



SITE PLAN CONTROL GUIDELINES

APPLICATION SUBMISSION GUIDE AND DESIGN GUIDELINE

PLANNING & DEVELOPMENT DEPARTMENT

Updated - December 2009

(Office Consolidation)

The Site Plan Design Guidelines were adopted by City Council on
October 28, 2003.

This document is intended to provide general information only. The original by-laws, acts, regulations and other relevant publications should be consulted for detailed reference. Specifically, please refer to the Ontario *Planning Act* and the City of Kingston Site Plan Control By-Law No. 2010-217 Passed on November 2, 2010.

The contents of this document are subject to change without notice.

Application forms and additional information can be obtained from the City of Kingston's web site at
<http://www.cityofkingston.ca/business/development/app-forms.asp>
or by contacting the Planning and Development Department at
(613) 546-4291 ext. 3180.

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1.0 INTRODUCTION

Pursuant to Section 41 of the *Planning Act*, the Council of the City of Kingston passed By-Law No. 2010-217 on February 21, 2006, which designates the whole of the City of Kingston as a “Site Plan Control Area”. However, only certain types of development are subject to Site Plan Control Approval, as set out in Section 3 of the By-law.

Generally speaking, residential development containing less than four dwelling units are not subject to Site Plan Control. Streetfront townhouses approved as part of a plan of subdivision are also exempt from Site Plan Control. All other types of residential, industrial, commercial and institutional developments, including renovations, additions, parking lots and patios, are subject to Site Plan Control review and approval by the City of Kingston. Site Plan Control approval is required prior to issuance of a building permit.

This document is intended to assist in the preparation of a Site Plan Control application submission and to provide some Site Plan Control design guidelines which should be taken into consideration when designing a site. The guidelines will be used as a checklist by staff to ensure that minimum requirements have been met.

The purpose of the Site Plan Control approval process is to:

- ensure development enhances and is compatible with the surrounding area in terms of character, use and scale;
- present a favourable image of the City of Kingston to visitors, potential investors and residents;
- contribute to a safe, functional and visually attractive built environment for all users;
- ensure that development is compatible with the natural environment of both the surrounding area and downstream areas; and,
- ensure that City of Kingston and Utilities Kingston technical requirements are satisfied.

2.0 SITE PLAN CONTROL REVIEW PROCESS

Site Plan Control approval is administered by the Planning and Development Department and all applications are to be submitted directly to the Planning and Development Department, following a mandatory Pre-consultation Meeting.

The Site Plan Control process examines the design and technical aspects of a proposed development to ensure it is safe, functional, attractive and compatible with the surrounding area and contributes to the economic, social and environmental vitality of the City. The review process also ensures that development is in compliance with City zoning and development standards. Typically features such as building design, site access, site servicing, drainage, stormwater management, traffic impacts, parking, and landscaping are reviewed during the Site Plan Control process.

Review of a Site Plan Control application is undertaken by various City departments, including: Accessibility; Building; Engineering; Environment; Fire & Rescue; Heritage; Kingston Hydro Corporation; Parks Development; Planning & Development; Public Works; Solid Waste; Transit; Transportation; and, Utilities Kingston. External agencies, such as Cataraqui Region Conservation Authority and KFL & A Public Health, are also part of the technical review process of a Site Plan Control application.

The Planning and Development Department will not consider applications which contravene City policy or Zoning By-Laws or do not contain required information. Any items requiring amendments to the Zoning By-Law by way of a Zoning By-Law Amendment application or a minor variance application must receive final approval (including no appeals during the appeal period) prior to approval of the Site Plan Control application.

A Site Plan Control review process flow chart is provided in Appendix A.

2.1 DEVELOPMENTS SUBJECT TO SITE PLAN CONTROL

Section 3 of By-law No. 2010-217 sets out the types of development that are subject to Site Plan Control. The most recent Office Consolidation of the By-law should be referenced for a complete and up-to-date list. The following list is an excerpt from the By-law:

- new non-residential developments or additions to existing non-residential developments which contain over 300 square metres of gross floor area;
- new non-residential development or redevelopment or additions to existing non-residential developments located along an Expressway, Arterial or Collector road;
- residential development containing four (4) or more dwelling units;
- specialized farm uses;
- development, redevelopment, alteration or expansion of any above ground broadcasting and communications buildings or structures;

- development, redevelopment, alteration or expansion to any above ground utilities infrastructure;
- commercial parking lots and commercial parking structures;
- day care centre;
- any patio accessory to a commercial use and located outdoors on private property;
- any development on or adjacent to lands designated environmental protection area, environmental resource area, environmental wetland area, area of natural or scientific interest or similar designation in an Official Plan;
- any development located within the Rideau Community: Neighbourhood Centre or Village Centre designation of the Official Plan;
- any propane transfer station;
- 752 King Street West (formerly known as Beachgrove);
- any development in the areas designated as “Water Activity Area” or “Harbour Area” in the Official Plan of the former City of Kingston;
- any new development of or conversion to a Community Based Care facility, Private School, Place of Worship, Private Social facility, Cultural facility or Community Centre;
- any new development of or conversion to Community Homes, Residential Care Facilities, Detoxification Centers, Recovery Homes, Crisis Care Shelters, Corrections Residences or Community Support Houses;
- some types of development within the Barriefield Heritage Conservation District;
- any development of real property designated under the *Ontario Heritage Act* where the addition or alteration has the effect of adding one or more dwelling units, adding more than 100 square metres of building area or altering site grading; and any development of new buildings or additions containing more than 100 square metres of building area on lands abutting a real property designated under the *Ontario Heritage Act*;
- any development along any road listed for road widening in an Official Plan, unless the widening has already been dedicated to the City; and,
- any development of a commercial outdoor recreational facility such as a campground, swimming pool or amusement park.

Please refer to the Site Plan Control By-law No. 2010-217 for further detail, definitions and exemptions.

2.2 SITE PLAN MODIFICATION

Most modifications to sites that previously received Site Plan Control Approval require a Site Plan Modification approval and, in some cases, an amending Site Plan Control Agreement and/or the submission of financial securities.

2.3 PRE-CONSULTATION

As of January 1, 2007 and in accordance with By-Law No. 2007-43, a Pre-Consultation Meeting must occur for all Site Plan Control applications. The purpose of the Pre-Consultation Meeting is to identify the necessary approvals that will be required to allow the project to proceed, to address any process or timing questions, to identify any potential technical issues and requirements that may impact the viability of the project, and to confirm the necessary supporting studies and information that will be required with the submission of the application.

Pre-consultation is mandatory and a regular Pre-Consultation Meeting is scheduled every two weeks. A Site Plan Control application will not be accepted by the Planning and Development Department until a Pre-Consultation Meeting has been held and all required information, as identified in the Meeting, accompanies the application. An applicant may be required to take part in the pre-consultation process again if a complete Site Plan Control application has not been submitted within one year of the initial Pre-Consultation Meeting or if significant changes have been made to the proposal.

For the Pre-Consultation Meeting schedule and further details regarding the pre-consultation process, please contact the Planning and Development Department.

2.4 SITE PLAN CONTROL APPLICATION FEES

The Applicant will be charged the appropriate fee for the submission of a Site Plan Control application, as set out in the Fees and Charges By-law No. 2005-10, as amended. The full application fee is payable with the application submission. The application fees are updated from time to time, following Council approval. 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 with the Planning and Development Department or the City's web site at www.cityofkingston.ca/business/development/app-fees.asp.

With the submission of the Site Plan Control application, the Legal Department's fee for the preparation of the Site Plan Control Agreement is required. The Applicant will also be required to pay fees associated with the registration of the agreement and will be advised by the Legal Department of the required fee upon registration of the agreement.

There may also be financial requirements arising from the application, including, but not limited to, park dedication, development charges and impost fees, payment of outstanding property taxes, deferred local improvement charges, road widening conveyance, legal preparation and registration of agreements. If there is a need for a peer review of any of the required supporting studies, the peer review shall be at the applicant's cost.

For information regarding Engineering Fees, other than the Site Plan Control application fee, please contact the Engineering Department or consult the City's web site at www.cityofkingston.ca/business/development/engineeringfees.asp.

Additional fees may be required where it is necessary for the Cataraqui Region Conservation Authority to review the Site Plan Control application. Please consult directly with the Cataraqui Region Conservation Authority for information on their fees and review process.

2.5 TECHNICAL CIRCULATION

Once a complete application has been submitted to the Planning and Development Department, the file is assigned to a Planner. The Planner will prepare the technical circulation for distribution with the appropriate plans and studies to commenting internal departments and external agencies.

The initial circulation comments are requested within 10 business days of distribution of the submission. Comments on subsequent submissions are requested within 5 business days. Once all comments have been received by the Planning and Development Department, they will be forwarded to the applicant who is then required to revise the Site Plan Control submission in order to address the identified concerns in a subsequent submission.

In order to keep the application active and obtain a timely approval, the applicant must address the comments and concerns as requested and provide the revised plans and any required additional information promptly. A complete package which addresses the technical comments and any public concerns must be submitted to the assigned Planner and shall not be submitted directly to an individual department/commenting agency. A letter outlining how each specific comment has been addressed must be included in all subsequent submissions.

The Planner will work with the applicant to address technical comments or any public concerns and if required, will arrange a meeting with the commenting departments and agencies to discuss the concerns.

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.

2.6 PUBLIC NOTICE

Once a complete application has been submitted to the Planning and Development Department, the Planner assigned to the file will prepare a sign(s) for the applicant. The sign will briefly describe the proposal and provides City contact information for the public to obtain more details.

The applicant is responsible for the proper installation and removal of the sign(s). The sign(s) must be removed within seven (7) days after the application is approved, denied, lapses, or is withdrawn or after a decision is rendered by the Ontario Municipal Board where the application has been the subject of an appeal. The Sign Specifications for a Site Plan Control Application

are included in Appendix B. A sign will not be required if the Site Plan Control application is for a proposal with less than 300 square metres of new floor area.

If the Site Plan Control application has been “bumped-up” to Planning Committee, a notice of the meeting will be posted in the local newspaper. The Planning Committee meeting is not a Public Hearing, however, any public presentations at the meeting will be at the discretion of the Planning Committee.

2.7 SITE PLAN CONTROL AGREEMENT

Prior to issuance of Site Plan Control approval, the Owner is required to enter into an agreement with the City of Kingston. The requirement for the Agreement is specified in Section 6 of By-Law 2010-217.

The Site Plan Control Agreement, or Site Plan Modification Agreement, contains specific conditions pertaining to the site as identified by the commenting agencies. The Agreement also contains schedules regarding the required financial securities, any cash surcharges, easements and the list of approved drawings.

Once executed, the Agreement is registered against the title of the land to which it applies and is binding on current and subsequent Owners of the property.

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

2.8 SITE PLAN CONTROL FINANCIAL SECURITIES

Financial securities are required to ensure the satisfactory completion and maintenance of the required works. There are three methods of calculating the securities:

1. Properties without 100% lot coverage:

For all properties that do not consist of 100% lot coverage, securities are calculated based on 50% of the on-site cost of the works (including grading, paving, hard and soft landscaping, walkways, retaining walls, fencing, lighting, stormwater management facilities, etc.). The securities do not include the cost of any buildings. Costs related to stormwater management should not include underground infrastructure and pipes, but should include stormceptors or any above ground stormwater works such as a pond if required on site. An estimate itemizing each cost must be prepared, signed and stamped by a Professional Engineer and submitted to the City for review and approval.

2. Properties with 100% lot coverage:

For properties with 100% lot coverage, securities will be based on 10% of the first \$500,000.00 of the total value of construction plus 1% of the balance of the value of

construction in excess of \$500,000.00. The total value of construction includes all buildings, grading, paving, hard and soft landscaping, walkways, retaining walls, fencing, lighting, stormwater management facilities or similar required works as shown on the plans. An estimate itemizing each cost must be prepared, signed and stamped by a Professional Engineer and submitted to the City for review, approval and inclusion in the Site Plan Control Agreement.

3. Municipal Property:

All works on municipal property require securities calculated on 100% of the cost of the works. An estimate itemizing each cost must be prepared, signed and stamped by a Professional Engineer and submitted to the City for review and approval.

The detailed cost estimate will be included as part of the Site Plan Control Agreement. Financial securities are required prior to obtaining Site Plan Control approval. Securities can be paid in cash, certified cheque or a letter of credit from a Canadian Chartered Bank. The securities for works on municipal property must be provided by cash, a certified cheque or a separate letter of credit than those provided for on-site works.

The form of the letter of credit which is satisfactory to the City can be found in Appendix C. It is essential that the letter of credit be in the name of the same individual or corporation as named on the title and signature page of the Site Plan Control Agreement. In addition, a letter of credit must be irrevocable and must be automatically renewed from year to year.

2.9 SITE PLAN CONTROL APPROVAL

In accordance with the provisions of By-Law No. 2010-217, the Director of Planning and Development has delegated authority to approve Site Plan Control applications. However, the Mayor and all members of Council are provided notice of all Site Plan Control applications and have the opportunity to request that Site Plan Approval be “bumped-up” to Planning Committee for review, consideration and a decision. In cases where a “bump-up” is requested, Planning Committee has been delegated the authority to make a final decision on the Site Plan Control application. Any member of City Council can also request that a future Site Plan Control application be “bumped up” at the time that a property is subject to a Zoning By-Law Amendment.

For a Site Plan Control application that has been “bumped up”, a Planning and Development Department staff report will be prepared upon receipt of comments from circulated departments and agencies and resolution of all major items. The report will be scheduled for a Planning Committee meeting and the Owner/agent is required to attend and present the application. The Committee can either make a recommendation for approval, approval in principle and delegate any unresolved items back to the Director of Planning and Development, refuse or defer the application.

Unless otherwise directed by a member of Council, no direct notification to the public is given regarding the Planning Committee meeting related to the 'bump-up' of a Site Plan Control application. Typically, however, a courtesy advertisement is placed in the newspaper outlining the items on a Planning Committee agenda. Public input at the Planning Committee meeting is at the discretion of the Planning Committee.

When all concerns have been satisfactorily addressed and all department and agency approvals are received, the applicant must submit three (3) copies of the executed Site Plan Control Agreement, in legal format, the required financial securities, seven (7) copies of the approved plans as described in the Site Plan Control Agreement and an electronic version of the Site Plan drawing in an AutoCad format. This information must be submitted within one year of the date the Site Plan Control Agreement was sent to the Applicant for signature otherwise, the City may require recirculation of the application, a recirculation fee, and/or updated cost estimate and financial securities. Site Plan Control approval is granted by way of an approval letter from the Director of Planning and Development.

