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**REGION OF HALTON**

**2017 Development Charges**

**Background Study**

**FOR**

**WATER, WASTEWATER, ROADS &**

**GENERAL SERVICES DEVELOPMENT CHARGES**

**December 14, 2016**

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**EXECUTIVE SUMMARY**





## EXECUTIVE SUMMARY

### 1. Purpose of this Background Study

- 1.1. This Background Study has been prepared pursuant to Section 10 of the *Development Charges Act, 1997* (DCA) as amended and, together with the proposed By-law, is being made available to the public more than 2 weeks prior to the public meeting, as required by Section 12 of the DCA, which is expected to be held March 22, 2017.
- 1.2. The development charges (DCs) calculated represent those which can be recovered under the DCA, based on the Region's capital spending plans and other assumptions which are responsive to the requirements of the DCA. A decision is required by Council, after receiving input at the public meeting and the completed study and By-law, as to the magnitude of the charge it wishes to establish, for residential and non-residential development.
- 1.3. A decision is required regarding the by-law structure. The Background Study proposes continuing with the current by-law structure of area specific water and wastewater DCs for the Greenfield versus Built Boundary areas and also proposes continuing with the non-residential roads DC structure being split between retail and non-retail. For the purpose of comparative review, the Study also provides the calculation of the uniform Region-wide DCs for water and wastewater services and a uniform average non-residential DC for roads service.
- 1.4. Decisions are also involved in finalizing DC policy and the By-law, including exemptions, indexing, applicability to the redevelopment of land, and the schedule of charges by type of land use. Key proposed changes are summarized below in Section 4 of this Executive Summary.
- 1.5. It is the purpose of the public meeting and the continuing consultation activity to obtain input on all these matters.
- 1.6. The purpose of this Background Study is to propose the replacement of the following By-law with the proposed By-law included herein:

- By-law No. 48-12, as amended, “A By-law to establish water, wastewater, roads and general services Development Charges for the Regional Municipality of Halton (Built Boundary and Greenfield Areas)” (expiring on September 4, 2017)
- 1.7. The 2017 DC update process has been undertaken in advance of the expiry date of this By-law and reflects the Region’s planning projections in the Best Planning Estimates approved by Council in 2011 (BPE, 2011), as well as the revised Master Plan capital requirements and costs associated therewith (PW-33-16 re: 2017 Development Charges Update – Water, Wastewater and Transportation Infrastructure Projects). Therefore, the Region’s DC By-law needs to be updated to reflect the revised capital needs.
- 1.8. It should be noted that the BPE, 2011 is based on targets set out in Schedule 3 of the Provincial Growth Plan, Places to Grow and Regional Official Plan Amendment No. 39 (ROPA 39). Specifically, the Region is required to plan for a total of 780,000 people (752,537 excluding the Census undercount)<sup>1</sup> and 390,000 jobs by 2031. Halton Region further allocated the Provincial growth targets by local municipality, through consultation with local municipalities, as part of the Sustainable Halton process, which represents the growth management and land use response to the province's Places to Grow Plan, the Provincial Policy Statement and the Greenbelt Plan.
- 1.9. Further, recent changes to the DCA (new clause 10(2) (c.2)) require that the Background Study must include an asset management plan for all assets with capital that is proposed to be funded under the DC By-law. Subsection 10(3) of the DCA provides a framework for this plan. This Background Study provides details of the Asset Management Plan (Appendix H).
- 1.10. This Study and the proposed By-law do not include GO Transit servicing requirements. The Region imposes a DC for GO Transit purposes, pursuant to By-law No. 159-01, commencing November 14, 2001. This By-law has been extended by Provincial legislation/regulation 6 times including most recently to December 31<sup>st</sup>, 2016. This latest extension maintains the GO Transit DC rates, subject to annual indexing in accordance with the Statistics Canada Construction Price Index. The Province has proposed an extension of the By-law to December 31<sup>st</sup>, 2019. Imposition of a revised GO Transit DC By-law to replace the current By-law would require a separate updating process.

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<sup>1</sup> Census undercount is estimated as approximately 4% according to Places to Grow Growth Plan for the Greater Golden Horseshoe 2006. Ministry of Public Infrastructure Renewal.

- 1.11. Further, this Study does not address the Recovery DC By-law No. 49-12 (Residential Recovery of the Early Payment of Estimated Future Water, Wastewater and Roads DCs for the Recovery Area 2012-2021). This By-law will be updated under a separate study.

## **2. Region-wide vs. Area Specific Costs**

- 2.1. S.10 (2)(c.1) of the DCA, requires Council to consider the use of more than one DC By-law to reflect different needs for services in different areas. As such, the Region considered area specific charges.
- 2.2. At present, the regional roads and general services charges are imposed on a Region-wide basis, while the water and wastewater residential and non-residential charges are imposed on an area specific basis: Greenfield DC and Built Boundary DC.
- 2.3. ROPA 38, approved by Council, and the Provincial Growth Plan requires that by the year 2016 and each year thereafter, a minimum of 40 percent (%) of all residential development occurring annually in Halton must be within the Built Boundary area (Built Boundary for the Provincial Growth Plan for the Greater Golden Horseshoe, 2006) with the remaining in the Greenfield area (area outside the Built Boundary) but within the ROPA 38 Urban Area. Accordingly, continuing with an area specific charge is proposed for the Greenfield and Built Boundary areas to support the intensification development of the Growth Plan (detailed in Appendix B).
- 2.4. The area specific water and wastewater charges were calculated based on the distribution/collection infrastructure required to service growth planned within the Greenfield and Built Boundary areas. The DC rates relating to the water and wastewater capacity (e.g. plant expansions) are calculated on a Region-wide basis given the difficulty in identifying area specific infrastructure related to capacity projects.

## **3. The 2017 DC Calculation**

- 3.1. An annualized cash flow method was undertaken to calculate the DCs, which considers available DC reserve fund balances, project costs adjusted for inflation, DC credits, outstanding (unfunded) capital costs, historic oversizing costs, financing costs associated with expenditure timing and anticipated DC revenues, with indexing over the planning horizon. In addition, the cash flow analysis provides for interest earnings on

positive reserve fund balances and interest expenses on negative balances. Details of the DC calculation and cash flow methodology are included in Appendices C, E, and F.

- 3.2. The planning period for the calculation of the charges in this Background Study extends to 2031 in the case of water, wastewater, roads and police and to 2026 for the general services (i.e. growth studies, paramedics, facilities, social housing, waste diversion and waterfront parks). 2031 was selected as the planning horizon for water, wastewater, roads and police, in that it is consistent with planning projections approved by Council (BPE, 2011) and the coverage of the Region's Official Plan (ROPA 39). A 10-year horizon has been used for the general services, consistent with the requirements set out in the DCA.
- 3.3. The estimated servicing needs related to this anticipated development are detailed in Appendices B, D and F. Table ES-1 summarizes the capital infrastructure cost required over the planning horizon and the deductions made pursuant to the DCA.

**Table ES-1**  
**Summary of Capital Costs for all Eligible Programs (\$2017, \$Millions)**

Services	Gross Cost	Less:					Net Growth		
		Ineligible (Level of Service)	Benefit to Existing Dev't	Subsidy, Dev Contbt'n	Post Period Benefit	10% Statutory Deduc't	Total	Res	N-res
<b>W/WW (2017-2031):</b>									
Water	\$ 535.1		\$ 11.4		\$ 43.6		\$ 480.1	\$ 357.7	\$ 122.4
Wastewater	625.7		95.8		18.0		511.9	379.6	132.3
Sub-Total	\$ 1,160.8	\$ -	\$ 107.2	\$ -	\$ 61.6	N/A	\$ 992.0	\$ 737.3	\$ 254.6
<b>Roads (2017-2031)</b>	<b>\$ 2,189.9</b>	<b>\$ -</b>	<b>\$ 388.7</b>	<b>\$ -</b>	<b>\$ 105.7</b>	<b>N/A</b>	<b>\$ 1,695.5</b>	<b>\$ 1,085.1</b>	<b>\$ 610.4</b>
<b>General Servc (2017-2026):</b>									
Growth Studies	\$ 16.6		\$ 4.6		\$ -	\$ 0.1	\$ 11.9	\$ 8.4	\$ 3.4
Police <sup>1</sup>	115.8		36.7		25.7	-	53.4	37.8	15.6
Paramedics	25.5		8.4		10.1	0.7	6.3	5.5	0.7
Facilities	11.8		3.6		1.2	0.5	6.5	5.6	0.8
Social Housing	95.0		47.5		-	4.8	42.8	42.8	-
Waste Diversion	9.8		4.8		1.7	0.3	2.9	2.8	0.1
Waterfront Parks	40.1		9.8	2.3	18.2	1.0	8.9	8.4	0.4
Sub-Total	\$ 314.5	\$ -	\$ 115.4	\$ 2.3	\$ 57.0	\$ 7.3	\$ 132.6	\$ 111.4	\$ 21.2
<b>Total</b>	<b>\$ 3,665.3</b>	<b>\$ -</b>	<b>\$ 611.3</b>	<b>\$ 2.3</b>	<b>\$ 224.3</b>	<b>\$ 7.3</b>	<b>\$ 2,820.0</b>	<b>\$ 1,933.8</b>	<b>\$ 886.2</b>

1. Police (2017-2031)

Note: May not add due to rounding

- 3.4. The non-residential roads infrastructure cost was further divided among different types of non-residential development between retail and non-Retail development (Appendix D and E).
- 3.5. Table ES-2 distributes further the water/wastewater costs between Greenfield and Built Boundary areas.

**Table ES-2****Water & Wastewater Project Costs by Area (2017-2031) (\$2017, \$Millions)**

Service	Gross Cost	Less: Benefit to Existing Dev't	Less: Post Period Benefit	Net Growth	Residential Share			Non-residential Share				
					Capacity	Distrb'n /Collect'n - Greenfield	Distrb'n /Collect'n - Built bndry	Total	Capacity	Distrb'n /Collect'n - Greenfield	Distrb'n /Collect'n - Built bndry	Total
Water	\$ 535.1	\$ 11.4	\$ 43.6	\$ 480.1	\$ 143.3	\$ 194.9	\$ 19.5	\$ 357.7	\$ 47.7	\$ 68.5	\$ 6.2	\$ 122.4
Wastewater	625.7	95.8	18.0	511.9	87.3	260.7	31.5	379.6	30.7	91.6	10.0	132.3
<b>Total</b>	<b>\$ 1,160.8</b>	<b>\$ 107.2</b>	<b>\$ 61.6</b>	<b>\$ 992.0</b>	<b>\$ 230.6</b>	<b>\$ 455.7</b>	<b>\$ 51.1</b>	<b>\$ 737.3</b>	<b>\$ 78.4</b>	<b>\$ 160.1</b>	<b>\$ 16.1</b>	<b>\$ 254.6</b>

Note: May not add due to rounding

- 3.6. The Region intends to implement the projects set out in this Study through its usual practice of preparing financial plans prior to the release of water and wastewater capacity. These plans will consider the projects in this Background Study to be financed under the plan and may use a combination of various financing techniques. The financial plan may also consider the staging of projects and, therefore, the timing and sequence of development to achieve the fiscal objectives of the Region under the Region's current Official Plan. Accordingly, the timing of some of the projects which are to be DC funded may be modified from what is shown in this Background Study. These modifications may be necessitated by the specifics of the financial plans to be prepared for water, wastewater and road servicing. The financial plan will be prepared once the DC By-law is approved.
- 3.7. The results of the calculation, in terms of the full charges involved, are summarized in Table ES-3 based on the costing and related assumptions contained in Appendices A to F. The water and wastewater charges are presented both on a Region-wide and area specific basis. The area-specific calculated charges are reflected in the proposed By-law contained in Appendix I. Further, Tables ES-4 and ES-5 compare the proposed rates to the current DC rates as of April 1, 2016.
- 3.8. The areas to which proposed DCs apply are illustrated on Map ES-1.

**Table ES-3  
Proposed Development Charges for All Services**

Development Categories	Water			Wastewater		
	Region-Wide	Greenfield	Built Boundary	Region-Wide	Greenfield	Built Boundary
<b>Residential</b>						
Single and Semi-Detached	\$ 6,005.30	\$ 7,581.80	\$ 2,742.94	\$ 7,334.66	\$ 8,966.66	\$3,957.47
Multiples - 3 or More Bedrooms	4,798.75	6,079.53	2,183.68	5,861.03	7,193.63	3,142.12
Multiples - Less than 3 Bedrooms	3,486.90	4,419.81	1,586.89	4,258.78	5,230.15	2,283.57
Apartments - 2 or More Bedrooms	2,942.71	3,723.95	1,344.48	3,594.13	4,405.66	1,940.18
Apartments - Less than 2 Bedrooms	2,267.17	2,869.32	1,035.74	2,769.04	3,394.63	1,494.56
Special Care/Need & Accessory Dwelling	1,876.51	2,369.06	857.60	2,291.91	2,801.76	1,237.83
<b>Non-Residential per sq. ft. (TFA)</b>						
Retail	\$ 2.217	\$ 2.763	\$ 1.072	\$ 2.963	\$ 3.542	\$ 1.748
Non-Retail	\$ 2.217	\$ 2.763	\$ 1.072	\$ 2.963	\$ 3.542	\$ 1.748

Development Categories	Roads	Growth Studies	Police	Paramedics	Facilities	Social Housing	Waste Diversion	Waterfront Parks
<b>Residential</b>								
Single and Semi-Detached	\$ 16,826.72	\$ 228.34	\$ 540.90	\$ 147.76	\$ 127.63	\$ 821.20	\$ 56.43	\$ 176.30
Multiples - 3 or More Bedrooms	13,446.01	172.16	407.83	111.41	96.23	619.17	42.55	132.93
Multiples - Less than 3 Bedrooms	9,770.23	127.44	301.89	82.47	71.23	458.33	31.50	98.40
Apartments - 2 or More Bedrooms	8,245.42	109.23	258.74	70.68	61.05	392.82	27.00	84.33
Apartments - Less than 2 Bedrooms	6,352.56	83.44	197.65	53.99	46.64	300.07	20.62	64.42
Special Care/Need & Accessory Dwelling	5,257.95	71.82	170.12	46.47	40.14	258.28	17.75	55.45
<b>Non-Residential per sq. ft. (TFA)</b>								
Retail	\$ 26.420	\$ 0.127	\$ 0.159	\$ 0.024	\$ 0.020	n/a	\$ 0.003	\$ 0.010
Non-Retail	\$ 5.216	\$ 0.127	\$ 0.159	\$ 0.024	\$ 0.020	n/a	\$ 0.003	\$ 0.010

Development Categories	Total		
	Region-Wide	Greenfield	Built Boundary
<b>Residential *</b>			
Single and Semi-Detached	\$ 32,265.24	\$35,473.74	\$25,625.69
Multiples - 3 or More Bedrooms	25,688.07	28,301.45	20,354.09
Multiples - Less than 3 Bedrooms	18,687.17	20,591.45	14,811.95
Apartments - 2 or More Bedrooms	15,786.11	17,378.88	12,533.93
Apartments - Less than 2 Bedrooms	12,155.60	13,383.34	9,649.69
Special Care/Need & Accessory Dwelling	10,086.40	11,088.80	8,013.41
<b>Non-Residential per sq. ft. (TFA)</b>			
Retail	\$ 31.94	\$ 33.07	\$ 29.58
Non-Retail	\$ 10.74	\$ 11.86	\$ 8.38

\*GO Transit requirements and Recovery DC By-law 49-12 are beyond the scope of this study and have not been included in this calculation.  
Note: May not add due to rounding

**Table ES-4**  
**Change in Residential DCs**  
**(Per Single Detached Unit)**

Service	As Of April 1, 2016		New Calculated		
	Greenfield	Built Boundary	Region - Wide	Area Specific	
				Greenfield	Built Boundary
Water & Wastewater	\$ 21,215	\$ 11,658	\$ 13,340	\$ 16,548	\$ 6,700
Roads	\$ 14,121	\$ 14,121	16,827	\$ 16,827	\$ 16,827
General Services:					
Growth Studies	\$ 234	\$ 234	228	\$ 228	\$ 228
Police	323	323	541	541	541
Paramedics	70	70	148	148	148
Facilities	72	72	128	128	128
Social Housing	406	406	821	821	821
Waste Diversion	-	-	56	56	56
Waterfront Parks	-	-	176	176	176
Sub-Total	\$ 36,441	\$ 26,883	\$ 32,265	\$ 35,474	\$ 25,626
GO Transit <sup>1</sup>	\$ 1,084	\$ 1,084	\$ 1,084	\$ 1,084	\$ 1,084
<b>Total</b>	<b>\$ 37,526</b>	<b>\$ 27,968</b>	<b>\$ 33,350</b>	<b>\$ 36,558</b>	<b>\$ 26,710</b>

1. GO Transit requirements are beyond the scope of this study. However, GO DC is shown in this table for the purposes of presenting a total quantum of DCs

Note: May not add due to rounding

**Table ES-5**  
**Change in Non-residential DCs**  
**(Per Sq. Ft of TFA)**

Service	As Of April 1, 2016				New Calculated					
	Greenfield		Built Boundary		Region Wide		Area Specific			
	Retail	Non-Retail	Retail	Non-Retail	Retail	Non-Retail	Retail	Non-Retail	Retail	Non-Retail
Water & Wastewater	\$ 7.70	\$ 7.70	\$ 4.57	\$ 4.57	\$ 5.180	\$ 5.180	\$ 6.304	\$ 6.304	\$ 2.820	\$ 2.820
Roads	\$ 18.24	\$ 5.04	\$ 18.24	\$ 5.04	\$26.420	\$ 5.216	\$26.420	\$ 5.216	\$26.420	\$ 5.216
General Services:										
Growth Studies	\$ 0.11	\$ 0.11	\$ 0.11	\$ 0.11	0.127	0.127	\$ 0.127	\$ 0.127	\$ 0.127	\$ 0.127
Police	0.16	0.16	0.16	0.16	0.159	0.159	0.159	0.159	0.159	0.159
Paramedics	0.01	0.01	0.01	0.01	0.024	0.024	0.024	0.024	0.024	0.024
Facilities	0.01	0.01	0.01	0.01	0.020	0.020	0.020	0.020	0.020	0.020
Waste Diversion	n/a	n/a	n/a	n/a	0.003	0.003	0.003	0.003	0.003	0.003
Waterfront Parks	n/a	n/a	n/a	n/a	0.010	0.010	0.010	0.010	0.010	0.010
<b>Total</b>	<b>\$ 26.23</b>	<b>\$ 13.03</b>	<b>\$ 23.10</b>	<b>\$ 9.90</b>	<b>\$31.944</b>	<b>\$10.740</b>	<b>\$33.068</b>	<b>\$11.864</b>	<b>\$29.584</b>	<b>\$ 8.380</b>

Note: May not add due to rounding

- 3.9. As shown in the tables above, the new calculated water and wastewater DC rates are declining while the roads and general services DCs are increasing, resulting in an overall reduction in the new DC rates, with the exception of retail development, compared to the current rates.
- 3.10. The reduction in the residential water and wastewater DCs is in reflection of the significant water and wastewater capacity projects that have been accommodated through the 2012 Allocation Program. These water and wastewater capacity projects will benefit growth planned between 2017 and 2031, but have been front-end financed by residential developers participating in the 2012 Allocation Program (Participating Owners) through a Front-ending Agreement established under section 44 of the DCA (LPS95-13/FN-29-13/PW-56-13 re: 2012 Allocation Program). In order to allow the reimbursement to the Participating Owners for front-ending costs beyond their share of the benefit (i.e. DCs), a residential front-ending recovery payment in the amount of \$9,500 per single detached equivalent unit will come into effect on January 1, 2017 in accordance with the provisions set out in the Front-ending Agreement. Accordingly, all subsequent residential developers who benefit from the front-ended municipal infrastructure will be subject to the front-ending recovery payment in addition to the Region's DCs established under its DC By-law.
- 3.11. As such the Front-ending recovery payment is not included in the 2017 DC By-law Update.

