North Grenville Developer's Guide

For Council Approval

Prepared for: Municipality of North Grenville

Prepared by: Jp2g Consultants Inc.
Engineers • Planners • Project Managers
12 International Drive
Pembroke, Ontario
K8A 6W5

Project No. 21-7067A

Date: June 14, 2022

Contents

1.0 Introduction

1.1 Purpose of Developer's Guide

The purpose of this Developer's Guide is to provide direction to those wishing to initiate a development involving a plan of subdivision/condominium application or a site plan control application.

In addition to the review of the Developer's Guide, reference should also be made to all other applicable documents which may contain aspects of design, such as the Municipal Official Plan and Zoning By-law, and Engineering Standards.

It is also understood that those submitting other Planning Act applications such as Official Plan Amendments, Zoning By-law Amendments, Minor Variances, or Consent applications, may benefit from a review and understanding of the direction provided by this Guide.

This Guide is intended to:

1. **Provide a series of development guidelines that apply to residential, commercial, industrial, and institutional development proposals initiated through site plan control and/or subdivision/condominium processes.**
2. **Ensure consistent development expectations within North Grenville through clearly expressed development standards, submission requirements for professional reports and drawings and related expectations.**
3. **Ensure that community design objectives are clearly understood and addressed in all subdivision/condominium and site plan proposals.**
4. **Outline when certain studies are required.**

1.2 Creation of Developer's Guide

The Municipality of North Grenville retained the services of Jp2g Consultants Inc. to assist in the preparation of a Developer's Guide. In addition to drawing from the Municipality's Official Plan and Zoning By-law, the content of this document also involved research into best practices. During the preparation of this Guide efforts were made to consult with staff, Council and various stakeholders. Specifically, there were two consultation workshops conducted: one involving staff and Council and the other involving members of the local development industry.

The Guide also involved consultation with various agencies involved in the review of development proposals, including the United Counties of Leeds and Grenville, Conservation Authorities, the Leeds Grenville Lanark District Health Unit, and Parks Canada.

1.3 Relationship with Other Documents

This document is intended to function as an independent document. However, it is understood that this Guide only covers certain elements of the design and development. In addition to this Developers Guide, the proponent and his team should familiarize themselves with the

Municipality's Engineering Standards which provides detailed direction on matters related to servicing and infrastructure. This Guide is intended to complement the Engineering Standards which should be reviewed in conjunction with this Guide. Consultation on applicable standards are intended to take place during the preconsultation phase of the development.

The Municipality's Zoning By-law and Official Plan are the key regulatory and policy documents governing development within the Municipality. Much of the direction set out in this Guide originated from these two documents. This Guide is intended to complement these documents and provide direction on how to implement various zoning requirements and Official Plan policies.

Every effort will be made to ensure that this Guide is updated in conjunction with updates to the Official Plan or Zoning By-law. When conflicts arise between the direction of this Guide and the policy or regulations of the Official Plan or Zoning By-law, the Official Plan or Zoning By-law provisions shall prevail.

The Municipality's Strategic Plan is also an important document for developers to be familiar with. The North Grenville Strategic Plan depicts the community's vision and creates a roadmap for how to get there. As a growing community, it is important for those wishing to develop in North Grenville to understand the **strategic** priorities of the community so that they can present opportunities to better the community that are consistent with the community's vision.

1.4 Structure of the Guide

This document has been broken out into eight (8) chapters:

1. Introduction.
2. General Submission Requirements.
3. Neighbourhood Integration.
4. Landscaping Standards.
5. Parkland Development Standards.
6. Sustainable Design Standards.
7. Street Right-of-Way Standards.
8. Agreements and Administrative Control.

It is understood that not all the sections may be relevant to every development proposal. Efforts have been made to separate the sections into relevant guidance for subdivision/condominium applications and site plan control application.

1.5 How and When to Use Guide

The steps in the "Planning Process" for subdivisions/condominium and site plan control applications can generally be categorized as follows:

1. Familiarization
2. Preconsultation
3. Application Submission
4. Application Review
5. Decision & Implementation

How the Guide can be utilized during the planning process is detailed below.

1.5.1 Familiarization

The proponent and his team shall familiarize themselves with the relevant planning and design requirements of the Municipality. The proponent may wish to meet with the Municipality's Engineering and Planning staff to discuss areas of preliminary concern and other issues prior to the preconsultation meeting and the commencement of project design.

Design work is to adhere to the Municipalities Master Plans and the requirements set out in the engineering standards. All engineering design and submission procedures and requirements are outlined in the Engineering Standards. It is incumbent upon the proponent and his team to familiarize themselves with these documents prior to proceeding to the design phase of the project.

1.5.2 Preconsultation

Preconsultation is a required element of the planning approval process for all those wishing to initiate a plan of subdivision/condominium or site plan application.
Preconsultation is typically, the first formal contact between the developer and the Municipality. It is understood that there may be several discussions between Municipal Staff and the developer leading up to the preconsultation exchange between the developer and the Municipality.

Preconsultation is designed to achieve two specific outcomes:

a) **Allow the developer to share their ideas and vision for their development proposal.**
b) **Allow for members of the Development Review Team (DRT) to provide direction and guidance to the developer, outlining matters related to Official Plan conformity, compliance with zoning regulations, compliance with other relevant documents (including this Guide), and confirmation of the planning approval process.**

Preconsultation takes place prior to the submission of an application. It is the stage in the process where developers share their ideas and vision and where members of the North Grenville Development Review Team provide direction and guidance to those wishing to develop.

This Guide is intended to provide direction on key elements of the design that are important to the Municipality. To ensure developers gain maximum benefit from the preconsultation phase, they should make every effort to acknowledge and understand the requirements of this Guide as part of the preconsultation submission. It is not expected that the developer will have fully formed proposal detailing compliance with the Guide, rather it is expected that the developer have a basic understanding of the design issues that are important to the Municipality and how the development proposal may address the design issues.

During the preconsultation phase, comments and direction will be provided by the Municipality's Development Review Team. Identification of required studies and supporting information, design elements that are critical for inclusion, understanding of local context, and awareness of pending initiatives, are all expected to be shared at this informal stage of the development process.

Preparation for a preconsultation meeting with the Development Review Team (DRT) by the developer and their representatives will ensure the maximum benefit of this informal, free process is obtained. It is expected that a developer will submit an outline of the project and a preliminary design concept/plan for review and consideration prior to the meeting. Section 2.1 of this Guide provides more details on preconsultation requirements.

It is understood that there may be confidential elements of the proposal that the developer wishes to keep private at the preconsultation stage. Section 2.1.2 of this Guide addresses confidential preconsultation.

It is the practice of Municipal Staff to provide a written follow-up to the developer summarizing the outcome of the preconsultation discussions, including process details, study requirements, and matters which require consideration.

1.5.3 Application Submission

In order for an application submission to be deemed complete, there is a basic requirement to complete the application, submit the required supporting studies, plans, and information as identified during the preconsultation stage, and pay the required fees.

Following the direction and comments received during the preconsultation stage, it is anticipated that submitted subdivision/condominium or site plan applications will address all the relevant elements of this Guide. There may be situations where unique circumstances exist and inclusion of various elements of the Guide may not be appropriate. Where these situations exist, it is anticipated that the application submission will contain a justification for not including elements of the Guide.

Application submissions that are not complete will be returned to the developer with the specific requirements for a complete application clearly identified. Incomplete applications shall not be processed and shall not proceed through the development review process.

Developers are encouraged to present their complete application to the North Grenville Development Review Team (DRT) so that members of the DRT are fully briefed on the details of the development proposal.

1.5.4 Application Review

Once an application has been deemed complete the Municipality shall circulate the application to the various internal departments and external agencies for their review and comment. The comments received will be focused on the mandate or responsibility of the commentor and generally involve comments that accept submitted material, seek clarification of the submitted material, offer an alternative approach, or outright refusal of the submitted material.

Review comments provided will focus on conformity with the local and County Official Plans, the North Grenville Zoning By-law, public body policies and procedures, provincial policy, as well as the direction in this Guide.

Once all requirements of the commenting bodies have been addressed to their satisfaction, the development proposal will be presented to the approval authority for consideration.

1.5.5 Decision & Implementation

Once the approval authority has made a decision on the merits of the application, it is the developer's responsibility to address any conditions associated with the approval. It is anticipated that for both subdivision/condominium and site plan applications, the approval will involve conditions that must be addressed prior to development proceeding.

The implementation of the decision by the approval authority usually involves satisfying conditions that are reflected in a Subdivision/ Condominium or Site Plan Agreement. Such agreements are typically between the developer and the Municipality however, other external bodies may be party to or have an interest in the agreement.

It is normally the case that an executed agreement will also involve the posting of securities and be registered on the title of the subject lands, all at the developer's expense. Agreements and Administrative Controls are discussed in detail in Section 8 of this Guide.

1.6 Geographic Application of the Guide

The Municipality of North Grenville has a diverse geography consisting of a fully serviced urban area (Kemptville), historic hamlet settlement areas developed on private services (Oxford Mills, Bishops Mills, South Gower, Burritts Rapids, etc) and vast rural lands developed on private services.

Although it is anticipated that the majority of the growth and development of the Municipality will be focused in Kemptville, and to a lesser extent the historic hamlets, this Guide will apply equally to any subdivision/condominium or any site plan application, regardless of the location within the Municipality.

1.7 Developer Guide Exemptions

This Guide is intended to be applied to all development proposals involving residential, commercial, industrial, and institutional subdivision/condominium and site plan applications.

Notwithstanding the above, the Developer's Guide is not intended to be applied against aggregate resource extraction applications, agricultural applications, forestry applications, or other resource-based activities.

That said, there may be benefit for exempt applications to consider elements of the Guide to assist in their design.

Other activities under Federal government jurisdiction, such as telecommunication applications under the Innovation, and Science and Economic Development Canada's (ISED) Spectrum Management and

It is typical for the approval of plans of subdivision to require conditions to be addressed and the plan finalized within three (3) years of the date of Draft Approval.

NG site plan approvals typically have a two year timelines in which conditions must be satisfied.

Telecommunications Policy, are exempt from the Developer's Guide.

1.8 Overall Design Objectives

There are a number of fundamental design objectives that provide direction to the Developer's Guide.

All future development, whether greenfield or infill, urban or rural, shall be consistent with the following Design Objectives:

1. Maximize integration and connections with existing neighbourhoods resulting in a contiguous community, where new development is not isolated from existing development and connects with existing neighbourhoods.
2. Incorporate connection with, continuation of, and advancement of the Municipality's active transportation infrastructure.
3. Develop high quality landscaped areas based on the planting of sustainable, native species appropriate for the situation.
4. Provide the necessary parkland and open space.
5. Designed to meet AODA standards for accessibility.
6. Incorporate sustainable design elements, use of sustainable building materials and construction methods.

It is the goal of the Official Plan "to promote a high standard of architectural, landscape and community design that is sensitive to the character of the surrounding uses and streetscapes, conducive to pedestrian accessibility, safety, circulation and use, and that provides for the protection of significant natural features."

2.0 General Submission Requirements

2.1 Preconsultation Requirements

2.1.1 Developer Preconsultation Submission

In order for preconsultation to be effective it is necessary for the developer to:

1. Prepare a written statement outlining the nature and details of the development proposal
2. Prepare a preliminary concept plan for the development of the property. Efforts should be made to avoid hand prepared concept plans. The Concept Plan should be drawn to scale and clearly labeled. The use of existing survey information, if available, for the boundary of the subject property and base for the concept plan is encouraged.
3. Arrange to have the developer's team attend the preconsultation meeting (planners, engineers, architects, etc.) to ensure that all parties are hearing the same message at the same time.

2.1.2 Confidential Preconsultation

It is understood that development concepts are rarely fully advanced at the preconsultation stage and that there may be the need to exchange sensitive details or materials during the preconsultation process. It is not unusual for land deals to be happening during the approval process and as a result, highly sensitive. As a result, it is common for the developer to want to keep sensitive information from being "public" at the preconsultation stage. Where sensitive information is presented to DRT it is critical for the developer to inform the DRT that the information is sensitive and confidential. DRT members are to respect confidential information presented during the preconsultation process and treat the meeting as "in camera" and not public.

It is the practice of Municipal Staff to provide a written follow-up to the developer summarizing the outcome of the preconsultation discussions, including process details, study requirements, and matters which require consideration.

2.2 Studies/Supporting Information Requirements/Triggers

Understanding the type and scope of the studies required to support any given subdivision/condominium or site plan application is a critical outcome of the DRT preconsultation process. Depending on the nature, location, and details of the development proposal, a wide range of studies may be required to be submitted in support of the development application. Appendix A sets out the range and type of studies that may be required, when the need for the study is triggered, who can do the study, when they are required in the process, who reviews the work, and how the recommendations are implemented. Although every effort will be made to identify required studies during the DRT preconsultation process, it is important to understand that additional information or new studies may be requested at any time throughout the approval process.

It is important to understand that there may be situations where the Municipality shall seek a third-party peer review of studies submitted by the proponent. The Municipality may require a deposit from the proponent to cover the costs associated with retaining third party peer review services.

2.3 Subdivision/Lot Creation Requirements

2.3.1 Subdivision/Condominium Drawing Requirements

The plan of subdivision/condominium submission requirements are set out in Section 51(17) of the Planning Act and shall apply to this Guide. The North Grenville Official Plan also provides the authority for additional information requirements.

An applicant of a plan of subdivision/condominium shall provide a plan of the proposed subdivision/condominium drawn to scale and showing:

a) the boundaries of the land proposed to be subdivided, certified by an Ontario Land Surveyor (OLS);

b) the locations, widths, orientation, and names of the proposed highways within the proposed subdivision, including site triangles, and of existing highways on which the proposed subdivision abuts or connects with, including the identification of the road authority;

c) active transportation elements including walkways, bike paths, sidewalks, and their connection to the Municipal Active Transportation Network and Commuter Cycling Plan;

d) the location of existing railways or railway corridors on which the proposed development abuts or is within the influence area of the railway authority;

e) on a small key plan (on a scale of not less than one centimetre to 100 metres), all of the land adjacent to the proposed subdivision that is owned by the applicant or in which the applicant has an interest, every subdivision adjacent to the proposed subdivision, and the relationship of the boundaries of the land to be subdivided to the boundaries of the township lot or other original grant of which the landforms the whole or part;

f) the purpose for which the proposed lots are to be used, including identification of parkland, open space, and stormwater management blocks;

g) the existing uses of all adjoining lands;

h) the approximate dimensions and layout of the proposed lots;

i) if any affordable housing units are being proposed, the shape and dimensions of each proposed affordable housing unit, and the approximate location of each proposed affordable housing unit in relation to other proposed residential units;

j) natural and artificial features such as buildings (to be retained and/or removed) or other structures or installations, railways, highways, watercourses, drainage ditches, natural heritage features, wetlands, wooded areas, and significant trees or vegetation to be protected within or adjacent to the land proposed to be subdivided;

k) the availability and nature of domestic water supplies;

l) the nature and porosity of the soil;

m) existing contours or elevations as may be required to determine the grade of the highways and the drainage of the land proposed to be subdivided;

n) identification of the phases of the development proposal;

o) the municipal services available or to be available to the land; and,

p) the nature and extent of any restrictions affecting the land proposed to be subdivided, including restrictive covenants or easement.

Special attention should be paid to Appendix 1 of the United Counties Subdivision/ Condominium application which sets out some of the general requirements for applications for subdivisions/condominiums, including direction on planning application fees, early preconsultation, assessment/review of applications, approval for private sewage systems, and other permits that may be required.

2.3.2 Unique Subdivision Requirements

For applications for plans of subdivision it is critical that required supporting documents are included in the application submission package. The confirmation of the studies required to be included in order for the subdivision application to be deemed complete, shall take place during the preconsultation before the Development Review Team (DRT).

For a residential plan of subdivision containing two hectares or more of developable lands, within the Urban Service Area, Section 2.4.3 of the Official Plan requires 21% of new development to be medium density development and 11% shall be high density development.

For developments proposing medium or high-density residential development, special consideration will be required to the demand for parking, the provision of on-site parking, the provision of visitor parking, and the need for on-street parking.

In no case should a development proposal result in on-street parking demands that spill into neighbouring areas. Consideration of seasonal issues such as snow storage shall also be considered.

It is a policy of North Grenville that a minimum of one street tree per new residential unit be planted. It is understood that most medium and high-density residential developments do not offer the same opportunity for street tree plantings that lower densities afford, due to conflicts between driveways, servicing laterals, and snow storage areas, especially with townhouse type development. It is anticipated that for such areas, landscaped plans will provide for as many street trees as practical, with the remaining required trees to be grouped and located in appropriate locations throughout the development.

A condition of subdivision approval typically involves the requirement to enter into a subdivision agreement between the applicant and the Municipality. Such agreements are registered on the title of the property and binding on successive owners.

2.3.3 Unique Condominium Requirements

One of the unique elements of condominium development is the option for the use of private roads through the common element condominium process. It is critical to ensure that the private road has the same form and function as a public street and that building setbacks should be from the private road right-of-way to the proposed building. There may be situations where the building setback can be significantly reduced from the private road, provided there is room

for parking and snow storage. Private roads are discussed in more detail in Section 7.6 of this Guide.

A condition of condominium approval typically involves the requirement to enter into a condominium agreement between the applicant and the Municipality. Such agreements are registered on the title of the property and binding on successive owners.

2.3.4 Landscape Plan Drawing Requirements

All subdivision and condominium applications shall also be accompanied by a Landscape Plan, drawn to scale, and showing:

i. Existing landscaped features to be retained, areas to be grassed, and areas to be used for the storage of snow.
ii. Location, type, and height of any fencing and retaining walls, and materials used for constructing sidewalks.
iii. Location, quantity, species, caliper or height of all existing and proposed trees, plants, and shrubs. A table of such landscaping materials, cross sections, and planting schedules must be shown on the plan.
iv. Any other detail pertaining to the aesthetic development of the site such as berms, planters, and street furniture (benches, bike racks, garbage receptacles, etc.).
v. Where required, an open space/park plan shall be prepared to the satisfaction of the Municipality.
vi. The requirements of the Municipal Engineering Standards for Landscape Plans should be addressed.

2.3.5 Application Fees and Deposits

Reference to the Municipality's User Fees By-Law is recommended to ensure applications are accompanied by the appropriate fees. It may be necessary to contact the approval authority for plans of subdivision and plans of condominium to confirm their required fees. In all cases, the fee is required to be submitted with the application in order for the application to be deemed complete. No application will be processed or reviewed until such time as fees are deposited with the approval authority.

With most applications, there may be a requirement for a separate deposit to cover the cost of the peer review of studies, including engineering plans and reports. Typically for plans of subdivision and/or condominiums, the security deposit is $5,000. The deposit is to be drawn upon when needed to cover the cost of the peer review. Any deposit remaining unspent at the conclusion of the project is returned to the applicant. Should the deposit be drawn to $0.00, the applicant will be required to replenish the deposit to a level determined by the Municipality. It is required that the deposit be replenished within 10 business days of the notice from the Municipality for the need to top up the deposit.

Deposits shall be in the form of cash, deposited with the Municipality.

2.4 Site Plan Requirements

2.4.1 Site Plan Drawing Requirements

The site plan submission requirements that are detailed in Section 41(4) of the Planning Act shall apply to this Guide. The North Grenville Official Plan also provides the authority for additional information to be requested.

A site plan application shall be accompanied by a Site Plan of the proposed development, drawn to scale, and showing:

a) Location of the subject property in relation to adjacent properties, streets, railway rights-of-way, easements, as well as the dimensions and area of the subject property.

b) A legend explaining all design features and a breakdown of all uses in metric units.

c) Identification of abutting lands in same ownership as the subject property.

d) Location of all buildings and structures to be erected and showing the size, elevation, and type of existing buildings and structures including floor area, number of storeys, width, length, height, and number of dwelling units for each building

e) Location of all facilities and works to be provided including:

i. Facilities designed to have regard for accessibility for persons with disabilities.

ii. Widenings of highways that abut onto the land.

iii. To provide access to and from the land, such as access ramps and curbing, and traffic direction signs, including the width of existing and proposed access to public streets.

iv. Off-street vehicular loading and parking facilities, either covered or uncovered, access driveways, including driveways for emergency vehicles, and the surfacing of such areas and driveways. Internal road pattern including aisles, ramps, loading bays, and parking spaces with dimensions. A table of parking calculations and parking for handicapped persons must be shown on the plan.

v. Walkways and walkway ramps, including the surfacing thereof, and all other means of pedestrian access.

vi. Distance from front lot line to centreline of public streets.

vii. Location and details of underground and above ground utilities extended to the subject property, including hydro, water, sewer, gas, cable, and telephone lines. The location of fire hydrants, light standards, hydro poles, or other installations shall be identified.

viii. Facilities for the lighting, including floodlighting, of the land or of any buildings or structures thereon.

ix. Walls, fences, hedges, trees, shrubs or other groundcover or facilities for the landscaping of the lands or the protection of adjoining lands.

x. Location and details of existing and proposed signs.

xi. Vaults, central storage and collection areas, and other facilities and enclosures for the storage of garbage and other waste material.

xii. Easements conveyed to the Municipality for the construction, maintenance or improvement of watercourses, ditches, land drainage works, sanitary sewage facilities and other public utilities of the Municipality or local board thereof on the land.

xiii. Grading or alteration in elevation or contour of the land and provision for the disposal of storm, surface, and wastewater from the land and from any buildings or structures thereon.

xiv. Perpendicular distance from lot lines to the nearest walls of existing and proposed buildings, and building spacing, where applicable.

xv. Location of designed fire routes(s), easements, and rights-of-way.

f) The requirements of the Municipal Engineering Standards for Landscape Plans should be addressed.

2.4.2 Landscape Plan Drawing Requirements

All site plan applications shall also be accompanied by a Landscape Plan, drawn to scale, and showing:

i. Existing landscaped features to be retained, areas to be grassed, and areas to be used for the storage of snow.

ii. Location, type, and height of any fencing and retaining walls, and materials used for constructing sidewalks.

iii. Location, quantity, species, caliper or height of all existing and proposed trees, plants, and shrubs. A table of such landscaping materials, cross sections, and planting schedules must be shown on the plan.

iv. Any other detail pertaining to the aesthetic development of the site such as berms, planters, and street furniture (benches, bike racks, garbage receptacles, etc.).

v. Where required, an open space/park plan shall be prepared to the satisfaction of the Municipality.

vi. The requirements of the Municipal Engineering Standards for Landscape Plans should be addressed.

