

Regional Municipality of Halton



DEVELOPMENT ENGINEERING REVIEW MANUAL

AUGUST 2022

PLANNING SERVICES

LEGISLATIVE AND PLANNING SERVICES DEPARTMENT

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List of Acronyms

ASP: Area Servicing Plan

CCTV: Closed-Circuit Televised Video

DARF: Development Agreement Request Form

DC: Regional Development Charge Project

DERM: Development Engineering Review Manual

DPM: Development Project Manager

DWWP: Drinking Water Works Permit

ECA: Environmental Compliance Application

EIR/FSS: Environmental Implementation Report/Functional Servicing Study

FSR: Functional Servicing Report

igpm: Imperial gallons per minute

LDM: Halton Region's Water and Wastewater Linear Design Manual

MECP: Ministry of the Environment, Conservation and Parks

MTO: Ministry of Transportation

NEC: Niagara Escarpment Commission

OBC: Ontario Building Code

OPSD: Ontario Provincial Standard Drawings

OPSS: Ontario Provincial Standard Specifications

PPW: Planning and Public Works

PRV: Pressure Reducing Valve

SWMP: Stormwater Management Pond

WWPS: Wastewater Pumping Station

WWTP: Wastewater Treatment Plant

1.0 Introduction

The purpose of Halton Region's ***Development Engineering Review Manual (DERM)***, is to support the land developers and consulting engineers with understanding the Region's approval process related to various development applications listed in [1.2.1](#). The DERM provides in depth information from the planning pre-consultation meeting to the assumption of the Regional works. The Halton Region Development Engineering team along with the Legislative Planning Services and Public Works staff have prepared this manual.

1.1 Intent

The DERM provides the necessary information and requirements for the submissions that are reviewed and approved by the Region. It also outlines the responsibilities of the land developers and consulting engineers when necessary. Following the manual and Regional guidelines appropriately will allow for an overall smoother submission process.

It is important to note that the terms "Sanitary" and "Wastewater" are used interchangeably throughout the DERM. In addition, it is the responsibility of the reader to utilize the most current version of this document. Additional links are also provided throughout the manual to allow for further understanding and information if needed.

1.2 Engagement of the Region

The development application will prompt a development engineering review when the application includes any of the following infrastructure:

- Watermains.
- Sanitary sewers.
- Storm sewers when adjacent to a Regional road.
- Regional roads.

It is important to note that a development engineering review will be required when deemed necessary by the Development Project Manager (DPM).

1.2.1 Planning Applications in Scope

The DPM will provide comments and conditions to the Regional Planner for the following types of planning applications:

- [Plan of Subdivision.](#)

- [Site Plan.](#)
- [Official Plan Amendment \(Local and Regional\).](#)
- [Plan of Condominium.](#)
- [Consent.](#)
- [Part Lot Control.](#)
- [Zoning By-law Amendment.](#)
- [Minor Variance.](#)

1.3 Related Documents

The DERM is to be read in conjunction with the ***Region's Water and Wastewater Linear Design Manual (LDM)***. The LDM is a guide for the Region's expectations with the implementation of water and wastewater linear infrastructure. The following should also be referenced for standards and requirements when necessary:

Regional Policies and By-Laws:

- [Regional Official Plan.](#)
- [Urban Servicing Guidelines](#) (Previously called, "Draft Urban and Rural Servicing Guidelines").
- [Transportation Master Plan.](#)
- [Consolidated Water Works By-Law 131-10](#) (To repeal and replace the Water Works System By-Law 42-04).
- [Wastewater System By-Law 184-95.](#)
- [Sewer Discharge By-Law 02-03.](#)
- Emergency Overflow Policy- Wastewater Pump Stations.
- [Policy for the Design and Construction of Development Charges Projects by the Development Industry.](#)
- Connection Charges Information Package.
- [Section 326 of the Municipal Act, 2001](#), as the Legislative Authority for Extending Water and Wastewater Services to Existing Premises.

Regional Manuals and Documents:

- [Inspection Services Manual-Linear Infrastructure.](#)
- [Approved Manufacturers Products List For Wastewater Systems.](#)
- [Approved Manufacturers Products List for Water Systems.](#)
- Commissioning and Disinfection of Watermains (Part of Halton Region's Engineering and Construction (E&C) Linear Contracts, Special Provisions – General, latest Version).

- [Sustainable Halton Water and Wastewater Master Plan Review.](#)
- Halton Region’s Specification for the Connections to Existing Watermains and Swabbing, Flushing, Disinfection, Leakage and Bacteriological Testing.
- Design Information for Proposed Road and Traffic Signal Works on Region of Halton Roads.
- [Uniform Traffic Signal Specifications.](#)
- Landscaping Guidelines.
- [Specifications for Hot-Mix Asphalt Paving, Materials, Sampling and Testing.](#)
- [Transportation Impact Study Guidelines.](#)
- [Noise Abatement Guidelines.](#)
- Special Projects Manual.
- Special Projects Design Manual.
- [Development Design Guidelines for Source Separation of Solid Waste.](#)
- [CAD Standards Manual for Linear Design Drawings.](#)
- Applicable Area Servicing Plans (ASP).

External Agency Manual and Documents:

- [MECP Guidelines for the Design of Drinking Water Systems, and, Storm and Sewage Works Systems.](#)
- [Fire Underwriters Survey – Water Supply For Public Fire Protection.](#)
- [OPSD & OPSS \(with Regional Additions and Revisions\).](#)
- [TAC - Geometric Design Guide for Canadian Roads.](#)
- [TAC - Manual of Uniform Traffic Control Devices.](#)
- [Ontario Building Code \(OBC\) \(Building Code Updates\).](#)
- Local Municipal official plans, zoning, and relevant guidelines and design standards.

It is the responsibility of the land developers and consulting engineers to ensure that they are using the latest versions of these related documents as well as the latest version of the DERM. If necessary, the Legislative and Planning Services Department from the Community Planning section can be reached at 905-825-6000 to provide further assistance.

2.0 Application Review

The application review process involves the DPM and Regional Planner who review the applications that are submitted (as specified in [1.2](#)). Specifically, the DPM will provide comments and conditions to the Regional Planner. When appropriate, the DPM will also coordinate the Ministry of the Environment, Conservation and Parks (MECP) and Regional development agreement processes.

2.1 Technical Reports, Studies and Plans

The applicant is responsible for submitting technical reports, studies and/or plans in order to support their planning application. The DPM will review the following reports, studies and/or plans regarding servicing information related to the various applications:

- Sub-Watershed Study.
- Servicing Strategy Report.
- Phasing of installation of services.
- [Stormwater Management Plan for Study Area.](#)
- [Functional Servicing Report \(FSR\).](#)
- [Environmental Implementation Report/Functional Servicing Study \(EIR/FSS\).](#)
- [Site Servicing Plan.](#)
- “As constructed” drawings of installed services.
- Detailed engineering drawings.

[Appendix A](#) provides the technical information required for each type of planning application. It is the applicant’s responsibility to follow and comply with the most recent version of these requirements.

2.2 Servicing Review and Approvals

The DPMs will review servicing information for the technical reports, studies and/or plans mentioned in [2.1](#) and then provide comments to the Regional Planner with respect to the following:

- Conformity with [Region’s Servicing Master Plan.](#)
- Conformity to the specific [Area Servicing Plan \(ASP\)](#) for the area if applicable.
- Capacity of water and sanitary systems including downstream impacts.

- Adequacy of the local infrastructure to service the proposal.
- Timing for capital infrastructure improvements.
- Review confirmation of impact of stormwater systems on Regional roads.
- Existing [easements/encroachments](#) and the need for any new easements.
- Need for any off-site service extensions to service the proposal.

For certain types of applications, such as subdivision applications, the Region may apply a condition as part of the planning approval. This condition involves the applicant submitting detailed engineering drawings and entering into a development agreement with the Region for the construction of the Regional works. Subsequent sections in the DERM provide further detailed information regarding the Region’s requirements.

2.3 Engineering and Inspection Fees

Regional engineering and inspection fees are charged to recover the costs incurred by Regional staff to review and approve engineering drawings for, and inspections of, local water, wastewater and Regional road works infrastructure related to the new development. The engineering and inspection fees will vary depending on the total estimated cost of water services, sanitary services and Regional road works. Table 1 displays the engineering and inspection fee deposit amount depending on the total estimated cost.

The applicant should make note that the first installment of the fee (\$5,000+ HST) is required to be submitted at the time of the first engineering drawing submission. The balance of the fees are payable upon execution of the development agreement.

Table 1- Associated Fees Applicable to the Total Estimated Cost of Proposed Water Services, Sanitary Services and Regional Road Works

Total Estimated Cost of Proposed Water Services, Sanitary Services and Regional Road Works	Engineering and Inspection Fee Deposits
Up to \$100,000	\$5,000 or 10% (whichever is greater) + HST
Between \$100,000.01 and \$250,000	7% + HST
Between \$250,000.01 and \$500,000	6% + HST
\$500,000.01 or more	5% + HST (maximum of \$100,000 + HST)

It is important to note that it is the applicant’s responsibility to ensure they are using the most up-to-date version of the engineering and inspection fee deposits. This information can be found on the following website: <https://www.halton.ca/The-Region/Regional-Planning/Planning-Applications>.

3.0 Functional Servicing Report (FSR)

The purpose of a Functional Servicing Report (FSR) is to assess the servicing requirements associated with the proposed development. It shall mainly address the conceptual framework for water servicing, wastewater servicing and storm water drainage adjacent to Regional roads, but may also include development phasing in relation to site servicing. Details and requirements of any analysis will vary based on the proposed land use, development site and location and what if any studies have previously been completed. A proper analysis of servicing and infrastructure capacity is provided in the report to ensure the proposed development can be serviced properly. Draft plan of subdivision and rezoning applications will require that a FSR be submitted. At the discretion of the DPM, a site plan application and a draft plan of condominium may also require a FSR to be submitted.

3.1 Guiding Principles for the FSR

Information provided by the Region and the associated local Municipality (Burlington, Oakville, Milton or Halton Hills) shall be utilized for guidance to prepare an appropriate FSR. The developer's consulting engineer shall specifically review and reference the applicable Area Servicing Plan (ASP) and the [Region's Master Servicing Plan](#). An ASP is a component of a [Secondary Plan](#) that applies the proposed servicing concept and satisfies the requirements set out in the Secondary Plan. Furthermore, Halton Region's Master Servicing Plan is also taken into account when creating a Secondary Plan and consequently, the associated ASP. Therefore, the levels of servicing (depicted in Figure 1) are important for the consulting engineer to recognize and review in order to prepare a proper FSR.

Figure 1- The Order of Conformity Regarding the Levels of Servicing



3.2 Water Servicing

Water servicing issues specific to the proposed development are to be addressed in the FSR. The following topics are to be included:

- a) An outline of the existing water system impacting the site including:
 - i) Existing pressure zone(s) for the location of the site.
 - ii) Existing pressures in the area.

- b) A complete analysis of the existing water system specific to the proposed development site which, embodies the following:
 - i) Adequate use of field testing of the existing system for the proposed development site.
 - ii) Determination of the fire flow and pressures that the system currently provides.
 - iii) Proper hydraulic analysis by using the appropriate calculations and/or modelling results if necessary for validation.

- c) A complete analysis of the proposed water system for the proposed development site which, embodies the following:
 - i) Preliminary watermain sizing.
 - ii) Detailed expected static pressures.
 - iii) Required and expected fire flows.
 - iv) Proper hydraulic analysis by using the appropriate calculations and modelling results if necessary for validation.

- d) Preliminary Servicing Plan to show the water distribution system including:
 - i) Watermain looping.
 - ii) Address interim watermain looping (relates to phased developments).
 - iii) Secondary connection requirements.

- e) Water system modelling analysis.

