Site Plan Control Guidelines

City of Kingston
Planning Services
February 20, 2025

The Site Plan Control Guidelines were endorsed by City Council on XX 2025 and may be updated by staff from time to time.

This document is intended to provide general information only. For detailed reference, please refer to the *Planning Act* and the City of Kingston Site Plan Control By-Law Number 2025-XX.

For additional information, contact Planning Services at 613-546-4291 extension 3180.

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1. Purpose

The purpose of the Site Plan Control Guidelines is to outline the submission requirements and review process through which site plan control applications are evaluated within the City of Kingston. The guidelines convey the City's expectations and preferences for development subject to site plan control.

Site plan control is a planning tool authorized under Section 41 of the *Planning Act* that allows municipalities to review development matters such as the massing and location of buildings, pedestrian and vehicular access, drainage and lighting. The site plan control process examines the design and technical aspects of a proposed development to ensure it is safe, functional, and compatible with the surrounding area.

On XX, City Council passed By-Law Number 2025-XX, titled the Site Plan Control By-Law, which designates the whole of the City of Kingston as a "Site Plan Control Area" and establishes classes of development exempt from site plan control.

Please note that site plan control is a separate process from other applicable approvals under the *Building Code Act*, *Ontario Heritage Act*, *Planning Act*, etc. Owners are responsible for obtaining all applicable approvals from the City of Kingston and external agencies, including those listed in Section 4.4.1. of this document, prior to construction.

2. Electronic Submission

All applications for site plan control are to be submitted electronically using the Development and Services Hub (DASH), the City's online development review portal at https://www.cityofkingston.ca/planning-and-development/how-to-use-dash/.

Assistance with DASH applications is available by contacting Planning Services at 613-546-4291, ext. 3180, planning@cityofkingston.ca or by visiting the Planning Services offices at 1211 John Counter Boulevard during regular office hours.

3. Pre-Application

Pre-application is optional but recommended prior to formal submission of a site plan control application. During the pre-application process, the applicant will meet with City staff to discuss any potential technical issues and required approvals and submission materials, including but not limited to, supporting studies, plans and drawings.

Pre-application does not imply or suggest any future recommendations or approvals on behalf of the Corporation of the City of Kingston, staff or agencies.

Pre-applications are to be submitted through DASH. Submission deadlines can be found at https://www.cityofkingston.ca/planning-and-development/development-applications/pre-application/.

For the purpose of pre-application, the applicant will generally provide the following information at a minimum:

a) The location(s) of the proposed development;

b) The proposed use(s); and

c) Preliminary scaled drawings and/or visual renderings of the proposed development.

4. Review Process

Review of a site plan control application is undertaken by various City departments and external agencies, such as Utilities Kingston, Cataraqui Conservation, and provincial ministries, as applicable.

Applications which contravene City policies, regulations, and the zoning by-law(s), or do not contain the required information will not be considered. Any proposals requiring a zoning by-law amendment or a minor variance must receive final approval (including no appeals during the appeal period) prior to the submission of the site plan control application.

The site plan control process flow chart is provided in Appendix A.

4.1 Complete Application Requirements

The following are minimum application requirements to be submitted prior to staff review or circulation of the site plan control application:

a) Complete application details in DASH;

b) Full application fees as per City of Kingston By-Law Number 2005-10, Fees and Charges By-Law, as amended;

c) Architectural elevations;

d) Floor Plans;

e) Grading Plan, as applicable;

f) Landscaping Plan (may be combined with Site Plan or Grading Plan);

g) Lighting Plan, as applicable;

h) Noise report, as applicable;

i) Owner authorization form (if applicant is not the property owner);

j) Servicing Plan, as applicable;

k) Servicing report;

l) Site Plan;

m) Site Plan Accessibility Checklist;

n) Stormwater Management Report/Brief, as applicable; and

o) Zoning Compliance Table.

The need for additional reports may also be identified once various City departments and external agencies have commenced their review of the application. Applicants are encouraged to undertake pre-application to help identify any additional requirements prior to formal submission.

To ensure the timely and coordinated processing of the site plan control application, all submission materials, including any required revisions, are to be uploaded to DASH and coordinated through Planning Services. Reports or drawings are not to be submitted directly to any individual department/commenting agency.

4.2 Required Fees

The applicant will be required to pay the appropriate fee for the submission of a site plan control application, as set out in By-Law Number 2005-10, the Fees and Charges By-Law, as amended. The full application fee is payable with the application submission. The application fees are updated from time to time. Fees are payable based on the fee schedule in effect on the date the complete application is made. For the current application fees, please consult Planning Services or refer to the Fees and Charges By-Law on the City's website.

The applicant will also be required to pay fees associated with the preparation and registration of the site plan control agreement and will be advised by the Legal Services Department of the required fee prior to the registration of the site plan control agreement. There may also be other financial requirements arising from the application, including, but not limited to, parkland dedication, development charges, community benefits charges, payment of outstanding property taxes, deferred local improvement charges and road widening conveyance. If there is a need for a peer review of any of the required supporting studies, the peer review will be at the applicant's cost.

Information regarding financial securities is provided in Section 5 of this document.

4.3 Public Notification and On-Site Signage

Once a complete application has been submitted, including the payment of the required application fees, the file is assigned to a Planner. The Planner will provide instructions for signage requirements to the applicant. The sign will include a brief description of the proposal and provide City contact information for the public to obtain more details. The applicant is responsible for the proper installation and removal of the sign(s).

If the site plan control application has been "bumped-up" to the Planning Committee, as described in Section 4.5 below, a notice of the meeting is provided by the City to all property owners within 120 metres of the subject site and to any individuals who have requested to be notified. A courtesy advertisement is also placed in the local newspaper outlining the items on the Planning Committee agenda.

4.4 Technical Circulation

The Planner assigned to the file will prepare the technical circulation for distribution to commenting internal departments and external agencies, as appropriate.

Once all comments have been received by Planning Services, they will be forwarded to the applicant who is responsible for addressing comments and submitting revisions, as required. In order to keep the application active and obtain timely approval, the applicant must address the comments and concerns as requested and provide the revised plans and any required additional information promptly. A letter outlining how each specific comment has been addressed must be included in all subsequent submissions.

When all comments have been satisfied, the site plan control agreement is finalized for execution by the owner and/or those who have legal signing authority.

4.4.1 Other Agencies

Agencies outside of the jurisdiction of the City of Kingston and Utilities Kingston may need to be contacted and their approval gained prior to issuance of site plan control approval or development of the site. Agencies such as, but not limited to, federal authorities (for example Parks Canada, Transport Canada, Fisheries and Oceans Canada), provincial ministries (for example Ministry of the Environment, Conservation and Parks, Ministry of Natural Resources and Forestry, Ministry of Transportation), Cataraqui Conservation, CN Rail, Kingston, Frontenac and Lennox & Addington (KFL&A) Public Health, Enbridge Gas, Hydro One, Cogeco and Bell Canada may be required to give their approval prior to development. The applicant is responsible for notifying and obtaining approval from all agencies outside the jurisdiction of the City of Kingston and Utilities Kingston.

Applicants are advised to contact Cataraqui Conservation directly if the proposed development is within 120 metres of any stream, river or other watercourse, water body, lake, wetland, floodplain, or environmentally significant area. A permit may be required under Ontario Regulation 41/24 or for the placement, grading, or removal of fill on a property, or for the alteration of a watercourse. Applications within Cataraqui Conservation's jurisdiction will need to be reviewed and approved by Cataraqui Conservation prior to issuance of site plan control approval.

Information regarding Cataraqui Conservation's land use planning policies, regulations, and application fees can be found on the Cataraqui Conservation website at https://cataraquiconservation.ca/.

4.5 Site Plan Control Approval – Delegated Authority

The Director of Planning Services has delegated authority to approve site plan control applications. The Mayor and all members of Council are provided notice of all site plan control applications and have the opportunity to request that a site plan control application be referred to or "bumped-up" to the Planning Committee. If a site plan control application has been referred to the Planning Committee (through a motion of Council), an information report to the Planning Committee is prepared by staff following

receipt of all technical review comments and resolution of all major items. A courtesy notice outlining the items on the Planning Committee agenda is placed in the newspaper and/or the City's website.

Site plan control approval by the City is required prior to issuance of a Building Permit. If construction of the proposed development has not commenced within one year of the date of the site plan control agreement, the City may withdraw site plan control approval and terminate the site plan control agreement.

If the City does not approve the site plan control application within the timeline prescribed by the *Planning Act*, or if the owner does not agree with the conditions of the approval, the owner may submit an appeal to the Ontario Land Tribunal.

4.5.1 Following Site Plan Control Approval

Once all technical comments have been resolved, the applicant must fulfill the following requirements to the satisfaction of the City as part of the final site plan control approval step:

a) Submit a cost estimate (as outlined in Section 5 of this document) and submit all required financial securities to the City after the cost estimate is finalized;

b) Submit one final set of drawings with a document listing the name and number of each final drawing, the date created, date of last revision and revision number, and the name of the firm or company that prepared each drawing;

c) Provide the following information:

   - Name of the owner;
   - Mailing address of owner;
   - Name of signing authorities and their titles; and
   - Legal description of the property

d) Provide a signed site plan control agreement.

A signed site plan control agreement, financial securities, fees, and all final documents must be submitted to Planning Services. When the documents are received, the owner will receive the final site plan control approval memo from the City.

4.5.2 Site Plan Control Agreement

The owner is required to enter into an agreement with the City prior to the issuance of site plan control approval. Once executed, the site plan control agreement is registered against the title of the land to which it applies and is binding on current and subsequent owners of the property.

A site plan control agreement contains specific conditions pertaining to the site as identified through the site plan control review process. The applicant is required to

provide a cost estimate for the project which is to be included as a schedule to the site plan control agreement and used to determine the required securities for the development. The site plan control agreement contains schedules regarding the required financial securities, any cash surcharges, easements, and the list of approved drawings.

If there is a significant amount of off-site work required, a separate Construction Agreement may be required by Development Engineering or Utilities Kingston.

4.5.3 Modifications Following Site Plan Control Approval

Any proposed changes to the approved plans may require further approval through a Site Plan Modification application. A modification to the site plan agreement may be required depending on the nature of the proposed changes.

5. Securities

Financial securities are required as part of the site plan control process to ensure the satisfactory completion and maintenance of the required works. The cost estimate approved by the City is appended to the site plan control agreement.

The amount of security required is calculated as follows:

a) the amount of security equals 50% of the estimated cost of the on-site improvements to a maximum amount of $250,000; and

b) for all facilities and works on City-owned property, the amount of security equals 100% of the cost of the approved facilities and works.

Securities may be provided in the form of cash, certified cheque, surety bond, or irrevocable letter of credit, satisfactory to the City.

5.1 Draws on Financial Security

In accordance with Site Plan Control By-Law Number 2025-XX, where an owner has entered into a site plan control agreement and has received notice from the City of a default with respect to any of the obligations, terms, covenants or provisions of the site plan control agreement or approved plans and drawings therein, the City may enter upon the owner's lands to remedy the default at the owner's sole expense.

5.2 Reduction/Release of Financial Security

Requests for reduction or release of financial securities are filed through DASH and must be accompanied by a certificate from a Qualified Person confirming that all required facilities and works have been completed in accordance with the approved site plan drawings, along with the applicable application fee.

Where all facilities and works have been completed, up to a maximum of 90% of the initial amount of the financial security may be released. The remaining 10% of the initial security amount will be held by the City for a minimum of one year as a maintenance security to ensure all facilities and works, including landscaping, are maintained and

that any necessary repairs or replacements are completed. After the one-year maintenance period, the owner may apply for final release of securities through DASH, including a certificate from a Qualified Person confirming that all required facilities and works have been completed, along with the applicable application fee.

Where a portion of the facilities and works have been completed, a partial release of securities may be requested, accompanied by a certificate from a Qualified Person confirming the cost and percentage of completed facilities and works, along with the applicable application fee.

The City may conduct a site inspection to confirm the satisfactory completion of facilities and works. Where deficiencies are identified, the security release may be delayed or reduced until the deficiencies have been remedied.

6. Required Reports, Studies, Plans and Drawings

Through the pre-application process, staff will identify the reports, studies, plans and drawings that are required with the submission of the site plan control application. The need for additional reports, studies and plans may also be identified once various City departments and external agencies have commenced their review of the application.