#### **4. Other DC Policies**

- 4.1. The rules for exemptions, relief and adjustments for the charge are detailed in Chapter 6 and included in the proposed By-law in Appendix I. The key proposed changes are:
- Expand the non-residential Lot Coverage Relief. (see 6.8.1)
  - Extend the Conversion Credit for non-retail to retail development (see 6.8.3)
  - Allow a residential DC deferral for Purpose Built Rental High Density Apartment (see 6.8.4)
- 4.2. The Region's Local Service Guidelines set out in general the size of water and wastewater and road infrastructure that constitutes a development charge project. The Local Services Guidelines are set out in Appendix G.



## **5. DC Recovery**

- 5.1. Table ES-1 above summarizes the total capital program considered, the deductions made and the amounts, which form part of the calculation of the DCs. The program is focused on works which are development-related. Under this Background Study for all services combined, \$2.8 billion of a total capital program of \$3.7 billion is eligible for DC recovery over the 10 and 15 year planning periods.

## **6. Consultation Process**

- 6.1. Halton Region has undertaken an organized and comprehensive public consultation process through the Development Charges Advisory Committee (DCAC) prior to the release of this Background Study. Once the Background Study is released Halton undertakes a public process prior to the public meeting under the DCA.
- 6.2. The consultation process will continue prior to Council considering DC By-law through information posted on the Region's website and the statutory public meeting. This process is discussed in Chapter 7.

## **7. Council Approvals Sought**

- 7.1. The Background Study and proposed DC By-law may subsequently be revised and submitted to Council. Accordingly, approval is being sought for:
- the proposed DC By-law;
  - the Background Study, including the development forecast, the development-related capital program, the DC calculation and deductions, and associated policy proposals;
  - the undertaking to ensure the increase in the growth-related services will be met, by virtue of the approval of the capital forecast contained herein; and
  - the post-2031 capacity to be paid for subsequently by DCs or other similar charges.

## **8. By-law Adoption and Implementation**

- 8.1. As summarized below, the public meeting is expected to be held March 22, 2017 as required by Section 12 of the DCA. The final DC proposals are planned to be made to the Administration and Finance Committee on May 10, 2017 and Council will consider approval of a By-law on June 14, 2017.

<b>Process</b>	<b>Date</b>
1. Release of DC Background Study to the Public	December 14, 2016
2. Public Meeting under the DCA, 1997 (A&F Committee)	March 22, 2017
3. Final DC Proposals & Comments to A&F Committee	May 10, 2017
4. Proposed Passing of DC By-law(s) by Council	June 14, 2017
5. Advertise Notice of passage of DC By-law(s)	Within 20 days of passage
6. Last day for DC By-law(s) Appeal	40 days after passage

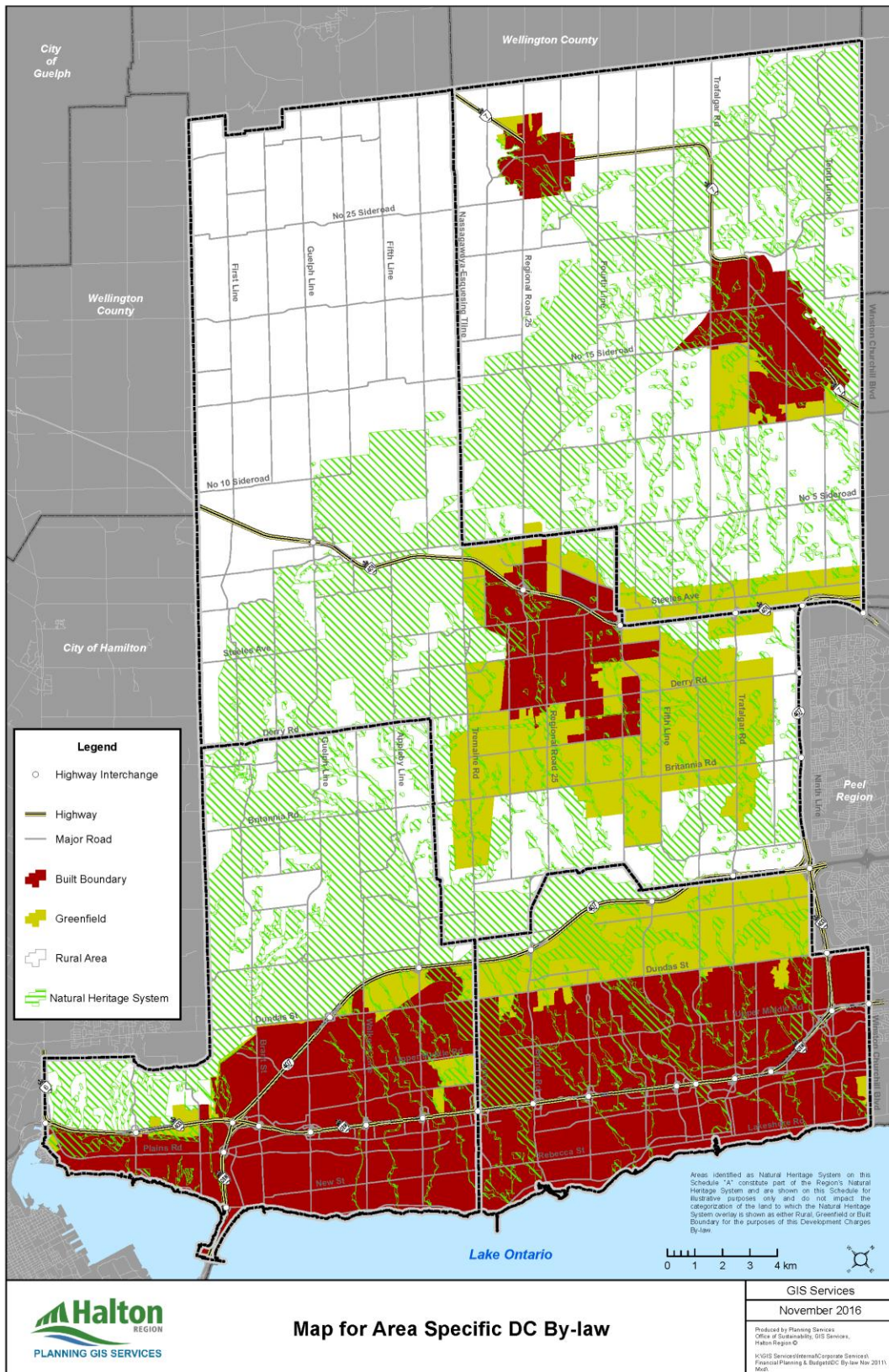
8.2. Although the By-law is scheduled to be passed on June 14, 2017, this Study proposes that the By-law come into force September 1<sup>st</sup>, 2017 to allow for a transitional period to the new rates prior to expiration of By-law No. 48-12 (September 4, 2017).

## **9. Acknowledgements**

9.1. The preparation of the 2017 DC Background Study and By-law has been undertaken in consultation with the following:

- Halton DCAC;
- Halton Region Planning and Public Works, Health and Social Services, as well as Halton Regional Police Service;
- Consultants retained by the Region, including GHD Inc., GM Blue Plan Engineering, Ellso Consulting Inc., Aird & Berlis LLP, Kagan Shastri LLP Lawyers, and Watson & Associates Economists Ltd.

### Map ES-1 Lands to which Development Charges are Applicable





# 1. INTRODUCTION



# 1. INTRODUCTION

## 1.1. Purpose of this Document

The Region of Halton has prepared a DC Background Study (the Study) and By-law for water, wastewater, roads and general services (i.e. growth studies, police, paramedic services, facilities, social housing, waste diversion, and waterfront parks) which through the DC process set out in the Study will lead to the replacement of By-law No. 48-12 (Water, Wastewater, Roads and General Services Development Charges for Halton Built Boundary and Greenfield Areas By-law, 2012), as amended by By-law No. 3-16 (removal of Conservation Halton) and By-law No. 51-16 (using 6 categories of residential development).

By-law No. 48-12, as amended, was approved by Council on April 18, 2012, and became effective September 5, 2012. The By-law will expire on September 4, 2017.

This Study has been prepared, in the first instance, to meet the statutory requirements applicable to the Region's DC Background Study, as summarized in Sections 1.2 and 1.3 below. It also addresses the requirement for "rules" (contained in Chapter 6) and the proposed By-law to be made available as part of the approval process (included as Appendix I).

In addition, the Study is designed to set out sufficient background on the legislation (Chapter 1), current Regional DC policy (Chapter 2) and the policies underlying the proposed By-law (Chapter 6), to make the exercise understandable to those who are involved. Finally, it also addresses post-adoption implementation requirements (Chapter 7).

This Study reviews all relevant information required under the DCA to determine the uniform DCs for water, wastewater, roads and general services (i.e. growth studies, police, paramedic services, facilities, social housing, waste diversion, and waterfront parks). With respect to the water and wastewater services, information has also been prepared to calculate uniform plant capacity DCs and area specific distribution/collection charges for the Greenfield and Built Boundary areas, as identified in ROPA 38 (Chapters 4 & 5 and Appendix C). The non-residential roads DC calculation has also been differentiated between retail and non-retail development (Appendix D and E).

The Chapters in this Study are supported by Appendices containing the data required to explain and substantiate the calculation of the charges.

Figure 1-1 outlines the proposed schedule to be followed with respect to the DC by-law adoption process.

**Figure 1-1**  
**Schedule of Key DC Process Dates**

Process	Date
1. Release of DC Background Study to the Public	December 14, 2016
2. Public Meeting under the DCA, 1997 (A&F Committee)	March 22, 2017
3. Final DC Proposals & Comments to A&F Committee	May 10, 2017
4. Proposed Passing of DC By-law(s) by Council	June 14, 2017
5. Advertise Notice of passage of DC By-law(s)	Within 20 days of passage
6. Last day for DC By-law(s) Appeal	40 days after passage

In addition to the above, it should be noted that a background study will be released on January 11, 2017 to update By-law No. 49-12 (Residential Recovery of the Early Payment of Estimated Future Water, Wastewater and Roads DCs for the Recovery Area 2012-2021). The Public Meeting under the DCA will be held on March 22, 2017, and Council will consider the related DC By-law together with the DC By-law proposed in this Background Study on June 14, 2017.

## **1.2. Development Charges Act, 1997 (DCA) Background Study Requirements**

The DCA requires that a DC background study must be completed by Regional Council before passing a DC By-law. The mandatory inclusions in such a study are set out in s.10 of the DCA and in s.8 of O.Reg. 82/98, and are as follows:

- a) the estimates under paragraph 1 of subsection 5(1) of the anticipated amount, type and location of development (Chapter 3);
- b) the calculations under paragraphs 2 to 8 of subsection 5(1) for each service to which the DC By-law would relate (Chapter 4);
- c) an examination, for each service to which the DC By-law would relate, of the long term capital and operating costs for capital infrastructure required for the service (Appendix H);



- d) In regard to b), consideration by Council of the use of more than one DC By-law to reflect the different needs for services in different areas (unless the regulations prescribe a specific service or area).
- e) the following for each service to which the DC relates:
1. the total of the estimated capital costs relating to the service.
  2. the allocation of the costs referred to in paragraph 1 of subsection 5(1) between costs that would benefit new development and costs that would benefit existing development.
  3. the total of the estimated capital costs relating to the service that will be incurred during the term of the proposed DC By-law.
  4. the allocation of the costs referred to in paragraph 3 of subsection 5(1) between costs that would benefit new development and costs that would benefit existing development.
  5. the estimated and actual value of credits that are being carried forward relating to the service. (O.Reg. 82/98 s.8 and addressed in Chapter 4 of this report)
- f) for all services, an asset management plan shall be provided for all assets whose capital are proposed to be funded under the DC By-law (Appendix H). This plan shall demonstrate that all assets mentioned above are financially sustainable over their full lifecycle.
- g) The DC background study must be made available to the public at least 60 days prior to passing the DC By-law. The background study must be posted on the municipality's website (or if no website is provided by the municipality, made available in the municipal office). Further, the background study must remain on the municipality's website until the DC By-law is repealed or replaced.

## **1.3. Development Charges Act, 1997 (DCA) Requirements**

### **1.3.1. Introduction**

1. DCs are payments made by new development in Halton (and other municipalities) normally as part of the building permit approval and/or the subdivision agreement process. These payments are made by all such new development, unless specifically exempt by the DCA or the Region's DC By-law.
2. These payments are made for the initial capital requirements of providing services to new development anticipated over a specific planning period (i.e. to 2026 or to 2031 for Halton). All Region-funded services are potentially eligible for DC funding, except those specifically excluded via the Regulations to the DCA (see section 1.3.2 below).
3. "Capital" is defined in the DCA to include the municipal cost to acquire, lease, construct or improve land or facilities, including rolling stock (7+ year life), furniture and equipment (other than computer equipment), library materials, as well as related study and financing costs.
4. The monies collected under a DC By-law are maintained in separate reserve funds, one for each of the services involved. It is also required that the monies only be expended for the purpose for which the DC was calculated.
5. In calculating the charge, it is necessary to:
  - establish a new growth forecast for population and housing, and for employees and floor area for a planning period;
  - determine and cost the additional services that such new growth will require and ensure that the capital program has Council approval;
  - make the cost deductions required by the Act with respect to service level, benefit to existing development, excess capacity, grants and contributions, the statutory 10%, etc.;
  - calculate DCs by type of use and document this in a Background Study and By-law;
  - take the study and proposed By-law through a public process, seeking Council approval thereof.

### **1.3.2. DC Prerequisites**

As per the DCA, the Region can impose DCs for:

1. A Regional service and funding responsibility other than (as per 2.1 (1) and (2) of O.Reg 82/98):
  - cultural or entertainment facilities such as museums, theatres and art galleries;
  - tourism facilities, including convention centres;

- parkland acquisition;
  - hospital provision;
  - landfill or incineration waste management services;
  - Municipal/local board general administration headquarters.
2. A service which will experience an increase in capital needs at least partially attributable to residential and/or non-residential growth in Halton for a period between 2017-2031 (or to 2026 in the case of some services).
  3. A service for which Regional Council has or will (as part of the DC process) approve (d) a capital forecast which includes capital capacity expansion projects as per paragraph 2.
  4. Such capital capacity expansion projects are not fully funded by grants, subsidies or developer contributions or other contributions.
  5. Such capital projects involve the acquisition, lease, construction or improvement of land, buildings, including furniture and equipment, studies and borrowing costs (as well as library materials).
  6. Such capital projects do not include computer equipment and rolling stock with an estimated useful life of less than 7 years.
  7. Such capital costs don't relate to a time beyond the next 10 years (except in the case of water, wastewater, roads and police).
  8. Such capital costs don't serve to increase the future (per capita/employee) level of service beyond the average attained in Halton over the 2007-2016 period, or as legislated.

### **1.3.3. A Summary of Statutory DC Calculation Requirements**

The following tabular text sets out the method that must be used to determine DCs for non-transit services (note that under section 6.1 of O.Reg 82/98, transit is a prescribed service and provides a forward looking service standard along with added requirements to be included in the background study as per sections 8(2), (3) and (4) of the O.Reg). The underlining has been added to the quotations for clarification/emphasis and is not part of the statute or regulation quoted on the left side of the page. The DC calculation process is also summarized schematically in Figure 1-2 which follows.

Para- graph	s.s.5(1) of the DCA (and associated Regulations)	Commentary
1.	<p>“The anticipated amount, type and location of development, <u>for which development charges can be imposed</u>, must be estimated.”</p> <p>s.10(2)(c.1) requires Council to consider the use of more than one DC By-law to reflect different needs from services in different area</p>	<p>Virtually all municipalities forecast <u>all</u> development (including DC-ineligible) in the first instance. That development is used as the denominator in the DC calculation with the <u>full</u> eligible cost of servicing all such development used as the numerator. That way, growth-related servicing costs are equitably spread over <u>all</u> benefiting development, the municipality does not recover DCs from exempt development and this would ensure that the requirements of s.s.5(6)3 have been met. That is, capital costs have not been offloaded from one type of development to another.</p> <p>While consideration of the use of area-rating is a mandatory requirement of the DCA, adoption of area specific By-laws is a choice to be made by Council.</p>
2.	<p>“The increase in the need for service <u>attributable to the anticipated development</u> must be estimated for each service to which the development charge by-law would relate.”</p>	<p>This step involves estimating the additional service requirement, individually for water, wastewater, roads, etc., that is needed by the development increment in paragraph 1.</p> <p>The anticipated development in paragraph 1 must correspond to the service attribution in paragraph 2.</p> <p>This involves removing statutorily ineligible development (i.e. municipalities, schools, specified industrial expansions, specified residential intensification and other statutorily exempt public uses) and the servicing cost thereof. However, this would be very difficult to accomplish, because numerous unspecified geographic locations are involved for such development, which makes the servicing cost difficult to identify.</p> <p>As a result, the total cost/total development approach outlined above is used and has the same effect on the DC quantum.</p>

	s.s.5(1) of the DCA (and associated Regulations)	Commentary
3.	<p>“The estimate under paragraph 2 may include an increase in need only if the council of the municipality <u>has indicated that it intends to ensure that such an increase in need will be met.</u>”<sup>1</sup></p> <p>O.Reg. 82/98 s.3. “For the purposes of paragraph 3 of subsection 5(1) of the Act, the council of a municipality has indicated that it intends to ensure that an increase in the need for service will be met <u>if the increase in service forms part of an official plan, capital forecast or similar expression of the intention of the council</u> and the plan, forecast or similar expression of the intention of the council has been approved by the council.”</p>	<p>The capital forecast underpinning the DC calculation must be formally approved by Council in one of the ways indicated in the Regulation.</p>
4.	<p>“The estimate under paragraph 2 must not include an increase that would result in <u>the level of service exceeding the average level of that service provided in the municipality over the 10-year period immediately preceding the preparation of the background study required under section 10.</u><sup>1</sup> The estimate also must not include an increase in the need for service that relates to a time after the 10-year period immediately following the preparation of the background study unless the service is set out in subsection (5).”</p> <p>O.Reg. 82/98 s.4(1) “For the purposes of paragraph 4 of subsection 5(1) of the Act, both the quantity and quality of</p>	<p>This provision creates a “service level cap” equal to the cost of providing service to the “anticipated development,” consistent with the 10-year historical average level of service.</p> <p>In accordance with s.s.5(1)4, services such as paramedic, etc., are restricted to a maximum 10-year planning horizon.</p> <p>s.s.5(5) lists water, wastewater, storm water, road, police, fire services and transit. They are not subject to a 10 year planning period cap.</p> <p>Services other than those excluded in s.s.2(4), may be defined by the municipality and, in some cases, grouped into “service categories” for purposes of reserve funds and credits (as per s.7).</p> <p>Two “level of service” considerations must be taken into account in satisfying compliance re the 10-year historical average level of service cap. These considerations</p>

<sup>1</sup> The Act notes that the provisions may be further governed by regulations.

	s.s.5(1) of the DCA (and associated Regulations)	Commentary
	<p>a service shall be taken into account in determining the level of service and the average level of service.”</p> <p>s.s.4(1.1) provides that in determining the quality of a service, the replacement cost, exclusive of any allowance for depreciation, shall be the amount used.</p> <p>s.s.4(2) addresses the service level in an excluded geographic area where a service is not provided.</p> <p>s.s.4(4) limits the service level in part of a municipality to the level otherwise applicable to the full municipality.</p> <p>s.s.4(3) modifies the service level cap where a higher level is required by another Act.</p>	<p>involve “quantity” (e.g. floor space/capita) and “quality” (e.g. cost per sq. m. of floor space).</p> <p>} Potentially affects area specific charges and needs to be part of Council’s consideration of area-rating as required by 10 (2) (c.1) of the DCA.</p> <p>} Affects water and wastewater requirements in Particular.</p>
	<p>O.Reg. 206/04 amended s.4 of O.Reg. 82/98 by adding the following subsection:</p> <p>“(1.1) In determining the <u>quality</u> of a service under subsection (1), the <u>replacement cost</u> of municipal capital works, exclusive of any allowance for depreciation, shall be the amount used. (underlining added)</p>	<p>The Reg. clarifies that the quality level of service measure is to be based on the undepreciated replacement cost of municipal capital works.</p>
<p>5.</p>	<p>“The increase in the need for service attributable to the anticipated development must be <u>reduced</u> by the part of that increase that can be met <u>using the municipality’s excess capacity, other than</u> excess capacity that the council of the municipality has indicated an intention would be paid for by new development.”<sup>2</sup></p>	<p>“Uncommitted excess capacity” is available capacity that obviates (part of) the need for new projects. It is different than “Post Period Benefit,” which is <u>not</u> needed by development during the planning period and is provided for the use of subsequent, i.e. post-2031 development, which can be required to fund it through future DCs.</p>