- f) Identification of potential constraints (for example, dead-end watermains) along with:
 - i) How they will be properly addressed.
 - ii) Recommendations/improvements to be made to the system.

3.3 Wastewater Servicing

Wastewater servicing issues related to the proposed development are to be addressed in the FSR and the following is to be included:

- a) An outline of the existing wastewater system where the proposed development will drain. Specifically identify any downstream constraints such as the following:
 - i) Pump stations.
 - ii) Trunk sewer capacity issues.

- iii) Local sewer capacity issues.
- b) A complete analysis of the existing downstream wastewater system to determine if the additional flows from the proposed development can be accommodated.
- c) A complete analysis and/or calculations that determine the wastewater flows from proposed development based on the Region's design standards. Ontario Building Code (OBC) flow rates **should not be used** in this type of analysis.
- d) Preliminary Design Sheets (see [LDM](#) for Engineering Design Sheets)
- e) Internal and external drainage area plans including:
 - i) Future adjacent developments.
- f) Preliminary wastewater system layout.
- g) Preliminary wastewater sewer profiles.

3.4 Stormwater Drainage Adjacent to a Regional Road

Stormwater drainage issues relating to Regional roadways shall be addressed in the FSR. The developer's consulting engineer should note that a Regional roadway is typically designed only for the drainage of the road allowance. The report is to include the following:

- a) An outline of the existing Regional road drainage system adjacent to the proposed development site.
- b) An outline of the proposed drainage to the Regional system. This will include:
 - i) Calculations showing the post-development conditions aligning with the pre-development conditions.
 - ii) Addressing the effect of the additional drainage to the Regional system.
 - iii) Addressing mitigation strategies and quality/quantity controls if required.
- c) An outline of the proposed erosion and sediment control measures to be taken to protect the Regional drainage system.
- d) Identification of necessary improvements to the existing Regional storm sewer system to accommodate the proposed development.
- e) Address the conformity of the proposed works with the local Municipality's Stormwater Management Criteria.

4.0 Engineering Submissions and Requirements

The applicant may be required to submit engineering drawings for approval by Halton Region prior to the preparation of the subdivision agreement or servicing agreement. This will occur once the applicant has received draft approval of a plan of subdivision or a conditional site plan approval.

Each submission will be reviewed by the DPM to ensure conformity to the Region's requirements and standards. The consulting engineer will be informed if the submission is incomplete along with the outstanding items. The engineering drawings submitted in support of a plan of subdivision as well as a request for the extension of Regional services **must**, be stamped and signed by a Professional Engineer licensed in the Province of Ontario. The specifications and standards in the [Region's LDM](#) and other appropriate documents shall be utilized for the design of the Regional services.

4.1 First Submission

After the first engineering submission is reviewed by the DPM, the consulting engineer will receive a copy of the marked up drawings and/or a letter outlining the Region's comments. The following is to be included in the first engineering submission:

- a) Three complete sets of engineering drawings.
- b) Three copies of the sanitary design sheets.
- c) An electronic set of drawings (PDF).

4.2 Successive Submissions

The consulting engineer will provide another submission to the Region once the comments have been addressed. The drawings will **only be internally circulated** when all of the requirements have been met and they will be returned for a subsequent submission if all of the requirements have not been met. The following is to be submitted to the Region and the local Municipality (Burlington, Oakville, Milton or Halton Hills):

- a) Sets of the revised drawings (the number of sets is specified by the DPM).
- b) An electronic set of drawings (PDF).
- c) Sanitary design sheets ([see the Appendix of the LDM for an example](#)).

- d) Ministry of Environment, Conservation and Parks (MECP) [Environment Compliance Application](#) (ECA) with supporting materials.
- e) Development Agreement Request Form (DARF) package of requirements. Further information is provided in [Section 7](#).
- f) A letter and updated tracking table detailing how each of the requested changes has been addressed, and highlighting any changes that were made in response to the Region's comments.
- g) Form/application.
- h) Complete the Region's Design Checklist for Drinking Water Systems.
- i) Complete the Region's Design Checklist for Sanitary Mains.
- j) Applicable Design Deviation memos ([see the Appendix of the LDM for an example](#)).

4.3 Final Submission

The following is to be submitted by the applicant when the Region and the local Municipality (Burlington, Oakville, Milton or Halton Hills) are satisfied with the revisions:

- a) One set of construction drawings, with all revisions from previous submissions (full size paper).
- b) One electronic set of drawings.
- c) Sanitary sewer calculation sheets (Excel format).

5.0 Construction of Regional Development Charge Projects

The Region's policy for the design and construction of Development Charge (DC) projects by the development industry allows land developers to undertake certain development charge projects. The works are designed and constructed by the land developer; and the costs incurred by the land developer are reimbursed when financing is available in the Region's capital budget.

The [*Development Charges Act, 1997*](#), requires a background study to occur no less than every five years to calculate the DC. The land developer should take note of the relevant information that can be found on: <https://www.halton.ca/The-Region/Finance-and-Transparency/Financing-Growth/Development-Charges-Front-ending-Recovery-Payment>. If necessary, the Development Officer Capital and Development Financing, from the Finance Department can be reached at DevelopmentCharges@halton.ca to provide further information.

It is to be noted that should a land developer choose to undertake a Development Charge (DC) project that mutually benefits both the Region and the development, the developer will only be reimbursed for the approved DC project and will not be eligible for additional funding for any other servicing required solely for the specific development.

5.1 Funding Alternatives

There are two funding scenarios that can occur for these types of projects. They are:

Scenario a) The funding for the project is available in the current budget year. Therefore, the land developer can be reimbursed for the costs in that year upon completion of all Regional requirements and submission of all required documents. The land developer is subject to a **10% holdback**.

Scenario b) The funding is only available in a future budget year. The land developer must front-end the costs until the funding becomes available within the Regional budget. The land developer can only request reimbursement in the year the funds become available, upon completion of all Regional requirements and submission of all required documents. The land developer is subject to a **10% holdback**.

5.2 Planning and Public Works Report

The DPM will prepare a Council report authorizing the acceleration of this project in order for a land developer to participate in Scenario b (as noted above). The report will outline the details of the particular DC project. Prior to the start of the design of the DC project, the Regional Council must approve the report.

5.3 Reimbursement Process

The consulting engineer can initiate the reimbursement process once the works have been constructed to the satisfaction of the Region and the maintenance period for the works have commenced. The reimbursement is subject to the Region **not receiving claims** against the project. The following information is required to be submitted by the consulting engineer to the DPM:

- a) Letter requesting the reimbursement of the funds for the components of the projects that are considered to be Regional Development Charge Projects.
- b) Certificate of Substantial Performance.
- c) Certificate of Publication of the Substantial Performance.
- d) Payment Certificates issued by the consulting engineer.
- e) Letter from the consulting engineer certifying payment for all engineering design and inspection fees.
- f) Letter from the contractor certifying payment of the contract.
- g) Invoices from the consulting engineer to the land developer. The engineering fees for the design and the inspection of the development charge component of the project will be outlined separately in the invoice.
- h) Invoices from the contractor for construction of the works.

6.0 Engineering Drawing Requirements

All engineering drawings must be prepared according to the Region's standards. All of the proposed and existing infrastructure must be shown on the applicable drawings. The engineering drawing requirements included in this section apply to all subdivision engineering drawings and engineering drawings for the extension of Regional services. A complete set of engineering drawings is comprised of, **but not limited to**, the following:

- a) Cover Sheet.
- b) General Notes (See [Appendix A](#) for a list of General Notes).
- c) General Plan of Services.
- d) Sanitary Drainage Area Plan.
- e) Sanitary Sewer Design Sheets.
- f) Watermain Plan.
- g) Plan and Profile Drawings.
- h) Details.
- i) Standards.

6.1 Minimum Drawing Quality Standards

Engineering drawings for development projects that are submitted to the Region for review, must be legible. The drawings submitted to the Region must include the following minimum standard of quality:

- a) The minimum text size to be used on any drawing of any scale is Leroy L60 (1.5mm high).
- b) Text is only to be shown right-side-up or on an angle, never upside-down.
- c) Overlapping text labels are to be avoided.
- d) Overlapping text and line work are to be avoided.
- e) Regional pipe works such as watermains, sanitary sewers, storm sewers and forcemains are to be adequately labelled to allow clear differentiation of infrastructure.
- f) Existing and/or future works should be distinguished from proposed works by either:
 - i) Use of pen weights.

- ii) Greying of the background information. Existing “greyed” out information must be clear and legible.

- g) All elevations are to relate to geodetic datum.

6.2 General Requirements for all Plans, or Plan and Profile Sheets

The following general requirements for all plans, or plan and profile sheets must be utilized:

- a) All plans must be on an A1 size sheet with the following:
 - i) Key plan located in the upper right hand corner.
 - ii) Regional Planning file number (e.g. 24T- number).
 - iii) Regional Development file number (DB-number, DO-number, DM-number, DH-number).
 - iv) Title block.
 - v) Regional approvals block for development projects with the following text:
“Design of sanitary, water services and Regional road works approved subject to detail construction conforming to Halton Region standards and specifications and location approval from the local Municipality.”

- b) The drawing title block includes:
 - i) The specified location of the subject street in relation to other cross streets. For example, “Street A from future Street to Street H” or “Street A from 120m west of Street P to 110m east.”
 - ii) “The Region of Halton” is included in the title block of all sheets.
 - iii) Reference to the development company and project name.

- c) Numbered sheets.

- d) Bar scales on all drawings.

- e) Chainage to be given in plan and profile drawings.

- f) The plan shows the lot layout with all Lot and Blocks labelled.

- g) All easements must be shown and labelled.

- h) Existing and external services, including utilities, must be shown and labelled.

- i) Existing vegetation and buildings must be shown.

- j) Benchmarks on all drawings.
- k) All drawings must be stamped and signed by the consulting engineer.

The consulting engineer must note that any submissions that are not stamped and signed and/or do not contain the information mentioned above, shall be returned. The consulting engineer must be licensed to practice in the Province of Ontario.

6.3 Cover/Title Sheet Requirements

The following is to be included in the Cover/Title sheet:

- a) A Key plan that includes:
 - i) The outline of the development.
 - ii) Labelled neighbouring streets.
 - iii) A minimum of one major road.
 - iv) North arrow.
 - v) Large diameter gas mains (where applicable).
 - vi) Interprovincial pipelines (where applicable).
 - vii) Adjacent transit corridors (where applicable such as, rail lines).
- b) Name of the development.
- c) Name of the land developer.
- d) Regional Planning file number (e.g. 24T- number).
- e) Regional Development file number (DB-number, DO-number, DM-number, DH-number).
- f) List of drawings with the following corresponding information:
 - i) Sheet index.
 - ii) Description (where applicable).
- g) “The Region of Halton” is included.

6.4 General Notes

The consulting engineer should utilize [Appendix B](#) for a suggested list of General Notes. They are responsible to **customize these notes** to suit the specific development.

6.5 General Plan of Services

The General plan should use a minimum scale of 1:1000 when possible and show the following existing and proposed infrastructure:

- a) Watermains labelled with the corresponding pipe size and type of material.
- b) Sanitary sewers labelled with the corresponding sizes and direction of flow.
- c) Water services and sanitary laterals from the main to the property line.
- d) All hydrants and valves are shown.
- e) Valve chambers are shown and numbered.
- f) Manholes are shown and numbered.
- g) All lot services and existing services indicated with dashed lines.
- h) Construction limits.
- i) Tap and sleeve by Region.
- j) Hydrant anchor tee and valve.

6.6 Sanitary Drainage Area Plans

Sanitary Drainage Area plans should use a minimum scale of 1:1000 when possible and the following is to be included:

- a) Sanitary sewers labelled with:
 - i) The length of each section of pipe.
 - ii) Pipe slope.
 - iii) Pipe size.
 - iv) Direction of flow.
- b) Drainage areas within the development with the corresponding limits of each drainage area.
- c) Area of each drainage area in hectares.
- d) Population density for each drainage area for existing and proposed sanitary sewers.
- e) Equivalent population for each drainage area.

