has been found to intercept ten times more air pollution and can store up to 90 times more carbon than a 15 cm tree (City of Toronto Urban Forestry Study, 2010). The protection and enhancement of the Town's greenspaces presents a unique, practical and relatively inexpensive opportunity to both mitigate and adapt to the effects of a changing climate and is consistent with the goals outlined for the community in the Official Plan.

The Town recognizes that unlike with many other "hard" assets which have an initial cost and depreciate over time, trees have an initial cost and then (assuming they are able to establish themselves and grow) tend to appreciate over time until they need to be removed. Not only does an urban forest look nice, but planned well, they are also socially and ecologically diverse, multifunctional landscapes. The Tree Canopy and Vegetation Preservation and Enhancement Policy articulates the Town's goals of preserving and enhancing the urban forest and natural areas in our community. This Policy is intended to be a guide for Town staff, residents and others to support good practices that will achieve a positive impact on the community over the long term.

2.0 LEGISLATIVE AUTHORITY

Section 270 of the *Municipal Act, 2001*, S.O. 2001, c. 25, as amended, provides that a municipality shall adopt and maintain a policy with respect to the manner in which the municipality will protect and enhance the tree canopy and the natural vegetation in the municipality.

3.0 DEFINITIONS

"Boulevard Tree" – shall mean a tree located within a road allowance owned and maintained by the Town.

"Director of Community Services" – shall mean the Town's Director of Community Services or designate duly appointed by the Town.

"Director of Public Works" – shall mean the Town's Director of Public Works

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and Utilities or designate duly appointed by the Town.

“Conservation Authority” – shall mean the Rideau Valley Conservation Authority.

“Council” – shall mean the Council of the Town of Smiths Falls.

“Invasive Species”- shall mean non-native plants that are introduced to the local area that disrupt the natural balance of an ecosystem, often spreading over a specific area.

“Mature Tree” – shall mean a tree with a diameter of 20 centimetres or greater at breast height.

“Native Species” – shall mean an uncultivated vegetation indigenous to geographic regions, which have adapted over time to various environmental influences, which grow naturally in the local area. For the purposes of this section, “cultivated” means a native species that has been altered to an unnatural variation not found in the wild.

“Natural Vegetation” – shall mean plant life that grows naturally in the area (a non-Invasive Species) and does not include a manicured lawn or garden.

“Park Tree” – shall mean a tree located in a Town-owned Park or actively managed open space.

“Priority Areas” – shall mean municipally owned lands identified by the Town in this Policy as a priority area for tree planting. These areas are identified in Schedule “B” of this Policy.

“Public Tree” – shall mean a Boulevard Tree, Park Tree or a tree located on other lands owned by the Town.

“Senior Planner” – shall mean the Town’s Senior Planner or designate duly appointed by the Town.

“Tree Canopy Coverage” – shall mean a measurement of the areal extent of vegetation foliage, typically measured in percentage of total land area

“Waterway” – shall mean a “waterbody” or “watercourse” as defined in the Town’s Zoning By-law.

4.0 BEST PRACTICES

The best practices outlined in this Section are intended as a guide to Town staff, residents and businesses to support landscaping decisions that result in a growing and sustainable tree canopy that functions harmoniously with the surrounding environment.

4.1 Encourage Native Species

The Town encourages the planting of trees and vegetation that are native to Eastern Ontario. Native Species that are best adapted to the local

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environment typically have higher survival rates and require less maintenance than introduced species which often contribute little to the local ecosystem and may become invasive. Wherever possible, planting plans should consist of Native Species, especially in proximity to natural areas.

In some cases however, a hardy, *non-invasive*, non-native tree is appropriate if it is better adapted to a particular site and has a better chance of survival over the long term.

Schedule “E” contains a list of preferred Native Species suitable for our local climate provided by the Conservation Authority. This list can be shared with municipal operations employees and residents who contact the Town seeking species selection advice.

4.2 Setting Trees up for Success

Tree and vegetation enhancement is a long term investment that pays dividends to the community. It is very important to consider the constraints of a location to ensure the right tree is chosen for the right place. Constraints to consider when choosing a species to plant include:

- Utilities such as power lines, buried water/sewer laterals and other hard infrastructure
- Urban conditions such as road salt and compaction
- Rooting space
- Environmental conditions such as full-sun, full-shade and pooling water
- Property lines
- Compatibility with existing trees with respect to size and rate of growth

The right species will be able to endure against the challenges of the chosen location and avoid interfering with overhead or underground services. Appropriate research may aide property owners in finding the desired height, width and endurance for successfully planting in the desired location.

For example, columnar (narrow) and fastigate (branches pointed upwards) trees may be able to accommodate overhead constraints without needing to sacrifice the desired height. Nowadays, shade trees are sold as clones and the desired size and growth form can be selected to suit the needs of a restricted location.

Schedule “A” shows an example of an appropriate planting plan for tree locations to avoid some of the above mentioned constraints.

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Schedule “D” offers planting and selection tips to find the best fit for different growing conditions and offers planting tips to ensure the right trees survive in the right places with minimal maintenance.

4.3 Diverse Greenspaces

A good planting plan makes use of a variety of shrubs and flowers to enhance biodiversity, create habitat for pollinators and other useful wildlife and improves the desirability of public and private greenspaces.

Neighbourhoods are encouraged to have a diverse variety of tree species. This helps limit invasive insects and tree specific diseases which can affect the overall health of the Town’s tree canopy.

4.4 Managing Invasive Species

The Town recognizes that the ecological benefit of removing Invasive Species over the long term exceeds the limited benefits of allowing these plants to remain in place. The easiest way to control the spread of Invasive Species is to avoid planting them and prioritize Native Species, or imported plants that are known not to spread on their own. Different species will require different control mechanisms to remove. Methods of removal include pulling, cutting, burning or smothering.

Removed plants should be disposed of in the garbage. They should not be placed in the compost or discarded in natural areas as discarded flowers may produce seeds.

4.5 Shoreline Naturalization

The Town encourages the protection and restoration of an area of Natural Vegetation in the riparian area adjacent a Waterway. A vegetative buffer along the shoreline (the “ribbon of life”) provides benefits to property owners including reduction in erosion, reduced maintenance, fewer geese and the infiltration and removal of pollutants such as salt or fertilizer. The removal of pollutants and enhancement of wildlife habitat also leads to better outcomes for fish. While a 5 metre (16 foot) vegetative buffer offers a minimum of benefits, the Official Plan supports a 15 m vegetated buffer on existing waterfront lots. For new lots being created and where possible through a planning application, a 30 metre (98 foot) vegetated buffer is recommended. As a general rule, the wider the buffer the greater the environmental benefit. The Town will strive to work with its partner agencies to support best practices and shoreline naturalization in areas of shared interest.

Schedule “D” outlines best practices for trees and shoreline vegetation to ensure long-term survival.

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Schedule “E” contains a list of preferred shoreline planting species suitable for our local climate provided by the Conservation Authority.

5.0 MUNICIPAL LEADERSHIP

The Town, through its operations will foster a “tree-friendly culture” through interdepartmental coordination on tree issues and sharing of ideas and best practices for tree protection, maintenance and planting. Its actions can also serve as a model for actions taken by citizens on their own property.

Including lands leased through Parks Canada along the shoreline, the Town owns or controls about 59 hectares (145 acres), or approximately 6.3% of assessable land within the municipality. Additionally, the Town is responsible for about 136 hectares (336 acres) encompassing municipal road rights-of-way. The rights-of-way are usually 20 m (66 ft) wide and extend some distance from sidewalks.

5.1 INTERDEPARTMENTAL COORDINATION

This Policy supports a multi-disciplinary, multi-department review of plans and proposals that have the potential to impact trees. The following broad service areas in the Town play an important role in advancing the objectives of this Policy:

- Land Use Planning (policy and development approvals)
- Public Works (right-of-way maintenance)
- Community Services (Town-owned parks and recreational services within our jurisdiction)

Town staff are encouraged to cooperate in the following ways:

- Interdepartmental review of private development proposals and municipal works to ensure all opportunities for tree preservation and planting are included;
- Coordination of by-laws, policies and procedures to ensure that urban trees and vegetated areas are consistently referenced, planned, enhanced and maintained; and,
- Coordination of existing and future initiatives that have tree-related components (e.g., Parks and Recreation Master Plan, Asset Management Plans, Climate Action Plans).

5.2 BEST PRACTICES FOR APPLICATIONS UNDER THE PLANNING ACT

A community survey done in conjunction with developing this policy showed that 96% of respondents supported the need to preserve or enhance tree coverage for new development in the Town. Through the planning approvals process, the Town will work with proponents to plan for

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tree and vegetation enhancements that over the long term bring value to the project and community as a whole. This section is intended to provide context and implementation guidance to existing planning policies and recognizes that each site presents its own opportunities and challenges.

5.2.1 Plans of Subdivision

New subdivisions approved by the Town will include conditions regarding the preservation or restoration of the tree canopy and vegetation. To implement this Policy and the applicable sections of the Official Plan, decision-makers are encouraged to consider the following:

- The planting of at least one Native Tree Species in the front yard of each lot (see Schedule “E” for supported species). Where this is not feasible consider the clustering of trees on the development site and alternative locations;
- Encourage biodiversity by planting multiple tree species;
- Design with nature and encourage development that avoids areas that support stands of Mature Trees;
- The submission of a tree protection or restoration plan where development is proposed in areas of extensive mature tree canopy;
- The replacement, where possible, of Mature Trees that must be removed as part of the development;
- Parkland dedication instead of cash-in-lieu where there is an opportunity to preserve intact natural features.
- Targets as described in Section 1.0 of this Policy.