2.4.3 Grading and Drainage Plan Drawing Requirements

All site plan applications shall also be accompanied by a Grading and Drainage plans which show:

i. Existing elevations on subject and adjacent lands, and along centreline or adjacent public streets and railway rights-of-way. All elevations are to be geodetic.

ii. Location, elevations and contours of any creeks, ravines, or watercourses on the subject and adjacent lands. Arrows indicating the proposed direction of flow of all surface water.

iii. Finished elevations at the building lines and at all critical points such as catch basins and adjacent lands.

iv. Location and details of swales, all surface water outlets, catch basins, ripraps, rock and retaining walls, and size and gauge of metal culverts.

v. Dimensions of box culverts, depth and quality of asphalt, curbing, servicing, and connections.
vi. The requirements of the Municipal Engineering Standards for Grading and Drainage Plans should be addressed.

2.4.4 OLS Drawing Requirements

All site plan applications shall be accompanied by a Survey prepared by an Ontario Land Surveyor (OLS), stating the legal description, and showing the property boundary. The Municipality may request that the survey also identify existing buildings and structures, existing trees, floodplain limit, and appropriate dimensions. The requirements of the Municipal Engineering Standards for OLS Drawings should be addressed.

2.4.5 Unique Site Plan Requirements

Site Plan applications are typically required for commercial, industrial, and institutional development proposals. Site plan control is also required for medium and high-density residential development, and, for low-density residential development in circumstances where there are natural heritage or hazard features.

The North Grenville Site Plan Control By-law 58-12, Section 4 provides for exemptions for certain classes of development from site plan control including:

a) **All buildings and structures accessory thereto, on lands where no development is proposed within 30 m of a waterbody.**
b) **A "public use", as defined in the Municipality's Zoning By-Law, where Council has by resolution specifically exempted such use.**
c) **Agriculture, forestry, or conservation buildings or structures, including buildings and structures accessory thereto.**
d) **A temporary building or structure used during construction of a permanent building or structure.**

The approval of a site plan can include conditions that must be satisfied. Typically, there is a site plan agreement entered into between the developer and the Municipality that details the terms and conditions related to the development of the property and how the conditions are satisfied, along with financial requirements, including the posting of a security deposit associated with specific site works. More detail on site plan agreements is provided in Section 8 of this Guide.

It is important to appreciate that only the applicant has the right to appeal site plan control decisions. The general public typically does not have appeal options for site plan applications.

Appendix B contains flow chart of the Development Review Process for site plan applications.

2.4.6 Application Fees and Deposits

Reference to the Municipality's User Fees By-Law is recommended to ensure applications are accompanied by the appropriate fees. In all cases, the fees are required to be submitted with an application in order for the application to be deemed complete. No application will be processed or reviewed until such time as fees are deposited with the approval authority.

With most applications, there may be a requirement for a separate deposit to cover the cost of the peer review of studies, including engineering plans and reports. Typically for site plans, the security deposit is $3,000. The deposit is to be drawn upon when needed to cover the cost of the peer review. Any deposit remaining unspent at the conclusion of the project is returned to the applicant. Should the deposit be drawn to $0.00, the applicant will be required to replenish the deposit to a level determined by the Municipality. It is required that the deposit be replenished within 10 business days of the notice from the Municipality for the need to top up the deposit.

Deposits shall be in the form of cash, deposited with the Municipality.

2.5 Approval Authorities

2.5.1 Subdivisions/Condominiums

The approval authority for plans of subdivision and condominiums is the United Counties of Leeds and Grenville. For such applications, the Municipality is a "commenting agency" and is responsible for reviewing the development proposal and providing comments to the United Counties, along with recommended conditions to be included in the United Counties decision.

Counties decisions on "draft plan approval" for subdivision and condominium applications are typically for a three-year period. All conditions associated with the draft plan approval must be satisfied within the three-year period. There is an option for the applicant to request one-year extensions to the draft approved application. If the conditions of draft approval are not satisfied within the three year or extended timeline, the Counties decision becomes null and void and the application will be deemed "lapsed". In order to reactivate a lapsed decision, the applicant must reapply with a new application and start the process from the beginning.

As part of the approval of a draft plan of subdivision or condominium, the United Counties has the authority to impose such conditions on the approval of a plan of subdivision. Such conditions must be reasonable, in the opinion of the approval authority, having regard for the nature of the development proposed for the subdivision, including the requirements:

1. That land be dedicated, or other requirements met for park or other public recreational purposes.
2. That such highways, including pedestrian pathways, bicycle pathways and public transit rights of way, be dedicated as considered necessary.
3. That such land be dedicated for commuter parking lots, transit stations and related infrastructure for the use of the general public using highways, as considered necessary.
4. When the proposed subdivision abuts on an existing highway, that sufficient land be dedicated to provide for the widening of the highway to such width as considered necessary.

5. That the owner of the land proposed to be subdivided enter into one or more agreements with the Municipality, dealing with such matters as may consider necessary, including the provision of municipal or other services.
6. In the case of an application for a condominium containing affordable housing units, a shared facilities, an agreement will be entered into to the satisfaction of the United Counties.

2.5.2 Site Plans

The approval authority for site plan applications is the Municipality of North Grenville. The Municipality is responsible for circulating the complete applications to the various agencies and public bodies to solicit their comments and for making a decision on the merits of the application.

With Site Plan applications there are no requirements to circulate the proposal to surrounding property owners. The Municipality may provide a courtesy notice to surrounding property owners, but there is no requirement for a public meeting and the public have no appeal rights on site plan applications.

The Municipality will circulate and gather comments from the various agencies and public bodies and provide a decision on the site plan application, typically with conditions, including the requirement to enter into a site plan agreement with the Municipality.

Once approved decisions on site plan applications typically do not have a lapsing date.

As part of the approval of a site plan application, the Municipality has the authority to require, as a condition, that the owner of the land provide, to the satisfaction of and at no expense to the Municipality, any or all of the following:

1. Widenings of highways that abut on the land.
2. Facilities to provide access to and from the land such as access ramps, curbings and traffic direction signs.
3. Off-street vehicular loading and parking facilities, either covered or uncovered, access driveways, including driveways for emergency vehicles, and the surfacing of such areas and driveways.
4. Walkways and walkway ramps, including the surfacing thereof, and all other means of pedestrian access.
5. Facilities designed to have regard for accessibility for persons with disabilities.
6. Facilities for the lighting, including floodlighting, of the land or of any buildings or structures thereon.
7. Walls, fences, hedges, trees, shrubs, or other groundcover or facilities for the landscaping of the lands or the protection of adjoining lands.
8. Vaults, central storage, and collection areas and other facilities and enclosures for the storage of garbage and other waste material.
9. Easements conveyed to the Municipality for the construction, maintenance, or improvement of watercourses, ditches, land drainage works, sanitary sewage facilities, and other public utilities of the Municipality or local board thereof on the land.

10. Grading or alteration in elevation or contour of the land, and provision for the disposal of storm, surface and wastewater from the land and from any buildings or structures thereon.
11. Maintain to the satisfaction of the Municipality and at the sole risk and expense of the owner any or all of the facilities or works including the removal of snow from access ramps and driveways, parking areas, loading areas, and walkways.
12. Enter into one or more agreements with the Municipality dealing with and ensuring the provision of any or all of the facilities or works and the maintenance thereof, and that development proceeds in accordance with the plans and drawings approved.

The Municipality is not authorized to regulate interior design, layout of interior areas, excluding interior walkways, stairs, elevators and escalators, or the manner of construction and standards for construction for development through the site plan control process.

2.5.3 External Approval Requirements

Through the draft plan of subdivision/condominium process or the site plan control process, there may be the need for approvals from external agencies/public bodies, other than the Municipality or the United Counties of Leeds and Grenville. The following is a summary of some of the more common external approvals that may be required through the subdivision/condominium or site plan approval processes:

Province of Ontario: the province is responsible for the approval of Records of Site Condition (RSC) for contaminated sites, Archeological Assessments where there are findings of significance, and Environmental Certificates of Approval (ECA) for sewage works and stormwater management. The Ministry of Transportation is also responsible for the review and issuance of land use permits for all development within 300 m of a MTO right-of-way.

Leeds Grenville, Lanark District Health Unit (LGLDHU): The LGLDHU is currently responsible for the issuance of building permits for septic systems with capacity of less than 10,000 l/day. If the development proposal is on private services, a permit from the LGLDHU will be required.

Conservation Authorities: There are two Conservation Authorities with jurisdiction in North Grenville (Rideau Valley CA and South Nations CA). Where development is within an area regulated by the Conservation Authority, a permit may be required to do any work within the floodplain, watercourse, wetland, or unstable slope.

United Counties Road Authority: Where development fronts on a County Road under the jurisdiction of the United Counties Road Authority, there may be a need for an entrance permit to be issued or upgraded.

Parks Canada (Federal): The Rideau Canal is federally regulated under the jurisdiction of Parks Canada. All near shore and in-water works within the area regulated by Parks Canada may require a permit.

The above list is not exhaustive and there may be additional external approvals required for a specific development proposal.

3.0 Neighbourhood Integration

Proper, thoughtful integration of new development into existing neighbourhoods is required in order to ensure the character and compatibility with the surrounding neighbourhood are maintained. Proper integration requires special attention to a number of design issues related to the road network, pedestrian and open space connectivity, building design details, cultural heritage considerations, and accessibility.

3.1 General Neighbourhood Integration Standards

The physical environment of a neighbourhood is composed of its lots, buildings, streetscapes, topography, street patterns and natural environment, that collectively determine much of the character of a neighbourhood. A well organized and documented understanding of a neighbourhood's character is an effective tool in assessing the appropriateness of a proposed change and the implications the change may have on the character of the neighbourhood (see Neighbourhood Characterization Studies in Table 1 of Section 2.2). The intent is to ensure projects are sensitive to, compatible with, and a good fit within, the existing surrounding neighbourhood based on, but not limited to, a review of both existing and proposed built form, massing, and architectural treatments, and accommodates natural heritage and hazard features. It is recommended that regard should be given to the Municipal Strategic Plan as it relates to community and neighbourhood development goals and objectives.

3.1.1 Residential Intensification

Residential intensification projects (including plans of subdivisions/condominiums) are subject to site plan control and must demonstrate:

a) Sensitivity to existing private amenity spaces as they relate to the location of proposed building entrances, garbage receptacles, parking areas, and other features that may impact the use and privacy of such spaces.

b) The use of fencing, landscaping, and planting buffers to mitigate impacts of the proposed development on existing properties.

c) Consideration of the following Urban Design Principles:

   i. innovative and creative standards of design for the form and design should complement and/or enhance any significant natural features that form part of the site or are located adjacent to the site;

   ii. new development should provide for a diversity of styles, continuity, and harmony in architectural style with adjacent uses;

   iii. new infill development should have a similar relationship to the street as surrounding development, and may be required to provide for pedestrian travel;

   iv. the design and positioning of new buildings should have regard for the impact of the proposed development on year-round sunlight conditions on adjacent properties and streets;

   v. buildings should be positioned to define usable and secure open space areas on the site and to afford a reasonable measure of privacy to individual dwelling units;

   vi. parking and driveways should be located and designed to facilitate maneuverability on site and between adjacent sites, and to reduce traffic flow disruption to and from the property.

3.1.2 Neighbourhood Character Statement

A detailed statement of the character of the existing neighbourhood that demonstrates how the proposed development respects the character of the existing neighbourhood is required for infill and intensification projects. Such work would inventory the urban design characteristics of the neighbourhood and shall include a review of structures and the natural environment within the surrounding neighbourhood.

The conceptual design of the proposed development needs to be based on specific built form principles which guide what it is that the project wants to achieve. The Neighbourhood Character Statement shall incorporate the following items:

The extent of the neighbourhood area to be reviewed is typically established at the pre-consultation stage. It shall include a minimum area consisting of a 120 metres radius from the subject site.

a) Character and Image:
   i. description of the existing street character;
   ii. description of the project in the context of the neighbourhood;
   iii. visual components; and,
   iv. retention and role of natural environment.

b) Site Design:
   i. the location of buildings, as well as their orientation to the street edge and sidewalks;
   ii. the location of building entrances;
   iii. how the design relates to its site and greater surrounding area, including established building lines, rear yard and front yard setbacks, and building separation;
   iv. views into and out of the site – how does the building function as a view terminus – provide pedestrian perspectives (at-grade views) and important views; and,
   v. vehicular and pedestrian circulation

c) Servicing:
   i. accessibility and connectivity of the site to the adjacent neighbourhood, community facilities and destinations, including consideration of the circulation for automobile, pedestrians, cyclists, and persons with disabilities;
   ii. access to transit;
   iii. shared service locations, parking, ramps, drop-offs, service areas for garbage, loading, utilities, etc.;
   iv. capacity of water and sewage system; and
   v. protection of source water aquifers.

3.1.3 Neighbourhood Compatibility

As part of an application for residential intensification, the applicant may be required to provide a detailed statement of the compatibility of the project, to demonstrate that the proposed project is sensitive to, compatible with, and a good fit within the existing surrounding neighbourhood. The conceptual design of the project shall incorporate the following items:

a) Built Form Elements:

i. how the building(s) addresses the street;
ii. street wall and treatment of grade level;
iii. rooftop and cornice lines;
iv. location of entrances and other openings;
v. relationship of the building(s) to the street at intersections;
vi. design for comfort and safety (i.e., privacy, lighting, sun, and wind protection, etc.); and
vii. dark skies friendly design and lighting.

b) Massing and Articulation:
i. at-grade openings;
ii. setbacks;
iii. transition to adjacent uses / buildings, and among buildings within the site;
iv. transition of scale;
v. street proportion / street sections (building to street ratio);
vi. shadowing caused by mid-rise and tall buildings should be minimized and impacts on adjacent private amenity areas (natural light and privacy for example) should be minimized; and
vii. energy efficient and passive solar design.

c) Architectural Treatment:
i. style;
ii. details;
iii. materials;
iv. colour; and
v. exterior lighting.

3.2 Transportation Network

The transportation network includes roads, railways, multi-use pathways, sidewalks, and parking. A key element of neighbourhood integration involves the proper design of the various elements of the transportation network and its integration with the existing neighbourhood design. The following is intended to guide proposed transportation networks.

1. The connection of a new road into an existing road network should be consistent with the existing block pattern and lengths. Efforts should be made to avoid mid-block road connections and promote right-angle connections. Public safety and site lines where new roads connect with the existing network are key elements.
2. The internal road network layout should be grid-like with short blocks, approximately 150m to 250m in length, to create an easily walkable network. In general, a grid-like road network is the preferred layout because it is known to reduces travel times and emissions, facilitates water supply servicing and emergency service access, supports transit and active transportation, and is easily navigable for users.
3. Connection to adjacent and existing development should be considered.
4. The internal road networks should include pedestrian and cycling facilities with connections to municipal facilities (existing and planned), where applicable.
5. Road allowance widths for new development should be consistent with the road allowance widths of existing neighourhoods. The Municipality may require larger road allowances widths where existing neighbourhood widths are substandard.

6. Consideration should be given to maintaining minimum intersection spacing guidelines, along with other intersection design requirements such as minimum sight distance and approach angles for developments with accesses onto municipal or county roads.
7. Hydro and utility lines are encouraged to be placed underground to avoid visual intrusion of the streetscape.
8. The standards for new road design are detailed in the Official Plan and the Engineering Standards for the Municipality. Reference should also be made to the Municipality's Traffic Calming Policies. Traffic calming should be incorporated as part of the Traffic Impact Study.

3.2.1 Streetscape

A significant component of the transportation standards is the detailed design of the streetscape. Existing building facades frame the streetscape and should be consistent with new development. Streetscapes include roadway, sidewalks, lighting, signage, landscaping, and parking. The streetscape and design of the transportation network is a major element in ensuring consistency and compatibility with existing neighbourhoods.

3.2.2 Unopened Road Allowances

Where a development proposal involves the opening of unopened road allowances, approval from the Municipality will be required. The Municipality will normally require an agreement for the construction of the road. Where more than one landowner will benefit from the opening of a road allowance, the Municipality will endeavour to recover a reasonable share of the road building costs from any benefitting owners who did not contribute to the original cost of construction. Such costs may be recovered by means of a special development charge which will be a condition of a severance or plan of subdivision. Nothing in the afore referenced should be construed as encouraging the opening of unopened road allowances.

The use of unopened road allowances as lanes to gain access to year-round residential development shall be discouraged. Roads may be permitted to cross unopened road allowances with the permission of the Municipality.

3.2.3 Road Widening

The Municipality shall use the subdivision/condominium or the site plan control planning approval processes to obtain road widening where necessary, especially where the proposed use will generate significant volumes of traffic or where the entrance onto the public road would otherwise be deemed insufficient by the Municipality. This policy applies to all roads under the Municipality's and Counties' jurisdiction.

The Municipality or the Counties may require land to be conveyed to the appropriate road authority at no cost for the purpose of widening the existing road right-of-way as a condition of subdivision/condominium or site plan control approval.

More details on road widening considerations is found in Section 7.3 of this Report.

3.2.4 Lands to be Clean

Where the Municipality is deeded land for public highways or road widening, the Municipality may require, as a condition of transfer, verification to the satisfaction of the Municipality that the lands in question are suitable or have been made suitable for the proposed use in accordance with provincial legislation and regulations, including, filing by the property owner of a Record of

Site Condition (RSC) and submission by the owner to the Municipality of proof that the MECP has acknowledged receipt of the RSC.

3.2.5 Pedestrian Design

Where appropriate, redevelopment projects will be encouraged to include pedestrian design features such as the widening of sidewalks, the provision of landscaped areas accessible to pedestrians, the development of grade-separated street crossings to link major developments, and street benches. Consideration will also be given to the upgrading of public streets to accommodate pedestrian traffic through measures such as the provision of weather protection, the use of accessibility design standards, and the development of at-grade, mid-block street crossings.

3.3 Active Transportation and Open Space Connectivity

During preconsultation, developers will be informed of the intended active transportation and cycling connections within various areas of the Municipality as per the ultimate cycling network.

One of the most important community development objectives in North Grenville is to establish four season pedestrian and bicycle friendly environments that serve the needs of all categories of users based on age or skill, provide direct access to the natural environment, promote a viable alternative to automobile use, and connect residential areas to recreation, commercial, and institutional uses.

The subdivision/condominium and site plan proposals may be required to reserve additional space, in addition to environmental setbacks, for the construction of cycling and recreational paths, where appropriate.

Opportunities for interconnections between bike routes and open space areas shall be identified as part of new development, or redevelopment of sites in order to improve the viability of cycling and active transportation as an alternative to car use.

Subdivision/condominiums and site plan applications shall be planned with an emphasis on active transportation, street connectivity and active transportation infrastructure, and will incorporate or facilitate the enhancement of the preferred cycling network as identified in the Municipality's Commuter Cycling Plan and Transportation Master Plan. They should be designed to encourage people to walk or cycle for health reasons and to reduce their dependence on the automobile. This may include the provision of sidewalks, pathways, and bicycle routes that are linked to established trails and/or public areas, such as the Ferguson Forestry Centre, Waterfront Trail, Riverside Park, schools, and community facilities.

In approving plans of subdivision, the Municipality shall consider requiring a walkway and bicycle path system to be developed so that an integrated open space network may be created.

3.3.1 Active Transportation Design Considerations

The following active transportation design elements will be considered by all development and redevelopment proposals:

1. Where possible, walkways and/or bicycle paths should be located along watercourses, hedge rows, and other natural boundaries, or along collector roads.
2. Development Subdivisions/Condominiums and site plans shall be expected to incorporate appropriate cycling facilities and opportunities for connectivity to the network. Submissions shall consider cycling facilities as part of the development process, including conceptual/layout plans and detailed design drawings.
3. The implementation of cycling facilities within new development areas that connect to existing and proposed routes identified in the cycling plan should be considered a priority. Developers shall demonstrate where and how these connections are to be made. Where existing cycling and pedestrian infrastructure exists at the limits of a development area, every effort should be made to ensure a connection between the existing facilities and the new development facilities. The introduction of small gaps within the network should be avoided whenever possible.
4. To encourage pedestrian travel, streetscapes should be safe, convenient, and attractive for pedestrians and include shelters, provide appropriate lighting, street furniture, bicycle racks, and landscaping.
5. The location, size, and nature of the development will determine whether sidewalks are needed on both sides or one side of the street, and whether bike lanes are necessary. New development, or redevelopment, will be expected to provide bicycle lanes on all roads with a 26 metre, or greater, road allowance and bicycle racks within all commercial developments. In general, sidewalks may be required on both sides of all arterial and collector roadways and on one side of all local streets. Sidewalks may not be required on cul-de-sac with 22 units or less unless the cul-de-sac connects to a walkway, park, school or is deemed necessary by the Municipality. Sidewalks may be required on both sides of the roadways for roads leading to high pedestrian traffic generators such as schools and commercial uses. Where possible, sidewalks should be constructed on the north and west sides of the streets. Reference to the Municipal Engineering Standards is recommended to confirm thresholds for the provision of sidewalks. When designing a sidewalk network consideration should be given to the intended road classification.
6. Active transportation infrastructure shall be constructed outside the 1:20 year flood plain unless approved by the RVCA. Where appropriate, the Municipality may require new developments to reserve additional space in addition to environmental setbacks for the construction of cycling and recreational paths.
7. When integrating cycling into new development areas, developers should consider topography, drainage, slopes, soil conditions, plant and animal communities, microclimates and human comfort, historic/cultural resources, public education, and significant views and vistas.

3.4 Cultural Heritage

The Municipality recognizes the importance of cultural heritage resources and will promote the identification, conservation, protection, restoration, maintenance, and enhancement of cultural heritage resources. In many cases, the cultural heritage resources are defining elements of existing neighbourhoods.