Approval by the Municipality, either by Planning Committee or Delegated Authority, 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 can withdraw Site Plan Control approval and terminate the Agreement.

If the City does not approve the application or if the applicant does not agree with the conditions of the approval, the application can be referred to the Ontario Municipal Board. In accordance with provisions in the *Planning Act*, only the property owner can appeal a Site Plan Control application to the Ontario Municipal Board.

2.10 REDUCTION / RELEASE OF FINANCIAL SECURITIES

Financial securities can be reduced or released in either a two or three phase process.

A reduction of 90% of the securities will be considered with the submission of a letter requesting a security reduction, an Engineer's certificate and the application fee. The Engineer's certificate must confirm that all the works on the site have been completed in accordance with the approved drawings and the conditions of the Site Plan Control Agreement.

Alternatively, an interim reduction of up to 60% of the securities will be considered with an Engineer's certificate identifying the completed works and itemizing the works remaining to be completed on the site, as set out in the original cost estimate and Site Plan Control Agreement. Following the 60% security reduction, 30% will be held until all the works are completed as per the approved plans and Site Plan Control Agreement. A reduction of this 30% of the securities will be considered upon receipt of an Engineer's certificate certifying that all the works have been completed. Requests for an interim reduction must be submitted in writing together with an Engineer's certificate, a cost estimate of the remaining works (prepared, signed and stamped by a Professional Engineer) and the application fee.

The remaining 10% of the securities will be held as warranty for a minimum period of one year from the date of the 90% security release to ensure that all the works on the site, including landscaping, are maintained and any necessary repairs or replacements are completed. Upon receipt of a letter requesting final security release, the balance of the securities will be returned following the expiry of the one year warranty period.

For securities associated with off-site works, the Engineering Department will consider a reduction of 90% of the securities with the submission of a request for security reduction and an Engineer's certificate. The remaining 10% of the securities will be held as warranty for a minimum period of one year from the date of the 90% security release, or as specified in the Site Plan Control Agreement or Construction Agreement.

2.11 FOLLOWING SITE PLAN APPROVAL

Any proposed changes to the plans after approval, or on site during construction may require further approval through a Site Plan Modification application. Although the changes may be shown on the building permit set, unless approved through Site Plan Control process, the approved Site Plan drawings prevail and site securities may be held until outstanding items are brought into compliance with approved plans.

The Planning and Development Department may need to request additional copies of plans for circulation and review to an other internal department or external commenting agency. Also, once the various groups have commenced their review of the application, additional information or plans may be required.

The required number of plans to be submitted with subsequent circulations of the application will depend on the responses to the initial circulation and will be determined by the Planner assigned to the file. All revisions to the plans must be dated, noted and described in the revision block on each drawing and must have the area(s) of revision highlighted (ie. in a cloud format).

3.1.1 General Requirements for All Plans

All plans must be full size on a standard 600mm x 900mm (24"x 36") sheet except, of course, the required reduced set which must be 8½" x 14". Sets of plans must be assembled as required in the table above.

The full size drawings must be individually folded to 8 ½" x 11". In accordance with the City's Fees and Charges By-law No. 2005-10, there will be a charge per plan to process drawings NOT folded to 8 ½" x 11". This charge will apply where City staff has received plans that were not folded and have been directed or requested by the applicant to fold the submitted plans.

The plans must be legible. All drawings shall be submitted with metric dimensions, be drawn in black and white (no colour, shades of grey are acceptable) to a standard metric scale (1:50, 1:100, 1:200, 1:250, 1:300, 1:400, etc.). A coloured copy of the plans may be required for presentation purposes.

The following information should be included on all of the submitted plans:

- identification of the proposed use of the site;
- name and address of firm preparing the plan;
- name of applicant;
- municipal address and/or Legal Description (Reference Plan, Lot, Concession and Registered Plan Lot Number);
- metric scale;
- north arrow;
- legend;
- title block and revision block;
- the main features of the site shall be shown (all buildings, parking areas, driveways, above ground utilities, landscape areas, fencing, ditches, etc.);
- location of all building entrances;
- overall dimensions (in metric) 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;

- all existing and proposed easements and reserves within or adjacent to the subject lands;
- sight triangles; and,
- required professional stamp.

3.1.2 Site Plan Drawing Requirements

In addition to the requirements of Section 3.1.1 of this document, the site plan shall include, but not be limited to, the following information:

- key plan, indicating location of the site in respect to the City street network;
- use of existing and proposed buildings and number of storeys;
- layout of parking area and minimum dimensions of parking spaces, barrier free parking spaces, loading spaces, aisles, driveways, ramps, fire routes;
- identify type of parking area (ie. open, underground, garage);
- location of all vehicle entrance(s);
- dimension vehicle entrance width, turning radii and sight triangles;
- truck routes, turning radii and required fire lanes;
- curb cuts, curb depressions, depressed walks on each side of all streets that border the property;
- layout of pedestrian access and walkways;
- height and design of all existing and proposed fences, walls;
- label existing and proposed surface treatment (ie. grass, paved, gravel);
- location, design and construction details of garbage collection area;
- location of all outdoor storage and detailing of enclosure;
- any existing or proposed street widening and 0.3 metre reserves;
- abutting road right-of-way width including the location and width of traffic islands, hydro poles, fire hydrants, sidewalks, etc.;
- all existing and proposed driveways of the subject site and adjacent properties;
- man-made or natural features (ie. watercourse, swale, culvert, retaining wall, embankment, catch basin) on or adjacent to the site;
- finished ground floor elevation of all buildings;
- a site statistic table indicating the following for each use, as applicable: lot area; paved/gravelled area; landscaped area; building area coverage; 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 barrier free parking spaces; number of required and provided loading spaces; percentage of building area; percentage of accessory building area; percentage of paved and/or gravelled area; percentage of landscaped area, etc.;
- for residential development, the site statistic table shall also indicate the following: density; number of bedrooms per unit; total amenity area;
- any easements or rights-of-way are to be shown and identified;
- location of all existing and proposed ground signs;
- location of snow storage area;

- location and dimensions of recreational areas (ie. amenity areas, play area, tennis courts, swimming pools, sports fields, etc.); and,
- location of existing buildings with an indication whether the buildings are to be demolished or to remain.

3.1.3 Architectural Drawing Requirements

The architectural drawings include the elevations and floor plans. Where required under the *Ontario Building Code*, architectural plans shall be prepared and stamped by an Architect or Engineer.

Floor plans

Floor plans shall be submitted for all buildings and the plans should show all floors except where the layout of a floor is repetitive. During the Site Plan Control review, interior layouts are used for information purpose only. Floor plans form part of the approved Site Plan Control plans or 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.

Elevation Drawings

In addition to the requirements of Section 3.1.1 of this document, the elevation drawings for all sides of all existing or proposed buildings shall include, but not be limited to, the following information:

- floor and overall building height dimensions;
- exterior material type and colour;
- all roof structures, screening and mechanical equipment (penthouses, chimneys, roof top units, vents, air conditioning, etc.);
- location and dimensions of any existing or proposed roof or fascia signs; and,
- location and design of all exterior lighting including lighting specifications.

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.

3.1.4 Engineering and Utilities Drawing Requirements

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 and the Professional Engineer’s certification is to be provided on the drawings.

Servicing Plan

In addition to the requirements of Section 3.1.1 of this document, the servicing plan shall include, but not be limited to, the following information:

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 6.0m 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 shall 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 meter set and regulator;
- all existing and proposed easements and reserves within or adjacent to the site;
- all necessary construction details and general notes are to be provided so as to accurately convey the design intent of the elements on the plan and to address the proposed built form;
- specify minimum grades, sizes, material types, bedding and backfill, cover on sanitary, water and gas mains and electrical services;
- details of any service connections to the City infrastructure including methods and materials;
- specify all existing services or stubs to be abandoned;
- any future local improvement works agreed to in the Site Plan Control Agreement;
- finished floor and basement floor elevations;
- 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.;
- identify material type and width of City and private sidewalks and walkways;
- curbs and/or curb and gutters (label with OPSD designate);
- 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;
- identify and dimension catch basins, double catch basins, ditches, culverts, ditch inlets and ditch outlets;
- manholes, hydrants, valves (boxes and chambers), Siamese connections and service shutoffs (curb stops);

- hydrant flange elevations and adjacent finished ground elevations shall 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 6.0m 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 & 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); and,
- details of any service connections to the City infrastructure including methods and materials.

Grading Plan

In addition to the requirements of Section 3.1.1 of this document, the grading plan shall include, but not be limited to, the following information:

- existing building structures and site details such as driveways, sidewalks, utilities, etc., within 6.0 metre of the site;
- geodetic grades as well as first floor elevations (in metres) of all buildings, finished floor and basement floor elevations for all buildings requiring servicing;
- proposed finished grades sufficient to show surface drainage and the extent of deviation from original grades;
- drainage swales;
- roof downspout locations and direction of drainage;
- arrows indicating the direction of surface drainage on all paved, granular and grassed areas;
- sufficient elevations in driveways and parking lots to show the drainage pattern;
- 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;
- proposed elevations for all building corners and all building access points, (i.e. ramps, entrances, and loading bays);
- elevations at the bottom and the top and any intermediate landings of wheelchair and scooter ramps;

- 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;
- rim elevations on all maintenance hole lids and covers;
- wherever possible and with the permission of the adjacent landowners, existing elevations are required to be shown at 3.0 metre and 6.0 metre beyond the site limits;
- existing building structures and site details such as driveways, sidewalks, utilities, etc., within 6.0 metre of the site;
- All elevations are to be based on City of Kingston Bench Marks
 - Contour lines and/or spot elevations referenced to the City Benchmark.
 - City Bench Mark data used, described and labelled on the drawing (Bench Mark information is available from the Senior Draftsman, Engineering Department)
- the following note must be provided on the grading plan:

“Construction Notes - Environment

While undertaking clearing, demolition, excavation or construction the Owner and their contractors shall be vigilant for the potential presence of underground fuel tanks, potentially contaminated soil or groundwater, buried wastes 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 remediated to applicable standards as defined within O.Reg. 153/04 or as revised;*
- 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 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;*
- 7. Construction wastes are not to be buried within the property that is the subject of this Agreement, and*
- 8. 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. “*

Construction Details

All necessary construction details and general notes are to be provided so as to accurately convey the design intent of the elements on the plan and to address the proposed built form. Please note that 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.

Additional Utilities Kingston Requirements:

The following additional information will be required with the submission of a Site Plan Control application:

- a water capacity assessment for the proposed development including fire flows available, design estimated loading and capacity evaluation;
- 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;
- 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;
- details of Protection System including a detailed single-line diagram (SLD) and settings characteristics of any interface protection devices;
- a “Request for Electrical Connection Application”; and,
- a gas load assessment for the proposed development.

3.1.5 Landscape Plan Requirements

The landscape plans must consist of a layout and grading plan, landscape plan, construction details, plant material information table, 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 3.1.1 of this document, the landscape plans shall include, but not be limited to, the following information:

- 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;
- clearly indicate the location of all vegetation to be retained or removed;
- plant material information table, as per landscape architectural standard practice;
- all hard surfaces such as parking area, sidewalks, walkways retaining walls, driveways, ramps, patios, etc.;
- access into buildings, stairs, ramps;
- location, height and type of fencing, pedestrian gates and/or service access;
- all above and underground utilities including fire hydrants;
- location of outdoor lighting;
- location and treatment of garbage collection area;
- location and treatment of bicycle racks;

- curbing for asphalt driveways and wheel stops for all granular parking areas;
- 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;
- any site furniture such as benches, bollards, tree grates, light standards, picnic tables etc. should be noted on the plan and details provided;
- locate and identify all recreational areas (ie. tennis courts, swimming pools, splash pads, sports fields);
- location and listing of play equipment; and,
- snow storage area.

Tree Preservation Plan

The tree preservation plan shall be prepared by an ISA Certified Arborist, Registered Professional Forester , or Treemarker and shall include, but not be limited to, the following information:

- the exact location of existing trees, significant shrubs or hedgerows, watercourses, rock out-cropping, swales, ponds, natural features, etc.;
- vegetation will be shown at actual size and be indicated, graphically, as either preserved, removed or transplanted;
- location of tree protection fencing around trees and vegetation to be preserved;
- provide a detail of the tree protection fencing type to be used (plywood hoarding a minimum 2.0 metres in height);
- preparation of 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 millimetres;
 - caliper size of vegetation in millimetres (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 100mm or 4” in caliper.

Example of Existing Vegetation Table:

ID#	Botanical Name	Common name	DBH (mm)	Condition	Proposed Impact	Preservation Suitability	Comment
1	acer saccharum	Sugar Maple	600	Poor	Removal	Low	Extensive trunk decay.
2	quercus alba	White Oak	440	Good	Retain	High	minor deadwood in lower canopy

Construction Details

All necessary construction details and general notes shall be provided so as to accurately convey the design intent of the elements on the plan and to address the proposed built form.

Construction details will include, but not be limited to, the following:

- planting details (deciduous and coniferous tree planting details, shrub planting detail and tree to be transplanted detail, planting on slopes, if applicable);
- 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);
- paving for walks and pathways (concrete, asphalt, unit paving, etc.);
- fencing for screening or privacy (wood, masonry, chain link, stone, etc.) and gates;
- tree protection fencing;
- garbage enclosures;
- pools, ponds, streams, splash pads, etc.;
- play areas and equipment;
- ground signs (where applicable);
- on-slab planting and structures;
- all general and specific notes required to supplement the drawings and details; and,
- other features requiring clarification.

3.1.6 Survey Requirements

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

3.2 REQUIRED REPORTS

Staff will identify at the Pre-Consultation Meeting the reports that are required with the submission of the Site Plan Control application. These studies must be current and will need to

be completed by an appropriately qualified professional. The number of reports to be submitted shall be as follows:

Report	Engineering	Utilities Kingston	Parks Development	Heritage	Public Works - Forestry	Environment	CRCA	Planning and Development
Serviceability	1	1						1
Stormwater Management	2						1	1
Tree Inventory and Preservation			1		1			1
Traffic Impact	2							1
Geotechnical	1							1
Hydrogeology	1					1	1	1
Environmental Impact			1			1	1	1
Noise and/or Vibration	1							1
Environmental Site Assessment						1		1
Archaeological				1				1
Heritage Impact				1				1
Urban Design			1					1

Staff will identify at the Pre-Consultation Meeting any additional reports that may be required with the submission of the Site Plan Control application. However, the need for additional reports may also be identified once the various groups have commenced their review of the application. Other studies that may be required in order to facilitate proper consideration of the Site Plan Control application could include: Shadow Analysis; Height Survey of adjacent buildings; Air Quality Study; Slope Stability Study; Wave Uprush Study; Wind Study; View Plane Assessment; etc.