5.2.2 Site Plan Control Approvals

Site Plan Control approvals, under Section 41 of the *Planning Act*, will take into consideration the preservation of existing tree canopy and natural vegetation.

To implement this Policy and the appropriate sections of the Official Plan, decision makers are encouraged to consider the following:

- Encourage development that avoids areas that support stands of Mature Trees;
- Replacement of Mature Trees that are planned for removal as part of the proposed development on a one for one basis elsewhere on the subject property or where feasible (subject to an authorizing policy) at an agreed upon location elsewhere in the Town;
- Where feasible, request the planting of a minimum of 1 new tree per 10 metres of road frontage, planted within 5 m of the front lot line (with consideration of clustering trees elsewhere on the lot where frontage planting is not feasible);

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- Gear tree establishment towards areas where shade can be provided to residents and visitors, such as walkways, trails and outdoor gathering spaces;
- Promote the use of small trees, shrubs and gardens leading up to entryways of commercial or multi-residential buildings;
- Orient parking areas, driveways and building envelopes to maximize the preservation of Mature Trees;
- Where lands are otherwise not intended to be used for development, such surplus lands should be managed on a minimal intervention basis with vegetation retained and enhanced where feasible;
- Vegetated aisles and parking islands increase shaded areas and reduce micro climates. Landscaping plans need to design the aisles and islands appropriately to accommodate the survival and growth of the vegetation selected;
- Avoidance of large masses or significant numbers of a single species;
- Encourage planting plans that make use of the compatible native species outlined in Schedule “E”;
- A vegetative buffer in consultation with the Conservation Authority for waterfront properties to enhance the “ribbon of life”.

5.3 MUNICIPAL OPERATIONS

The urban forest will be recognized as a critical municipal asset through long term commitment to proactive management, adequate resource allocation and joint stewardship with the community.

The preservation of existing trees will be a key priority wherever possible when undertaking municipal works within Town owned lands. Ideally, removals should be limited to situations in which the tree is diseased, stressed, damaged or otherwise obstructing visual sight lines or infrastructure. This section is applicable to provide guidance and identify measures the Town can take within its own operations to preserve and enhance the tree canopy.

5.3 General Maintenance and Care

5.3.1 A **tree protection manual** will be produced or obtained for the use of Town staff who are involved in the planting, removal or care of trees on Town-owned lands. The manual will be an inter-departmental resource that will include guidelines and specifications for the protection and establishment of trees in different contexts.

5.3.2 No person shall harm or remove a Public Tree unless authorized by the Town.

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- 5.3.3** No person shall plant a Public Tree without the written approval from the Town.
- 5.3.4** Any person conducting work within the general location of a Public Tree shall carry out such work with regard for the tree's protection, particularly around the **root protection zone**. This is the area close to the tree where the tree is most sensitive to digging or site alteration. While this varies by tree species, in general the root protection zone can be defined as 1 metre beyond the dripline of the tree.
- 5.3.5** Town staff shall have regard for visible signs of stress or damage on Public Trees.
- 5.3.6** When visible signs of stress, disease or damage occur on a Public Tree, or where there is a perceived threat to public safety, qualified individuals will assess the Public Tree and care for the tree as deemed appropriate by the Director of Public Works (Boulevard Trees) or the Director of Community Services (Park Trees).
- 5.3.7** When it is determined that a lot line bisects the diameter of the tree trunk, the Town shall be responsible for all maintenance of the tree where more than half of the diameter is located on Town property and a cost proportional to the Town's share of the diameter when the majority of the trunk diameter is located on private property.

5.4 Boulevard Trees

The Town will undertake best efforts to preserve and protect existing Boulevard Trees and will avoid removal of live trees when possible. The Town will, whereever reasonable, follow the Best Practices of this policy.

- 5.4.1** Where a Boulevard Tree must be removed for any reason, two trees (50 mm caliber) will be planted as a replacement on the same block as the original tree location.
- 5.4.2** Where a Boulevard Tree is proposed for removal in a Priority Area (idenfified in Schedule "B"), a replacement of up to three (3) trees (50 mm caliper) will be planted on the same block as the original tree location.
- 5.4.3** Where a Boulevard Tree is removed and replacement is not feasible on the same block as the original tree location, replacement will take place on another road allowance within the Town's geographic boundaries.
- 5.4.4** Once it is determined that a Boulevard Tree must be removed, a written notice will be provided to abutting property owner(s). The notice will include details about the reason for the removal and

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where feasible, provide abutting owners an opportunity to select a replacement species from a list of those available.

If the removal of the tree is necessary based on an immediate danger to persons or property, the notice requirement will not apply.

- 5.4.5** Where a Boulevard Tree is to be planted, abutting property owners will receive a tree care brochure. This brochure will help the abutting property owner recognize issues the newly planted tree may face such as disease, damage and dehydration. **Abutting property owners will be encouraged to be part of the solution to keep street trees alive and vigorous.**
- 5.4.6** When an abutting property owner seeks the removal of a Boulevard Tree for any reason other than public safety or municipal operational necessity, such request shall be made to the Director of Public Works and Utilities and only granted in exceptional circumstances. The removal of a tree and its replacements pursuant to this Section shall be undertaken at the expense of the requestor.
- 5.4.7** All removed Boulevard Trees will be replaced with a Native Tree Species wherever possible.

5.5 Park Trees and Vegetation

The Town will undertake best efforts to preserve and enhance existing Park Trees and Natural Vegetation and will avoid the removal of live trees and site alterations which affect Natural Vegetation, unless it is to manage invasive species, remove diseased vegetation or address concerns of public safety. The Town will, wherever possible, follow the Best Practices of this Policy.

- 5.5.1** Where a Park Tree must be removed for any reason a minimum of one tree (50 mm caliper) will be planted as a replacement in the same Town-owned park as the original tree location.
- 5.5.2** Where a Park Tree is proposed for removal in a Priority Area (identified in Schedule "B"), a replacement of up to three (3) trees (50 mm caliper) will be planted in the same Town-owned park as the original tree location.
- 5.5.3** Where a Park Tree is removed and replacement is not feasible within the same Town-owned Park as the original tree location, replacement will take place on another property owned by the Town.
- 5.5.4** All removed Park Trees will be replaced with a Native Tree Species wherever possible.

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5.5.5 Species selection within parks will be informed by the intended function (shade, aesthetics, etc) for a particular area and guided by the Town's Parks and Recreation Master Plan, once approved. In particular, tree planting plans shall be developed with the intention of creating varied and diverse functional landscapes that include:

- Edible trees including fruit and nut trees either on their own or in groupings in locations that are inviting to a broad cross-section of the community;
- Flowering trees planted in areas of high landscape value;
- Groves that will, in time, create opportunities for natural and forest based play.

5.5.6 All shoreline areas will include a “ribbon of life” of Natural Vegetation in the riparian area adjacent a Waterway on all properties owned by the Town. In these areas, the Department of Community Services will continue to look for opportunities to reduce grass cutting operation and to naturalize areas in accordance with the best practices outlined in this Policy. In general, this vegetative buffer should be at least 5 metres wide and wider buffers will be used where possible. Water accesses for recreational purposes can continue to be maintained where the historic use is in place and new ones can be created where feasible and where they can be offset by tree replacement.

5.6 Priority Areas

Priority Areas identified by the Town are listed in Schedule “B” of this Policy. Priority Areas are neighbourhoods and corridors within the Town where tree coverage is particularly light and where enhanced efforts in tree planting will be especially beneficial.

Priority areas are identified based on meeting one or more of the following criteria:

- High traffic and gateway areas to the Town where tree plantings would enhance the visual appeal and create positive first impressions;
- Areas with a high volume of hardened surfaces and few existing trees where revegetation would be particularly beneficial;
- Residential areas where there are particularly few street trees (fewer than two per side of block) or where a large number of existing trees have been or will need to be removed for reasons of tree health;

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- Parkland areas where a need has been identified by the community.

Schedule “B” outlines the current Priority Areas. It is anticipated that in accordance with the Monitoring section of this Policy that the Priority Areas will be assessed once per term of Council and may be updated as needed.

5.7 External Consultation

Prior to the removal or planting of a Public Tree in proximity to any waterway, the Town shall obtain any approvals that may be necessary from the Conservation Authority, Parks Canada or any other governing agency.

6.0 DEVELOPING PROGRAMS AND PARTNERSHIPS

Outreach, education, stewardship and partnerships are vital components to fulfilling the objectives of this Policy. This calls for the strengthening of existing partnerships and fostering of new ones within the community and this is the responsibility of everyone who has an interest. Environmental agencies and non-profit organizations offer resources, expertise and connections beyond what may be easily achievable to the Town and can operate as allies in fulfilling our shared objectives. An Urban forest advisory committee, as recommended in Section 7.4 would provide strategic guidance and capacity to assist in these measures.

Ultimately, the well-being and enhancement of the tree canopy on privately owned properties relies on the resources available to property owners.

Ongoing dialogue between Town staff, Council, stakeholder agencies/organizations and members of the community to develop these partnerships will allow for an efficient allocation of resources and the sharing of ideas and practices.

At present, the Rideau Valley Conservation Authority offers several programs and incentives in partnerships with municipalities and citizens. RVCA will play a key role in coordinating tree planting as well as providing hands-on technical guidance in fulfilling the best practices outlined in Section 5 of this Policy. Other organizations including, but not limited to the Rideau Environmental Action League, Rideau Roundtable, schools and others should be engaged.