Cultural heritage resources include, but are not restricted to, significant built heritage, culturally significant heritage landscapes, archaeological sites, cemeteries and burials, buildings and structural remains of historical and architectural value, and human-made rural, hamlet, and urban districts or landscapes of historic and scenic interest.

3.4.1 Archeological Assessments

The Municipality recognizes that there may be archaeological remains of prehistoric and historic habitation, or areas containing archaeological potential within the boundaries of the Municipality, both terrestrial and marine. The Municipality may require archaeological assessments conducted by archaeologists licensed under the Ontario Heritage Act for any development proposal affecting areas containing a known archaeological site or considered to have archaeological potential. Archaeological assessment reports conducted by licensed archaeologists are to be in compliance with guidelines set out by the Ministry of Tourism Culture and Sport, as well as licensing requirements developed under the Ontario Heritage Act.

Aboriginal communities shall be provided an opportunity to comment on development proposals where there are cultural heritage and archaeological resources.

3.4.2 Cultural Heritage Bonusing

Subdivision/Condominium and site plan control development proposals will be encouraged to preserve and restore buildings considered by Council to be of cultural heritage value or interest. Where these buildings are incorporated into a project, the density of the residential development may be increased through bonusing provisions contained in policy 14.2 of the Official Plan, provided the overall maximum net density of the project does not exceed 60 units per gross hectare.

All new development proposals shall have regard for cultural heritage resources and shall, wherever possible, incorporate these resources into any new development plans.

All new development will be planned in a manner which preserves and enhances the context in which cultural heritage resources are situated.

3.5 Accessibility

The North Grenville Accessibility Advisory Committee includes as part of its responsibilities to assist Planning & Development staff in the review subdivisions/condominium and site plans applications to ensure compliance with the *Accessibility for Ontarians with Disabilities Act* (AODA). Their goal is to enhance accessibility for residents, persons with disabilities, and visitors.

Subdivision/Condominium and site plan development projects will be encouraged to include pedestrian design features such as the widening of sidewalks, the provision of landscaped areas accessible to pedestrians, and the development of grade-separated street crossings to link major developments, and street benches. Consideration will also be given to the upgrading of public streets to accommodate pedestrian traffic through measures such as the widening of sidewalks, the provision of weather protection, the use of accessibility design standards, and the development of at-grade, mid-block street crossings.

All future public spaces, including future municipal parks planned through the subdivision/condominium and site plan processes, shall be constructed in compliance with AODA standards.

Accessibility is not just a physical design issue but also has a visual element. Specific design elements of a subdivision/condominium or site plan applications must be able to be “visually accessible” in order that its intended function is realized. The example is of a public park which is located in the rear of housing and not seen from the street. Such parks are less accessible than those which have high street exposure. Accordingly, new development will ensure accessibility and connectivity of the site to the adjacent neighbourhood, community facilities, and destinations, including consideration of the circulation for automobile, pedestrians, cyclists and persons with disabilities.

4.0 Landscaping Standards

4.1 Landscaping Overview

North Grenville promotes a high standard of landscape design that is sensitive to the character of the surrounding uses and streetscapes, conducive to pedestrian accessibility, safety, circulation, and use, and that provides for the protection of significant natural features.

For the purpose of this document "landscaping" shall mean the installation and maintenance of any combination of the following elements:

- **a) vegetation including trees, shrubs, hedges, ornamental plantings, grass, or other ground cover, or**
- **b) non-vegetative hardscaping materials such as brick, pavers, rock, stone, concrete, tile, and wood, excluding monolithic concrete and asphalt and any area used for parking, but including such features as a walkway, patio, deck, or in-ground pool, or**
- **c) architectural elements such as decorative fencing, walls, sculptures, gazebos, trellises, planters, benches, lighting, and other similar features**

4.2 Landscaping Benefits

4.2.1 Landscaping and Energy Conservation

One of the benefits of well-planned landscaping is its contribution to energy conservation. Landscaping can provide summer shade and protection from winter winds. Landscaping should be used to conserve energy and water, enhance the appearance of building setback and yard areas, contribute to the blending of new and existing development, and screen parking, loading, garbage, and service facilities from adjacent properties and streets.

Landscape designs and energy conservation are explored in more detail in Section 6.2.2 of this Report.

4.2.2 Landscaping and Stormwater Management

In order to meet storm water quality objectives, the retention of existing tree cover or natural vegetation, and the provision of significant grassed and natural areas, shall be encouraged to facilitate absorption of surface water into the ground. Erosion and siltation control measures will be incorporated into any grading and drainage scheme.

It is understood that drainage control within a compact urban environment may result in the loss of existing tree cover or natural vegetation. In such circumstances, the landscape plan should provide for new tree planting, in appropriate locations to compensate for the loss of existing trees. It is understood that urban developments may result in fewer trees being planted than previously existed prior to development.

Innovative landscaping design which incorporates stormwater management systems, such as bioswales, rain gardens, and permeable pavement, is strongly encouraged wherever possible.

4.2.3 Landscaping and Watercourses

The retention or restoration of the natural vegetative buffer adjacent to watercourses, as the means of protecting water resources and its related ecological function from the negative impacts of development shall be a requirement for subdivision/condominium and site plan control developments.

Notwithstanding the required 30-metre vegetative buffer, a water access area of a maximum of 8 metres width may be permitted provided the natural shoreline is disturbed as little as possible and the balance of the waterfront outside of the access area is maintained in a natural state. Within the natural vegetative buffer, the pruning of trees for viewing purposes or the removal of trees for safety reasons may be permitted provided the intent of the policy is maintained.

The retention and/or establishment of mature tree cover and native shrubs and vegetative cover on lands within 30 metres (98 feet) of a high-water mark of a watercourse, shall be required in order to protect the riparian and littoral zones and associated habitat, to prevent erosion, siltation and nutrient migration, maintain shoreline character and appearance, and to minimize the visual impact of development.

4.3 Landscape Plans

All applications for subdivisions/condominium or site plan control shall be supported by a Landscaping Plan that considers the following:

i. An inventory of existing trees and vegetation on the site prior to development, including identification of which stands of trees or individual trees warrant retention based on a preliminary assessment.
ii. The retention of as much natural vegetation as possible, especially along watercourses, on steep slopes, in valued woodlots, in areas linking green spaces, and along roadways.
iii. Measures for the protection of those trees or stands of trees being retained during construction.
iv. Description of the area and nature of tree loss and compensation measures proposed. Such compensation measures may include off-site plantings.
v. Tree planting or vegetative cover required to provide protection for watercourses or steep slopes.
vi. The use of native species in tree planting strategies shall be encouraged. Monoculture tree plantings shall be discouraged.
vii. Preparation of guidelines for property owners on the importance and care of trees on their property.
viii. Impact on the environment during and after construction, and proposal of mitigation measures where there is substantial alteration of the existing tree cover on the site.
ix. Natural features/functions that may be protected and enhanced by incorporating them into public open spaces, neighbourhood parks, recreational pathways, and/or stormwater management systems.

To the extent feasible, existing trees of desirable species should be retained and incorporated into the landscaping plans for new development. Also, designs for new development will consider the need for suitable locations to accommodate the planting of street trees.

Section 6.36 of the Zoning By-law sets out the requirements for Planting Areas. Development shall adhere to the planting area standards of Section 6.36 of the Zoning By-law.

When planting new trees, developers should reference "Choosing the Right Tree – A Landowners Guide to Putting Down Roots" (Appendix C). The information in this guide is for landowners, in Ontario's Great Lakes St. Lawrence Forest Region, who have made the decision to plant trees or shrubs and want to know what species are best suited to their particular site and needs.

This Guide recognizes that landscaping along boundary lines requires the involvement of neighbouring landowners. To this extent, efforts should be made to engage abutting property owners in discussions regarding tree planting, locations, species, and the alternative use of fencing along shared property lines.

4.4 Site Alteration

Site alteration of lands prior to or during the subdivision/condominium or site plan development review process shall be strongly discouraged and shall only be permitted through the prior approval of the Municipality. Unauthorized site alteration may result in delays in the approval process and/or restorative measures being imposed through the subdivision/condominium or site plan process.

For the purpose of this document, "Site Alteration" means activities such as the removal of topsoil from land, the placement or dumping of fill on land, the alteration of the grade of land, or excavation by any means, including the clearing or stripping of vegetation from the land, the compaction of soil, or the creation of impervious surfaces, or any combination of these activities.

Site alterations that are permitted without Municipal approval include:

a) Site Alteration that is incidental to a Normal Farm Practice carried out by an Agricultural Operation, including, but not limited to, sod-farming, greenhouse operations, nurseries, field and forage crop or livestock production, but not including the removal of Topsoil or peat for sale, exchange, or other disposition.
b) Site Alteration associated with the implementation of a development that has been approved by the Municipality under either the Planning Act or the Building Code Act.
c) Site Alteration associated with the maintenance of services, including septic systems or wells, the installation and maintenance of fences, or the landscaping and maintenance of yards, provided that all such works are conducted in accordance with the other provisions of this by-law.

Site alteration, including the removal of vegetation shall not be permitted in, or within 120 metres of any natural heritage feature, including wetlands, fish habitat, ANSIs, or woodlands is prohibited except in accordance with Section 6.8 of the Official Plan.

4.5 Landscaping in Urban Areas

In urban areas, selective protection of significant trees or shrubs shall be promoted. Provisions relating to protection of vegetation may be incorporated into subdivision or site plan agreements.

Residential intensification projects will be encouraged to use landscaping, including fencing and planting buffers, to mitigate impacts of the proposed development on neighbouring properties.

Specific to highway commercial site plans, appropriate landscaping shall be provided along the road frontage to act as a visual buffer. There may be higher standards for landscaping along major entryways to the Municipality. Specifically, landscaping provisions on lands abutting County Roads #43 and #44 should include trees, grass, and berms located on a strip of land not less than 1.5 metres wide between the street line and any parking areas on the property.

The required play space shall be in one location in rear areas and ends of buildings, or in other suitable locations on the property in order to:

i. **permit direct access to and from the dwelling units without encountering traffic hazards;**
ii. **not impair views for front entrances and living room windows within the dwelling units; and,**
iii. **be located at least 4 metres (13.1 ft.) from the nearest wall of the nearest building.**

Section 6.5 of the Zoning By-law establishes the standards for Amenity Areas and Place Space Areas for Multiple and Townhouse development. Development shall adhere to the amenity area standards of Section 6.5. As per Section 6.5 no amenity area is required for a multiple dwelling which contains three (3) dwelling units or less.

4.6 Landscaping in Rural Areas

In rural areas, site plan applications shall be encouraged to retain existing natural vegetation, especially along public roads. Those developing lands shall be encouraged to remove as little vegetation as possible when establishing roads, building sites, and servicing facilities. The intent is for new rural development to blend in with the natural landscape and not present an urban appearance. The retention of natural vegetation is not meant to include noxious weeds or invasive species.

5.0 Parkland Development Standards

A well-designed park system offers social, environmental, health, and economic benefits, and has the potential to bring people together. As the community grows, so too must the amount of parkland for the use and enjoyment of the residents of North Grenville.

5.1 Requirement for Parkland

Under the Planning Act, 1990, the Municipality is entitled to a dedication of land for park purposes as a condition on any application for plan of subdivision/condominium approval. For site plan developments, where there has been no previous parkland dedication, the Municipality is also authorized to obtain a dedication of land for park purposes as a condition of the approval of the site plan.

For lands to be used for commercial/industrial development, two (2) per cent of the land to be developed shall be provided for parkland purposes. For lands to be developed for residential purposes, five (5) per cent of the land to be developed shall be provided for parkland purposes.

In addition to the prescribed parkland dedication under the Planning Act, the Municipality may also pursue negotiations with the developer to acquire additional lands for park or open spaces purposes.

It is important to understand that land conveyed to the Municipality for park purposes shall be used for park or other public recreational purposes but may be sold at any time. All agreements and offers of purchase and sale shall contain statements to this effect.

5.1.1 Cash-in-lieu of Parkland

The Planning Act also allows for Municipalities to request cash-in-lieu of parkland in situations where it has been determined by the Municipality that there is no need for additional parkland in the area. Cash-in-lieu may also be considered by the Municipality where the amount of land involved is small and, therefore, unsuitable for park development. This may be the case with many site plan developments.

The Planning Act allows for cash-in-lieu of parkland dedication to be used towards “the erection, improvement, or repair of buildings and the acquisition of machinery for park or other public recreational purposes.” Within North Grenville there is an identified need to increase the parkland supply. Cash-in-lieu funds could be used for additional parkland acquisition or improvements to existing parks.

The Municipality may use cash-in-lieu of parkland from developments to strengthen and improve existing parks and recreation facilities.

The calculation of the cash-in-lieu of parkland for a plan of subdivision/condominium shall be consistent with the Planning Act and reflect the “value of the land as of the day before the day of the approval of the draft plan of subdivision/condominium.”

The calculation of the cash-in-lieu of parkland for a site plan shall be consistent with the Planning Act and reflect the “value of the land the day before the day the building permit is issued in respect of the development or redevelopment or, if more than one building permit is required for the development or redevelopment, as of the day before the day the first permit is issued.”

In determining the value of cash-in-lieu of parkland, the Municipality may require that the developer provide an appraisal of the valuation of the land by a qualified professional, and that such appraisal be subject to peer review.

5.2 Parkland Classification: Size and location & function

The North Grenville Parks, Recreation, and Culture Master Plan established the following park classification system to be consulted when acquiring additional parkland:

1. **COMMUNITY PARK:** Community Parks are generally drive-to locations that offer a wide variety of active and passive recreation spaces such as (but not be limited to) sports field complexes, outdoor pools, splash pads, indoor recreation facilities, and facilities found within Neighbourhood Parks. Supporting amenities may include parking, washrooms, pavilions, and other ancillary features. Community Parks may also contain natural environmental features, historical or cultural amenities, trail systems, and/or special event space. Generally, 4.0 hectares or larger in size.

2. **NEIGHBOURHOOD PARK:** Neighbourhood Parks provide a limited range of active and passive recreational opportunities through facilities such as playgrounds, courts, spaces for unorganized activities, and trail connections. They are often situated within subdivisions to promote walkability and may be coordinated with school sites. Sports fields and off-street parking are discouraged. Generally, 0.5 to 2.0 hectares in size.

3. **PARKETTE/PLAZA:** Parkettes or Plazas are publicly owned lands that are located in highly visible and accessible locations, typically in gateways or urban core areas. They serve to support the Municipality’s social and cultural fabric and create a sense of place, and may contain elements of historic or cultural significance that are of local importance. They are typically characterized by floral gardens, hardscaped areas for events and gatherings, public art, seating areas, related civic uses, etc. Generally, 0.1 to 0.5 hectare in size.

4. **OPEN SPACE**: Open Space properties are predominantly used for conservation and/or passive recreational activities (e.g., walking, nature appreciation, education). These lands will be largely undeveloped and contain open space or natural heritage features such as woodlots, wetlands, conservation habitat, linear trail connections, etc. but should generally be publicly accessible. Open Spaces lands are generally not accepted as part of the parkland dedication as they do not meet active parkland needs (playgrounds, sports fields, courts, etc., are not permitted).

5.3 Parkland Priorities

To address growth-related needs the Municipality intends to maximize parkland dedication available through the Planning Act. Preference will be given to accepting developable (active) parkland that can support active outdoor recreation opportunities. Generally speaking, emphasis should be placed on:

1. Neighbourhood park development in areas of growth (e.g., within settlement areas).
2. Establishment of a new or expanded community park to meet growth-related sport and recreation needs (e.g., sports fields).
3. The establishment of waterfront parks.

It is anticipated that future parks established through plans of subdivision/condominium will be predominantly within the “neighbourhood park” classification. That said, there may be situations where Parkette/Plaza parks are appropriate and may be established through the approval process depending on location and need.

Within the Downtown Commercial Area, parkland dedication required of new commercial or residential development may be taken in the form of setbacks, parkettes, public art, or landscaped plaza areas that enhance pedestrian circulation or contribute to the visual amenity of the Downtown Commercial Area.

The Municipality may request, as a condition of approval, the dedication of land for waterfront parkland in order to establish this open space pathway.

It is a priority to acquire and develop additional waterfront parkland in order to establish a continuous open space pathway along the South Branch of the Rideau River to, among other things, connect Residential areas with each other, to the Downtown, and to the Municipality's major park and recreational facilities.

When planning for parklands, such lands shall generally be kept free of buildings and structures, except for those accessory buildings or structures which are necessary to serve the use and for those recreational buildings and structures such as arenas, pools, playground equipment, and ball fields.

5.4 Parkland Options

Where lands are dedicated for park purposes, the Municipality will accept only those lands suitable for park use.

5.4.1 Parkland Location

The location identified for parkland through the subdivision/condominium or site plan approval process shall be central to the design of the development lands. Parkland should not represent an afterthought or consist of the land “leftover” after the developable lands have been planned. Parkland should be a central, defining feature of any new development. It should be visually accessible with the majority of the lands abutting open and maintained streets. The location of

parkland behind development, accessed by pathways and with limited road frontage shall be discouraged.

When considering the location of parkland within residential subdivisions/condominium proposals, it is important to locate the parkland within close proximity to the highest density of development with the subdivision. This is based on the notion that the higher density residential development does not have the same yards and open space as lower density development and therefore benefit from close proximity to the public parkland and open space.

The determination of the location of parkland should be discussed early in the development review process, ideally during the preconsultation phase with the Municipality.

Notwithstanding the above, there may be situations where parkland is best located to ensure protection of natural heritage features, protection of existing tree cover, or provision of waterfront access, and therefore may not be a central feature in the development.

The Municipality may encourage the use of floodplain lands for passive recreational uses which do not involve buildings or structures, and may acquire floodplain lands for these purposes. The Municipality may acquire these lands as part of any subdivision/condominium or site plan application, however the acquisition of such natural hazard lands may not be considered as part of the parkland dedication required under the Planning Act.

5.4.2 Parkland Accessibility

All lands to be dedicated as public parkland shall be designed to ensure accessibility for persons with disabilities.

Accessibility and inclusivity are important objectives of park design. Parks are a place for all, emphasizing the need to facilitate access for persons of all ages and abilities. Not all parks or areas within them are appropriate for universally accessible infrastructure (e.g., ecologically sensitive, or naturalized zones), however, community-focused spaces should consider the ability of all residents to access them, in keeping with the requirements of the *Accessibility for Ontarians with Disabilities Act.*

North Grenville is committed to universal accessibility and safety within parks through compliance with the Accessibility for Ontarians with Disabilities Act (AODA) and Crime Prevention Through Environmental Design (CPTED) principles (i.e. Territoriality/ Territorial Control, Natural Surveillance, Image and Milieu, and Access Control.

5.4.3 Waterfront Parks

It is an important priority that the Municipality obtain, wherever possible and practical, waterfront lands along the Rideau River and South Branch of the Rideau River, as parkland. It is the

Municipality's intent to provide for a continuous linear park / open space network by integrating waterfront areas along the Rideau River, the South Branch of the Rideau River and its tributaries.

5.4.4 Trails as Parkland

It is the intent of this Plan that the concept of recreational trails connecting various parts of the Municipality be considered as an integral part of the Municipality's future development.

Recreation trail systems are a unique community resource providing opportunities for public waterfront access, outdoor leisure and recreational activities, interpretation of the natural environment and historic context of the community, and diversity of tourism activities. The Municipality may consider acquiring lands for recreation trail purposes through parkland dedications.

Parkland dedication may involve lands for recreation trails, connections and linkages to recreation trails and recreation trail amenities such as trail heads, trail parking areas, and trail rest stops.

5.4.5 Open Space as Parkland

In situations where a development is proposed involving or within the vicinity of a Natural Heritage Feature, the dedication of open space parkland immediately adjacent to the Natural Heritage Feature may be considered in order to minimize the impact of development on the Natural Heritage System.

Acquisition of open space lands should be pursued over and above the Planning Act parkland dedication, particularly where they assist the Municipality in meeting the following objectives:

i. linking and enhancing the active transportation network;
ii. protecting natural habitat and areas of cultural significance, often in partnership with others; and/or
iii. improving public access to the waterfront.

5.5 Parkland Design

When parkland dedication is required for a subdivision/condominium or site plan, the designated parkland block(s) will be identified on the development plans with sufficient detail to identify lot grading, drainage, landscaping, access, and other information as may be required. In certain cases, it may be a condition of approval for the developer to complete a park design plan to the satisfaction of the Municipality. This is further explained in Section 5.5.1.