<sup>2</sup> The Act notes that the provisions may be further governed by regulations.

	s.s.5(1) of the DCA (and associated Regulations)	Commentary
	<p>O.Reg. 82/98 s.5. “For the purposes of paragraph 5 of subsection 5(1) of the Act, excess capacity is uncommitted excess capacity unless, either before or at the time the excess capacity was created, the <u>council</u> of the municipality <u>expressed a clear intention that the excess capacity would be paid for by development charges</u> or other similar charges.”</p>	<p>The Reg. explains the circumstances under which (part of) the cost of “committed excess capacity,” (i.e. infrastructure in the ground from prior DC By-laws or otherwise), can be recovered via future DCs.</p>
6.	<p>“The increase in the need for service must be reduced by the extent to which an increase in service to meet the increased need would <u>benefit existing development</u>.”<sup>1</sup></p> <p>Note: no regulatory clarification has been provided.</p>	<p>Existing development benefits from:</p> <ul style="list-style-type: none"> <li>• the repair or unexpanded replacement of existing assets;</li> <li>• an increase in average service level or existing operational efficiency;</li> <li>• the elimination of a chronic servicing problem not created by growth;</li> <li>• providing services where none previously existed (e.g. water service).</li> </ul>
7.	<p>“The <u>capital costs</u> necessary to provide the increased services must be estimated. The capital costs <u>must be reduced by the reductions set out in subsection (2)</u>. What is included as a capital cost is set out in subsection (3).”<sup>1</sup></p> <p>O.Reg. 82/98 s.6 indicates that: Unless the person making the grant, subsidy, etc., was specific as to how it is to be applied, the contribution is to be shared between growth and non-growth project components in proportion to the way in which the costs were allocated in s.s.5(1)6.</p> <p>s.s.5(3) defines capital costs to include:</p> <ul style="list-style-type: none"> <li>• the acquisition or lease of (an interest in) land;</li> <li>• construction, improvement, acquisition</li> </ul>	<p>s.s.5(2) refers to capital grants, subsidies and other contributions made to a municipality <u>or that Council anticipates</u> will be made in <u>respect of the capital costs</u>.</p> <p>These costs exclude “local services” related to a plan of subdivision or a consent approval, to be installed or paid for by the owner (s.s.2(5)).</p>

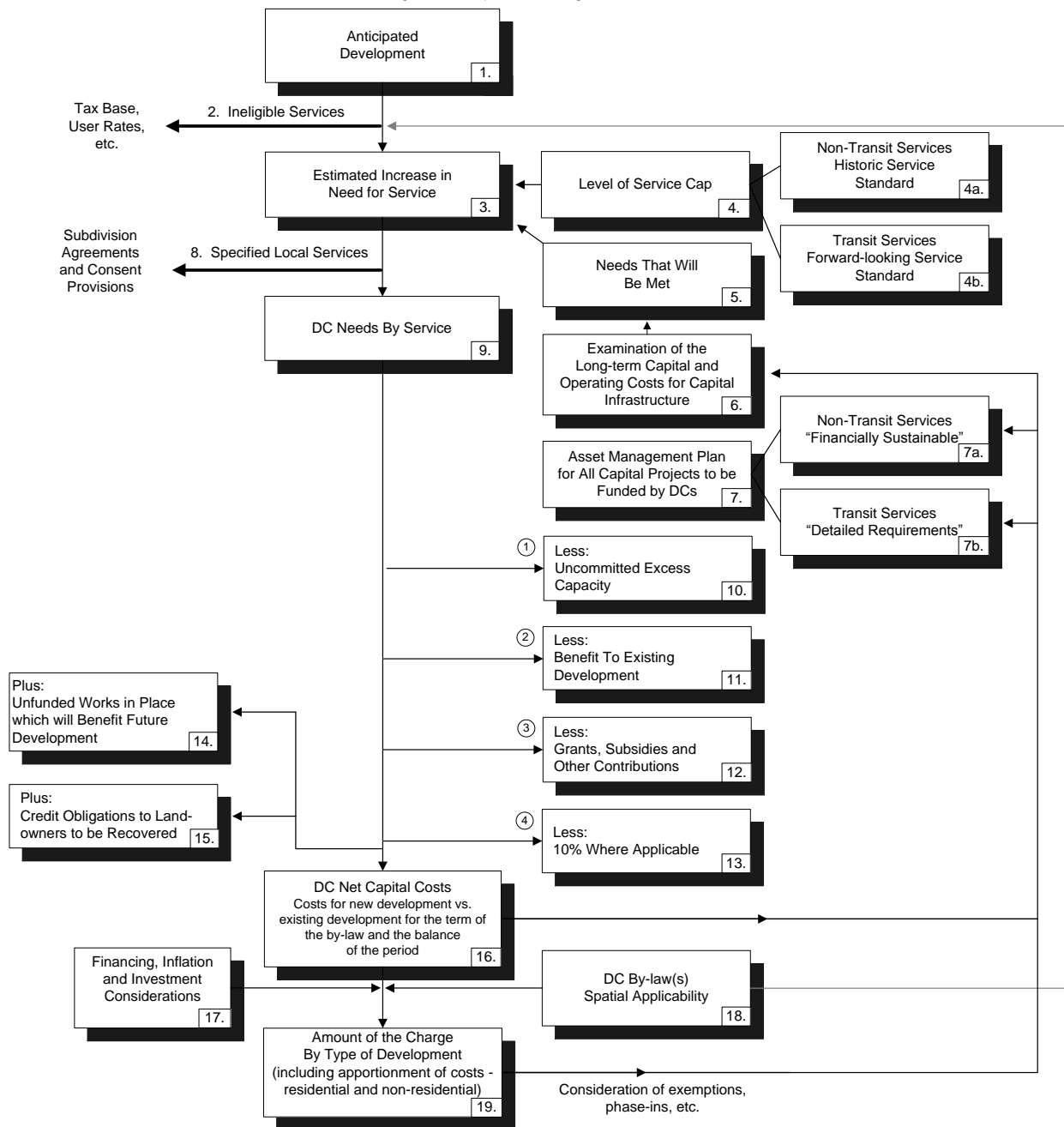
	s.s.5(1) of the DCA (and associated Regulations)	Commentary
	or lease (capital component only) costs for buildings/structures/facilities; <ul style="list-style-type: none"> <li>• 7+ year useful life rolling stock;</li> <li>• FFE, other than computer equipment;</li> <li>• library materials;</li> <li>• studies re above;</li> <li>• DC Background Studies; and</li> <li>• interest on related borrowings.</li> </ul>	Includes debt payments related to previously constructed growth-related works.
8.	“The capital cost must be reduced by 10 per cent. This paragraph does not apply to services set out in subsection (5).”	In Halton’s case, the 10% reduction <u>does</u> apply to: <ul style="list-style-type: none"> <li>• paramedic services;</li> <li>• facilities (field office space);</li> <li>• related growth studies;</li> <li>• shelters;</li> <li>• childcare;</li> <li>• social housing;</li> <li>• waste diversion; and</li> <li>• waterfront parks.</li> </ul> <p>The purpose of this reduction is undefined, beyond the Province’s expressed wish in 1997 to moderate DC quantum. The exclusion of various services under s 2.1 of the Regulation serves a similar purpose. (i.e. Cultural/entertainment facilities, including museums, theatres and art galleries; tourism facilities, including convention centres; parkland acquisition; public hospitals, landfill and incineration waste management services; and general administration headquarters for municipalities/local boards).</p>
9.	“Rules <u>must be</u> developed to determine if a development charge is payable in any particular case and to determine the amount of the charge, subject to the limitations set out in subsection (6).”	These are mandatory DC By-law inclusions as to how the charge is to be applied to development types and circumstances.



s.s.5(1) of the DCA (and associated Regulations)	Commentary
<p>s.s.5(6):</p> <p>“The rules developed under paragraph 9 of subsection (1) to determine if a development charge is payable in any particular case and to determine <u>the amount of the charge are subject to the following restrictions:</u></p> <ol style="list-style-type: none"> <li>1. The rules must be such that the total of the development charges that would be imposed upon the anticipated development is less than or equal to the capital costs determined under paragraphs 2 to 8 of subsection (1) <u>for all the services to which the development charge by-law relates.</u></li> <li>2. If the rules expressly identify a type of development <u>they must not provide for the type of development to pay development charges that exceed the capital costs, determined under paragraphs 2 to 8 of subsection (1),</u> that arise from the increase in the need for services attributable to the type of development.  However, it is <u>not necessary that the amount of the development charge for a particular development be limited to the increase in capital costs, if any, that are attributable to that particular development.</u></li> <li>3. If the development charge by-law will exempt a type of development, phase in a development charge, or otherwise provide for a type of development to have a lower development charge than is allowed, <u>the rules for determining development charges may not provide for</u></li> </ol>	<p>These are 3 over-riding tests to be met by the DC by-law.</p> <p>A municipality cannot collect more than the calculated cost for each service (if the amount of development and resultant revenue outpaces the forecast, then address via a reserve fund deduction in the DC calculation in the next round or other appropriate means).</p> <p>A municipality cannot offload the cost of servicing one type of development onto another type. e.g. Industrial servicing costs cannot be transferred to residential development.</p> <p>It is not necessary that the <u>average</u> municipal-wide per unit servicing costs funded by the DC reflect the needs of any <u>particular</u> development project.</p> <p>Provides further clarification on the inability of the By-law to offload cost recovery from one type of development to another, in this case from exempt or discounted development to non-exempt development.</p>

	s.s.5(1) of the DCA (and associated Regulations)	Commentary
	<u>any resulting shortfall to be made up through higher development charges for other development.”</u>	
10.	“The rules <u>may provide</u> for full or partial exemptions for types of development and for the phasing in of development charges. The rules <u>may also provide</u> for the indexing of development charges based on the prescribed index.”	Optional By-law inclusions such as authority to set rules on discretionary exemptions, phasing in of DCs and indexing of DCs.

Figure 1-2  
The Process of Calculating a Development Charge under the Act that must be followed





## **2. CURRENT REGION OF HALTON POLICY**



## **2. CURRENT REGION OF HALTON POLICY**

### **2.1. Summary of Halton's Current DC By-laws**

#### **2.1.1. Halton's current DC policies are based on the following By-laws:**

- a) By-law No. 48-12, as amended, established water, wastewater, roads and general services DCs for the Regional Municipality of Halton (Greenfield and Built Boundary Areas). This By-law was passed on April 18, 2012, came into force on September 5, 2012, and will expire on September 4, 2017.
- b) By-law No. 3-16 amends By-law No. 48-12 to reflect the Ontario Municipal Board (OMB) decision to remove sections related to the collection of DCs for Conservation Halton's capital projects.
- c) By-law No. 51-16 amends By-law No. 48-12 to reflect the OMB decision for the imposition of DCs for 6 categories of residential development.

The areas to which these By-laws apply are shown in Map 2-1. This includes the Greenfield area, Built Boundary area and Rural area.

It should be noted that this Study does not address GO Transit DC By-law No. 159-01, as amended, because the Province, through Ontario Regulation 343/13, extended the existing By-law to December 31, 2016 and has done so periodically. Imposition of a revised GO Transit DC By-law to replace the current By-law will require a separate study process.

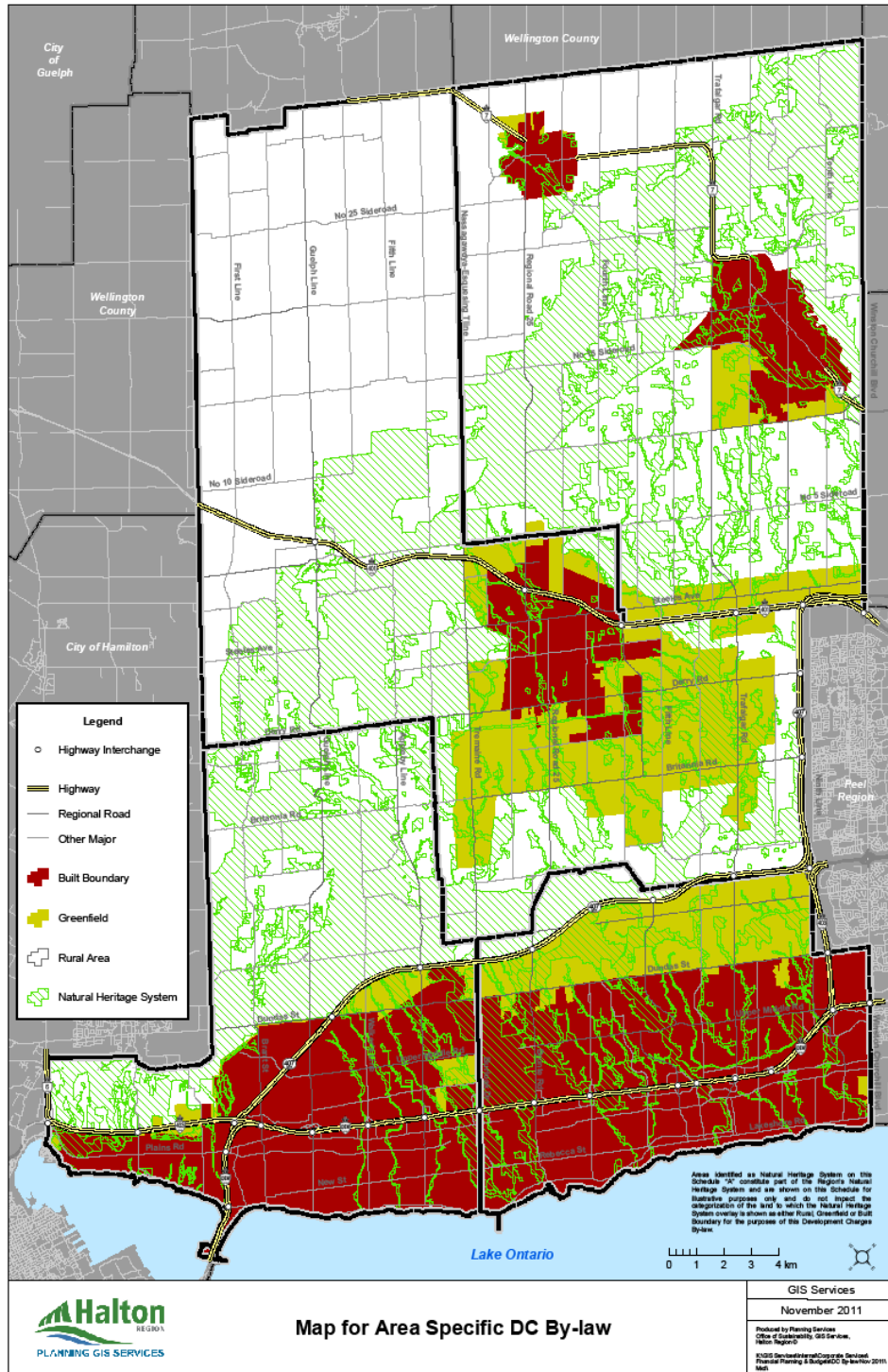
Further this Study does not address the Recovery DC By-law No. 49-12 (Residential Recovery of the Early Payment of Estimated Future Water, Wastewater and Roads DCs for the Recovery Area 2012-2021). This By-law will be updated under a separate study.

Additionally, this Study does not address the residential Front-ending recovery payment commencing on January 1, 2017, which has been established under the front-ending provision (section 44) of the DCA.

# MAP 2-1

## Schedule "A" to By-law No. 48-12, as amended

### MAP OF REGION OF HALTON





### 2.1.2. By-law No. 48-12, as amended

- By-law No. 48-12, as amended, establishes the area specific residential and non-residential water, wastewater (both Greenfield and Built Boundary as shown in Map 2-1), roads and general services DCs for the Regional Municipality of Halton.
- The residential DCs applied to the Greenfield and Built Boundary areas are as follows:

Residential Development Type	Greenfield/ Built Boundary	Charge in By-Law					Current As Of April 1, 2016				
		Water	Wastewater	Roads	General Services*	Total	Water	Wastewater	Roads	General Services*	Total
Single & Semi-detached Dwelling	Greenfield	\$ 9,884.68	\$ 10,304.23	\$ 13,437.60	\$ 1,251.55	\$ 34,878.06	\$ 10,387.26	\$ 10,828.14	\$ 14,120.83	\$ 1,104.98	\$ 36,441.21
	Built Boundary	\$ 4,710.69	\$ 6,382.80	\$ 13,437.60	\$ 1,251.55	\$ 25,782.64	\$ 4,950.21	\$ 6,707.34	\$ 14,120.83	\$ 1,104.98	\$ 26,883.36
Multiple Dwelling (3 or more bedrooms)	Greenfield	\$ 7,876.26	\$ 8,210.56	\$ 10,676.26	\$ 957.66	\$ 27,720.74	\$ 8,276.73	\$ 8,628.03	\$ 11,219.10	\$ 845.51	\$ 28,969.37
	Built Boundary	\$ 3,730.52	\$ 5,054.71	\$ 10,676.26	\$ 957.66	\$ 20,419.15	\$ 3,920.20	\$ 5,311.72	\$ 11,219.10	\$ 845.51	\$ 21,296.53
Multiple Dwelling (less than 3 bedrooms)	Greenfield	\$ 5,706.37	\$ 5,948.58	\$ 7,734.98	\$ 725.37	\$ 20,115.30	\$ 5,996.51	\$ 6,251.03	\$ 8,128.26	\$ 640.42	\$ 21,016.22
	Built Boundary	\$ 2,702.77	\$ 3,662.15	\$ 7,734.98	\$ 725.37	\$ 14,825.27	\$ 2,840.20	\$ 3,848.36	\$ 8,128.26	\$ 640.42	\$ 15,457.24
Apartment Dwelling (2 or more bedrooms)	Greenfield	\$ 5,487.84	\$ 5,720.76	\$ 7,461.73	\$ 686.12	\$ 19,356.45	\$ 5,766.87	\$ 6,011.64	\$ 7,841.12	\$ 605.74	\$ 20,225.37
	Built Boundary	\$ 2,622.40	\$ 3,553.25	\$ 7,461.73	\$ 686.12	\$ 14,323.50	\$ 2,755.73	\$ 3,733.92	\$ 7,841.12	\$ 605.74	\$ 14,936.51
Apartment Dwelling (less than 2 bedrooms)	Greenfield	\$ 3,964.63	\$ 4,132.91	\$ 5,390.65	\$ 520.59	\$ 14,008.78	\$ 4,166.22	\$ 4,343.06	\$ 5,664.74	\$ 459.60	\$ 14,633.62
	Built Boundary	\$ 1,894.53	\$ 2,567.01	\$ 5,390.65	\$ 520.59	\$ 10,372.78	\$ 1,990.85	\$ 2,697.53	\$ 5,664.74	\$ 459.60	\$ 10,812.72
Special Care/Special Need Dwelling	Greenfield	\$ 3,131.67	\$ 3,264.59	\$ 4,256.79	\$ 408.50	\$ 11,061.55	\$ 3,290.90	\$ 3,430.59	\$ 4,473.22	\$ 360.64	\$ 11,555.35
	Built Boundary	\$ 1,495.93	\$ 2,026.93	\$ 4,256.79	\$ 408.50	\$ 8,188.15	\$ 1,572.01	\$ 2,129.98	\$ 4,473.22	\$ 360.64	\$ 8,535.85

\* Separately enumerated for growth studies, police, paramedic services, services for seniors, facilities, and social housing.