6.1 Required Reports and Studies

Required reports and studies must be current and completed by an appropriately qualified professional. Common reports and studies that may be required include, but are not limited to, Archaeological Impact Assessment, Environmental Impact Assessment, Environmental Site Assessment, Geotechnical Study, Heritage Impact Assessment/Statement or Conservation Report, Hydrogeology Study, Noise and/or Vibration Report, Servicing Report, Stormwater Management Report, Traffic Impact Study, and Urban Design Study.

Other studies that may be required in order to facilitate proper consideration of the site plan control application could include, but are not limited to, a Shadow Analysis, Height Survey of Adjacent Buildings, Air Quality Study, Slope Stability Study, Wave Uprush Study, Wind Study, and Snow Load Calculations.

Terms of Reference for the following commonly required reports and studies are available by contacting Planning Services:

a) Heritage Impact Statement;

b) 3D Building Mass Model;

c) Environmental Impact Assessment;

d) Erosion and Sediment Control Plan;

e) Floodplain Analysis;

f) Geotechnical Study;

g) Landscaping Plan;

h) Lighting Study;

i) Noise Impact Study;

j) Parking Study;

k) Phase 1 & 2 Environmental Site Assessment;

l) Planning Justification;

m) Record of Site Condition;

n) Servicing Report;

o) Stormwater Management Report;

p) Traffic Impact Study;

q) Tree Preservation and Protection Plan; and

r) Urban Design Study.

6.2 Required Plans and Drawings

Required plans and drawings must be current and completed by an appropriately qualified professional. Common plans and drawings that are required include, but are not limited to, Site Plan, Architectural Drawings, Elevation Drawings, Engineering and Utilities Drawings, Servicing Plan, Grading Plan, Construction Details, Landscape Plan, Tree Preservation Plan and Survey.

6.2.1 General Requirements for Plans and Drawings

All plans and drawings must be legible and submitted with metric dimensions. The following information must be included on all submitted plans:

a) Identification of the proposed use of the site;

b) Name and address of the firm preparing the plan;

c) Name of applicant and owner;

d) Municipal address and/or legal description (Reference Plan, Lot, Concession and Registered Plan Lot Number);

e) Metric scale;

f) North arrow;

g) Legend;

h) Title block and revision block;

i) The main features of the site (all buildings, parking areas, driveways, above ground utilities, landscape areas, fencing, ditches, etc.);

j) Location of all building entrances;

k) Overall dimensions of all property boundaries and all buildings and structures existing or proposed on the site and abutting properties, including dimensions which are sufficient to show the position of buildings in relation to site boundaries;

l) All existing and proposed easements, rights-of-way and reserves within or adjacent to the subject lands;

m) Sight triangles; and

n) Required professional stamp.

All revisions to plans and drawings must be dated, noted and described in the revision block on each drawing and must have the area(s) of revision highlighted (in a cloud format).

6.2.2 Site Plan Drawing

In addition to the requirements of Section 6.2.1, the site plan drawing must include the following information at a minimum:

a) Key plan, indicating location of the site in respect to the City street network;

b) Use of existing and proposed buildings and number of storeys;

c) Layout of the parking area and minimum dimensions of parking spaces, accessible parking spaces, loading spaces, bike spaces, aisles, driveways, ramps, fire routes;

d) The type of parking area (i.e. open, underground, garage);

e) Location of vehicular entrance(s);

f) Dimensions of vehicular entrance width, turning radii and sight triangles;

g) Truck routes, turning radii and required fire lanes;

h) Curb cuts, curb depressions, depressed walks on each side of all streets that border the property;

i) Layout of pedestrian access and walkways;

j) Height and design of all existing and proposed fences and privacy screens;

k) Labelled existing and proposed surface treatment (for example, grass, paved, gravel);

l) Location, design and construction details of waste and recycling collection area(s);

m) Location of all outdoor storage areas and detailing of enclosure;

n) Any existing or proposed street widening and 0.3 metre reserves;

o) Abutting road right-of-way width including the location and width of traffic islands, hydro poles, fire hydrants, sidewalks, etc.;

p) All existing and proposed driveways on the subject site and adjacent properties;

q) Man-made or natural features (such as a watercourse, swale, culvert, retaining wall, embankment, catch basin) on or adjacent to the site;

r) A site statistic table indicating the following for each use, as applicable: lot area; landscaped open space area; ground floor area; gross building floor area; number of units; height of building; number of storeys; number of required and provided parking spaces; number of required and provided accessible parking spaces; number of required and provided loading spaces; number of required and provided bike parking spaces, lot coverage of principal building(s); lot coverage of accessory building(s); and percentage of paved and/or graveled area;

s) For residential development, the site statistic table must also indicate the following: density, number of bedrooms per unit, and total amenity area;

t) Location of snow storage area(s);

u) Location and dimensions of amenity areas; and

v) Location of existing buildings with an indication whether the buildings are to be demolished or to remain.

6.2.3 Architectural Drawings

Architectural drawings include elevations and floor plans. Where required under the Ontario Building Code, architectural plans must be prepared and stamped by an Architect or a Professional Engineer. Floor plans must be submitted for all buildings. The plans should show all floors except where the layout of a floor is repetitive. During the site plan control review process, interior layouts are used for information purposes only. Floor plans form part of the approved site plan control plans for the site plan control agreement where they include interior walkways, stairs, elevators and escalators to which members of the public have access from streets, open spaces and interior walkways in adjacent buildings.

Architectural Design Considerations

From a planning and design perspective, the City will be looking for proposals that promote:

a) a visually attractive built environment;

b) an environmentally friendly and sustainable development;

c) pedestrian orientation;

d) opportunities for active transportation;

e) compatibility with adjacent buildings and land uses; and

f) the conservation and enhancement of cultural heritage resources and natural heritage features.

The design of a site should be appropriate in massing and location and in general conformity with surrounding buildings. When adjacent to a protected heritage property, site design should strive to avoid negative impacts to the heritage value of the adjacent property, such as visual obstruction, overshadowing or isolation.

Mechanical equipment should be integrated into the design of the building or located in areas of the building that are not visually prominent. All rooftop mechanical equipment or elevator shafts should be screened such that they are not visible from ground level. Materials used to screen the rooftop mechanics should be sensitive to the materials used in building construction.

6.2.4 Elevation Drawings

In addition to the requirements of Section 6.2.1, the elevation drawings for all sides of all existing or proposed buildings must include the following information:

a) Floor and overall building height dimensions;

b) All roof structures, screening and mechanical equipment (penthouses, chimneys, rooftop units, vents, air conditioning, etc.);

c) Location and dimensions of any existing or proposed roof or fascia signs; and

d) Location and design of all exterior lighting including lighting specifications if separate lighting plan is not provided.

In addition to the above, inclusion of exterior material type and colour is requested.

Where the proposed development includes a streetscape or group of buildings, a “street elevation”, drawn to scale, showing all elevations from the street side is required.

6.2.5 Engineering and Utilities Drawings

Site grading and servicing must conform with any approved records currently on file with the City. All engineering drawings must be prepared by a Professional Engineer licensed to practice in Ontario. The Professional Engineer’s certification (i.e. P.Eng. stamp, signed and dated) is to be provided on the drawings.

6.2.6 Servicing Plan

In addition to the requirements of Section 6.2.1, the servicing plan must include the following information at a minimum:

a) Existing and proposed above ground services:

- All existing and proposed above ground utility services within the site, adjacent street, road allowance, boulevards and within 6 metres of the site;
- Light standards and fixture location, utility structures, hydro transformer boxes, vaults and Bell chambers, hydro/telephone/cable poles, guys and pedestals;
- Overhead and underground structures associated with electrical service entrances must be located on the site plan and include the proposed sizing and design connected load;
- Indicate existing street lighting poles as well as new pole locations, as illustrated within the composite utility plan;
- For street lighting, indicate proposed power supplies, circuiting, estimated demand load, conductor and duct sizes, and ground rod locations;
- Proposed location of the gas running line, meter set and regulator;
- Specify minimum grades, sizes, material types, bedding and backfill, cover on sanitary, water and electrical services;
- Details of any service connections to the City infrastructure including methods and materials;
- All existing services or stubs to be abandoned;
- Any future local improvement works agreed to in an existing site plan control agreement;
- Existing and proposed driveways to neighbouring sites on both sides of the street;
- Existing asphalt driveway ramps;
- Existing and proposed driveway depressions;
- Curb cuts at all sidewalks, ramps, etc.;
- Material type and width of City and private sidewalks and walkways;
- Curbs and/or curb and gutters (label with Ontario Provincial Standard Drawings or OPSD reference);
- Road shoulders;

- Driveways, parking areas, retaining walls, berms, fences and handrails, trees, bushes and hedges;
- Drainage swales with a typical swale cross section detail;
- Sanitary sewer and electric servicing manholes;
- Identified and dimensioned catch basins, double catch basins, ditches, culverts, ditch inlets and ditch outlets (label with OPSD reference);
- Manholes, hydrants, valves (boxes and chambers), Siamese connections and service shutoffs (curb stops);
- Hydrant flange elevations and adjacent finished ground elevations must be shown on all hydrants within or immediately adjacent to the site;
- The calculated fire flow available from the nearest hydrant;
- Traffic and pedestrian signals; and
- Signs (street and private) and parking meters.

b) Existing and proposed underground services:

- All existing and proposed underground utility services (water, sewer, gas, electric, fibre) within the site, adjacent street, road allowance, boulevards and within 6 metres of the site;
- Sanitary sewers, storm sewers, and foundation drains labelled with the following: pipe material, diameter, slope, pipe bedding, pipe inverts at the point of connection to main, at the building face and at property line;
- Plan and profile detail for any underground work to be done in the City right-of-way;
- Inlet elevations of all catch basins;
- Septic system location (if required);
- Watermain services (domestic and fire lines) to the building with pipe material, diameters and obvert elevations at critical locations;
- Hydro services and gas services (with pipe material and size for existing gas services); and
- Details of any service connections to the City infrastructure including methods and materials.

The following note is also required on any servicing plan with proposed watermain or large services 100 millimeters and greater:

"Prior to testing and disinfection of the large water services, the Owner shall provide to Utilities Kingston, for its review and written approval, a watermain testing, disinfection and final connection plan that has been prepared approved by a professional engineer. The plan shall include details about where the testing water is fed from and how the Ministry of the Environment, Conservation and Parks' disinfection requirements will be followed, including a consistent feed of chlorine. It shall also include a description about how and when the final tie-in will occur. The water service shall be terminated with a meter and backflow preventer within thirty (30) days of the final connection, or the Owner will be required to repeat the testing."

6.2.7 Grading Plan

In addition to the requirements of Section 6.2.1, the grading plan must include the following information:

a) Existing building structures and site details such as driveways, sidewalks, utilities, etc., within 6 metres of the site;

b) Geodetic grades as well as first floor elevations (in metres) of all buildings, finished floor and basement floor elevations for all buildings requiring servicing;

c) Proposed finished grades sufficient to show surface drainage and the extent of deviation from original grades;

d) Drainage swales;

e) Roof downspout locations and direction of drainage;

f) Arrows indicating the direction of surface drainage on all paved, granular and grassed areas;

g) Sufficient elevations in driveways and parking lots to show the drainage pattern;

h) Spot elevations at all locations where the grade changes on the site including cross sections of any changes of elevation across the site that impacts planting, parking or access;

i) Proposed elevations for all building corners and all building access points, (i.e. ramps, entrances, and loading bays);

j) Elevations at the bottom and the top and any intermediate landings of wheelchair and scooter ramps;

k) Sufficient elevations at property line, back edge of walk, top of curb, and road crown, in all site entrances and along the frontage of the property as required to reflect the existing conditions;

l) Rim elevations on all maintenance hole lids and covers;

m) Wherever possible and with the permission of the adjacent landowners, existing elevations are required to be shown at 3 metres and 6 metres beyond the site limits;

n) All elevations are to be based on City of Kingston Benchmarks;

o) Contour lines and/or spot elevations referenced to the City Benchmark;

p) City Benchmark data used, described and labelled on the drawing (Benchmark information is available from Engineering/GIS Technologist, Engineering Services); and

q) The following note:

"Construction Notes – Environmental

While undertaking clearing, demolition, excavation or construction the Owner and their contractors shall be vigilant for the potential presence of underground fuel tanks, contaminated soil or groundwater, buried wastes, designated substances or abandoned water wells. If any of the above are encountered or suspected, the Owner shall ensure that:

1. The City of Kingston's Environment Division is advised that contaminants or wastes have been discovered or are suspected;

2. Any soil or groundwater contamination encountered is to be managed in accordance with all applicable regulations and standards;

3. Any wastes generated by site clean-ups are managed in accordance with applicable laws and standards;

4. Any abandoned fuel tanks encountered are decommissioned in accordance with applicable laws and standards;

5. Any unused water wells (drilled or dug) are properly abandoned in accordance with Ontario Regulation 903 – Wells or as revised;

6. If it appears likely that contamination, including the presence of designated substances, extends beyond the boundaries of the subject property, the Owner notifies the local office of the Ministry of the Environment and the City of Kingston's Environment Division;

   Construction wastes are not to be buried within the property that is the subject of this Agreement, and

7. That the Owner and their contractors report all spills to the Ministry of the Environment's Spills Action Centre (1-800-268-6060) and to the Municipality (546-4291 ext. 1368) forthwith."