- f) External drainage area plan as required.

6.7 Sanitary Sewer Design Sheets

The consulting engineer must provide the sanitary sewer design sheets on full size A1 drawings, as part of the drawing set. The Region's [LDM](#) shows an example of the proper format.

6.8 Watermain Plan

The Watermain plan should be at a scale of 1:500 or 1:1000 and should include:

- a) Watermains labelled with size and pipe material.
- b) Water services from main to the property line.
- c) Hydrants, valves and bends are all shown and labelled.
- d) Valve chambers are shown and numbered.
- e) A schematic detail of each valve chamber showing the fittings and valves located in the chamber.
- f) Existing external mains with all hydrants and valves labelled.
- g) Pressure zone boundaries.

6.9 Plan and Profile

Plan and profile drawings should be at a minimum scale of 1:500. Both plan and profile drawings should show the following unless indicated otherwise:

- a) Watermains labelled with pipe size, pipe material and class of pipe along with the following:
 - i) Locations where joints are to be restrained (in fill or disturbed ground) shown in profile drawings.
 - ii) Depth of cover shown in profile drawings.
 - iii) Horizontal and vertical bends labelled and shown in profile drawings.
 - iv) Offset to the property line shown in plan drawings.
- b) Water services from the main to the property line:
 - i) Sizes greater than 25mm should have services labelled.

- ii) Indication of locations when services are passing under storm sewers.
- iii) Units that are fitted with individual Pressure Reducing Valves (PRVs) are to be shown and labelled.

- c) A schematic detail of each existing and proposed valve chamber showing the fittings and valves located in the chamber.

- d) Sanitary sewers labelled with length, pipe size, pipe material and direction of flow.

- e) Existing external mains with all hydrants and valves labelled.

- f) Manhole specifications.

- g) Hydrant flange elevations.

- h) All road allowances with the following identified:
 - i) Dimensions.
 - ii) Lots.
 - iii) Blocks.
 - iv) Easements.
 - v) Zone boundaries (where applicable).

6.10 Detail Sheets

Any detailed drawings specific to the development under review is to be included.

6.11 Standard Sheets

All applicable City/Town standard drawings, Regional standard drawings and [Ontario Provincial Standard Drawings](#) (OPSD) are to be included. The consulting engineer should make note of and apply the [Regional addition and revision notes](#) to the OPSD.

6.12 Additional Plans as Required

The consulting engineer may be required to submit additional drawings for the project approval process. The additional plans may have a direct or indirect impact to the project coordination. These drawings include, **but not limited to**, the following:

- a) Utility Coordination plans.

- b) Phasing plans.

- c) Regional roadworks drawings:
 - i) Plan and profile drawing of the affected road showing the proposed works.
 - ii) Typical section plan.
 - iii) Proposed pavement elevation drawing.
 - iv) Pavement marking and signage plan.
 - v) Traffic management plan.
 - vi) Detail sheets.
 - vii) Structural drawings (culverts).
 - viii) Detailed road cross-section plan.
 - ix) Staging plans.
 - x) Removals plan.
 - xi) General notes with notes specific to road works, pavement structure, etc.
 - xii) Proposed illumination plan including electrical.
 - xiii) Alignment data.
 - xiv) Entrance profiles.
 - xv) Stormwater Management plan.
 - xvi) Grading plan.
 - xvii) Sediment and Erosion plan.
 - xviii) Landscaping plan.

- d) Regional roadworks drawings for works that include traffic signals (including temporary conditions when applicable):
 - i) Traffic control wiring diagram.
 - ii) Traffic signal layout.
 - iii) Electrical layout.
 - iv) Electrical details.
 - v) H-SAD drawing.
 - vi) PHM-125 drawing.

7.0 Development Agreements and Additional Approvals

Regional development agreements such as, subdivision agreements and servicing agreements, are required for various circumstances. Examples of when these types of agreements would be required include:

- a) Construction of Regional servicing works including, watermains and sanitary sewers within a plan of subdivision.
- b) Construction of Regional roadworks including, turning lanes, median extensions, intersection works and stormwater drainage facilities.
- c) Construction of Regional servicing works for the extension of watermains and/or sanitary sewers required for the purpose of servicing a development.

The Region requires a subdivision agreement when there is a draft plan approval with conditions that need to be cleared. Servicing agreements are required for any Regional works, including within a right-of-way, which will be constructed by the land developer. The land developer is also responsible for obtaining any additional required approvals prior to the start of construction.

7.1 Development Agreements

When a Regional development agreement is required, it is the applicant's responsibility to initiate the preparation of the agreement by submitting a Development Agreement Request Form (DARF), the corresponding Schedules and additional deliverables to the DPM. [Appendix C](#) outlines the required deliverables for both Regional subdivision agreements and servicing agreements.

7.1.1 Development Agreement Request Form

The land developer can obtain the DARF from the Regional website or by contacting the DPM. These forms can be completed electronically or in written form. The forms must be completed in full with the following information:

- Owner's name and contact information.
- Agent's name and contact information.
- Breakdown of the unit counts (for subdivisions).
- Additional legal requirements (for subdivisions).

7.1.2 Schedules

There are corresponding Schedules for the development agreements that must be completed and submitted in the package. The following are descriptions of the Schedules:

Schedule One: A registerable description of the lands that the agreement is associated with and placed on title to.

Schedule Two: Location Map.

- For servicing agreements, the map should show the lands against which the agreement will be registered and the location of the works to be constructed under the agreement.
- The Location Map should reflect the requirements outlined previously for Key plans (see section [6.3](#)).
- The Location Map must be clear with legible text (avoid aerial or colour mapping).

Schedule Three: Includes details of the cost of the works, security amounts, water meter installation fees, engineering and inspection fees, administration fees, water meter fees, Regional development charges required and other applicable fees to be paid by the land developer.

- The amount of security is based on an estimate of the cost of Regional works to be constructed; both internal and external to the plan.
- The estimate must be prepared by a Professional Engineer, and should include all taxes and consulting engineering fees from design to Regional assumption.
- Water meter fees:
 - For residential subdivision agreements, water meters will be collected for single detached, semi-detached and street townhouses only. Water meters **will not** be collected for condominium townhouse blocks, non-residential blocks and parks.
 - For industrial/commercial subdivision agreements, water meters **will not** be paid under the subdivision agreement. The land developer of these blocks must obtain a Regional Services Permit and is responsible to pay for these water meters at that time.
 - For servicing agreements, the water meters **will not** be paid under the servicing agreement. The applicant must obtain a Regional Services Permit and pay for these water meters at a later date. Development Charges will be calculated by Regional staff in accordance with the current Development Charges By-Law. The DPM will create the initial draft of Schedule Three.

Schedule Four: Requirements for transfers of lands for Regional easements, widening's, etc.

Schedule Five: Terms of Letters of Credit (standard form, not required from the land developer).

Schedule Six: Special clauses applicable to the particular development.

Schedule Seven: A list of the engineering drawings that are applicable to the development project.

7.1.3 Additional Deliverables Required

The applicant is responsible to submit the following in the development agreement package:

- Four copies of the draft M-Plan if, the development is a subdivision.
- Four copies of the draft R-Plan if, the development requires transfer of lands for Regional purposes such as, road widening's and/or easements.
- Four copies of the legal plans (registered M-Plan or R-Plan) that show the subject property for the development if, the development agreement is a servicing agreement for the extension of services of Regional road works.
- Parcel Pages: Up-to-date parcel pages of the lands that the agreement is associated with, must be obtained by the applicant from their Solicitor/Registry office, and submitted.
- No Blasting Letter: It is the responsibility of the applicant to submit a letter by a Professional Engineer stating that there will be **no blasting** undertaken to construct the subject works.

7.2 Watermain and Sewer Approvals

The land developer, with help from their consulting engineer, have the responsibility of obtaining watermain and sewer approvals prior to the start of construction. The following section outlines the process and requirements needed.

7.2.1 Ministry of the Environment, Conservation and Parks

Under the current Ministry of Environment, Conservation and Parks (MECP) Transfer of Review (TOR) and Notice of Modification (NOM) Approvals program, the responsibility of the administrative and technical review of applications for sewage and waterworks has been delegated to Halton Region. [Halton Region's agreement with the MECP](#) strictly applies to the following:

- Sanitary sewers.

- Storm sewers (excluding new stormwater outfalls).
- Sewage pumping stations.
- Force mains (excluding those pumping directly to a sewage treatment plant).

For works that are being constructed to service a new development (whether under a subdivision agreement or servicing agreement), the land developer is the proponent for applying for approval. For works being constructed by a local Municipality (Burlington, Oakville, Milton or Halton Hills) as a Capital project, the local Municipality (Burlington, Oakville, Milton or Halton Hills) is the proponent.

For projects draining to the Skyway WWTP or Mid-Halton WWTP, the application will follow the NOM process. The proponent, with help from their consulting engineer, is responsible to provide the DPM with a package containing the following for approval by the Region:

- MECP Approval – WWCS Form 2 (Skyway WWTP)/ MECP Approval – NOM Sewage Works (Mid-Halton WWTP) [Provided by the DPM]
- MECP Pipe Data Form [Provided by the DPM]
- Design Checklist – Wastewater Mains [Provided by the DPM]
- Sanitary Sewer Design Brief [Provided by the DPM]
- ECA Source Protection Form [Provided by the DPM] (See [Section 7.3](#))
- Design Deviation Memo (if applicable) [Provided by the DPM]
- Location Map/ Key Map
- A copy of the sewer design sheets, storm (for Regional roads) and sanitary
- A full set of the engineering drawings that are both stamped and signed by Professional Engineers licensed to practice in Ontario

The Public Works (PW) department will receive the application once the DPM has reviewed the package and has certified the design is in accordance with the requirements set out by the MECP and the Region. The DPM will provide the applicant with the approved NOM form (signed by the Water and Wastewater System Services Director) following the approval of the ECA Application by PW.

For projects draining to the Oakville SW/SE WWTP, Georgetown WWTP, Acton WWTP, and Milton WWTP, the application will follow the TOR process. The proponent, with help from their consulting engineer, is responsible to provide the DPM with a package containing the following for approval by the Region prior to the submission to MECP:

- ECA Application 8551E Form [Provided by the DPM]
- MECP Pipe Data Form [Provided by the DPM]
- Design Checklist – Wastewater Mains [Provided by the DPM]
- Sanitary Sewer Design Brief [Provided by the DPM]
- ECA Source Protection Form [Provided by the DPM] (See [Section 7.3](#))
- Design Deviation Memo (if applicable) [Provided by the DPM]
- Location Map/ Key Map
- A copy of the sewer design sheets, storm (for Regional roads) and sanitary
- A full set of the engineering drawings that are both stamped and signed by Professional Engineers licensed to practice in Ontario

MECP will receive and review a pre-consultation package provided by Public Works (PW) once the DPM has reviewed the package and has certified the design is in accordance with the requirements set out by the MECP and the Region. The internal approval process for the application package will also include PW review (including a sign-off from the Water and Wastewater System Services Director) and a Letter of Recommendation from a Professional Engineer in the Legislative and Planning Services Department.

The DPM will compile all of the necessary components provided by the proponent/ internal Regional review into an official ECA Application package to be sent to MECP. Once the ECA Application has been approved by MECP, the DPM will then provide the applicant with the finalized TOR ECA Approval Form including the appropriate MECP signature.

7.2.2 Drinking Water Works Permit

Effective September 2009, Halton Region has been authorized to internally approve drinking water systems for certain alterations to the water distribution system under the new Municipal Drinking Water License and Drinking Water Works Permit (DWWP). The conditions of the DWWP

are laid out in, “Guide for Applying for DWWP Amendments, License Amendments” under [Schedule B](#).