NOTE: Services for Seniors DC removed at April 1, 2014 per section 17(d)

- The non-residential charges applied to Greenfield and Built Boundary areas are as follows:

Non-Residential Development Type	Charge in By-Law (per Sq. Ft.)					Current As Of April 1, 2016 (per Sq. Ft.)				
	Water	Waste-water	Roads	General Services*	Total	Water	Waste-water	Roads	General Services*	Total
Greenfield Retail	\$ 3.43	\$ 3.90	\$ 17.35	\$ 0.29	\$ 24.97	\$ 3.60	\$ 4.10	\$ 18.24	\$ 0.29	\$ 26.23
Greenfield Non-Retail	\$ 3.43	\$ 3.90	\$ 4.78	\$ 0.29	\$ 12.40	\$ 3.60	\$ 4.10	\$ 5.04	\$ 0.29	\$ 13.03
Built Boundary Retail	\$ 1.70	\$ 2.65	\$ 17.35	\$ 0.29	\$ 21.99	\$ 1.79	\$ 2.78	\$ 18.24	\$ 0.29	\$ 23.10
Built Boundary Non-Retail	\$ 1.70	\$ 2.65	\$ 4.78	\$ 0.29	\$ 9.42	\$ 1.79	\$ 2.78	\$ 5.04	\$ 0.29	\$ 9.90

\* Separately enumerated for growth studies, police, paramedic services and facilities.

- The DCs were indexed on April 1<sup>st</sup>, 2013 and each year thereafter, on April 1<sup>st</sup>, in accordance with the Statistics Canada Quarterly Construction Price Statistics.
- In general, DCs shall be payable on the date a building permit is issued. In the case of residential development, the water services, wastewater services and roads services components shall be payable with respect to an approval of a plan of subdivision or a consent at the time of execution of the subdivision agreement or the agreement entered into as a condition of a consent. With respect to high density apartment dwellings with a minimum of 4 storeys or containing more than 130 dwelling units per net hectare per approved plans under s.41 of the *Planning Act*, the water services, wastewater services, and roads services components along with the general services component of the DCs shall be payable on the date of building permit issuance.

- DC exemptions beyond the statutory provisions include public hospitals, places of worship, designated conservation authority uses, agricultural development (excluding associated residential or commercial), temporary venues/seasonal structures, temporary buildings, garden suites, and parking garages.

### 2.1.3. Summary of Current DC Policies

Table 2-1 summarizes the DC policies included in the current DC by-law described above.

**Table 2-1**  
**Summary of Existing Halton Region DC Policies**

DC Policies	Description
Residential Dwelling Categories	- Residential charge is based on 6 categories of dwelling units, including: Single/Semi Detached, Multiple (3 or more bedrooms), Multiple (less than 3 bedrooms), Apartment (2 or more bedrooms), Apartment (less than 2 bedrooms), Special Care/Special Need/Accessory.
Non-Residential Categories	- Non-residential charge is based on total floor area (TFA) (sq. ft. /sq. m.) and DCs categorized by: retail and non-retail.
Exemption for Intensification of Existing Housing (Mandatory)	- Enlargement of an existing unit; - Creating 1 or 2 additional units in a single detached or 1 additional unit in any other type of dwelling provided the TFA of the new unit(s) does not exceed the existing unit.
Temporary Residential Building Exemption - Garden Suite - Other	- Garden Suite – through an agreement registered on title, exempt if removed within the period set by local municipality’s temporary use By-law and if not DCs go onto property tax. - Other – through an agreement, exempt if securities posted in amount of DC payable at building permit and if the building is removed within 3 years of building permit issuance (or any extension provided in writing by the Treasurer), the security is returned. If not, security deposited to the DC reserve funds.

DC Policies	Description
Timing of DC Payment	<ul style="list-style-type: none"> <li>- Residential:               <ul style="list-style-type: none"> <li>o Collect water, wastewater and roads at subdivision or consent agreement (except for high density apartment);</li> <li>o Collect general services at building permit.</li> </ul> </li> <li>- Non-residential:               <ul style="list-style-type: none"> <li>o Collect all DCs at building permit.</li> </ul> </li> <li>- Notwithstanding the above, Region may enter into agreement under s.27 of the DCA to collect all or part of DCs earlier or later than they would otherwise be payable.</li> </ul>
Timing of DC Payment (High Density Apartment Residential)	<ul style="list-style-type: none"> <li>- Collect all DCs at building permit provided development is an apartment dwelling with a minimum of 4 storeys or containing more than 130 dwelling units per net ha. per plans approved under s.41 of the <i>Planning Act</i>.</li> </ul>
Industrial Expansion Exemption (Mandatory)	<ul style="list-style-type: none"> <li>- If existing building is enlarged by 50% or less, expansion is exempt, and</li> <li>- Enlargement must be a bona fide increase in the size of the existing building, attached to and having direct entry to the existing building and used in connection with an industrial purpose.</li> <li>- Expansion calculated based on the cumulative areas of the existing building prior to expansion.</li> <li>- Expansion calculation is based on TFA which includes below grade floor area.</li> </ul>
Commercial Expansion Exemption	<ul style="list-style-type: none"> <li>- Provide an expansion exemption, for the first 278 m<sup>2</sup> (3,000 sq. ft.) for an expansion of the existing commercial building (attached or detached) on the site;</li> <li>- Expansion or accessory building on the lot must be incidental to or subordinate in purpose and exclusively devoted to the commercial use in the existing building;</li> <li>- There must be at least 6 months since issuance of the last building permit on the lot.</li> </ul>
Municipal and School Board Exemptions (Mandatory)	<ul style="list-style-type: none"> <li>- DCs exempt for "Land owned by and used for the purposes of a municipality or a board as defined in the <i>Education Act</i>" per DCA.</li> <li>- Unless buildings or part thereof are used for commercial purposes.</li> </ul>

DC Policies	Description
Demolition Credit	<ul style="list-style-type: none"> <li>- Credit calculated by multiplying the number/type of dwelling units or the non-residential TFA being demolished, by the relevant DC in effect on the date when the DC is payable.</li> <li>- Given where a building permit is issued within 5 years from the date of the demolition permit.</li> <li>- Does not apply if the building is exempt under the current By-law.</li> <li>- Where the building cannot be demolished until the new building is constructed, DCs are payable on issuance of a building permit and a refund is made, without interest, if the demolition is made within 12 months of building permit issuance.</li> <li>- The Treasurer may extend the time which the existing building must be demolished, by owner written request prior to issuance of the first building permit.</li> <li>- Credit provided on a one-time basis unless there is an approved phasing plan.</li> </ul>
Conversion Credit	<ul style="list-style-type: none"> <li>- Credit calculated by multiplying the number/type of dwelling units or the non-residential TFA, being converted by the relevant DC in effect on the date when the DC is payable.</li> <li>- Does not apply if the original building (prior to conversion) is exempt under the current By-law.</li> <li>- Credit provided on a one-time basis unless there is an approved phasing plan.</li> <li>- Despite the above, where there is a conversion from a               <ul style="list-style-type: none"> <li>- non-retail to a retail development that is 3,000 sq. ft. or less, an exemption of the incremental DC will be provided on a one-time basis only.</li> </ul> </li> </ul>
Lot Coverage Relief	<ul style="list-style-type: none"> <li>- Provides partial DC exemptions for non-residential development that exceeds its lot size based on:               <ul style="list-style-type: none"> <li>o TFA up to 1.0 times the lot area – 100% DC payable;</li> <li>o TFA between 1.0 and 1.5 times the lot area – 50% DC payable to that portion;</li> <li>o TFA beyond 1.5 times the lot area – 25% DC payable to that portion.</li> </ul> </li> </ul>
Parking Garages Exemption	<ul style="list-style-type: none"> <li>- Parking garages (whether at, above or below grade) are exempt.</li> </ul>
Temporary Non-Residential Building (i.e. sales trailers)	<ul style="list-style-type: none"> <li>- Require securities posted in amount of DC payable at building permit.</li> <li>- If the building is removed within 3 years of building permit issuance (or any extension provided in writing by the Treasurer), the security is returned. If not, security deposited to the DC reserve funds.</li> </ul>

<b>DC Policies</b>	<b>Description</b>
Agricultural Exemption	<ul style="list-style-type: none"> <li>- DCs are exempt when the use is considered a bona fide farming operation, including sod farms, breeding and boarding of horses, and green houses with no connection to the Regional water and wastewater. Residential and commercial uses in agricultural development are not exempt.</li> <li>- Staff review availability of Farm Business Registration (FBR) number in order to confirm the Agricultural use.</li> </ul>
Other Exemptions	<ul style="list-style-type: none"> <li>- Includes the following additional discretionary exemptions:               <ul style="list-style-type: none"> <li>o Hospitals (unless buildings or part thereof are used for commercial purposes);</li> <li>o Places of Worship;</li> <li>o Conservation Authorities (unless buildings or part thereof are used for commercial purposes);</li> <li>o Seasonal structures;</li> <li>o Temporary venue.</li> </ul> </li> </ul>
Non-Residential Payment Deferral	<ul style="list-style-type: none"> <li>- Available for non-residential DCs through an agreement for all developments</li> <li>- Payments to be amortized over a 10 year period at the prime lending rate of the Region's bank.</li> </ul>



### **3. ANTICIPATED DEVELOPMENT IN HALTON 2017-2031**





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### 3. ANTICIPATED DEVELOPMENT IN HALTON 2017-2031

#### 3.1. Requirements of the Act

Subsection 5(1) of the DCA sets out the method that must be used to determine DCs. The first step states that:

“The anticipated amount, type and location of development, for which development charges can be imposed, must be estimated.”

Steps 2 and 5 go on to refer to “the increase in need for service attributable to the anticipated development...” Thus, the estimate of anticipated development is an important starting point to the process.

The requirement of the Act is for a development forecast that refers to residential, commercial, industrial and institutional development. Such development generates increased service needs, via its occupancy and use, which is measured in terms of households, population, and employment. This chapter, therefore, addresses both the anticipated increase in development and the users thereof. It covers all forms of development in order to spread the costs over the entirety of the benefiting development.

The Act requires that the amount, type and location of development be estimated. “Timing” is not referenced, other than indirectly, in section 8, para. 3 of O.Reg. 82/98, where capital costs to be incurred during the term of the proposed DC by-law must be set out. Also, s.s.5(1)4 of the Act restricts the estimate of the increase in the need for services other than water supply, wastewater, highways (as per s.s.1(1) of the *Municipal Act*), storm water drainage and control, electrical power, police and fire protection, to a maximum of 10 years following the preparation of the background study.

Accordingly, a 10-year (2017-2026) planning horizon is used for general services including growth studies, paramedic services, facilities, social housing, waste diversion, and waterfront parkland. A long-term time horizon (2017-2031) is used as a basis to establish the increase in needs for police, water, wastewater and road service requirements.

### **3.2. Anticipated Development**

The anticipated development in Halton over the 10-year and longer planning horizon has been prepared based on the Halton Region Best Planning Estimates, updated in 2011 (BPE, 2011). The BPE, 2011 was developed by Regional staff in consultation with staff from local municipalities based on various demographic models, using parameters derived from Statistics Canada Census data.

The 2011 BPE population and employment forecast reflects the population and employment targets set out in Schedule 3 of the Provincial Growth Plan, Places to Grow and Regional Official Plan Amendment No. 39 (ROPA 39). Specifically, the Region is required to plan for a total of 780,000 people (752,537 excluding the Census undercount) and 390,000 jobs by 2031. Halton Region further allocated the provincial growth targets by local municipality as part of the Sustainable Halton process, which represents the growth management and land use response to the Province's Places to Grow Plan, the Provincial Policy Statement and the Greenbelt Plan.

The anticipated growth between 2017 and 2026 was used as a basis to establish the increase in needs for the general services, such as growth studies, paramedic services, facilities, social housing, waste diversion, and waterfront parks.

Water, wastewater, road, and Police services requirements are based on the anticipated growth between 2017 and 2031. In order to support the calculation of area specific water and wastewater charges, the growth to 2031 has also been presented on a Greenfield versus Built Boundary basis. The area specific charges are discussed in Chapter 6. Appendix A provides a detailed summary of the BPE, 2011 growth forecast.

Tables 3-1 and 3-2 provide a summary of anticipated development in Halton Region.

**Table 3-1**  
**Summary of Anticipated Residential Development**

### 1. Housing Units

Total Housing Units	2016	2021	2026	2031
Town of Oakville	71,191	81,580	88,109	93,550
City of Burlington	71,618	74,880	77,687	80,572
Town of Milton	41,963	55,711	68,375	80,293
Town of Halton Hills	20,521	22,284	28,279	34,141
<b>Halton Region</b>	<b>205,293</b>	<b>234,455</b>	<b>262,450</b>	<b>288,556</b>
Incremental Units	2017-2021	2022-2026	2027-2031	2017-2031
Town of Oakville	10,389	6,529	5,441	22,359
City of Burlington	3,262	2,807	2,885	8,954
Town of Milton	13,748	12,664	11,918	38,330
Town of Halton Hills	1,763	5,995	5,862	13,620
<b>Halton Region</b>	<b>29,162</b>	<b>27,995</b>	<b>26,106</b>	<b>83,263</b>

Source: Halton Region BPE, 2011

### 2. Population

Total Population <sup>1,2</sup>	2016	2021	2026	2031
Town of Oakville	197,702	221,826	234,122	246,399
City of Burlington	175,438	178,847	182,034	186,169
Town of Milton	124,645	161,750	195,735	228,084
Town of Halton Hills	57,922	61,672	77,003	91,885
<b>Halton Region</b>	<b>555,707</b>	<b>624,095</b>	<b>688,894</b>	<b>752,537</b>
Incremental Population	2017-2021	2022-2026	2027-2031	2017-2031
Town of Oakville	24,124	12,296	12,277	48,697
City of Burlington	3,409	3,187	4,135	10,731
Town of Milton	37,105	33,985	32,349	103,439
Town of Halton Hills	3,750	15,331	14,882	33,963
<b>Halton Region</b>	<b>68,388</b>	<b>64,799</b>	<b>63,643</b>	<b>196,830</b>

<sup>1</sup> Includes institutional population

<sup>2</sup> Excludes the Census undercount.

Source: Halton Region BPE, 2011

**Table 3-2**  
**Summary of Anticipated Non-Residential Development**

Total Employment	2016	2021	2026	2031
Town of Oakville	106,485	120,796	122,578	128,359
City of Burlington	98,710	102,846	104,145	105,349
Town of Milton	62,553	81,106	96,631	114,330
Town of Halton Hills	20,744	22,936	32,356	41,962
<b>Halton Region</b>	<b>288,492</b>	<b>327,684</b>	<b>355,710</b>	<b>390,000</b>
Incremental Employment	2017-2021	2022-2026	2027-2031	2017-2031
Town of Oakville	14,311	1,782	5,781	21,874
City of Burlington	4,136	1,299	1,204	6,639
Town of Milton	18,553	15,525	17,699	51,777
Town of Halton Hills	2,192	9,420	9,606	21,218
<b>Halton Region</b>	<b>39,192</b>	<b>28,026</b>	<b>34,290</b>	<b>101,508</b>

Source: Halton Region BPE, 2011

## **4. THE RESULTANT INCREASE IN THE NEED FOR SERVICE**



## **4. THE RESULTANT INCREASE IN THE NEED FOR SERVICE**

### **4.1. Introduction**

This chapter addresses the requirements of s.s.5(1) of the DCA with respect to the establishment of the estimated increased need for service attributable to the anticipated development, which underpins the DC calculation. These requirements were detailed in sections 1.2 and 1.3 and illustrated schematically in Figure 1-2.

### **4.2. Services Potentially Involved**

Table 4-1 lists the full range of DC-related municipal services categories. A number of these services are referenced in s.s.2(4) of the DCA as being ineligible for inclusion in DCs. These are shown as “ineligible” on Table 4-1. In addition, 2 ineligible costs defined in s.s.5(3) of the DCA are “computer equipment” and “rolling stock with an estimated useful life of (less than) seven years...”. Further, local water, wastewater and road works are recovered separately under subdivision agreements and related means (as are other local services). Appendix G sets out guidelines with respect to the size of water, wastewater, roads, and road related infrastructure that constitutes a DC project versus a local service. Services which are potentially eligible for inclusion in the Regional DC are indicated with an “R.”

This Study includes some of the rolling stock and computer equipment that is integral to, or part of, an eligible project included in the police and paramedic services programs. The supporting information is described in detail in Appendix F.

### **4.3. The Increase in the Need for Service**

The DC calculation commences with an estimate of “the increase in the need for service attributable to the anticipated development,” for the services to be covered by the By-law. There must be some form of link or attribution between the anticipated development and the estimated increase in the need for service. While the need could conceivably be expressed generally in terms of units of capacity, s.s.5(1)3 (and s.3 of the associated regulation), which requires that Municipal Council indicate that it intends to ensure that such an increase in need will be met, suggests that a project-specific expression of need would normally be applicable.

**Table 4-1  
Development Charge-Related Categories Of Municipal Services  
And Halton Region Responsibilities**

Categories of Municipal Services	Eligibility for Inclusion in the D.C. Calculation	Service Components	Maximum Potential D.C. Recovery %
1. Services Related to a Highway	R/ Area Municipal Area Municipal/ Dev. Agreements Dev. Agreements R/ Area Municipal R/ Area Municipal/ Dev. Agreements R/Area Municipal	1.1 Arterial roads	100
		1.2 Collector roads	100
		1.3 Local roads	0
		1.4 Traffic signals	100
		1.5 Sidewalks and streetlights	100
		1.6 Interchanges and Grade Separations	100
2. Other Transportation Services	Area Municipal Area Municipal Area Municipal Area Municipal R/ Area Municipal R/ Area Municipal n/a n/a	2.1 Transit vehicles & facilities	100
		2.2 Other transit infrastructure	100
		2.3 Municipal parking spaces - indoor	90
		2.4 Municipal parking spaces - outdoor	90
		2.5 Works yards	100
		2.6 Rolling stock <sup>1</sup>	100
		2.7 Ferries	90
		2.8 Airport	90
3. Stormwater Drainage <sup>2</sup> and Control Services	Area Municipal/ <i>Municipal Act</i> Area Municipal Area Municipal	3.1 Main channels and drainage trunks	100
		3.2 Channel connections	100
		3.3 Retention/detention ponds	100
4. Fire Protection Services	Area Municipal Area Municipal  Area Municipal	4.1 Fire stations	100
		4.2 Fire pumpers, aerials and rescue vehicles	100
		4.3 Small equipment and gear	100
5. Outdoor Recreation Services (i.e. Parks and Open Space)	Ineligible  Area Municipal Area Municipal Area Municipal Area Municipal R/ Area Municipal Area Municipal Ineligible	5.1 Acquisition of land for parks, woodlots and ESAs	0
		5.2 Development of area municipal parks	90
		5.3 Development of district parks	90
		5.4 Development of city-wide parks	90
		5.5 Development of special purpose parks	90
		5.6 Development of waterfront parks	90
		5.7 Parks rolling stock <sup>1</sup> and yards	90
		5.8 Conservation authority facilities	0
6. Indoor Recreation Services	Area Municipal  Area Municipal	6.1 Arenas, indoor pools, fitness facilities, community centres, etc. (including land)	90
		6.2 Recreation vehicles and equipment <sup>1</sup>	90
7. Library Services	Area Municipal  Area Municipal Area Municipal	7.1 Public library space (incl. furniture and equipment)	90
		7.2 Library vehicles <sup>1</sup>	90
		7.3 Library materials	90
8. Electrical Power Services	Ineligible Ineligible Ineligible	8.1 Electrical substations	0
		8.2 Electrical distribution system	0
		8.3 Electrical system rolling stock <sup>1</sup>	0
9. Provision of Cultural, Entertainment and Tourism Facilities and Convention Centres	Ineligible  Ineligible	9.1 Cultural space (e.g. art galleries, museums and theatres)	0
		9.2 Tourism facilities and convention centres	0
10. Wastewater Services	R R Dev. Agreements R	10.1 Treatment plants	100
		10.2 Sewage trunks	100
		10.3 Local systems	0
		10.4 Vehicles and equipment	100
11. Water Supply Services	R R Dev. Agreements R	11.1 Treatment plants	100
		11.2 Distribution systems	100
		11.3 Local systems	0
		11.4 Vehicles and equipment	100



Categories of Municipal Services	Eligibility for Inclusion in the D.C. Calculation	Service Components	Maximum Potential D.C. Recovery %
12. Waste Management Services	Ineligible	12.1 Collection, transfer vehicles and equipment	0
	Ineligible R	12.2 Landfills and other disposal facilities	0
		12.3 Other waste diversion facilities, vehicles, and equipment	90
13. Police Services	R	13.1 Police detachments	100
	R	13.2 Police rolling stock <sup>1</sup>	100
	R	13.3 Small equipment and gear	100
	R	13.4 Communications systems	100
14. Homes for the Aged	R	14.1 Homes for the aged space	90
15. Child Care	R	15.1 Child care space	90
16. Health	R	16.1 Health department space	90
	R	16.2 Health department vehicles <sup>1</sup>	90
17. Social Services	R	17.1 Social service operating space	90
	R	17.2 Social housing	90
18 <i>Provincial Offences Act (POA)</i>	Area Municipal	18.1 POA space	90
19. Paramedic Services	R	19.1 Ambulance station space	90
	R	19.2 Vehicles <sup>1</sup>	90
20. Hospital Provision	Ineligible	20.1 Hospital capital contributions	0
21. Provision of Headquarters for the General Administration of Municipalities and Area Municipal Boards	Ineligible	21.1 Office space	0
	Ineligible	21.2 Office furniture	0
	Ineligible	21.3 Computer equipment	0
22. Other Services	R/ Area Municipal	22.1 Studies in connection with acquiring buildings, rolling stock, materials and equipment, and improving land <sup>3</sup> and facilities, including the DC background study cost	0-100
	R/ Area Municipal	22.2 Interest on money borrowed to pay for growth-related capital	0-100

Note: computer equipment excluded throughout

<sup>1</sup> where a 7+ year life is involved

<sup>2</sup> could also be provided as part of the Regional road works where required

<sup>3</sup> same percentage as service component to which it pertains

#### 4.3.1. Water and Wastewater Needs

As part of the 2017 DC update process, the 2017 Development Charge Water/Wastewater Technical Report has been prepared by GM Blue Plan Engineering which provides the basis for the development of the costs and implementation timing of water and wastewater projects required to service growth in Halton Region between 2017 and 2031. The project costs and implementation timing set out in the 2011 Halton Water and Wastewater Master Plan served as key inputs to the Technical Report. This report incorporates the most up to date water and wastewater system and cost information, including additional technical infrastructure review and analysis which has been completed since the 2011 Master Plan updates. This report identifies Halton's water and wastewater infrastructure requirements to service anticipated growth during the period between 2017 and 2031, and establishes the basis for allocating the related benefits for the purpose of DC calculations. Project costs were updated in the Technical Report using

current estimates from Class Environmental Assessment Studies, Detail Design and/or cost indexing.