6.2.8 Construction Details

All necessary construction details and general notes are to be provided to accurately convey the design intent of the elements on the plan and to address the proposed built form. Minimum grades, sizes, material types, bedding and backfill, cover on sanitary, water and gas mains and electrical services where appropriate (within the City of Kingston service area) are to be specified on the drawings.

A plan and profile detail is required for any underground work to be done in the City right-of-way. Details also need to be provided for any service connections to the City infrastructure, including methods and materials.

Construction details will include the following at a minimum:

a) Planting details (deciduous and coniferous tree planting details, shrub planting detail and tree to be transplanted detail, planting on slopes, if applicable);

b) Retaining walls, steps, curbing, ramps, stairs or seating walls (if retaining wall is greater than 1.0 metre in height and not connected to the building, the detail must be stamped by a licensed professional Engineer);

c) Paving for walks and pathways (concrete, asphalt, unit paving, etc.);

d) Fencing for screening or privacy (wood, masonry, chain link, stone, etc.) and gates;

e) Tree protection fencing;

f) Garbage enclosures;

g) Pools, ponds, streams, splash pads, etc.;

h) Play areas and equipment;

i) Ground signs (where applicable);

j) On-slab planting and structures;

k) All general and specific notes required to supplement the drawings and details; and

l) Other features requiring clarification.

6.2.9 Landscape Plan

The landscape plans must consist of a layout and grading plan, landscape plan, construction details, and tree preservation plan. Sites without trees or significant vegetation will not require a tree preservation plan to be completed.

The landscape plans must be prepared and stamped by a Landscape Architect or other accredited professional acceptable to the City.

In addition to the requirements of Section 6.2.1, the landscape plans must include the following information at a minimum:

a) Location and identification (in landscape industry standard symbols and notations) of all existing or proposed plant material, planting beds, sodded areas, berms and other soft surfaces;

b) Clearly indicate the location of all vegetation to be retained or removed;

c) All hard surfaces such as parking area, sidewalks, walkways retaining walls, driveways, ramps, patios, etc.;

d) Access into buildings, stairs, ramps;

e) Location, height and type of fencing, pedestrian gates and/or service access;

f) All underground and aboveground utilities including fire hydrants;

g) Location of outdoor lighting;

h) Location and treatment of the garbage collection area;

i) Location and treatment of bike parking;

j) Curbing for asphalt driveways and wheel stops for all granular parking areas;

k) All spot elevations along the property boundary and at the building corners, at top and bottom of steps, etc., as is necessary to convey the intent of the grading plan;

l) Any site furniture such as benches, bollards, tree grates, light standards, picnic tables etc. should be noted on the plan and details provided;

m) Location and description of all recreational and amenity areas;

n) Location and description of play equipment; and

o) Snow storage area(s).

Landscape Plan Considerations

In addition to the requirements noted above, the following are recommended for consideration when preparing landscape plans:

a) Wherever possible, existing vegetation should be incorporated into the new development and shown in conjunction with the proposed building footprint;

b) A mix of deciduous and coniferous plant material throughout the site is encouraged and will ensure that the site has green elements in the winter and can provide some screening or buffering of portions of the property;

c) Any landscaped buffer areas adjacent to residential uses are encouraged to contain one-third coniferous material;

d) Areas subject to erosion such as slopes or swales should be sodded and staked or planted with suitable ground cover;

e) Low landscaping is encouraged around site entrance features and the base of ground signs;

f) All shrubs should be planted in continuous mulched beds;

g) Applicants are encouraged to leave unused portions of the site undisturbed until such time as the development is proposed to include those areas;

h) All site furniture should be chosen to reflect the proposed and surrounding architecture of the buildings, have a high degree of longevity and durability and be designed for the safety of site users;

i) The placement of all off-site furniture proposed on City-owned lands should consider pedestrian movement and required maintenance (including snow removal);

j) Landscaping on each site must not impede the safety of pedestrians or motorists and not create areas that are hidden from public view;

k) Landscaping must be planned so as to not block sightlines, sight triangles or signage;

l) Climbing plants, such as ivy, should be avoided in close proximity to protected heritage buildings;

m) Trees or shrubs that bear fruit or secrete a sticky or slippery sap are discouraged in proximity to pathways; and

n) All planting beds should be setback 0.5 metres from the edge of paving or sidewalks that will be plowed.

Any proposed planting on the municipal right-of-way requires approval from Utilities Kingston, Engineering Services and Public Works – Forestry.

Slope and Berm Considerations

The following consideration must be given to the design of slopes and berms:

a) Areas subject to erosion such as slopes, drainage swales etc. should be sodded or planted with erosion-resistant ground cover;

b) Slopes in landscaped areas and on berms should not exceed 3:1 (3 horizontal to 1 vertical) and optimally should be no greater than 5:1 for ease of maintenance;

c) If sodding is not appropriate due to weather concerns, the use of erosion blankets in swales or on slopes is permissible until such time as sodding can be successfully completed;

d) Other areas of high visibility such as boulevards and recreation areas should be sodded;

e) The maximum allowable height of a berm without a break in grade is 1.2 metres;

f) Landscape berms must not encroach onto City boulevard or adjacent properties unless written authorization from the adjacent landowner(s) is provided; and

g) Any tree on a slope should be staked.

Landscape Design Considerations

Landscaping is a critical component of any development. Generally, the landscape design of any development or redevelopment should:

a) Contribute to the overall City image;

b) Enhance the public perception of the proposed development;

c) Preserve existing trees, where possible;

d) Provide a diversity of plant material and naturalizing, where possible;

e) Be integrated with stormwater management features;

f) Be easy to maintain without catchment areas that attract debris;

g) Preserve and enhance cultural heritage resources and natural heritage features; and

h) Screen less attractive elements of the development such as the parking areas, loading areas, storage areas, garbage enclosures, etc.

Stormwater Management Ponds

Stormwater management ponds must be landscaped and integrated into the site. Native plant material is preferred that will eventually form a natural wetland. Where stormwater ponds are adjacent to natural areas only native material will be accepted as plant stock. In addition, the following must be taken into consideration when designing the landscaping of the stormwater management area:

a) shrub beds and perennials are to be planted in continuous mulched beds. Mulching must be spread to a depth of 75 millimeters; and

b) to preclude access to the water basin, low, dense or compact shrubbery should be used.

6.2.10 Tree Preservation Plan

The tree preservation plan must be prepared by an International Society of Arboriculture (ISA) Certified Arborist, Registered Professional Forester, or Treemarker and must include the following information at a minimum:

a) The exact location of existing trees, significant shrubs or hedgerows, watercourses, rock out-cropping, swales, ponds, natural features, etc.;

b) Vegetation shown at actual size and indicated, graphically, as either preserved, removed or transplanted;

c) Location of tree protection fencing around trees and vegetation to be preserved;

d) A detail of the tree protection fencing type to be used (plywood hoarding a minimum 2 metres in height); and

e) An existing vegetation list on the plan that corresponds to labels on the plan which denote the location of existing vegetation. The list should contain the following:

- Inventory List or key to vegetation found on or just adjacent to the site;
- List of Species of tree, large shrub or hedgerow being inventoried;
- Diameter at Breast Height (DBH) of vegetation in millimeters;
- Caliper size of vegetation in millimeters (measured 1.4 metres above grade) or height of vegetation in metres;
- Trees in large groups, hedgerows or woodlots can be inventoried as a whole, giving average size, species composition and approximate number of trees. However, if a portion of the large tree group is proposed to be removed, each removed tree should be identified;
- Coniferous trees can be inventoried using caliper size for larger trees and using approximate height for smaller trees;
- Condition of the tree, hedgerow, etc., as either “Dead”, “Poor”, “Fair” or “Good”;
- Preservation Direction of the tree, hedgerow, etc., as either “Preserve” or “Remove”;
- Preservation Priority of the tree, hedgerow, etc., as either “Low”, “Medium”, “High” or to be “Transplanted”; and,
- Comment or a brief description on each tree, hedgerow, etc., regarding form, health, growth pattern, etc. and reason for removal, if applicable.

Inventory is necessary only for specimen trees equal to or greater than 100 millimeters or 4 inches in caliper.

The following guidelines should be used when identifying plant material:

a) Typical plan standard symbols must be used, as per the Ontario Association of Landscape Architects;

b) A cluster of similar species can be linked with a species symbol and a total number of plants in the cluster;

c) Tree shapes should be shown by landscape industry standard symbols and notations and must indicate mature spread of species; and,

d) Planting table column headers should include:

- quantity (including the number of trees to be removed and the number of replacement trees);
- species symbol (i.e. Ar);
- botanical name (i.e. Acer Rubrum);
- common name (i.e. Red Maple);
- size of planted material (60 millimetre minimum caliper for deciduous trees/ flowering deciduous trees 50 millimeter caliper/coniferous trees 1.8 metre – height); and
- particulars of plantings (i.e. Bare Root [BR] / Balled and Burlapped [B & B]).

Tree Inventory and Preservation Considerations

The following tree protection and planting standards must be considered when preparing the landscape plans:

a) Tree protection fencing should be erected a minimum of 0.5 metres outside of the drip-line of the vegetation to be preserved;

b) No storage of materials or equipment or excavation within the protection zone is allowed;

c) No equipment or materials are allowed to hit, abrade or damage trees designated to be preserved on site;

d) No contaminants or effluent will be dumped or flushed where feeder roots of trees exist;

e) Trees are to be planted in a hole that is dug to a diameter greater in width and depth than the root ball;

f) Stakes for anchoring tree guy wires must be spruce, 50 millimeters x 750 millimeters, pointed at one end and notched at the other to securely hold the guy wires; and

g) All trees must be staked with 2 steel “T” bars no less than 2 metres long, hammered into ground that is free of disturbed soil.

If during the period of time, up to and including the final site plan control securities release, any plant material indicated to be preserved should happen to be damaged severely, removed or shows signs of severe distress, the owner will be responsible for replacing that plant material with new stock. The caliper size of the existing plant material must be replaced with new stock that is equal in aggregate caliper size. For example, if a 360-millimeter caliper Oak tree indicated to be preserved dies before final site plan securities are returned, then six sapling Oaks of 60-millimeter caliper must be planted on site in its place. If the required replacement trees cannot be accommodated on the site, the owner will be required provide a cash-in-lieu payment or plant trees elsewhere in the City, pursuant to the provisions of the City’s Tree By-Law.

Valleylands, woodlots, ravines and other environmentally sensitive lands must be protected from dumping, encroachment or other abuses during construction of the site. A minimum vegetative buffer of 5 metres horizontal along watercourses and wetlands should be maintained wherever possible. This buffer should contain existing and native vegetation and consist of ground covers, shrubs and trees. When work is required in an ecologically sensitive area, the applicant must provide to the City a copy of the Site Alteration permit or other such permit as obtained from the proper approval body such as Cataraqui Conservation.

All plant material is to conform to the Canadian Nursery Landscape Association specifications and standards. All sod is to conform to the Nursery Sod Growers Association of Ontario specifications. All seeding is to conform to the Canadian Seed Growers’ Association.

The following planting sizes are to be considered minimum acceptable requirements for plant material:

a) Deciduous trees are 60 millimeter caliper;

b) Flowering deciduous trees are 50 millimeter caliper;

c) Coniferous trees are 1.8 metres in height;

d) Deciduous shrubs are 60 centimetres cm in height; and

e) Coniferous shrubs are 50 centimetres in spread.

f) Recognizing that the use of native species is not always appropriate, wherever possible, species native to eastern Ontario should be used. Appendix B provides recommended, restricted and nuisance species to be considered when selecting appropriate site vegetation.