The design and site preparation of the parkland and open space will take into account the intended and future passive and/or active recreational uses. General requirements for parkland preparation and conveyance include the following:

a) Size, topography, and configuration of the park must be acceptable to the Municipality so as to satisfy the standards for grading, drainage, setbacks, fencing and other municipal requirements. The Municipality retains the right not to accept the conveyance of land as parkland that is considered unsuitable, such as but not limited to hazard or

flood-prone lands, natural heritage or valley lands, stormwater management facilities, lands containing easements or rights-of-way, etc.

b) All dedicated parkland should be conveyed to the Municipality free and clear of any physical encumbrances above and below grade. In certain circumstances the Municipality may accept conveyed lands where there are minimal and reasonable encumbrances.
c) If land required for a park exceeds the available amount through Planning Act parkland dedication, the Municipality may seek to acquire the balance at market values for unserviced developable land.
d) Park location must be deemed appropriate by the Municipality for the population the park is intended to serve.
e) To create an adequately sized parcel, land consolidation between development phases or multiple ownerships may be required. Where there are multiple phases of development, the upfront dedication of parkland for the entire development is encouraged. Under such situations, the phasing of the outfitting of the parkland will be detailed in agreements with the Municipality.
f) Parks will have access to public roads. It is preferable for parks to have a minimum of 50% open frontage on abutting streets.
g) All park designs shall include grading and drainage plans acceptable to the Municipality. Prior to acceptance of the parkland, the developer will complete pre-grading, drainage, fine grading, and seeding (4-inches of topsoil) to the satisfaction of the Municipality. Under no circumstances will topsoil will be removed from proposed parkland.
h) Where an agreement has been implemented to front end the construction of a park, all costs associated with the design and the initial development of the parkland will be the sole responsibility of the developer.
i) The developer will engage the professional services of a registered Landscape Architect or other qualified professional to prepare Detail Design/Technical Drawings to fully describe the construction of all park features.
j) As part of the general subdivision development in areas with public services, the developer may be responsible for installing storm sewers serving the parkland in urban parks, as well as electrical and water services two (2) metres into the park property. In privately serviced areas, the developer must include an open ditch, culvert, and driveway in the road allowance; a well, constructed as applicable regulations; and hydro service 2-metres into the park property. Sanitary serving may be required for higher-order community parks. Access for park maintenance should also be incorporated into the design.
k) The developer will be responsible for identification and development of all pathway, trail, and/or sidewalk connections to parkland blocks. These connections shall not comprise part of parkland dedication.
l) The developer will be required to post and maintain signage at all park locations, indicating that the site will be a future park along with agreed upon playground equipment or amenities, and when they will be installed.
m) Any site work and designs will pay special attention to the care and preservation of natural wetland areas, where applicable.
n) Stormwater management (SWM) facilities may be integrated into parkland and open spaces, where applicable, but not as part of the Planning Act parkland dedication.

o) All parkland design and development will comply with the Design of Public Space Standards under the Accessibility for Ontarians with Disabilities Act, such as where walkways or trails are required through parklands.
p) The developer will install permanent fencing around the park perimeter where property lines are shared with residential/commercial land uses or protected/hazard lands, to the specifications approved by the Municipality, where required.
q) Parkland landscape plans shall comply with municipal tree planning standards, with an emphasis on native and non-invasive species. Opportunities for tree preservation shall be encouraged. A detailed Park Tree Preservation Plan may be required.
r) Municipal property preserved as open space or intended for parkland development will not be used for the purposes of temporary stockpiling or storage of earth, construction supplies, debris, or any other materials without express permission of the Municipality.
s) The timing of conveyance of parkland in accordance with the Planning Act, will be stipulated in the Subdivision Agreement. The Municipality will typically require conveyance be completed upon registration of the first phase of a subdivision.
t) Park construction will include the installation of permanent signage, including park identification signs, regulatory signs, interpretive signs, and trails signage, as specified, and located by the Municipality.
u) Parkland design should include comfort amenities such as pathways, seating, washrooms, and shade (e.g., trees and pavilions). Comfort amenities benefit everyone and can position the parks system to be used for outdoor special events and festivals. To further promote health, consideration shall be made for providing sufficient shade structures (e.g., trees, built structures), seating, bicycle parking, and a source of free, potable water in parkland design.

5.5.1 Responsibility to Outfit Parkland

Parks will generally be constructed by the Municipality upon 50% occupancy of a residential subdivision. The Municipality may consider a combination of parkland and cash-in-lieu of parkland to be able to finance the outfitting of the park. It is understood that developed parkland may be a selling feature for the development and that early outfitting of the park is desirable. In such situations the developer needs to negotiate with the Municipality of “front-ending” the development of the parkland, to be detailed in an agreement with the Municipality.

6.0 Sustainable Design Standards

Sustainable design is defined as the “design of communities, neighbourhoods, and buildings in ways which reduce their environmental footprint, including reduced reliance on fossil fuels, and support human health and productivity. In comparison to conventional design, sustainable design takes advantage of natural processes to generate less waste, less pollution, and reduce their overall environmental footprint.”

It is the intent of the Municipality to support development that is environmentally sustainable, energy efficient, and that conserves the natural features and characteristics of the land and rivers.

The following sustainability principles shall be considered by all development:

1. **Promote sustainable development that maintains the integrity of natural areas and preserves groundwater quality and quantity.**
2. **Preserve and enhance the water quality, ecological integrity, and biodiversity in the Rideau River and its riparian area.**
3. **Permit the development of alternative energy sources where such installations will not detract from the quality of life within the area.**

6.1 Protection of Natural Heritage Features

No development or site alteration shall be permitted within provincially significant or locally significant wetlands, significant woodlands, ANSIs or fish or wildlife habitat, with the exception of sustainable forestry, conservation, wildlife management, passive outdoor recreation, and educational activities, excluding buildings and structures.

The Municipality will encourage measures that protect and enhance the ecological function and integrity of the area’s natural heritage in a sustainable manner, and shall manage development to avoid natural hazards and significant natural features. The Municipality shall encourage owners of identified natural heritage features to retain these lands in their natural state.

6.2 Sustainable Design Principles

Fundamental to sustainable design is the need to understand and respect natural processes and features in creation of the design concept.

The Municipality’s Sustainable Design Principles include:

i. Protect the Municipality’s natural heritage system and take an ecosystem approach to design that supports natural functions, such as natural drainage, groundwater recharge and discharge, and wildlife habitat.
ii. Protect, integrate, and enhance vegetation cover and significant woodlands, corridors, natural landscapes, and existing topography, where possible and appropriate.
iii. Reduce resource consumption.
iv. Reduce the release of contaminants into the environment.

v. Maximize energy-efficiency and promotion of sustainable design which will reduce the resource consumption, energy use, and carbon footprint of the built environment.

6.3 Sustainable Design Elements

For subdivision/condominium and site plan development proposals, the following Sustainable Design Elements should be considered in coordination with the Municipality's Engineering Standards:

i. Orient roadways and development to maximize opportunities for passive solar gain and use energy efficient development forms and building measures.
ii. Consider use of renewable energy and alternative energy systems.
iii. Maximize opportunities for sustainable transportation modes (walking, cycling, transit facilities and connections), including accommodation of active transportation, including the provision of bike rack parking areas. For medium to high density residential development there will also be the requirement to provide for the indoor storage of bikes.
iv. Minimize impervious surfaces by reducing driveway and surface parking areas and providing permeable or semi-permeable surface materials as alternatives to concrete or asphalt.
v. Maximize reuse and recycling of resources and materials.
vi. Incorporate sustainable design elements such as green roofs or walls, sun traps, and reflective or permeable surfaces.
vii. Utilize green building technologies and rating systems such as Leadership in Energy and Environmental Design (LEED).
viii. Utilize native species for all landscaping design.
ix. Use of Low Impact Development (LID) standards where possible to manage snowmelt and rainwater on site through evaporation, infiltration, and water re-use.
x. Preserve natural drainage flow and incorporate vegetated swales, where appropriate.
xi. Promote efficient and sustainable use of water resources, including practices for water conservation and sustaining water quality.

For all new commercial/industrial or multi-residential development proposals, there will be an expectations that the site plan incorporates Electric Vehicle (EV) charging stations, or as a minimum the planning for the eventual installation of EV charging stations.

6.3.1 Energy Conservation

Landscaping, layout of roads, and general site design can contribute to energy conservation. South-facing buildings and windows that are designed to reduce summer thermal gain can maximize solar energy potential. Landscaping can provide summer shade and protection from winter winds. When reviewing development applications, the Municipality will require new development to take advantage of energy conservation design techniques including consideration of the following:

1. When reviewing development applications, the Municipality will:
    i. Encourage the design of local road layout to provide opportunities for passive solar gain such as south facing windows.
    ii. Require, where feasible, buildings be oriented to maximize the potential from solar energy.
    iii. Encourage consideration of alternative energy systems.

2. Landscape designs shall consider energy and water conservation through the following measures:
    i. Provide for energy conservation through appropriate location and choice of species to provide shade and cooling during summer and provide for wind protection in winter.
    ii. Utilize native species and species with low watering requirements wherever possible.
    iii. Utilize permeable, light coloured or landscaped surfaces wherever practical to reduce heat retention and encourage natural infiltration of storm water.
    iv. Design of the building and exterior lighting shall be dark skies friendly.

3. Design and orientation of subdivisions and developments should maximize the opportunity for use of alternative and renewable energy systems by:
    i. Maximizing solar exposure through street and building orientation.
    ii. Ensuring that opportunities presented by access to sunlight are not impaired on adjacent properties.

6.3.2 Green Infrastructure

Developers are encouraged to incorporate green infrastructure in their design.

The management and control of stormwater is a critical element of sustainable design. It is recognized that the utilization of “green engineering” techniques such as Low Impact Development (LID) where stormwater is allowed to infiltrate into the ground and not be piped to a stormwater management facility can be extremely effective management of stormwater under certain circumstances.

As extreme weather events become common place, the need for enhanced stormwater management becomes critical. As such, care and consideration must be given to locate and effectively manage snow storage to ensure there is no conflict with the SWM system and that freeze thaw occurrences can be effectively managed.

The use of pervious materials for parking lot design is encouraged to allow for more groundwater infiltration.

6.4 Telecommunication Infrastructure

Modern, efficient, and robust telecommunication infrastructure is becoming increasingly essential for a sustainable lifestyle. Ensuring future developments are equipped with robust telecommunication infrastructure will provide enhanced options to enable working from home and thereby reduce the need to commute to the workplace.

Innovative options such as FTTP (Fibre to the Premises) or FTTH (Fibre to the Home) should be explored to ensure telecom infrastructure is robust enough for future needs. This Guide supports the 50/10 Canadian Telecommunication Initiative.

All subdivision/condominium and site plan development will need to demonstrate the provision of robust telecommunication capabilities. To this extent, new subdivisions/condominium developments will be encouraged to install advanced telecommunication backbone infrastructure within the development.

7.0 Street Right-of-way Standards

When planning for site plan development or a plan of subdivision/condominium the consideration of the street right-of-way and the resulting streetscape are critical elements of design. Whether the new development is an infill project within an established neighbourhood, or greenfield development abutting existing neighbourhoods, there is a need to ensure that the new development protects and enhances the character of the existing established neighbourhoods.

Ensuring consistent right-of-way widths for all new roads, both private and public, is the first order of protection of the character of existing neighbourhoods and the integration of new development into the community.

7.1 Roadway Design Elements

All roadways within North Grenville should be designed to accommodate the following design elements in coordination with the Municipality's Engineering Standards:

- Active transportation - sidewalks, pathways, bike routes
- Emergency vehicle access
- Sanitary and stormwater controls and services
- Water services
- Curbs and gutters
- On-street parking
- Snow storage
- Lighting
- Utility corridors
- Traffic calming & signage
- Daylighting
- Landscaping, trees, boulevards

Right-of-way widths must be large enough to accommodate all the above street elements yet narrow enough for buildings and trees to frame the street.

7.2 Road Design Standards

The design of street elements, including road classification, geometric design elements, detailed design elements (i.e., curves, intersecting streets, curbs, daylighting, cul de sacs, turnarounds, utilities, and community mailboxes), traffic controls, pavement design, sidewalks, driveways, and street lighting shall be consistent with the direction provided in the Municipal Engineering Design Guidelines.

The Municipality shall have regard for, but not be limited to, the following road related considerations when reviewing new development proposals for plans of subdivision/condominium and site plan control applications:

1. Where new roads are required to serve a developing area, a logical hierarchy of roads shall be identified and designed with the capacity to accommodate anticipated traffic generated by the development.
2. The design of the road provides for the safe movement of vehicles and pedestrians.

3. The carrying capacity of the adjacent roads is sufficient to accommodate the anticipated traffic generated by the proposed development, as well as anticipated growth in levels of background traffic.
4. The carrying capacity of existing and proposed arterial and major collector roads shall be protected by:
    i. the use of shared access, where appropriate, for new development;
    ii. limiting the number of entrances/exits for non-residential developments located adjacent to these roads;
    iii. discouraging the intersection of local streets and arterial/major collector roads through the land subdivision process; and
    iv. the new roads shall provide access to lands designated for development which are currently underdeveloped or underutilized and are required to meet the future needs of the Municipality.
5. Within the road right of way, hydro lines and telecommunication utilities should be placed underground to avoid visual intrusion of the streetscape.

7.2.1 Collector Roads

The Municipality shall consider the following guidelines that take into account development applications which include collector roads as part of the development:

1. In areas of new development where heavy traffic volume is projected, residential lots shall be encouraged to back onto collector roads or be accessed by a lane parallel to and intersecting the collector roads.
2. Traffic controls shall give priority to travel on the collector over travel on local roads.
3. Street lighting shall be provided, and a sidewalk shall be located on at least one side of a collector road.

7.2.2 Development Adjacent to Highway 416

Where a draft plan of subdivision/condominium is proposed adjacent to Highway 416, approval from MTO will be required for the subdivision layout. Subdivisions should be designed such that the lots back onto the Provincial highway and front onto a local internal street.

Subdivision layouts where a local road runs parallel to a Provincial highway with no lots between the local road and Provincial highway will be discouraged, as this restricts the Province from effectively acquiring land for future highway purposes. Ideally, rear yards should back onto a Provincial highway.

7.3 Road Widening

For plans of subdivision/condominium or site plan control applications, the United Counties or the Municipality may require land to be conveyed for the purpose of widening the existing road right-of-way as a condition of approval. The required lands for road widening shall be in accordance with the functional classification of the road outlined in Section 13.2.7 of the Official Plan. Specifically:

a) County Road 43 will maintain a minimum right-of-way of 30.5 metres; and,
b) All other County roads will maintain a 26.2 metre right-of-way, wherever feasible.

Land for widening of the road right-of-way shall generally be sought equally from both sides of the right-of-way. In certain situations, exemptions or modifications to the requirements may be necessary to reflect site constraints, existing physical development or encroachments,

placement of buildings, heritage structures, scale of proposed development, and pedestrian safety.

7.4 Active Transportation

Enhancing existing active transportation opportunities is a priority for the Municipality. Proposals for plans of subdivision/condominium or site plan control, shall be planned with an emphasis on street connectivity, active transportation connectivity and active transportation infrastructure.

Development will incorporate or facilitate the enhancement of the preferred cycling network as identified in the Municipality's Commuter Cycling Plan.

7.5 Complete Streets

The opportunity for complete streets shall be identified during the preconsultation stage of the application review.

The concept of complete streets involves the creation of streets that are designed and operated to prioritize safety, comfort, and access to destinations for all people who use the street, and to ensure streets are safe and accessible for all ages and users, especially pedestrians and cyclists.

The promotion of complete streets is an intentional move away from the auto-centric street systems that have been developed over the past 70 years.

The location, size, and nature of the development will determine whether sidewalks are needed on both sides or one side of the street and whether bike lanes are necessary.

Common themes in complete streets include:

- **Inclusion of multi modal transportation systems.** Complete streets generally include a variety transportation systems for pedestrians, cyclists, cars/trucks, public transit, subways, street cars, etc.
- **Emphasis on safety.** This can include features such as curbs, rest stops (seating), shade trees, lighting, "clearways", bright markings (bike lanes), etc.
- **Inclusion of active transportation.** The inclusion of these methods is generally expected when planning complete streets in order to make streets functional for all.
- **"Greening" and stormwater management.** These are important aspects to complete streets and are important for managing stormwater runoff, reducing the "urban heat island", and improves safety by buffering between modes of transportation, as well as removing storm water from impervious surfaces that can become dangerous when water pools.

7.5.1 Complete Street Design Principles

The design of complete streets shall include consideration of the following:

1 **Prioritize safe and accessible options for people** such that on any street, regardless of the priority mode, all users should feel safe. This reflects the reality that pedestrians and cyclists are more vulnerable than vehicular road users, and that supporting active modes of transportation often results in health benefits, to both individuals and the

community. Streets should be designed to be inclusive and accessible and the various needs of users of all ages and abilities should be accommodated to the maximum degree possible.

2 **Ensure context sensitivity** such that land use and the adjacent transportation infrastructure are integrated where appropriate and supportive of each other. The design recommendations for each street classification should recognize important neighbourhood characteristics (including established land uses and functions). This includes the consideration of the civic functions performed by different streets in the Municipality.

3 **Embed sustainability** into the design of streets through minimizing environmental impacts and emissions and supporting energy efficiency. This primarily includes prioritizing active modes of transportation such as walking and cycling. Ecological and urban resilience features such as trees, planters, vegetation, and low impact development elements that facilitate groundwater recharge should also be considered. Decisions should consider the lifespan of the street, and be cost-effective, avoiding undue short- or long-term financial burden on the Municipality for construction, operations, and maintenance.

4 **Prioritize connectivity** by designing complete streets and communities with block sizes, building orientations, neighbourhood configurations, and street patterns that maximize connectivity for pedestrians, cyclists, and transit users. This includes consideration of new connections and greenways that allow more residents to be within a ten-minute walk of major civic and community facilities.

5 **Emphasize vitality** such that new and renewed streets attract pedestrians with an enhanced sense of place, benefiting local commuters, businesses, and property owners. Whether out for a relaxing stroll, running errands, or meeting with friends, pedestrians bring economic and social activity to North Grenville's streets.

7.6 Private Roads

For the purpose of this Guide, a Private Road shall be defined as per Section 13.2.5 of the North Grenville Official Plan.

Private roads are intended to be designed to function as a local residential street and discourage the movement of through traffic. Private Road right-of-way widths shall be established in accordance with the Municipal Engineering Standards . Reductions to the minimum right-of-way width may be considered where it is demonstrated that the right-of-way width can safely accommodate all of the required servicing infrastructures for the proposed development and is compatible with the surrounding neighbourhood.

The following shall govern new private roads.

1. There is no legal obligation on the part of the Municipality to maintain or repair private roads or otherwise provide services to any development located on a private road, nor is there any responsibility acknowledged for the provision of school bussing.
2. New private roads shall be developed under agreement with the Municipality and will be required to meet a minimum standard of construction and maintenance to ensure that access can be gained for emergency vehicles in accordance with the Ontario Building Code.

3. The Municipality may, at its sole discretion, register notice on title or require that an owner enter into an agreement acknowledging that the Municipality will not be responsible for the repair or maintenance of private roads or the provision of services to any development located on a private road, and further that the Municipality may not be able to provide emergency services to development located on a private road due to the condition of the road.
4. The design and construction of a private road will be undertaken by a professional engineer or other persons competent in road construction, as approved by the Municipality.
5. In circumstances where a private road is not being maintained to an acceptable standard, the Municipality may make improvements to bring the road to an appropriate standard and assess any costs relating to the work to the relevant parties. This action shall not be interpreted as the Municipality assuming responsibility for the private road.

8.0 Agreements & Administrative Control

The Plan of Subdivision/Condominium and the site plan control approval processes authorize the execution of an agreement between the Municipality and the developer in order to implement various terms and conditions associated with the approval of the development proposal.

8.1 Standard Agreements

8.1.1 Standard Subdivision & Site Plan Agreements

The Municipality's standard subdivision/condominium and site plan agreements are comprised of two components. The first component is the "body" of the agreement which details general terms and conditions related to provision of services, financial requirements, notifications, consultation, engineering and maintenance requirements, and phasing of development. These are generally standard elements of the agreement which are consistent through the various development proposals and are not typically changed for individual development proposals.

The second component of the subdivision/condominium agreement is the "schedules" of the agreement which detail the specific, unique elements of the development proposal including: legal descriptions, details of scope of work and cost estimates, specific financial requirements, acknowledgement of studies undertaken, special terms and conditions related to development, including the implementation of recommendations from various studies and reports. These are generally the elements which are unique to a given development proposal and are changed for each individual development proposal.

Agreements can address on-site development issues as well as off-site matters, such as the extension of services, off-site mitigation/ compensation, and external benefiting properties.

It is typical that the subdivision and site plan agreements will contain terms and conditions required by other public bodies that participated in the development review process. Where required, it is anticipated that the subdivision and site plan agreements will contain a Schedule detailing the terms and conditions required by external public bodies. In most cases, the external public bodies will be presented a draft of the agreement with their specific terms and conditions for review and approval, prior to the execution of the agreement.

It is always recommended that the developer ensure that any agreement to be executed with the Municipality is reviewed by their own independent legal counsel prior to signing the agreement.

In order for the execution of the agreement to be deemed finalized, all financial matters, such as the posting of securities, shall be completed to the satisfaction of the Municipality.

8.1.2 Other Standard Agreements

Certain subdivision/condominium or site plan proposals may also involve the need for execution of additional agreements above and beyond the standard subdivision or site plan agreements.

Development proposals involving the provision of communal services will require the developer to enter into Servicing Responsibility and Maintenance Agreements, governing the construction, operation, and financial arrangements associated with the provision of communal services.

There may be situations where agreements with external bodies are required. Agreements with MTO, Conservation Authorities, United Counties, and Parks Canada may be required depending on the specifics of the development proposal. It may be appropriate where the specific terms and conditions with the external bodies can be reflected in the subdivision or site plan agreement. There may be other situations where the external agreement is separate and distinct from the subdivision agreement. Where the agreements are separate and distinct, it is recommended that the subdivision or site plan agreements acknowledge the external agreements. Such agreements may be registered on the title of the subject property by the external body at the sole expense of the developer.

Where rights-of-way or easements have been identified through the subdivision/condominium or site plan approval processes (drainage, utilities, environmental, heritage, etc.), there may be a need for separate right-of-way or easement agreements.

8.2 Security Estimates

In most cases, plans of subdivision/condominium and site plans require the posting of securities to cover the cost of the works to be done. Typically, security estimates are based on detailed costing estimates for the site works prepared by the developer's engineer. Site works consist of all "non-building" activities, including but not limited to the street construction, provision of services, sidewalks, stormwater management, landscaping, signage, lighting, parking etc.

Through the approval process, the developer is required to provide a detailed list of site works, including their estimated costs. This list is typically prepared by a qualified individual (engineer) and is reviewed by the Municipality. All cost estimates provided to the Municipality must be acceptable to the Municipality.

8.2.1 Subdivision Security

For subdivision developments, securities will typically represent 100% of the cost estimates. This is based on the assumption that roads, parks, and stormwater pond (i.e., site works) for the subdivision will be transferred to the Municipality as "public" assets at the end of the development process. Where site works will be transferred to the Municipality, the required security shall represents 100% of the site work costs.

Securities posted with the Municipality shall be in a form acceptable to the Municipality. Generally, it is expected that securities will be in the form of a letter of credit (LOC) or cash security. LOC securities should use the Municipalities accepted form.

8.2.2 Condominium/Site Plan Security

For condominium and site plan proposals, securities will represent 25% of the cost estimates. This is based on the assumption that the site works will remain under private ownership and not transferred to the Municipality. Should there be a need for the construction of "public" assets through the condominium or site plan processes, the securities required for such elements will be 100% of the estimated cost of the works.