Appendix B of this Study provides information on the Region's water and wastewater program, including overview of the programs, DC calculation assumptions and detailed project lists and related costs. The estimated cost of the program totals to \$1.16 billion between 2017 and 2031 (in 2017\$), with \$516 million allocated within the term of the proposed By-law. The program cost and cost allocations are summarized in Chapter 5 (Section 5.9).

#### **4.3.2. Roads and Related Needs**

The 2017 Development Charge Transportation Technical Report has been prepared by EIIso Consulting Inc., based on the 2011 Transportation Master Plan, which provides details of the program that have been incorporated into this Study. The 2011 Transportation Master Plan, which outlined the transportation costs and timing, served as key inputs to the Technical Report.

Halton Region uses a demand forecasting model for its long term transportation planning. The model is used for network-wide analysis and overview including comparison of the network characteristics between the current year and the 2031 planning horizon. As noted in the 2017 Development Charges Transportation Technical Report, this model was updated for the DC Study. Adjustments include review of demand forecasting model based on 2011 TTS data, review of screenline capacities to 2031, updated costing based on environmental assessment and detailed design, and indexing of benchmark costs.

The projects included in the Technical Report provides a sustainable and integrated capital plan that considered all modes of travel (automobile, transit, cycling, and walking) to accommodate growth in Halton Region to the year 2031 as established through Regional Official Plan Amendment (ROPA) 38. ROPA 38 brought the Regional Official Plan into conformity with the Provincial Growth Plan for the Greater Golden Horseshoe and established a growth plan for Halton to accommodate 780,000 residents (752,537 excluding the Census undercount) and 390,000 jobs by 2031. Costs have been apportioned to growth/non-growth and residential/non-residential uses.

Appendix D of this Study provides information on the Region's roads program, including overview of the programs, DC calculation assumptions and detailed project lists and related costs. The estimated cost of the program totals to \$2.19 billion between 2017 and 2031 (in

2017\$), with \$791 million allocated within the term of the proposed By-law. The program cost and cost allocations are summarized in Chapter 5 (section 5.9).

#### 4.3.3. General Service Needs

Similar descriptive material for the general services (i.e. growth studies, police, paramedic services, facilities, social housing, waste diversion, and waterfront parks) is provided in Appendix F and related costs are summarized in Chapter 5.

#### 4.4. Credits Carried Forward

Section 8 paragraph 5 of O.Reg. 82/98 indicates that a DC background study must set out, “The estimated value of credits that are being carried forward relating to the service.” s.s.17 paragraph 4 of the same Regulation indicates that, “...The value of the credit cannot be recovered from future development charges,” if the credit pertains to an ineligible service. This indicates that a credit for eligible services can be recovered from future DCs. A credit is, in effect, a Regional payment liability linked to the prior provision of infrastructure by a landowner. Credits need to be included in the DC calculation, in order to ensure that the necessary DC “funding room” has been provided.

The Region’s outstanding credit obligations are relating to the non-residential development credits that were recognized under the Old DCA, section 14 as required by O. Reg. 82/98, and to the credits resulting from capital contributions provided by developers under DC agreements. Table 4-2 summarizes the outstanding credits that have been incorporated into the DC calculations.

**Table 4-2  
Region of Halton Outstanding Non-residential DC Credit (\$000s)**

Cost Allocation	Total Credits				
	Water	Wastewater	Roads	Police	Total
Region-wide	\$ 1,325	\$ 2,864	\$ 169	\$ 20	\$ 4,378
Area Specific:					
Capacity	595	1,040	-	-	1,635
Distrbt'n/Collct'n:					
Greenfield	730	1,824	-	-	2,553
Built Boundary	-	-	-	-	-

## **4.5. Eligible Debt and Committed Excess Capacity**

### **4.5.1. Requirements Of The Act**

Section 66 of the DCA states that, for the purposes of developing a DC By-law, a debt incurred with respect to an eligible service may be included as a capital cost, subject to any limitations or reductions in the Act. Similarly, s.18 of O.Reg. 82/98 indicates that debt with respect to an ineligible service may be included as a capital cost, subject to several restrictions. It is therefore necessary to review the projects on which Regional long term debt is outstanding, in order to determine whether some or all of those costs are eligible for inclusion in the calculation of the charge.

In order for such costs to be eligible, two conditions must apply. First, they must have funded excess capacity which is able to meet service needs attributable to the anticipated development. Second, the excess capacity must be “committed,” that is, either before or at the time it was created, Regional Council must have expressed a clear intention that it would be paid for by DCs or other similar charges. For example, this may have been done as part of previous DC processes. This inclusion is referenced as Box 14 in Figure 1-2 (“Unfunded Works”) and includes internal borrowing or long term debt.

### **4.5.2. Halton’s Unfunded Works**

Most of the Region’s internal/external debt previously incurred, in support of growth within the planning horizon, is related to the water, wastewater and roads programs. External debt and internal borrowing from the Regional funds are used in order to temporarily finance the DC revenue shortfalls resulting from delayed timing of DC collection relative to growth-related capital expenditures. Additionally, the roads program includes unfunded works which have been approved by Council up to 2016 but have yet to be financed. The DC calculations for water, wastewater, roads and other general services, as set out in Appendices C, E, and F include unfunded works carried forward as summarized in Tables 4-3a and 4-3b.

**Table 4-3a**  
**Residential Unfunded Works Carried Forward (\$000s)**

Cost Allocation	Debt Carried in 2017 DC Update		
	Regional Debt/ Unfunded Works	External Debt	Total
<b>Water</b>			
Capacity	\$ -	\$ -	\$ -
Distribution:			
Greenfield	-	38,892	38,892
Built Boundary	-	2,139	2,139
Subtotal	\$ -	\$ 41,030	\$ 41,030
<b>Wastewater</b>			
Capacity	\$ -	\$ 8,162	\$ 8,162
Collection:			
Greenfield	-	50,386	50,386
Built Boundary	-	4,834	4,834
Sub-total	\$ -	\$ 55,220	\$ 55,220
Total	\$ -	\$ 104,412	\$ 104,412
<b>Roads</b>	33,530	-	33,530
<b>Gross</b>	\$ 33,530	\$ 104,412	\$ 137,942

Note: May not add due to rounding

**Table 4-3b**  
**Non-Residential Unfunded Works Carried Forward (\$000s)**

Cost Allocation	Debt Carried in 2017 DC Update		
	Regional Debt/ Unfunded Works	External Debt	Total
<b>Water</b>			
Capacity	\$ 42,146	\$ 5,707	\$ 47,853
Distribution:			
Greenfield	45,116	17,137	62,253
Built Boundary	(1,702)	793	(910)
Subtotal	\$ 85,559	\$ 23,637	\$ 109,196
<b>Wastewater</b>			
Capacity	\$ 89,832	\$ 3,314	\$ 93,147
Collection:			
Greenfield	47,266	25,208	72,474
Built Boundary	5,005	2,156	7,161
Subtotal	\$ 142,103	\$ 30,678	\$ 172,781
Total	\$ 227,662	\$ 54,315	\$ 281,978
<b>Roads</b>	122,175	357	122,532
<b>Gross</b>	\$ 349,838	\$ 54,673	\$ 404,510

Note: May not add due to rounding

Debt payable to the Region represents the Regional interim financing previously provided for growth share of capital infrastructure costs, including a carrying cost, as set out in financial plans approved by Council (e.g. CS-73-08/PWE31-08 & CS-49-09/PW20-09/LPS80-09) and the annual budgets. External debt is related to financing of Employment Land Servicing projects (CS-33-11/PW-53-11/LPS58-11) and plant expansions to service growth in intensification area (e.g. Skyway WWTP) as approved by Council.

#### **4.5.3. Historic Post-period Benefit (Oversizing) Costs**

As of 2016, a total of \$29.7 million in Regional financing (including carrying costs), as shown in Table 4-4, has been used to fund the water, wastewater and road programs that benefit growth beyond the planning horizon of previous DC By-laws (i.e. Post-period Benefit/Oversizing). This total included \$5.4 million for road oversizing and \$24.3 million for the water and wastewater program. Since these costs benefit the planning horizon to 2031 based on BPE, 2011, they will be recovered from DCs and therefore included in the DC calculations.

**Table 4-4  
Summary of Post-period Benefit Cost Carried Forward (\$000's)**

Cost Allocation	Total Post-period Benefit (w. Interest)			
	Water	Wastewater	Roads	Total
<b>Residential:</b>				
Region-wide	\$ 9,372	\$ 6,682	\$ 3,242	\$ 19,296
Area Specific:				
Capacity	207	2,800	-	3,007
Distrbt'n/Collct'n:				
Greenfield	9,165	3,882	-	13,047
Built Boundary	-	-	-	-
<b>Non-Residential:</b>				
Region-wide	\$ 3,733	\$ 4,493	\$ 2,161	\$ 10,387
Area Specific:				
Capacity	594	2,194	-	2,788
Distrbt'n/Collct'n:				
Greenfield	3,139	2,299	-	5,438
Built Boundary	-	-	-	-
<b>Total</b>	<b>\$ 13,104</b>	<b>\$ 11,175</b>	<b>\$ 5,403</b>	<b>\$ 29,682</b>

Note: May not add due to rounding

#### **4.6. Council's Assurance**

In order for an increase in need for service to be included in the DC calculation, Regional Council must indicate "... that it intends to ensure that such an increase in need will be met" (s.s.5(1)3). This can be done if the increase in service forms part of a Council-approved Official Plan, capital forecast or similar expression of the intention of Council (O.Reg. 82/98 s.3). Council's approval of the long term capital forecast in Appendices B, D and F is therefore sought, which provides for the servicing of the development forecast contained in Appendix A.





## **5. DCA CALCULATION REQUIREMENTS**



## 5. DCA CALCULATION REQUIREMENTS

### 5.1. Introduction

Section 1.3.3 in the Introduction provided an overview of the method that must be used to determine DCs, including quotations directly from the DCA and associated Regulations. The intent of this chapter is to provide additional detail on the mandatory reductions to the increase in the need for service, as well as other adjustments to the capital cost to be incorporated in the DC calculation. For a detailed definition of “capital cost”, including specific works that are eligible for inclusion in the capital cost estimate, refer to section 7 of the tabular text in Section 1.3.3.

Subsection 5(1) of the DCA sets out the method that must be used to determine DCs. This method specifically calls for 5 different types of deductions to be made from municipal servicing costs which relate to the need for service attributable to new development anticipated over the planning period. These are:

- level of service cap;
- uncommitted excess capacity;
- benefit to existing development;
- grants, subsidies and other contributions;
- the 10% statutory deduction for “soft services”.

Two other calculation adjustments are addressed herein as being implicit requirements. These are:

- post-period benefit;
- allocation of the total costs between residential and non-residential benefit.

The basis for, and nature of, each of the DC calculation deductions is outlined below, with the total cost, by service, presented in Section 5.9.

There is no explicit requirement under the DCA calculation method set out in s.s.5(1) to net outstanding reserve fund balances as part of making the DC calculation; however, s.35 does restrict the way in which DC reserve funds are used in the future.

An overview of Halton’s DC reserve fund balances and the use of these funds in the DC calculation is provided in Section 5.10.

## 5.2. Level of Service Cap

Paragraph 4 of subsection 5(1) of the DCA states that the estimate of the increase in the need for service attributable to the anticipated development, made under paragraph 2, must not include an increase that would result in the level of service exceeding the average level provided in the Region over the 10 year period preceding the preparation of the background study.

s.s.4(3) of O.Reg. 82/98 provides for an exception, such that:

*“If the average level of service determined is lower than the standard level of service required under another Act, the standard level of service required under the other Act may be deemed ... to be the average level of service.”*

Section 4 of the Regulation also provides that:

- both the quantity and quality of a service shall be taken into account in determining the average level of service.
- a geographic Area of the municipality may be excluded in determining the average level of service, if the service is not provided there and the Area is identified in the By-law. However, the average level of service so determined, cannot exceed that which would be determined if the By-law applied to the whole municipality.

A commonly-used quantity measure is units per capita (e.g. lane kms, square feet, m<sup>3</sup> capacity, hectares, etc.), while quality can be measured in terms of cost per unit, engineering standards or recognized performance measurement systems, depending on circumstances. Appendix F provides detailed schedules that outline the level of service that has been established for each of the General Services, in terms of both quantity and quality. Any resulting deductions are also provided on a project-specific basis.

With respect to water and wastewater servicing, the servicing standard is largely governed by regulatory requirements, and therefore no deductions have been made for this purpose (Appendix B and the Water and Wastewater Technical Report).

For the road program, the level of service has been measured by lane km per capita, volume over capacity (v/c) ratios, as well as roadway network replacement values, which together indicated no increase in service level over the 2031-planning period. Therefore, no deductions have been made (Appendix D and the Transportation Technical Report).

### **5.3. Uncommitted Excess Capacity**

Paragraph 5 of s.s.5(1) of the DCA requires a deduction from the increase in the need for service attributable to the anticipated development that can be met using the Region's "excess capacity", other than excess capacity which is "committed", i.e. where Council has indicated a clear intention that it would be paid for by DCs or other similar charges, before or at the time the capacity was created (s.5 of O.Reg. 82/98).

"Excess capacity" is undefined in the Act, but in this case must be able to meet some or all of the increase in need for service of the anticipated development, in order to potentially represent a deduction. The deduction of "excess capacity" from the future increase in the need for service, occurs as part of the conceptual planning and feasibility work associated with justifying and sizing new facilities, e.g. if a road widening to accommodate increased traffic is not required because sufficient capacity is already available or is being provided via transit, then that widening would not be included as an increase in need, in the first instance.

The revised Water/Wastewater and Transportation Master Plans and General Services Capital Programs have been prepared taking into consideration any excess capacity available in the system. Therefore, the long-term capital needs set out in this Study represent incremental capacity requirements as set out in Appendices B, D and F.

### **5.4. Benefit to Existing Development**

Benefit to existing development deductions have been addressed on a service-specific and project-specific basis. The allocation method related to transportation service focuses on the residual value of the existing asset through the use of Tangible Capital Asset values. The methodology employed is discussed in greater detail in Appendices B, D and F and in the Transportation and Water/Wastewater Technical Reports. The results are summarized in section 5.9.

## 5.5. Grants, Subsidies and Other Contributions

s.s.5(1)7 of the DCA requires that the capital costs must be reduced by the reductions set out in subsection (2).

s.s.5(2) states that:

*“The capital costs, determined under para. 7 of subsection (1), must be reduced, in accordance with the regulations, to adjust for capital grants, subsidies and other contributions made to a municipality or that the Council of the municipality anticipates will be made in respect of the capital costs.” (underlining added)*

Section 6 of O.Reg. 82/98 indicates that any such grant, subsidy or other contribution (including developer contributions) must be used to reduce the s.s.5(1)7 capital costs in the same proportion as the increase in need was reduced under s.s.5(1), paragraph 6, unless at the time it was made, the person making it expressed a clear intention that all or part be used to benefit existing or new development. In the latter case, a deduction to capital costs must be made, but only to the extent that the funds were intended to benefit new development. Any grants, subsidies, developer and other contributions anticipated have been reflected in Appendices B, D and F, in accordance with the provisions of the Act and Regulation.

## 5.6. 10% Statutory Deduction

Paragraph 8 of s.s.5(1) of the DCA requires that, “the capital costs must be reduced by 10 per cent.” This paragraph does not apply to water supply services, wastewater services, storm water drainage and control services, services related to a highway, electrical power services, police services, fire protection services, and transit services. The Regional services that the 10% reduction does apply to are growth studies (other than those relating to water, wastewater, roads and police), paramedic services, facilities, social housing, waste diversion, and waterfront parks, as well as related financing costs.

The 10% is to be netted from the capital costs necessary to provide the increased services, once the other deductions have been made. The total cost, by service, is presented in section 5.9, with additional detail on a project specific basis provided in Appendix F.

## **5.7. Post Period Benefit (Oversizing)**

This is a term and a concept which is not specifically referenced in the DCA. It refers to the cost of development-related servicing capacity which is not required by development anticipated over the Region's 2021 and 2031 planning periods, which will clearly benefit development in a subsequent planning period and, in some cases, should therefore be (partially) funded by such subsequent development.

For example if a sewage treatment plant is specifically sized to accommodate development to 2041, then the DC recovery of an appropriate portion of that cost should be deferred, such that it is funded by the development that ultimately benefits from it. This requirement is implicit in s.s.5(1)2 of the DCA, which requires the charge to be based on "the increase in the need for service attributable to the anticipated development...", in this case development during 2017-2031. However, in the case of major facilities which have not been explicitly oversized, no post-period benefit deduction is provided.

With respect to water and wastewater programs, an appropriate deduction has been made for capacity to service development anticipated post-2031.

Review of the infrastructure capacity indicated that oversizing was required for some of the trunk facilities. This review showed that for projects with smaller diameter pipes which typically serviced more localized areas, many of these localized areas had only marginal additional flows beyond 2031. The trunk projects which service larger areas service a larger amount of flows beyond 2031. Also, the smaller diameter infrastructure typically cannot be downsized without impacting the system such as water pressures and fire flows for the water system and increased velocities and surcharging for the wastewater system. Accordingly, the oversizing requirements have been identified for some water feedermain, wastewater trunk sewers and water and wastewater treatment plants.

Quantifying oversizing for these projects has been determined based on comparison of the infrastructure only required to meet 2031 needs versus the recommended infrastructure sizing. The incremental difference in cost for the recommended size of infrastructure and the size of infrastructure to meet the 2031 horizon has been allocated as the oversizing cost. Any oversizing identified through this analysis has been deducted from the 2031 DC recoverable costs and is to be recovered through subsequent DC By-law(s) covering the post 2031 period.