The Town will continue to seek out and explore partnerships with other agencies and organizations that offer complementary programs and supports to residents, business owners and municipal programming initiatives.

Schedule “C” offers a list of initiatives and programs that may be available to the Town on its own or in collaboration of others. This is meant as a ‘living’ list that can be added to and changed as opportunities arise.

7.0 IMPLEMENTATION

7.1 Tree Canopy Assessment

The Town commits to completing an assessment of the Town's Tree Canopy Coverage within 3 years of the adoption of this policy. The assessment shall serve as the basic foundation for the ongoing monitoring that is necessary to measure the success of this Policy and can be undertaken by staff, with the support of RVCA and the Town's Geographic Information Systems provider. Typically assessments are based on interpretation of aerial photos as well as ground truthing as necessary. As such, they will not be precise but can establish a very useful baseline which can be compared over many years to determine trends. This assessment should be reviewed at least every four years afterwards to monitor the success of this Policy and the objectives outlined herein. The review methodology should be consistent each time in order to ensure a consistent comparison.

7.2 Tree Inventory

As resources permit, the Town will undertake an inventory to assess the mix of species, size and condition of Public Trees. The data obtained from this work can be a very useful tool to improve the effectiveness and efficiency of tree management on Town-owned lands. A tree inventory can assist in:

- Identifying over-represented and under-represented species to guide the right planting mix;
- Targeting disease and pest management, in the event that a future threat emerges that targets specific species of trees (ie. Emerald Ash Borer);
- Identifying trees of special interest (ie. heritage);
- More efficient urban forest management, such as prioritizing service requests and early identification of hazards.

An inventory can be completed as budget allows, by a contractor retained by the Town or a trained and qualified summer student. There are electronic applications that would assist in this effort.

7.3 Promotion

The success of this Policy depends on broad public buy-in and awareness of the benefits of an enhanced tree canopy and opportunities or programs available to the public. Upon approval of this Policy by Council, the Town will publicize the Policy and its objectives online and through local media. Moving forward, the Policy will be made available in an easily accessible location on the municipal website.

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Different sections of this Policy are targeted towards different audiences, including municipal operations, the development community and residents at large. As such, it is the intention of this Policy that it is dividable, with excerpts made available in a user-friendly format for distribution to stakeholders. For example, Section 5 (“Best Practices”) and its accompanying schedules may be made available on its own as a guide to residents seeking advice on a planting plan.

7.4 Urban Forest Advisory Committee

As resources permit, Council is encouraged to establish an Urban Forest Advisory Committee consisting of local stakeholders and members of the community knowledgeable about urban forest issues, as well as key Town staff. While the scope and mandate of such a Committee would be as determined by Council, certain roles could include:

- Providing advisory input on the implementation of various sections of this Policy, including publications and promotion;
- Providing advice to Council with respect to issues that arise that may affect the tree canopy or vegetated areas, in general;
- Reviewing municipal or other projects that relate to this Policy;
- Assisting with the pursuit of expanded partnerships and funding for tree canopy initiatives.

As the objectives of this Policy support a broader goal of mitigating climate impacts, an Urban Forest Committee can become part of a future climate change action committee. A staff member would need to be appointed as staff resource and liaison.

7.5 Administration

This Policy shall be administered by the Senior Planner or such employee as designated by the Senior Planner. The Senior Planner shall be responsible for promoting and distributing this Policy to the appropriate staff and stakeholders.

7.6 Financial

The Town commits to establishing an annual budget dedicated to the enhancing of the Town’s tree canopy and vegetation that supplements current maintenance and vegetation budgets.

8.0 MONITORING

The need to assess the condition of the urban forest on an ongoing basis is critical to determine the success of this policy. At least once per term of Council, the Town will undertake a review of this Policy and the relative condition and amount of the tree canopy and vegetation in the Town. The following criteria

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should be investigated and considered in a review:

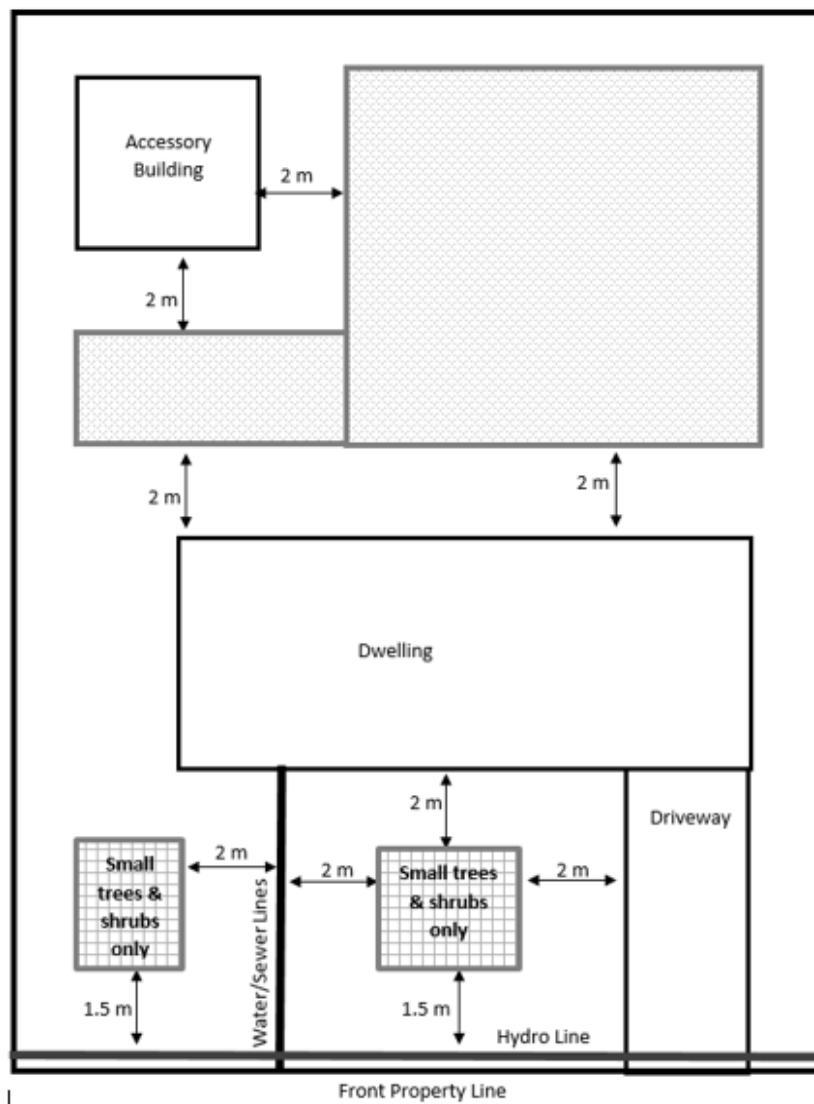
- Relative Tree Canopy Coverage compared to the previous assessment;
- Species distribution of Public Trees;
- Public agency cooperation and resources;
- Resident cooperation, interest and involvement;
- Municipal programming and staff resourcing;
- Maintenance and replacement policies of Public Trees;
- Natural areas management, as may be defined in a Parks and Recreational Master Plan;
- Financial implications and opportunities.

In the event the Tree Canopy Coverage declines or does not improve in a manner satisfactory to Council, the Town may consider amending the Policy.

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Schedule "A"
Model Planting Plans

Figure 1: Single family home with hydro lines at front

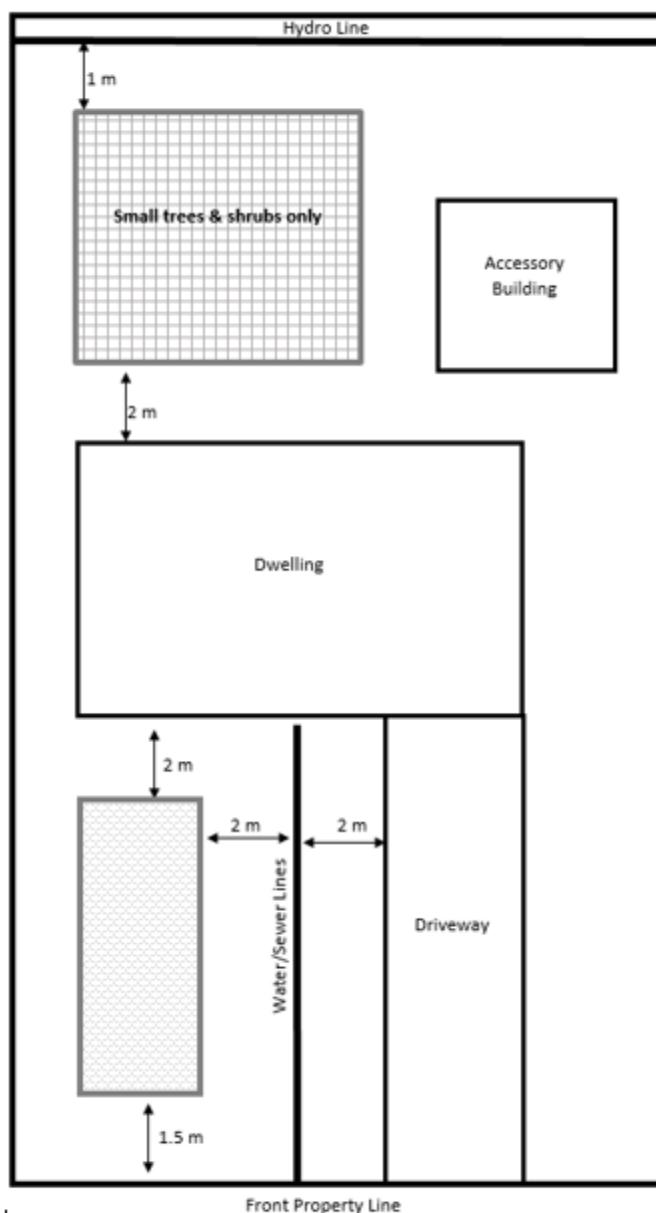


***** Notes**

- 1 – Hydro One suggests tall trees be set back a minimum of 8m from hydro lines. it is suggested only small trees and shrubs be planted within 8m of a hydro line.
- 2 – Trees must be setback a minimum of 1 m from side and rear lot lines.
- 3 – Where the front property is within close proximity of a sidewalk, tree plantings must be setback a minimum of 3m from the back edge of the sidewalk.