6.2.11 Survey

The survey must be prepared by a licensed Ontario Land Surveyor or other professional acceptable to the Land Registry/Land Titles Office.

7. Site Design Guidelines

The guidelines in this section are intended to set out certain minimum standards for development, however, the City of Kingston encourages proposals to exceed these requirements. Adherence to these guidelines will be reviewed by various City departments and Utilities Kingston through the site plan control review process.

7.1.1 Vehicular Movement and Parking Design

a) Parking areas should be designed to allow safe and efficient vehicle movement;

b) Where parking is provided in front of buildings, attention should be paid to landscaping techniques and parking lot design to soften the visual impact of the parking area from the street;

c) Site entrances must be well-defined;

d) Fire routes must be provided in accordance with the Ontario Building Code;

e) Adequate truck turning radius must be provided;

f) Parking along the access and major on-site aisle(s) is discouraged;

g) Adequate mechanisms should be provided to protect buildings and landscape areas; and

h) Landscaping is encouraged throughout large surface parking areas.

7.1.2 Pedestrian Movement Design

a) A safe and well-defined pedestrian walkway should be provided to all main building entrances with connections to sidewalks and bus stop areas;

b) Pedestrian connections through parking areas should be incorporated in the design;

c) A pedestrian walkway should have a minimum width of 1.5 metres clear from vehicle overhang and should be defined by curbing or be in an area raised above grade, except where it crosses travelling lanes; and

d) A continuous accessible path of travel should provide an uninterrupted route to and within the site and buildings.

7.1.3 Compatibility and Adverse Impact

Site design must take into consideration uses and buildings on adjacent lands. Site design and compatibility can be enhanced through buffering in the form of setbacks, planting strips, fencing, berming, or combinations of any of these items.

In addition to aesthetic qualities that soft landscaping presents, fencing and/or berming may be required to serve as a noise and/or privacy enhancing element. Fencing that is required should not only fulfill its role as an acoustic barrier or buffer but be aesthetically designed.

Lighting must be designed to promote pedestrian and vehicle safety while minimizing ambient light pollution. Any exterior lighting should be adequate for the site and be directed appropriately away from adjacent natural, residential and other sensitive adjacent areas. Reducing light trespass on adjacent properties is best accomplished by the use of full cut-off fixtures, low wattage fixtures and fixtures with optics designed for reduced glare.

Public security should be improved through enhanced lighting, clearly defined building entrances in well-traveled areas, visibility of public areas, and ease of accessibility for emergency personnel or vehicles. The creation of areas hidden from public view should be avoided.

7.1.4 Garbage and Recycling Storage Area

The City of Kingston provides recycling collection for all residential uses and garbage collection for all freehold residential buildings with less than 7 dwelling units. Multi-residential uses with 7 or more residential units and condominium complexes have the option of arranging for private garbage collection service or can pay to have the City collect garbage. All commercial, institutional and industrial uses must arrange for private garbage collection service except businesses in the Downtown Kingston Business Improvement Area (BIA) which can pay to have the City collect garbage.

The City will collect the garbage and recycling at curb side or within the site if a continuous, unobstructed route that does not require trucks to back up, is built and maintained to provide access for municipal trucks in a manner satisfactory to the City. A 15 metre turning radius is required for municipal trucks.

The location and construction of proposed garbage and recycling storage areas must be considerate of adjacent uses and detailed on the submitted plans. Outdoor garbage storage areas should be enclosed on all sides by a solid wall (masonry, wood or other durable material) not less than 1.5 metres in height. Such walls should contain an adequate door or gate which must be unlocked for collection crews. On-site garbage and recycling enclosures must have adequate lighting.

Garbage and recycling storage enclosures intended to contain large metal garbage bins requiring commercial pick-up are recommended to be constructed with doors with the hinge points outside the minimum specified width, posts with latch mechanisms to stop door swinging, and in accordance with the minimum dimensions shown in Table 1.

Table 1: Minimum Garbage Enclosure Dimensions

Bin size (cubic yards)	Width (metres)	Height (metres)	Length (metres)
2	3.05	1.5	1.8
3	3.05	1.5	2.0
4	3.05	1.5	2.3
6	3.05	1.7	2.6
8	3.05	2.1	2.6

7.2 Engineering

7.2.1 Access

Access to the site and vehicular movement within the site must be designed to the City's Transportation & Transit, Building and Fire & Rescue requirements and must comply with applicable zoning regulations.

Heavy Duty Pavement Structure is to be used for all commercial and industrial entrances within the City boulevard. A cross section is to be included on the drawing. Heavy Duty Pavement Structure consists of:

- 50mm HL3 150mm Granular A
- 50mm HL4 300mm Granular B

Suggested pavement structure for internal asphalt surfaces include:

- 35mm HL3 150mm Granular A
- 40mm HL4 200mm Granular B

(where "mm" stands for millimeters and "HL" stands for Hot Load)

The use of paving stones, interlocking stone, bricks or similar materials are discouraged within the City boulevard. These materials are commonly damaged during routine road maintenance (including snow removal) and can be difficult to replace with consistent material following damage. The City's Access Management Guidelines should be consulted for guidance on the location, configuration, and design of accesses to the site. The Access Management Guidelines are available by contacting the Transportation and Transit Department.

7.2.2 Sidewalks

Municipal sidewalks are required as per By-Law Number 2003-31, “A By-Law to Provide for the Provision of Sidewalks in the City of Kingston”. In general, municipal sidewalks are to be located along the frontage of local minor collectors, major collector and arterial roads. The specific location of the sidewalk is to be determined by the City. Municipal sidewalks are required to be designed and constructed by the owner, at the owner’s cost. The requirement for a sidewalk on local roads in industrial parks will be established on a case-by-case basis.

Design Criteria

a) Where private curbing is to be extended to the City sidewalk, a note is to be added to the drawing stating:
"All driveway curbing within 0.6 metres of a City sidewalk is to be depressed to the elevation of the City sidewalk.”

b) A minimum clearance of 0.6 metres is to be provided between all proposed above ground services and the City sidewalk and new/existing entrances.

c) Heavy duty sidewalk is to be continuous through industrial/commercial site entrances using 150 millimeters x 150 millimeters steel mesh reinforcement.

d) Sidewalk design and construction must conform with the City of Kingston standard, including accessibility standards for width, texture, curb cuts and warning markings.

e) Once constructed, an inspection of the sidewalk will be done by City staff, at the expense of the owner.

7.2.3 Grading

Lot grading is to be in accordance with the overall approved subdivision lot grading plan, where applicable. Grades are to match the adjacent properties and approved subdivision lot grading plan unless otherwise noted. A note to this effect is requested on the drawings.

Grading of grassed areas must be a minimum of 2% and a maximum of 8%. On sites with steep slopes or extensive existing or proposed fill, there may be a need for the owner to submit a Geotechnical Report, prepared by a Professional Engineer, in support of the site plan control application.

Drainage Swales

The minimum depth of a drainage swale must be 0.15 metres to a maximum depth of 0.60 metres (0.3 metre maximum water depth). Drainage swales must have a minimum grade of 2% to a maximum grade of 8%. The minimum grade may be reduced for the purpose of providing an enhanced swale for quality control, subject to the review and approval of a Stormwater Management Plan. The maximum side slopes of a drainage swale must be 3:1. Swale inverts are required at all changes in grade.

A typical swale cross section detail is required with the engineering drawings.

Driveway and Parking Lot Grades

The minimum grade of a driveway and/or parking lot is 1% to a maximum grade of 5%. An absolute maximum of 10% grade may be considered in certain circumstances, however, not without de-icing elements. Parking lot ramps may be considered up to a maximum grade of 15% when indoor or heated, and up to a maximum of 10% when outdoor or unheated.

7.2.4 Stormwater Management Design and Criteria

All stormwater runoff is to be controlled to the specified run-off rate adopted for the original subdivision, or to the City's current Design Criteria.

If the City determines that a Stormwater Management Report is not required, then a Stormwater Brief is to be submitted. The Stormwater Brief is to justify that the post-development peak release rates (for all storm events up to and including the 1:100-year design storm) have been analyzed and the results indicate:

a) that post development peak flow rates do not exceed pre-development peak flow rates, or other allowable rates as approved by the City, to each outlet location for all storm events;

b) that there will not be an increase in flow to neighbouring properties;

c) that the flow will not negatively impact neighbouring properties;

d) discharge outlet location(s); and

e) proposed quality control measures.

The proper use of erosion and sediment control measures during construction are to be discussed in the report or brief and illustrated on the grading plan, along with notes regarding the use of the measures. Appropriate measures are to be applied around all disturbed areas, such as:

a) Silt fence barriers installed prior to commencement of any work must remain in place until the site has stabilized (i.e. vegetation or other cover), at which time they may be removed, along with any accumulated sediment;

b) Straw bale or rock flow check dams in ditches and swales; and

c) Double layer of geotextile material should be installed under catch basin lids during construction to help prevent the entry of sediment into storm sewers, structures and receiving water bodies.

The following OPSD illustrations may assist in the erosion and sediment control specifications:

- 219.100 light-duty straw bale barrier
- 219.110 light duty silt fence barrier
- 219.130 heavy duty silt fence barrier
- 219.210 rock flow check dam, v-ditch
- 219.211 rock flow check dam, flat bottom ditch
- 810.010 Type 'B' rip-rap treatment for outlets, with geotextiles materials

Design Criteria

- The stormwater collection system is to be designed to accommodate rainfall intensity as set out in the following formulae:

  Q = 2.78 AIR

  Where: Q = Design flow in litres per second (L/s)

  A = area in hectares

  I = intensity in millimeters per hour (mm/h)

  R = runoff coefficient

- For major events, the more conservative of the following IDF curves should be used:

  - MTO Intensity-Duration-Frequency (IDF) Curve Online Lookup Tool, by placing a coordinate marker on the property location; or
  - Environment Canada IDF Curves, by selecting the IDF curve for Kingston, Ontario closest to the project location.

- For minor events, rainfall intensity to be based on the City of Kingston standard intensity duration equation:

  $$I = \frac{1778}{tc + 13}$$

  Where: tc = time of concentration in minutes

- Minimum inlet time = 15 minutes. Where two drainage systems meet, the larger time of concentration is used to calculate the resultant downstream flow.

- Pre-development (existing) and post-development (proposed) catchment area maps must be included to support design calculations and illustrate delineated

drainage areas. All external catchment areas which drain onto the subject site must be accounted for in design calculations.

- Post-development stormwater peak flow rates to each outlet location must not exceed pre-development peak flow rates. However, in locations with sewer capacity constraints or historical flooding issues, or on sites with no existing stormwater controls, post-development peak flow rates to each outlet location must not exceed 80% of pre-development peak flow rates (i.e., 20% reduction). No quantity control is required for discharge directly to water bodies.

- At a minimum, a normal level of treatment is required, i.e., 70% total suspended solids (TSS) removal. For discharge directly to watercourses or water bodies an enhanced level of treatment (i.e., 80% TSS removal) is required. Cite sources and provide calculations to support stormwater quality control approach and include justification for design criteria utilized in selected treatment method (e.g., particle size distribution).

- Runoff coefficients must be based on the following:

    - Asphalt, concrete, roof areas: 0.90
    - Gravel areas (post-development, potential for future paving): 0.90
    - Gravel (pre-development): 0.70
    - Grassed area, parkland – 5 Year Event: 0.25
    - Residential:
        - single detached house, lot size greater than or equal to 400 square metres: 0.40
        - single detached house, lot size less than or equal to 400 square metres: 0.40
        - semi-detached house: 0.50
        - townhouses: 0.60
        - apartments: 0.60
    - Commercial: 0.80
    - Industrial: 0.70
    - Institutional: 0.55

- The owner’s engineer must submit detailed design calculations for the major and minor flow paths, utilizing the storm sewer design.

- All design methodology decisions and assumptions must be justified in the report with sources cited as applicable.

- Minimum pipe flow velocity is to be 0.75 metres/second however, the maximum pipe flow velocity must not exceed 6.0 metres/second.

- Stormwater storage/treatment facilities located within 1 metre of bedrock and the seasonal high-water table are susceptible to groundwater infiltration/exfiltration and contamination. Documentation will be required to confirm that there is at least 1 metre between the base of the facility and the top of bedrock or seasonal high-water table, and that the underlying soils are not swelling clays or contaminated soils. If infiltration-based stormwater management facilities are proposed, a Geotechnical and Hydrogeological Report may be required to support the design.