The future alteration must meet the requirements of the MECP’s [Watermain Design Criteria for Future Alterations Under a Drinking Water Works Permit](#). The developer’s consulting engineer must complete and sign parts 2 and 3 of the [Form 1](#)- Record of Watermains Authorized as a Future Alteration. The consulting engineer is responsible for providing the DPM this form in their second submission and the DPM will review and process the submission. The DPM will recommend the final approval and signing of the Form 1 when they are satisfied with the watermain design and have received complete engineering drawings.

7.2.3 Other Approvals

The following approvals must be obtained by the applicant (if applicable to the development):

- a) Services that are being constructed through or on a provincial highway require approval prior to construction from the Ministry of Transportation (MTO). MTO will issue an Encroachment Permit to Halton Region for a period of 10 years.
 - i) All costs associated with the acquisition of the [MTO Encroachment Permit](#) will be the responsibility of the land developer.
- b) Where services will cross an Ontario Hydro corridor outside of a Municipal right-of-way, an easement must be obtained by the land developer prior to the construction of the works.
- c) Where works will cross a pipeline easement, a pipeline crossing agreement must be negotiated with the appropriate oil/natural gas company.
- d) Where works will cross the Niagara Escarpment area, a Niagara Escarpment Commission (NEC) development permit or exemption letter must be obtained.
- e) A permit is required from Conservation Halton (CH) in order to undertake any works:
 - i) in or adjacent to rivers or stream valleys, wetlands, shorelines or hazardous lands
 - ii) that include alterations to a river, creek, stream or watercourse
 - iii) that interfere with wetlands
 - iv) that require crossing a river, creek, stream or watercourse
- f) A Municipal Consent (MC) is required when Regional infrastructure is constructed on an existing local Municipal road.

7.3 Compliance with Source Water Protection Plans

The Region requires information from the developer's consulting engineer in order to ensure compliance with applicable Source Water Protection Plans under the [Clean Water Act, 2006](#) requirements. The DPM will complete the two-page internal document titled Supplementary Source Protection Sewage ECA-Application Screening Form with the following information provided from the consulting engineer:

- a) The project type will be classified by either a Storm Sewer, Sanitary Sewer (wastewater), Wastewater Pumping Station (WWPS), Stormwater Management Pond (SWMP) and/or a Wastewater Treatment Plant (WWTP) project.
- b) The project description including the Municipal address location and Regional file number.
- c) The developer's consulting engineer contact information.
- d) Applicable supporting documents such as, Drainage Area Plans, Sewer Design Sheets and the Design Reports for the proposed station, pond or plant.

A report is required from the developer's consulting engineer if the internal screening of the provided information indicates that there is a possibility of a Significant Drinking Water Threat Activity. This report is to be titled, "Source Protection Supplementary Report for Sewage Works Significant Drinking Water Threats," and should include, amongst other items, prepared scaled plans, identifying features, and possible design and operational requirements.

7.4 Regional Roads

Any new construction proposed by a land developer that requires a servicing or subdivision agreement and a full set of engineering drawings, will be processed by Community Planning's DPM. The DPM will perform their review and then circulate the drawings to Transportation Services and Engineering Services for their review and comments.

Transportation Services is responsible for the daily operation of the Region's road network including traffic operations, safety, enforcement and education. This group is also responsible for the Transportation Master Plan, establishing roadway infrastructure standards, right-of-way widths, geometric dimension guidelines, functional planning, Class EA studies for road improvements and implementation, review of transportation impact of proposed development and access management.

A servicing agreement will be required where there are alterations proposed to a Regional road or within a right-of-way, as required by the development application. The consulting engineer is responsible for becoming familiar with the Region's design criteria, manuals and specifications.

Typical construction that require an agreement is as follows:

- a) Entrances to Regional roads.
- b) Regional road improvements including right and left turn lanes to facilitate access.
- c) Right-of-way reconstruction to facilitate grading and storm water works.
- d) Traffic signals and lighting, with the final construction approval by the Electrical Safety Authority certification [[The Ontario Electrical Safety Code \(O. Reg. 164/99\)](#)].
- e) Noise attenuation devices.
- f) Signage.

8.0 Construction

Once all necessary approvals have been released, the project may advance to construction. The following section outlines the process and requirements needed.

8.1 Pre-Construction Meeting

A pre-construction meeting will not be scheduled until the engineering drawings have been signed by both the Region and the local Municipality (Burlington, Oakville, Milton or Halton Hills). **At least one week's notice** must be given to arrange a pre-construction meeting. Five sets of prints of the signed drawings will be submitted at the time the meeting is arranged. A list of general construction requirements for developments (see [Appendix D](#)) will be distributed at the pre-construction meeting.

If work is being proposed on a Regional road, then a separate and additional pre-construction meeting must be arranged at least one week prior to work commencing on the Regional road.

The contractor is responsible to supply the following during the pre-construction meeting:

- a) A construction schedule.
- b) List of material suppliers.
- c) List of emergency numbers including afterhour's numbers.

8.2 Requirements to Commence Construction

Construction will **not be allowed** to take place until:

- a) Drawings have been approved and signed by the Region and the local Municipality (Burlington, Oakville, Milton or Halton Hills).
- b) A pre-construction meeting has been held.
- c) All applicable agency approvals have been obtained (MECP, MTO, etc.). For a servicing agreement, a Municipal Consent or Road Cut Permit from the local Municipality (Burlington, Oakville, Milton or Halton Hills) must be received.
- d) The subdivision agreement has been signed and executed by owner and returned.
- e) The servicing agreement has been registered on title.

8.3 Responsibility of the Developer's Consulting Engineer

The developer's consulting engineer is required to provide a **qualified full-time inspector** who is familiar with Regional standards. The Region will perform part-time inspections as necessary to ensure general conformance to the development agreement, and the Region's standards.

Any proposed changes to the approved engineering drawings must be submitted in writing, through the Regional inspector, to the DPM. The **DPM must approve the changes** prior to the change occurring in the field.

The tapping of existing water and sanitary sewers will only be performed by Regional staff. This will be coordinated by the Regional inspector.

8.4 Testing

All tests performed on the watermains and sanitary sewers, must be in accordance with Halton's standards.

- a) Watermains:
 - i. Pressure test.
 - ii. Swabbing.
 - iii. Chlorination.
 - iv. Fire flows.

Once the mains are completed and the tests have been performed, the consulting engineer will arrange for a qualified private contractor to perform fire flow tests. The locations will be determined by the DPM.

The original test results will be submitted to the consulting engineer's inspector. They are to forward the original results to the DPM, along with a certification letter. The certification letter is to be addressed to the DPM and prepared by the consulting engineer. It will certify that the actual flows meet or exceed the design flows. At each location the consulting engineer is to confirm the results of the fire flow tests expressing the flows in igpm (imperial gallons per minute) at 20psi (pounds per square inch). [Appendix E](#) provides a sample Fire Flow Certification Letter.

The applicant should also note that only Halton Region pre-qualified contractors for watermain disinfection, swabbing and commissioning are to perform the tests. The list of pre-qualified contractors can be provided from the DPM upon request.

- b) Sanitary Sewers:
 - i. Air and Mandrel testing.
 - ii. CCTV inspection (to be done before both maintenance and assumption).

[Appendix F](#) provides a sample CCTV Inspection Certification Letter that is to be prepared by the consulting engineer and addressed to the DPM. The applicant should also note that only Halton Region pre-qualified sewer pipe CCTV inspection contractors are to perform the CCTV inspections. The list of pre-qualified contractors can be provided from the DPM upon request.

It is important to note that storm sewers on Regional roads also require CCTV inspections to be performed before both maintenance and assumption.

8.5 Watermain and Sanitary Sewer Commissioning

Prior to initiation of the commissioning of watermains and sanitary sewers, the Region of Halton **requires** the submission of digital as-built drawings. The submitted digital drawings should consist of both PDF and all associated AutoCAD files. This requirement is typically a condition found in the Region's conditional draft plan approval. To support this requirement, Regional inspectors will monitor progress by using the drawings throughout the project.

(This will require the digital as-built drawings to be received and approved prior to scheduling the commissioning process.)

Appendix D provides further information regarding watermain and sanitary sewer commissioning.

9.0 Plan Registration and Building Permit

The following section outlines the land registration and building permit process.

9.1 Pre-Registration

To initiate the registration process, the owner must forward a letter to the Region's Legal Department requesting that the plan be registered and for the pre-registration meeting to be scheduled. The pre-registration meeting will be led by the Region's Legal Department.

The Legal Department will liaise with other departments for clearances. The DPM, upon receipt of the request of clearance from the Legal Department, will proceed to verify if all related Regional servicing requirements and conditions that need to be addressed prior to the registration of the plan, have already been fulfilled by the owner to the satisfaction of the Region. Once the DPM is satisfied that all related servicing issues have been duly addressed, and that the **owner has fulfilled their obligations**, the DPM will release the clearance of servicing conditions to the Legal Department.

Figure 2- Types of Conditions that the DPM will Clear Prior to the Registration of the Plan



9.2 Plan Registration

In order for a plan of subdivision to be registered, the owner is required to satisfy all applicable Regional requirements and conditions outlined in the Regional subdivision agreement.

9.3 Building Permit Release

The DPM will issue a Building Permit Release letter to the local Municipality (Burlington, Oakville, Milton or Halton Hills) once all Regional requirements have been fulfilled. This will occur upon receipt of a letter from the consulting engineer, requesting initiation of this process. A sample of the request from the consulting engineer is shown in [Appendix G](#).

10.0 Maintenance Period to Assumption

In Halton Region, the minimum guaranteed maintenance period for services constructed under a standard subdivision agreement is **24 months**. For services constructed under a standard servicing agreement, the minimum guaranteed maintenance period is **12 months**. As outlined in both the subdivision agreement and servicing agreement, the developer's consulting engineer may request in writing to have the securities reduced during the maintenance and assumption process.

10.1 Requirements for Maintenance Period

The DPM will formally notify the land developer of the start of maintenance date. The following are the minimum requirements for the establishment of the start of the maintenance period:

- a) Registration of the plan.
- b) "As constructed" drawings have been developed (see [Appendix H](#) for the requirements), received and approved by the DPM.
- c) All water and sanitary sewer testing has been completed.
- d) Fire flow tests are complete and the fire flow certification letter was received by the DPM.
- e) CCTV Inspection Reports have been received by the DPM.
- f) All deficiencies identified in the pre-maintenance inspection have been rectified.

10.2 Pre-Maintenance Inspection

The pre-maintenance inspection will be conducted by a Regional inspector and it will occur once all of the services have been constructed. The Deficiency Checklist Guide shown in [Appendix I](#) will be utilized as a guide for the inspection.

10.3 Establishment of Subdivision Maintenance Date

See [Appendix J](#) for the establishment of the subdivision maintenance date requirements.

10.4 Maintenance Period Responsibilities

The consulting engineer is responsible to ensure that all of the works align with the Region's policies and standards for the duration of the maintenance period. The consulting engineer must manage and repair any deficiencies or defects observed during the maintenance period. All complaints and comments must be resolved by the consulting engineer.

The Region will complete any required repairs for the land developer, should the consulting engineer fail to manage and repair any damages notified in writing by the Region during the maintenance period. The land developer will be directly invoiced for these costs. The Region has the ability to cover these costs from the securities posted by the land developer if the land developer does not pay these invoices within a timely manner.

10.5 Assumption

In order to initiate the process of Regional assumption of a subdivision or Regional services, the consulting engineer will submit a certification letter to the DPM. This certification letter shall verify that the works are deficiency free and will request for a Regional final assumption inspection to be performed.