For the road program, a deduction for post planning period benefit has been made for a number of major infrastructure improvements in the last 5 years (2026-2031) of the capital improvement plan. This deduction is proportional to the degree to which the v/c ratio on a major road improvement in 2031 is less than the average v/c on the associated screenline.

The total cost attributed to post-period benefit is summarized for each service in section 5.9, and discussed in greater detail on a project specific basis in Appendices B, D and F, as well as in the Transportation and Water/Wastewater Technical Reports.

## **5.8. Residential vs. Non-Residential Benefit**

s.s.5(6)2 of the DCA requires that every “type” of development that is expressly identified in the DC By-law cannot be required to pay DCs that exceed the capital costs arising from the increase in the need for service attributable to that particular type of development.

In the first instance, this allocation involves a split between residential and non-residential benefit. Table 5-1 summarizes the ways in which these splits were made as part of the DC calculations contained herein. Additional detail supporting these methodologies, as well as project specific cost allocations between residential and non-residential, are provided in Appendices B, D and F, as well as in the Transportation and Water/Wastewater Technical Reports.



**Table 5-1**  
**Summary of Residential/Non-residential Split Assumptions by Service**

Service	Basis	Splits	
		Residential	Non-residential
Water <sup>1</sup>			
Capacity	Per GM BluePlan Technical Report Sept 2016	75%	25%
Greenfield		74%	26%
Built Boundary		76%	24%
Wastewater <sup>1</sup>			
Capacity	Per GM BluePlan Technical Report Sept 2016	74%	26%
Greenfield		74%	26%
Built Boundary		76%	24%
Roads	Per ELLSo Consulting Technical Report Sept 2016	64%	36%
Growth Studies	Net population growth between 2017 and 2026 relative to employment growth for same period	71%	29%
Police	Net population growth between 2017 and 2026 relative to employment growth for same period	71%	29%
Paramedics	Net population growth between 2017 and 2026 relative to employment growth for same period, with residential weighted at three times employment.	88%	12%
Facilities <sup>2</sup>	Based on review of specific usage of facility space, varies by program.	87%	13%
Social Housing	Fully allocated to residential since program is directly related to population.	100%	0%
Waste Diversion	Primarily allocated to residential use	95%	5%
Waterfront Parks	Primarily allocated to residential use	95%	5%

<sup>1</sup> Detailed description for infrastructure categories (ie. Capacity, Greenfield, Built Boundary) are provided in Chapter 6 and Appendix B

<sup>2</sup> Weighted average res/nres split presented here for all program areas (ie Health, Social Services & Operations). Detail supporting each areas specific split is provided in Appendix F, part 5)

## 5.9. Summary of Estimated Capital Expenditures

Based on the above guidelines, Table 5-2 summarizes the estimated Regional capital expenditures for the period 2017-2031 for the water, wastewater, roads, and police services, and 2017-2026 for the general services (excluding police).

**Table 5-2**  
**Summary of Capital Costs for all Eligible Programs (\$2017, \$Millions)**

Services	Gross Cost	Less:					Net Growth		
		Ineligible (Level of Service)	Benefit to Existing Dev't	Subsidy, Dev Contbt'n	Post Period Benefit	10% Statutory Deduc't	Total	Res	N-res
W/WW (2017-2031):									
Water	\$ 535.1		\$ 11.4		\$ 43.6		\$ 480.1	\$ 357.7	\$ 122.4
Wastewater	625.7		95.8		18.0		511.9	379.6	132.3
Sub-Total	\$ 1,160.8	\$ -	\$ 107.2	\$ -	\$ 61.6	N/A	\$ 992.0	\$ 737.3	\$ 254.6
Roads (2017-2031)	\$ 2,189.9	\$ -	\$ 388.7	\$ -	\$ 105.7	N/A	\$ 1,695.5	\$ 1,085.1	\$ 610.4
General Servc (2017-2026):									
Growth Studies	\$ 16.6		\$ 4.6		\$ -	\$ 0.1	\$ 11.9	\$ 8.4	\$ 3.4
Police <sup>1</sup>	115.8		36.7		25.7	-	53.4	37.8	15.6
Paramedics	25.5		8.4		10.1	0.7	6.3	5.5	0.7
Facilities	11.8		3.6		1.2	0.5	6.5	5.6	0.8
Social Housing	95.0		47.5		-	4.8	42.8	42.8	-
Waste Diversion	9.8		4.8		1.7	0.3	2.9	2.8	0.1
Waterfront Parks	40.1		9.8	2.3	18.2	1.0	8.9	8.4	0.4
Sub-Total	\$ 314.5	\$ -	\$ 115.4	\$ 2.3	\$ 57.0	\$ 7.3	\$ 132.6	\$ 111.4	\$ 21.2
<b>Total</b>	<b>\$ 3,665.3</b>	<b>\$ -</b>	<b>\$ 611.3</b>	<b>\$ 2.3</b>	<b>\$ 224.3</b>	<b>\$ 7.3</b>	<b>\$ 2,820.0</b>	<b>\$ 1,933.8</b>	<b>\$ 886.2</b>

1. Police (2017-2031)

Note: May not add due to rounding

Table 5-3 summarizes the water/wastewater costs allocated between plant capacity, distribution/collection-Greenfield, and distribution/collection-Built Boundary areas.

**Table 5-3**  
**Water & Wastewater Project Costs by Area (2017 - 2031) (\$2017, \$Millions)**

Service	Gross Cost	Less: Benefit to Existing Dev't	Less: Post Period Benefit	Net Growth	Residential Share				Non-residential Share			
					Capacity	Distrb'n /Collect'n - Greenfield	Distrb'n /Collect'n - Built bndry	Total	Capacity	Distrb'n /Collect'n - Greenfield	Distrb'n /Collect'n - Built bndry	Total
Water	\$ 535.1	\$ 11.4	\$ 43.6	\$ 480.1	\$ 143.3	\$ 194.9	\$ 19.5	\$ 357.7	\$ 47.7	\$ 68.5	\$ 6.2	\$ 122.4
Wastewater	625.7	95.8	18.0	511.9	87.3	260.7	31.5	379.6	30.7	91.6	10.0	132.3
<b>Total</b>	<b>\$ 1,160.8</b>	<b>\$ 107.2</b>	<b>\$ 61.6</b>	<b>\$ 992.0</b>	<b>\$ 230.6</b>	<b>\$ 455.7</b>	<b>\$ 51.1</b>	<b>\$ 737.3</b>	<b>\$ 78.4</b>	<b>\$ 160.1</b>	<b>\$ 16.1</b>	<b>\$ 254.6</b>

Note: May not add due to rounding

## 5.10. DC Reserve Fund Balances

There is no explicit requirement under the DCA calculation method set out in s.s.5(1) to account for the outstanding reserve fund balance as part of making a DC calculation; however, s.35 does restrict the way in which the funds are used in the future, i.e.

*“The money in a reserve fund established for a service may be spent only for capital costs determined under paragraphs 2 to 8 of subsection 5(1).”*

The table below summarizes the projected balances of the Region’s DC reserves as of the end of 2016.

**Table 5-4  
Summary of DC Reserve Fund Projected Balances at Dec. 31, 2016**

<b>DC Reserve Fund</b>	<b>Residential</b>	<b>Non-Residential</b>	<b>Total</b>
Water and Wastewater	\$ 5,897,326	\$ -	\$ 5,897,326
Roads	(43,776,913)	-	(43,776,913)
Growth Studies	(2,714,987)	(2,039,338)	(4,754,326)
Police	(372,856)	(1,460,498)	(1,833,354)
Paramedic Services	(1,526,753)	(288,436)	(1,815,189)
Facilities	(653,402)	(8,191)	(661,593)
Social Housing	1,444,859	na	1,444,859
<b>Total</b>	<b>\$ (41,702,726)</b>	<b>\$ (3,796,464)</b>	<b>\$ (45,499,191)</b>

In addition, the Region’s DC Reserve Fund continuity between 2012 and 2016 is provided by service in Tables 5-4a and 5-4b below. The resulting reserve balances have been incorporated into the related DC calculations as opening balances of the cash flows (Appendices C, E and F).

**Table 5-4a  
Residential DC  
Reserve Fund Continuity**

**Water Capacity - Residential (516260)**

	2012	2013	2014	2015	Projected 2016 <sup>1</sup>
<b>Opening Balance</b>	\$ -	\$ (922,982)	\$ 331,253	\$ 9,073,339	\$ 30,146,185
DC Revenues	816,358	1,270,158	9,420,476	23,706,374	30,075,920
Interest Earnings	-	-	108,978	691,575	832,227
Expenditures Draws <sup>2</sup>	(1,739,340)	(15,923)	(787,368)	(3,325,103)	(30,679,832)
<b>Closing Balance</b>	\$ (922,982)	\$ 331,253	\$ 9,073,339	\$ 30,146,185	\$ 30,374,500

**Water Distribution - Greenfield - Residential (516270)**

	2012	2013	2014	2015	Projected 2016 <sup>1</sup>
<b>Opening Balance</b>	\$ -	\$ (3,004,322)	\$ (4,584,478)	\$ (1,294,098)	\$ 21,152,153
DC Revenues	395,885	3,900,081	14,032,063	35,141,436	48,812,504
Interest Earnings	-	-	-	373,374	1,018,522
Expenditures Draws <sup>2</sup>	(3,400,208)	(5,480,236)	(10,741,683)	(13,068,559)	(28,012,841)
<b>Closing Balance</b>	\$ (3,004,322)	\$ (4,584,478)	\$ (1,294,098)	\$ 21,152,153	\$ 42,970,338

**Water Distribution - Built Boundary - Residential (516280)**

	2012	2013	2014	2015	Projected 2016 <sup>1</sup>
<b>Opening Balance</b>	\$ -	\$ (340,889)	\$ (88,495)	\$ (489,246)	\$ (695,420)
DC Revenues	133,286	302,442	400,298	597,865	639,687
Interest Earnings	-	-	4,316	-	-
Expenditures Draws <sup>2</sup>	(474,175)	(50,047)	(805,366)	(804,039)	(5,311,886)
<b>Closing Balance</b>	\$ (340,889)	\$ (88,495)	\$ (489,246)	\$ (695,420)	\$ (5,367,619)

**Wastewater Capacity - Residential (516360)**

	2012	2013	2014	2015	Projected 2016 <sup>1</sup>
<b>Opening Balance</b>	\$ -	\$ 9,794,171	\$ 10,133,284	\$ (1,548,201)	\$ (63,984,188)
DC Revenues	772,887	1,485,392	10,938,514	27,525,681	61,558,073
Interest Earnings	455,072	444,715	395,346	-	-
Expenditures Draws <sup>2</sup>	8,566,211	(1,590,995)	(23,015,345)	(89,961,668)	(70,037,723)
<b>Closing Balance</b>	\$ 9,794,171	\$ 10,133,284	\$ (1,548,201)	\$ (63,984,188)	\$ (72,463,839)

**Wastewater Distribution - Greenfield - Residential (516370)**

	2012	2013	2014	2015	Projected 2016 <sup>1</sup>
<b>Opening Balance</b>	\$ -	\$ 5,075,705	\$ (135,042)	\$ 3,957,358	\$ 21,656,675
DC Revenues	316,434	2,518,684	13,102,668	34,119,010	46,527,634
Interest Earnings	359,756	122,741	120,894	542,534	748,080
Expenditures Draws <sup>2</sup>	4,399,515	(7,852,172)	(9,131,162)	(16,962,227)	(44,714,533)
<b>Closing Balance</b>	\$ 5,075,705	\$ (135,042)	\$ 3,957,358	\$ 21,656,675	\$ 24,217,856

**Wastewater Distribution - Built Boundary - Residential (516380)**

	2012	2013	2014	2015	Projected 2016 <sup>1</sup>
<b>Opening Balance</b>	\$ -	\$ (932,314)	\$ (498,374)	\$ 132,332	\$ 1,196,212
DC Revenues	218,095	643,098	839,865	1,257,241	1,331,900
Interest Earnings	-	-	-	15,797	-
Expenditures Draws <sup>2</sup>	(1,150,409)	(209,159)	(209,159)	(209,159)	(16,362,023)
<b>Closing Balance</b>	\$ (932,314)	\$ (498,374)	\$ 132,332	\$ 1,196,212	\$ (13,833,911)

**Roads - Residential (516060)**

	2012	2013	2014	2015	Projected 2016 <sup>1</sup>
<b>Opening Balance</b>	\$ (13,713,425)	\$ 6,831,163	\$ (4,127,496)	\$ (11,014,888)	\$ (14,173,068)
DC Revenues	57,103,208	20,608,228	44,833,128	31,417,034	79,200,279
Interest Earnings	-	-	275,233	-	-
Expenditures Draws <sup>2</sup>	(36,558,620)	(31,566,888)	(51,995,752)	(34,575,214)	(108,804,125)
<b>Closing Balance</b>	\$ 6,831,163	\$ (4,127,496)	\$ (11,014,888)	\$ (14,173,068)	\$ (43,776,913)

**Growth Studies - Residential (516080)**

	2012	2013	2014	2015	Projected 2016 <sup>1</sup>
<b>Opening Balance</b>	\$ (1,371,115)	\$ (1,182,021)	\$ (1,398,355)	\$ (1,526,066)	\$ (1,812,352)
DC Revenues	780,330	367,363	534,526	607,951	764,957
Interest Earnings	-	-	-	-	-
Expenditures Draws <sup>2</sup>	(591,237)	(583,697)	(662,237)	(894,237)	(1,667,592)
<b>Closing Balance</b>	\$ (1,182,021)	\$ (1,398,355)	\$ (1,526,066)	\$ (1,812,352)	\$ (2,714,987)

**Police - Residential (516040)**

	2012	2013	2014	2015	Projected 2016 <sup>1</sup>
<b>Opening Balance</b>	\$ 592,209	\$ 657,175	\$ 300,441	\$ (31,896)	\$ (517,515)
DC Revenues	967,551	506,248	736,578	837,585	1,054,073
Interest Earnings	25,842	18,934	1,498	-	-
Expenditures Draws <sup>2</sup>	(928,427)	(881,916)	(1,070,413)	(1,323,204)	(909,413)
<b>Closing Balance</b>	\$ 657,175	\$ 300,441	\$ (31,896)	\$ (517,515)	\$ (372,856)

**Paramedic Services - Residential (516015)**

	2012	2013	2014	2015	Projected 2016 <sup>1</sup>
<b>Opening Balance</b>	\$ 285,995	\$ (245,433)	\$ (1,040,603)	\$ (939,556)	\$ (816,708)
DC Revenues	240,892	109,279	159,047	180,848	227,636
Interest Earnings	131	-	-	-	-
Expenditures Draws <sup>2</sup>	(772,450)	(904,450)	(58,000)	(58,000)	(937,680)
<b>Closing Balance</b>	\$ (245,433)	\$ (1,040,603)	\$ (939,556)	\$ (816,708)	\$ (1,526,753)

**Facilities - Residential (516025)**

	2012	2013	2014	2015	Projected 2016 <sup>1</sup>
<b>Opening Balance</b>	\$ 946,607	\$ 628,227	\$ (1,908)	\$ (593,680)	\$ (647,657)
DC Revenues	421,163	112,401	163,983	186,456	234,688
Interest Earnings	37,258	13,218	-	-	-
Expenditures Draws <sup>2</sup>	(776,801)	(755,754)	(755,754)	(240,433)	(240,433)
<b>Closing Balance</b>	\$ 628,227	\$ (1,908)	\$ (593,680)	\$ (647,657)	\$ (653,402)

**Social Housing - Residential (516035)**

	2012	2013	2014	2015	Projected 2016 <sup>1</sup>
<b>Opening Balance</b>	\$ 1,090,067	\$ 2,182,814	\$ 1,525,796	\$ 998,325	\$ 1,086,526
DC Revenues	1,019,608	637,461	926,887	1,054,317	1,326,406
Interest Earnings	73,139	78,712	45,643	33,884	31,927
Expenditures Draws <sup>2</sup>	-	(1,373,191)	(1,500,000)	(1,000,000)	(1,000,000)
<b>Closing Balance</b>	\$ 2,182,814	\$ 1,525,796	\$ 998,325	\$ 1,086,526	\$ 1,444,859

1. The Region's 2016 year-end financial reporting has not been completed at the time of completing this study. Accordingly, the 2016 year-end balances represent the best information available at this time.

2. Expenditure Draws consist of transfer (to)/from capital project accounts and reserves, capital closures as well as development charge refunds.

**Table 5-4b  
Non-Residential DC  
Reserve Fund Continuity**

**Water Capacity - Non-Residential (517260)**

	2012	2013	2014	2015	Projected 2016 <sup>1</sup>
<b>Opening Balance</b>	\$ -	\$ (2,763,592)	\$ (1,585,350)	\$ (607,906)	-
DC Revenues	246,435	2,134,462	1,912,370	5,355,623	3,643,200
Interest Earnings	-	-	-	17,954	-
Expenditures Draws <sup>2</sup>	(3,010,026)	(956,220)	(934,926)	(4,765,671)	(3,643,200)
<b>Closing Balance</b>	\$ (2,763,592)	\$ (1,585,350)	\$ (607,906)	\$ -	\$ -

**Water Distribution - Greenfield - Non-Residential (517270)**

	2012	2013	2014	2015	Projected 2016 <sup>1</sup>
<b>Opening Balance</b>	\$ -	\$ (1,056,707)	\$ -	\$ (492,993)	\$ -
DC Revenues	1,945,609	3,274,980	782,244	4,759,519	3,141,095
Interest Earnings	-	-	-	13,777	-
Expenditures Draws <sup>2</sup>	(3,002,316)	(2,218,273)	(1,275,237)	(4,280,304)	(3,141,095)
<b>Closing Balance</b>	\$ (1,056,707)	\$ -	\$ (492,993)	\$ -	\$ -

**Water Distribution - Built Boundary - Non-Residential (517280)**

	2012	2013	2014	2015	Projected 2016 <sup>1</sup>
<b>Opening Balance</b>	\$ -	\$ -	\$ -	\$ -	\$ -
DC Revenues	1,362,202	762,978	420,632	490,480	490,037
Interest Earnings	3,163	18,630	-	6,331	-
Expenditures Draws <sup>2</sup>	(1,365,364)	(781,608)	(420,632)	(496,811)	(490,037)
<b>Closing Balance</b>	\$ -	\$ -	\$ -	\$ -	\$ -

**Wastewater Capacity - Non-Residential (517360)**

	2012	2013	2014	2015	Projected 2016 <sup>1</sup>
<b>Opening Balance</b>	\$ -	\$ (849,823)	\$ -	\$ -	\$ -
DC Revenues	298,070	1,968,694	2,532,969	7,101,638	4,857,600
Interest Earnings	-	-	-	65,785	-
Expenditures Draws <sup>2</sup>	(1,147,893)	(1,118,872)	(2,532,969)	(7,167,423)	(4,857,600)
<b>Closing Balance</b>	\$ (849,823)	\$ -	\$ -	\$ -	\$ -

**Wastewater Distribution - Greenfield - Non-Residential (517370)**

	2012	2013	2014	2015	Projected 2016 <sup>1</sup>
<b>Opening Balance</b>	\$ -	\$ -	\$ -	\$ (836,251)	\$ -
DC Revenues	2,220,940	3,294,976	913,390	4,852,593	3,197,691
Interest Earnings	-	32,904	-	-	-
Expenditures Draws <sup>2</sup>	(2,220,940)	(3,327,880)	(1,749,641)	(4,016,342)	(3,197,691)
<b>Closing Balance</b>	\$ -	\$ -	\$ (836,251)	\$ -	\$ -

**Wastewater Distribution - Built Boundary - Non-Residential (517380)**

	2012	2013	2014	2015	Projected 2016 <sup>1</sup>
<b>Opening Balance</b>	\$ -	\$ -	\$ -	\$ -	\$ -
DC Revenues	1,742,835	1,220,662	966,785	1,312,223	1,163,838
Interest Earnings	3,694	28,212	-	14,226	-
Expenditures Draws <sup>2</sup>	(1,746,529)	(1,248,874)	(966,785)	(1,326,449)	(1,163,838)
<b>Closing Balance</b>	\$ -	\$ -	\$ -	\$ -	\$ -