3.2.1 Servicing Report

A Servicing Report is typically required for all multi-residential development. The report must identify how the proposed development will be serviced, including water, sanitary and storm, connections to existing municipal infrastructure and availability of capacity in the municipal system to accommodate additional capacity of the proposed development. The Servicing Report should also address all impacts on downstream infrastructure that could require system

upgrades. The Servicing Report must be prepared, signed and stamped by a qualified Professional Engineer.

3.2.2 Stormwater Management Report

The Stormwater Management Report must identify all drainage related impact caused by the proposed development and assess quantity and/or quality control of stormwater runoff. 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. The Engineering Department may, at its sole discretion, require a Stormwater Brief in lieu of a Report. The Stormwater Management Report/Brief must be prepared, signed and stamped by a qualified Professional Engineer.

3.2.3 Tree Inventory and Preservation Study

A Tree Inventory and Preservation Study is required for all properties containing woodlots, tree stands or hedgerows. A tree survey must be prepared by an ISA Certified Arborist, Registered Professional Forester, or Treemarker. The Tree Inventory and Preservation Study must identify all existing trees, their type, size and condition, those trees proposed to be removed and retained, and the methods to be used to ensure preservation of those trees to be retained. Any works on the site shall be in accordance with the City's Tree By-law. A permit may be required prior to any tree removal in advance of final Site Plan Control approval.

3.2.4 Traffic Impact Study

The City of Kingston may require the completion of a Traffic Impact Study for any development regardless of size and land use. All proposed developments are considered on an individual basis in order to assess the need for a Traffic Impact Study. The Traffic Impact Study must provide an assessment of the adequacy of the existing or future transportation system to accommodate additional traffic generated by the proposed development or redevelopment. It shall recommend what, if any, improvements will be required to the roadway system in order to maintain a satisfactory level of service. The Traffic Impact Study must be prepared, signed and stamped by a qualified Professional Engineer. For more information regarding the preparation of a Traffic Impact Study, please contact the Engineering Department for a copy of the City's *Traffic Impact Study Guidelines*.

3.2.5 Geotechnical Assessment

The purpose of a Geotechnical Assessment is to evaluate the soils and subsurface conditions of a site and to provide recommendations for the design and construction of the site. The Geotechnical Assessment must be prepared, signed and stamped by a qualified Professional Engineer.

3.2.6 Hydrogeology Study

A Hydrogeology Study is required for all applications in areas serviced by private water and septic services. The Hydrogeology Study must be prepared, signed and stamped by a qualified Professional Engineer.

3.2.7 Environmental Impact Study

An Environmental Impact Study is required for applications that affect significant or environmentally sensitive lands. The report shall include a description of the environment that will be affected, description of the development proposal, an assessment of the expected impacts on the environment, a list of assumptions used in the assessment and recommendations regarding the actions necessary to prevent, mitigate or remedy the effects on the environment of the development proposal. The Environmental Impact Study must be prepared by a qualified professional. Please contact the Cataraqui Region Conservation Authority for a copy of their *Guidelines for Environmental Impact Assessment*.

3.2.8 Noise and Vibration Study

A Noise and/or Vibration Study is required where a sensitive land use (ie. residential) is proposed near a noise source (ie. railway, major roadway, industry) or where a noise source (commercial or industrial use) is proposed adjacent to a sensitive land use. The report should follow the Ministry of the Environment's guidelines and demonstrate that the appropriate criteria can be achieved. The report must include indoor and outdoor sound levels and recommend mitigation measures for the development which could include sound barriers, ventilation requirements, special building component and necessary warning clauses. The Noise and/or Vibration Study must be prepared, signed and stamped by a qualified Professional Engineer.

3.2.9 Environmental Site Assessment

Generally, an Environmental Site Assessment is required for all applications where a land use change is proposed from an industrial or commercial use to a more sensitive land use (ie. residential). Initially a Phase I Environmental Site Assessment is required. Further investigation would be required when the Phase I Environmental Site Assessment identifies the possibility of site contamination. A Record of Site Condition is required in accordance with Ontario Regulation 153/04.

3.2.10 Archaeological Report

An Archaeological Report is required for all applications in or near areas of archaeological potential, as determined by the criteria set out by the Ministry of Culture and the City's Archaeological Master Plan. Reports must be completed by an individual holding a valid archaeological licence.

3.2.11 Heritage Impact Study

A Heritage Impact Study is required for development or redevelopment proposals on lands adjacent to a protected heritage property. The proposed development is required to be evaluated and the report is to demonstrate how the heritage attributes of the protected heritage property will be conserved, and what mitigative measures or alternative development approaches may be required to protect the resource. For more information regarding the

preparation of a Heritage Impact Study, please consult the City of Kingston's *Heritage Impact Statement Requirements* available from the Planning and Development Department.

3.2.12 Urban Design Study

An Urban Design Study is required for any development proposals in the downtown core area proposing building heights in excess of six storeys. The Urban Design Study must clearly demonstrate that the proposed building is in compliance with the urban design policies of the Official Plan and is compatible with the scale and massing of buildings in the surrounding area.

3.3 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, provincial ministries (ie. Ministry of Environment), Cataraqui Region Conservation Authority, KFL & A Public Health, Union Gas, Hydro One, 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.

Cataraqui Region Conservation Authority

The applicant is advised to contact the Cataraqui Region Conservation Authority (CRCA) 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.

Information regarding CRCA's land use planning policies and regulations can be found on the CRCA's web site at www.cataraqueiregion.on.ca, including the CRCA *Planning Policy*. The CRCA may also refer to the requirements of the *Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulations* (Ontario Regulation 148/06), *Conservation Authorities Act* and federal *Fisheries Act*, among others, in its review of Site Plan Control applications.

The applicant may also require a permit from the CRCA for the placement, grading, or removal of fill on a property, or for the alteration of a watercourse. Applications within their jurisdiction will need to be reviewed and approved by the Cataraqui Region Conservation Authority prior to issuance of Site Plan Control approval. Please consult directly with the Cataraqui Region Conservation Authority for information on their application fees, guidelines and review process.

Ministry of Environment

A Certificate of Approval from the Ministry of Environment is required for facilities that release emissions to the atmosphere, discharge contaminants to ground and surface water, provide potable water supplies, or store, transport or dispose of waste. It is the developer's

responsibility to obtain any required Certificates of Approval from the Ministry of Environment or other agencies.

4.0 SITE PLAN CONTROL DESIGN GUIDELINES

Attractive and functional design is expected for all development, or redevelopment, within the City of Kingston. The guidelines in this section are intended to set out some minimum standards for development to meet however, the City of Kingston encourages proposals to exceed these requirements. Adherence to these guidelines will be reviewed by the various City departments and Utilities Kingston throughout the Site Plan Control review process.

4.1 PLANNING & URBAN DESIGN

From a planning and urban design point of view, the City will be looking for proposals that promote:

- a visually attractive built environment;
- an environmentally friendly and sustainable development;
- pedestrian orientation;
- active transportation such as bicycling;
- compatibility with adjacent buildings and land uses; and,
- heritage features, natural corridors and areas of environmental or community interest.

Site plan designs shall take into account, but not be limited to, the following considerations for all development or redevelopment proposals:

4.1.1 General Site Design

All Site Plan Control applications must comply with Official Plan policies and the applicable Zoning By-Law.

Generally, a higher level of quality in built and landscape design is expected for development at gateway locations, along arterial roads and in business parks.

4.1.2 Architectural Design

The design of a site and the building(s) on the site shall be appropriate in massing and in general conformity with surrounding buildings.

Mechanical equipment shall be integrated into the design of the building or located in areas of the building that are not visually prominent. All roof top mechanical equipment or elevator shafts shall be screened in such a manner as to not be able to be viewed from ground level. Materials used to screen the roof top mechanics should be sensitive to the materials used in building construction and are not to be transparent in any way.

Loading areas shall not abut residential uses or visually prominent areas (such as street frontages).

4.1.3 Vehicular Movement and Parking Design

- parking areas shall be designed to allow safe and efficient vehicle movement;
- 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;
- site entrances shall be well defined;
- fire routes shall be provided in accordance with the *Ontario Building Code*;
- adequate truck turning radius shall be provided;
- parking along the access and major on-site aisle(s) shall be discouraged;
- adequate mechanisms shall be provided to protect buildings and landscape areas;
- landscaping will be encouraged throughout large surface parking areas; and,
- adequate bicycle parking shall be provided as close to building entrances as possible and preferably in a location that provides a roofed shelter.

4.1.4 Pedestrian Movement Design

- a safe and well defined pedestrian walkway should be provided to all main building entrances with connections to sidewalks and bus stop areas;
- pedestrian connections through parking areas should be incorporated in the design;
- a pedestrian walkway should have a minimum width of 1.5 metres clear from vehicle overhang and shall be defined by curbing or be in an area raised above grade, except where it crosses travelling lanes; and,
- a continuous accessible path of travel shall provide an uninterrupted route to and within the site and buildings.

4.1.5 Compatibility and Adverse Impact

Site designs must take into account 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 fulfil its role as an acoustic barrier or buffer but be aesthetically design.

Lighting shall be designed to promote pedestrian and vehicle safety while minimizing ambient light pollution. Any exterior lighting needs to 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 bulbs and flat glass fixtures to reduce glare.

4.1.6 Crime Prevention Through Environmental Design

Sites shall be designed to promote safe environments by applying Crime Prevention Through Environmental Design (CPTED) concepts and principles in the design of buildings, site layout and landscaping.

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

4.1.7 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. Multiple family residential uses with 7 or more dwelling 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 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 shall be detailed on the submitted plans. Garbage and recycling storage areas shall be located in the rear yard or interior side yard and shall not be located in a front yard or yard abutting a street. Recycling carts and boxes requiring municipal pick-up must be stored indoors and taken outside for collection. Outdoor garbage storage areas shall 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 shall 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 shall 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 following minimum dimensions:

BIN SIZE	ENCLOSURE DIMENSIONS (minimum)		
	Width	Height	Length
2 cu. yd.	3.05 m	1.5 m	1.8 m
3 cu. yd.	3.05 m	1.5 m	2.0 m
4 cu. yd.	3.05 m	1.5 m	2.3 m

6 cu. yd.	3.05 m	1.7 m	2.6 m
8 cu. yd.	3.05 m	2.1 m	2.6 m

4.2 LANDSCAPE DESIGN

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

- contribute to the overall city image;
- enhance the public perception of the proposed development;
- adhere to CPTED principles;
- preserve existing trees and natural features, where possible;
- provide a diversity of plant material and naturalizing, where possible;
- be integrated with stormwater management features;
- be easy to maintain without catchment areas that attract debris;
- preserve and enhance heritage resources; and,
- screen less attractive elements of the development such as the parking areas, loading areas, storage areas, garbage enclosures, etc.

4.2.1 General Landscape Design

Landscape plans must include the following:

- all existing or proposed plantings on the site;
- wherever possible, existing vegetation should be incorporated into the new development and shown in conjunction with the proposed building footprint;
- any proposed planting on the municipal right-of-way requires approval from Utilities Kingston, the Engineering Department and Public Works - Forestry;
- a mix of deciduous and coniferous plant material throughout the site will ensure that the site has green elements in the winter and can provide some screening or buffering of portions of the property;
- any landscaped buffer areas adjacent to residential uses are required to contain 1/3 coniferous material;
- where views of rear or sides of outdoor storage areas are potentially visible to the public, these areas should be screened appropriately with a combination of berming/plantings or fencing;
- areas subject to erosion such as slopes or swales shall be sodded and staked or planted with suitable ground cover;
- slopes in landscaped areas and on berms shall not exceed 3:1 (3 horizontal to 1 vertical) and optimally should be no greater than 5:1 for ease of maintenance;
- low landscaping shall be provided around site entrance features and the base of ground signs;
- street trees 9 metres on centre will be required across the front of properties in combination with shrub beds;
- all shrubs to be planted in continuous mulched beds;

- applicants are encouraged to leave unused portions of the site undisturbed until such time as the development is proposed to include those areas;
- 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;
- landscaping on each site must not impede the safety of pedestrians or motorists and not create areas that are hidden from public view;
- landscaping should be planned so as to not block sightlines, sight triangles or signage; and,
- trees or shrubs that bear fruit or secrete a sticky or slippery sap shall not be permitted in proximity to pathways.

For development along major arterial roads and within business parks, a high order of planting will be required as outlined in the following design criteria:

- multi-level planting including street trees and shrub beds;
- foundation plantings at front of building;
- foundation plantings at base of any commercial signage; and,
- other areas with high visibility to the public should be sodded.

Where non-residential development abuts residential uses or zones, screening and buffering of the abutting property line(s) will be required through one or more of the following methods:

- a minimum 1.4 metre high wooden privacy fence; and/or,
- a minimum 1 metre high berm with a mix of coniferous and deciduous plantings with 1/3 being coniferous.

Planting strips should be designed with the following criteria in mind:

- the applicable Zoning By-Law must be consulted for any zone provisions regarding the requirement to provide a planting strip;
- as a minimum, any non-residential development abutting a residential use or zone requires a continuous 3 metre wide planting strip along the property line;
- where, in any zone, a strip of land is to be used for no purpose other than a planting strip, it shall be a minimum 1 metre wide in order to support plant growth;
- except where it is required along a front lot line or along a side lot line, a planting strip shall be used for no other purpose than planting a row of trees or a continuous, uninterrupted hedgerow of evergreens or shrubs, immediately adjacent to the lot line or portion thereof along which such planting strip is required hereunder; the remainder of the strip shall be used for no other purpose than the planting of ornamental shrubs, flowering shrubs, flower beds or a combination thereof;
- where required along a front lot line, a planting strip shall be used for no other purpose than trees, hedges, shrubs, flower beds, grasses or sodding or a combination thereof;
- where ingress and egress driveways or walks extend through a planting strip, it shall be permissible to interrupt the strip within 10 feet of the edge of such driveway or within 5 feet of the edge of such walk;

- no vegetation within a sight triangle shall exceed the specified height allowed for under the applicable Zoning By-Law; and,
- all shrubs and perennials are to be planted in continuous, mulched beds. Mulching shall be shredded bark mulch spread to a depth of 75mm.