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Figure 2: Single family home with hydro lines at rear

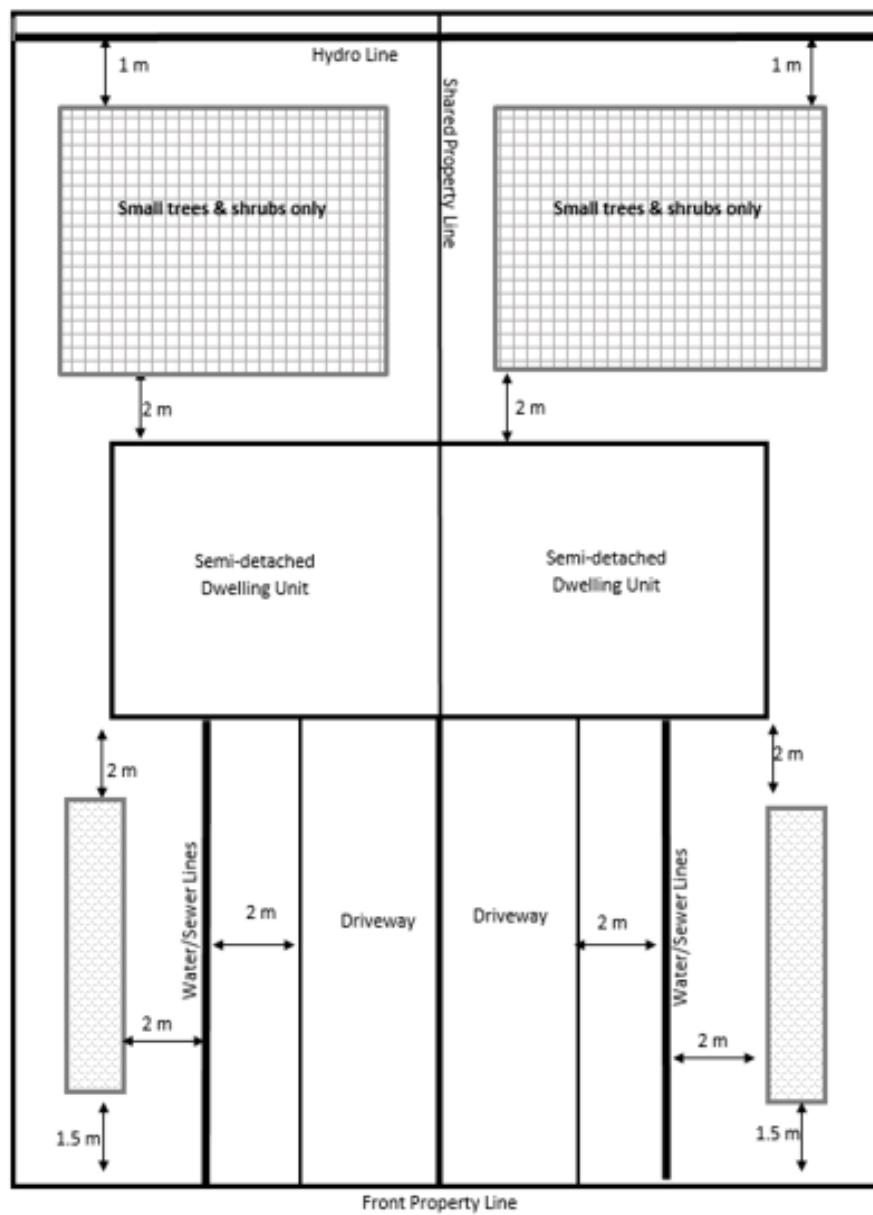


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- 2 – Trees must be setback a minimum of 1 m from side and rear lot lines.
- 3 – Where the front property is within close proximity of a sidewalk, tree plantings must be setback a minimum of 3m from the back edge of the sidewalk.

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Figure 3: Semi-Detached Development



***** Notes**

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- 2 – Trees must be setback a minimum of 1 m from side and rear lot lines.
- 3 – Where the front property is within close proximity of a sidewalk, tree plantings must be setback a minimum of 3m from the back edge of the sidewalk.

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Townhouse Development

While planting plans can accommodate trees on most individual townhouse lots given their size and unique configurations, these must be developed on an individual case-by-case basis.

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Schedule "B"
Current Tree Planting Priority Areas

- Downtown Core (as identified in the Official Plan)
- Gateway areas to Town
 - Cornelia Street from William/Mazie intersection to Elmsley Street
 - Union Street
 - Jasper Avenue from Lower Reach Park to Beckwith intersection
 - Queen Street from Walker Road to its intersection with Elmsley
 - Brockville Street from Van Horne to Ross Street
 - Lombard Street to Elmsley Street
- Lower Reach Park and Riverdale Park within 30 m of the Rideau River
- Uptown residential area bordered by Elmsley Street to the west, Montague Township boundary to the north and east and Lorne Street to the south.

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Schedule "C"
Municipal and Partner Initiatives to Promote Tree Canopy and Vegetation Enhancement

The following initiatives undertaken by the Town or by partnering with other organizations who share the objectives of this Policy will encourage actions on public and private property that meet the desired goals.

This is meant as a 'living' list of ideas and a guide for decision makers to explore opportunities.

- Encourage an adopt-a-tree program for the ongoing care of trees planted by the Town;
- Publicize the opportunity for residents to request a Town Boulevard Tree in front of their house;
- Proactively seek other emerging partnership and funding opportunities as they arise;
- Identify and celebrate 'Legacy Trees' or 'Heritage Trees' within the Town that have significant visual, landscape or associative value;
- Promote awareness of the importance of naturalized areas and the 'Ribbon of Life' along shorelines through educational and interpretive signage;
- Plan for the publication and distribution of this policy on the Town's website, in other municipal advertising and at the pre-consultation stage of development applications;
- Develop and distribute information for the public on cost savings, carbon and energy reductions resulting from municipal actions, such as reduced mowing areas;
- As opportunity warrants, work closely with local arborists to promote best tree maintenance practices;
- Work closely with the school boards to promote adding to and preserving the current tree canopy, reduce grass mowing areas and introduce naturalized areas wherever possible;
- Establish a Town arboretum or botanical garden as an educational tool to promote and demonstrate the wide variety of trees and vegetation native to our area. Explore the use of edible trees (fruit and nuts) to promote local food options.
- Develop incentives such as organized bulk tree sales, tree giveaways, neighborhood tree planting events etc.;
- Public land planting projects;
- Encourage and promote Private Land Forestry and Shoreline Naturalization programs offered by the Conservation Authority.
- Consider adopting a Site Alteration By-law that prohibits certain clearing activities in advance of planning approval on projects.

SUBJECT: TREE CANOPY AND VEGETATION PRESERVATION AND ENHANCEMENT POLICY

Schedule "D"
Best Practices for Trees and Shoreline Vegetation

TREE PLANTING

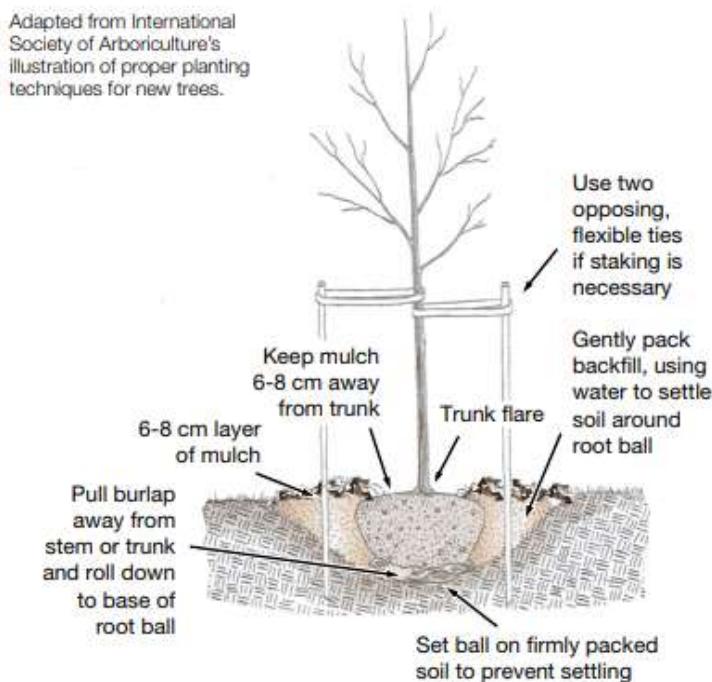
The best time to plant trees is when they are dormant, as that allows for less stress on the roots during the transplant. Deciduous trees can be planted in the spring, as soon as the frost is out of the ground or in the fall, from leaf-fall until freeze-up. Poplars, willows, ash, elms, and birches tend to overwinter better if planted in the spring.