**Roads - Non-Residential (517030)**

	2012	2013	2014	2015	Projected 2016 <sup>1</sup>
<b>Opening Balance</b>	\$ 4,815	\$ -	\$ -	\$ -	\$ -
DC Revenues	22,727,614	12,204,085	13,438,833	22,992,917	25,070,878
Interest Earnings	510,147	236,996	229,007	251,864	-
Expenditures Draws <sup>2</sup>	(23,242,576)	(12,441,082)	(13,667,840)	(23,244,781)	(25,070,878)
<b>Closing Balance</b>	\$ -	\$ -	\$ -	\$ -	\$ -

**Growth Studies - Non-Residential (517040)**

	2012	2013	2014	2015	Projected 2016 <sup>1</sup>
<b>Opening Balance</b>	\$ (1,259,274)	\$ (1,116,936)	\$ (1,222,818)	\$ (1,379,738)	\$ (1,391,346)
DC Revenues	429,374	176,153	172,116	454,429	291,280
Interest Earnings	-	-	-	-	-
Expenditures Draws <sup>2</sup>	(287,036)	(282,036)	(329,036)	(466,036)	(939,273)
<b>Closing Balance</b>	\$ (1,116,936)	\$ (1,222,818)	\$ (1,379,738)	\$ (1,391,346)	\$ (2,039,338)

**Police - Non-Residential (517020)**

	2012	2013	2014	2015	Projected 2016 <sup>1</sup>
<b>Opening Balance</b>	\$ (517,726)	\$ (453,823)	\$ (743,706)	\$ (1,065,114)	\$ (1,344,415)
DC Revenues	638,367	259,544	249,496	657,055	423,680
Interest Earnings	-	-	-	-	-
Expenditures Draws <sup>2</sup>	(574,464)	(549,427)	(570,904)	(936,356)	(539,764)
<b>Closing Balance</b>	\$ (453,823)	\$ (743,706)	\$ (1,065,114)	\$ (1,344,415)	\$ (1,460,498)

**Paramedic Services - Non-Residential (517015)**

	2012	2013	2014	2015	Projected 2016 <sup>1</sup>
<b>Opening Balance</b>	\$ 85,411	\$ (4,630)	\$ (162,974)	\$ (159,055)	\$ (129,758)
DC Revenues	60,583	21,206	15,919	41,297	26,480
Interest Earnings	1,926	-	-	-	-
Expenditures Draws <sup>2</sup>	(152,550)	(179,550)	(12,000)	(12,000)	(185,158)
<b>Closing Balance</b>	\$ (4,630)	\$ (162,974)	\$ (159,055)	\$ (129,758)	\$ (288,436)

**Facilities - Non-Residential (517025)**

	2012	2013	2014	2015	Projected 2016 <sup>1</sup>
<b>Opening Balance</b>	\$ (16,859)	\$ 26,241	\$ (5,439)	\$ (37,272)	\$ (15,438)
DC Revenues	36,286	15,475	15,748	41,067	26,480
Interest Earnings	180	428	-	-	-
Expenditures Draws <sup>2</sup>	6,634	(47,583)	(47,582)	(19,233)	(19,233)
<b>Closing Balance</b>	\$ 26,241	\$ (5,439)	\$ (37,272)	\$ (15,438)	\$ (8,191)

1. The Region's 2016 year-end financial reporting has not been completed at the time of completing this study. Accordingly, the 2016 year-end balances represent the best information available at this time.

2. Expenditure Draws consist of transfer (to)/from capital project accounts and reserves, capital closures as well as development charge refunds.





**6. DEVELOPMENT CHARGE RULES  
& LONG TERM CAPITAL AND OPERATING COST  
EXAMINATION**



## 6. DEVELOPMENT CHARGE RULES

### 6.1. Introduction

s.s.5(1)9 of the DCA states that rules must be developed:

*“... to determine if a development charge is payable in any particular case and to determine the amount of the charge, subject to the limitations set out in subsection 6.”*

Paragraph 10 of the section goes on to state that the rules may provide for exemptions, phasing in and/or indexing of DCs.

s.s.5(6) establishes the following restrictions on the rules:

- The total of all DCs that would be imposed on anticipated development must not exceed the capital costs determined under s.s.5(1) paragraphs 2-8 for all services involved.
- If the rules expressly identify a type of development, they must not provide for it to pay DCs that exceed the capital costs that arise from the increase in the need for service for that type of development. However, this requirement does not relate to any particular development.
- If the rules provide for a type of development to have a lower DC than is allowed, the rules for determining DCs may not provide for any resulting shortfall to be made up by DCs imposed on other development.

In order to address this requirement, the following conventions have been adopted:

- Costs applicable to residential uses have been assigned to different types of residential units based on the average occupancy for each housing type constructed during the first 10-20 years of occupancy (as outlined in Appendix A).
- The residential vs. non-residential split is made based on factors relevant to each service (e.g. water flow in the case of water and trip generation in the case of roads) as outlined in Appendices B, D and F.

With respect to “the rules”, section 6 of the DCA states that a DC By-law must expressly address the matters referred to above re subsection 5(1) paragraph 9 and 10, as well as how the rules apply to the redevelopment of land.

The rules for determining if DCs are payable in any particular case and for determining the amount of the DCs involved are outlined in Table 6-1 in this chapter and set out in the proposed By-law in Appendix I. Table 6-1 also compares Halton's proposed DC policies with its current policies.

This chapter also includes a review of a water/wastewater DC rate structure (Section 6.10 and 6.11), Asset Management Plan (Section 6.12) and the long-term capital and operating cost examination (Section 6.13).

## **6.2. The Amount of the DC Payable in Any Particular Case**

The quantum of the DC is as calculated in Appendices C, E and F and summarized in the Executive Summary and Schedules "B" and "C" of the proposed By-law in Appendix I.

The rules for determining if DCs are payable in any particular case are addressed in this chapter and in the proposed By-law (Appendix I). These rules deal with matters such as: the list of services for which charges are being imposed, types of development approval triggering the need for the imposition of DCs, the requirements for the installation of local services in addition to payment of the DC, the method used in calculating DCs for individual developments, the quantum of the charge, the timing of calculation and payment, and the alternative means of payment.

## **6.3. DC Exemptions**

s.s.5(1)10 of the DCA requires that "The rules may provide for full or partial exemptions for types of development." s.s.6.2 of the DCA also requires that a DC By-law must set out an express statement indicating how, if at all, the rules provide for exemptions.

The DCA mandates a number of exemptions or equivalent, as follows:

- The following development cannot be charged for:
  - the enlargement of an existing dwelling unit;
  - the creation of a maximum of 2 additional dwelling units in a single-detached dwelling or 1 additional unit in any other type of dwelling, subject to specified floor area restrictions;

- An exemption applies to all land owned by and used for purposes of a municipality or a school board (*Education Act*);
- An exemption for industrial development applies to the enlargement of the gross floor area (GFA) of an existing industrial building by up to 50%;
- Other statutory exemptions may be required in the case of entities such as Crown agencies, colleges and universities, based on consideration of case law;
- It would appear that the Provincial and Federal Governments are notionally exempt from payment of DCs, but may agree to pay the charge or a “grant-in-lieu” thereof under the *Municipal Grants Act* or equivalent.

The rules for exemptions, relief and adjustments for the charge are as set out in the proposed By-law in Appendix I. Table 6-1 outlines the Region’s current and proposed DC policies.

#### **6.4. Indexing of DCs**

The rules with respect to the indexing of the DCs are as set out in the proposed By-law in Appendix I, that is, that the charges are to be adjusted annually, as of April 1<sup>st</sup> of each year, commencing April 1, 2018 in accordance with the Statistics Canada Quarterly, Construction Price Statistics (catalogue number 62-007, currently known as the CANSIM table 327-0043). This is consistent with the Region’s current policy.

#### **6.5. Interest**

The Region pays interest on a refund under subsection 18(3) and 25(2) of the DCA at a rate equal to the Bank of Canada rate on the date the By-law came into force and effect.

#### **6.6. The Application of DCs to Redevelopment**

The rules with respect to redevelopment are as set out in Table 6-1 below and in the proposed By-law in Appendix I. The demolition policy provides a demolition credit in the circumstance where a building permit is issued within 5 years from the date the associated demolition permit has been issued. The conversion credit is provided where there is a conversion of space in a residential or non-residential building to another use. The rules also include expansion exemptions for industrial development and for commercial (non-retail) development.

## 6.7. Summary of Halton DC Policies

Based on the above, Table 6-1 summarizes the existing DC policies in the current DC By-law No. 48-12, as amended, and highlights proposed changes to the policies. The proposed changes are detailed in section 6.8. The existing DC policies that will remain unchanged are detailed in section 6.9.

**Table 6-1**  
**Summary of Existing and Proposed DC Policies**

DC Policies	Existing Policies	Proposed Changes
<b>Intensification:</b>		
Industrial Expansion Exemption ( <i>Mandatory</i> )	<ul style="list-style-type: none"> <li>- If existing building is enlarged by 50% or less, expansion is exempt, and</li> <li>- Enlargement must be a bona fide increase in the size of the existing building, attached to and having direct entry to the existing building and used in connection with an industrial purpose.</li> <li>- Expansion calculated based on the cumulative areas of the existing building prior to expansion.</li> <li>- Expansion calculation is based on TFA which includes below grade area.</li> <li>- Does not include retail warehouses.</li> <li>- (see 6.9.1).</li> </ul>	<ul style="list-style-type: none"> <li>- No change.</li> </ul>
Commercial (Non-Retail) Expansion Exemption	<ul style="list-style-type: none"> <li>- Provide expansion exemption for first 3,000 sq. ft., for an expansion of the existing commercial building (attached or detached) on the site;</li> <li>- Existing commercial building, as defined under By-law, must be occupied and must be at least 6 months since issuance of last permit on the lot.</li> <li>- (see 6.9.2).</li> </ul>	<ul style="list-style-type: none"> <li>- No change.</li> </ul>
Non-Residential Lot Coverage Relief	<ul style="list-style-type: none"> <li>- Provides partial DC exemptions for non-residential development that exceeds its lot size based on:               <ul style="list-style-type: none"> <li>o TFA up to 1.0 times the lot area – 100% DC payable;</li> <li>o TFA between 1.0 and 1.5 times the lot area – 50% DC payable on that portion;</li> <li>o TFA beyond 1.5 times the lot area – 25% DC payable on that portion.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- Provide a full DC exemption when the non-residential development is greater than 1.0 times the lot area.</li> <li>- (see 6.8.1).</li> </ul>

DC Policies	Existing Policies	Proposed Changes
Demolition Credit	<ul style="list-style-type: none"> <li>- Credit calculated by multiplying the number/type of dwelling units or the non-residential TFA being demolished, by the relevant DC in effect on the date when the DC is payable.</li> <li>- Given where a building permit is issued within 5 years from the date of the demolition permit.</li> <li>- Does not apply if the building is exempt under the current By-law.</li> <li>- Where the building cannot be demolished until the new building is constructed, DCs are payable on issuance of a building permit and a refund is made, without interest, if the demolition is made within 12 months of building permit issuance.</li> <li>- The Treasurer may extend the time which the existing building must be demolished, by owner written request.</li> <li>- Credit provided on a one-time basis unless there is an approved phasing plan.</li> </ul>	<ul style="list-style-type: none"> <li>- Where a formal planning application (e.g. complete site plan application under the Planning Act) has been submitted to the local municipality but a building permit cannot be issued within the 5 year timeframe, the Treasurer, upon written request, may extend the credit by 1 year (see 6.8.2).</li> </ul>
Conversion Credit	<ul style="list-style-type: none"> <li>- Credit calculated by multiplying the number/type of dwelling units or the non-residential TFA, being converted by the relevant DC in effect on the date when the DC is payable.</li> <li>- Does not apply if the original building (prior to conversion) is exempt under the current By-law.</li> <li>- Credit provided on a one-time basis unless there is an approved phasing plan.</li> <li>- Despite the above, where there is a conversion from a non-retail to a retail development that is 3,000 sq. ft. or less, an exemption of the incremental DC will be provided on a one-time basis only. (over 3,000 sq. ft. pays the incremental DC on the conversion TFA).</li> </ul>	<ul style="list-style-type: none"> <li>- Expand the conversion credit for a non-retail to a retail development to exempt the greater of 25% or 10,000 sq. ft. (930 sq. m.) of the converted TFA from DC, on a one time basis only.</li> <li>- (see 6.8.3).</li> </ul>
Exemption for Intensification of Existing Housing ( <i>Mandatory</i> )	<ul style="list-style-type: none"> <li>- Enlargement of an existing unit.</li> <li>- Creating 1 or 2 additional units in a single detached or 1 additional unit in any other type of dwelling provided the TFA of the new unit(s) does not exceed the existing unit.</li> <li>- (see 6.9.3).</li> </ul>	<ul style="list-style-type: none"> <li>- No change.</li> </ul>
High Density Apartment	<ul style="list-style-type: none"> <li>- Collect all DCs at building permit provided development is an apartment dwelling with a minimum of 4 storey or containing more than 130 units per net ha per plans approved under s. 41 of the <i>Planning Act</i>.</li> <li>- (see 6.9.4).</li> </ul>	<ul style="list-style-type: none"> <li>- No change.</li> </ul>

DC Policies	Existing Policies	Proposed Changes
Residential Deferral for Purpose Built Rental High Density Apartment	- DC payable at building permit (BP).	<ul style="list-style-type: none"> <li>- 1 year deferral from BP issuance, with interest:               <ul style="list-style-type: none"> <li>o deferral agreement;</li> <li>o security by Letter of Credit (LC) or agreement registered on title;</li> <li>o may be subject to financial plan requirements.</li> </ul> </li> <li>- (see 6.8.4).</li> </ul>
Residential Deferral for Purpose Built Assisted Rental High Density Apartment - Under Housing program	- DC payable at building permit.	<ul style="list-style-type: none"> <li>- 3 year deferral from BP issuance with No Interest:               <ul style="list-style-type: none"> <li>o deferral agreement;</li> <li>o security by LC;</li> <li>o proof of "Contribution Agreement." (eg. IAH);</li> <li>o may be subject to financial plan requirements.</li> </ul> </li> <li>- (see 6.8.4).</li> </ul>
<b>Economic Development:</b>		
Non-Residential Payment Deferral	<ul style="list-style-type: none"> <li>- Available for non-residential DCs through an agreement for all developments.</li> <li>- Deferral agreement with security by LC or agreement registered on title.</li> <li>- Payments to be amortized over a 10 year period at the prime lending rate of the Region's bank.</li> <li>- (see 6.9.5).</li> </ul>	- No change.
Non-Residential DC Categories	<ul style="list-style-type: none"> <li>- Categorize DC's by: Retail and Non-Retail.</li> <li>- (see 6.9.6).</li> </ul>	- No change.
Temporary Non-Residential Building	<ul style="list-style-type: none"> <li>- Require securities posted in amount of DC payable at building permit. If the building is removed within 3 years of building permit issuance, the security is returned. If not, security deposited to the DC reserve funds.</li> <li>- (see 6.9.7).</li> </ul>	- No change.



DC Policies	Existing Policies	Proposed Changes
<b>Other:</b>		
Municipal and School Board Exemptions (Mandatory)	<ul style="list-style-type: none"> <li>- DCs exempt for “Land owned by and used for the purposes of a municipality or a board as defined in the <i>Education Act</i>” per the DCA.</li> <li>- Unless buildings or part thereof are used for commercial purposes.</li> <li>- (see 6.9.8).</li> </ul>	- No change.
Parking Garages Exemption	<ul style="list-style-type: none"> <li>- Parking garages (whether at, above or below grade) are exempt.</li> <li>- (see 6.9.9).</li> </ul>	- No change.
Temporary Residential Building Exemption- Garden Suite, Other	<ul style="list-style-type: none"> <li>- a) Garden Suite - through an agreement registered on title, exempt if removed within the period set by local’s temporary use By-law and if not DC onto property tax.</li> <li>- b) Other - through an agreement, exempt if securities posted in amount of DC payable at building permit and if the building is removed within 3 years of building permit issuance, the security is returned. If not, security deposited to the DC reserve funds.</li> <li>- (see 6.9.10).</li> </ul>	- No change.
Agricultural Exemption	<ul style="list-style-type: none"> <li>- DCs are exempt when the use is considered a bona fide farming operation, including sod farms, breeding and boarding of horses, and green houses with no connection to Regional water and wastewater. Residential, commercial and retail uses in agricultural development are not exempt.</li> <li>- Confirm the Agricultural use based on the zoning and availability of Ontario Farm Business Registration Number (FBR#).</li> </ul>	<ul style="list-style-type: none"> <li>- To clarify the exemption, agricultural definition is being refined to exclude breeding/boarding/grooming of household pets.</li> <li>- (see 6.8.5).</li> </ul>
Other Exemptions	<ul style="list-style-type: none"> <li>- Includes other discretionary exemptions: <ul style="list-style-type: none"> <li>o Hospitals (unless buildings or part thereof are used for commercial purposes);</li> <li>o Places of Worship Conservation Authorities (unless buildings or part thereof are used for commercial purposes);</li> <li>o Seasonal structures;</li> <li>o Temporary venues;</li> <li>o (see 6.9.11).</li> </ul> </li> </ul>	- No change.

DC Policies	Existing Policies	Proposed Changes
Timing of DC Payment	<ul style="list-style-type: none"> <li>- Residential:               <ul style="list-style-type: none"> <li>o Collect water, wastewater and roads at subdivision or consent agreement. (except for high density apartment at building permit);</li> <li>o Collect other services at building permit.</li> </ul> </li> <li>- Non-Residential:               <ul style="list-style-type: none"> <li>o Collect all DCs at building permit.</li> </ul> </li> <li>- Notwithstanding the above, the Region may enter into agreement under s.27 of DCA to collect all or part of DC earlier (i.e. allocation program) or later (i.e. non-residential deferral).</li> <li>- (see 6.9.12).</li> </ul>	<ul style="list-style-type: none"> <li>- No change.</li> </ul>

## 6.8. Proposed DC Policy Changes

The proposed By-law will continue to include the current rules and policies as outlined above save and except for the following changes proposed to better align with the Region's Strategic Action Plan (2015-2018) to support intensification development and assisted housing opportunities and based on issues that were raised during the implementation of the current By-law No. 48-12, as amended.

### 6.8.1. **Non-Residential Lot Coverage Relief**

Under the current By-law, partial DC exemptions are provided for non-residential development which exceeds its lot size. This relief is provided when the following conditions are met:

- For the portion of the TFA of non-residential development that is less than or equal to 1.0 times the area of the lot, the current non-residential DC applies;
- For the portion of the TFA that is greater than 1.0 times the area of the lot and less than or equal to 1.5 times the area of the lot, 50% of the current DC applies; and
- For the portion of the TFA that is greater than 1.5 times the area of the lot, 25% of the current DC applies.

In the interest of promoting non-residential intensification going forward, it is being recommended to provide a greater relief as follows:

- For the portion of the TFA of non-residential development that is less than or equal to 1.0 times the area of the lot, the current non-residential DC applies;

- For the portion of the TFA that is greater than 1.0 times the area of the lot, the DC does not apply.

### 6.8.2. Demolition Credit

A demolition credit is currently provided where a residential or non-residential building has been (or is being) demolished. It is calculated by multiplying the number/type of dwelling units or the non-residential TFA being demolished, by the relevant DC in effect on the date when the DC is payable. A credit is given where a building permit is issued within 5 years from the date of the demolition permit and it does not apply if the building is exempt under the current By-law. A demolition credit is provided on a one-time basis unless there is a phasing plan in place approved by the Regional Treasurer or designate.

In cases where the building cannot be demolished until the new building is constructed (i.e. redevelopment of the site where the businesses must continue to operate until the new building can be occupied), DCs are payable on issuance of a building permit and a refund is made, without interest, if the demolition is made within 12 months of building permit issuance. In situations where 12 months is not sufficient time to complete construction, occupy the new building and complete the full demolition of the original building, the policy allows for the Regional Treasurer or designate to approve an extension to the time allowed to obtain a refund beyond the 12 months. This approval is required prior to obtaining the first building permit for the new development, and is only considered upon submission of a written request by the developer.

