

RESIDENTIAL INFILL GRADING AND SERVICING (RGS) APPLICATION INFORMATION PACKAGE

The RGS Application is for a single-family property that is not a Heritage Property, or located within the City’s Site Plan Control Area. If a Severance Application precedes the RGS Application, the old and new municipal addresses must be registered.

When preparing for a RGS Submission, it is important that the homeowner and their consultant refer to the RGS Requirement Checklist. Plans submitted that do not meet the checklist requirements may be returned to the applicant without being reviewed. The checklist includes only key elements required for a RGS Plan.

All grading and servicing design shall be in accordance to the City of Markham Engineering [Design Criteria](#) and [Standard Drawings](#).

Application Types:

Type	Description	Plan	Fee ¹
Type-I	New detached infill residential construction of any size involving proposed grading and/or servicing works	Grading & Servicing Plan (1 Plan)	\$350 + HST
Type-II	Residential addition of 50 m ² or more	Grading Plan required	\$350 + HST
Type-V	Service connection only (May be combined with any of the types above)	Servicing Plan required	\$0
Type-VI ³	Revision Application – Only for previously accepted applications	As per Application Type	To be determined

¹ Service Connection Fee is determined upon acceptance of the RGS Application in accordance with Bylaw [211-83 \(2020-38\)](#).

³ This Application Type is for revisions after a RGS Acceptance was previously issued. It is **NOT** for re-submissions of an active application. The fee for the Revision Subtype may vary based on the nature of the revision. The Revised Plan must be uploaded at the time of application. A notification will be sent to the applicant regarding the required fee subsequent to application prescreening.

Application Type-II can be combined with Type-V when new service connection(s) are required with an addition.

Area of the addition is calculated based on the area of ground level disturbance to determine the type of RGS application. Total area on all levels are used to determine the Lot Grading Undertaking Deposit amount.

ePlan Submissions

The RGS Application is to be submitted via [ePlan](#). Prior to making an ePlan submission, the applicant must have a [registered account](#) in ePlan. A [RGS Quick Reference Guide](#) and other [ePlan Guides and Tutorials](#) can be found on the City’s website.

For assistance, contact DSC@markham.ca.

Required Documents for RGS Submission (depending on Application Type):

- Grading and/or Servicing Plan (See [ePlan Submission Standards](#))
- Signed RGS Requirement Checklist
- TRCA Approved Grading Plan and Clearance Letter (See Checklist Item 31)
- Utility Locate Records (See Checklist Item 39)
- Servicing Locate Records (See Checklist Item 40)
- CCTV Inspection Video (See Checklist Item 41)
- Hydraulic Report (See Checklist Item 45)
- TAPP and Arborist Report ([See Tree Preservation Requirements](#))

Application Fee must be paid immediately with the application.

For more information regarding the RGS Application Process, please visit our [website](#).