The DPM will send a request to Regional staff who will perform the final assumption inspection. The inspection will determine if the works are deficiency free. If deficiencies are found, the consulting engineer will be informed by the DPM and the consulting engineer is responsible to make the appropriate repairs. Once the repairs have been completed and re-inspected by the consulting engineer, the process will repeat.

Once the DPM has received final confirmation that the works are deficiency free (from subsequent inspections, if applicable), they then will initiate the Council assumption process with Legal Services.

Works constructed under a Regional servicing agreement are not required to go to Council for assumption. For works covered by a Regional subdivision agreement, Legal Services will draft a By-Law which will go to Regional Council for passing and acceptance.

Once the Regional Council has assumed the works, and the notification has been forwarded to the DPM, the DPM will initiate the reduction of the land developer's securities. The securities will be fully reduced if the local Municipality (Burlington, Oakville, Milton or Halton Hills) has notified the DPM of the assumption of the works under their jurisdiction. If the local Municipality has yet to send this notification, the securities will be reduced to a minimal value (typically 2%).

Appendix A - Development Application Requirements and Pricing



The Regional Municipality of Halton
COMMUNITY PLANNING
DEVELOPMENT APPLICATION REQUIREMENTS

2021

Pre-Consultation	Applicants are strongly encouraged to consult with Regional Staff prior to the submission of an application to discuss specific Regional requirements. <u>The checklists below may only represent a portion of the supporting information required by Halton Region.</u> Incomplete applications will not be processed.
Assisted Housing	Applications for Assisted Housing projects are exempt from Regional Development Application fees. Proposals that incorporate an Assisted Housing component may be eligible for a pro-rated reduction in Regional fees. Projects must conform to the "Assisted Housing" definition in the current Regional Official Plan. Approval is at the sole discretion of the Chief Planning Official of the Region of Halton.
Other Requirements	Other Regional Sections/Divisions/Departments may have additional requirements and fees.
Fee Payment	PAYMENT IS BY CHEQUE ONLY , payable to: The Regional Municipality of Halton Fees include all applicable taxes unless otherwise noted. HST Number 12360 9950 RT0001

Health Department - Lot Assessment Fee

* Applications requiring Health Dept. lot assessment must add \$142.00 per lot to the application fee.

Regional Official Plan Amendment Application

\$10,317.83

Regional Official Plan Amendment (Pits and Quarries)

\$145,315.59

- 15 copies of the completed Regional Official Plan Amendment Application form
- 1 copy of all reports, studies and plans in a digital format
- 15 copies of the Proposed Regional Official Plan Amendment
- 3 copies of any accompanying plans/technical reports
e.g. Planning Justification, Noise, Traffic, Environmental Impact Assessment, Agricultural Impact Assessment, Functional Servicing Reports
- 1 copy of Phase I/II Environmental Site Assessment report

Public Meeting Advertising Fee

\$ Actual Cost

Local Official Plan Amendment (Applicant Initiated)

\$8,718.50

- 3 copies of the completed Application form and, if applicable
- 3 copies of the Official Plan Amendment Application
- 1 copy of all reports, studies and plans in a digital format
- 3 copies of the Proposed Plans & Key Maps
- 3 copies of any accompanying plans/technical reports
e.g. Planning Justification, Noise, Traffic, Environmental Impact Assessment, Agricultural Impact Assessment, Functional Servicing Reports
- 1 copy of Phase I/II Environmental Site Assessment report

Applicant Initiated Revision

\$4,359.26

Local Official Plan Amendment Requiring Regional**Approval (Applicant Initiated)**

\$8,718.57

Same requirements as above.

Applicant Initiated Revision

\$4,359.26

Local Official Plan Amendment (Municipally Initiated)

- 3 copies of the completed Application form and, if applicable
- 3 copies of the Official Plan Amendment Application
- 1 copy of all reports, studies and plans in a digital format
- 3 copies of the Proposed Plans & Context Maps
- 3 copies of the Draft Amendment
- 3 copies of any accompanying plans/technical reports
e.g. Planning Justification, Traffic, Environmental Impact Assessment, Agricultural Impact Assessment, Functional Servicing Reports
- 1 copy of Phase I/II Environmental Site Assessment report

Minor Variance Application

\$36.35*additional Health Dept. lot assessment fee may be required

- 1 copy of the completed Application form or 2 copies if the development is not within the Urban Area

Zoning By-Law Amendment (Applicant Initiated)

\$1028.39

- 3 copies of the completed Application form, and if applicable
- 3 copies of the completed Re-Zoning Application
- 1 copy of all reports, studies and plans in a digital format
- 2 copies of the detailed Landscape Plan (if abutting a Regional Road)
- 2 copies of any accompanying plans/technical reports
e.g. Planning Justification, Traffic, Functional Servicing Reports
- 1 copy of Phase I/II Environmental Site Assessment report

Holding By-law Removal

\$363.18

Temporary Use By-law Permits and Renewals

\$581.07

Revisions to Application

\$514.22

Zoning By-Law Amendment (Municipally Initiated)

- 3 copies of the completed Application form, and if applicable
- 1 copy of all reports, studies and plans in a digital format
- 3 copies of the completed Re-Zoning Application
- 2 copies of the detailed Landscape Plan (if abutting a Regional Road)
- 2 copies of any accompanying plans/technical reports
e.g. Planning Justification, Traffic, Functional Servicing Reports
- 1 copy of Phase I/II Environmental Site Assessment report

Subdivision Application

\$10,608.36

- 3 copies of the completed Application form
- 3 copies of the Proposed Plan of Subdivision Map
- 1 copy of all reports, studies and plans in a digital format
- 2 copies of the detailed Landscape Plan (if abutting a Regional Road)
- 3 copies of any accompanying plans/technical reports
e.g. Planning Justification, Noise, Traffic, Functional Servicing Reports
- 1 copy of Phase I/II Environmental Site Assessment report

Plan Revision (pre Draft Approval) Applicant Initiated

\$762.60

Plan Revision (post Draft Approval) Applicant Initiated

\$2,180.31

Phased Draft Approval Fee

\$10,451.91

Phase Revision Requiring Circulation

\$5,226.61

Sub-Phasing Requiring Circulation

\$3,135.73

Phase Revision & Sub-Phasing Not Requiring Circulation

\$762.60

Emergency Extension of Draft Approval - 3 Months

\$304.52

Extension of Draft Approval - 1 Year

\$871.60

Subdivision -Final Approval / Registration

\$2,180.31

Effective January 1, 2021

Site Plan Application (Applicant Initiated)

\$1,162.15

- 3 copies of the completed Application form
- 1 copy of all reports, studies and plans in a digital format
- 1 Waste Management Plan
- 3 copies of the Proposed Site Plan
- 2 copies of the detailed Grading and Landscape Plan (if abutting a Regional Road)
- 1 Site Servicing Plan
- 3 copies of any accompanying plans/technical reports

Minor Development / Minor Modification

\$727.71

Site Plan Revision (Applicant Initiated)

\$727.71

Condominium Application

\$3,065.93

- 3 copies of the completed Application form and Plan
 - 1 copy of all reports, studies and plans in a digital format
 - 1 Waste Management Plan
 - 1 copy-Grading & Landscape Plan (abutting a Regional Road)
- Plan Revision**

\$458.14

Vacant Land or Common Element

\$451.16

Draft Approval Extension –1 Year or Emergency 3 Month

\$304.52

Exemption Fee

\$508.42

Condominium Conversion

\$1,452.63

Condominium Final Approval / Registration

\$741.64

Consent Application

\$1,162.15 *add. Health Dept. lot assessment fee may be required

- 3 copies of the completed Application form
 - 1 copy of all reports, studies and plans in a digital format
 - 3 copies of any plans/technical reports e.g. Planning Justification, Noise, Traffic, Agricultural Impact Assessment
 - 1 copy of Phase I/II Environmental Site Assessment report
 - 1 Completed Environmental Site Screening Questionnaire
- Consent - Revision**

\$304.52

Validation of Title

\$269.49

Niagara Escarpment Plan Amendment

Major Files Major Files may include Golf Courses, Aggregate uses and any other file as determined by the Chief Planning Official of the Region of Halton.
\$10,317.83

Minor Files

\$2,906.64

- 3 copies of the completed Application form

Green Energy Act Application or

Ontario Power Authority Project Application

\$1,162.08

Engineering & Inspection Fees – Land Development Agreements

Based on Total Cost of Water and Wastewater Works

\$0 - \$100,000.00 Greater of 10% or \$5,000*

\$100,000.01 - \$250,000.00 7%*

\$250,000.01 - \$500,000.00 6%*

\$500,000.01 or more 5%*- To a maximum of \$100,000.00*

Note: A NON- REFUNDABLE DEPOSIT OF \$5,000.00* IS REQUIRED WITH THE FIRST ENGINEERING SUBMISSION.
*Add HST

Parkway Belt West Plan Amendment / MZO (Applicant Initiated)

\$2,906.64

- 3 copies of the completed Application form
- 1 copy of all reports, studies and plans in a digital format
- 2 copies of any accompanying plans/technical reports e.g. Planning Justification, Noise, Traffic Reports
- 1 copy of Phase I/II Environmental Site Assessment report

Part Lot Control By-Law

\$581.07

- 3 copies of the completed Application form
- 1 copy of all reports, studies and plans in a digital format
- 3 copies of the Plan of Survey
- 2 copies of the Engineer's Letter

Review of Major Applications Requiring Planning Act Approval in Bordering Municipalities

\$21,797.79

- 3 copies of the completed Application form
- 1 copy of all reports, studies and plans in a digital format
- 3 copies of the Proposed Plans & Key Maps
- 3 copies of any accompanying plans/technical reports

Publications

Regional Official Plan (2009)	\$72.65
Regional Official Plan (2006)	\$72.65
Regional Plan Updates Subscription	\$17.03 per yr
Regional Official Plan (1980)	\$79.61
Maps (OP 1980)	\$7.15
Aquifer Management Plan	\$106.15
MOU HUSP	\$58.65
MOU HASR	\$108.94

Research/Analysis

Halton Region's Database Search for Environmental Source Information	\$181.59
Development Assessments/Research	\$217.89
DATS Computer Analysis	\$217.89
DATS Continuing Reports	\$41.70 per hour (min. 1 hr)
Old File Retrieval from Storage	\$22.36
Special Data Requests quoted at cost.*	
Photocopies	\$0.52 /pg (min \$3.00)
Reports	\$0.07/pg (min \$3.00)

Regional Standard for Digital Drawings

Drawing Files

- All drawing files shall be standard AutoCAD (Release 2000 or higher)
- Additionally a "MAPEXPORT" to an ESRI Shapefile (This consists of 5 or more file extensions (.shp, .prj, .shx, .dbf, .sbn, .sbx and .shx))

Drawing Scale

- Drawing units are to be metric and to scale

Co-ordinates

- The drawing co-ordinates shall be to real 6 degree UTM co-ordinates (Zone 17N), NAD 83 Datum
- This real co-ordinate registration shall conform to the following criteria:
 - All information in plan view shall be registered to AutoCAD's World co-ordinate system and to the 6 degree UTM co-ordinate system
 - Registration of the 6 degrees UTM co-ordinate system shall consist of a series of cross hairs drawn to the nearest 100 m interval
 - The northing and easting co-ordinate shall be shown at the intersection of the co-ordinating lines
 - Co-ordinate registration shall be indicated on all plan portions before the image is moved or rotated from its real co-ordinate location
 - It is strongly recommended that all drawings not be rotated or moved.