Evergreens can be planted early in the spring until four weeks after deciduous trees have opened their leaves or late in the growing season, from about the first week of August to the end of October. Trees should be planted promptly once received, and roots should never be allowed to dry out. Temperature extremes should be avoided when trees are in storage.

Location is important. Before doing any digging, ensure that you call Ontario One Call for clearances on underground utility locates as required by law. Trees should be spaced properly, considering the location of other trees, structures and infrastructure – and planned to grow.

The first weeks and months after planting a tree is critical to ensure its long term survival. To give the tree its best chance of survival, carefully prepare and maintain a planting site.

For the first year the soil around a newly planted tree should be always damp. New trees should be watered twice a week in dry conditions. If water pools around the base or has trouble draining, cut back on watering. Weeds should be removed around the tree base for the first few years in order to minimize competition for soil nutrients and water. The planting soils should be well packed but not overly compacted.



Caring for Your New Tree or Shrub

Without a surrounding forest to care for it, your tree or shrub needs you to help it grow.

Image source: Rideau Valley Conservation Authority

SUBJECT: TREE CANOPY AND VEGETATION PRESERVATION AND ENHANCEMENT POLICY

Text Source: “Tree Planting Guide” (Tree Canada): Online: <https://treecanada.ca/resources/tree-planting-guide/> and Ganaraska Conservation

TREE CARE TIPS (TREE CANADA)

When a tree is planted in soil that is radically different than the original soil it is growing in, or when new soil is too rich, it can be harmful to the tree and cause the roots to refuse growth outside the planting hole. This will prevent the tree’s roots from anchoring properly. Roots can grow in a girdling condition if the new soil they are planted in is very different than the soil it has originally grown in. When a tree is planted near a permanent structure made of concrete (i.e. retaining wall, house), roots may become girdled by being deflected from the structures.

Compost – The soil you are planting in should not be radically changed or augmented with compost, try to leave the soil conditions as native as possible. The tree’s roots should be loosened up to encourage them to grow out. Any girdling roots should be cut away when the tree is taken out of a container.

Stakes and Supports – Staking large trees is often unnecessary. However bare root tree planting in a windy area or tree plantings on a slope should be staked – trees need to develop a strong support and reaction to wind and sway. It is important to ensure that the tree develops this wood. Unfortunately too often the stakes and wires are left on too long and the tree grows into the supports.

Mulching – Too much mulch can damage root growth as it creates low soil oxygen but high moisture levels and can cause insect root rot and other diseases, and affect soil pH or soil nitrogen levels. Use bark or living perennial mulch to a maximum depth of three to eight cm (1"-3"). The bark and perennial mulch is more inert than wood chips,

Fertilizing – Fertilizer contains one or more elements required for tree growth but should not be thought of as “food” – it is like a vitamin, not a meal and can actually stress newly-planted trees. It is suggested to use a well balanced fertilizer (10-10-10) if soil and leaves appear to be deficient and/or two years before or two years after any root injury but not soon after the tree is newly-planted.

Helpful Insects – There are many insects who need trees for survival and do not cause harm and can be helpful in controlling other insects that may be harmful to the tree. Identify insects found on the tree to see which are beneficial and which are not before attempting to control them.

Early Pruning – Removing the top of the tree will impede healthy growth because it reduces the tree’s capacity to photosynthesize. The tree’s crown form, structure and development will be negatively affected by the removal of the top live limbs. Only the diseased, damaged or dead wood should be removed during the first 5-10 years after planting the tree.

Source: “Tree Planting Guide” (Tree Canada): Online: <https://treecanada.ca/resources/tree-planting-guide/>

SUBJECT: TREE CANOPY AND VEGETATION PRESERVATION AND ENHANCEMENT POLICY

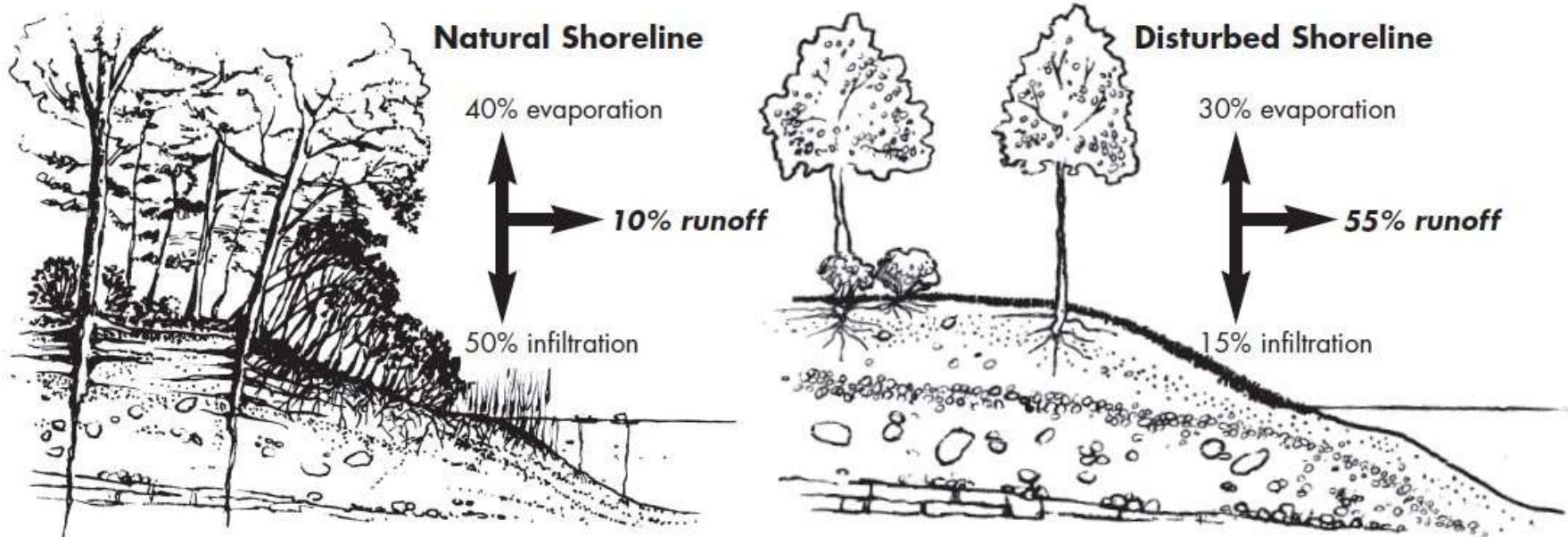
BEST PRACTICES FOR SHORELINE BUFFERS

Different plants thrive better in specific situations. Schedule "E" provides suggestions for different kinds of plants in a variety of the most common shoreline environments. A well planned mix of native trees, shrubs and hardy perennials will bring the benefits of the "ribbon of life" while minimize maintenance and protect important views.

- All shoreline areas should have a vegetated shoreline rich in native plants. As a best practice this policy recommends that areas to be left open for water access and views be kept to around 25% of the frontage or 15 metres.
- The Smith Falls Official Plan supports a 15 m deep vegetated buffer on existing waterfront lots. For new lots being created and where possible through a planning application, a 30 metre (98 foot) vegetated buffer is recommended. As a general rule, the wider the buffer the greater the environmental benefit.
- Shoreline buffer areas should be untouched, no-mow areas so that grasses and wildflowers can establish where possible. These "herbaceous" plants provide valuable runoff reduction and groundcover. "Woody" plants like trees and shrubs should also be included as they have deeper roots providing erosion protection and add to the overall canopy targets.
- Only native species should be used along natural areas like shoreline and wetlands to avoid accidentally introducing an exotic invasive plant to the ecosystem. Species selections should be based on existing site conditions (soil type, moisture, sunlight availability, etc.). To preserve views, consider low-growing or prunable shrubs, or prune lower branches of trees for views.
- Shoreline areas are sensitive. Limiting your impact is usually best, so establishing a shoreline buffer, disturbance to the areas should be minimal:
 - o Any exposed soil near water is at risk of erosion into the watercourse. Make sure you have proper sediment and erosion control measures in place and get the area covered as quickly as possible with fast growing groundcover or seed. If exposed soils are at risk of erosion, erosion blankets can be installed to protect soil until seed can establish.
 - o Mulch is not ideal for areas prone to flooding. If necessary, use natural, un-dyed shredded mulch and limit to areas directly around the plant rather than creating mulched beds.
 - o Placing fill in the floodplain requires permission. Limit the amount of soil to 1-2 wheelbarrows where possible using existing parent soil instead.
 - o Herbicide use should be limited around waterways. If existing weeds need to be removed, consider mowing, hand or mechanical removal, or smothering with tarps.
- Planting should occur in spring (April- May) or fall (September-October) for optimal plant growth. Avoid planting hot, dry seasons, or after periods of drought.

Source: www.loveyourlake.ca and Rideau Valley Conservation Authority

HOW SHORELINE PLANTINGS HELP



Native vegetation protects water quality from polluted runoff, and helps soil absorb water.

Hard surfaces and reduced vegetation increase runoff and erosion potential, and decrease absorption by the soil.