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

- areas subject to erosion such as slopes, drainage swales etc. shall be sodded or planted with erosion resistant ground cover;
- 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;
- other areas of high visibility such as boulevards and recreation areas should be sodded;
- the use of hydro seeding in less prominent areas will be permitted;
- slopes in landscaped areas and on berms shall not exceed 3:1 (3 horizontal to 1 vertical);
- the maximum allowable height of a berm without a break in grade is 1.2 metres;
- landscape berms shall not encroach onto City boulevard or adjacent properties unless written authorization from the adjacent landowner(s) is provided; and,
- any tree on a slope should be staked.

Stormwater management ponds shall be landscaped and integrated into the site. The preference would be for native plant material 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 shall be taken into consideration when designing the landscaping of the stormwater management area:

- shrub beds and perennials are to be planted in continuous mulched beds. Mulching shall be spread to a depth of 75mm;
- to preclude access to the water basin, low, dense or compact shrubbery should be used;
- due to safety concerns of pedestrians, plants with thorns should not be located near pathways or building entrances and plants that deposit any sappy residue, leaves, cones, etc. should not be located near a pathway; and,
- all planting beds should be setback 0.5 metres from the edge of paving or sidewalks that will be plowed.

4.2.2 Tree Inventory and Preservation

Prior to submitting landscape plans with a Site Plan Control application, the applicant should review the Tree By-Law No. 2007-170 to determine if it applies to the subject property. If the By-Law applies to any trees on the property then the landscape plan proposed for the site must clearly indicate the location of all trees to be removed or preserved. The tree preservation plan should be included in the landscape plan package. The species table list on the landscape plan shall also include the total number of trees to be removed and the number of replacement trees as determined by Public Works - Forestry Department.

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

- tree protection fencing should be erected a minimum of 0.5 metres outside of the drip-line of the vegetation to be preserved;
- no storage of materials or equipment or excavation within the protection zone is allowed;
- no equipment or materials are allowed to hit, abrade or damage trees designated to be preserved on site;
- no contaminants or effluent shall be dumped or flushed where feeder roots of trees exist;
- trees are to be planted in a hole that is dug to a diameter greater in width and depth than the root ball;
- stakes for anchoring tree guy wires shall be spruce, 50mm x 750 mm, pointed at one end and notched at the other to securely hold the guy wires; and,
- all trees shall 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 securities release, any plant material indicated to be preserved should happen to be damaged severely, removed or shows signs of severe distress, the applicant shall be responsible for replacing that plant material with new stock. The caliper size of the existing plant material shall be replaced with new stock that is equal in aggregate caliper size. For example, if a 360mm caliper Oak tree indicated to be preserved dies before final Site Plan securities are returned, then six (6) sapling Oaks of 60mm caliper shall be planted on site in its place. If the required replacement trees cannot be accommodated on the site, the Owner shall 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 5.0 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 developer shall provide to the City a copy of the Fill, Encroachment or other such permit as obtained from the proper approval body such as the Cataraqui Region Conservation Authority.

4.2.3 Plant Material Information

All plant material is to conform to the Canadian Nursery Trades Association Specifications and Standards. All sod is to conform to the Canadian Nursery Sod Growers Association 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:

- deciduous trees are 60mm caliper;
- flowering deciduous trees are 50mm caliper;
- coniferous trees are 1.8 metres in height;
- deciduous shrubs are 60cm in height; and,
- coniferous shrubs are 50cm in spread.

Wherever possible, species native to eastern Ontario should be used. The use of native species helps to reduce the spread of invasive species and helps ensure the overall success of the planting. Recognizing that the use of native species is not always appropriate, the following nuisance tree species are not recommended for planting on any new site development project:

- *Acer negundo* (Manitoba Maple);
- *Populus* species (Poplar species);
- *Salix* species (Willow species);
- *Ulmus parvifolia* (Chinese Elm); and,
- *Rhamnus* species (Buckthorn species).

A list of the City’s recommended street tree species can be found in Appendix D.

In certain naturalizing projects (typically adjacent to Environmental Protection Areas, Areas of Natural or Scientific Interest or other wetlands), the Cataraqui Region Conservation Authority recommends the specific species that are listed in Appendix E.

The following guidelines shall be used when identifying plant material:

- typical plan standard symbols shall be used, as per Ontario Association of Landscape Architects;
- a cluster of similar species can be linked with a species symbol and a total number of plants in the cluster;
- tree shapes shall be shown by landscape industry standard symbols and notations and shall indicate mature spread of species; and,
- planting table column headers should include, in order:
 - 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 (60mm mm minimum caliper for deciduous trees/ flowering deciduous trees 50mm caliper/coniferous trees 1.8 metre -height); and,
 - particulars of plantings (i.e.) Bare Root (BR) / Balled and Burlapped (B & B).

Example of Plant Material Information Table:

Quantity	Symbol	Botanical Name	Common name	Size	Remarks
4	AR	<i>Acer rubrum</i>	Red Maple	60mm caliper	B & B

requirement for a sidewalk on local roads in industrial parks will be established on a case by case basis.

Design Criteria:

- 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 0.6m of a City sidewalk is to be depressed to the elevation of the City sidewalk."
- 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.
- Heavy duty sidewalk is to be continuous through industrial/commercial site entrances using 150mm x 150mm steel mesh reinforcement
- Sidewalk design and construction shall conform with the City of Kingston standard, including accessibility standards for width, texture, curb cuts and warning markings.

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

4.3.4 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 shall 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 applicant 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 shall be 0.15 metres to a maximum depth of 0.60 metres (0.3 metre maximum water depth). Drainage swales shall 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 shall 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 shall be 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.

4.3.5 Stormwater Management Design and Criteria

Prior to commencing the design of stormwater management facilities, the designer should contact the City’s Engineering Department and the Cataraqui Region Conservation Authority.

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. The Stormwater Management Report must provide:

- assumptions and methodology used to generate runoff volumes;
- techniques proposed to control storm run-off to the allowable run-off rate;
- method and volume of stormwater storage;
- quality of run-off and what on-site treatment of stormwater is proposed; and,
- discharge point.

With respect to stormwater management, the Site Plan or Grading Plan must provide:

- all erosion and sediment control measures along with notes regarding the use of the measures;
- the stormwater runoff coefficient;
- the proposed methods of stormwater storage, i.e., roof hopper controls, orifice controls and on-site storage areas including volume and top water elevation;
- a cross sectional detail of the control structure identifying the orifice size, invert and high water level; and,
- maximum ponding depth of 250 mm at catch basins (may be greater at loading docks).

If the City determines that a Stormwater Management Report is not required then a one to two page Stormwater Brief is to be submitted. The Stormwater Brief is to justify that the post-development peak release rates (for all storm events) have been analyzed and the results indicate:

- that post development peak rates do not exceed pre-development peak rates, or other allowable rates as approved by the City, for all storm events;
- that there will not be an increase in flow to neighbouring properties;
- that the flow will not negatively impact neighbouring properties;
- discharge outlet location; and,
- proposed quality control measures.

The proper use of erosion and sediment control measures during construction are to be discussed in the report 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:

- sediment fence installed prior to commencement of any work and 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;
- straw bale check dams in ditches and swales; and,
- Geotextile should be installed under catch basin lids during construction in order to help prevent the entry of sediment into storm sewers and receiving water bodies.

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

218.010	sodding of side slopes
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219.010	erosion control blankets
219.100	straw bale check dams
219.110	light duty sediment fence
219.130	heavy duty sediment fence
219.211	rock check dam
810.010 Type 'B'	rip-rap treatment for outlets, with geotextiles

Stormceptor maintenance schedule and procedures are to be included with the Stormwater Management Report and added to the Site Plan Control Agreement.

Design Criteria:

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

$$Q = 2.78 AIR$$

Where: Q = Design flow in L/s
 A = area in ha
 I = intensity in mm/h
 R = runoff coefficient

- For major events, the IDF curves should be used. For minor events, rainfall intensity to be based on the City of Kingston standard intensity duration equation:

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

where t_c = 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.

- Runoff coefficients shall be based on the following:

Asphalt, concrete, roof areas	0.90
Grassed area, parkland - 5 Year Event	0.25
Residential - single family housing, \geq lot size of 400 m ²	0.40
- single family housing, \leq lot size of 400 m ²	0.50
- semi-detached housing	0.50
- townhouses	0.60
- apartments	0.60
Commercial	0.80
Industrial	0.70
Institutional	0.55

- The Owner's engineer shall submit detailed design calculations for the major and minor flow paths, utilizing the storm sewer design.
- Minimum pipe flow velocity is to be 0.75 m/s however, the maximum pipe flow velocity shall not exceed 6.0 m/s.

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 mm, as greater depths may restrict the movement of pedestrians and most light passenger vehicles.

4.3.6 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, in accordance with Ministry of the Environment Guideline B-4 and Procedure B-4-1. 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.

4.3.7 Retaining Walls

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

- appropriate construction details;
- Professional Engineer's certification on all retaining walls that exceed 1.0 metre in height; and,
- provision of a handrail or fence on all retaining walls that exceed 1.0 metre in height.

Retaining walls that are connected to the building must comply with the *Ontario Building Code* and will be reviewed by the Building Department at the Building Permit stage.

4.3.8 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.

4.3.9 Major Off-site Construction

If major road work or off-site construction is required, the Engineering Department and/or Utilities Kingston may require separate drawings relating to this work. A Construction Agreement between the owner and the City with separate financial securities equal to 100% of the cost of the works may also be required. A cost estimate prepared by a Professional Engineer retained by the Owner will be required to be submitted to determine the amount of financial securities for off-site construction works.

4.3.10 Subdivision Approvals

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

4.4 UTILITIES

These standards are written to provide guidelines for the design and construction of utility systems as part of “typical” site plan developments. They 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.

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 Union Gas, Hydro One or Fortis Ontario. For the Utilities Kingston distribution area, please refer to the map in Appendix F.

A copy of the By-law To Control Waste Discharges To Municipal Sewers (Sewer Use By-law) can be found on the City of Kingston’s web site at www.cityofkingston.ca/pdf/bylaws/bl_2000-263.pdf.

4.4.1 General Requirements

- The property Owner is responsible for maintenance of water laterals from the property line to the building face and for sewer laterals from the main to the building face.
- 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 shall be in accordance with the private utility agreements.
- Inspection personnel under the Owner’s engineer’s supervision shall be “on-site” at all times when underground infrastructure is being tested.
- Water and sewer services and foundation drains may be laid in the same trench subject to the provisions of the *Ontario Building Code*. In such cases the horizontal separation between each service shall be 0.5 metres. All other utility services shall be separated 2.5 metres from water and sewer services measured from edge of structure. Sanitary and foundation/storm service drains shall be capped and clearly marked at the property line with a wooden 2x4 projecting a minimum of 1.0 metres above ground.
- All buried water and sewer services shall have an appropriate warning tape laid on top of the cover material or no closer than 300mm of the top edge of the structure. Utilities Kingston shall approve such tape.
- All water mains and sanitary and storm sewers shall be designed and installed in accordance with accepted good engineering practices and with Ministry of the Environment 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).

- Clearance between pipe or conduit crossings shall normally be a minimum of 300mm between the outside pipe barrels. Where a clearance of 300mm or less cannot be avoided, there shall be concrete encasement or non-shrink backfill of the crossing extending 1 metre in each direction on each pipe.
- Connections to any mains outside the development shall only be permitted if directed or approved by the City.
- Any conflicts with existing services, and/or change in grade which impact existing services shall be rectified at the Applicant's expense.
- Where on-site services and/or off-site services are within a plan of subdivision not yet assumed by the municipality, the site plan applicant shall be required to coordinate their off-site construction activities with the subdivision developer and the municipality such that said servicing is not detrimental to the subdivision developer's obligations to the municipality as they relate to the Subdivision Agreement.

4.4.2 Manhole

For industrial, commercial and institutional developments, a control manhole must be provided inside the City road allowance at 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).

4.4.3 Storm Sewer Systems

Site storm drainage shall be piped to existing storm sewers, where available. Where no storm sewer exists, the Engineering Department shall be consulted for direction. Roof drains and weeper drains are not to be connected to the sanitary sewer.

If a storm lateral connection to an existing combined sewer is required, Utilities Kingston shall be consulted and an application for exemption to the Sewer Use By-Law shall be submitted.

4.4.4 Sanitary Sewer Systems

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, is required to be submitted with the Site Plan Control application.

The submission of the Sewer Use By-Law Schedule A is also required for industrial, institutional or commercial developments. An exemption to the Sewer Use By-Law shall be submitted to Utilities Kingston if a storm lateral connection to an existing combined sewer is required. For a copy of the Sewer Use By-Law Schedule A form, please contact Utilities Kingston.

Sewer services shall conform to the following:

- Pipe bedding shall be as set forth in OPSD 820 series. Bedding and cover shall conform to Granular "A" as set forth in OPSS.

- All pipe and fittings supplied shall carry CSA certification to the appropriate CSA standard sewer grade. The following pipe shall be used for sewers:
 - Reinforced concrete pipe per OPSS 1820 according to CSA A257.2 Class 65-D with rubber gaskets or;
 - Type PSM polyvinyl chloride (PVC) pipe with elastomeric gasket per OPSS 1841 and CSA B182.2 M1990. Profile type pipe such as those meeting CSA 182.4 and CSA 182.6 shall not be used for sanitary sewer applications;
 - Sanitary services $\geq 200\text{mm}$ mm to be DR 35 pipe;
 - Sanitary services $< 200\text{mm}$ mm to be DR 28 pipe; and,
 - Sanitary services shall be green in colour.
- The minimum sanitary main size shall be 200mm.
- The maximum design velocity at peak design flow in the sanitary sewers shall be 3.0 m/s. The minimum design velocity at peak design flow shall normally be 0.6 m/s at design flow. Consideration will be given on a case-by-case basis for design flow velocity less than 0.6 m/s but in no case shall slopes be less than shown below and in no case shall pipe size be increased so as to reduce the minimum slope.
- Minimum Slopes:

<u>Size/ Condition</u>	<u>Minimum Slope</u>
Top reach (MH to MH)	1.0%
Top 25 dwelling units	1.0%
200mm	0.4%
250mm	0.3%
- The minimum cover for sanitary mains shall be 1.5 metres from the finished grade.
- The crown of the main at the point where the service is connected shall be a minimum of 1.0 metre below the lowest floor grade of the buildings being serviced except where connection is by a pumped sewage connection with back flow prevention installed to protect the building being connected.
- The Manning’s roughness coefficient for design purposes shall be 0.013 unless otherwise specified.
- Industrial, commercial and institutional design flows are recommended to follow Ministry of the Environment guidelines. Infiltration shall be 0.00014m^3 per second per hectare of contributing area.
- Peaking factors shall be 2.75 for maximum flow and 4.0 for minimum flow as derived from the Harmon formulae.
- Sewers shall be air tested with services extended to the property line based upon OPSS 410, modified so that the pressure drop does not exceed 3.5 kPa over a time in minutes equal to the volume in cubic metres multiplied by 1.25.
- Sewers shall be tested for deflection as per OPSS 410.