Securities posted with the Municipality shall be in a form acceptable to the Municipality. Generally, it is expected that securities will be in the form of a letter of credit (LOC) or cash security. LOC securities should use the Municipalities accepted form.

8.2.3 Phased Security

Where the development of a Subdivision/condominium or site plan is proposed to be phased, provisions can be made in the respected agreement for the phasing of securities. In such situations, the Municipality may require an update to the cost estimates for future phases of development so that the security estimates reflect the current pricing.

When phasing of the development results in a phasing of securities, the securities of each phase shall be treated as a separate and distinct arrangement. Securities from one phase of development should not be rolled into another phase of security.

8.3 Agreement Registration

In all situations, subdivision/condominium and site plan agreements entered into with the Municipality, shall be registered on the title of the subject property and binding on future successors of title.

The Developer shall be responsible for the registration of the agreement(s) on title at the Land Registry Office. All costs associated with the registration of agreements will be the responsibility of the developer.

8.4 Administrative Controls

There are a number of tools authorized under the Planning Act, 1990, that provides the Municipality and approval authorities with administrative controls to regulate the development of land in conjunction with the above noted agreements.

8.4.1 Use of Holding Provisions

In many situations, the Municipality may impose a “Holding (h)” provision to various zones. The Municipality may place certain lands within a holding category in the implementing Zoning By-law when the principle of development has been established, in order to:

i. Prevent or limit the use of land in order to achieve orderly phased development.
ii. Ensure that the private or municipal servicing and design criteria established by the Municipality have been met and any required special studies completed prior to removing the holding symbol.
iii. Allow for the implementation of special design features in specific locations or developments.
iv. Where development is to occur by registered plan of subdivision.
v. Where a site plan agreement is a requirement of the development process.
vi. Ensure that all conditions of development, including financial requirements and agreements in accordance with the provisions of this Plan and/or the Planning Act, have been complied with.

8.4.2 Effects of Holding Provisions

Lands which are subject to holding provisions will be identified in the Zoning By-law by the symbol 'h' in conjunction with the appropriate zone symbol denoting the eventual usage of the land, and will be subject to the following policies:

i. Lands in a holding zone will generally be limited to existing uses or uses which will not preclude the future development of the lands, such as agricultural uses, forestry uses, conservation uses, and park and open space uses.
ii. New development proposed on land zoned for holding purposes will not be permitted until the Municipality deems it appropriate to remove the holding symbol through an amending By-law in accordance with the conditions outlined below.

8.4.3 Removal of Holding Provisions

An application for removal of the holding symbol will be reviewed by the Municipality in consideration of the following criteria:

i. The proposed use of lands is in conformity with the requirements of the Zoning By-law.
ii. The required services are provided or can be provided.
iii. Any required tests or reports are completed to the Municipality's satisfaction.
iv. The financial requirements of the Municipality have been fulfilled.
v. The phasing and design of the proposed development is approved by the Municipality.
vi. Any agreements have been completed to the Municipality's satisfaction.

8.4.4 0.3 Metre Reserves & Temporary Turning Circles

The Municipality may implement the use of 0.3 m reserves as a tool to manage the phasing of subdivision/condominium development. Typically, 0.3 m reserves are placed across a road-rights-of-way at the end of a phase of development. Such 0.3 m reserves are deeded to the Municipality and are used as a “no-trespass” control which legally stops through traffic and effectively prohibits the next phase of development until the 0.3 m reserve is removed. Such reserves are reflected in a reference plan or the draft plan of subdivision as a block.

In addition to the use of the 0.3 m reserve, where the 0.3 m reserve is placed at the end of a road, there will also be a requirement for a temporary turning circle to be established, impacting the abutting lots. The temporary turning circle will be removed once the 0.3 m reserve is lifted and through traffic is permitted. The lands impacting the abutting lots will be transferred back to the impacted lots as part of the lifting of the 0.3 m reserve.

The removal of the 0.3 m reserve and temporary turning circles is an administrative exercise of Council when they are satisfied that a future phase of the development is in a position to proceed. Typically, this requires the execution of the subdivision/condominium agreement for the next phase of development and the depositing of securities for the next phase.

APPENDIX A

Studies, Scope and When Required

STUDY TYPE	DESCRIPTION/SCOPE	TRIGGER	STUDY AUTHOR	REVIEWER	WHEN IN PROCESS	IMPLEMENTATION	KEY POINTS TO KNOW	OFFICIAL PLAN
Environmental Site Assessment (ESA) & Records of Site Condition (RSC)	Potentially man-made contaminated sites are sites where the environmental condition of the property (soil and/or groundwater) may have potential for adverse effects on human health, ecological health or the natural environment. In order to minimize or prevent the potential for contaminated lands to create a hazard to public health and safety, to property or to the natural environment, it is important prior to permitting development, to identify these sites and ensure that they are suitable or have been made suitable for the proposed use in accordance with provincial legislation and regulations.	Development proposals involving a change in land use from a commercial and/or industrial use to a sensitive land use (residential, institutional) shall require and ESA be undertaken to identify potential man-made contamination. Where a Phase 1 ESA indicates that the property is may be contaminated, confirmation that a Phase 2 ESA has been completed in accordance with Ontario Regulation 153/04, will be required. Should the site be required to be remediated prior to the new sensitive land use, there is a requirement for the proponent to apply to MECP for a a "Record of Site Condition (RSC)" which demonstrates that the site is suitable for the new sensitive land use.	Qualified Professional - as outlined in Ontario Regulation 153/04	Reviewed by Planning & Engineering Staff. If contamination is identified, the Ministry of Environment, Conservation and Parks (MECP) will receive the ESA. Once remediation has been completed the proponent must apply to the MECP for a "Record of Site Condition" which demonstrates that the site is suitable for the new sensitive land use.	When triggered, As part of a submission for a plan of subdivision or condominium an affidavit from a qualified person confirming that a Phase 1 Environmental Site Assessment (ESA) has been completed in accordance with Ontario Regulation 153/04. For site plan applications where a property has been identified through the Municipality's development review process as potentially contaminated due to previous or existing uses on or adjacent to the property. Such properties may have been subject to a zoning bylaw amendment planning process which identified the site as contaminated, in which case a "Holding (H)" extension may be applied to the zoning requiring a Record of Site Condition prior to the approval of the site plan. The site plan	For sites identified as being contiminated and requiring remediation prior to the introduction of the sensitive land use, there is a requirement for a RSC which certifiies the site is suitable for the sensitive land use. Typically it is a condition of the approval of the subdivision or site plan that the RSC be received. Conditions related to the RSC can be placed in the subdivision or site plan agreement. Where an RSC has been made a condition of subdivision or site plan approval, a building permit may be issued in regard to a property on a phased basis to allow for site assessment and remediation/risk management. Where contamination from a property extends onto a municipal right-of-way and filing of a RSC in the Environmental Site Registry	Should the site be required to be remediated prior to the new sensitive land use, there is a requirement for the proponent to apply to MECP for a a "Record of Site Condition" which demonstrates that the site is suitable for the new sensitive land use. This external approval can take a significant amount of time to receive and is required prior to development proceeding.	Section 5.6 of the Official Plan outlines the policies related to man-made contaiminated sites

STUDY TYPE	DESCRIPTION/SCOPE	TRIGGER	STUDY AUTHOR	REVIEWER	WHEN IN PROCESS	IMPLEMENTATION	KEY POINTS TO KNOW	OFFICIAL PLAN
Geotechnical Investigation	A geotechnical investigation will be required where development is proposed on, or near lands which demonstrate or have potential for erosion hazards, slopes or areas where slope failure is evident, unstable bedrock such as Karst, unstable soils such as marine clay or organic soils .	Geotechnical assessments associated with erosion, unstable soils or bedrock hazards will be required to satisfy the tests set out in the "Hazardous Sites Technical Guide", MNRF. The studies will accurately delineate the Hazard Limit; identify existing erosion and/or slope instability hazards; assess the impact of the proposed development on existing hazards; identify measures to safely avoid the potential hazards, including appropriate development setbacks from the Erosion Hazard Limit; identify and address any associated impacts that development adjacent to the Hazard Limit will have on components of the Natural Heritage System.	Qualified Professional - typically an engineer	The Municipality and/or the Conservation Authority	When triggered, Geotechnical Investigations will be required for submission of the site plan or subdivision applications to be deemed complete	The results and recommendation of a Geotechnical Investiation shall be implement through the subdivision or site plan agreements.	Geotechnical Investigations typically require bore holes and require heavy equipment to a site. Geotechnical Investigations may also required under the Ontario Building Code for determination of footings and foundations	Section 5.3 deals with erosion hazards, Section 5.4 deals with unstable bedrock, Section 5.5 outlines detailed policies on Geotechnical Investigations

STUDY TYPE	DESCRIPTION/SCOPE	TRIGGER	STUDY AUTHOR	REVIEWER	WHEN IN PROCESS	IMPLEMENTATION	KEY POINTS TO KNOW	OFFICIAL PLAN
Traffic Impact Statement (TIS)	A Traffic Impact Statement is for the determination of traffic impact and mitigation measures to address impact of proposed development. Traffic Impact Statement is to be prepared in accordance with the MTO "General Guidelines for the Preparation of Traffic Impact Studies." The main purpose of a traffic impact assessment is to demonstrate how the transportation impacts of a proposed development or redevelopment can be mitigated and addressed. The traffic impact assessment also serves as the basis for the identification and evaluation of transportation related improvements as a condition of access approval for the development.	Traffic Impact Statements (TIS) shall be required for all development proposed within 800 m of MTO's 416 Corridor, all Commercial and Industrial subdivision or site plan proposals including lands designated Economic Enterprise and located along the Highway 43 and 44 corridors, site plans for residential intensification, downtown development/redevelopment site plans, residential plans of subdivision	Qualified Professional - typically a transportation engineer	In the case of development within 800 m of the MTO 416 Corridor, MTO will be resposible for the review and comment on TIS. For development along County Roads, the United Counties of Leeds and Grenville Highway Department will be responsible for the review and comment on TIS. For all local roads, the Municipality will be responsible for the review and comment on TIS	When triggered, TIS will be required for submissions of the site plan or subdivision applications to be deemed complete.	The results and recommendation of a Traffic Impact Statement shall be implement through the subdivision or site plan agreements. In the case of MTO or County approval there may also be terms and conditions associated with the approval of entrances onto their corridors	Traffic impact statements are often required as supporting information for Official Plan or Zoning By-law amendments that introduce new development. In cases where the TIS is done for an OPA or ZBA they will be available for the plan of subdivision or site plan application.	The clearest direction in the Official Plan regarding TIS is found in Section 13.2.7.1 under the MTO transportation policy

STUDY TYPE	DESCRIPTION/SCOPE	TRIGGER	STUDY AUTHOR	REVIEWER	WHEN IN PROCESS	IMPLEMENTATION	KEY POINTS TO KNOW	OFFICIAL PLAN
Noise Impact Assessment	Determination of compliance with NCP-300 (MECP Environmental Noise Guideline – Stationary & Transportation Source)	For any proposed residential development in close proximity to a major source of noise, such as a Provincial highway, an airport, a railway or aggregate operation; or where a development which could be a major source of noise proposes to locate in close proximity to existing residential development; submit a noise feasibility study, to determine whether the proposal is feasible due to noise levels, for any sensitive use within: 100 m of a principle railway, 50 m of a secondary railway, 100 m of the Highway 416, and any non-residential use with potential for noise close to existing residential development.	Qualified Professional - typically an engineer	In the case of development within close to railway corridors, the railway authority will be responsible to comment and review the Noise Impact Assessment. For development within the close proximity to the MTO 416 Corridor, MTO will be responsible to comment and review the Noise Impact Assessment. For development within close proximity to a County Road, the United Counties of Leeds and Grenville Highway Department will be responsible for the review and comment on the Noise Impact Study.	When triggered, a Noise Impact Assessment will be required to be submitted with the site plan or subdivision application in order to be deemed complete	When triggered, the Noise Impact Assessment recommendations will be implemented through the subdivision or site plan agreements to be registered on title of the property.	Noise Impact Assessments typically result in mitigation measures that involve site works (i.e. berms, fensing, vegetation) or certain archetural details (window openings, central air, increased insulation/wall thinkness) and so it is important that this work is completed early in the development concpet process.Detailed noise studies may be required for any new sensitive land use, including residential uses, industrial uses, mineral aggregate operations, and stationary noise sources proposed within 500 metres of a principal railway main line or the Highway 416 right-of-way; 250 metres of a secondary railway main line;100 metres from all other railway lines or roads; or,where a non-residential development which could be a major source of noise	Section 2.14 sets out general polies related to noise. Section 13.5 sets out the direction for Noise Assessment Studies. Section 13.5.1 sets out specific noise policies related to railway lines.
Servicing Options/Feasibility Assessment	Determination of feasibility of sanitary, water and stormwater servicing constraints and preferred servicing options	Any application for a plan of subdivision/condominium or site plan application	Qualified Professional - civil engineer	The Municipality (typically peer reviewer)	The servicing option/feasibility assessment is required with the submission of a plan of subdivision or site plan application to be deemed complete	Servicing Options are typically refined to specific engineering drawings for the subdivision or site plan. The Servicing Option report can be referenced in the subdivision or site plan agreement.	Servicing Options/feasibility Assessment is typically a high level servicing concept document which is further refined and detailed in servicing civil drawings.	Section 2.5.4 sets out general servicing policies. Section 12.19 of the OP sets out specific servicng requirements.

STUDY TYPE	DESCRIPTION/SCOPE	TRIGGER	STUDY AUTHOR	REVIEWER	WHEN IN PROCESS	IMPLEMENTATION	KEY POINTS TO KNOW	OFFICIAL PLAN
Servicing Design Plan	Identification of the detailed plans for sanitary and water servicing	Typically identified as a condition of daft approval and submitted following draft approval and prior to final registration. A site plan application may skip the Servicing Option study and proceed straight to detail design as part of their application submission.	Qualified Professional - civil engineer	The Municipality (typically peer reviewer)	Required as a condition of draft approval. The details maybe submitted with application for site plan and not as a condition.	Implemented through subdivision agreement and site plan agreement registered on title of the property	The detailed design of the preferred servicing option.	Section 2.5.4 sets out general servicing policies. Section 12.19 of the OP sets out specific servicng requirements.
Stormwater Management Plan (SWM)	Identification of the detailed plans for stormwater management	Typically identified as a condition of daft approval and submitted following draft approval and prior to final registration. A site plan application may skip the Servicing Option study and proceed straight to detail design as part of their application submission.	Qualified Professional - civil engineer	The Municipality (typically peer reviewer)	Required as a condition of draft approval. The details maybe submitted with application for site plan and not as a condition.	Implemented through subdivision agreement and site plan agreement registered on title of the property	The detailed design of the preferred stormwater management solution. Plans typically include erosion and sediment control.	Section 13.6 of the OP addresses stormwater management.

STUDY TYPE	DESCRIPTION/SCOPE	TRIGGER	STUDY AUTHOR	REVIEWER	WHEN IN PROCESS	IMPLEMENTATION	KEY POINTS TO KNOW	OFFICIAL PLAN
Archeological Assessment	Determination of archeological features and mitigation plan in compliance with Standards and Guidelines for Consultant Archaeologists (MHSTCI 2011);	Any development proposal affecting areas containing a known archaeological site or considered to have archaeological potential. The criteria for determining areas of archaeological potential is defined by the Ministry of Tourism, Culture and Sport, and may include: The presence of known archaeological sites within 300 metres of the property; The presence of a water source (primary, secondary, ancient) within 300 metres of the property; The presence of a known burial site or cemetery adjacent to the property; Elevated topography; Pockets of sandy soil in a clay or rocky area; etc...	archaeologists licensed under the Ontario Heritage Act	The Municipality (typically peer reviewer), Indigenous Communities (AOO), Ministry of Heritage, Sport, Tourism and Culture Industries	When triggered, an Archeological Assess is required for submission of the site plan or subdivision applications to be deemed complete.	Implemented through subdivision agreement and site plan agreement registered on title of the property	Phase 1 Archeological Assessment is typically a table top exercies. Phase 2 requires field work (May to Nov). Any required Phase 3 work requires a signficant amount of time and field work. Reports must be filed with MHSTCI.	Section 12.7 outlines the policies related to archeological assessment
Neighbourhood Character Statement	Determination of defining characteristics of neighbourhoods and compatibility with proposed development	Residential Intensification subdivision/condominium or site plan applications within the Residential, Hamlet or Downtown Commercial designation, or requesting Bonus Zoning pursuant to policy 14.2.	May be undertaken by the applicant.	The Municipality	When triggered, a neighbourhood character statement is required for submission of the site plan or subdivision applications to be deemed complete.	Implemented through subdivision agreement and site plan agreement registered on title of the property	The exercise is to identify defining elements of the neighbourhood and to design an intensification proposal that is consistent with those defining elements.	Section 10.2.6.2 and 10.2.6.3 set out policies on residential intensification. Section 10.2.8.1 sets out detailed requirements for a Neighbourhood Character Statement

STUDY TYPE	DESCRIPTION/SCOPE	TRIGGER	STUDY AUTHOR	REVIEWER	WHEN IN PROCESS	IMPLEMENTATION	KEY POINTS TO KNOW	OFFICIAL PLAN
Heritage Impact Assessment	Identification of heritage resources and mitigation of impact on heritage resources	For subdivisions/condominium or site plan applications on land containing or adjacent to properties designated to be of cultural heritage value or interest under the Ontario Heritage Act. For subdivisions/condominiums or site plan applications adjacent to the Rideau Canal.	Qualified Professional - Heritage Expert or Land Use Planner	The Municipality	When triggered, a Heritage Impact Assessment is required for submission of the site plan or subdivision applications to be deemed complete.	Implemented through subdivision agreement and site plan agreement registered on title of the property	A Heritage Impact Statement is required to demonstrate how the heritage values, attributes and integrity of the protected heritage property are to be conserved and how any impacts may be mitigated.	Section 2.7.5 contains general policies related to heritage impact assessments. Specific heritage policies found in Sections 12.7 and 13.2.4
Risk Management Plan	Identification of uses and mitigation of impact on Municipality's Wellhead Protection Areas.	All subdivision/condominium and site plan applications located within a Wellhead Protection Area with a vulnerability score of 10	Qualified Professional	Risk Management Official (who is the Rideau Valley Conservation Authority)	When triggered, a Risk Management Plan is required for a submission of a site plan or subdivision application to be deemed complete	Implemented through notice from Risk Management Officer. If required, the subdivision agreement and site plan agreement can contain clauses related to recommendations in the Risk Management Plan	Lands shown as WHPA-A, WHPA-B and WHPA-C on Schedules A1 and B1 are areas where Planning Act and Building Code Act applications shall require a clearance notice from the Risk Management Official prior to approval.	Section 2.6.4.1, Source Water Protection policies in the OP relate to Risk Management Plans

STUDY TYPE	DESCRIPTION/SCOPE	TRIGGER	STUDY AUTHOR	REVIEWER	WHEN IN PROCESS	IMPLEMENTATION	KEY POINTS TO KNOW	OFFICIAL PLAN
Land Use Compatibility Assessment	Determination of compatibility between land uses in accordance with MECP D-6 Series Guidelines Ministry of the Environment and Climate Change Guideline on Compatibility Between Industrial Facilities and Sensitive Land Uses Site Plan Control.	Plan of Subdivision or Site Plan applications involving new or expanded industrial uses in order to regulate the physical character of industrial development and to ensure compatibility with established land uses. Plans of Subdivision or Site Plan applications involving Residential Intensification or Infill projects require a statement of the compatibility, where it is clearly demonstrated that the proposed project is sensitive to, compatible with, and a good fit within, the existing surrounding neighbourhood based on, but not limited to, a review of both existing and proposed built form, massing, and architectural treatments.	Applicant - typically with assistance of Land Use Plan	The Municipality	When triggered, a Land Use Compatibility Assessment is required for a submission of a site plan or subdivision application to be deemed complete	Recommendation of a Land Use Compatibility Assessment may be implemented through a site plan agreement or subdivision agreement. If the mitigation measure is an increased setback, there may be a need to implement through the Zoning By-law	Measure to ensure the compatibility of adjacent land uses, particularly industrial facilities and sensitive land uses may be achieved in a variety of ways: a separation distances, buffering using berm, wall, fence or landscaping, or a combination of these features. It may also consist of an intervening land use which would be compatible with both of the conflicting uses.	Section 10.2.8.2 sets out compatibility policies for residential intensification projects. Section 12.13 contains the policies related to land use compatibility.
Urban Design Study	Determination of how a site should be developed and details the design principles for a site relate to matters of visual character, aesthetics and compatibility of land use	All site plan and plan of subdivision applications.	Applicant - typically with assistance of Land Use Plan	The Municipality	When triggered, an Urban Design Study is required for a submission of a site plan or subdivision application to be deemed complete.	Urban Design Study recommendtion may be implemented through the site plan agreement or subdivision agreement. If mitigation measures relate to setbacks, height, mass, there may be a need to implement through the Zoning By-law.	Urban Design Studies will provide direction on how to create the development concept so that it meets the design principles of the OP and therefore should be done early in the design concept phase of the project.	Section 2.7.2 sets out urban design goals, Section 2.7.6 sets out urban design stragegies, Section 10.3.3 sets out Downtown urban design objectives. Section 10.10 sets out the urban design principles. Section 10.10.9 details urban design reports.