For further information, please contact Halton Region's Planning Application Intake Clerk at:

(905) 825-6000 Ext. 7764

Halton Region
1151 Bronte Road
Oakville, ON L6M 3L1
www.halton.ca

Effective January 1, 2021

Appendix B - General Notes

1. The location of all underground and aboveground utilities and structures is not necessarily shown on these drawings, and, where shown, the accuracy of the location of such utilities and structures is not guaranteed. Before starting work, the contractor shall determine the exact location of all such utilities and structures, and shall assume all liability for damage to them.
2. All areas disturbed by the contractor during the construction of the works shown herein shall be restored to original condition or better as determined by Planning and Public Works Department. All grass and vegetation covered areas shall be restored by placing 150 mm of topsoil and No. 1 nursery sod to establish a grass cover to the satisfaction of the /Region unless noted otherwise.
3. City/Town and Region of Halton standard drawings, O.P.S.S. and O.P.S.D. with Regional amendments shall constitute part of the engineering design and construction contract.
4. The design is based on Halton Region's Water and Wastewater Linear Design Manual - October 2019 Version 5.0, and Approved Products List.
5. All watermain and wastewater appurtenances, materials and components shall comply with the Region's approved manufacturer's product lists for water and wastewater systems. Alternative materials may be acceptable, provided approval has first been obtained from the City/Town Engineer and/or the Regional Commissioner of Public Works or designate.
6. No blasting is permitted.
7. Any areas within R.O.W. which require fill in excess of 0.30 m are subject to compaction tests and such tests must show a min. compaction of 95% S.P.D. at all depths.
8. Manhole and valve chamber covers are to be set flush with base course asphalt and adjusted to final grade prior to installing top lift of asphalt.
9. All trenches within existing right-of-way are to be backfilled in accordance with City/ Town requirements.
10. The name of Soil Consultant, the address and the date of their final report should be noted. The recommended compaction lift heights for watermain and wastewater main

- installation should be identified in this note. State the recommended lift height, whether 200mm, or other.
11. Protective measures shall be employed for tree protection, as per the local City/Town and Region standards.
 12. The project proponent, their Civil Engineering Consulting Firm and contractor are required to obtain formal Conservation Halton authorization or Permit for the development works project in proximity to the creek/waterway.
 13. The project proponent and contractor must have an approved plan to deal with and to eliminate mud tracking.
 14. The project proponent's Civil Engineering Consulting Firm is required to have competent full-time inspection staff on site for the full amount of time the contractor is on site. The Consulting Engineering Firm's Inspector will be the Region's and the City's sole contact for all public complaints and emergency issues, etc. as they arise. The Consulting Firm is required to provide a staff person's 24 hour emergency contact name and phone number for the duration of the construction works project.
 15. The Civil Engineering Consulting Firm will be the sole contact throughout the duration of the maintenance period. The works will only be assumed by the Region on the fulfillment of the following conditions: the Firm has certified in writing that the proponent's minimum one (or two) year Guarantee & Maintenance period has expired, the works were inspected by the Firm and found to be deficient free (Engineer's Letter), and the Firm has requested the Region to perform its own assumption inspection.

SANITARY SEWER NOTES

1. Sanitary manholes as per OPSD 701.010 with frames and covers as per OPSD 401.010 type "A" unless otherwise noted on the drawings.
2. Benching in manholes to be as per OPSD 701.021 as amended by the Region of Halton. Benching in sanitary manholes to be to the obvert of the pipe. The benching is required to have a smooth finish and transition through the manhole.
3. Safety grates are not allowed in Halton Region.

4. Sanitary sewer pipe shall be PVC DR35 (in green color) conforming to CSA B182.2, O.P.S.S. 1841, OPSD 806.040 and OPSD 806.060 unless otherwise noted.
5. Sanitary service connections shall be 125 mm dia., PVC DR28 (in green color), for single family, semi-detached and row townhouse residential connections (shared service laterals are not permitted), and 150 mm dia. PVC DR28 (in green color) for non-residential commercial, industrial and institutional connections. Sanitary service connections to be at a minimum 2% grade. Installation shall be as per OPSD 1006.010 as amended by the Region of Halton and where common trench construction is utilized, per Halton Standard Drawings RH 302.01 and RH 302.02.
6. On completion of the sewer installation, the contractor shall arrange for a mandrel test (undertaken a minimum 30 days after backfill completed), air test and CCTV inspection to be performed in accordance with the Region of Halton requirements. All testing and CCTV inspection is only to be performed by a Region of Halton approved contractor.
7. Following the expiry of the Region's 12-month maintenance period (24 months for subdivision agreements) the contractor shall re-flush and perform a final CCTV inspection and repairs to address all deficiencies.
8. Services to be a min. 2.15 m and max. 2.75 m deep at property line. Risers shall be used where noted as per OPSD 1006.010.
9. Total depth of manhole adjustment units is to be a minimum of 150mm to a 300mm maximum.
10. All sanitary sewer manhole lids are to be cast with the words 'DANGER' and 'SANITARY'.
11. The inlet and outlet sanitary sewers pipes that join the maintenance holes (manholes) shall have gasket flexible water tight connections.
12. All manholes are to be waterproofed and tested to confirm that they are water tight. Waterproofing shall be installed on the exterior of all manholes. Waterproofing shall be a non-toxic, non-flammable, fast curing material to ANSI/NSF Standard 61, barrier materials.

13. All new wastewater mains connecting to the existing system shall be plugged at the connection point to the active system until written approval from Halton Region has been received to accept flows.
14. Sanitary sewers are not permitted to accept any storm drainage including foundation, roof drainage and weeping tile connections.
15. Granular A bedding and cover on all sewers and connections to be as per OPSD 802.010 with granular "B" backfill, unless noted otherwise.
16. Granular backfill around manholes shall be compacted by mechanical means to a minimum of 95% S.P.D.

WATERMAIN NOTES

1. Watermains 150 mm to 300 mm diameter to be P.V.C. CL235 (DR-18) with gasketed joints, as per AWWA C900 and CSA B137.3.
2. Water service connections to be as per OPSD 1104.010 and 1104.020. Minimum water service connection size is 25 mm in diameter. Pipe for all service connections up to 50 mm dia. shall be type K soft copper tubing meeting AWWA C800 (latest version).
3. Stainless steel service saddles shall be used when tapping water services.
4. A min. horizontal separation of 2.5 m must be maintained between watermains and sanitary or storm sewers, including service laterals. The distance shall be measured from the nearest edge or outside surfaces.
5. A min. vertical separation of 0.15 m between watermains and sewers must be maintained if watermain crosses above sewer or 0.50 m if sewer crosses above watermain.
6. Watermain bedding and cover to be at a minimum 150 mm Granular 'A' material as per OPSD 802.010 and OPSS. 401 for PVC (flexible) pipes and OPSD 802.030, 802 .031, OPSD 802 .032 and OPSD 802.033 for rigid pipes, with Granular 'B' backfill.
7. An anchor tee and valve assembly, right at the watermain, shall feed all the fire hydrants. I.e. the secondary valve shall be located right at the watermain, with the note, combination anchor tee & valve.

8. All hydrants as per OPSD 1105.010 (as amended by Region of Halton) and AWWA 502, to have steamer connections. Hydrants to be supplied with:
 - Two (2) 63.5mm (2 ½") with CSA standard thread, 63.5mm I.D., 79.4 O.D., 5 threads per 25mm, 31.75mm square operating nut; and
 - One (1) 100mm (4") storz pumper connection as per CAN/ULC #S-520, 31.75mm square operating nut, and storz cap painted gloss black.
9. Minimum cover over hydrant lateral shall be 1.7 m. If hydrant main valve seat exceeds 1.7 m, a suitable hydrant bottom extension must be used and placed between boot and hydrant barrel. Refer to Halton Region Standard Drawing RH 407.010.
10. Halton's amended Standard for the distance between the bottom of the break-off flange and the finished grade is 0mm to 50mm. O.P.S.D 1105.010 drawing happens to show between 100mm to 150mm, but to be explicitly clear Halton's Standard is between 0mm and 50mm and takes precedence.
11. Along with the standard watermain chlorination, pressure testing and water sampling, all watermains will be swabbed through the fire hydrants.
12. Water Service curb boxes are to have stainless steel rods and stainless steel cotter pins.
13. All metallic components in the water distribution system shall be protected from corrosion.
14. Petrolatum Coatings meeting AWWA C217 are the preferred method of corrosion protection of metallic appurtenances both inside and outside of chambers.
15. For corrosion protection each copper water service connections shall be protected with a minimum anode weight of 14.5 kg and installed in accordance with OPSS.Muni 442.07.04 and OPSD 1109.010 & 1109.011. Services larger than 50 mm dia. are to be treated like any metallic watermain.
16. Water valve chamber joints shall have a continuous rubber gasket adhered to the concrete as supplied by the manufacturer. Water valve chambers shall be water tight.
17. All sacrificial anodes for water service connections shall conform to ASTM B-418 Type II and shall be made of high grade electrolytic zinc, 99.99% pure.

18. Polyethylene Encasement is NOT permitted for corrosion protection of metallic watermain and appurtenances.
19. All valves to open left (counter-clockwise), be of the approved type with the non-rising stem and shall have 50mm square standard AWWA operating nut.
20. All plugs, caps, tees, bends and other appurtances shall be mechanically restrained as per manufacturers specifications. Any mechanical thrust restraint device utilized must be included in Halton's List of Approved Manufacturers & Products for Water Systems.
21. Consultant should provide a table of restrained lengths specific to the project.
22. Where watermain is placed in fill or in previously disturbed ground all joints to be mechanically restrained.
23. Minimum depth of cover over watermain shall be 1.70m measured from the top of the pipe to the finished grade.
24. The depth of water services at property line should be a minimum of 1.7 m and a maximum of 2.0 m. The distance between the ground elevation and the top of the rod should be between 0.5 m and 1.0 m.
25. Water services crossing the storm sewer to have min. 1.70 m of cover. Where this cannot be achieved, water service is to cross under storm sewer.
26. Gate valves conforming to A.W.W.A. C509 or C515 are required on watermains 300 mm and under. Line gate valves shall have screw type valve boxes.
27. All watermain fittings shall have mechanical joints. Valves in chambers to be flanged.
28. Valve chamber access covers, are to be cast with the words 'Danger' and 'Water'.
29. Pipe barrel bending/deflection shall not be allowed.
30. Maximum allowable joint deflection shall be 50% of the manufacturer's specifications. Joint deflection is discouraged and should be avoided, and bends incorporated.
31. Tracer wire shall be installed on all new installations of watermain pipe and services greater than 50 mm dia. for locating purposes. A solid 10 gauge TWU copper wire shall be installed along the top of the pipe, strapped to the pipe at 6 m intervals.

32. The inspector may test the tracing wire for conductivity. If the tracing wire is not continuous from valve to valve, the contractor shall, at his own expense, replace or repair the wire.
33. All water customers supplied by a watermain to be shut down shall be notified by the contractor at least 48 hours in advance of the shut down as per Region of Halton specifications. Notification shall take place under the Engineer's direction.
34. All horizontal and vertical bends that are installed with the water distribution system will be tied-in to above-ground water infrastructure, for as-constructed drawing purposes.
35. The watermain must be constructed entirely separate from the existing system. Connection to the existing system will only be allowed once the new system has had all of its swabbing performed, pressure testing passed, chlorination, flushing and bacteriological testing results approved.
36. Watermain Isolation Plans and Watermain Commissioning Plans are required at the construction stage.
37. All residential water meters are to be installed as per RH 500.010/500.011 and RH 503.010/503.011 depending on the size (ie 20-25mm, 38-50mm).
38. Operation of existing watermains shall be by Region of Halton staff only.