Image Source: Rideau Valley Conservation Authority

Schedule "E"
Example Species

Coniferous Trees			
Common Name	Latin Name	Description	Growing Conditions
Eastern Hemlock	<i>Tsuga canadensis</i>	<ul style="list-style-type: none"> • Medium sized tree, up to 21 metres • Provides shelter for deer, birds 	<ul style="list-style-type: none"> • Cool location, no direct sun • Sandy/ loam soil, moist
Eastern White Cedar	<i>Thuja occidentalis</i>	<ul style="list-style-type: none"> • Medium sized tree, up to 15 metres • Can be used for windbreaks when planted in rows 	<ul style="list-style-type: none"> • Full sun to partial shade • Sand/loam/clay soil , moist/intermediate/dry • Tolerant of flooding
Eastern White Pine	<i>Pinus strobus</i>	<ul style="list-style-type: none"> • Large tree, 18-30 metres 	<ul style="list-style-type: none"> • Full sun to partial shade • Sand/loam soil, moist/intermediate/dry
Tamarack (AKA Larch)	<i>Larix laricina</i>	<ul style="list-style-type: none"> • Medium Tree, 21 metres • Needles turn yellow and drop in the fall 	<ul style="list-style-type: none"> • Full sun to partial shade • Grows in most soil types where wet/moist
White Spruce	<i>Picea glauca</i>	<ul style="list-style-type: none"> • Large sized tree, 20-30 metres 	<ul style="list-style-type: none"> • Full sun to partial shade • Sand/loam/clay soil, moist/intermediate

Deciduous Trees			
Common Name	Latin Name	Description	Growing Conditions
Alternate Leaf Dogwood (AKA Pagoda Dogwood)	<i>Cornus alternifolia</i>	<ul style="list-style-type: none"> • Common in forest understory, small tree or shrub, 4-8 metres • Showy white flowers, black-blue berries, graceful branching pattern 	<ul style="list-style-type: none"> • Full to partial shade • Loam soil, moist
Black Willow	<i>Salix nigra</i>	<ul style="list-style-type: none"> • Growth can vary as a large tree or small shrub, 3 to 30 metres • Fast growing 	<ul style="list-style-type: none"> • Full sun to partial shade • Sand/loam/clay soil, moist/ wet
Bur Oak	<i>Quercus macrocarpa</i>	<ul style="list-style-type: none"> • Large tree, 12-18 metres, slow growing and long-lived • Acorns eaten by wildlife 	<ul style="list-style-type: none"> • Full sun to partial shade • Sand/loam/clay soil, moist/intermediate/ dry
Peachleaf Willow	<i>Salix amygdaloides</i>	<ul style="list-style-type: none"> • Growth can vary as a medium tree or small shrub, 3-20 metres 	<ul style="list-style-type: none"> • Full sun to partial shade • Sand/loam/clay soil, moist
Red Maple	<i>Acer rubrum</i>	<ul style="list-style-type: none"> • Medium to large tree, 15-25 metres • Leaves turn red in fall 	<ul style="list-style-type: none"> • Full sun to partial shade • Sand/loam/clay soil, moist • Adaptable to many conditions
Serviceberry	<i>Amelanchier spp.</i>	<ul style="list-style-type: none"> • Includes many similar species • May grow as shrub or small tree • Showy white flowers, attracts wildlife 	<ul style="list-style-type: none"> • Full sun to partial shade • Sand/loam/clay/organic soil, moist/intermediate/dry

Deciduous Trees Continued

Common Name	Latin Name	Description	Growing Conditions
Silver Maple	<i>Acer saccharinum</i>	<ul style="list-style-type: none"> Large tree, 20-30 metres Leaves turn yellow in fall Fast growing 	<ul style="list-style-type: none"> Full sun to partial shade Sand/loam/clay soil, wet/moist/intermediate Tolerant to flooding and drought
Sugar Maple	<i>Acer saccharum</i>	<ul style="list-style-type: none"> Large tree, 20-35 metres Leaves turn red, yellow and orange in fall Principle source of maple syrup 	<ul style="list-style-type: none"> Sun, partial shade, shade Sand/loam/clay soil, intermediate moisture, requires good drainage Sensitive to salt and air pollution
White Birch (AKA Paper Birch)	<i>Betula papyrifera</i>	<ul style="list-style-type: none"> Medium to Large tree, up to 24 metres White, peeling bark Fast growing 	<ul style="list-style-type: none"> Full sun Sand/loam soil, moist/ intermediate/dry
AVOID PLANTING EXOTIC INVASIVES: Manitoba Maple (<i>Acer negundo</i>), Norway Maple (<i>Acer platanoides</i>), European and Glossy Buckthorn (<i>Rhamnus cathartica & frangula</i>), Tree of Heaven (<i>Ailanthus altissima</i>)			

Shrubs

Common Name	Latin Name	Description	Growing Conditions
Alternate Leaf Dogwood (AKA Pagoda Dogwood)	<i>Cornus alternifolia</i>	<ul style="list-style-type: none"> Common in forest understory, small tree or shrub, 4-8 metres Showy white flowers, black-blue berries, graceful branching pattern 	<ul style="list-style-type: none"> Full to partial shade Loam soil, moist
American Mountain Ash	<i>Sorbus americana</i>	<ul style="list-style-type: none"> Large shrub Not a true ash Showy white flowers 	<ul style="list-style-type: none"> Full sun to partial shade Sand/loam/clay soil, moist
Bebbs Willow	<i>Salix bebbiana</i>	<ul style="list-style-type: none"> Small to medium shrub, 1-5 metres Fast growing 	<ul style="list-style-type: none"> Full to partial shade Sand/loam/clay soil, moist/ wet
Black/Common Elderberry	<i>Sambucus nigra sp. canadensis</i>	<ul style="list-style-type: none"> Medium shrub, 1-4 metres Showy white flowers, purple-black berries (edible when cooked) Valued by many varieties of wildlife 	<ul style="list-style-type: none"> Full sun to partial shade Sand/loam/clay/organic soil, moist/ wet
Black Willow	<i>Salix nigra</i>	<ul style="list-style-type: none"> Growth can vary as a large tree or small shrub, 3 to 30 metres, fast growing 	<ul style="list-style-type: none"> Full sun to partial shade Sand/loam/clay soil, moist/wet
Bush Honeysuckle	<i>Diervilla lonicera</i>	<ul style="list-style-type: none"> Small shrub, 30 to 100 cm Spreading, groundcover-like shrub Not a true honeysuckle 	<ul style="list-style-type: none"> Full sun to full shade Sand/loam soil, intermediate/dry

Shrubs Continued

Common Name	Latin Name	Description	Growing Conditions
Buttonbush	<i>Cephalanthus occidentalis</i>	<ul style="list-style-type: none"> Medium shrub, up to 4 metres Showy white flowers Valued by many varieties of wildlife 	<ul style="list-style-type: none"> Full sun Sand/loam/clay/organic soil, moist/ wet
Chokecherry	<i>Prunus virginiana</i>	<ul style="list-style-type: none"> Large shrub, 4-8 metres Valued by many varieties of wildlife 	<ul style="list-style-type: none"> Full sun to full shade Sand/loam/clay soil, moist/ intermediate
Common Juniper	<i>Juniperus communis</i>	<ul style="list-style-type: none"> Small shrub, up to 100 cm Coniferous 	<ul style="list-style-type: none"> Full sun Sandy soil, dry
Downy Arrowwood	<i>Viburnum rafinesquianum</i>	<ul style="list-style-type: none"> Small shrub, up to 2 metres White flowers High wildlife value 	<ul style="list-style-type: none"> Full sun to full shade Sand/loam/clay soil, dry
Gray Dogwood	<i>Cornus Racemosa</i>	<ul style="list-style-type: none"> Medium shrub, 1-4 metres White flowers, white berries Valued by many varieties of wildlife 	<ul style="list-style-type: none"> Full sun to partial shade Sand/loam/clay soil, moist/intermediate/dry
Highbush Cranberry	<i>Viburnum trilobum var. americanum</i>	<ul style="list-style-type: none"> Large shrub, 2-4 metres Showy white flowers, red berries, high wildlife value Easily confused with invasive European Highbush Cranberry 	<ul style="list-style-type: none"> Full sun to full shade Sand/loam/clay/organic soil, moist/ wet
Mapleleaf Viburnum	<i>Viburnum acerifolium</i>	<ul style="list-style-type: none"> Medium shrub, up to 2 metres 	<ul style="list-style-type: none"> Partial to full shade Sand/loam/clay soil, moist/intermediate
Nannyberry	<i>Viburnum lentago</i>	<ul style="list-style-type: none"> Large shrub, 4-7 metres White flowers 	<ul style="list-style-type: none"> Full sun to partial shade Sand/loam/clay/organic soil, moist/ wet
Narrow Leaved Meadowsweet	<i>Spirea alba</i>	<ul style="list-style-type: none"> Small shrub, 1 to 1.5 metres White flowers 	<ul style="list-style-type: none"> Full sun Sand/loam/clay/organic soil, moist/ wet
Ninebark	<i>Physocarpus opulifolius</i>	<ul style="list-style-type: none"> Small to medium shrub, 2-3 metres White flowers 	<ul style="list-style-type: none"> Full sun to partial shade Sandy soil, adaptable moisture conditions
Peachleaf Willow	<i>Salix amygdaloides</i>	<ul style="list-style-type: none"> Growth can vary as a medium tree or small shrub, 3-20 metres 	<ul style="list-style-type: none"> Full sun to partial shade Sand/loam/clay soil, moist
Pussy Willow	<i>Salix discolor</i>	<ul style="list-style-type: none"> Medium to large shrub, 2-8 metres 	<ul style="list-style-type: none"> Full sun Sand/loam/clay soil, moist/ wet
Red Osier Dogwood	<i>Cornus sericea/stolonifera</i>	<ul style="list-style-type: none"> Medium shrub, 2-4 metres White flowers, white berries, attractive red stems Valued by many varieties of wildlife Important shoreline erosion control plant 	<ul style="list-style-type: none"> Full sun Sand/loam/clay/organic soil, moist/ wet Grows in sand or gravel deposits that frequently flood
Sandbar Willow	<i>Salix exigua</i>	<ul style="list-style-type: none"> Medium to Large shrub, up to 7 metres Forms thickets 	<ul style="list-style-type: none"> Full sun Sand/loam/clay soil, moist/ wet