STUDY TYPE	DESCRIPTION/SCOPE	TRIGGER	STUDY AUTHOR	REVIEWER	WHEN IN PROCESS	IMPLEMENTATION	KEY POINTS TO KNOW	OFFICIAL PLAN
Planning Impact Analysis OR Planning Rational Report	To determine the appropriateness of a proposed change in land use, and to identify ways of reducing any adverse impacts on surrounding uses. Addresses conformity with Official Plan or Zoning By-law and summarizes recommendations of required studies.	All subdivision/condominium and site plan development proposals shall be required to prepare a Planning Impact Analysis or Planning Rational Report.	Qualified Professional - typically a Land Use Planner	The Municipality	When triggered, a Planning Impact Analysis or Planning Rational Report is required for the submission of a subdivision/condominium or site plan applications to be deemed complete.	Recommendations of a Planning Impact Analysis or Planning Rational Report may be implemented through the subdivision agreement or site plan agreement.	All subdivision/condominium or site plan applications will require a PIA or PRR.	Section 10.2.7 speaks to planning impact analysis for residential intensification proposals, Section 10.4.4 speaks to planning impact analysis for commercial development, Section 10.6.7 speaks to planning impact analysis for industrial development.
Hydrogeological & Terrain Analysis	Is completed to evaluate the groundwater for domestic water supply and the terrain for individual sewage disposal systems in accordance with MECP guidelines and the Ontario Drinking Water Objectives. Lot sizes for the development will be based on the approved studies.	All subdivision/condominium developments on private services, all site plan applications for golf courses, all subdivision and site plan applications within Well Head Protection Zone 10, all subdivision and site plan applications within 500 m of a landfill site where use of groundwater is proposed, all subdivision and site plan applications for privately serviced development within the Economic Enterprise designation (CR 43 Corridor).	Qualified Professional - typically a Hydrogeologist or engineer	The Municipality - typically involves peer review by outside subject matter expert.	When triggered a hydrogeological and terrain analysis is required for the submission of a plan of subdivision/condominium or site plan application to be deemed complete	Recommendation of a hydrogeological and terrain analysis is implemented through the subdivision or site plan agreement registered on title of the property	This type of report determines the suitability of the site for development on private services and should be conducted early in the concept development process	Section 4.8 related to golf course development, Section 9.2 related to rural residential subdivisions, Section 12.5.8, related to subdivision approvals.

STUDY TYPE	DESCRIPTION/SCOPE	TRIGGER	STUDY AUTHOR	REVIEWER	WHEN IN PROCESS	IMPLEMENTATION	KEY POINTS TO KNOW	OFFICIAL PLAN
Aggregate Impact Asssessment	To determine whether development would preclude or hinder the establishment of new operations or access to the resources	All subdivision/condominium and site plan applications within 150 metres for the boundary of an area licened for a pit above the water table, 300 metres for a pit below the water table and 500 metres for a quarry, within 500 metres (influence area) of the lands identified as "Bedrock Resource",within 300 metres of adjacent lands designated Mineral Aggregate on Schedule 'A' to the Official Plan.	Qualified Professional - typically a land use planner	The Municipality	When triggered an aggregate impact assessment is required for the submission of a plan of subdivision/condominium or site plan application to be deemed complete.	Recommendations of an Aggregate Impact Assessment may be implemented through the subdivision agreement or site plan agreement. There may be situations where the recommendation are better implemented through the Zoning By-law, such as reduced setbacks.	Development which would preclude or hinder the establishment of new operations or access to the resources will only be permitted if: resource use would not be feasible; or the proposed land uses or development serves a greater long term public interest; and issues of public health, public safety and environmental impact are addressed.	Section 7.2 of OP deals with Mineral Aggregate and setback and study requirements.
Minimum Distance Separation (MDS)	To ensure appropriate separation from and compatibility with existing livestock operation	Rural Subdivisions and site plans shall comply with the minimum distance separation (MDS) formulae. MDS does not apply to development within designated settlement areas	Applicant	The Municipality	When triggered a MDC calcuation is required for the submssion of a plan of subdivision/condominium or site plan application to be deemed complete.	Recommendations of MDS may be implemented through the subdivision agreement or site plan agreement (notices on title). There may be situations where the recommendation are better implemented through the Zoning By-law, such as reduced setbacks	As per provincial policy, MDS calculations are not required for development within designated settlement areas. Specific regulations related to the implementation of the MDS Guidelines are identified in the Zoning By-law.	Section 4.2 relates to MDS and rural residential development. Section 12.5.2.4 relates to farm related commercial and industrial development. Section 12.18 includes reference to MDS separation requirements.
Waste Disposal Impact Study	To assess the potential adverse impacts or risks to health and safety and to recommend necessary remedial measures	Subdivisions and site plan applications within 500 metres of the perimeter of an open or closed landfill site to consider factors such as ground and surface water contamination by leachate, odour, litter, dust, noise, visual impact, air emissions, vectors and vermin, and landfill generated gases, especially methane gas.	Qualified Individual - typically an engineer	The Municipality	When triggered a Waste Disposal Impact Study is required for the submission of a plan of subdivision/condominium or site plan application to be deemed complete	Recommendation of a Waste Diposal Impact Stuidy may be implemented through the subdivision agreement or site plan agreement. There may be situations where the recommendations are better implemented through the Zoning By-law, such as setbacks and restricted development zones.		Section 4.6 of OP deals with Wast Disposal Sites

STUDY TYPE	DESCRIPTION/SCOPE	TRIGGER	STUDY AUTHOR	REVIEWER	WHEN IN PROCESS	IMPLEMENTATION	KEY POINTS TO KNOW	OFFICIAL PLAN
Floodplain Assessment	Determination of the floodplain on a subject property	All subdivisions and site plans which include lands identified as floodplain by the Conservation Authority where a flood line study has not been completed. The proponent may also challenge the CA's engineered floodplain mapping through their own floodplain assessment.	Qualified Individual - typically and OLS	The Municipality and the Conservation Authority	When triggered a Floodplain Assessment is required for the submission of a plan of subdivison/condominium or site plan application to be deemed complete	Floodplain Assessment may include recommendation to be implemented through the subdivision agreement or site plan agreement. It is typical for floodplains to be identified in the Zoning By-law land use schedules.	the intent of this Plan to take a restrictive approach to existing development within the floodplain and to prohibit new development within the floodplain.	Section 5.2 contains floodplain policies
Retail Market Study	Determination of impact that the commercial development may have on existing retail uses within the market area.	Any subdivision or site plan application that proposes to establish or expand a retail commercial development having a per unit gross leasable floor area in excess of 1,850 square metres may be required to include a retail market impact study	Qualified Individual	The Municipality	When triggered a Retail Market Study is required for the submission of a plan of subdivision/condominium or site plan application to be deemed complete.	Retail Market Study recommendation may be implemented through the subdivision or site plan agreement. There may be situations where the recommendations are best implemented through the Zoning By-law (restriction on permitted uses, minimium/maximum size)	Any application that proposes to establish or expand a retail commercial development having a per unit gross leasable floor area in excess of 1,850 square metres may be required to include a retail market impact study, satisfactory to the Municipality, identifying the primary and secondary market area of the development, the existing and projected market demands and the impact that the development may have on existing retail uses within the market area.	Section 10.4.3 and 10.5.6 adderss the need and scope of a Retail Market Study
Affordable Housing Report	Determination of the affordability of the proposed development	Any subdivision/condominium proposing new residential development	Qualified Individual - typically a planner	The Municipality	When triggered an affordable housing report is required for the submission of a plan of subdivision/condominium application to be deemed complete.	Affordable Housing Report recommendations may be implemented through the subdivision agreement.	The Municipality shall attempt to have 25% of all new residential construction affordable. In a given year the residential development may meet, exceed or fall short of the 25% target and therefore, to achieve a more realistic picture of the progress made in achieving this target, three year averages shall be used to meet affordable housing objectives.	Section 11.3.2 of the Official Plan sets out the policies for affordable housing.

STUDY TYPE	DESCRIPTION/SCOPE	TRIGGER	STUDY AUTHOR	REVIEWER	WHEN IN PROCESS	IMPLEMENTATION	KEY POINTS TO KNOW	OFFICIAL PLAN
Headwater Drainage Features Assessment;	Determiniation of impact on and mitigation measures to be implement to ensure protection of Headwater Drainage Features	Any subdivision or site plan application which has the potential to alter a Headwater Drainage Feature.	Qualified Individual	The Municipality and the Conservation Authority	When triggered a headwaters drainage features report is required for the submission of a plan of subdivision/condominium or site plan application to be deemed complete	Recommendation of a Headwater Drainage Features Assessment may be implemented through the subdivision or site plan agreement. In some cases the best way to implement recommendation may involve the zoning by-law (i.e. no development zones, setbacks)	Headwater Drainage Features (HDF's) provide many ecological and hydrological functions such as recharge, discharge, infiltration and the provision of food, water, sediments, nutrients, organic matter and energy to downstream reaches. HDF's can provide aquatic and terrestrial habitat. The importance of maintaining HDF's on the landscape is accentuated by the fact that the largest portion of a stream or river's flow may be generated by the collective contributions of HDF's.	Section 6.2.7 establishes the HDF policies of the OP

STUDY TYPE	DESCRIPTION/SCOPE	TRIGGER	STUDY AUTHOR	REVIEWER	WHEN IN PROCESS	IMPLEMENTATION	KEY POINTS TO KNOW	OFFICIAL PLAN
Municipal Financial Impact Assessment;	An assessment demonstrating the potential financial implications of the proposed development on the Municipality	Major site plan development proposals and plans of subdivision require a complete financial impact analysis	Qualified Individual	The Municipality	When triggered a Municipal Financial Impact Assessment will be required to be submiitted with a subdivision or site plan application to be deemed complete	Recommendation of the Municipal Financial Impact Assessment can be implemented throug the subdivision or site plan agreement.	Approval of major development proposals or plans of subdivision may be refused or deferred if a satisfactory financial analysis is not submitted for the Municipality's review or if the Municipality determines that the required investment in municipal work is premature. The financial impact analysis will consider the scope, total cost, cost sharing and timing of major road, sewer, water and storm water management works and shall also incorporate an assessment of the total cost, cost sharing and timing of community facilities and services, including parks and recreation facilities, libraries, and fire and police services needs associated with growth.	Section 2.5.3 of the Official Plan sets out policies related to Financial Impacts Assessments

STUDY TYPE	DESCRIPTION/SCOPE	TRIGGER	STUDY AUTHOR	REVIEWER	WHEN IN PROCESS	IMPLEMENTATION	KEY POINTS TO KNOW	OFFICIAL PLAN
Photometric plan	To demonstrate that the installation and maintaining of outdoor lighting fixtures will direct sufficient light downward and minimizes light trespass and blinding glare.	All site plan and subdivision/condominium application are required to include a photometric plan of the site showing the proposed design light levels, along with details of the exterior light fixtures proposed to be used at the site.	Qualified Individual	The Municipality	When triggered a Photometrick Plan will be required to be submitted with a subdivision/condominium or site plan application to be deemed complete	Recommendation of the Photometric Plan can be implemented through the site plan or subdivsion agreement.	Light spillage from new development and redevelopment projects onto adjacent properties and roads shall be avoided. The target light levels at the development property's boundaries shall be 0.0 foot-candles. All exterior light fixtures shall be properly shielded to prevent glare and to direct light downwards and onto the development property. Light wattages may have to be reduced where reflective surfaces on the site may cause secondary (reflected) glare and light trespass.	Section 12.21.1 sets out the Dark Skies policies

STUDY TYPE	DESCRIPTION/SCOPE	TRIGGER	STUDY AUTHOR	REVIEWER	WHEN IN PROCESS	IMPLEMENTATION	KEY POINTS TO KNOW	OFFICIAL PLAN
Wildland Fire Assessment	To assess for the risk of high to extreme wildland fire behaviour on the subject lands and adjacent lands and to identify measures that outline how the risk will be mitigated.	All site plan and subdivision/condominium applications within or adjacent to lands identified as having potential risk of wildland fires on the OP Schedule	Qualified Individual - typically biologist and typically done as part of an EIS	The Municipality	When triggered a Wildland Fire Assessment will be required to be submitted with a subdivision/condominium or site plan application to be deemed complete	Recommendations of th Wildland Fire Assessment can be implement through the site plan or subdivision agreement.	Consideration of the wildland fire assessment and mitigation standards, as identified by the Ministry of Natural Resources and Forestry is required. Wildland fire mitigation measures shall not be permitted in lands designated as Provincially Significant Wetland. Wildland fire mitigation may include the following: Entering into a site plan agreement with the Municipality of North Grenville which utilizes the principles outlined in "The Home Owners Fire Smart Manual" prepared by The Province of Ontario which suggests mitigation methods. Undertaking a site review to assess the risk of high to extreme wildland fire behaviour on the subject lands and adjacent lands.	Section 5.7 sets out the Wildland Fire policies.

APPENDIX B

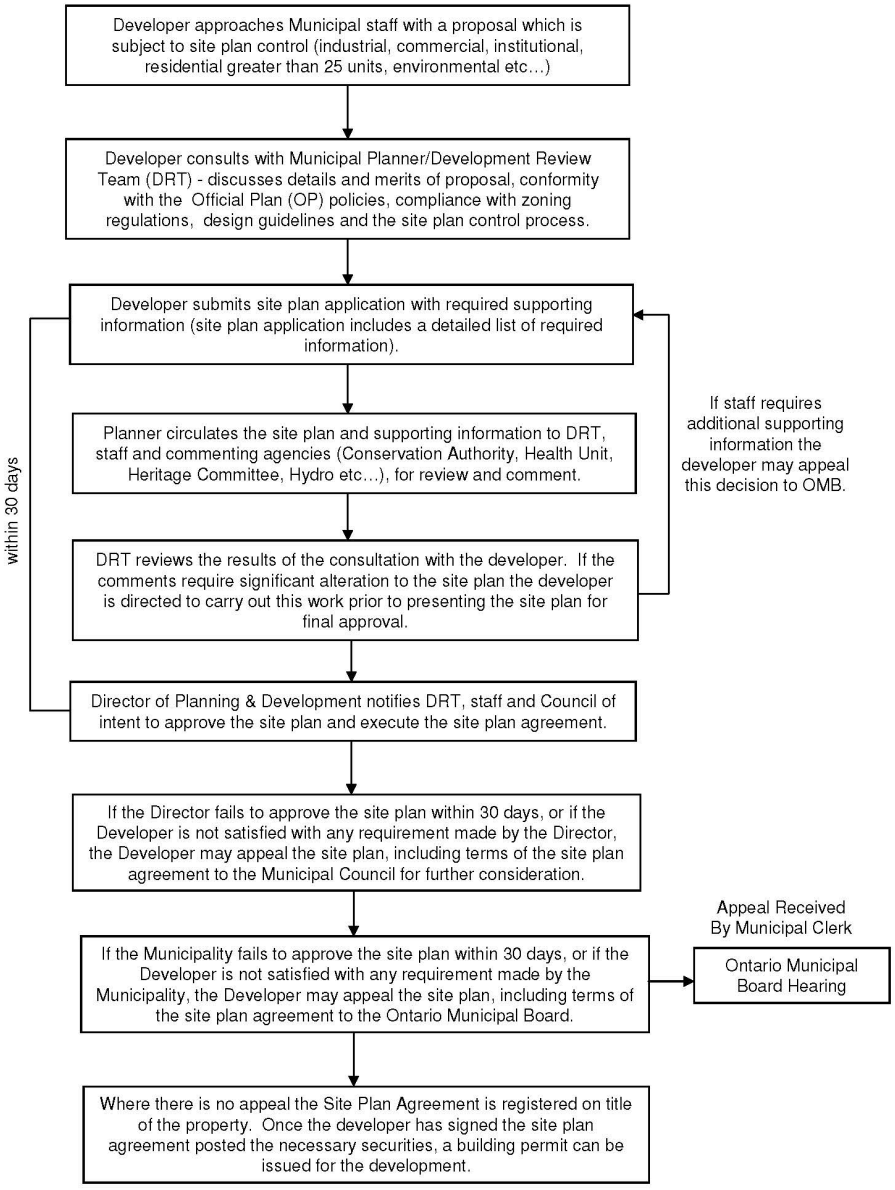
North Grenville Site Plan Review Process

North Grenville

Development Review Process

For Request For Approval of an Application for Site Plan Control

(Sec 41 of Planning Act, Amended 2006 by Bill 51)



24/09/2008

APPENDIX C

Choosing the Right Tree

Choosing the Right Tree

A Landowner's Guide to Putting Down Roots

What's Inside

Choosing The Right Tree is the result of a collaborative effort of the Ferguson Forest Centre (FFC), the Forest Gene Conservation Association (FGCA), and the Eastern Ontario Model Forest (EOMF) – who are working toward a better forest for tomorrow.

FERGUSON Forest Centre

FOREST Gene Conservation ASSOCIATION

EASTERN ONTARIO MODEL FOREST

EOMF's vision of forests for seven generations is a mosaic of healthy forest ecosystems within a landscape of rural and urban areas throughout eastern Ontario, providing long-term economic, social, and spiritual benefits, while ensuring a healthy environment that is valued by all.

The publication of this booklet was made possible because of the financial contributions of the following supporters:

Bog to Bog
Community Stewardship Council of Lanark County
Domtar Inc.
Grenville Land Stewardship Council
Hastings Stewardship Council
Leeds County Stewardship Council
Lennox & Addington Stewardship Council
Northumberland Stewardship Council
Ottawa Stewardship Council
Prescott-Russell Stewardship Council
Prince Edward Stewardship Council
Resource Stewardship S. D. & G.
Rideau Valley Conservation Authority
Victoria Land and Water Stewardship Council

To discover how you can become an EOMF member, or for more information, please visit www.eomf.on.ca.

EASTERN ONTARIO MODEL FOREST
P.O. Bag 2111,
Kemptville, Ontario
Canada K0G 1J0
Tel.: (613) 258-8241
Fax: (613) 258-8363
modelforest@eomf.on.ca
www.eomf.on.ca

FORÊT MODÈLE DE L'EST DE L'ONTARIO
C.P. 2111,
Kemptville (Ontario)
Canada K0G 1J0
Tél. : (613) 258-8241
Téléc. : (613) 258-8363
foretmodele@eomf.on.ca
www.eomf.on.ca/francais

Natural Resources Canada
Canadian Forest Service
Ressources naturelles Canada
Service canadien des forêts

Canada

ISBN 1-896392-89-X

About This Guide

The information in this guide is for landowners, in Ontario's Great Lakes St. Lawrence Forest Region, who have made the decision to plant trees or shrubs, and want to know what species are best suited to their particular site and needs. This booklet will help you:

- *Get to know your site*
- *Choose the right species for your site*
- *Choose a species that meets your needs*
- *Choose the right stock for your site*

1 Introduction

Virtually everyone would agree: trees and forests provide our society with so many benefits that they have become fundamental to our quality life. In fact, even the idea of a treeless city or countryside is unimaginable to most people. Even so, we have tended to take the future of forests for granted – we have severely disturbed and continue to disturb what was once a natural forested landscape. We must take better care of the trees we have. And, just as important, we need to plan for the forests of the future.

Whether it's to attract wildlife, grow timber or improve the local environment, each spring private landowners plant thousands of tree seedlings across Ontario. Although there can be any number of reasons why these seedlings are planted, each and every landowner starts off with the same overall objective – to have as many of the trees as possible survive to grow another year.

Now more than ever, landowners are asked to demonstrate good stewardship and to do it with a fraction of the public support they were once accustomed to. In Ontario, the large-scale, heavily subsidized planting programs that resulted in thousands of hectares of land returned to forest are a thing of the past. Although some planting programs are available, most require a significant investment on behalf of the landowner. In many cases landowners are choosing to purchase and plant trees on their own. Often they are unfamiliar with planting methods that will ensure good survival and, as a result, every summer many trees die unnecessarily. While it can be expected that some of the trees will die, it is important to minimize the chance of unnecessary and excessive mortality caused by either poor planting technique or improper species selection. One of the most important things a landowner can do is choose the right tree for the right site. Keep in mind that tree planting is expensive, and no tree planting operation is more expensive than a failed one. Choosing the right tree is the first step to ensuring that the landowner's efforts and money are not wasted.

Although you may never sit in its shade, plant a tree for those who will.

2 The Importance of Choosing the Right Tree

Jane Landowner spent a lot of time and money planting 10,000 red pine seedlings on her 4 hectare field. Her decision to plant red pine was primarily based on the cost and availability of the seedlings – at the time about 32 cents per tree. Unfortunately for Jane, the site was poorly drained and most of the trees died during the following spring. If Jane had spent more time assessing the site, and her choice of species she would have known that red pine does not do well in wet soils. She should have purchased a more suitable species like eastern white cedar and, although she may have had to pay more per seedling, the survival rate would have been much higher. In this case, the only thing that wasn't poorly drained was Jane's bank account!

Even if you know very little about how our native trees and forests grow it is probably a good bet that you are aware that different species of trees are found on different sites. Like all other types of plants, trees have specific growing requirements. As a result, each site has its own capability, and in the same way, its own limitations for growing trees. In the example, it was unfortunate that Jane had to find out the hard way that the relationship of species and site is an important one.

In this case, a lot of money was wasted planting a species of tree that was unsuitable for the site available. Obviously, one of the most important first steps a landowner can make is to ensure that the right species is chosen for their site.

Choosing the right species for the site does not always guarantee success, but choosing the wrong species is sure to guarantee failure. So spend some time determining what your site characteristics are and if you are still unsure, consult a professional.

3 Getting to Know Your Site

When forest managers refer to site characteristics, they are talking about a broad range of physical and chemical properties. Once you know a site's characteristics, you can determine what species will grow well (and those that won't!). In most cases, there will be a few species that should do well on the site – think about the many different species you find in most natural forests. This gives you a chance to base your final species selection on additional considerations like long-term objectives, species availability and cost.

Although your site may have several unique characteristics that separate it from others, only two, soil type and drainage, influence how well one species will do compared to another.

Soil Type

Although you don't have to be a soil scientist to plant trees, knowing a little about soil is valuable. Trees depend on soil to anchor them in place, provide moisture and nutrients, and to act as a seedbed for future generations. All soils are made up of four main ingredients: mineral particles (the bulk of the material), air spaces between the particles, water in varying amounts, and some organic matter from plant and animal debris. Classifying soils is primarily a quantification of the different ingredients found within it.

Mineral particles range from boulders as large as basketballs, to tiny particles so small they can't be seen without a powerful microscope. Soil texture is the relative proportion of the individual particles. A handful of dirt rubbed between your fingers will have a certain amount of 'grittiness' to it. The more abrasive the soil feels the larger the individual particles; the smoother the soil feels the smaller the particles. This grittiness (or the lack of it) is a relative measure of three main soil particle sizes – sand, silt and clay.

Sand has the largest particles, which feel "gritty". Silt has medium-sized particles that feel soft, silky or "floury". Clay has the smallest particles and feels "sticky". The amount of sand versus silt versus clay within the soil directly affects a tree species' ability to grow on a site.