Appendix C - Subdivision and Servicing Agreements

Proposed Subdivision Agreement

Items

1. Development Agreement Request
2. “No Blasting” Letter
3. Schedule “One”
4. Proposed M-Plan
5. Schedule “Two” – Location Map
6. Schedule “Three”
7. Schedule “Four”
8. Proposed Transfer/Easement Reference Plan
9. Schedule “Seven”
10. Parcel Pages
11. Additional Information: as required

Proposed Servicing Agreement

Items

1. Development Agreement Request
2. Page 1 – Description of Works
3. “No Blasting” Letter
4. Schedule “One”
5. Proposed R-Plan
6. Schedule “Two” – Location Map
7. Schedule “Three”
8. Schedule “Four”
9. Proposed Transfer/Easement Reference Plan
10. Schedule “Seven”
11. Parcel Pages
12. Additional Information: as required

NOTE: This document is updated annually.

Appendix D - General Construction Notes

1. No Regional watermains or wastewater mains on private property can be constructed until the drawings have been approved and signed, and also as per no. 3.
2. No construction of wastewater mains or storm sewers or stormwater management facilities can occur until MECP Approval has been received, and also before the pre-approval forms (e.g. Form 1 – Record of Watermains) under the Halton’s Municipal Drinking Water Licence has been signed by the land developer’s Professional Engineer and the Region’s representative.
3. Watermain or wastewater works construction and connections on private property, within existing right-of-way or any works on Regional right-of-way cannot occur until all approvals have been received and the Regional subdivision agreement/servicing agreement has been signed and returned by the developer, along with all the required securities (Letter of Credit or cash), payment of agreement monies for fees, receipt of liability insurance (\$5 Million min.) naming The Regional Municipality of Halton as additional insured etc. In the case of Regional servicing agreements, the agreement must also be registered on title to the property.
4. The Regional Development Project Manager must be notified 10 days prior to the start of construction.
5. 5 sets of the signed drawings, digital CAD drawings and PDF ‘s on USB/Dropbox (or equivalent) and one set of the signed contract documents (for Development Charge main or other works) will be submitted prior to the pre-construction meeting.
6. The consulting engineer must have competent full time inspection staff on site at all times to ensure compliance with the approved drawings, Regional Standards and Specifications and to obtain the required “as constructed” information. Full time means the entire day which the contractor, or sub-contractors, are working. The consulting engineer’s construction manager will oversee their inspection staff and will ensure that all the as-constructed information is being recorded properly as per the requirements of Halton Region. Such requirements include information of all wastewater main inverts: manholes and services, watermain valves, chambers, tees, fittings, horizontal and vertical bends, fire hydrants, secondary valves, services, etc.
7. The consulting engineer’s inspection staff will create and maintain a daily construction inspection diary that will be used to report on all the activity on site that day. This will include creating detailed engineering sketches of construction and maintaining a detailed products list (manufacturer and model) for all Regional infrastructure installed on site, and any deviation from the products list. The base for the product list can be the contractor’s material suppliers list augmented for this purpose. The consulting engineer

will forward a copy of their daily construction inspection diary for the project to the Region's Development Project Manager immediately following construction.

8. The contractor must have competent full-time supervision on site at all times to ensure compliance with the approved drawings. Full time means the entire day which their employees, or sub-contractors, are working.
9. It is the consulting engineer's responsibility to ensure that he/she and the contractor have a copy of, and are familiar with, the most recent Region of Halton Drinking Water Licences and Permits (as applicable), current Region of Halton Water and Wastewater Linear Design Manual, Development Engineering Review Manual (D.E.R.M.), Halton Region Inspection Services Manual – Linear and DS-W98 Commissioning and Disinfection of Watermains (Work Instruction) including ANSI/AWWA 651-14 Disinfection of Watermains. The consulting engineer will undertake to notify the neighbouring residents of the construction works with 48 hours or more of notice, and provide their contact information.
10. It is the consulting engineer's responsibility to ensure that he/she and the contractor are familiar with and comply with the requirements of the Ontario Provincial Specifications (OPS) with Halton Region Additions and Revisions, the American Waterworks Association Standards (AWWA C651), The Ontario Safe Water Drinking Act (2002), The Clean Water Act and the Procedure for Disinfection of Drinking Water in Ontario.
11. Only materials from the approved manufacturers list may be used on the project.
12. Any changes to the signed drawings must be approved, in advance, by the Regional Development Project Manager.
13. All watermain taps into mains that are in service must be done by Regional staff. Regional staff tap $\leq 300\text{mm}$ in diameter. The Region's approved contractor(s) tap watermains that are $> 300\text{mm}$ in diameter. An approved saddle must be used. A watermain Isolation Plan must be in place before tapping.
14. Only Region personnel may operate hydrants and valves on the existing water system.
15. All dead end watermains which are temporary in nature due to the need for a future watermain extension to complete the development, and specifically approved by the Region, shall terminate with a temporary fire hydrant and secondary valve. This will help facilitate the watermain swabbing, flushing and bacteriological testing needed to place the main into operation.
16. All permanent dead end watermains, as specifically approved by the Region, that are placed into operation shall be flushed on a monthly basis by the land developer until assumption of the system by the Region. The consulting engineer shall maintain detailed record keeping of the flushing program and be able to provide these records to the Region

within seven days on request. The consulting engineer will ensure that the Region's Water Department is on site for the operation of any hydrants or valves.

17. After completion of the water works the mains must be hydrostatically tested, cleaned swabbed and disinfected, pressure testing, leakage testing, disinfection, chlorine residual testing, de-chlorinated water testing and water samples taken. The contractor shall submit a commissioning plan in accordance with Halton Region's Commissioning and Disinfection guidelines. The specialist carrying out the commissioning and disinfection, in conjunction with the consulting engineer and Region, shall take and record measurements on Halton's approved "Watermain Disinfection, Pressure Testing & Acceptance" form.

- All testing, with the exception of the water sampling, must be performed by a company pre-qualified by Halton, as follows:
 - Aquacom Contracting Ltd.
 - Aquaone Water Quality
 - Aquazition(2009) Ltd
 - Brickwater Construction Ltd
 - HYDRATEST
 - IQ Environmental Inc.
 - Sutherland Contracting Ltd.
 - Urban Infrastructure Associates Inc.

Note the list will be effective from December 15, 2021 and will be changed again without notice. Please consult with a DPM prior to hiring a pre-qualified contractor.

- Watermains must have a minimum of three swabs through each main, and hydrants, stubs and blow-offs must have a minimum of one swab each.
- Two rounds of water testing will be required and the Regional inspector will collect water samples for lab testing.

18. Once the watermains are completed and tested, the consulting engineer will arrange with a qualified private contractor to perform fire flow tests at locations determined by the Development Project Manager. The Region's contractor for the Region's hydrant maintenance program is SCG Flowmetrix, but please note that any contractor that specialized in fireflow rate testing can be utilized by the developer and their consulting engineer. The procedure is as follows:

- The original test results will be submitted to the consulting engineer's inspector who will forward the original results to the Development Project Manager along with a letter of certification.

- The consulting engineer will prepare a letter to the Development Project Manager certifying that the actual flows meet or exceed the design flows. At each location they will confirm the results of the fire flow tests expressing the flows in U.S.G.M. and I.G.P.M. at 20psi.
 - The Development Project Manager will send a letter confirming that the Region has no objection to the release of building permits to the Building Department at the local Municipality (Burlington, Oakville, Milton or Halton Hills), with a copy to the Fire Department and the Region's Water Department.
19. The contractor must ensure that tracer wire is solid 10 gauge TWU copper wire, secured to the pipe every pipe length (looped around every bell end and pulled tight) with no splicing between valves. Conductivity tests will be done by the contractor or consulting engineer at the completion of each mainline run. Any problems must be rectified before road building commences.
20. Once the wastewater mains have been completed the mains must be air tested, mandrel tested, flushed and CCTV inspection completed. Plugs must be installed in all downstream wastewater manholes until after all testing, flushing and CCTV inspection is complete.
- Air testing of the wastewater system must be performed by a company approved by Halton (such as NeilTech Services) and must be witnessed by the consulting engineer and the Regional inspector. Any changes in size or length must be given to the testing company. The Regional inspector must get a copy of the tests daily.
 - Mandrel testing must be performed by an approved contractor and must be witnessed by the consulting engineer and the Regional inspector. The Region is to get a copy of the test results. No mandrel testing until after 30 days has passed post construction.
 - The contractor will arrange to have the mains flushed 30 days post construction and prior to CCTV inspection. No debris is to be flushed down existing mains.

TV inspections will be arranged by the consulting engineer and will be performed by one of the Region's Pre-Qualified CCTV contractors, as listed below:

- Aquaflow Technology Inc.
- Badger Daylighting
- Capital Sewer Services
- Civica Infrastructure Inc.
- Dambro Environmental Inc.
- Eye-View Drain Services Limited
- GFL Environmental Inc.
- Great Lakes Sewer Services Ltd

- Infrastructure Intelligence Services Inc.
- Miller Underground Inc.
- Mircam Pipe Inspection Inc
- Nieltech Services Ltd
- Orcon Infrastructure Ltd
- PipeFlo Contracting Corp
- Pipetek Infrastructure Services Inc
- Sewer Technologies Inc
- Tunnel Vision Trenchless Services Inc.
- Wessuc Inc.

Note the list will be effective from November 1, 2021 to October 31, 2023. The list will be changed again without notice. Please consult with a DPM prior to hiring a pre-qualified contractor.

The pre-qualified contractor will perform development related CCTV inspections of wastewater mains (sanitary sewers).

- Once all wastewater mains are constructed by the contractor, passed testing and the CCTV reports reviewed by the consulting engineer, the consulting engineer will prepare a letter to the Development Project Manager certifying the deficient free condition of the wastewater mains. A copy of the consulting engineer's certification letter and requirements can be found in Appendix F.
- In addition to the wastewater mains being CCTV'ed immediately after construction as discussed above, the wastewater mains will also be CCTV'ed just prior to assumption of the subdivision by Regional Council. Both rounds of CCTV inspections and reports will be certified in writing as deficient free by the developer's consulting engineer.
- The Regional Municipality of Halton currently has contractors pre-qualified to perform CCTV inspection services and Reports for new sanitary sewers constructed in new developments related to Halton infrastructure (The local Municipalities within Halton have their own process for storm sewers).

21. The contractor should utilize pre-benched manholes where possible. Manhole benching is to the obvert of the pipe and should have a smooth steel trowel finish in the trough. Fibreglass manhole benching should be used in problem areas as requested by the Region. Long sweep benching is to be used for dead end manhole servicing.

22. A pre-maintenance inspection will be performed as soon as possible following base asphalt paving. The contractor, consulting engineer and Region shall inspect the works for deficiencies. A deficiency list shall be created and maintained by consulting engineer, and a copy forwarded to the contractor, the Region's Development Inspector and the

Region's Development Project Manager. All major deficiencies shall be rectified immediately. Any works that are part of the Region's agreement and are not yet constructed or unable to be inspected for whatever reason shall be detailed on the list. Confirmation that all deficiencies have been rectified, with the Region's inspector present, shall be forwarded to the Region's Development Project Manager.

23. The guaranteed maintenance period (a minimum of 12 months, for subdivisions 24 months) will only commence when:

- The works are completed and tested, with test results copied to the Development Project Manager.
- Copies of the consulting engineer's certification letters, ie. (1) all works, and (2) sanitary sewer, have been received and are to be deemed satisfactory.
- A copy of the Statutory Declaration of the completed project works by the contractor is forwarded to the Development Project Manager.
- A copy of the consulting engineer's inspection diary is forwarded to the Development Project Manager.
- Any major deficiencies and pre-maintenance deficiencies have been corrected.
- The subdivision plan has been registered (if applicable).
- "As constructed" prints have been reviewed by the Region, red-lined where necessary, and then the final as-constructed mylars and digital CAD drawings (including plot files, X-refs and pen assignments) and PDF's have been received.
- Additional Development Charge works reporting requirements as necessary.

24. Effective July 1st, 2018, Halton Region requires the water and wastewater (sanitary) as-constructed drawings prior to testing and commissioning of the watermain, wastewater main (sanitary sewer) and stormwater main extensions.