RESIDENTIAL INFILL GRADING AND SERVICING REQUIREMENTS CHECKLIST

Part I: General Information (For Types-I, Type-II & Type-V)		
1.	<input type="checkbox"/>	This is a new RGS Application with no previous submissions that are currently under review.
2.	<input type="checkbox"/>	This lot is <u>NOT</u> under a Severance Application where the severance process has not been completed. <i>(DO NOT submit for RGS Review if severance process is not complete. The municipal address must be registered with the Land Registry Office.)</i>
3.	<input type="checkbox"/>	This lot is <u>NOT</u> within the Site Plan Control Area. <i>(DO NOT submit for RGS Review if this is within the Site Plan Control Area. Contact City of Markham Development Services to confirm.)</i>
4.	<input type="checkbox"/>	This is <u>NOT</u> a Heritage Property. <i>(DO NOT submit for RGS Review if this is within the Site Plan Control Area. Contact City of Markham Development Services to confirm.)</i>
5.	<input type="checkbox"/>	A Tree Assessment and Preservation Plan (TAPP) and an Arborist Report. <i>(See Tree Preservation requirements to determine if this is required for your RGS Application.)</i>
6.	<input type="checkbox"/>	Title block. <i>(Including: municipal address of property, name of Owner/Applicant, name and address of the firm preparing the drawing, legal description of property, scale, scale bar, date of submission, and revision box with all revision dates, RGS Application number – after first submission.)</i>
7.	<input type="checkbox"/>	Plan is prepared and created into a vector based, PDF file, to a minimum 1:200 metric scale, on a minimum of 24"x36" paper size.
8.	<input type="checkbox"/>	Key plan, showing site location in respect to the City street network.
9.	<input type="checkbox"/>	North arrow.
10.	<input type="checkbox"/>	Legend for existing and proposed information, as required.
11.	<input type="checkbox"/>	Clear identification of property lines and right of way limits. <i>(Including any proposed road widening, sight triangles and 0.30 m reserve blocks, adjacent to the subject property, along with existing lot corner elevations.)</i>
12.	<input type="checkbox"/>	Any easement(s) within the property and of whom the easements are in favor.
13.	<input type="checkbox"/>	Abutting roads, including the location of all existing surface features. <i>(Including walkways, edges of pavement and shoulders, curbs, traffic islands, utility poles and pedestals, transformers, streetlight poles, hydrants, bus shelters, mail boxes, sidewalks, watercourses, ditches, culverts, embankments and overhead utilities.)</i>
14.	<input type="checkbox"/>	All existing access/driveway entrances to the subject property and the adjacent properties, including widths and slopes (within private property and within City Right of Way.)
15.	<input type="checkbox"/>	Existing and proposed buildings, structures, fences, trees and bushes, all above ground features, etc. within the private property.
16.	<input type="checkbox"/>	All drawings are stamped, signed, and dated, by a Professional Engineer or an Ontario Land Surveyor. Digital seals must be of the same size and shape as original rubber stamp issued by the associated authority.

Part II: Lot Grading Information (For Type-I & Type-II)		
17.	<input type="checkbox"/>	Geodetic survey datum, derived from City of Markham benchmarks. Benchmarks used must be identified on the RGS plan. <i>(Contact City of Markham Operations Department – Mr. Benjamin Kihara at bkihara@markham.ca)</i>
18.	<input type="checkbox"/>	Topographic Survey of existing elevations, grading features, trees, etc. <i>(Topographic survey must be completed no longer than 1 year prior to submitting the RIGS Application.)</i>
19.	<input type="checkbox"/>	Existing house boundary on the subject property and adjacent property(s).