There are three broad texture classes: sandy soils, loamy soils and clay soils. The term loam refers to soils with more equal proportions of sand, silt and clay. Although there can be many combinations of classes such as sandy loam, loamy sand or even clay loam, it is only really necessary to determine which of the three general classes you have.

Table 1 lists some common properties to look for when assessing a soil texture class. Grab a handful of soil – does it feel gritty or smooth? Squeeze the soil in your hand. Does it form a cast (clump)? Lightly wet the soil and try it again. Try to make a soil ribbon (Fig.1) by lightly wetting the soil until it feels like moist putty. Then, try to squeeze it between your thumb and forefinger upwardly into a thin flat ribbon – if a ribbon forms the soil contains clay. The longer the ribbon, the more clay it contains.

Figure 1: Making a soil ribbon

Source: www.gsfc.nasa.gov/globe/stories/clays.htm

Table 1: Soil texture class assessment properties

Soil texture class	Visual appearance	Reaction when squeezed in the hand		Ability to form a ribbon
		DRY SOIL	MOIST SOIL	
Sand soils	- Granular with easily detectable particles easily falls apart	- Will not form a cast or, cast easily	- Forms a cast that crumbles	- Cannot form a ribbon
Loam soils	- Low to moderately granular - Can form clumps/ clods when dry	- Forms a cast that can be handled relatively easily	- Forms a cast that can be easily handled	- Pure loam cannot form a ribbon - Loam with more silt and clay will form a fragile ribbon
Clay soils	- Fine texture with very few large particles - When dry, forms hard clumps	- Forms a cast that can be handled freely	- Forms a cast that can be worked and is cohesive	- Forms a long, flexible ribbon

Adapted from the US Department of Labor Web site: www.osha-slc.gov/doc/outreachtraining/htmlfiles/soiltex.html

Drainage

Drainage is the second site characteristic that needs to be assessed before making a species selection. How well your site holds water can have a dramatic impact on the long-term survival of different species. Drainage is influenced by soil texture. The smaller the particle size, the more water the site holds – a clay soil can hold considerably more moisture than a sandy soil. Soil depth, recent precipitation, topography, depth to the water table, and the amount and type of vegetation also influence drainage in one way or another.

Soil drainage can be classified into four different categories:

Well Drained water drains from the site rapidly; water seldom pools on the site even during a heavy rain or after snow melt;

Moderately Drained water may pool but only for brief periods;

Imperfectly Drained water pools on the site, sometimes for extended periods especially during the spring or in wet years;

Poorly Drained water drains slowly from the site throughout the year; soil may appear wet below the surface.

Determining the drainage of your site is relatively easy and usually comes from observing what happens to the site in the spring and fall, as well as during and after a rainfall.

Site Variability

The area you intend to plant may not be uniform especially if there is variation in topography. You should assess the entire site looking for differences that might affect your choice of species. If your site differs in either soil texture or drainage you may need to choose different species for certain areas.

Mary Landowner planted 100 red oak trees along her sloping laneway. After five years most of the trees were still alive although Mary noticed that the oaks in the higher, well-drained, end of the laneway were thriving while those in the lower portion which flooded every spring were just barely hanging on. Mary should have chosen a more suitable species for a wetter area such as green ash or tamarack.

4 Choosing the Right Species for Your Site

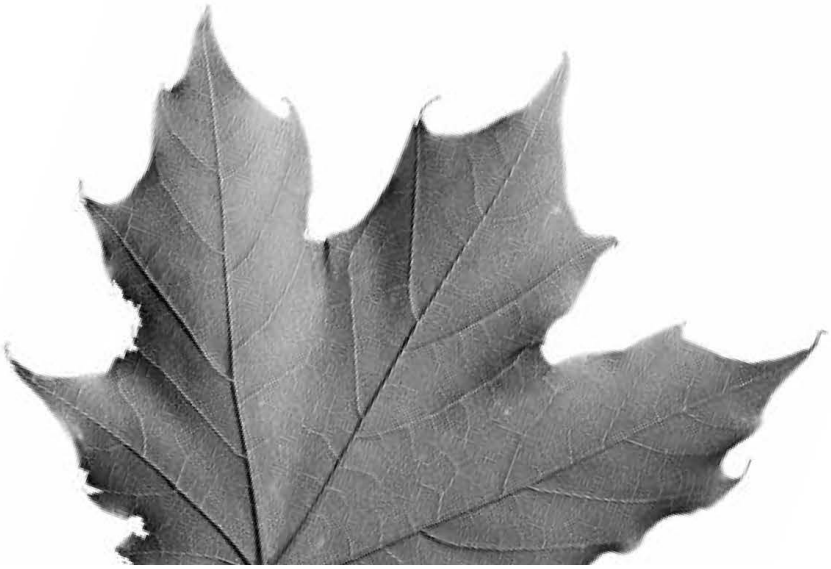
Now that you have determined both soil texture and drainage of your site, you can start to narrow down your species choice(s). Each species is adapted to a range of site conditions, which are categorized in Table 2.

More detail on the specific site requirements for the many different species is provided in the following pages. In addition, there are many other sources of information on individual tree species, their requirements, how they grow and how to look after them – consult one of the partners who helped produce this publication. Information on these agencies and others is listed at the back of this publication.

Table 2: Species recommended for different site conditions

Soil Texture	Natural Drainage	
	WELL TO MODERATE	IMPERFECT TO POOR
Sand	white pine, red pine, *European larch,*Norway spruce, red oak, white cedar, *hybrid poplar, *black locust	white pine, tamarack, black spruce, willow, green ash
Loam	white pine, red pine, *European larch, *Norway spruce, white spruce, black spruce, white cedar, sugar maple, red maple, white ash, green ash, red oak, black cherry, beech, basswood, black walnut, bitternut hickory, *hybrid poplar, *black locust, butternut, bur oak	white cedar, tamarack, black spruce, silver maple, red maple, willow, green ash
Clay	white pine, *European larch, *Norway spruce, white ash, green ash, white cedar, beech, *hybrid poplar, *black locust, black walnut, butternut, bur oak	tamarack, black spruce, silver maple, green ash, willow

** not native to Ontario*



5 Choosing a Species That Meets Your Needs

Choosing the right species is not just a matter of determining which ones will survive on your site and which won't. You need to consider your own long-term objectives for the trees. Are you planting a windbreak along a field, or are you establishing a stand of trees for wood products? Do you want to attract birds to your garden, or do you want to rehabilitate your cottage shoreline? What you want to do on the property affects how you will do it. The most appropriate choice of tree species is one that will thrive on your site once it is planted, and one that will also grow to meet your personal needs in the future. Table 3 lists some species that are suitable for some of the common tree planting objectives. Look for the species that are suited to your site and your objectives.

Susan Landowner would like to see a sugar maple forest returned to her old pasture. However, the current site is exposed and the loamy sand soils are somewhat compacted and undernourished after many years of grazing. She could plant thousands of sugar maple seedlings, but a local forest manager suggests that maple, which naturally regenerates in a shaded moist soil, will struggle and not do well for many years. He suggests planting white or red pine, which can handle the light drier soils and open conditions. As the pine grows it will shade the site. Sugar maple and white ash seed from Susan's neighbour's forest will seed in among the pine. Susan will also benefit from harvest and sale of the pine on her way to a naturally regenerated sugar maple forest.

Table 3: Commonly planted species by property objective

Objective	**Species** (* = non-native species in Ontario)
Wildlife (cover or mast)	Fruiting shrubs, ironwood, **red oak, bur oak, black cherry, cedar**, hemlock, **black walnut butternut**
Timber	**red pine, white pine, white spruce, white ash, red oak**, hard maple, ***Norway spruce**
Christmas trees	**white spruce, *Norway spruce**, balsam fir, *fraser fir, ***scotch pine, white pine**
Windbreaks	***Norway spruce, white spruce, cedar, *hybrid poplar**

In Table 3, the species in **bold** font are those that should do well on an average planting site – open and exposed old-field sites with varying amounts of competition from other plants such as grasses. The remaining species are those which regenerate naturally beneath a forest canopy in cool, moist forest soils that have lots of organic matter. These species, although they can survive in the open, do better when planted under or among existing trees.

Bill Landowner wanted to create a windbreak along the field behind his barn. He assessed his site and knows its soils are shallow and dry. From Table 3, he sees that cedar as well as white and Norway spruce would eventually provide adequate protection from the prevailing winds. But he chooses to plant only cedar because his shallow, dry site is not recommended for spruce (Table 2).

6 Choosing The Right Stock For Your Site

Seed Source

Now that you have chosen a species that is adapted to your site and that meets your needs, it is time to ensure that the trees you order from the nursery will be adapted to your climate. That is, make sure they were grown from seed that came from an area with a climate similar to the area where they will be planted.

Nurseries grow seedlings from seeds or from cuttings. Although most tree species grow across large geographic areas, over many generations local populations have evolved to be specially adapted to local climatic conditions and, as a result, seedlings need to be planted in the area from which their seed came. There are examples where trees have flourished once moved to a different area – but these situations must be viewed as lucky experiments. In many cases moving trees from one climate to another is an experiment that does not work out so well – ecologically or economically!

The map on the following page shows the different tree seed zones for Ontario. Trees grown from seed collected within one seed zone are genetically adapted to the climate of that zone and can be safely planted within the same zone. It is important to ensure that your stock came from the zone of your planting site. Ask about it when you order the stock. For more information on seed zones contact the Forest Gene Conservation Association (contact information appears at the back of this publication).

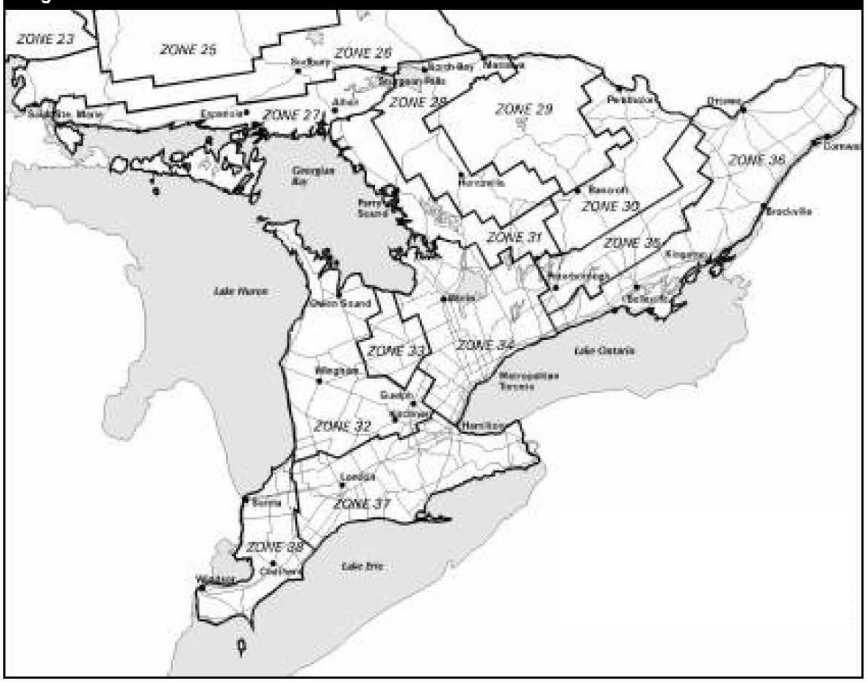
Tom Landowner lives outside Peterborough and his brother has a farm in the Niagara area. Tom wanted to reforest an area behind his house and tried to save some money by transplanting red oak seedlings from his brother's farm. Although the site was well suited to red oak, and the seedlings grew several feet each year, they were frequently killed back by the fall frosts and never grew that well. If Tom had known that seed source matters, he might have saved himself a lot of work.

Stock Type and Size

There are still some choices to make now that you've picked your species and seed source. The following tables describe bareroot stock that does well on open field planting sites. Small, container seedlings of many kinds are increasingly popular with nurseries, and larger trees are available as potted or balled and burlaped stock. Consider your site type and the resources you have for planting and tending before you choose. Ask your nursery or forest consultant for advice on what stock types will do well in your situation.

Tree Seed Zones of Southern Ontario

Figure 2: Ontario tree seed zones



Source: OMNR 1996

7 Species Characteristics

Native Evergreen Conifers

WHITE PINE

Pinus strobus

35 metres (115 feet)
100+ years
Bareroot Seedlings
3 years old
15-35 cm tall

Ontario's tallest tree and provincial tree

Appearance: Clusters of 5 soft, long, bluish-green needles. Smooth, young bark: dark, ridged mature bark.
Site and soils: Best on well drained to moist, sand and loams. Tolerates shade when young.
Rural plantings: Reforestation, timber plantations. Plant at 6ft. spacing. Grows 2-3 feet/year once established. Plant under canopy of taller trees to help avoid white pine weevil problems. Grows well with red pine, maple, ash and beech.
Urban settings; Prune for landscaping purposes; sensitive to salt and air pollutants.
Native to: Southern and central Ontario

RED PINE

Pinus resinosa

25 metres (80 feet)
100+ years
Bareroot Seedlings
2-3 years old
12-35 cm tall

Highest yielding conifer plantation species

Appearance: Clusters of 2 brittle, long, shiny dark green needles. Scaly, pinkish-gray bark, burrowed with age.
Site and soils: Good on infertile, well-drained, sandy, gravelly soils. Needs full sunlight.
Rural plantings: Reforestation, timber plantations. Plant at 8 feet by 8 feet. Grows 2-3 feet/year once established. Periodically thin to maintain health and growth. Grows well with white pine, aspen.
Urban settings: Reddish bark is striking with dark green foliage; doesn't thrive in inner city.
Native to: Ontario

WHITE SPRUCE

Picea glauca

25 metres (80 feet)
100+ years
Bareroot Seedlings
3 years old
15-35 cm tall

Appearance: Short, whitish or bluish-green needles; wide form.
Site and soils: Best on well-drained, moist silty soils. Tolerates poorly drained and heavy soils. Avoid dry sites. Tolerates shading. Slow initial growth, then 1-2 feet/year on good sites once established.
Rural plantings: Reforestation, timber plantations, Christmas trees. Plant at 8 feet by 8 feet, but thin periodically to maintain health and growth. Grows well with many species.
Urban settings: Windbreaks, landscaping.
Native to: Central and northern Ontario

RED SPRUCE

Picea rubens

25 metres (80 feet)
100+ years
Bareroot Seedlings
3 years old
15-35 cm tall

Appearance: Yellow to dark green needles, often pressed close to yellow-orange twig. Broad, open form.
Site and soils: Well-drained, moist, silty soils; cool moist sites. Very tolerant of shade. Best planted under taller trees or in small openings.
Rural plantings: Reforestation, wildlife cover. Grows well with white pine, balsam fir, yellow birch, sugar maple.
Urban settings: Uncommon
Native to: Central Ontario (but uncommon)

WHITE CEDAR

Thuja occidentalis

15 metres (50 feet)
80+ years
Bareroot Transplant Seedlings
2-4 years old
15-60 cm tall

Appearance: Yellow to green scale-like leaves, turning bronzy green in winter. Broad, dense, columnar form; thin red-brown young bark; gray-brown mature bark in strips.
Site and soils: Does well on many sites; dry, wet or shallow soils. Tolerant of shade.
Rural plantings: Reforestation, site restoration, wildlife plantings for browse and cover. Slow growing. Grows well with white pine, balsam fir, yellow birch, sugar maple.
Urban settings: Common as hedges, windbreaks. Easily pruned.
Native to: Ontario

JACK PINE

Pinus banksiana

20 metres (65 feet)
80+ years
Bareroot Seedlings
2 years old
15-35 cm tall

Appearance: Clusters of 2 short, yellow-green needles. Thin, reddish-gray young bark; dark brown flaky and ridged mature bark.
Site and soils: Does well on many sites. Will tolerate sandy, gravelly sites. Needs full sunlight.
Rural plantings: Restoration of droughty sites, timber plantations on better sites. Grows in pure stands or with birch, aspen, red pine.
Urban settings: Unknown
Native to: Northern and central Ontario

Native Evergreen Conifers *(Continued)*

EASTERN HEMLOCK

Tsuga canadensis

30 metres
(100 feet)
100+ years

Appearance: Flat, blunt, finely toothed needles with shiny green top and whitened underside. Slender twigs, angled lead shoot; reddish-purple layers in outer bark.
Site and soils: Various soils but best on a cool, moist, well drained site. Very shade tolerant. Found on drier but cool sites (northern slopes) in warmer southern part of its range.
Rural plantings: Found in pure stands or mixed with yellow birch, white spruce, white pine, sugar maple and beech. A late successional species - shade tolerance makes it best suited to under planting or stand conversion, and not most afforestation situations. Deer browsing damage is usually very high.
Urban settings: Uncommon - not tolerant or urban situations which often include exposed sites, air pollution, heat extremes and compacted soils.
Native to: Central and southern Ontario

PITCH PINE

Pinus rigida

Only native conifer able to sprout from damaged/cut stumps

20 metres
(65 feet)
100 years

Bareroot
Seedlings
2 years old
12-20 cm tall

Appearance: Clusters of 3 brittle, long, yellow-green needles. Scaly, pinkish-gray bark, furrowed with age (similar to red pine).
Site and soils: Tolerates extreme sites - wet or shallow, dry soils. Needs full sunlight.
Rural plantings: Restoration of droughty sites. Grows in pure stands or mixed with species such as white oak, gray birch.
Urban settings: Drought and salt resistant, interesting form.
Native to: Small area along St. Lawrence River - east of Kingston, Ontario.

BALSAM FIR

Abies balsamea

Only native fir in eastern Canada

20 metres
(65 feet)
60 years

Bareroot
Transplant
Seedlings
4 years old
15-35 cm tall

Appearance Short, dark green needles, arranged along twig for flat branch effect. Very regular conical form, with spire-like tip. Gray, smooth, young bark with resin blisters; brownish, scaly older bark.
Site and soils: Adapted to a variety of soils. Very tolerant of shade.
Rural plantings: Reforestation, Christmas trees. Grows well in pure stands or with birch, aspen, white spruce or hemlock.
Urban settings: Windbreaks, landscaping.
Native to: Central and northern Ontario

Native Deciduous Conifers

TAMARACK

Larix laricina

Loses needles in autumn

25 metres
(80 feet)
80 years

Bareroot
Transplant
Seedlings
1-2 years old
15-35 cm tall

Appearance: Tufts of many soft, short, bluish-green needles; yellow and fall off in autumn. Thin, smooth, gray young bark; reddish-brown, scaly, mature bark.
Site and soils: Grows best on moist, sandy soils. Tolerates wet, poorly drained sites. Needs full sunlight.
Rural plantings: Reforestation. Fast initial growth on good sites. Grows well in pure stands or with birch, aspen, spruce. Sensitive to chemical weed control.
Urban settings: Uncommon, but has brilliant yellow autumn colour, light green spring colour.
Native to: Northern and central Ontario

Exotic Evergreen Conifers

NORWAY SPRUCE

Picea abies

30 metres
(100 feet)
100+ years

Bareroot
Seedlings
2-3 years old
12-35 cm tall

Appearance: Short, dark green needles. Thin, reddish-brown young bark; dark purplish-brown, scaly, mature bark.
Site and soils: Best on well-drained to moist, sand and loams (similar to white pine). Avoid wet or dry sites. Tolerates some shade.
Rural plantings: Timber plantations. Plant at 8 feet by 8 feet. Grows 2-3 feet/year on good sites.
Urban settings: Windbreak species, distinctive drooping branches, drought susceptible.
Native to: Europe and Asia; adapted to southern and central Ontario

SCOTS PINE

Pinus sylvestris

Can be invasive and displace native species in natural areas

25 metres
(80 feet)
80 years

Bareroot
Seedlings
2 years old
15-35 cm tall

Appearance: Clusters of 2 short, bluish- to grayish-green needles. Thin, orange, papery young bark; gray-brown, scaly plates on mature bark.
Site and soils: Sandy, gravelly sites; other poor quality sites. Needs full sunlight.
Rural plantings: Common Christmas tree, otherwise not recommended. Fast growth. Subject to insect and disease damage, especially in a pure stand.
Urban settings: Common; distinctive orange, papery inner mature bark.
Native to: Europe and Asia

Exotic Evergreen Conifers *(Continued)*

AUSTRIAN PINE — *Pinus nigra*

20 metres (65 feet)
80* years
Bareroot Seedlings
2 years old
10* cm tall

Appearance: Clusters of 2 long, dark green needles; broad form. Yellow-brown, flaky young bark; dark gray-brown, furrowed mature bark.
Site and soils: Tolerates a wide variety of soils.
Rural plantings: Not recommended.
Urban settings: Very common ornamental; drought and salt resistant; interesting form.
Native to: Southern Europe

MUGHO PINE — *Pinus mugo*

Low shrub to small tree
Medium-lived
Bareroot Seedlings
2 years old
12-20 cm tall

Appearance: Long, dark green needles; upsweeping branches, low spreading form. Dark gray, scaly bark.
Site and soils: Adapted to a variety of soils; used for erosion control.
Rural plantings: Not recommended.
Urban settings: Very common ornamental (requires pruning to keep good form); salt tolerant; common along roadways
Native to: Mountains of southern Europe

Exotic Deciduous Conifers

EUROPEAN LARCH — *Larix decidua*

Loses needles in autumn

25 metres (80 feet)
80 years
Bareroot Seedlings
2 years old
15* cm tall

Appearance: Tufts of many soft, short, bright green needles. Yellow and fall off in autumn.
Site and soils: Grows best on moist, sandy soils. Needs full sunlight.
Rural plantings: Plantations for wood products at 8 feet by 8 feet spacing. Fast initial growth on good sites. Sensitive to chemical weed control.
Urban settings: Ornamental, brilliant autumn colour; pretty, bright green spring colour.
Native to: Europe

JAPANESE LARCH — *Larix kaempferi*

Loses needles in autumn; limited frost hardiness

25 metres (80 feet)
80 years
Bareroot Seedlings
2 years old
15* cm tall

Appearance: Tufts of soft, short, grayish or bluish-green needles. Orange-brown twigs; needles turn yellow and fall off in autumn.
Site and soils: Grows best on moist, sandy soils. Needs full sunlight.
Rural plantings: Plantations for wood products at 8 feet by 8 feet spacing. Fast initial growth on good sites. Sensitive to chemical weed control.
Urban settings: Ornamental, brilliant autumn colour; pretty, bright green spring colour.
Native to: Mountains of Japan

Native Broadleaf Trees

SUGAR MAPLE — *Acer saccharum*

Canada's National tree

30 metres (100 feet)
100* years
Bareroot Seedlings
2 years old
15* cm tall

Appearance: Deep yellow-green lobed leaves, broad-spreading open grown form. Smooth, young bark; dark, irregularly-ridged mature bark.
Site and soils: Best on deep, fertile, well-drained to moist loams. Tolerates shade when young. Responds well to thinning.
Rural plantings: Reforestation, maple sugar orchards. Grows well with white pine, hemlock and other broadleaf trees.
Urban settings: Sensitive to salt and air pollutants; hot, dry conditions and compacted soils. Brilliant autumn colour.
Native to: Central and southern Ontario

BLACK MAPLE — *Acer nigrum*

as for Sugar Maple

Note: Closely related to sugar maple; known for its higher sugar content. Leaves have a droopy appearance and a fuzzy underside.