Shrubs Continued

Common Name	Latin Name	Description	Growing Conditions
Speckled Alder	<i>Alnus incana</i>	<ul style="list-style-type: none"> Large shrub, 2-10 metres 	<ul style="list-style-type: none"> Full sun Sand/loam/clay/organic soil, wet/moist
Staghorn Sumac	<i>Rhus typhina L</i>	<ul style="list-style-type: none"> Large shrub, 1-8 metre Showy red berries Grows in thickets, rapid spreader 	<ul style="list-style-type: none"> Full sun Sand/loam/clay soil, intermediate/dry Common on disturbed soils, drought tolerant, good slope stabilizer
Sweetgale (AKA Bayberry)	<i>Myrica gale</i>	<ul style="list-style-type: none"> Small shrub, up to 1.5 metres Fragrant leaves 	<ul style="list-style-type: none"> Full sun Sand/organic soil, wet/moist
Virginia Creeper	<i>Parthenocissus quinquefolia</i>	<ul style="list-style-type: none"> Vine Can easily grow onto nearby trees and shrubs 	<ul style="list-style-type: none"> Full sun to partial shade Sand/loam/clay soil, intermediate/moist

AVOID PLANTING EXOTIC INVASIVES: European and Glossy Buckthorn (*Rhamnus cathartica & frangula*), European Highbush Cranberry (*Viburnum opulus*), Russian Olive (*Elaeagnus angustifolia*), Autumn Olive (*Elaeagnus umbellata*), Tartarian Honeysuckle (*Lonicera tatarica*), Amur Honeysuckle (*Lonicera maackii*), Morrow Honeysuckle (*Lonicera morrowii*), European Fly Honeysuckle (*Lonicera xylosteum*), Multiflora Rosa (*Rosa multiflora*), Common Japanese Barberry (*Berberis thunbergii*), Japanese Knotweed (*Fallopia japonica/ Polygonum cuspidatum*), Oriental Bittersweet (*Celastrus orbiculatus*)

Ground Covers

Common Name	Latin Name	Description	Growing Conditions
Bearberry	<i>Arctostaphylos uva-ursi</i>	<ul style="list-style-type: none"> White or pink flowers in spring Red berries Shiny, waxy evergreen leaves 	<ul style="list-style-type: none"> Full sun to partial shade Sand/loam soil, dry/ intermediate Drought tolerant
Bloodroot	<i>Sanguinaria canadensis</i>	<ul style="list-style-type: none"> White flowers with yellow centre in early spring 	<ul style="list-style-type: none"> Full to partial shade Sand/loam/clay soil, moist/intermediate
Bunchberry	<i>Cornus canadensis</i>	<ul style="list-style-type: none"> Showy white flowers throughout summer followed by red berries 	<ul style="list-style-type: none"> Full to partial shade Cool moist soil
Canada Anemone	<i>Anemone canadensis</i>	<ul style="list-style-type: none"> White flowers in June Rapid spreader 	<ul style="list-style-type: none"> Full sun to partial shade Sand/loam/clay soil, moist/intermediate
Canada Wild Ginger	<i>Asarum canadense</i>	<ul style="list-style-type: none"> Single maroon flower in late spring Heart-shaped leaf Deer resistant 	<ul style="list-style-type: none"> Full to partial shade Sand/loam/clay soil, moist
Canada Mayflower (AKA False Lily-of-the-Valley)	<i>Maianthemum canadense</i>	<ul style="list-style-type: none"> Small white flowers growing in spikes 	<ul style="list-style-type: none"> Adaptable to many conditions
Foamflower	<i>Tiarella cordifolia</i>	<ul style="list-style-type: none"> Small white flowers growing in spikes 	<ul style="list-style-type: none"> Full to partial shade Loam soil, moist/ intermediate
Mayapple	<i>Podophyllum peltatum</i>	<ul style="list-style-type: none"> Grows up to 40 cm Single white flower under leaves in spring 	<ul style="list-style-type: none"> Full to partial shade Clay/loam soil, intermediate/moist

Ground Covers Continued

Common Name	Latin Name	Description	Growing Conditions
Wild Geranium	<i>Geranium maculatum</i>	<ul style="list-style-type: none"> Showy pink flowers in late spring Different than garden geraniums 	<ul style="list-style-type: none"> Full to partial shade Sand/ clay soil, intermediate/dry
Wild Strawberry	<i>Fragaria virginiana</i>	<ul style="list-style-type: none"> Small white flowers Red, edible berries Spreads by runners 	<ul style="list-style-type: none"> Full sun Sand/loam/clay soil, dry/intermediate
Wintergreen	<i>Gaultheria procumbens</i>	<ul style="list-style-type: none"> Fragrant, white flowers 	<ul style="list-style-type: none"> Partial shade Acidic soil, dry/intermediate/moist
AVOID PLANTING EXOTIC INVASIVES: Periwinkle (<i>Vinca minor</i>), Goutweed (<i>Aegopodium podagraria</i>), English Ivy (<i>Hedera helix</i>), Lily-of-the-Valley (<i>Convallaria majalis</i>)			

Wildflowers

Common Name	Latin Name	Description	Growing Conditions
Black-eyed Susan	<i>Rudbeckia hirta</i>	<ul style="list-style-type: none"> Yellow-orange rays surrounding a brown-black center, late summer to fall 	<ul style="list-style-type: none"> Full sun to partial shade Sand/loam/clay soil, dry/ intermediate
Blue Vervain	<i>Verbera hastata</i>	<ul style="list-style-type: none"> Spikes of small blue/purple flowers 	<ul style="list-style-type: none"> Full sun to partial shade Wet to moist soils
Boneset	<i>Eupatorium perfoliatum</i>	<ul style="list-style-type: none"> Distinctive white flowers 	<ul style="list-style-type: none"> Full sun to partial shade Wet to moist soils
Butterfly Milkweed	<i>Asclepias tuberosa</i>	<ul style="list-style-type: none"> Showy bright orange-red flowers in July 	<ul style="list-style-type: none"> Full sun Dry soil
Canada Anemone	<i>Anemone canadensis</i>	<ul style="list-style-type: none"> White flowers in June Rapid spreader 	<ul style="list-style-type: none"> Full sun to partial shade Sand/loam/clay soil, moist/ intermediate
Canada Goldenrod	<i>Solidago canadensis</i>	<ul style="list-style-type: none"> Yellow flowers growing in spikes Rapid colonizer, may be considered weedy 	<ul style="list-style-type: none"> Full sun Dry to moist soil
Cardinal Flower	<i>Lobelia cardinalis</i>	<ul style="list-style-type: none"> Vibrant scarlet red flowers in late summer 	<ul style="list-style-type: none"> Full sun Sand/ loam soil, wet
Cup Plant	<i>Silphium perfoliatum</i>	<ul style="list-style-type: none"> Tall growing flower, up to 2.5 metres Yellow flowers 	<ul style="list-style-type: none"> Full sun Sand/loam/clay soil, moist/intermediate
Great Blue Lobelia	<i>Lobelia siphilitica</i>	<ul style="list-style-type: none"> Tall growing, up to 1.2 metres Spike of blue and white flowers 	<ul style="list-style-type: none"> Full sun to partial shade Sand/loam/clay soil, wet
Lance-leaved coreopsis	<i>Coreopsis lanceolata</i>	<ul style="list-style-type: none"> Tall growing flower, up to 1 metre Large yellow flowers 	<ul style="list-style-type: none"> Full sun to partial shade Sandy soil, dry

Wildflowers Continued

Common Name	Latin Name	Description	Growing Conditions
Obedient Plant	<i>Physostegia virginiana</i>	<ul style="list-style-type: none"> Purple-pink flowers, 30 to 120 cm 	<ul style="list-style-type: none"> Full sun Sand/loam soil, wet/ intermediate
Purple Coneflower	<i>Echinacea purpurea</i>	<ul style="list-style-type: none"> Purple rays More common in southern Ontario 	<ul style="list-style-type: none"> Full sun to partial shade Sandy/ loam soil, intermediate moisture
Spotted Joe-Pye Weed	<i>Eupatorium maculatum</i>	<ul style="list-style-type: none"> Large growing flower, 1-1.8 metres Clusters of purple flowers 	<ul style="list-style-type: none"> Full sun to partial shade Sand/loam/clay/organic soil, wet/ moist
Spotted Touch-me-not (AKA Jewelweed)	<i>Impatiens capensis</i>	<ul style="list-style-type: none"> Yellow-orange flowers Rapid spreader 	<ul style="list-style-type: none"> Full to partial shade Moist conditions
Swamp Milkweed	<i>Asclepias incarnata</i>	<ul style="list-style-type: none"> Purple-pink flowers in July, 30-150 cm 	<ul style="list-style-type: none"> Full sun Sand/loam/clay soil, wet/ moist
Wild Bergamot (AKA Bee Balm)	<i>Monarda fistulosa</i>	<ul style="list-style-type: none"> Showy purple-pink flowers bloom in late summer, 60-120 cm Deer resistant 	<ul style="list-style-type: none"> Full sun Sand/loam/clay soil, intermediate/dry Drought tolerant
AVOID PLANTING EXOTIC INVASIVES: Giant hogweed (<i>Heracleum mantegazzianum</i>), Japanese knotweed (<i>Polygonum cuspidatum</i>), Himalayan balsam (<i>Impatiens glandulifera</i>), multiflora rose (<i>Rosa multiflora</i>), Orange daylily (<i>Hemerocallis fulva</i>)			