Design sheets shall be submitted in spreadsheet format (Excel or equivalent) in accordance with Utilities Kingston and City of Kingston standards, in both hard copy and digital format containing formulae used in arriving at the calculations.

Maintenance Holes

All sanitary maintenance holes (MH) shall be as follows:

- conform to OPSD or OPSS 700 standards;
- spaced at a distance not greater than 90 metres unless increased spacing is determined appropriate by Utilities Kingston;
- where pipes of different sizes are connected to a maintenance holes, the crown of the inlet pipe(s) shall not be lower than the crown of the outlet. The difference in invert elevations between inlets and outlets shall be as indicated in Ministry of the Environment guidelines;
- tested for leakage in accordance with OPSS sect 407; and,
- sampling maintenance holes shall be installed in accordance with the City of Kingston Sewer Use By-law.

Sanitary Service Laterals

All public sanitary service laterals shall be as follows:

- separate services shall be provided to each building and each unit of a semi detached or row house residential building;
- service laterals from the building line to the main shall be laid at a minimum slope of 2% from the building line to the main sewer;
- the first 40 service laterals connected to a 200mm main shall be set above the spring line of the sewer main with proper “Y” fittings and with long radius bends;
- service laterals 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;
- service laterals shall not be connected directly to maintenance holes unless authorized by Utilities Kingston;
- service laterals from adjacent properties shall not be connected to each other;
- service laterals shall be sized to meet the *Ontario Building Code* and shall be minimum of 125mm;
- the colour shall be green;
- the minimum cover for service laterals will normally be a minimum of 1.5 metres from the finished grade;
- services with 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;
- services with less than 1.0 metre of cover are not permitted;
- service laterals shall not be connected to a storm main;
- unconnected sanitary and other drain services shall be brought to the property line, properly capped and clearly marked such that an installer will not cross connect services;
- caps must withstand air testing of sewers including services to the lot line; and,
- capped services shall be appropriately marked with a “2x4” extending from the pipe invert to at least 1.0 metre above finished grade level.

Building Sewers

All building sewers shall be as follows:

- building sewers from the building line to the main shall be laid at a minimum of 2% from the building line to the sewer;
- 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;
- building services from adjacent properties shall not be connected to each other;
- building sewer services shall be sized to meet the *Ontario Building Code* and shall be a minimum of 125mm;
- the colour shall be green;
- the minimum cover for sanitary services will normally be a minimum of 1.5 metres from the finished grade;
- 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;
- services with less than 1.0 metre of cover are not permitted; and,
- sanitary services shall not be connected to a storm main.

4.4.5 Water Distribution System

Watermains

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

The design of a watermain shall be as follows:

- average day per capita - 350L per person / day;
- maximum day 2.75 times the average day;
- peak hour rate factor shall be 4.25 unless approved otherwise by Utilities Kingston;
- sizing shall be based on needed fire flow plus maximum day flow or peak hour flow alone, whichever is largest;
- the maximum and minimum pressure under normal operating conditions shall be 700 kPa and 280 kPa respectively;
- the minimum system pressure under fire flow conditions shall not be less than 140 kPa;
- design fire flows shall be in accordance with *Water Supply for Public Fire Protection, A Guide to Recommended Practices 1977*, by Insurance Bureau of Canada;
- a suitable means for flushing such as a hydrant or a blow off shall be provided on services ≥ 100 mm diameter;
- shall not be connected to any sewer;
- flushing devices other than hydrants shall be approved on a case-by-case basis;
- large diameter water services (≥ 100 mm) shall be evenly graded and hydrants or air release valves shall be placed at high points;
- the minimum depth of cover measured from the top of a main or a service connection gooseneck shall not be less than 1.7 metres;

- pipe bedding and cover shall conform to those requirements as set forth in OPSD 802 series for storm sewer mains;
- bedding and cover shall be Granular “A”;
- a Professional Engineer shall certify that testing and the disinfecting of mains was undertaken as set forth herein and as per OPSS;
- all newly constructed watermains shall be isolated from the existing distribution system by physical separation or through the use of an appropriate backflow prevention device approved by Utilities Kingston and shall remain in place until approval of the Utilities Engineer is granted for permanent interconnection; and,
- watermains and water services shall not be used as an electrical ground in new buildings.

Water Servicing Requirements

Water services shall 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 shall 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 shall 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 systems are required to be adjacent to fire access routes or streets and no greater than 45 metres travel distance from a fire hydrant.

(b) Ductile Iron Pipe and Fittings

- ductile Iron Pipe shall be centrifugally cast, AWWA C151-A21.51- 81 in 5.5 metre lengths, Pressure Class 350 for pipe up to 300mm, Pressure Class 250 from 400mm to 500mm and Pressure Class 200 for larger pipes;
- all ductile iron pipes shall be cement lined and shall be polyethylene encased as per AWWA Standard C-105;
- all ductile iron fittings shall be cement lined with mechanical joints;
- every ductile iron pipe and special casting shall be coated outside with coal tar pitch varnish using a hot dip method; and,
- wedges shall be installed at ductile iron pipe joints to ensure electrical continuity.

(c) Plastic Pipe and Fittings

- plastic pipe shall conform to AWWA C900-Poly (Vinyl Chloride) (PVC) Specification, SDR 18 for pipe up to 400mm in diameter, for larger pipe sizes and subject to the Contract Administrator's approval, a larger SDR number may be used, however the minimum wall thickness allowed will be 26mm;
 - the pipe shall be homogeneous throughout, free from voids, cracks, inclusions, discolouration, and other defects;
 - all pipe and fittings shall be certified to CSA B137.3;
 - fitting shall 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 300mm and larger according to CSA B137.3; and,
 - the colour for all PVC pipe and PVC fittings shall be blue.
- (d) Concrete Pressure Pipe and Fittings
- concrete Pressure Pipe shall only be allowed if so stated in the tender form or on the contract drawings;
 - concrete pressure pipe shall be laid according to the specifications outlined in the A.W.W.A. M9 Concrete Pipe Installation Manual;
 - the internal joint gap shall be checked to ensure the proper seating of the gasket, then be pointed with cement mortar using a hand trowel; and,
 - the joint exterior shall be protected with a diaper filled with grout installed to the manufacturer's instructions.

Valves

Valves shall be as follows:

- three valves shall be placed on a tee intersection and four valves on a cross intersection;
- on straight runs isolation valve spacing shall be not more than 150 metres;
- valve boxes shall be adjusted to finished grade;
- main valves are to be located in line with the intersecting street lines, at all intersections;
- all valves shall be clockwise opening with 50mm operating nut with the exception of the area of the former City, which shall have "Kingston Operating Nuts";
- the operation of all valves, curb stops and hydrants shall 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

Service connections shall be as follows:

- services shall be sized in accordance with the *Ontario Building Code*;
- service connections shall have a corporation main stop and be "goose-necked" near the water main as per the appropriate OPSD;
- main stops may be set at the spring line and the gooseneck may be horizontal;
- a ball valve type curb stop without a drain and associated valve box to finished grade shall be provided on the service connection to each premises and be located at the property line, in accordance with relevant OPSD and the use of a stainless steel extension rod;
- separate services shall be provided to each building and each unit of a semi-detached or row house residential building;
- water services shall be "Type K" copper, or approved polyethylene;
- non-conductive materials will require the use of tracer wire;
- there shall be no joints between the main stop and the curb stop and no joints between the curb stop and the building interior; and,
- service connections to PVC mains shall be by stainless steel saddle or approved equal, either of which shall be approved by Utilities Kingston.

Fire Hydrants

Fire hydrants shall be installed as per OPSD and shall also conform to the following:

- hydrants shall be located such that the maximum road travel distance from hydrant to the center frontage of a lot shall not exceed 75 metres;
- any deviation beyond the maximum allowable spacing shall require the approval of the City's Fire Chief;
- each hydrant shall have an isolation valve with a valve box;

- each hydrant shall have a 150mm barrel with two 63mm hose connections and one 100mm Stortz Pumper (Steamer) Port connection and shall be clockwise opening;
- hydrants shall be Clow Brigadier D67M, or Canada Valve Century B50-B18;
- each hydrant shall have a concrete shock collar of 1m x 1m x 150mm thick, the top of which shall be 150mm below the flange;
- hydrant flanges shall be higher than the crown of the adjacent road or the top of the adjacent curb, whichever is higher;
- hydrant flanges shall be placed such that connecting bolts can be easily removed;
- hydrants set in ditches or swales shall conform to OSPD 217.05;
- all hydrants shall be self-draining;
- to ensure drainage, washed gravel of suitable size and quantity shall be placed around the drain holes and topped with suitable geotextile to ensure fines do not migrate into the drainage rock;
- fire hydrants, which are not in service, shall have a 300mm x 300mm sign affixed on the road-facing side with 35mm black lettering on a reflective yellow background stating “NOTICE: THIS HYDRANT IS NOT IN SERVICE”;
- prior to the issuance of the Preliminary Certificate of Approval of the Underground Services, each hydrant shall be flow rated by Utilities Kingston personnel in accordance with Installation, Field Testing, and Maintenance of Fire Hydrants AWWA M17;
- upon meeting the applicable standard, the flow ratings will be forwarded to the Owner’s engineer prior to issuance of the Preliminary Certificate of Approval of the Underground Services;
- the Owner’s application for the Certificate shall have appended to it the hydrant ratings as provided by Utilities Kingston;
- all hydrants shall be placed in an obstruction free zone such that neither their view nor their accessibility is obstructed;
- no object shall be permitted within a triangle bounded by a point commencing 1.0 metre behind the hydrant, and extending at a 45° angle to the curb or road edge;
- no object wider in any direction than 250mm is permitted within an area bounded by a triangle within an apex 1 metre behind the hydrant and sides intersecting the road edge or curb at a 10° angle;
- the Fire Chief shall have the final authority on the location of structures or other items which might interfere with the view or the accessibility of hydrants; and,
- Utilities Kingston shall paint all hydrants Chrome Yellow, and the bonnet and nozzle caps painted as follows:

BLUE-Class AA	Flows greater than 95 L/s (1500 USGPM)
GREEN -Class A	Flows of 63 to 95 L/s (1000 to 1500 USGPM)
ORANGE- Class B	Flows of 31 to 63 L/s (500 to 1000 USGPM)
RED - Class C	Flows less than 31 L/s (500 USGPM)

Tracer Wire

All services shall be traced with an appropriate tracer wire. Tracer wire shall be “cad welded” to valve boxes and service boxes or connected in an equal fashion as approved by Utilities Kingston. Tracer wire splices shall be by means approved by the City.

Non-metallic services shall have the tracer wire extending into the building being serviced and terminated at the water meter remote. All non-metallic water mains and services shall have a 12 gauge tracer wire and have the tracer wire thermo welded to the curb box.

Tracer wire shall be looped up the outside of all main and hydrant valve boxes and extended into the valve box by 50mm through a saw cut 50mm below the bottom of the cover bell. Where applicable the tracer wire is to continue from the hydrant valve box to the hydrant where it shall be cad welded to the boot of the hydrant.

Cathodic Protection

Tracer wire on mains shall be protected with a 2.3kg zinc anode, at each end a maximum spacing of which shall be 500 metres.

Sacrificial anodes shall be supplied and installed on all ductile iron or cast iron fittings and at other locations as directed by the Engineer. Anodes shall be:

- zinc casting alloy conforming to ASTM M-418 10.9kg;
- magnesium extrusion conforming to ASTM B-843-93 14.5 kg; and,
- set and thermite welded to the satisfaction of the Engineer.

Valves, metallic fittings and hydrants shall be protected with 7.7kg magnesium anodes. Metallic services of 25mm or smaller and less than 20 metres in length shall be protected with a 2.3kg zinc anode. Other metallic services of 50mm or smaller shall be protected with a 5.5kg zinc anode.

4.4.6 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 Union 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 shall be the responsibility of Utilities Kingston and all associated construction costs shall be borne by the Owner.

For those areas where the City does not have distribution rights, gas mains and servicing requirements shall conform to the standards of the supplier. Regardless, in no case shall a gas service or main be placed within 2.0 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 shall conform to the following:

- Gas mains and services to be labelled with pipe material and size;

- Valve boxes and valve chambers indicated on plans;
- Proposed design load submitted; and,
- Proposed location of the meter set and regulator to be indicated.

4.4.7 Abandoned Services

For all existing services or stubs to be abandoned, a note shall be included on the drawings stipulating that the services are to be cut and capped at the main unless prior written approval has been provided by Utilities Kingston.

4.4.8 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 which are available on the City's web site at www.cityofkingston.ca/business/development/subdivisions.asp.

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 developer's expense.

4.4.9 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 Granite Power.

In the areas where the 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 shall apply:

- the design shall be approved by Utilities Kingston;
- the Owner shall be responsible for all costs;
- the Owner shall install conduits, transformer pads and necessary grounding; and,
- all electrical wiring shall 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 shall conform to the standards of the supplier.

Regardless of ownership, all wire services under roads shall 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 shall 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 shall be located on the site plan and include the proposed sizing and design connected load.
- All electric servicing manholes shall be labelled.
- Light standards and fixtures locations shall be shown.
- Utility structures, transformer boxes and Bell/cable poles, pedestals and guys shall be indicated on the drawing.
- Traffic and pedestrian signals shall be included where applicable.
- All electrical servicing shall be done in accordance with the standards established by the electrical supply authority (i.e. Utilities Kingston or others).

4.4.10 Fibre Optics

Utilities Kingston has wired areas in the City of Kingston with fibre optic glass so broadband services are available to select single and multi-tenant commercial and industrial sites throughout the city. Fibre optic access offers customers highly scalable, reliable and secure service between locations in the City or to the Internet. Utilities Kingston may install a fibre optics conduit at no expense to the Owner in the joint utility trench. For more information please contact Utilities Kingston at 613-546-1181.

4.4.11 Utility Easements

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

Easements shall be five (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 shall 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 shall not be less than 3.0 metres. 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.

4.4.12 Other Utility Approvals

Please be advised that agencies outside of the jurisdiction of Utilities Kingston will need to be contacted and their approval gained. Agencies such as, but not limited to, Union Gas, Hydro One, Granite Power or Fortis Ontario may be required to give their approval.