SILVER MAPLE — *Acer saccharinum*

25 metres (80 feet)
80 years
Bareroot Seedlings
1-2 years old
15-20 cm tall

Appearance: Light green (lighter below), deeply cut leaves; spreading, open grown form. Smooth, young bark; gray-brown, shaggy, mature bark.
Site and soils: Best on deep, fertile, moist loams (withstands seasonally wet soils). Needs full sunlight.
Rural plantings: Reforestation, plantations for pulp and timber. Grows fast.
Urban settings: Aggressive roots and brittle branches make it unsuitable to inner city areas. Pale yellow autumn colour.
Native to: Central and southern Ontario

Native Broadleaf Trees *(Continued)*

RED MAPLE

Acer rubrum

25 metres (80 feet)
80 years
Bareroot Seedlings
2 years old
15+ cm tall

Appearance: Light green (lighter below), lobed, toothed leaves; wide open grown form. Smooth, young bark; gray-brown, scaly, ridged, mature bark.
Site and soils: Adapted to a variety of soils - wet and dry. Best on moist sites. Tolerates some shade when young.
Rural plantings: Reforestation, plantations for pulp and timber.
Urban settings: Common ornamental, brilliant autumn colour - deep red.
Native to: Central and southern Ontario

RED OAK

Quercus rubra

25 metres (80 feet)
100+ years
Bareroot Seedlings
1-2 years old
12-20 cm tall

Appearance: Dull green bristle-tipped leaves. Smooth, lined young bark; grooved and ridged, dark, mature bark.
Site and soils: Best on deep, well-drained sandy loam. Tolerates drier conditions. Avoid heavy, wet soils. Tolerates some shade when young. Responds well to thinning.
Rural plantings: Reforestation, timber plantations, wildlife food source. Grows well with pines and other broadleaf trees.
Urban settings: Large, attractive ornamental. Tolerates urban conditions.
Native to: Southern and central Ontario

WHITE OAK

Quercus alba

30 metres (100 feet)
100+ years
Bareroot Seedlings
2 years old
15+ cm tall

Appearance: Bright green, round, lobed leaves. Pale gray, scaly young bark; similar mature bark with a reddish cast.
Site and soils: Best on deep, well-drained loams. Avoid dry or poorly drained conditions. Tolerates some shade when young.
Rural plantings: Reforestation, timber plantations, wildlife food source. Grows well with pines, hemlock and other broadleaf trees.
Urban settings: Large, attractive ornamental.
Native to: Southern and eastern Ontario

BUR OAK

Quercus macrocarpa

25 metres (80 feet)
200+ years
Bareroot Seedlings
2 years old
15+ cm tall

Appearance: Shiny, green, round lobed leaves; corky twigs and branches. Rough, furrowed young bark; deeply furrowed mature bark.
Site and soils: Adapted to a range of soils - dry to moist, sand or clay. Tolerates some shade.
Rural plantings: Reforestation, timber plantations, wildlife food source. Grows well with pines, hemlock and other broadleaf trees.
Urban settings: Tolerant of urban conditions. Large, attractive ornamental.
Native to: Southern and eastern Ontario

WHITE ASH

Fraxinus americana

30 metres (100 feet)
100 years
Bareroot Seedlings
2 years old
15+ cm tall

Appearance: Dark green compound leaves with 5-9 leaflets. Light gray young bark; finely furrowed mature bark.
Site and soils: Deep, well-drained upland soils. Avoid dry, infertile sites. Tolerates some shade.
Rural plantings: Reforestation, mixed species timber plantations. Grows well with white pine, balsam fir, yellow birch, sugar maple.
Urban settings: Common urban tree, columnar form, yellow-purple autumn colour.
Native to: Southern and central Ontario

GREEN ASH

Fraxinus pensylvanica

20 metres (65 feet)
60 years
Bareroot Seedlings
1-2 years old
12-20 cm tall

Appearance: Yellow-green compound leaves with 5-9 leaflets. Light gray young bark; finely furrowed mature bark.
Site and soils: Adapted to a wide range of soils. Can tolerate some flooding. Tolerates some shade when young.
Rural plantings: Reforestation. Grows well with silver maple, cottonwood and willow.
Urban settings: Common urban tree, columnar form. Yellow autumn colour.
Native to: Southern and central Ontario

Native Broadleaf Trees *(Continued)*

BLACK ASH — *Fraxinus nigra*

20 metres (65 feet)
100 years
Bareroot Seedlings
2 years old
15+ cm tall

Appearance: Dark green compound leaves with 7-11 leaflets. Light gray, soft, corky young bark; scaly mature bark.
Site and soils: Adapted to imperfectly drained soils. Can tolerate some flooding. Needs full sunlight.
Rural plantings: Reforestation. Grows well with cedar, balsam fir, silver and red maple.
Urban settings: Common urban tree, columnar form.
Native to: Ontario

HACKBERRY — *Celtis occidentalis*

15 metres (50 feet)
100 years
Bareroot Seedlings
2 years old

Appearance: Simple, bluish-green leaves with elongated tip. Gray to light yellow-brown bark with warty, irregular ridges.
Site and soils: Adapted to a range of soils - moist or dry. Tolerates some shade.
Rural plantings: Reforestation, wildlife food source. Grows well with cedar, balsam fir, silver and red maple.
Urban settings: Small, elm-like tree. Tolerant of urban conditions.
Native to: Southern and eastern Ontario

WHITE ELM — *Ulmus americana*

10-30 metres (30-100 feet)
30-100 years
Bareroot Seedlings
1 year old
15+ cm tall

Appearance: Simple toothed, dark green leaves; arching umbrella crown. Gray-brown furrowed bark; ash-gray with age.
Site and soils: Adapted to a range of sites. Tolerates most sites. Moderately shade-tolerant.
Rural plantings: Windbreaks, restoration. Can be short-lived due to Dutch elm disease.
Urban settings: Tolerant of urban conditions.
Native to: Ontario

BLACK WALNUT — *Juglans nigra*

Edible nuts

30 metres (100 feet)
100+ years
Bareroot Seedlings
1 year old
15+ cm tall

Appearance: Yellow-green compound leaves with 14-22 leaflets. Light brown, scaly young bark; dark, broad ridges on mature bark.
Site and soils: Best on deep, well-drained, fertile sites. Avoid dry sites. Needs full sunlight.
Rural plantings: Reforestation, timber plantations, wildlife food source. Grows fast on good sites. Grows well with other broadleaf trees. Produces juglone, which can be toxic to some tree species (pines).
Urban settings: Large, attractive ornamental; for larger green spaces.
Native to: Southwestern Ontario; becoming naturalized in eastern Ontario

BUTTERNUT — *Juglans cinerea*

Edible nuts; susceptible to butternut canker

25 metres (80 feet)
80 years
Bareroot Seedlings
1 year old
15+ cm tall

Appearance: Yellow-green compound leaves with 11-17 leaflets. Pale gray, smooth young bark; pale gray, widely ridged mature bark.
Site and soils: Best on well-drained fertile loams. Avoid drier and poorly-drained conditions. Needs full sunlight.
Rural plantings: Reforestation, timber plantations, wildlife food source. Grows well with other broadleaf trees.
Urban settings: Large, attractive ornamental.
Native to: Southern and eastern Ontario

BLACK CHERRY — *Prunus serotina*

20+ metres (65 feet)
80 years
Bareroot Seedlings
2 years old
15+ cm tall

Appearance: Simple, bright, shiny green leaves. Smooth, dark young bark with dash-like marks; dark, rough, scaly mature bark.
Site and soils: Adapted to a wide range of soils. Needs full sunlight.
Rural plantings: Reforestation, timber plantations, wildlife food source. Grows well with other broadleaf trees.
Urban settings: Attractive; white spring flowers and dark, scaly bark.
Native to; Southern and eastern Ontario

Native Broadleaf Trees *(Continued)*

WHITE BIRCH

Betula papyrifera

25 metres (80 feet)
80 years

Bareroot Seedlings
2 years old
15* cm tall

Appearance: Simple, dull green, toothed leaves. Thin, smooth, dark red young bark; white, papery mature bark.
Site and soils: Adapted to a wide range of sites. Needs full sunlight.
Rural plantings: Reforestation. Grows well with pines, spruce, poplar, balsam fir, yellow birch and sugar maple.
Urban settings: Common urban tree.
Native to: Ontario

OHIO BUCKEYE

Aesculus glabra

15 metres (50 feet)
80 years

Bareroot Seedlings
1 year old
12-20 cm tall

Appearance: Yellow-green, palmately compound leaves with 5-7 leaflets. Light gray young bark; Rough, dark brown, furrowed and scaly mature bark.
Site and soils: Adapted to a wide range of sites. Can tolerate some flooding.
Rural plantings: Not recommended outside its native range.
Urban settings: Showy, late spring flowers.
Native to: Southwestern Ontario. Has demonstrated some cold hardiness for areas beyond its natural range, such as eastern Ontario.

HONEY LOCUST

Gleditsia triacanthos

20 metres (65 feet)
90 years

Bareroot Seedlings
1 year old
15* cm tall

Appearance: Bright green compound leaves with 14-30 leaflets; spiny twigs. Smooth, brown, spiny young bark; Scaly-ridged mature bark.
Site and soils: Adapted to moist, rich, bottomland soils. Needs full sunlight.
Rural plantings: Not recommended.
Urban settings: Common ornamental. Casts a light shade. Tolerant of urban conditions.
Native to: Extreme southwestern end of Ontario

Exotic Broadleaf Trees

BLACK LOCUST

Robinia pseudoacacia

Spreads readily by seed and root sprouts; invasive in open sites

25 metres (80 feet)
90 years

Bareroot Seedlings
1 year old

Appearance: Dull green compound leaves with 7-19 leaflets; spiny twigs. Smooth, brown, spiny young bark; thick, brown, furrowed mature bark.
Site and soils: Adapted to a wide range of soils. Best in moist soils. Needs full sunlight.
Rural plantings: Site restoration (mine spoils, gravel pits). Good species for honey production.
Urban settings: Showy, late spring flowers.
Native to: Eastern USA, naturalized in southern and eastern Ontario

HORSE CHESTNUT

Aesculus hippocastanum

25 metres (80 feet)
100 years

Bareroot Seedlings
1 year old
12-20 cm tall

Appearance: Yellow-green, palmately compound leaves with 5-9 leaflets; green, spiked husk on nuts. Smooth, dark gray young bark; Fissured, scaly mature bark.
Site and soils: Best on well-drained deep soils.
Rural plantings: Not recommended. Can be invasive in forest conditions
Urban settings: Showy, white flowers. Tolerates urban conditions.
Native to: Southeastern Europe

HYBRID POPLAR

Populus hybrids

25 metres (80 feet)
40 years

Bareroot Seedlings
1 year old
100 cm tall

Appearance: Simple, dark green leaves. Smooth, green young bark; light yellow-gray, rough, mature bark.
Site and soils: Best on moist to well-drained loams.
Rural plantings: Plantations for pulp. Grows very fast, but is short-lived.
Urban settings: Windbreaks, screens.
Native to: Ontario and Europe (hybrids of poplars from both areas)

Native Small Trees and Shrubs

JUNEBERRY *Amelanchier species*

Edible fruit

5-10 metres (15-30 feet)

Bareroot Seedlings 2 years old 15* cm tall

Appearance: Small tree: simple green leaves. Smooth, gray young bark marked by vertical lines; rough, scaly mature bark.
Site and soils: Adapted to a wide variety of sites. Best in moist to dry sites. Tolerates some shade. Best in full sunlight.
Rural plantings: Reforestation, wildlife food source.
Urban settings: Showy, white flowers; small, shrubby or tree form.
Native to: Ontario

RED ELDERBERRY *Sambucus pubens*

4 metres (15 feet)

Bareroot Seedlings 2 years old 15* cm tall

Appearance: Large shrub or shrubby tree: compound leaves with 5-7 leaflets; plump, red buds. Warty, gray-brown mature bark.
Site and soils: Adapted to a wide range of soils. Best in moist soils. Best in full sunlight.
Rural plantings: Reforestation, wildlife food source.
Urban settings: White late spring flowers. Tolerant of air pollution.
Native to: Ontario

BLACK ELDERBERRY *Sambucus canadensis*

Edible autumn fruit

3 metres (10 feet)

Bareroot Seedlings 2 years old 15* cm tall

Appearance: Large shrub or shrubby tree: compound leaves with 5-11 leaflets. Warty, gray-brown mature bark.
Site and soils: Adapted to low ground sites. Tolerates some shade. Best in full sunlight.
Rural plantings: Reforestation, wildlife food source.
Urban settings: Fragrant: white early summer flowers; small shrubby tree form.
Native to: Ontario

PIN CHERRY *Prunus pensylvanica*

10 metres (30 feet) 40 years

Bareroot Seedlings 2 years old 15* cm tall

Appearance: Small tree: simple leaf with a tapered tip. Smooth, dark, reddish young bark; mature bark has horizontal papery strips.
Site and soils: Adapted to many sites. Needs full sunlight.
Rural plantings: Reforestation, wildlife food source.
Urban settings: White spring flowers; small tree form.
Native to: Ontario

WILD PLUM *Prunus nigra*

Edible late summer fruit

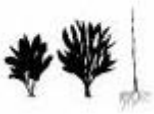
9 metres (30 feet)

Bareroot Seedlings 1 year old 15* cm tall

Appearance: Small tree: simple leaf with a tapered tip; thorny twigs. Smooth, dark brown young bark with thorns; scaly mature bark.
Site and soils: Best on moist loam soils. Needs full sunlight.
Rural plantings: Reforestation, wildlife food source.
Urban settings: White, then pink spring flowers; small tree form.
Native to: Southern and eastern Ontario

WILLOW *Salix species*

Ask for native species (many exotics are grown)



Shrub and tree forms

Bareroot Seedlings 1 year old 30* cm tall

Appearance: Large shrub to large tree forms; simple green leaves. Smooth, gray young bark; rough, furrowed mature bark.
Site and soils: Adapted to many sites. Tolerates flooded conditions. Needs full sunlight.
Rural plantings: Site restoration, wildlife cover.
Urban settings: Small shrubby or small tree form.
Native to: Ontario

NANNYBERRY *Viburnum lentago*

5 metres (15 feet)

Bareroot Seedlings 3 years old 30* cm tall

Appearance: Large shrub or small tree; simple yellow-green leaves; blue-black autumn berries. Gray-brown, fine, scaly mature bark.
Site and soils: Adapted to a wide range of soils. Best in moist soils. Best in full sunlight. Tolerates some shade.
Rural plantings: Restoration, wildlife food source.
Urban settings: White late spring flowers; shrub or small tree form.
Native to: Ontario

Native Small Trees and Shrubs *(Continued)*

HIGHBUSH CRANBERRY *Viburnum trilobum*

3 metres (10 feet)
Bareroot Seedlings
3 years old
30 cm tall

Can be confused with European species

Appearance: Large shrub; lobed maple-like leaves. Smooth, wiry branches; rougher mature bark.
Site and soils: Adapted to moist sites. Best in full sunlight.
Rural plantings: Restoration, wildlife food source.
Urban settings: White spring flowers; red berries; shrub form.
Native to: Ontario

RED OSIER DOGWOOD *Cornus stolonifera*

2-3 metres (6-10 feet)
Bareroot Seedlings
2 years old
15* cm tall

Appearance: Low shrub; simple leaf; bluish-white autumn berries. Smooth, red bark.
Site and soils: Damp lowland sites. Needs full sunlight.
Rural plantings: Restoration, wildlife food source.
Urban settings: White spring flowers; small shrub; bright red winter stems.
Native to: Ontario

ALTERNATE LEAF DOGWOOD *Cornus alternifolia*

10 metres (30 feet)
40 years
Bareroot Seedlings
2 years old
15* cm tall

Appearance: Simple, smooth, margined leaf. Thin, reddish-brown young bark; shallow-ridged mature bark.
Site and soils: Best on moist loam soits. Tolerates shading.
Rural plantings: Site restoration (roots readily to stabilize soits), wildlife food source.
Urban settings: White spring flowers; small tree form with flat layered branching.
Native to: Southern and eastern Ontario

GRAY DOGWOOD *Cornus racemosa*

2-3 metres (6-10 feet)
Bareroot Seedlings
2 years old
15* cm tall

Appearance: Large shrub; simple, smooth, margined leaf; white August berries. Thin, reddish-brown young bark; shallow-ridged mature bark.
Site and soils: Best on moist loam soits. Tolerates shading. Best in full sunlight.
Rural plantings: Reforestation, wildlife food source.
Urban settings: White spring flowers; small tree form with flat layered branching.
Native to: Southern and eastern Ontario

8 Directory of Contacts

Eastern Ontario Stewardship Councils

Ontario Stewardship Councils link landowners to information, expertise and funding to ensure that good forest management practices flourish.

Ottawa Stewardship Council
Box 599, 5524 Dickinson Street,
Manotick, ON K4M 1A5
(613) 692-0014
joff.cote@mnr.gov.on.ca

Prescott-Russell Stewardship Council
Box 430, 31 St Paul Street,
Alfred, ON K0B 1A0
(613) 679-0936
suzanne.lafrance@mnr.gov.on.ca

Resource Stewardship S. D. & G.
Box 429, 18045 County Road #2,
Cornwall, ON K6H 5T2
(613) 933-7671
jim.hendry@mnr.gov.on.ca

Grenville Land Stewardship Council
Box 605, Oxford Avenue
Brockville, ON K6V 5Y8
(613) 342-8528
jack.henry@mnr.gov.on.ca

Leeds County Stewardship Council
Box 605, Oxford Avenue
Brockville, ON K6V 5Y8
(613) 342-8526
gary.nielsen@mnr.gov.on.ca

Community Stewardship Council of Lanark County
Box 37, Sunset Boulevard
Perth, ON K7H 3E2
(613) 267-4200 ext.153
jeff.ward@mnr.gov.on.ca

Ontario Ministry of Natural Resources
P.O. Bag 2002
Kemptville, ON K0G 1J0
(613) 258-8204
www.mnr.gov.on.ca

For other councils see
www.ontariostewardship.org

Eastern Ontario Conservation Authorities

A network of organizations dedicated to conserving and managing natural resources on a watershed basis.

Cataraqui Region
Box 160, 1641 Perth Road
Glenburnie, ON K0H 1S0
(613) 546-4228
crca@cataraquiregion.on.ca

Mississippi Valley
(Ottawa west, Lanark)
Box 268
Lanark, ON K0G 1K0
(613) 259-2421
info@mvc.on.ca

Raisin Region (Cornwall area)
Box 429, 18045 County Road 2
Cornwall, ON K6H 5T2
(613) 938-3611
info@rrca.on.ca

Rideau Valley
(Ottawa, Leeds & Grenville)
Box 599, 1128 Mill Street,
Manotick, ON K4M 1A5
(613) 692-3571
postmaster@rideauvalley.on.ca

South Nation Conservation
(Ottawa east, Stormont, Leeds and Grenville, Dundas and Glengarry)
Box 69, 15 Union Street
Berwick, ON K0C 1G0
(613) 984-2948
ppiitz@nation.on.ca

For other Conservation Authorities see
www.conservation-ontario.on.ca

Other Contacts

Ferguson Forest Centre
Growing primarily native species of trees and shrubs hardy to the south central Ontario climate.
275 County Road 44
Kemptville, ON K0G 1J0
(613) 258-0110
info@seedlingnursery.com

Landowner Resource Centre
A one-window information shop for landowners.
Box 599, 5524 Dickinson Street,
Manotick, ON K4M 1A5
(613) 692-2390
info@lrconline.com

Ontario Woodlot Association
A network of regional chapters offering a greater voice to the woodlot owner.
275 County Road 44
Kemptville, ON K0G 1J0
(613) 258-0110
info@ont-woodlot-assoc.org

Domtar Inc.
Box 40, 810 Second Street West
Cornwall, ON K6H 5S3
(613) 932-6620
www.domtar.com

Boisés Est
A Francophone organization promoting sound management of private woodlots.
770, 3e Concession
Plantaganet, ON
K0B 1L0
japsoucy@alumni.uottawa.ca

Bog to Bog
An opportunity for landowners to help create an ecological connective corridor between Mer Bleue and Alfred Bog.
Box 633, 4858 Champlain Street,
Bourget, ON K0A 1E0
(613) 487-3183
b2b@eisa.com

Eastern Ontario Certified Forest Owners
A group of landowners who have or are seeking group forest certification for their woodlots.
P.O. Box 2111
Kemptville, ON K0G 1J0
(613) 258-8422
sdavis@eomf.on.ca

Mohawk Council of Akwesasne
Department of the Environment
CIA #3, 101 Tewasateni Road
Cornwall Island, ON K6H 5R7
(613) 936-1548
hlickers@akwesasne.ca

Forest Gene Conservation Association
Suite 233, 266 Charlotte Street
Peterborough, ON K9J 2V4
(705) 755-3284
barb.boysen@mnr.gov.on.ca
www.fgca.net