Where rainwater harvesting systems are proposed, the design and calculations may need to be adjusted and must be in accordance with the relevant provisions of the Ontario Building Code.

In areas which may be subject to the 1:100 year flooding, the maximum depth of flood water over the finished grade of walkway, parking and/or driveway areas is to be 250 millimeters, as greater depths may restrict the movement of pedestrians and most light passenger vehicles.

7.2.5 Snow Storage

The plans must indicate where snow will be stored. Snow storage should be in areas located as far away as possible from ditches, swales, or known groundwater discharge or recharge areas. Snow storage locations should be designed to drain away from ecologically sensitive features in order to help minimize contamination and should be separated from such features by a buffer of natural vegetation.

7.2.6 Retaining Walls

For any applications which will require retaining walls that are not connected to the building, the following are required:

a) Appropriate construction details;

b) Professional Engineer’s certification on all retaining walls that exceed 1.0 metre in height;

c) Provision of a handrail or fence on all retaining walls that exceed 1.0 metre in height; and

d) Provision of a guard where there is a difference in elevation of more than 0.6 metres between the walking surface and the adjacent surface, where the public will have access to the space.

Retaining walls that are connected to the building or that retain more than 1.0 metre of earth must comply with the Ontario Building Code and will be reviewed by Building Services at the Building Permit stage.

7.2.7 Roof Drains

Roof drains or weeper drains are not to be connected to the sanitary sewer. Restricted flow roof drains will be required and should be identified on the drawings.

Roof downspout locations and direction of drainage are also to be identified on the drawings. Splash pads should be provided when appropriate.

7.2.8 Off-Site Works

Minor Off-Site Works

When minor off-site works are required for the construction of the works a separate submission will not be required and the works will be managed through a site plan control agreement. Additional provisions will be added to the associated site plan control agreement and securities will be taken for the off-site works at 100% of the cost of the works. A cost estimate prepared by a qualified person retained by the owner will be required to be submitted to determine the amount of financial securities for off-site construction works.

Examples of minor off-site works include:

- Replacement of sidewalk within the subject property's road frontage; and
- Unsignalized entrances i.e. Porkchops.

Major Off-Site Works

When the amount of off-site works is deemed to be major, an off-site works agreement with an additional drawing package will be required. Off-site works will be deemed major if one of the following apply:

- The works area is part of an intersection upgrade;
- The works are outside of the road frontage of the subject property;
- The works will majorly impact a driving lane for greater than 50% of the subject property’s road frontage;
- The works will be subject to a cost sharing agreement; or
- As required by the Manager of Development Engineering.

If an off-site works agreement is required, securities will be taken at 100% of the costs associated with the works and a 1% design and review and a 1% inspection fee will be taken. A cost estimate prepared by a qualified person retained by the owner will be

required to be submitted to determine the amount of financial securities for off-site construction works.

7.2.9 Subdivision Approvals

Where a site plan control application is being filed in conjunction with the review and approval of the design of subdivision services in which the site is situated, the site plan drawings must be approved by the subdivider's design engineer.

7.3 Utilities

These standards are written to provide guidelines for the design and construction of utility systems as part of "typical" developments and provide a basis for which the site plan control application will be reviewed. Deviations from these standards will be considered on a case-by-case basis for justifiable engineering reasons.

The following information will be required with the submission of a site plan control application:

a) A water capacity assessment for the proposed development including required and available domestic and fire flows;

b) A sanitary sewer assessment for the proposed development including an evaluation of available existing capacity at the street and estimated loading on the immediate downstream sewer;

c) Calculations for the minimum capacity of feeder conductors and service entrance equipment as determined by the requirements of section 8 of the Ontario Electrical Safety Code;

d) Details of Protection System including a detailed single-line diagram (SLD) and settings characteristics of any interface protection devices;

e) A "Request for an Electricity Service Application"; and

f) A Gas Load Summary for the proposed development using the Utilities Kingston Gas Load Summary form.

Utilities Kingston is not responsible for all utilities within the limits of the City of Kingston. Water and sanitary sewer services within the City of Kingston are the responsibility of Utilities Kingston, as well as natural gas and electricity servicing in the area of the former City of Kingston. Natural gas and electricity servicing in the former Township of Kingston and Township of Pittsburgh are the responsibility of either Enbridge Gas, Hydro One or Eastern Ontario Power. For the Utilities Kingston distribution area, visit utilitieskingston.com/Corporate/AboutUs/ServiceAreas.

7.3.1 General Requirements

a) The property owner is responsible for maintenance of water and sanitary service laterals from the property line to the building face and for sewer laterals from the property line to the building face;

b) It is the owner's responsibility to co-ordinate with privately owned utilities and to ensure that their servicing is in compliance with the standards set forth by those utilities. Maintenance of services connected to private utilities must be in accordance with the private utility agreements;

c) Inspection personnel under the owner's engineer's supervision must be "on-site" at all times when underground infrastructure is being tested;

d) Water and sewer services may be laid in the same trench subject to the provisions of the Ontario Building Code. In such cases the vertical separation between each service must be 0.5 metre and the horizontal separation must be 2.44 metres. All other utility services must be separated 2.5 metres from water and sewer services measured from edge of structure. Sanitary and storm service drains must be capped and clearly marked at the property line with a wooden 2x4 projecting a minimum of 1.0 metre above ground. Foundation drains should not be in the same trench;

e) All buried water and sewer services must have an appropriate warning tape laid on top of the cover material or no closer than 300 millimeters of the top edge of the structure. Marking in the municipal right-of-way must conform to the requirements of the City of Kingston's Subdivision Development Guidelines and Technical Standards. Marking on private property must comply with the Ontario Building Code to the satisfaction of Building Services;

f) All water mains and sanitary and storm sewers must be designed and installed in accordance with accepted good engineering practices and with Ministry of the Environment, Conservation and Parks guidelines for water distribution and sanitary sewage collection and constructed in accordance with applicable Ontario Provincial Standard Specifications (OPSS) and Ontario Provincial Standard Drawings (OPSD);

g) Clearance between pipe or conduit crossings will normally be a minimum of 300 millimeters between the outside pipe barrels. Where a clearance of 300 millimeters or less cannot be avoided, there must be concrete encasement or non-shrink backfill of the crossing extending 1 metre in each direction on each pipe;

h) Connections to any mains outside the development will only be permitted if directed or approved by the City;

i) Any conflicts with existing services, and/or change in grade which impact existing services must be rectified at the owner's expense;

j) Where on-site services and/or off-site services are within a plan of subdivision not yet assumed by the municipality, the site plan control applicant will be required to coordinate their off-site construction activities with the subdivision applicant and the municipality such that said servicing is not detrimental to the subdivision applicant's obligations to the municipality as they relate to the subdivision agreement; and

k) For an electrical distribution system within a subdivision that is to be transferred to Kingston Hydro, a residential subdivision agreement will need to be entered into with Kingston Hydro.

7.3.2 Manhole

For industrial, commercial and institutional developments, a control manhole must be provided inside the property line for the purpose of effluent sampling under the Municipal Industrial Strategy for Abatement (M.I.S.A.) to the satisfaction of the City and Utilities Kingston. The manhole is to be constructed to approved Ontario Provincial Standards Drawings (OPSD).

7.3.3 Storm Sewer Systems

Site storm drainage must be piped to existing storm sewers, where available. Where no storm sewer exists, Engineering Services must be consulted for direction.

The City's technical standards and specifications for storm sewer system design are available in the City of Kingston's Subdivision Development Guidelines & Technical Standards.

7.3.4 Sanitary Sewer Systems

The City's technical standards and specifications for sanitary sewer system design are available in the City of Kingston's Subdivision Development Guidelines & Technical Standards and should be referred to for sanitary sewer laterals within the municipal right-of-way.

Building Sewers

All building sewers must be as follows:

a) Building sewers from the building line to the main must be laid at a minimum of 2% from the building line to the sewer;

b) The first 40 service lateral connected to a 200 millimetre main must be set above the spring line of the sewer main with proper "Y" fittings and with long radius bends. Building sewers connected to larger mains may be by tee connection with the side of the tee rotated at between 22 ½ degrees and 45 degrees above horizontal;

c) Building services from adjacent properties must not be connected to each other;

d) Building sewer services must be sized to meet the Ontario Building Code and must be a minimum of 100 millimeters;

e) The colour must be green;

f) The minimum cover for sanitary services will normally be a minimum of 1.5 metres from the finished grade;

g) Services of less than 1.5 metres cover may be permitted, on a case-by-case basis, with frost protection to the equivalent of 1.5 metres of cover;

h) Services with less than 1.2 metre of cover are not permitted unless designed to provide appropriate frost protection; and

i) Sanitary services must not be connected to a storm main.

7.3.5 Water Services

Watermains

Water demands for industrial, commercial and institutional establishments vary greatly from the type of water using facilities and the population of facilities. Design must follow the recommended Ministry of the Environment, Conservation and Parks criteria unless more accurate information is available.

The City's technical standards and specifications for water distribution design are available in the City of Kingston's Subdivision Development Guidelines & Technical Standards and should be referred to for water service laterals within the municipal right-of-way.

Water Servicing Requirements

Water services must conform to the following:

a) **General Requirements**

- Watermain services (domestic and fire lines) to the building labelled with pipe material, diameters and obvert elevations at critical locations;
- Fire hydrants, valves, Siamese connections and service shutoffs (curb stops) identified on the plan;
- Hydrant flange elevations and adjacent finished ground elevations must be shown on all hydrants within or immediately adjacent to the site;
- Valve boxes and valve chambers indicated on drawings;
- A water capacity assessment for the proposed development, including fire flows available, design estimated loading and capacity evaluation is required to be submitted with the site plan control application;
- A valve must be provided at the property line for ALL service connections;
- "Y" services are not permitted where separate lots exist or are proposed; and
- The locations for sprinkler and standpipe system siamese connections are required to be adjacent to fire access routes or streets and no greater than 45 metres travel distance from a fire hydrant as per the Ontario Building Code.

b) **Ductile Iron Pipe and Fittings**

- Ductile Iron Pipe must be centrifugally cast, American Water Works Association (AWWA) C151-A21.51- 81 in 5.5 metre lengths, Pressure Class 350 for pipe up

to 300 millimeters, Pressure Class 250 from 400 millimeters to 500 millimeters and Pressure Class 200 for larger pipes;

- All ductile iron pipes must be cement lined and must be polyethylene encased as per AWWA Standard C-105;
- All ductile iron fittings must be cement lined with mechanical joints;
- Every ductile iron pipe and special casting must be coated outside with coal tar pitch varnish using a hot dip method; and
- Wedges must be installed at ductile iron pipe joints to ensure electrical continuity.

c) **Plastic Pipe and Fittings**

- Plastic pipe must conform to AWWA C900-Poly (Vinyl Chloride) (PVC) Specification, SDR 18 for pipe up to 400 millimeters in diameter, for larger pipe sizes and subject to the owner's engineer's approval, a larger SDR number may be used, however the minimum wall thickness allowed will be 26 millimeters;
- The pipe must be homogeneous throughout, free from voids, cracks, inclusions, discolouration, and other defects;
- All pipe and fittings must be certified to CSA B137.3;
- Fitting must be ductile iron according to AWWA C153/A21.53 or injection moulded PVC plastic according to CSA B137.2 or prefabricated PVC plastic for pipe diameters 300 millimeters and larger according to CSA B137.3; and
- The colour for all PVC pipe and PVC fittings must be blue.

d) **Concrete Pressure Pipe and Fittings**

- Concrete Pressure Pipe must only be allowed if so stated in the tender form or on the contract drawings;
- Concrete pressure pipe must be laid according to the specifications outlined in the AWWA M9 Concrete Pipe Installation Manual;
- The internal joint gap must be checked to ensure the proper seating of the gasket, then be pointed with cement mortar using a hand trowel; and
- The joint exterior must be protected with a diaper filled with grout installed to the manufacturer's instructions.

Valves

Valves must be as follows:

- Valve boxes must be adjusted to finished grade;

- All property line valves must be clockwise opening with 50mm operating nut;
- The operation of all property line valves, curb stops and hydrants within the municipal right-of-way must be restricted to employees of Utilities Kingston;
- The placement of additional water valve(s) for the purpose of isolating the water service may be permitted on a case-by-case basis for such facilities as residential, commercial and industrial developments; and
- Any material and/or installation costs associated with the additional water valve(s) are to be paid by the owner.