4.4.13 Construction and Inspection

Utilities Kingston is responsible for inspection of services. Utilities Kingston's role during testing will be as follows:

- continuity testing on water services:
 - the Developer shall contact Utilities Kingston prior to the test being performed;
 - Utilities Kingston personnel must be on site to witness the testing performed;
- pressure testing of the sewer and water systems:
 - testing performed by the Developer;
 - results of testing to be supplied to Utilities Kingston;
- disinfection and bacteriological testing of the water service:
 - testing performed by the Developer;
 - results of testing to be supplied to Utilities Kingston.

Services smaller than 100mm in diameter serving a single structure, and connected to an existing watermain, shall 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 material to be supplied by the Developer. Before final connection to the meter, the service shall 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 100mm and larger shall be treated as a water main or main extension for the purposes of leakage testing, backflow protection, flushing and disinfection. Connections to existing water mains shall be as stated above. No connection to the City of Kingston water distribution system will take place without proof of the installation of an appropriate backflow prevention device.

Leakage testing and disinfection of all mains and services ≥ 100 mm diameter shall conform to OPSS 701 as described and amended below:

- all new pipes shall be isolated from the existing distribution system by the temporary installation of a suitable backflow prevention device to be supplied, installed, and eventually removed by the developer;
- hydrostatic testing shall be conducted under the supervision of the Developer's engineer, upon the completion of the water service including backfilling;
 - The test section shall be filled slowly with water and all air shall be removed from the pipeline
 - A 24 hour absorption period may be allowed before starting the test; and,
 - The test section shall be subjected to the specified continuous test pressure for a minimum of 2 hours.

- test pressure shall be 1035 kPa unless otherwise required by the *Ontario Building Code* or other legislation relating to the particular service;
- the leakage is the amount of water added to the test section to maintain the specified test pressure for the test duration;
- the measured leakage shall be compared with the allowable leakage as calculated for the test section;
- the allowable leakage is 2.22 litres per millimetre of pipe diameter per kilometre of water main per day;
- if the measured leakage exceeds the allowable leakage, all leaks shall be located and repaired and the test section shall be retested until a satisfactory result is obtained;
- flushing and disinfection operations shall be conducted under the supervision of the Developer's engineer;
 - while flushing or chlorinating, all valves, hydrants and curb stops located on the section to be disinfected shall be operated to ensure disinfection;
 - flushed sections shall be protected from contamination;
 - after flushing is completed, water from the existing distribution system shall be allowed to flow at a controlled rate into the new pipeline;
 - liquid chlorine solution shall be introduced so that the chlorine is distributed throughout the section being disinfected;
 - the chlorine shall be applied so that the chlorine concentration is 50 mg/l minimum throughout the section;
 - the system shall be left charged with the chlorine solution for 24 hours;
 - sampling and testing for chlorine residual shall be carried out by the Developer's engineer;
 - the chlorine residual will be tested in the section after 24 hours;
 - if the tests indicate a chlorine residual of 25 mg/l minimum, the section shall be flushed completely and recharged with water normal to the operation of the system;
 - if the test does not meet the requirements, the flushing and chlorination procedure shall be repeated until satisfactory results are obtained;
 - twenty-four hours after the system has been recharged, the Developers engineer shall take samples for bacteriological testing; and,
 - if there is indication of contamination, the disinfection procedure shall be repeated in its entirety.

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 shall not be put into operation until clearance has been given by Utilities Kingston.

Developers and Contractors are advised that except in the case of an emergency shutdown, it is illegal to operate any 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. Developers or Contractors shall not operate during the

construction process any water valves and shall 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 dealt with 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.

Construction of the services (i.e. water service and sewer laterals) will be performed by the contractor and inspected by Utilities Kingston. If the services are backfilled at the time of inspection the laterals will not pass the inspection.

Connections to sanitary sewers will be witnessed and inspected by Utilities Kingston personnel. By-law No. 2000-264, Section 11.0 provides that no one may operate a fire hydrant (other than the Fire Department) unless authorized or performed by Utilities Kingston personnel. Fire hydrants shall not be used to provide a source of water for construction purposes. The inappropriate use of hydrants can cause premature wear, breakage, loss of pressure, contamination of potable water or insufficient water for fire protection in the entire system. Any evidence of the illegal use of hydrants will result in the active enforcement of the provisions of By-law No. 2000-264 regarding the illegal use of hydrants.

All electrical installations shall be inspected and approved by the Electrical Safety Authority. In some instances, the electrical supply authority (i.e. Utilities Kingston or other) 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.

4.5 FIRE & RESCUE

Fire safety standards applicable to site plan design are provided, primarily, from provincial regulations such as the *Ontario Fire Code*, *the Fire Protection and Prevention Act*, and, *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 shall be designed to the City's requirements, applicable zoning regulations and the approval of the Fire Department. Fire access routes should include dimensions to indicate:

- minimum width of 6 metres;
- minimum 12 metres centre line turning radius;
- minimum 5 metres overhead clearance height;
- maximum 90 metres dead end length or suitable turn-around facilities; and,

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

For further information regarding fire protection issues, please contact the Fire Prevention Bureau at (613) 548-4001 ext. 5123.

4.6 ACCESSIBILITY

The *Planning Act* identifies accessibility for persons with disabilities to all facilities and services 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, row houses 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.

4.6.1 General Design Considerations

Plans submitted for accessibility review and evaluation are encouraged to:

- clearly indicate all specific accessibility considerations including, but not limited to, lighting, signage, parking, ramps, doorways, and safety features;
- indicate the disability groups considered in the development of the plan (e.g., mobility, visual disabilities);
- consider accessibility (universal design) in the development of the plan as indicated by stating the source or guidelines used as reference; and,
- the International disability symbols should be used to mark designed accessibility features.

4.6.2 Barrier Free Parking Spaces

The requirements associated with barrier free parking spaces, including size, location and required number of barrier free parking spaces, are governed by the applicable Zoning By-Law for the property.

Barrier free parking spaces shall 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 barrier free parking spaces shall 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.

All barrier free parking spaces must be painted blue and be marked by an identifying marker consisting of the International Symbol for the physically challenged.

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

4.6.3 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.

The main entrance, all fire exits and adjacent pedestrian pathways must be accessible (automated doors, wide enough to accommodate motorized scooters, etc). Ideally, all entrances should be accessible. The type of entry control devices utilized should consider the difficulty for people with limited mobility or dexterity.

The main entrance to the buildings and all other entrances to outdoor open space or recreation areas, should be designed in accordance with the *Ontario Building Code* and ideally should have a minimum width of 0.81 metre. Automatic sliding doors which are easy to open or open automatically with a proximity or motion sensor and slow to close are also satisfactory.

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*. The top and bottom of the ramp should be identified by a tactile or texture change in the flooring and by a visual alert having a contrast of 70%.

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.

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.

4.6.4 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:

- the lobby, main social and recreational facilities, mail boxes, laundry room, elevators, public washrooms, garbage deposit areas and indoor garage all should be accessible to physically challenged persons;
- at least one elevator should accommodate wheelchairs and scooters with the control buttons not more than 1.2 metres above the floor and doors which close relatively slowly;

- public washrooms or washrooms adjacent to lounges or recreational areas in apartment's buildings should be designed in accordance with the *Ontario Building Code*;
- mailboxes should be no lower than 0.6 metres and no higher than 1.4 metres from the floor; and,
- 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 physically challenged persons.

4.6.5 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 its surroundings. The design of curb-cuts should include flared edges and colours or tactile alerts to demarcate them.

Grades should be gradual along a pathway. Long or steep ramps should have switchbacks with resting platforms.

A passenger drop-off area should be provided with a direct and level route to the main entrance of the building and, ideally, provided with a roof shelter. Curb ramps, where required, shall 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.

4.6.6 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 in *THE PRINCIPLES OF UNIVERSAL DESIGN*, Copyright 1995, The Center for Universal Design, NC State University.

4.6.7 Additional Reference Material

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

- Canada Mortgage and Housing Corporation, *Housing for Persons with Disabilities*, 1996;

- Canadian Standards Association, CAN/CSA - B651-M90, *Barrier Free Design - A National Standard of Canada*, 1990;
- Standards for Barrier Free Design of Ontario Government Facilities, *Management Board Secretariat*, 2004;
- National Capital Commission, *Barrier Free Site Design Manual*, 1994;
- Ontario Ministry of Community and Social Services, *Designing for Disabled Guidelines*, 1987; and,
- Ontario Ministry of Housing, *Ontario Building Code*, Section 3.8, Barrier Free Design, 2006.

4.7 BUILDING

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 the Building Department which is responsible for the review and approval of Building Permit applications. Applications for Building Permit 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 shall be discussed with the Building Department 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 shall be prepared by an Architect or Engineer and bear an Architect or Engineer stamp.

4.7.1 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.

4.7.2 Signage

All ground and/or facia signs on the subject property must comply with the City of Kingston's Sign By-law No. 2009-140 'A By-law to Provide for the Prohibition and Regulations of Signs and other Advertising Devices', 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.

5.0 CONTACTS AND OTHER RELATED DOCUMENTS

5.1 CONTACTS

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

Planning and Development Department	(613) 546-4291 extension 3180
Engineering Department	(613) 546-4291 extension 3130
Building Department	(613) 546-4291 extension 3280
Utilities Kingston	(613) 546-1181
Accessibility	(613) 546-4291 extension 3182
Parks Development	(613) 546-4291 extension 1256
Heritage	(613) 546-4291 extension 1386
Cataraqui Region Conservation Authority	613) 546 4228

5.2 OTHER 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:

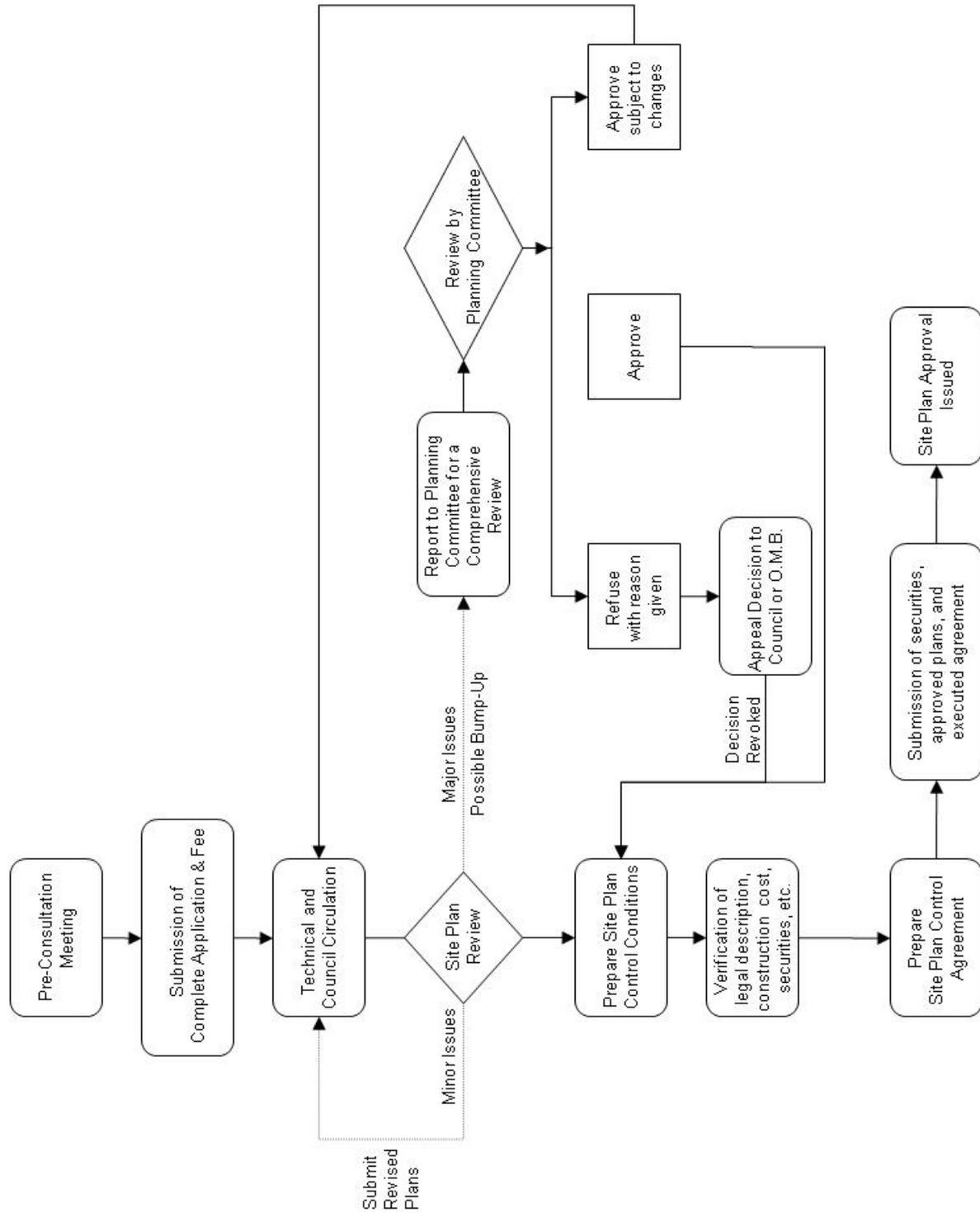
- Ontario *Planning Act*
- Provincial Policy Statement
- City of Kingston's Official Plan(s)
- City of Kingston's Zoning By-Laws:
 - By-Law # 32-74 (former Township of Pittsburgh)
 - By-Law # 76-26 (former Township of Kingston)
 - By-Law # 97-102 (Cataraqui North)
 - By-Law # 8499 (former City of Kingston)
 - By-Law # 96-259 (Downtown and Harbour)
- Site Plan Control By-Law No. 2010-217
- Tree Conservation By-Law No. 2005-289
- Site Alteration By-Law No. 2008-128
- Archaeological Master Plan
- Subdivision Development Guidelines and Technical Standards
- Transportation Master Plan
- Cycling and Pathways Study
- Downtown and Harbour Architectural Guidelines

The above noted City documents can be found on the City's web site at www.cityofkingston.ca

6.0 LIST OF APPENDICIES

- A. Site Plan Control Review Process Flow Chart
- B. Sign Specifications for a Site Plan Control Application
- C. Sample Letter of Credit
- D. City Recommended Street Tree Species
- E. CRCA Recommended Tree & Shrub Species
- F. Utilities Kingston Distribution Area Maps

Appendix A: Site Plan Control Review Process Flow Chart



Appendix B: Signage Specifications for Site Plan Control Applications

The cost of the signage for a Site Plan Control application is included in the application fee. Signs will be produced by the Planning & Development Department; however, Applicants are responsible for the proper installation and removal of the sign(s). A sign will not be required if the Site Plan Control application is for a proposal with less than 300 square metres of new floor area.