(Continued) Part II: Lot Grading Information (For Type-I & Type-II)		
20.	<input type="checkbox"/>	Existing spot elevations within the project site. <i>(Minimum of 5 m outside the property boundaries, on abutting public streets, and at a minimum of 10 m intervals within the property. Include the door step elevation and finished floor elevations of adjacent properties.)</i>
21.	<input type="checkbox"/>	Existing spot elevations within the City Right of Way (every 10 m); and slope gradients at all critical locations. <i>(Including road center lines; vehicle accesses and driveways, ramps, parking lots, edges of pavement, curb lines or sidewalks; swales, ditches, grassed areas, etc.)</i>
22.	<input type="checkbox"/>	Identification of any existing swales, ditches, culverts (including size), creeks, watercourses, ravines, and drainage easements/routes complete with elevations, inverts and flow arrows indicating the surface drainage direction. Indicate on drawing that new culverts are to be installed by the owner at owner's expense, under City supervision. <i>(Contact the City of Markham Operations Department prior to installing culverts.)</i>
23.	<input type="checkbox"/>	Arrows indicating the direction of surface drainage on all proposed paved, granular, and grassed areas and the slope (between 2-5%).
24.	<input type="checkbox"/>	A minimum of 0.60 m undisturbed strip around perimeter of the site wherever it abuts adjacent properties is maintained.
25.	<input type="checkbox"/>	Proposed spot elevations: <ul style="list-style-type: none"> - At all high/low points of the side yard swales, top and bottom of slopes, all changes in gradient, building corners, etc. - Of top and bottom of retaining walls (bottom elevations on both sides of the wall shall be provided.) Provide cross sections to better illustrate design intent, as required. <i>(Retaining wall to be a minimum of 0.60 m away from the property line within the subject site. Wall ends to be tapered to maximum 0.15 m in height. Retaining walls higher than 0.90 m must have structural drawings sealed and signed by a Structure Engineering with Ontario P.Eng. designation.)</i>
26.	<input type="checkbox"/>	House siting elevations included on the plan: Basement slab elevation(s), garage slab elevation(s), finished floor elevation of the ground floor and entrances to all buildings, elevations of underside of footings (identify all levels with different elevations) and top of foundation wall elevation. <i>(Where top of foundation wall elevation changes or reverse veneer is used, the limit of the sections and the different top of foundation wall elevations must be identified.)</i>
27.	<input type="checkbox"/>	A minimum of 0.15 m is provided between the highest finished grade adjacent to the house and the top of foundation wall elevation.
28.	<input type="checkbox"/>	Cross section details of swales (if different from the standard 0.15m depth with 3:1 slopes on both sides.) Longitudinal slope of swale is a minimum 2%. <i>(Swales convey surface runoff off the subject site without spilling onto adjacent property. Infiltration galleries are not approved outlets for surface runoffs.)</i>
29.	<input type="checkbox"/>	Proposed roof downspout locations and direction of flow. <i>(Downspouts must be directed to the front or rear of the property and away from dwelling of neighboring properties. Downspouts must be discharged at grade and not connected underground.)</i>
30.	<input type="checkbox"/>	Erosion and sediment control measures are to be used during and after construction (include standard drawing MP11). Silt fence shall be placed at the limit of construction and away from shared property lines. <i>(Silt fence is not required at locations where tree protection fence is required.)</i>
31.	<input type="checkbox"/>	Locations of any regulatory flood lines or development limit lines (i.e. setback and slope stability limits). <i>(Properties within the TRCA Regional Storm Limit, Engineering Floodline, or Screen Zone 166-06 require TRCA clearance prior to RGS acceptance. Submit TRCA stamped Grading Plan and Clearance Letter to the Engineering Department.)</i>

(Continued) Part II: Lot Grading Information (For Type-I & Type-II)		
32.	<input type="checkbox"/>	For sites with no City services: Location of septic tanks, outline of tile beds, wells, and holding tanks for fire-fighting shall be shown.
33.	<input type="checkbox"/>	If applicable, show tree protection fence, matching the TAPP approved by City Tree Preservation. <i>(Drawing shall include Markham’s tree preservation standard drawing MP12. Include any tree preservation note as required by City Tree Preservation on the Grading and Servicing Plan.)</i>
34.	<input type="checkbox"/>	Details on proposed vehicular entrances to the subject property, including elevations at the garage and property line, driveway slope between 2-8%. <i>(Driveway elevation at property line must match existing elevation. Slopes of driveway within private property and City R.O.W. do not have to be the same.)</i> <ul style="list-style-type: none"> - Show limit of garage door opening. - Identify the size of garage (1-, 2- or 3-car). - Provide dimension of driveway apron. <i>(Ensure minimum offset of 1.2 m to boulevard furniture - light and utility poles, pedestals, transformers, hydrants, mailboxes, trees, bus shelters; and features within City Right of Way to remain unchanged.)</i> <i>Existing sidewalk elevation not permitted to be altered to accommodate driveway.)</i>
35.	<input type="checkbox"/>	Proposed curb locations and re-installation of curb. <i>(Indicate on the drawing that curb modifications are to be carried out by the City, at the expense of the owner. Curb Modification Application can be found on City’s website, or contact the Operations Department.)</i>
36.	<input type="checkbox"/>	Shown catch basin sediment traps and Standard Detail MP5 , if there are catch basins within 50m of site. <i>(Note on drawings that catch basins are to be fitted with sediment trap at each catch basin.)</i>
37.	<input type="checkbox"/>	Show location of temporary gravel access pad (mud mat) at the entrance of house construction activities, as per standard drawing MP7. Size mud mat to suit site. Include standard drawing MP7 on the drawing. <i>(If existing driveway is used as construction access for mud tracking purposes, indicate so on plan.)</i>