Service Connections

Services on private property must be sized and designed in accordance with the Ontario Building Code (and not larger). For services 100 millimeters or larger and located within a municipal right-of-way, please refer to the City of Kingston's Subdivision Development Guidelines & Technical Standards for requirements, including specifications for connections, tracer wire, and cathodic protection.

Fire Hydrants

Requirements related to fire hydrants can be found in the City of Kingston's Subdivision Development Guidelines & Technical Standards and Ontario Building Code, as applicable.

7.3.6 Natural Gas

The supplier of natural gas within the former boundaries of the City of Kingston is Utilities Kingston. In other areas the supplier is Enbridge Gas. In those areas where Utilities Kingston has distribution rights for natural gas, Utilities Kingston is responsible for maintenance of gas services to the meter outlet.

All design and installation in the area in which Utilities Kingston has distribution rights are the responsibility of Utilities Kingston.

For those areas where the City does not have distribution rights, gas mains and servicing requirements must conform to the standards of the supplier. Regardless, in no case must a gas service or main be placed within 2 metres of other parallel-aligned water and sewer mains or services in accordance with the *Public Utilities Act*, unless prior approval is received from the owner of each utility.

Gas services must conform to the requirements of the Utility, CSA B149, Z662, Ontario Building Code, and all applicable standards.

7.3.7 Abandoned Services

For all existing services or stubs to be abandoned, a note must be included on the drawings stipulating that the services are to be abandoned at the main, as per Utilities

Kingston requirements, unless prior written approval has been provided by Utilities Kingston.

7.3.8 Street Lighting

Any street lighting on the municipal right-of-way must be designed to meet the City of Kingston and Utilities Kingston standards. For more details regarding street lighting requirements and standards, please refer to the City of Kingston's Subdivision Development Guidelines and Technical Standards.

For site plan control applications that alter the existing lighting in the right-of-way, these current design guidelines will be followed for their replacement. All costs for the installation of new or replacement lighting in the right-of-way will be at the owner's expense.

7.3.9 Electricity and Other Wire Servicing

The supplier of electricity within the former boundaries of the City of Kingston and parts of Barriefield Village is Kingston Hydro Corporation. In other areas the supplier is Hydro One or Eastern Ontario Power.

In the areas where Kingston Hydro Corporation has distribution rights for electricity, maintenance responsibilities vary. In most situations, Utilities Kingston will maintain the primary electrical cables along with the transformers. Exceptions to this situation may occur and are described in the Conditions of Service document for Kingston Hydro Corporation.

In these areas, the following apply:

a) The design must be approved by Utilities Kingston;

b) Utilities Kingston will complete calculations according to a Capital Cost Recovery Model to determine allocation of costs (see https://utilitieskingston.com/Electricity/NewServices/CapitalCostRecovery for full details);

c) The owner must install conduits, transformer pads and necessary grounding; and

d) All electrical wiring must be in ducts including services to the meter base.

For those areas where Utilities Kingston does not have distribution rights, the electrical distribution and servicing requirements must conform to the standards of the supplier.

Regardless of ownership, all wire services under roads must be placed in conduit extending on either side of the road to the edge of the joint utility trench. If no joint utility trench exists, the duct must extend to a point 1.5 metres behind the back of curb in the case of urban roads and 0.5 metre behind the shoulder in the case of semi-urban roads.

Electrical Servicing Requirements

- Overhead and underground structures associated with electrical service entrances must be located on the site plan and include the proposed sizing and design connected load.
- All electric servicing manholes must be labelled.
- Light standards and fixtures locations must be shown.
- Utility structures, transformer boxes and Bell/cable poles, pedestals and guys must be indicated on the drawing.
- Traffic and pedestrian signals must be included where applicable.
- All electrical servicing must be done in accordance with the standards established by the electrical supply authority.

Overhead Clearance

The following minimum clearances are required for electrical wires above buildings:

- 1 metre for 750 Volt service or less;
- 3 metres for services greater than 750 Volt but less than 46 kilovolt (kV);
- 3.7 metres for services greater than 46 kV but less than 69 Kv; and
- Distances as per CAN/CSA-C22.3 Number 1 for voltages greater than 69 kV.

7.3.10 Fibre Optics

Utilities Kingston has fibre optic cables throughout the City of Kingston to make broadband networking and dedicated internet access available to single and multi-tenant residential, commercial and industrial sites through the city. Utilities Kingston may install a conduit to pull cable through in the future to provide service to building tenants, at no cost to the owner, in joint utility trenches. If there is not an opportunity to place new conduit, there may be an option to bring fibre optic cable to the building via an aerial attachment to the building. For more information please contact Utilities Kingston by emailing orders@utilitieskingston.com or calling 613-546-1181.

7.3.11 Utility Easements

Utility infrastructure that is to be assumed by the City of Kingston and services more than one property must be situated in either a road allowance or on property deeded to the City of Kingston by easement or ownership. Easement documents must be in the standard format prescribed by the City of Kingston.

Easements must be 5 metres wide for a single utility main or line. Where more than one utility main or line is in a single easement, the easement must extend to 3 metres beyond the outside edge of the outside mains or lines. Easements of less width will be

considered for situations such as shallow rear yard catch basin connections, in which case the easement width must not be less than 3 metres.

Electrical infrastructure that is to be assumed by Kingston Hydro Corporation and services more than one property must be situated in either a road allowance or on property deeded to the Kingston Hydro Corporation by easement or ownership. Easement documents must be in the standard format prescribed by Kingston Hydro.

Easements must be 6 metres wide for underground electrical infrastructure and 10 metres wide for overhead electrical infrastructure. Easements of less width will be considered for certain situations.

All measurements are to be construed as being the perpendicular width.

Regardless, the separations as stated in the *Public Utilities Act* will not be compromised and sufficient width will be provided to allow for exposure of buried services using side slopes required by regulation and without the need for shoring.

7.3.12 Construction and Inspection

The owner's engineer is responsible for inspection and testing of utility infrastructure including but not limited to the following:

a) Continuity testing on water services;

b) Pressure testing of the sewer and water systems; and

c) Disinfection and bacteriological testing of the water service.

Results of testing are to be supplied to Utilities Kingston and the City of Kingston Building Services Department using the most current version of the Testing Results for New Watermains and Large Services form. A Sewer Water Alteration Permit (SWAP) may be required for this connection. To obtain a SWAP, please contact a Utilities Kingston Service Advisor.

Water services smaller than 100 millimeters in diameter serving a single structure, and connected to an existing watermain, must be installed according to OPSS 701. Connections to water mains will be performed by a tapping sleeve and valve. The work will be completed by Utilities Kingston personnel, with all tapping materials to be supplied by Utilities Kingston at the owner's expense. Before final connection to the meter, the service must be flushed with all valves in the fully open position for a minimum of 5 minutes. Connection to follow immediately upon completion of the flushing.

Services 100 millimeters and larger must be treated as a water main or main extension for the purposes of leakage testing, backflow protection, flushing and disinfection. No connection to the City of Kingston water distribution system will take place without proof of the installation of an appropriate backflow prevention device.

Hydrostatic testing, disinfection, and microbiological sampling must be conducted under the supervision of the owner's engineer. Results are to be submitted to Utilities Kingston Engineering and City of Kingston Building Services Department for review and confirmation prior to final permanent connection and commissioning of the new works. Results must be submitted using the Utilities Kingston form "Testing Results for New Water Mains and Large Diameter Services".

- The applicant's Engineer must submit a Testing and Disinfection Plan for review and comment by Utilities Kingston, prior to any field activities.
- The Testing and Disinfection Plan must include all procedures required to complete the Plan, including but not limited to, proposed water connection locations, backflow prevention, flushing procedures, chlorination procedures, and sampling locations.
- Review of the Testing and Disinfection Plan by Utilities Kingston does not constitute approval of the plan.

Hydrostatic Testing

- Hydrostatic testing of pipes must conform to OPSS 441, as applicable.
- No water is to be introduced into the pipe section to be tested except through a backflow protected connection. Backflow preventers must be certified as installed by qualified personnel before any water may be introduced into the new pipe.
- No hydrostatic testing will commence until the owner's engineer is on site, has given permission to proceed, and all the connections to the existing distribution system have been severed.
- Hydrostatic testing must be conducted under the supervision of the owner's engineer upon completion of the watermain including services and backfilling.
- A test section must be either a section between valves or the completed watermain.

Flushing/Swabbing of Watermains

Flushing/Swabbing operations must be conducted under the supervision of the owner's engineer.

All watermains must be wet swabbed as follows:

- A minimum of three new foam swabs with a density of approximately 25 kilogram per cubic metre and a minimum diameter of 50 millimeters larger than the watermain must be used.
- Swabs must have a minimum length of 1.5 times the diameter.

- Swabs must be propelled through the watermain using potable water and must be spaced a minimum of 1.5 metres between swabs.

- Gate valves must be left in the open position.

- Swabbing must continue until the discharge water runs clear within 10 seconds of the last swab exiting the discharge point.

- All fitting, taps, valves etc. required for the introduction, propelling and recovery of the swabs, as well as the swabs are to be supplied by the contractor. The removal of all of the above at the completion of the swabbing works is the responsibility of the contractor.

- Temporary swab launching as well as retrieval facilities must be constructed in accordance with drawings W03-03-120 and W03-03-121.

The firm conducting the swabbing must show proof that at least one on-site staff member is a qualified operator under O. Reg. 128/04 (minimum Class 1) and be approved by the owner's engineer in writing before work may begin.

All water discharged by the flushing/swabbing operations must be at an approved outlet location. The contractor will be responsible for collecting and/or disposing of all such water, ensuring that all erosion and sediment control and de-chlorination requirements of the Ministry of the Environment, Conservation and Parks, Cataraqui Conservation and various other authorities having jurisdiction are met.

Disinfection and Microbiological Sampling

- Disinfection and microbiological sampling must be completed per "Watermain Disinfection Procedure, Ministry of the Environment, Conservation and Parks (MECP) Safe Drinking Water Branch, as amended, and AWWA C651-14 Disinfecting Water Mains".

- After flushing/swabbing is completed, water from the existing distribution system must be allowed to flow at a controlled rate into the new pipeline. Liquid chlorine solution must be introduced at a controlled rate so that the chlorine dosage is consistent and is distributed throughout the section being disinfected. The chlorine must be applied so that the free chlorine (CL2) concentration is 25 milligrams per litre (mg/L) minimum and 200 mg/L maximum throughout the section. The system must be left charged with the chlorine solution for 24 hours.

- The chlorine concentration will be tested in the section after 24 hours, by the owner's engineer. If tests indicate a chlorine residual in accordance with Table 1 of the MECP Watermain Disinfection Procedure, as amended, the section must be flushed completely and recharged with water normal to the operation of the system. If the test does not meet the requirements, the disinfection procedure must be repeated until satisfactory results are obtained.

- Immediately after the system has been recharged samples for microbiological testing must be collected by the owner's engineer. At each sampling location, a sample must be taken and tested for free CL2 residual prior to collecting the sample for microbiological testing. The free CL2 residual must be at least 0.20 mg/L. If it is less than this the chlorination procedure must be repeated until satisfactory results are obtained before proceeding with sampling for bacteriological testing.

- Immediately after confirming the presence of an acceptable CL2 residual the owner's engineer must collect a sample for microbiological testing.

- Two consecutive acceptable samples taken a minimum of 16 hours apart must be obtained.

- If there is indication of contamination, the disinfection procedure must be repeated in its entirety.

- Water service testing procedures and results are to be documented on Utilities Kingston Drinking Water Systems Testing Results of New Water Mains and Large Diameter Services 100mm and Larger form and by the applicant's Engineer. All test results are to be forwarded to Utilities Kingston for review and approval.

- The system must not be put into operation until clearance has been given by Utilities Kingston. A permanent meter and backflow preventer will be required within 30 days of final connection or the testing process may need to be repeated.

Water service testing procedures and results are to be certified by a Professional Engineer. All test results are to be forwarded to Utilities Kingston for review and approval. The system must not be put into operation until clearance has been given by Utilities Kingston.