Appendix E - Sample Fire Flow Certification Letter

DATE

Name,
Development Project Manager
Halton Region
1151 Bronte Road
Oakville ON L6M 3L1

Owner's/Developer's Professional
Consulting Engineering Firm
Street number and name
City/Town, ON, postal code
Phone : #
Fax: #

Dear Name:

Re: **Results of Fire Flow Testing for the _____ Subdivision, Town/City of _____, 24T-,D_ - _____**

On (date), fire flow testing was undertaken at several locations within the development (see attached key plan) and was witnessed by a member of this firm. Analysis of the pressure testing was carried out by our office and the results indicate that sufficient pressures will be available during fire flow and peak demand conditions as follows:

- During peak demand conditions, all the tested nodes remained above the minimum pressure criteria of 275 kPa (40 psi)
- During residential low density fire demand conditions, 91 l/s (1200 igpm), all the tested nodes remained above the minimum pressure criteria of 140 kPa (20 psi)
- During residential medium density fire demand conditions, 136 l/s (1800 igpm), all the tested nodes remained above the minimum pressure criteria of 140 kPa (20 psi)
- During commercial/industrial fire demand conditions, 273 l/s (3600 igpm), all the tested nodes remained above the minimum pressure criteria of 140 kPa (20 psi)
- In addition, it was noted that the test results compared well to the modelled results, thereby providing credibility to the water supply modelling for the subdivision and confirming that the water system was constructed and is operating in accordance with the approved design.

Attached, for your files, are the original fire flow test results provided by our contractor, (name). Upon receipt of this information, please provide a clearance letter to the Town/City for the release of building permits.

Yours truly,

Name,

Consulting Engineer; signed, PEO license #, stamped, dated
cc: ABC Investments Limited, Attention: Name

Appendix F - Sample CCTV Certification Letter

DATE

Name,
Development Project Manager
Halton Region
1151 Bronte Road
Oakville, ON, L6M 3L1

Owner's/Developer's Professional
Consulting Engineering Firm
Street number and name
City/Town, ON, postal code
Phone : #
Fax: #

Dear Name:

Re: **Review of sanitary sewer construction and CCTV reports post construction, ABC Investments Limited, ABC Community Phase 1 Subdivision Agreement, 24T-11004/B(A), Region file: DB-1001, in the City of Burlington (Halton Region)**

As per Halton's procedures for sanitary sewer certification please find attached, two paper copies of the sanitary sewer CCTV inspection results (bound in Oxford No. 415 or equivalent file folders) and one CD/DVD/USB recorded in Microsoft's Windows Media Video format, ".wmv" digital video files and accompanying Microsoft Access Database, ".mdb" files (attached to the inside of each of the folders) for the above mentioned Regional subdivision agreement. The CCTV inspection was carried out by _____ which, is one of the Halton Region Pre-qualified sewer pipe CCTV inspection contractors.

It is acknowledged that the CCTV contractor pre-qualification documents clearly spell out all inspection, documentation and reporting requirements. Also included is an 11x17 drawing of the phase 1 subdivision with all the sanitary sewers and manholes shown. The individual sanitary sewer pipe segments are highlighted and clearly labelled with their corresponding CCTV report number, example for #'s 1 – 25. The results of the air testing and mandrel testing are also attached.

We have reviewed the videos along with the PACP Coding (CSA NASSCO Pipeline Assessment Certification Program) in the hardcopy reports against the as-built drawings. Each pipe segment that was constructed has a complete corresponding report. The sewer pipe connections to the manholes are appropriate and the manhole benching is to the obvert of the pipe, with a smooth trowel finish. There are no obstructions in the sewers, no protruding sewer service laterals, no cracks or fractures in the pipes, no displaced joints, no deformation in the pipes, no low points or sags in the pipes, no water ponding or water infiltration. Sanitary sewer deficiencies noted in the pre-maintenance inspection have been rectified. They have been verified by the Region's development inspector and re-videoed by us where applicable. The sewers are deficient free and in compliance with Halton standards. Other certifications and a copy of the statutory declaration are being provided separately. We hereby acknowledge that our Engineers will ensure that the sanitary sewers are flushed, CCTV'ed with reports, reviewed and certified again by us prior to assumption.

Please feel free to contact us if further clarification is required.

Yours truly,

Name,

Consulting Engineer: signed, PEO license #, stamped, dated

cc: ABC Investments Limited, Attention: Name

Appendix G - Sample Building Permit Release Letter

Date

File Number

The Region of Halton
Planning and Public Works Department
1075 North Service Road
Oakville, Ontario
L6M 2G2

Attention: *Development Project Manager*

Dear Sir,

Re: Certification of Completed Works

Name of the development

File number

City/ Town

SAMPLE: The installation of the sanitary sewers and watermains are complete and functional for the above referenced project. *Please see attached sketch.*

We certify that the sanitary sewers and watermains have been constructed in general conformance with the latest engineering drawings and Halton Region standards.

Contact information.

Appendix H- As Constructed Drawing Requirements

General

- The general, watermain, sanitary drainage plans and plan and profile drawings should be "as constructed" and submitted.
- The Approvals block should indicate who signed the original drawings.
- All drawings should be stamped and signed by the consulting engineer.
- A letter should be submitted certifying that the works were constructed in accordance with Regional standards and as per the "as constructed" drawings. The letter should be stamped and signed by the consulting engineer who is a Professional Engineer licensed to practice in the Province of Ontario.

Water

- Ties should be given from the hydrants to all water boxes.
- Ties should be given to all valves and bends (horizontal and vertical).

Wastewater

- Revised design sheets should be submitted.
- Revised inverts and slopes should be shown on all drawings.

Appendix I - Deficiency Checklist Guide

NOTE: This document is updated regularly, and works are project dependant.

Watermains

1. Valves

- Box exposed and at grade _____
- Box plumb _____
- Valve key fits _____
- Valve operable _____
- Ground settlement _____

2. Hydrants

- Operate _____
- Drain _____
- Plumb _____
- Break off flange at correct elevation _____
- Location conflicts _____
- Painted _____
- Ground settlement _____

3. Hydrant Secondary Valve

- Box exposed and at grade _____
- Box plumb _____
- Valve key fits _____
- Valve operable _____
- Ground settlement _____

4. Valve chambers

- Chambers to grade _____
- Water pumped and chamber free of debris _____
- Correct frame and cover _____
- Valve box alignment _____
- Condition of steps _____

- Thrust blocks _____
- 5. Curb stops and boxes
 - Box exposed and at grade _____
 - Box plumb _____
 - Valve operable _____
 - Ground settlement _____
 - Marked with blue 2"x4" (pre-maintenance inspection only) _____
 - Driveway restoration from having to expose or repair _____
- 6. Watermains
 - Tracer Wire (if applicable) _____

Sanitary Sewers

- 1. Sanitary Sewers
 - CCTV inspection deficiencies corrected (pre-maintenance inspection only)

 - Major deficiencies re-televised _____
- 2. Manholes
 - Manhole to grade _____
 - Correct frame and cover _____
 - Manhole steps _____
 - Benching to obvert _____
 - Benching finish _____
 - Infiltration _____
 - Parging _____
 - Moduloc _____
 - Safety grates _____
 - Ground settlement _____
- 3. Laterals
 - Marked with red 2"x4" (pre-maintenance inspection only) _____

Appendix J - Establishment of Subdivision Maintenance Date

The following submissions, passed tests and approved inspections must be complete to establish the start of subdivision maintenance date:

- a) Subdivision to be registered
- b) Sanitary sewer air and mandrel testing have been conducted and passed
- c) As constructed drawings are submitted in hard copy, PDF and AutoCAD, reviewed and approved
- d) Services are connected, fire flow testing was undertaken, report was submitted and approved, complete with a fire flow certification letter
- e) The consulting engineer is to submit a CCTV inspection package and certification letter for review and approval to the DPM
- f) Base asphalt paving has been completed
- g) The consulting engineer stamped the certification of substantial completion letter and it was received by the DPM
- h) A hard copy submission of the consulting engineer's inspection diary was received
- i) Completion report from Halton Region's inspector, with the inspection manager and operations' signature
- j) Successful completion of pre-maintenance inspection, with no deficiencies noted from the Regional inspector

Appendix K - Glossary of Terms

Area Servicing Plan (ASP):

A draft document prepared by a Consulting Engineer in consultation with Halton Region and other relevant agencies. An ASP identifies and evaluates water and wastewater servicing alternatives and recommends a servicing plan. It should also include an implementation plan for the servicing and must build on previous Regional studies to align with the infrastructure planning across the Region.

Consent:

A Ministry approval that provides an alternative process for land division proposals that are relatively less complex where a plan of subdivision is not required (i.e. the creation of one or two lots or easements) (also commonly known as a severance of land).

Easement:

A legal right that one party has to use real estate that is owned by another party. The rights of the easement holder regarding use of the property are specific and typically limited.

Encroachment:

An agreement between the City/Town/Region and a property owner whose property abuts the municipal property which permits the property owner to utilize a designated portion of City/Town/Region property for the purpose of improving the land use.

Environmental Implementation Report/Functional Servicing Study (EIR/FSS):

An EIR characterizes and analyses the natural heritage features and functions and determines the potential impacts of a proposed development application, including servicing requirements, on the Natural Heritage System (NHS). A FSS identifies servicing requirements related to sanitary, water, storm water, roads and site grading.

Minor Variance:

Small changes or exceptions to existing land use or development restrictions contained in the Zoning By-law.

Official Plan Amendment:

A policy change process that incorporates any proposed changes into the Regional Official Plan.

Part Lot Control:

Authority granted to the City/Town/Region to pass a By-law to exempt lands within a Plan of Subdivision from the Part Lot Control provisions in the Planning Act. This process is used to lift Part Lot Control restrictions from lands within registered plans of subdivision to create parcels for sale.

Plan of Condominium:

Authority granted to the City/Town/Region to regulate the division of land and/or buildings parcels or units that may be sold as part of a condominium corporation.

Plan of Subdivision:

Authority granted to the City/Town/Region to regulate the servicing and development of large parcels of land in accordance with appropriate municipal regulations and standards. Issues that are examined during the review of Plan of Subdivision include whether the land is suitable for the proposed subdivision, the adequacy of utilities, municipal services and the conservation of natural resources.

Region's Servicing Master Plan:

A document that provides a Region-wide review, evaluation and development of water and wastewater servicing strategies for all urban service areas as well as the framework and vision for the water and wastewater servicing needs within the urban areas in Halton Region.

Secondary Plan:

A plan describing the growth and development of a defined area of Halton Region. It can be considered a second layer of the Regional Official Plan that demonstrates in greater depth how the Official Plan policies will be implemented in a smaller area.

Site Plan Application:

A review process performed by the City/Town/Region that examines the design and technical aspects of a proposed development to ensure it is compatible with the surrounding area and contributes to the economic, social and environmental vitality of the City/Town/Region. Features such as building designs, site access and servicing, waste storage, parking, loading and landscaping are reviewed.

Site Servicing Plan:

A drawing included as part of the Site Plan Application that details all proposed internal servicing for storm, sanitary and water.

Storm Water Management Plan for Study Area:

A report that addresses water resource concerns during and post development. It will provide the size and location of SWMPs and will demonstrate (through modelling and other techniques) that when integrated, the SWMPs will meet the criteria established to ensure that the watercourse will not undergo any changes, there will not be any increase in flood potential, and the development will not present a hazard to aquatic life or human use.

Zoning By-law/Zoning By-law Amendment:

A Zoning By-law is a document that describes the permitted use of land (i.e. residential commercial, industrial, etc.), as well as the location, size and height of buildings or structures, landscaping, parking requirements and other site-specific requirements. A Zoning By-law Amendment (ZBA) or Rezoning is the process through which the City/Town/Region guides and approves changes to how lands are used for specific purposes.