NOTE: Failure to appropriately post the sign(s) will result in the stoppage of the application process, including the cancellation of any public meetings or the need to hold additional public meetings.

Location & Installation of Signage

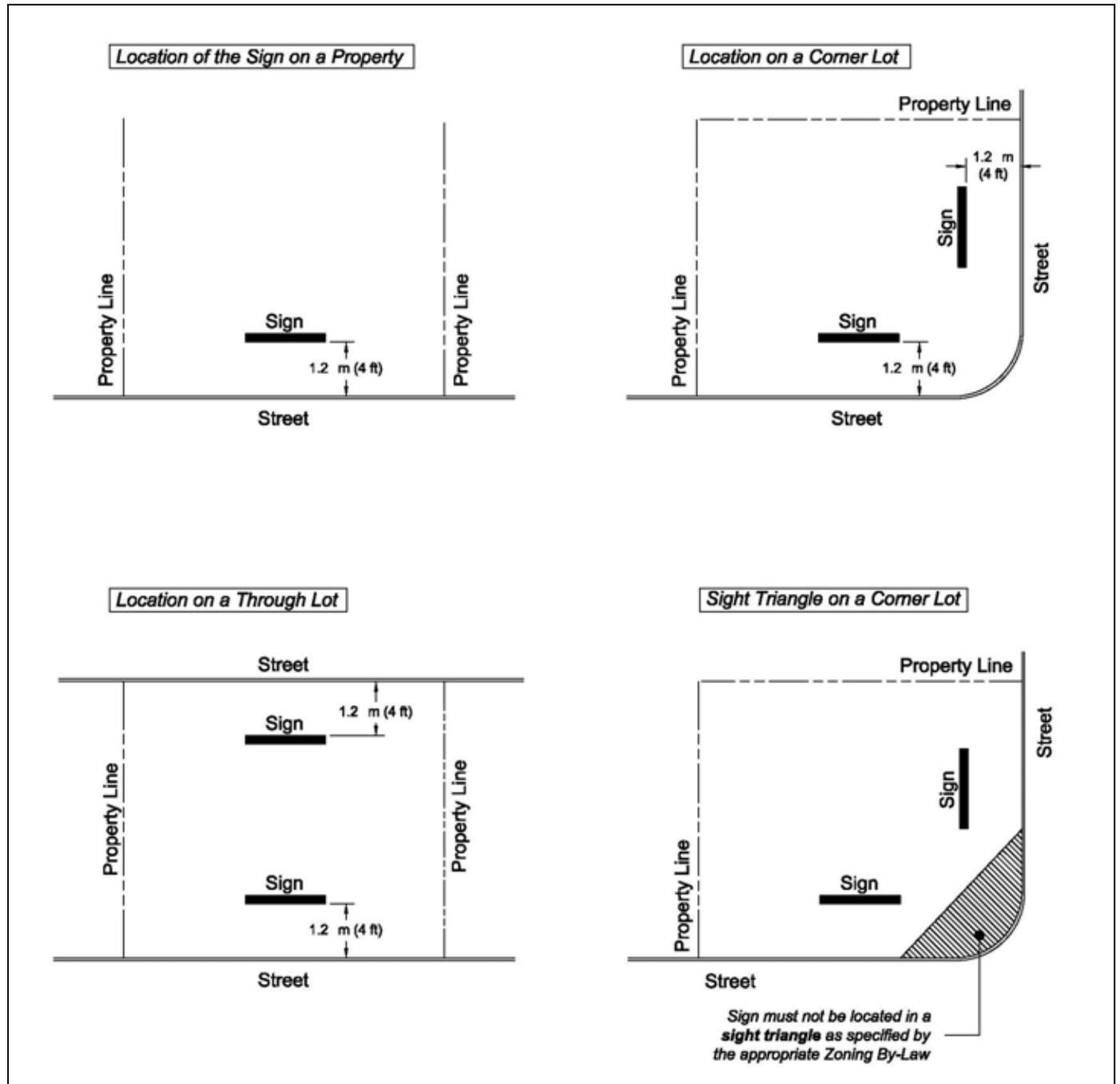
- The applicant is responsible for the installation and maintenance of all signs (including snow clearance), which shall be located away from any obstructions such that the signs are visible from the street and installed in a safe and secure manner.
- Signage is required for each separately assessed property that is subject to the application(s).
- All signs shall be secured to a stake or post that can be anchored firmly in the ground and located according to the specifications listed below (the Applicant is responsible for providing the stake or post).
- The sign must be placed on the stake or post a minimum of 0.5 metre (1.6 ft.) above ground (Note: the sign must remain visible from the street/sidewalk at all times, even during periods of snow accumulation).
- The sign for a consent application shall be posted a minimum of fourteen (14) days prior to the public meeting.
- The sign shall be posted by the date specified by the Planning & Development Department (to be confirmed in a letter from the Planning & Development Department).
- The sign shall be placed on the subject property, and not within public rights-of-way.
- The sign shall be located approximately midway between the side lot lines at a maximum setback of 1.2 metre (4 ft.) from the street line.
- The sign shall not be placed in a window of a building located on the subject property.
- For corner lots, two signs shall be placed as noted above for each frontage of the subject site, at approximately the halfway point along each frontage.
- For through lots having frontage on more than one street, a sign shall be placed as noted above for each frontage of the subject site, at approximately the halfway point along each frontage.
- No sign shall be located within any sight triangle, as specified by the appropriate Zoning By-Law.
- The sign may be placed on the exterior of a building, if it cannot be accommodated in the front yard of the subject property.

Should you require assistance in determining the appropriate location of your sign, please contact the Planning & Development Department at (613)546-4291, ext. 3180.

Removal of Signage

The sign(s) shall be removed by the Applicant within seven (7) days after any of the following:

- The application is denied, lapses, or is withdrawn;
- The application is approved by the Planning & Development Department or Council; or
- A Decision is rendered by the Ontario Municipal Board where the application has been the subject of an appeal.



Appendix C: Letter of Credit

BANK OR FINANCIAL INSTITUTION LETTERHEAD & ADDRESS IRREVOCABLE COMMERCIAL LETTER OF CREDIT

TO: The Corporation of the City of Kingston
City Hall, 216 Ontario Street
Kingston, ON K7L 2Z3

We hereby authorize you to draw on the FINANCIAL INSTITUTION, ADDRESS, for account of DEVELOPER up to an aggregate amount of AMOUNT WRITTEN OUT IN FULL Dollars (\$AMOUNT) available by drafts at sight for 100% of invoice value as follows:

Pursuant to the request of our customers, the said DEVELOPER.

We, the FINANCIAL INSTITUTION, hereby establish and give to you an irrevocable letter of credit in your favour in the total amount of \$AMOUNT which may be drawn on by you at any time and from time to time upon written demand for payments made upon us by you which demand we shall honour without inquiring whether you have a right as between yourself and our said customers to make such demand and without recognizing any claim of our said customers.

Provided, however, that you are to deliver to the FINANCIAL INSTITUTION, ADDRESS, at such time as a written demand for payment is made upon us, a certificate signed by you agreeing and/or confirming that monies drawn pursuant to this letter of credit are to be and/or have been expended and relate to those municipal services and financial obligations set out in the (please specify type of agreement or contract i.e. Subdivision, Site Plan) AGREEMENT between the DEVELOPER / APPLICANT and the City of Kingston relating to (name of subdivision, property being developed or building or business being built or contract being performed).

The amount of this letter of credit shall be reduced from time to time as advised by notice, in writing, given to us from time to time by you.

Partial drawings are permitted.

Drafts must be drawn and negotiated not later than the EXPIRY DATE.

It is a condition of the Credit that it shall be deemed to be automatically extended without amendment for one year from the present or any future expiry date hereof, unless at least 30 days prior to such expiry date, we notify you in writing by registered mail, that we elect not to consider this credit to be renewable for an additional period.

The drafts drawn under this credit are to be endorsed hereon and shall state on their face that they are drawn under the FINANCIAL INSTITUTION.

Letter of Credit No.

Dated:

Assistant Manager or Other Authorized Officer

Manager or other Authorized Officer

Appendix D: City Recommended Street Tree Species

Recommended Street Tree Species:

Common Name	Latin name
Sugar Maple	<i>Acer saccharum</i>
Freeman Maple	<i>Acer x freemani</i>
Emerald Queen Maple	<i>Acer Plantanoides 'Emerald Queen'</i>
Parkway Maple	<i>Acer Plantanoides 'Parkway'</i>
Red Maple	<i>Acer rubrum</i> var. Morgan/Red Sunset
Hackberry	<i>Celtis occidentalis</i>
Ash	<i>Fraxinus</i> var: White/ Marshall's Seedless/Summit/Green
Honey Locust	<i>Gleditsia triacanthos</i> var. Shademaster/Skyline
Maidenhair tree (male only)	<i>Gingko biloba</i>
Oak (Red and Pin)	<i>Quercus rubur, Quercus Palustris</i>
Linden	<i>Tilia</i> var <i>cordata</i> Glenleven/ <i>Euchlora</i> (Crimean)

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

Common Name	Latin name
Katsura Tree	<i>Ceridiphyllam japonicum</i>
Amur Cork tree	<i>Phellodendron amurense</i>
Ornamental Pears /Bradford, Redspire	<i>Pyrus calleryana</i>
Ivory Silk Tree	<i>Syringa amurensis japonica 'Ivory Silk'</i>
Serviceberry	<i>Amelanchier canadensis</i>
Amur Maple	<i>Acer ginnala</i>
Thornless Cockspur Hawthorn	<i>Craetaegus crusgalli 'inermis'</i>

Restricted species adjacent to Natural or Environment Protection Areas:

The following trees and shrubs are not recommended to be planted adjacent to natural areas or Environmental Protection Areas. However, alternative species are provided for consideration.

Invasive Tree Species	Effects on Natural Area	Alternatives to consider
Norway Maple	Dominates forest Canopy.	Native maple 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 red mulberry	Native Witch-Hazel, Native Serviceberry, pin cherry , chokecherry
Lilac	Dominates forest edge	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

The alternative species are also good trees/shrubs to consider adjacent to stormwater retention pond sites.

Appendix E: Cataraqui Region Conservation Authority Recommended Species

Recommended species list from the Cataraqui Region Conservation Authority for lands adjacent to Environmental Protection Areas, and wetlands, and woodlots.

Deciduous Trees

Black Ash.	<i>Fraxinus nigra</i> Marsh
White Ash L.	<i>Fraxinus americana</i>
Red / Green Ash	<i>Fraxinus pennsylvanica</i>
Large Toothed Aspen	<i>Populus grandidentata</i>
Trembling Aspen Michx.	<i>Populus tremuloides</i>
American Basswood L.	<i>Tilia americana</i>
American Beech Ehrh.	<i>Fagus grandifolia</i>
White (Paper) Birch	<i>Betula papyrifera</i>
Yellow Birch	<i>Betula alleghaniensis</i>
Butternut	<i>Juglans cinerea</i>
Black Cherry	<i>Prunus serotina</i>
Pin Cherry	<i>Prunus pensylvanica</i>
Shagbark Hickory	<i>Carya ovata</i>
American Hop-hornbeam/Ironwood	<i>Ostrya virginiana</i>
Red Maple	<i>Acer rubrum</i>
Sugar Maple	<i>Acer saccharum</i>
Silver Maple	<i>Acer saccharinum</i>
Mountain Maple	<i>Acer spicatum</i>
Striped Maple	<i>Acer pensylvanicum</i>
Bur Oak	<i>Quercus macrocarpa</i>
Red Oak	<i>Quercus rubra</i>
White Oak	<i>Quercus alba</i>
Balsam Poplar	<i>Populus balsamifera</i>
Canada Plum	<i>Prunus nigra</i>
Black Willow	<i>Salix nigra</i>

Coniferous Trees

Balsam Fir	<i>Abies balsamea</i>
Eastern Hemlock	<i>Tsuga canadensis</i>
Tamarack or Eastern Larch	<i>Larix laricina</i>
Eastern White Pine	<i>Pinus strobus</i>
Red Pine	<i>Pinus resinosa</i>
White Spruce	<i>Picea glauca</i>
Black	<i>Picea mariana</i>