Part III: Lot Servicing Information (For Type-I & Type-V)		
38.	<input type="checkbox"/>	Show all existing and proposed above ground servicing infrastructure within the road allowance. This includes, but is not limited to: <ul style="list-style-type: none"> - manholes, storm and sanitary sewers, water mains (include identification of all pipe material, diameter, slope, direction of flow and manhole inverts), catch basins, valve boxes and chambers. - Existing above and underground utility features within the boulevard; including but not limited to gas meters, light poles, hydro/Bell/cable TV poles, pedestals, transformers, and all underground and overhead utility lines (hydro, gas, bell, cable). <i>(Plan and Profile Drawings and As-Built Drawings can be used as <u>reference only</u> and can be requested via an online Drawing Request Form on the City’s website.)</i>
39.	<input type="checkbox"/>	Submit a record of locates for existing utilities. Locate records are to include sketches of all utilities and connections on <u>both</u> sides of the road, within the frontage of the subject property. <i>(Requests for locates can be applied from Ontario One Call website. Alternatively, applicant may submit locate records prepared by qualified private consultants retained by the applicant. If existing utility feeds have been decommissioned, locate record indicating “all clear” shall be submitted. Include locate records information onto the Grading and Servicing Plan. Include the gas feed, hydro feed, etc. into the property.)</i>
40.	<input type="checkbox"/>	Submit a record of locates from the City’s Waterworks Department, for existing service connections. Locate records are to include a Tie-In Sheet of all service connections on <u>both</u> sides of the road, (within the frontage of the subject property) with tie-in distances, material and size of service connections. <i>(Locate requests via Ontario One Call usually include servicing locates from the City of Markham Waterworks Department, but will not have sufficient information. Applicants may submit requests via City’s Contact Centre (905-477-7000 ext5530) or email to waterworks.locates@markham.ca. Specify in request the purpose of locates is for RGS Applications with the Engineering Department. Incorporate information on locate records onto the Grading and Servicing Plan, including location and size of connections, etc.)</i>

(Continued) Part III: Lot Servicing Information (For Type-I & Type-V)		
41.	<input type="checkbox"/>	<p>Show location and details of any existing service connections to City infrastructure, as per locate records. Indicate whether or not they will be decommissioned. If the existing sanitary and/or storm service connections are proposed to be re-used, existing invert elevation at property line must be obtained and shown, along with pipe size and type of material. Note on the drawing that the invert elevation at street line is verified by the OLS sealing and signing the drawing.</p> <p>CCTV inspection <u>video</u> of the existing sanitary and/or storm service connection needs to be submitted with the Application for condition assessment. Video inspection of existing municipal services is to be free of any structural or operational defects and must be in conjunction with the elevations at property line. The re-usability of the existing sanitary and storm service connections is determined at the sole discretion of the City.</p> <p><i>(Note: Existing wye sanitary connections and all clay connections are not permitted for reuse.)</i></p>
42.	<input type="checkbox"/>	<p>Proposed service connections, including the mainline invert and obvert, invert of service connection at property line, identification of pipe length from mainline to property line, material, diameter and slope. <i>(Invert of proposed service connection shall match the obvert of the existing mainline sewer. Distance to closest MH must be scalable on the drawing or dimension is provided. Provide pipe elevations at crossings between mainline san/stm sewers and proposed stm/san connections. New storm connection to existing storm sewer 600 mm diameter or greater is not permitted. Sump pump discharging to the rear of house is to be used if storm connection to storm sewer cannot be made. See Item 49.)</i></p>
43.	<input type="checkbox"/>	<p>Provide a minimum 2.5 m horizontal offset between water service connections/hydrants and sanitary or storm service connections.</p>
44.	<input type="checkbox"/>	<p>Water box must be located outside of the driveway. Water connection shall be connected to water main at right angle, where possible.</p>
45.	<input type="checkbox"/>	<p>A standard new residential water service connection is to be 25 mm. For sizes larger than 25 mm, provide a Hydraulic Report, prepared by the Applicant's consultant, demonstrating the need for the larger size connection.</p> <p>The Hydraulic Report is to include the City's Plumbing Data Form and Pressure Calculations, or a Letter from a P.Eng. to confirm that the proposed development has met the minimum pressure requirements as per City's Engineering Design Criteria Section C3. The pressure calculation or the letter shall include a P.Eng. stamp on it.</p> <p><i>(The requirement to install a new residential water service connection greater than 25 mm is at the sole discretion of the City.)</i></p>
46.	<input type="checkbox"/>	<p>Provide a minimum 1.0 m horizontal offset between proposed and existing service connections.</p>
47.	<input type="checkbox"/>	<p>Where possible, place proposed storm and sanitary connections in a common trench, with a 0.5 m horizontal separation.</p>
48.	<input type="checkbox"/>	<p>A storm service connection with sufficient frost cover must be provided if a storm sewer smaller than 600 mm diameter exists in the road.</p> <p><i>(Storm connections shall not be connected to private or City catch basins. A storm service connection is for foundation drains only, not for surface drainage. Private rear lot CBs are not permitted, except for special circumstances that require review and approval by the Environmental Services Department.)</i></p>
49.	<input type="checkbox"/>	<p>Provide a schematic diagram of sump and/or ejector pumps (if required) for storm and/or sanitary, respectively.</p> <p><i>(Where there is no storm sewer less than 600 mm in diameter in the road, the sump pump shall be discharged at grade at the rear of the house. An ejector pump must discharge into a sanitary service connection. The use of a sewage ejector pump is subject to the review and approval by the Building Standards Department. Where possible, the proposed underside of footing shall be adjusted to permit gravity connection. It is the applicant's responsibility to coordinate with the Building Standards Department on this subject matter.)</i></p>