Owners are advised that except in the case of an emergency shutdown, it is illegal to operate any municipal water valve in the City of Kingston. Only licensed personnel at Utilities Kingston are permitted to open, close or in any way operate a water valve that is part of the active/live water distribution system. Owners and contractors may not operate during the construction process any water valves and must contact Utilities Kingston where operation of the water system is required. Any evidence of unauthorized activity on the water valves near or adjacent to a construction site will be enforced to the fullest extent possible.

Additions or extensions to the water service will require the installation of a backflow preventor. Disinfection and bacteriological testing of the water service extension is required and the test results are to be forwarded to Utilities Kingston. The water line extension can only be charged by Utilities Kingston personnel.

Connections to sanitary sewers and watermains will be witnessed and inspected by the owner's engineer and Utilities Kingston personnel as per the Sewer Water Alteration Permit.

By-Law Number 2006-122, Water By-Law, Section 8.1 provides that no person, except for City personnel authorized under the *Safe Drinking Water Act*, is permitted to operate a fire hydrant. Fire hydrants must not be used to provide a source of water for construction purposes. Any evidence of the illegal use of hydrants will result in the active enforcement of the provisions of By-Law Number 2006-122 regarding the illegal use of hydrants.

All electrical installations must be inspected and approved by the Electrical Safety Authority. In some instances, the electrical supply authority may inspect electrical service entrance cables, equipment meters and/or embedded installations where there is concern that the installations may impact the local distribution system of the supply authority.

All electrical installations within the City right-of-way or that are to be transferred to Kingston Hydro, must be inspected and approved by Kingston Hydro/Utilities Kingston.

7.4 Fire Access Route Design

Fire safety standards applicable to site plan design are provided, primarily, from provincial regulations such as the Ontario Building Code. In addition to these regulations, fire safety requirements with respect to site access and water supply provisions are detailed elsewhere within this document.

The access and vehicular movement within the site must be designed to the City's requirements, applicable zoning regulations and the approval of the Building Department. Fire access routes should include dimensions to indicate:

a) minimum width of 6 metres;

b) minimum 12 metres centre line turning radius;

c) minimum 5 metres overhead clearance height;

d) maximum 90 metres dead end length or suitable turn-around facilities; and

e) maximum 15 metres distance from principal entrances and other required access openings.

7.4.1 Fire Alarm Systems

Where a fire alarm system is installed, the building must be provided with a security box mounted within three metres of the main entrance and at a height between 1.5 metres to 1.8 metres above the floor or at location acceptable to the Chief Fire Official. The security box is designed exclusively to hold building access keys such as, but not limited to, building entry, service rooms, common spaces, elevator operation and roof access. All keys are to be provided with metal or plastic identification tags.

Every building pursuant to Section 2.8 of the Ontario Fire Code that is required to maintain a Fire Safety Plan approved by the Chief Fire Official must install and maintain a Security Box containing a copy of the approved fire safety plan adjacent to the principal entrance to the building or part of the premise to which the Fire Safety Plan applies. Sections for on site or after hours contacts are to be completed and updated with contacts who can be reached and respond to site on a 24 hour basis when need be.

For further information regarding fire protection matters, please contact Building Services at 613-546-4291 ext. 3280.

7.5 Accessibility

The *Planning Act* identifies the accessibility for persons with disabilities to all facilities, services and matters to which the Act applies as a matter of provincial interest. There are specific accessibility requirements in the Ontario Building Code which should be considered at the time of the site design. Barrier free design applies to all buildings except single, semi-detached, duplexes, triplexes, townhouses, or boarding houses with less than eight residents.

The Municipal Accessibility Advisory Committee (MAAC) conducts a review of plans submitted with a site plan control application for accessibility/universal design. Plans will be reviewed and evaluated in terms of accessibility for persons with various types of disabilities.

7.5.1 General Design Considerations

Plans submitted for accessibility review are encouraged to:

a) clearly indicate all specific accessibility considerations including, but not limited to, lighting, signage, parking, ramps, doorways, and safety features;

b) indicate how persons with disabilities are considered in the development of the plan (e.g., mobility, visual disabilities);

c) consider accessibility (universal design) in the development of the plan as indicated by stating the source or guidelines used as reference; and

d) include the International Symbol of Access (ISA) to mark designed accessibility features.

7.5.2 Accessible Parking Spaces

The requirements associated with accessible parking spaces, including size, location and required number of accessible parking spaces, are governed by the applicable zoning by-law for the property.

Accessible parking spaces should be the spaces located closest to the nearest accessible entrance(s) of the building on an accessible route. If located in a separate building, the accessible parking spaces must be on the shortest accessible route to an accessible entrance of the parking facility. Care should be taken so that persons in

wheelchairs and scooters or using braces and crutches are not compelled to wheel or walk behind parked cars. The location of accessible spaces at ground or underground levels that require users to cross traffic lanes should be avoided. If this is not possible, a high contrast painted crosswalk with tactile indicators should be provided.

All accessible parking spaces must be painted blue and be marked by an identifying marker consisting of the International Symbol of Access (ISA).

Accessible parking spaces should be level, preferably a 2% grade in all directions. Where this is not possible, the gradient should not exceed 5%.

The following features of accessible parking spaces must be shown on the site plan and/or parking structure floor plans:

a) type of accessible parking space (Type A or Type B);

b) location of access aisles;

c) dimensions of accessible parking spaces and access aisles (width and length);

d) vertical clearance dimensions when located within a parking structure;

e) location of accessible parking signage at the top-center of the accessible space;

f) diagram illustrating the signage for Type A “van accessible” parking spaces;

g) required curb cuts and depressed curbs, including tactile indicators;

h) slope and cross slope of accessible parking spaces; and

i) presence of any surface drains proximate to accessible parking spaces.

7.5.3 Access To and Within Buildings

Entrances should be easily distinguishable. Canopies are a good feature to have above entrances to help identify the entrance and to provide shelter while entering.

All pedestrian entrances are required to be accessible under the Ontario Building Code and must connect to a barrier free path of travel to an open public thoroughfare. The type of entry control must also meet the specifications under the Ontario Building Code. Accessible building entrances should be noted on the site plan drawings and marked with the International Symbol of Access (ISA).

The main entrance to the building and all other entrances to outdoor open space or recreation areas, should be designed in accordance with the Ontario Building Code. The entrance to the building requires a 1.6 metre wide path of travel if level with the adjacent area to be delineated. Every path of travel less than 1.6 metre must be provided with an unobstructed space of 1.8 metre by 1.8 metre not more than 30 metres apart.

Where a change in level is necessary, either inside the building in areas where members of the public have access from streets, open spaces or interior walkways in adjacent buildings, or outside the building, a ramp should be provided in accordance with the Ontario Building Code. Sloped floors or ramps are required where a change in level exceeds 13 millimeters inside a building. A ramp is required where the gradient exceeds 1 in 20 exterior to a building. Where the difference in elevation of the exterior walk is not more than 200 millimeters, a curb ramp may be provided. The top and bottom of a ramp must be identified with tactile attention indicators in accordance with Sections 4.1.1. and 4.1.2. of International Standard ISO 23599. All ramps should be noted on the site plan drawings including the length and width of the ramp, along with any handrails or landings that may be required.

The sight lines from the entrances to the passenger loading area and parking lots should be uninterrupted. Lighting at the entrances, the passenger loading area and in the lobby should be sufficiently bright and non-glare. All portions of a barrier free path of travel must be equipped to provide a level of illumination not less than 50 lux for exits.

Provision should be made for the thorough and immediate removal of snow and ice from exterior ramps and a curb or guardrail should be provided to keep wheelchair and scooters from slipping over the edge of the ramp.

7.5.4 Interior Design

Although not part of the site plan control review process, consideration should be given to the following interior design principles as it could affect the layout or design of the building or the site:

a) The lobby, main social and recreational facilities, mailboxes, laundry room, elevators, public washrooms, garbage deposit areas and indoor garage all should be accessible to persons with disabilities;

b) Where required, at least one elevator should accommodate wheelchairs and scooters with the control buttons no lower than 0.9 metre and no higher than 1.1 metre above the floor, and with doors which close relatively slowly;

c) Public washrooms or washrooms adjacent to lounges or recreational areas in apartment buildings should be designed in accordance with the Ontario Building Code;

d) Mailboxes should be no lower than 900 millimeters and no higher than 1100 millimeters from the floor; and

e) Laundry rooms require generous floor space to allow turning movements for wheelchair and scooters and at least one washer and dryer should have side hinged front loading doors for easy access by persons with disabilities.

7.5.5 Pathways

The surface should be firm, even and clear of obstacles such as trash cans or newspaper boxes. Paving blocks with large joints and gravel and soil should be

avoided. Pathways should have a colour or texture that contrasts from their surroundings. The design of curb cuts should include flared edges and colours or tactile alerts to demarcate them. Pathways should be clear of obstacles such as garbage bins, planters, bicycle parking, bollards and columns. Grades should be gradual along a pathway. Long or steep ramps should have switchbacks with resting platforms.

A passenger loading area should be provided with a direct and level route to the main entrance of the building and, ideally, provided with a roof shelter. Where a passenger loading area is provided, an access aisle must be provided adjacent to the vehicle space measuring at least 2440 millimetres by 7400 millimetres with a vertical clearance of at least 3600 millimetres. Curb ramps, where required, must be provided to permit access from parking area to sidewalk.

Openings to the pathway should be perpendicular to the direction of travel. As a safety measure, wheel-stops help prevent vehicles from encroaching the pathway.

The following pathways should be shown on site plan drawings:

a) Access from municipal sidewalks to the building(s);

b) Access from passenger drop off and loading areas to proximate accessible entrances;

c) Access to exterior amenity areas; and

d) Access within the site including pathways between multiple buildings on the site.

The following pathway features should be shown on site plan drawings:

a) Curb cuts and depressed curbs with tactile surface indicators are required for pathways and on any pedestrian crossing area(s);

b) Width of pathways;

c) Dimensions of turning spaces, if required;

d) Slope of pathways (may be shown on site plan or grading plan); and

e) Ramps, if required.

7.5.6 Universal Design Principles

In addition to the requirements of the Ontario Building Code, the City of Kingston's MAAC also applies Universal Design principles in its assessment of accessibility.

Universal Design is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design. The intent of the universal design concept is to simplify life for everyone by making products, communications, and the built environment more usable by more people at

little or no extra cost. The Universal Design concept targets all people of all ages, sizes, and abilities.

Further information on the Universal Design principles, can be found at https://www.cmhc-schl.gc.ca/blog/2023/what-is-universal-design.

7.5.7 Additional Reference Material

Applicants are encouraged to review the following documents at the design stage and incorporate as many features as possible in the building and site plan design:

- Illustrated Technical Guide to the Accessibility Standard for the Design of Public Spaces (DOPS);
- Canada Standards Association, CAN/CSA – B651:23 – Accessible Design for the Built Environment, 2023;
- Standards for Barrier Free Design of Ontario Government Facilities, Management Board Secretariat, 2023; and
- Ontario Ministry of Municipal Affairs and Housing, Ontario Building Code, Section 3.8, Barrier Free Design, 2020.

7.6 Building Permit

Review and approval of a Building Permit is not part of the site plan control process. Any questions or submission of an application for Building Permit should be directed to Building Services which is responsible for the review and approval of Building Permit applications. Building Permit applications may be processed concurrently with an application for site plan control approval.

The Ontario Building Code requires that certain types of buildings be designed by an Architect or Engineer. This matter must be discussed with Building Services prior to filing a site plan control application, in order to determine if the proposed building fits into that category. In cases where the proposed building is subject to this requirement, the plans submitted for site plan control approval must be prepared by an Architect or Engineer and bear an Architect or Engineer stamp.

7.6.1 Spatial Separation

Spatial separation requirements of the Ontario Building Code should be taken into consideration when designing a site as they could impact the location of buildings and windows, as well as the type of exterior building material.

7.6.2 Signs

All ground and/or facia signs on the subject property must comply with the Ontario Building Code and the City of Kingston By-law Number 2009-140, “A By-Law to Regulate Signs in The City of Kingston”, and will be reviewed during the Building Permit application process. However, the location of all existing and proposed ground signs must be shown on the site plan drawing and all roof and/or facia signs must be shown

on the Architectural Drawings that are included with the submission of the site plan control application.