Deciduous Shrubs

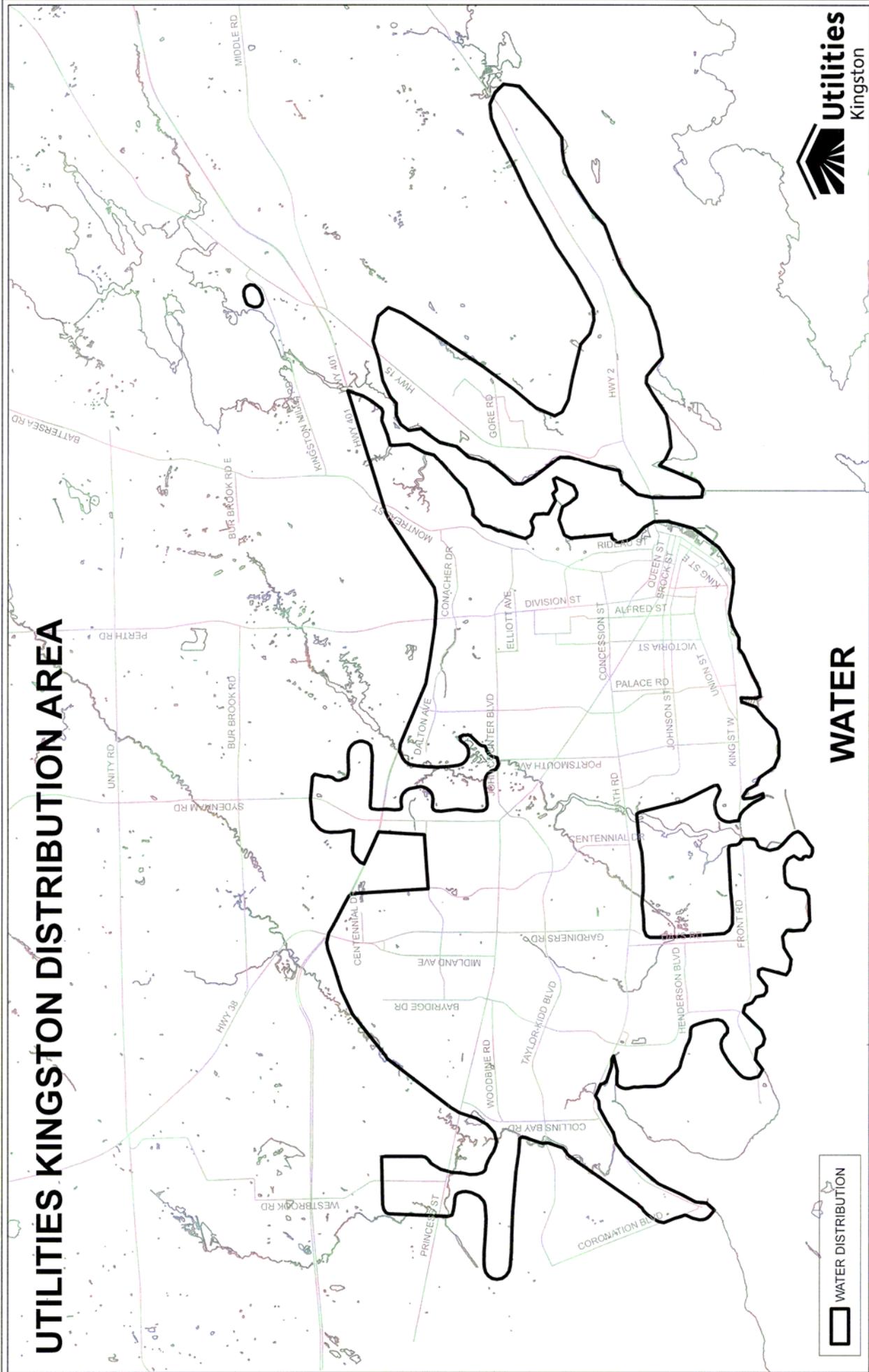
Specked Alder	<i>Alnus incana</i>
Choke Cherry	<i>Prunus virginiana</i>
Alternate-leaved Dogwood	<i>Cornus alternifolia</i>
Hawthorne	* <i>Crataegus chysocarpa</i>
Nannyberry	<i>Viburnum lentago</i>
Serviceberry	<i>Amelanchier</i>
Bebb's Willow	<i>Salix bebbiana</i>
Shining Willow	<i>Salix lucida</i>
Pussy Willow	<i>Salix discolor</i>

Coniferous Shrubs

Red Cedar	<i>Juniperus virginiana</i>
Eastern White Cedar	<i>Thuja occidentalis</i>
Common Juniper	<i>Juniperus communis</i>

Appendix F: Utilities Kingston Distribution Area Maps

UTILITIES KINGSTON DISTRIBUTION AREA

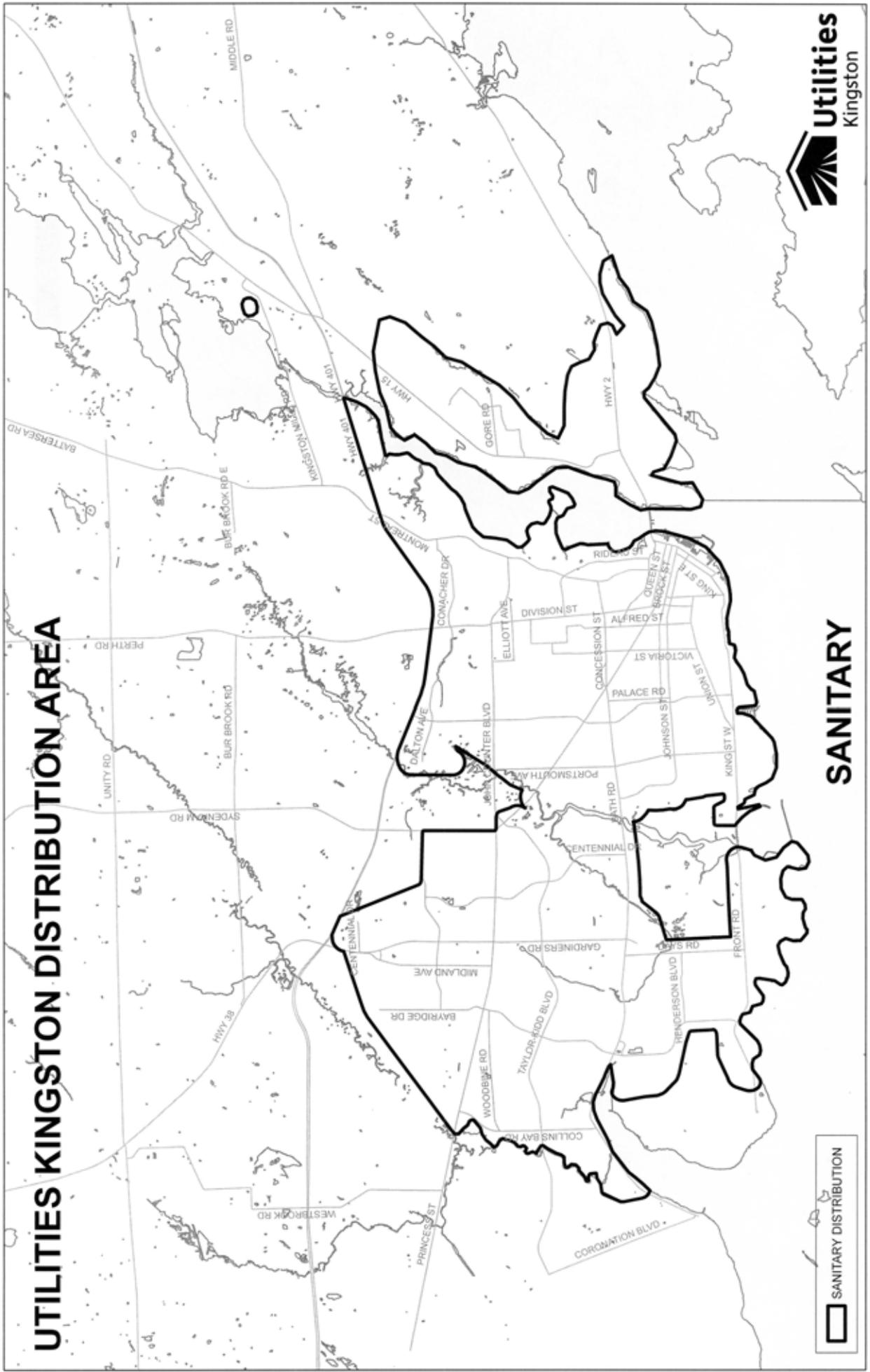


WATER

□ WATER DISTRIBUTION



UTILITIES KINGSTON DISTRIBUTION AREA

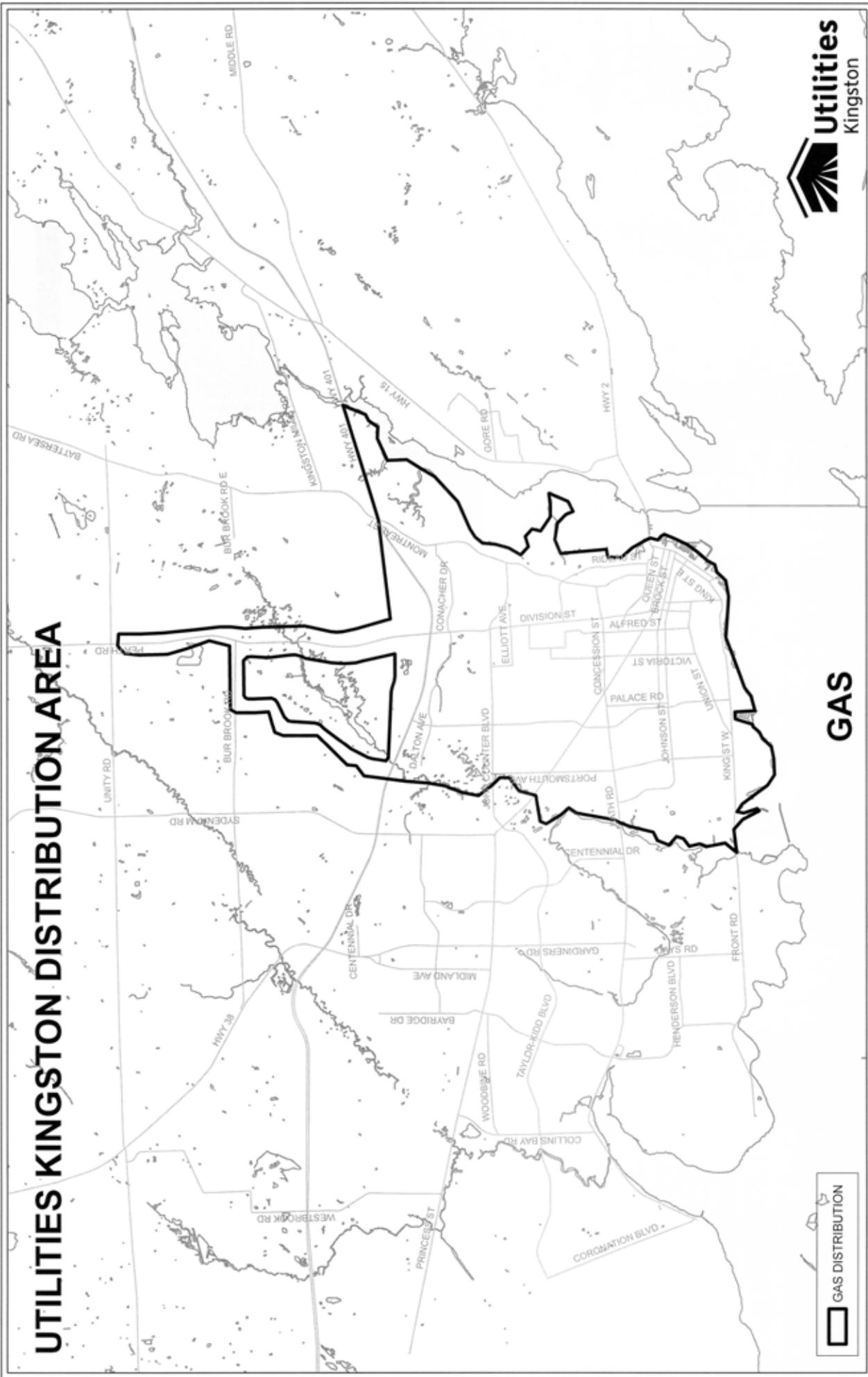


SANITARY

 SANITARY DISTRIBUTION



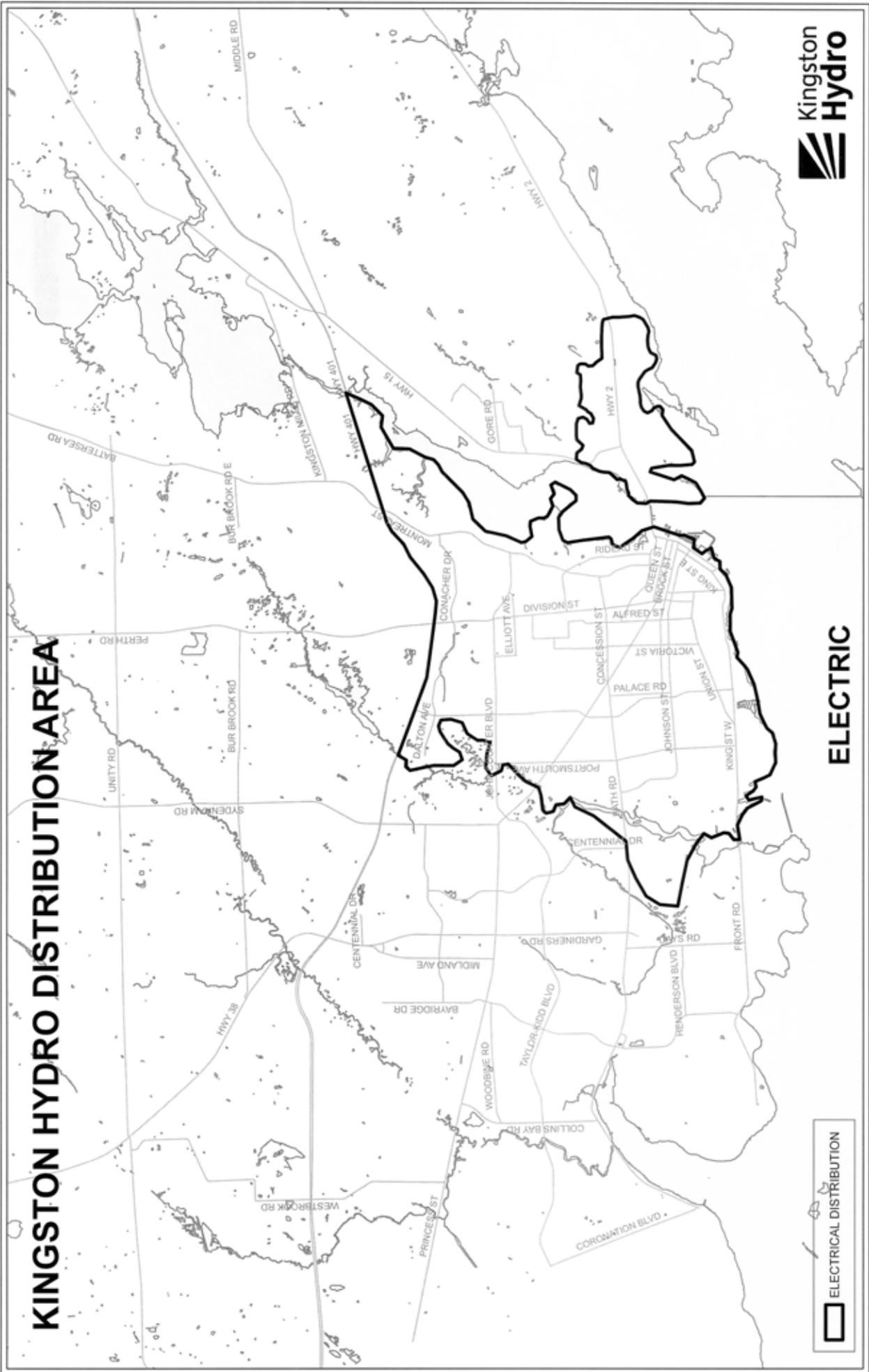
UTILITIES KINGSTON DISTRIBUTION AREA



GAS

 GAS DISTRIBUTION

KINGSTON HYDRO DISTRIBUTION AREA



ELECTRIC

 ELECTRICAL DISTRIBUTION