**(Continued) Part III: Lot Servicing Information
(For Type-I & Type-V)**

50.	<input type="checkbox"/>	<p>If the existing sanitary sewer contains cast-in-place pipe liner (CIPP liner), it must be labeled on the Grading and Servicing Plan, and a new sanitary connection at a new location is not permitted. The Applicant must choose one of the following options and show design on plan.</p> <p>Option 1: Re-use existing sanitary connection. Provide CCTV for condition assessment to confirm re-usability per Checklist Item #41. Provide ex. invert elevation at streetline that has been verified by the OLS signing and sealing the drawing. <u>Add note</u> to indicate invert has been verified by OLS. Consider ex. tee at mainline sewer is typically installed with an upward 45 degree angle from the mainline sewer. Provide invert elevation at streetline accordingly. If ex. connection is not re-usable, go to Option 2.</p> <p>Option 2: Disconnect existing sanitary connection upstream of tee at mainline sewer. Re-use existing tee. Consider ex. tee at mainline sewer is typically installed with an upward 45 degree angle from the mainline sewer. Install new sanitary connection in the same alignment as old. Label drawing accordingly. Provide invert elevation at streetline.</p> <p>To determine if there is CIPP liner in the existing sanitary sewer, contact the Engineering Department, or forward inquiry to DSC@markham.ca.</p>
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Part IV: Declaration of Requestor

**Typing your name is equivalent to your signature*

I, _____ (your name), declare that:

The information contained in this residential infill lot grading and servicing application is true to the best of my knowledge. Work described in this residential infill lot grading and servicing application has not commenced. I understand that the lot grading and servicing plan may be returned to the applicant without being reviewed if the above requirements are not met to the City’s satisfactory.

Date: _____

Lot Grading Undertaking Deposit Guide

The total Undertaking Deposit is the sum of all applicable items below:

1. Major addition: Type-II (Existing building)

a. >50>100 m ² (>538.2>1076.4 ft ²)	\$3,500
b. >100>150 m ² (>1076.4>1614.6 ft ²)	\$4,500
c. >150 m ² (>1614.6 ft ²)	\$5,500
d. If major addition is at side/back/front of the existing building, add:	\$500

4. Completely new building with lot grading only: Type-I

Any area size	\$10,000
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5. New or repairing retaining wall: Type-I or Type-II

Any length and height	\$10,000
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Notes:

- i. 1 m² = 10.764 ft²
- ii. All application types require the as-built drawing, and grading certificate with a Professional Engineer's signature and seal, or an Ontario Land Surveyor and the Lot Grading Undertaking Release Form (see website) for the release of the Undertaking Deposit.
- iii. A new or repairing retaining wall higher than 0.9 m must be certified by a Professional (Structural) Engineer only.