8. Contacts and Related Documents

The following departments may be contacted regarding requirements for development within the City of Kingston:

8.1 Contacts

Department	Phone Number	Email
Building Services	613-546-4291, ext. 3280	buildingpermits@cityofkingston.ca
Engineering Services	613-546-4291, ext. 3130	engineering@cityofkingston.ca
Heritage Services	613-546-4291, ext. 1389	heritageplanning@cityofkingston.ca
Planning Services	613-546-4291, ext. 3180	planning@cityofkingston.ca
Transportation & Transit Services	613-546-4291, ext. 3299	transportation@cityofkingston.ca
Utilities Kingston	613-546-1181	info@utilitieskingston.com

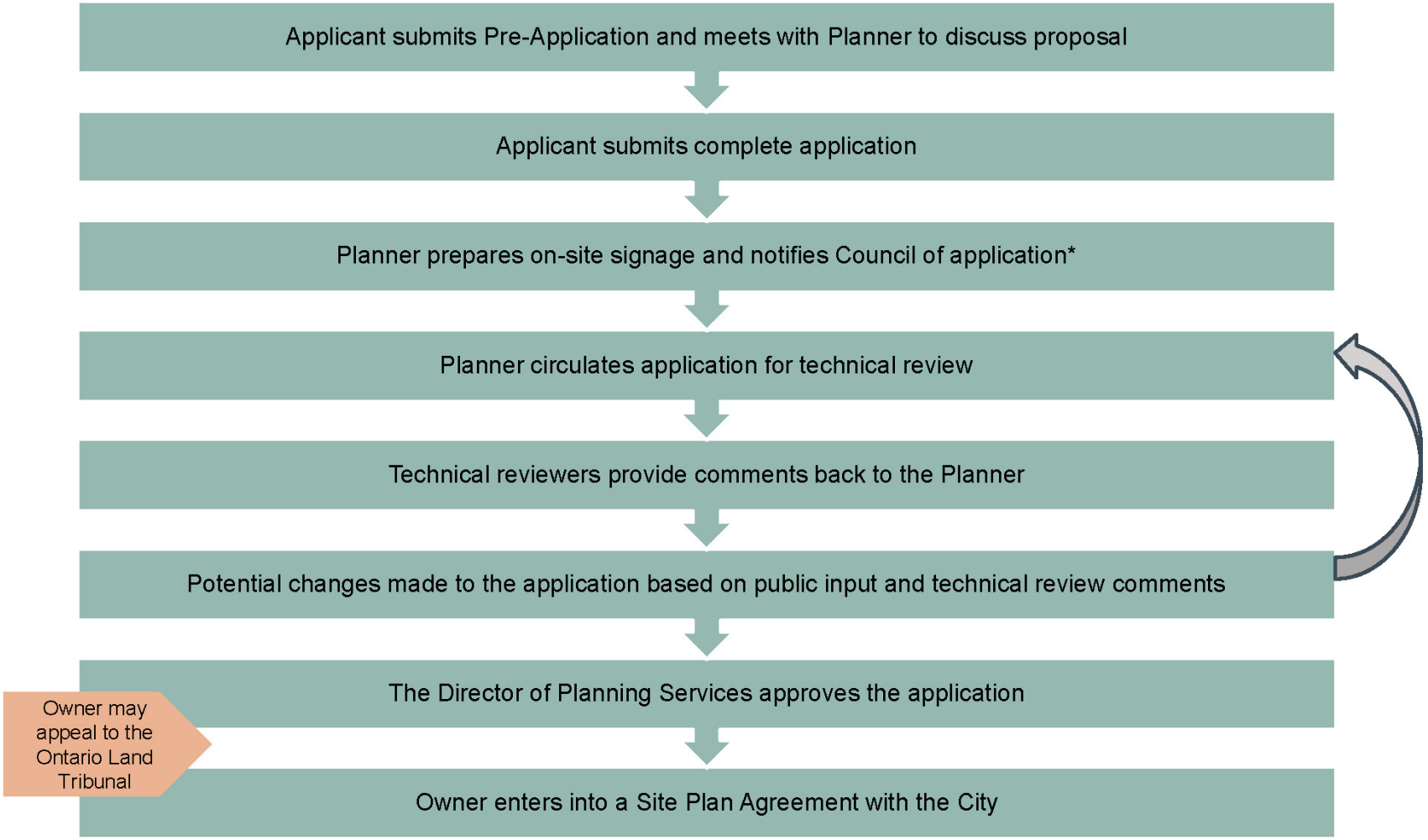
8.2 Related Documents

In addition to the documents referenced throughout these guidelines, the following documents should be consulted when designing a site and preparing a site plan control application submission:

- Ontario *Planning Act*
- Provincial Planning Statement, 2024
- City of Kingston Official Plan
- City of Kingston Zoning By-Law
- City of Kingston Site Plan Control By-Law Number 2025-XX
- City of Kingston Tree By-Law Number 2018-15

- City of Kingston Sign By-Law Number 2009-140
- City of Kingston Site Alteration By-Law Number 2008-128
- City of Kingston Archaeological Master Plan
- City of Kingston Subdivision Development Guidelines and Technical Standards
- Kingston Transportation Master Plan
- City of Kingston Active Transportation Master Plan
- City of Kingston Access Management Guidelines
- City of Kingston Downtown and Harbour Architectural Guidelines

Appendix A: Site Plan Control Process Flow Chart



*As per By-Law Number 2006-75, a member of Council may request that an application for Site Plan Control be referred to Planning Committee. If the application is referred to the Planning Committee, an Information Report is prepared by staff to obtain comments from the public and the Planning Committee.

Appendix B: Recommended, Restricted and Nuisance Tree Species Lists

Table 1: Recommended Street Tree Species

Common Name	Latin Name
Sugar Maple	Acer Saccharum
Freeman Maple	Acer X Freeman
Emerald Queen Maple	Acer Plantanoides 'Emerald Queen'
Parkway Maple	Acer Plantanoides 'Parkway'
Red Maple	Acer Rubrum Var. Morgan/Red Sunset
Hackberry	Celtis Occidentalis
Honey Locust	Gleditsia Triacanthos Var. Shademaster/Skyline
Maidenhair Tree (Male Only)	Gingko Biloba
Oak (Red And Pin)	Quercus Rubur, Quercus Palustris
Linden	Tilia Var Cordata Glenleven/ Euchlora (Crimean)

Table 2: Cataraqui Conservation Recommended Tree and Shrub Species

The following species are native, non-cultivars that are recommended by Cataraqui Conservation based on Planting Guidelines for the Cataraqui Region (2015).

Common Name	Latin Name
Deciduous Trees	
Large Toothed Aspen	Populus Grandidentata
Trembling Aspen Michx.	Populus Tremuloides

Common Name	Latin Name
American Basswood L.	Tilia Americana
American Beech Ehrh.	Fagus Grandifolia
White (Paper) Birch	Betula Papyrifera
Yellow Birch	Betula Alleghaniensis
Butternut	Juglans Cinerea
Black Cherry	Prunus Serotina
Pin Cherry	Prunus Pensylvanica
Shagbark Hickory	Carya Ovata
American Hop-Hornbeam/Ironwood	Ostrya Virginiana
Red Maple	Acer Rubrum
Sugar Maple	Acer Saccharum
Silver Maple	Acer Saccharinum
Mountain Maple	Acer Spicatum
Striped Maple	Acer Pensylvanicum
Bur Oak	Quercus Macrocarpa
Red Oak	Quercus Rubra
White Oak	Quercus Alba
Balsam Poplar	Populus Balsamifera
Canada Plum	Prunus Nigra

Common Name	Latin Name
Black Willow	Salix Nigra
Coniferous Trees	
Balsam Fir	Abies Balsamea
Eastern Hemlock	Tsuga Canadensis
Tamarack Or Eastern Larch	Larix Larcina
Eastern White Pine	Pinus Strobus
Red Pine	Pinus Resinosa
White Spruce	Picea Glauca
Black	Picea Mariana
Deciduous Shrubs	
Specked Alder	Alnus Incana
Choke Cherry	Prunus Virginiana
Alternate-Leaved Dogwood	Cornus Alternifolia
Hawthorne	Crataegus Chrysocarpa
Nannyberry	Viburnum Lentago
Serviceberry	Amelanchier
Bebb's Willow	Salix Bebbiana
Shining Willow	Salix Lucida
Pussy Willow	Salix Discolor

Common Name	Latin Name
Coniferous Shrubs	-
Red Cedar	Juniperus Virginiana
Eastern White Cedar	Thuja Occidentalis
Common Juniper	Juniperus Communis

Table 3: Recommended Street Trees for Small Lots, Cul-de-sacs, or where Servicing Limits Space

Common Name	Latin Name
Katsura Tree	Ceridiphyllam Japonicum
Amur Cork Tree	Phellodendron Amurense
Ornamental Pears/Bradford, Redspire	Pyrus Calleryana
Ivory Silk Tree	Syringa Amurensis Japonica ‘Ivory Silk’
Serviceberry	Amelanchier Canadensis
Amur Maple	Acer Ginnala
Thornless Cockspur Hawthorn	Craetaegus Crusgalli ‘Inermis’

Table 4: Restricted Species adjacent to Natural or Environmental Protection Areas and Alternatives

The following trees and shrubs are not recommended to be planted adjacent to natural areas or Environmental Protection Areas. Alternatives species are provided for consideration. The alternative species are also good trees/shrubs to consider adjacent to stormwater retention pond sites.

Common Name	Effects On Natural Area	Alternatives
Norway Maple	Dominates Forest Canopy	Native Maples Species
Horsechestnut	Invades Forest, Tends To Dominate	Native Chestnut
Tree Of Heaven	Dominates Early Successional Forest	Black Walnut
Amur Maple	Competes With Early Successional Forest Species	Native Mountain Maple, Hop Tree
Russian Olive	Invades Meadows And Shrub Communities	Native Viburnums, Redbud, Native Pin Cherry, Chokecherry
White Mulberry	Hybridizes With Rare Mulberry	Native Witch-Hazel, Native Serviceberry, Pin Cherry, Chokecherry
Lilac	Dominates Forest Redge	Native Red Mulberry, Pin Cherry, Chokecherry
Burning Bush	Invades Forest Understorey	Native Serviceberry, Native Highbush Cranberry, Elderberry, Nannyberry, Native Euonymus
Scots Pine	Invades Meadows	White Pine, Red Pine, White Spruce

Table 5: Nuisance Species

Common Name	Latin Name	Rationale
Acer Negundo	Manitoba Maple	Low landscape value, heavy seed production and easily propagates into natural areas, fence lines via seed. Fast growing tree with weak wood structure that tends to fail frequently in high wind and ice events. Normally invite nuisance insect like Boxelder bug to landscapes that

Common Name	Latin Name	Rationale
		congregate in large populations on sides of houses and trees and will enter into buildings/structures if allowed.
Populus Species	Poplar Species	Low landscape value, cottonwood varieties create large cloud 'puffs' at flowering stage that cover roads, sidewalks, yards, roofs in white blanket of fluff, fast growing tree with weak wood structure prone to limb and trunk failures during high wind and winter events. High frequency of rot diseases in main stems (cankers, heart rot fungi, etc). Useful for wind rows and natural area rehabilitation plantings, but not in a formal landscape design
Salix Species	Willow Species	Similar concerns to Poplar species. Useful in high water, shoreline rehab and riparian settings but not within a formal landscape.
Ulmus Parvifolia	Chinese Elm	Common to self seed into fencelines, natural areas; commonly affected by wilt diseases, cankers and rot fungi; very fast growing with weak wood qualities and frequently loses limbs in high wind and ice events.
Rhamnus Species	Buckthorn Species	Highly invasive species that quickly overtakes native understory plantings within natural forest areas; propagates rapidly through seed dispersal and cuttings; rapid root spread with epicormic (watershoot) development; intensive management strategies required to eradicate these from both natural and formal landscapes.

Table 6: Problematic Invasive Species

The following species are identified as problematic invasive species that are not recommended in any development, based on Planting Guidelines for the Cataraqui Region (2015).

Common Name	Latin Name
Common Reed	Phragmites Australis

Common Name	Latin Name
Dog-Strangling Vine	Vincetoxicum Rossicum
Garlic Mustard	Alliaria Petiolate
Giant Hogweed	Heracleum Mantegazzianum
Norway Maple	Acer Platanoides
Purple Loosestrife	Lythrum Salicaria
Wild Parsnip	Pastinaca Sativa
European Buckthorn	Rhamnus Cathartica
Tartarian Honeysuckle	Lonicera Tatarica