Grasses, Sedges & Rushes

Common Name	Latin Name	Description	Growing Conditions
Awl Fruited Sedge	<i>Carex stipata</i>	<ul style="list-style-type: none"> Sedge, 30-100 cm Clusters of spiky looking green fruits at the tip 	<ul style="list-style-type: none"> Full sun to partial shade Sand/loam/clay soil, wet/ moist
Bebb's Sedge	<i>Carex Bebbii</i>	<ul style="list-style-type: none"> Sedge, 20-90 cm 	<ul style="list-style-type: none"> Full sun Sand/loam/clay soil, wet/moist
Big Bluestem	<i>Andropogon gerardii</i>	<ul style="list-style-type: none"> Grass, 1- 2.5 metres Warm season grass High wildlife value 	<ul style="list-style-type: none"> Full sun Sand/loam soil, moist /dry Drought tolerant, do not plant in consistently wet soil
Canada Blue-Joint	<i>Calamagrostis canadensis</i>	<ul style="list-style-type: none"> Grass, 0.5 to 1.8 metres Cool season grass Rapid spreader 	<ul style="list-style-type: none"> Full sun to partial shade Sand/loam/clay soil, wet/moist
Common Rush (AKA Soft Rush)	<i>Juncus effusus</i>	<ul style="list-style-type: none"> Rush, 0.5-1.2 metres Rapid spreader, can be invasive 	<ul style="list-style-type: none"> Full sun Wet/moist soil
Dark Green Bulrush	<i>Scirpus atrovirens</i>	<ul style="list-style-type: none"> Bulrush, 0.5- 1.5 metres 	<ul style="list-style-type: none"> Full sun to partial shade Clay/sand soil, wet/moist
Fowl Meadow-Grass	<i>Poa palustris</i> (AKA <i>Glyceria striata</i>)	<ul style="list-style-type: none"> Grass, 1-1.8 metres Cool season grass 	<ul style="list-style-type: none"> Full sun to partial shade Sand/loam/clay soil, wet/moist
Fox Sedge	<i>Carex vulpinoidea</i>	<ul style="list-style-type: none"> Sedge, 30-60 cm 	<ul style="list-style-type: none"> Full sun Sand/loam/clay soil, wet/moist

Grasses, Sedges & Rushes Continued

Common Name	Latin Name	Description	Growing Conditions
Indian Grass	<i>Sorghastrum nutans</i>	<ul style="list-style-type: none"> • Grass, 1-2.5 metres • Warm season grass 	<ul style="list-style-type: none"> • Full sun • Sand/loam soil, intermediate/dry • Drought and compaction tolerant, do not plant in consistently wet soil
Prairie Cordgrass	<i>Spartina pectinata</i>	<ul style="list-style-type: none"> • Grass, 1-2 metres • Good for erosion control • Warm season grass 	<ul style="list-style-type: none"> • Full sun • Sand/loam/clay soil, wet/ moist • Salt tolerant
Riverbank Wild Rye	<i>Elymus riparius</i>	<ul style="list-style-type: none"> • Grass, up to 1.5 metres 	<ul style="list-style-type: none"> • Full sun to full shade • Sand/loam soil, moist/intermediate
Virginia Wild Rye	<i>Elymus virginicus</i>	<ul style="list-style-type: none"> • Grass, 0.6-1 metres • Cool season grass 	<ul style="list-style-type: none"> • Full sun to partial shade • Sand/loam/clay soil, wet/moist/intermediate
AVOID PLANTING EXOTIC INVASIVES: Common Reed (<i>Phragmites australis</i>), Flowering Rush (<i>Butomus umbellatus</i>), Miscanthus (<i>Miscanthus sinensis</i> and <i>M. sacchariflorus</i>), Reed or Giant Manna Grass (<i>Glyceria maxima</i>)			

Aquatics

Common Name	Latin Name	Description	Growing Conditions
Blue-flag Iris, Northern	<i>Iris versicolor</i>	<ul style="list-style-type: none"> • Emergent aquatic, 20-90 cm • Showy purple flower May to July 	<ul style="list-style-type: none"> • Full sun to partial shade • Shallow standing water or moist shorelines
Broad-Leaved Arrowhead	<i>Sagittaria latifolia</i>	<ul style="list-style-type: none"> • Emergent aquatic plant • Showy white flowers, arrowhead shaped leaves • Strong roots 	<ul style="list-style-type: none"> • Full sun • Wet areas, prefers 6-12 inches of water
Canada Waterweed	<i>Elodea canadensis</i>	<ul style="list-style-type: none"> • Submergent • Rapid spreader 	<ul style="list-style-type: none"> • Standing or flowing water
Common Cattail	<i>Typha latifolia</i>	<ul style="list-style-type: none"> • Emergent aquatic plant, 1-3 metres • Rapid spreader, can be invasive forming monocultures 	<ul style="list-style-type: none"> • Full sun • Grows in or near water
Common Duckweed (AKA Lesser Duckweed)	<i>Lemna minor</i>	<ul style="list-style-type: none"> • Floating aquatic plant • Small floating leaves • Rapid spreader, may form mats 	<ul style="list-style-type: none"> • Standing or slow moving water
Coontail (AKA Common Hornwort)	<i>Ceratophyllum demersum</i>	<ul style="list-style-type: none"> • Submergent • Free floating (no roots) 	<ul style="list-style-type: none"> • Standing or slow moving water
Pickerelweed	<i>Pontederia cordata</i>	<ul style="list-style-type: none"> • Emergent aquatic • Showy purple or white flower 	<ul style="list-style-type: none"> • Full sun • Standing or slow moving water

Aquatics Continued

Common Name	Latin Name	Description	Growing Conditions
Pondweeds	<i>Potamogeton</i> sp (<i>Potamogeton foliosus</i> , <i>P. nodosus</i> , <i>P. pectinatus</i> , <i>Zanichellia palustris</i>)	<ul style="list-style-type: none"> Submergent aquatic 	<ul style="list-style-type: none"> Standing or flowing water
White Water Lily, Fragrant	<i>Nymphaea odorata</i>	<ul style="list-style-type: none"> Floating aquatic plant Showy white flowers with lily pads 	<ul style="list-style-type: none"> Full sun Shallow, standing or low flowing water
Wild Celery (AKA Tapegrass)	<i>Vallisneria americana</i>	<ul style="list-style-type: none"> Submergent Long ribbon-like leaves Provides important cover for fish and other aquatic wildlife 	<ul style="list-style-type: none"> Standing to fast flowing water
Yellow Pond Lily (AKA Bullhead Lily)	<i>Nuphar variegata</i>	<ul style="list-style-type: none"> Floating aquatic plant Showy yellow flowers with lily pads 	<ul style="list-style-type: none"> Full sun Shallow, standing or low flowing water
AVOID PLANTING EXOTIC INVASIVES: Common Reed Grass (<i>Phragmites australis</i>), Curly Pondweed (<i>Potamogeton crispus</i>), Eurasian Watermilfoil (<i>Myriophyllum spicatum</i>), Flowering Rush (<i>Butomus umbellatus</i>), Narrow-leaved Cattail (<i>Typha angustifolia</i>), Purple Loosestrife (<i>Lythrum salicaria</i>), Yellow Flag Iris (<i>Iris pseudacorus</i>), Yellow Floating Heart (<i>Nymphoides peltata</i>)			

Ferns

Common Name	Latin Name	Description	Growing Conditions
Lady Fern	<i>Athyrium filix-femina</i>	<ul style="list-style-type: none"> Up to 1 metre 	<ul style="list-style-type: none"> Full shade Moist soil
Ostrich Fern	<i>Matteuccia struthiopteris</i>	<ul style="list-style-type: none"> Up to 2 m 	<ul style="list-style-type: none"> Full to partial shade Sand, loam organic, wet, moist or intermediate
Royal Fern	<i>Osmunda regalis</i>	<ul style="list-style-type: none"> 1 to 2 metres 	<ul style="list-style-type: none"> Partial shade Swamps and wet areas
Sensitive Fern	<i>Onoclea sensibilis</i>	<ul style="list-style-type: none"> Up to 60 cm 	<ul style="list-style-type: none"> Full to partial shade Sand, loam soil, wet to moist

Other Native Plant Resources

- Ottawa Forest and Greenspace Advisory Committee's Native Trees and Shrubs Database: <http://www.ofnc.ca/ofgac/>
- Evergreen Native Plant Database: <http://nativeplants.evergreen.ca/>
- Ottawa Field-Naturalists' Club: http://www.ofnc.ca/fletcher/your-garden/index_e.php
- Grow Me Instead Guide: http://www.ontarioinvasiveplants.ca/files/GMI_Booklet_spreads_2011_Final_web.pdf

Sources of Native Plants

- Ferguson Forest Centre: <http://www.seedlingnursery.com/>
- Connaught Nursery: <http://www.connaughtnursery.com/>
- Rideau Valley Conservation Authority's Shoreline Naturalization Program: http://www.rvca.ca/programs/shoreline_naturalization_program/index.html
- Society for Ecological Restoration Ontario; 6th Ed. Native Pant Resource Guide Ontario: <http://chapter.ser.org/ontario/files/2012/08/SERO-6th-Ed.-Growers-List-Only.pdf>

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Source: Rideau Valley Conservation Authority