During the by-law implementation, requests have been made to allow for an extension of the 5 year demolition credit in situations where a developer is engaged in a formal planning application (e.g. complete site plan application under the *Planning Act*) but is not in a position to get their building permit issued within the 5 year timeframe.

Accordingly, it is recommended that the policy be adjusted to allow for the Regional Treasurer or designate to approve a 12 month extension to the demolition credit, upon submission by the developer of a written request for an extension, including proof that a formal planning application has been accepted and is in process by the local municipality.

### **6.8.3. Conversion Credit**

A conversion credit is currently provided where there is a proposed conversion of space in a residential or non-residential building. The current By-law provides for conversion credits under the following conditions:

- Credit is applied for the portion of the building that is being converted;
- Credit is calculated by multiplying the number and type of dwelling units or the non-residential TFA, being converted by the relevant DC in effect on the date when the DC is payable;
- Credit shall not exceed, in total, the amount of DCs payable for the building permit;
- Credit does not apply if the original building is exempt under the current By-laws;
- Credit is provided on a one-time basis unless any excess credit is expressly permitted by a phasing plan for the redevelopment that is acceptable to and approved by the Region.

Despite the above, where there is a conversion from non-retail to retail development that is 3,000 sq. ft. or less, an exemption of the incremental DC will be provided on a one-time basis. However, if the conversion is greater than 3,000 sq. ft. it is subject to the full incremental DC payable for the entire TFA.

In order to encourage intensification development it is recommended that the retail conversion policy be revised to allow for an exemption of the incremental DCs up to a conversion of either 10,000 sq. ft (930 sq. m) or 25% of the TFA being converted, whichever is greater.

### **6.8.4. Residential Deferral**

Currently the Region does not have a deferral policy for any type of residential development, as the timely collection of DCs is critical to ensure the successful implementation of the Region's Allocation Programs. The DC By-law, however, allows high density apartment development to pay all DCs at building permit issuance. This timing is delayed compared to the timing of DC payment required for all other residential development types for the water/wastewater and roads DCs, which is at subdivision agreement.

The current policy related to high density condominium apartments will remain unchanged. However, in order to promote intensification and assisted housing opportunities, a DC deferral policy for the following residential developments are recommended:

- **Purpose Built Rental High Density Apartment**

When the proposed development is for a residential rental high density apartment, rather than pay the DCs at building permit, the owner would have the option of entering into a 1 year deferral agreement with the Region. The DCs, plus interest, would then be payable 1 year from the date of the issuance of the building permit. The owner would have to provide security by either registering the deferral agreement on title (and providing postponements) or providing a Letter of Credit for the full amount of the DC payable including interest. It should be noted that the provision of this policy may be subject to the Region's financial plan requirements.

- **Purpose Built Assisted Rental High Density Apartment – under a Housing Program**

Where the proposed development is for a residential rental high-density apartment that is receiving funding approved under a Regional Housing Program as evidenced by an executed Contribution Agreement with the Region, a 3 year deferral of DCs would be provided, with no interest. Rather than paying the DCs at building permit, the owner would have the option of entering into a deferral agreement, and the DCs would then be payable 3 years from the issuance of the building permit. As security, a Letter of Credit for the full amount of the DC payable would be required. It should be noted that the provision of this policy may be subject to the Region's financial plan requirements.

#### **6.8.5. Agricultural Exemption**

Agricultural uses are exempt under the By-law when the use is considered to be a bona fide farming operation, which currently includes greenhouses that are not connected to Regional water services or wastewater services, sod farms, and farms for the breeding and boarding of horses. Residential, commercial and retail uses in agricultural development are not exempt.

A refinement to the agricultural definition is proposed to provide clarity of the current exclusion of breeding, boarding and/or grooming of household pets from the exemption.

In order to assist in confirming a bona fide farming operation for exemption, a review of the availability of a Farm Business Registration Number (FBR) is requested.

## **6.9. Existing DC Policies to Remain in Place**

### **6.9.1. Industrial Expansion Exemption (Mandatory)**

The Act requires a DC exemption to an existing industrial building expansion on the following basis:

- If the GFA of the existing building is enlarged by 50% or less, the expansion would be exempt from DCs.
- If the GFA of the existing industrial building is enlarged by more than 50%, DCs would be payable on the amount by which the enlargement exceeds 50% of the GFA before the enlargement.
- For the purpose of applying the industrial expansion exemption the terms “GFA” and an “existing industrial building” are based on the definitions used in the O. Reg 82/98 to the Act. In applying the exemption the following is required:
  - the GFA of an existing industrial building is enlarged where there is a bona fide increase in the size of the existing building and the enlarged area is attached to the existing industrial building, there is a direct means of ingress and egress between the existing and enlarged area and it is used for, or in connection with, an industrial purpose as set out in s.s.1(1) of O. Reg. 82/98. Further, the exemption does not apply where the enlarged area is attached to the existing industrial building by means only of a tunnel, bridge, canopy, corridor or other passage-way, or through a shared below-grade connection such as a service tunnel, foundation, footing or a parking facility;
  - GFA as defined in the DCA, includes above grade floor area only;
  - under the current By-law, the Region uses TFA which includes below grade floor area, to calculate the industrial expansion exemption.

### **6.9.2. Commercial (Non-Retail) Expansion Exemption**

The current By-law provides for an expansion exemption on the first 3,000 sq. ft. of the expansion of the existing commercial building (attached or detached) on the site. In order to apply for this exemption, the expansion building should meet the definition of commercial use (e.g. non-industrial, non-retail) in the By-law and the related building permit must be at least 6 months after the last building permit on the site and the existing building(s) must be occupied.

### **6.9.3. Exemption for Intensification of Existing Housing (Mandatory)**

The Act requires a DC exemption related to the redevelopment of residential units, for the following:

- Enlargement of an existing dwelling.
- Creating 1 or 2 additional dwelling units in an existing single detached dwelling unit provided the TFA of the additional 1 or 2 units does not exceed the TFA of the existing unit.
- Creating 1 additional dwelling unit in an existing semi-detached dwelling unit provided the TFA of the additional 1 unit does not exceed the TFA of the existing unit.
- Creating 1 additional dwelling unit for any other existing residential building provided the TFA of the additional 1 unit does not exceed the TFA of the existing smallest unit.

### **6.9.4. Definition of High Density Apartment & Timing of Payment (Residential)**

Generally residential developments are required to pay their water, wastewater and roads DCs prior to building permit. For high density development with a minimum of 4 storeys or containing more than 130 dwelling units per net hectare per approved plans under s.41 of the *Planning Act*, these charges are deferred to the building permit stage. The intention of this policy is to promote high density residential development by addressing cash flow issues that are particular to multi-story residential developments.

### **6.9.5. Non-Residential Payment Deferral**

The Region will continue to provide an option to defer non-residential DCs to all developments, redevelopments and building expansions. This policy has been in place since Council's approval in 1995 (CS-04-95). The intent of the policy is to help to alleviate cash flow problems relating to DC payments since such payment is required before a building is constructed and the revenues from it materialize. To provide businesses with greater flexibility, the deferral program permits payments to be amortized over a 10-year period at the prime lending rate of the Region's bank. The owner is required to enter into a deferral agreement and a security is required by way of providing a Letter of Credit or the agreement must be registered on title.

### **6.9.6. Non-Residential DC Categories**

In 2012, the Region established differentiated non-residential DC rates for retail and non-retail development in the interest of continued economic development in employment areas. The transportation DC was differentiated for retail and non-retail uses based on technical information that provides different trip generation rates relating to each category.

It is being proposed for the 2017 DC By-law to continue to differentiate Transportation DCs between retail and non-retail development based on a similar methodology detailed in Appendix D.

### **6.9.7. Temporary Non-Residential Building**

The current By-law provides exemptions for temporary non-residential buildings as long as the building is removed within a specified timeframe. This policy is designed for development that is required on a site before a permanent structure is erected (e.g. sales trailers). The applicant is required to post securities in the amount of the DC payable at building permit. If the building is removed within 3 years of building permit issuance, the security is returned. If not, the DC is collected by depositing the security into the appropriate DC reserve funds.

### **6.9.8. Municipal and School Board Exemptions (Mandatory)**

The Act requires that the following institutions be exempt from payment of DCs:

- Buildings or structures owned by and used for the purposes of any area municipality or the Region; and
- Buildings or structures owned by a public or separate board of education (as defined in the *Education Act*) and used only for school purposes;
- Unless such buildings or parts thereof are used primarily for commercial purposes.

The current practice of exempting partnerships between a private entity and municipality or school board (providing municipal/school boards' services) is appropriate in light of the DCA requirement. In its review of such partnership development, the Region takes into consideration the land ownership and the nature of the services provided by the applicant. In order for the institutional DC exemption to apply, the land must be owned by a municipality or a school board and the services provided should be for a municipal or a school board purpose authorized by the applicable legislation.



### 6.9.9. Parking Garages Exemption

Under the current By-law parking garages, whether at, above or below grade, are exempt from DCs.

### 6.9.10. Temporary Residential Building Exemption

The current By-law includes special policies for the following 2 types of temporary residential dwelling units:

- Garden suite - a temporary accommodation for a family member, usually a senior.
- Other - a temporary accommodation for resident workers.

#### a) Temporary Dwelling - Garden Suites

Under the *Planning Act*, garden suites are only permitted when a temporary use By-law (a form of zoning By-law) is enacted by the Council of the local municipality. The temporary By-law specifies the subject land and the duration of the usage of the garden suite. The initial period cannot exceed 3 years, but the timeframe can be extended by local Council. Regardless of the duration of the By-law, the *Planning Act* does not allow the garden suite to become a legal conforming use.

The current policy for a garden suite type temporary dwelling unit is as follows:

- The garden suite has been authorized by a temporary use By-law passed by the local municipality pursuant to sections 39 and 39.1 of the *Planning Act* and such By-law is in full force and effect;
- The owner is required to enter into an agreement with the Region, to be registered on title, prior to building permit issuance;
- Under the agreement, DCs are exempt if the owner removes the building within 60 days following the expiration of the temporary use By-law (or any extensions thereof), and provides evidence of the removal to the Region within 30 days following the removal (up to 90 days total). The onus of notifying the Region of the removal is on the applicant;
- If the owner does not provide satisfactory evidence of removal within the timeframe, it will no longer be considered as a garden suite and the Region will add the DCs to the tax roll;
- If the lot with the garden suite is sold, unless the purchaser agrees to assume the responsibility by entering into an identical agreement or remove the building, the entire

amount of DC should be paid to the Region prior to the completion of the sales transaction;

- The amount of DC payable is the DC rate for an accessory dwelling on the date that the building permit was issued.

#### **b) Temporary Dwelling - Other**

This policy applies in situations where a temporary use By-law is not available. Examples include a seasonal residential use or a short-term residential use to accommodate resident workers, such as farm workers. In most cases once these dwellings are removed, there are no plans for redevelopment on the site, and therefore the applicant cannot take advantage of the demolition credit.

The current policy for this type of temporary dwelling unit is as follows:

- Before the building permit issuance, the applicant must enter into an agreement with the Region and provide a security in the amount equal to the DCs otherwise payable;
- The security may be in the form of cash or Letter of Credit;
- A refund of cash or a return of Letter of Credit will be made, without interest, if the applicant submits an application for refund, accompanied by proof of the removal of the temporary building to the Region's satisfaction, within 3 years from the building permit issuance;
- If there is no application received within the 3 years, the Region collects the DCs by depositing the security (or cash) into the Regional reserve funds on the day following the 3-year anniversary date.

#### **6.9.11. Other Discretionary Exemptions**

The following are additional discretionary exemptions that are included in the current By-law:

- **Hospitals** - Buildings used as hospitals governed by the *Public Hospitals Act, R.S.O. 1990; c. P.40*, unless such buildings or parts thereof are used primarily for commercial purposes;
- **Place of Worship** - Buildings that are exempt from taxation as a place of worship;
- **Conservation Authorities** - Buildings/structures owned by and used for the purpose of a conservation authority, except for buildings/structures used primarily for recreational

purposes for which the conservation authority charges admission and/or fees or any other commercial purposes;

- **Seasonal Structures** as defined in the By-law;
- **Temporary Venues** as defined in the By-law.

#### **6.9.12. Timing of DC Payment**

DCs for all services are currently calculated and payable on the day of building permit issuance, except for the water, wastewater and roads component for residential uses, which are currently payable upon execution of a subdivision agreement, rather than prior to building permit issuance, as the Region is required to have the necessary infrastructure constructed before the development occurs. For high density apartments and non-residential uses, all DCs are payable at building permit.

Notwithstanding the above, an owner and the Region may enter into an agreement under section 27 of the DCA requiring all or part of the DCs to be paid before (i.e. residential allocation program) or after (i.e. non-residential deferral) they would otherwise be payable. The terms of such agreement may not amend or alter any other provisions or sections of the By-law.

#### **6.9.13. Exemptions, Relief, Credits and Adjustments Not Cumulative**

It must be noted that only one of the applicable exemption(s), relief, credit(s) or adjustment(s) set out in the By-law shall be applicable to a development or redevelopment. Where the circumstances of a development or redevelopment are such that more than one type of exemption, relief, credit or adjustment could apply, only one type shall apply and it shall be the exemption, relief, credit or adjustment that results in the lowest DCs being payable.

### **6.10. By-law Structure**

Bill 73 has introduced 2 new sections where Council must consider the use of area specific charges:

1. Section 2(9) of the Act now requires a municipality to implement area specific DCs for either specific services which are prescribed and/or for specific municipalities which are to be regulated.
2. Section 10(2) c.1 of the DCA requires that “the development charges background study shall include consideration of the use of more than one DC By-law to reflect different needs for services in different areas”.

For the 2017 DC By-law update, consideration has been given to area specific charges as required under the DCA (as amended by Bill 73). In regard to the first item, there are no services or specific municipalities identified in the regulations which must be area rated. The second item requires Council to consider the use of area rating.

The most common approach to structuring DC By-laws in Ontario is to implement a uniform or a municipal-wide charge. Currently Halton has Region-wide DC rates for all services except water/wastewater (W/WW).

Since 1999, the Region's W/WW DCs have been charged on an Area specific basis to recognize the higher average costs in servicing the Greenfield areas compared to the Built Boundary areas. The current Area specific W/WW DC was established in 2012 (By-law No. 48-12), based on distribution/collection infrastructure required to service growth planned within the Built Boundary and Greenfield areas. The Built Boundary for the Greater Golden Horseshoe was established by the provincial Growth Plan based on the 2006 Built Boundary. The remainder of the Regional urban area (i.e. outside the Built Boundary) was classified as Greenfield area. The DC rates relating to the water and wastewater capacity (plant expansions for example) were calculated on a Region-wide basis given the difficulty in identifying Area specific infrastructure related to capacity projects.

The remaining services (roads, growth studies, police, paramedic services, facilities, social housing, waste diversion and waterfront parks) are not restricted to one specific area and are often used/required by all residents/business. For example, the entire road network is used by new development depending on their travel requirements.

For the reasons noted above, it is being proposed to continue to calculate the distribution/collection component of the W/WW DCs on an Area specific basis and the capacity component of W/WW and all other services (transportation and general services) on a Region-wide basis.

Table 6-2 below illustrates the By-law structure:

**Table 6-2**  
**2017 DC By-Law Structure**

<b>1. Water/Wastewater</b>	<b><u>Areas Applied</u></b>	<b><u>Planning Period</u></b>
A. Capacity	Region-wide	2017-2031
B. Distribution/Collection:	Area-specific	2017-2031
(i) Greenfield		
(ii) Built Boundary		
<b>2. Roads</b>	Region-wide	2017-2031
<b>3. General Services</b>		
A. Police	Region-wide	2017-2031
B. All other Services	Region-wide	2017-2026

### **6.11. Asset Management Plan**

The recent changes to the DCA (new clause 10(2) (c.2)) require that the Background Study must include an Asset Management Plan (AMP) related to new infrastructure. Subsection 10(3) of the DCA provides:

The AMP shall,

- (a) deal with all assets whose capital costs are proposed to be funded under the DC By-law;
- (b) demonstrate that all the assets mentioned in clause (a) are financially sustainable over their full life cycle;
- (c) contain any other information that is prescribed; and
- (d) be prepared in the prescribed manner.

At a broad level, the AMP provides for the long term investment in an asset over its entire useful life along with the funding. For growth-related works, the majority of capital costs will be funded by DCs. Non-growth related expenditures will then be funded from non-DC sources through the state of good repair program. During the useful life of the asset, there will be minor maintenance costs to extend the life of the asset along with additional program related expenditures to provide the full services to the residents. At the end of the life of the asset, it will be replaced by non-DC financing sources.

Having a financial plan is critical for putting an AMP into action. By having a strong financial plan, municipalities can also demonstrate that they have made a concerted effort to integrate the AMP with financial planning and municipal budgeting, and are making full use of all available infrastructure financing tools.

It has been the Region's long standing practice to prepare the Region's ten-year budget forecast based on the asset management plan. The ten year budget forecast is updated through the annual budget process based on the latest information available including the existing long-term asset management plan, building condition assessments, results of studies such as master plans, optimization studies etc. For the purpose of the 2017 DC By-law update, the ten-year budget forecast has been extended to 2031 to cover the planning horizon based on the long-term asset management plan, incorporating the infrastructure identified for the 2017 update and building condition assessments. As detailed in Appendix H, the analysis demonstrates that the Regional property tax and water and wastewater utility rate impacts are projected to stay at a level consistent to the current (2017) and previous budgets.

## **6.12. Long Term Capital and Operating Cost Examination**

Subsection 10(2)(c) of the Act requires that a DC Background Study include an examination for each service to which the DC By-law would relate, of the long term capital and operating costs for capital infrastructure required for the service.

One standard that could be used in scrutinizing the above-referenced costs is the current level of operating costs per capita. Another more detailed standard that goes beyond the specific requirements of the Act would be the anticipated impact on tax and user rate levels, as determined by the application of a full fiscal impact model. As discussed in Appendix H, Halton's assessment is based on the latter method.

The revenue to be generated by the DC By-law during its life of up to 5 years will be determined by the quantum of the charge, the amount and type of development occurring and the impact of the rules regarding exemptions, indexing, land redevelopment, etc. The net stream of revenue which results will determine the rate at which the Region is able to construct the works which underlie the DC. Consideration of these revenue streams would normally occur as part of the Region's annual Capital Budget and Forecasting process.

Appendix H contains Halton's Long Term Capital and Operating Cost examination. The Region intends to implement the projects set out in this Study through its usual practice of preparing financial plans prior to the release of water and wastewater capacity. These plans will consider the projects (including roads) to be financed under the Plan and may use a combination of various financing techniques. The financial plan may also consider the staging of projects and, therefore, the timing and sequence of development to achieve the fiscal objectives of the Region under the Region's current Official Plan. Accordingly, the timing of some of the projects which are to be DC funded may be modified from what is shown in this Background Study. These modifications may be necessitated by the specifics of the financial plans to be prepared for water, wastewater and road servicing. The financial plan will be prepared after the approval of the 2017 DC By-law.





## **7. BY-LAW ADOPTION AND IMPLEMENTATION**



## **7. BY-LAW ADOPTION AND IMPLEMENTATION**

### **7.1. Introduction**

This Chapter outlines the comprehensive process that the Region has carried out as part of arriving at DC rates and policies which are fair and legally defensible, and have full regard for public comments and concerns and any possible economic or development implications.

As part of this process, Regional staff in Legislative and Planning Services, Public Works, Finance and other departments deployed substantial resources, in addition to engaging specialists in Transportation, Water/Wastewater Servicing, Legal, Economics and Development Charges to prepare separate inputs to the Study.

This Chapter discusses the consultation and by-law adoption process.

### **7.2. Consultation**

Halton Region has followed an organized and comprehensive consultation process consisting of the Development Charges Advisory Committee which provided advice on the preparation of the DC Background Study and an extensive public consultation process to be carried out once the DC Background Study is released to the public.

#### **7.2.1. Development Charges Advisory Committee (DCAC)**

The purpose of the DCAC is to provide advice and assistance with respect to the preparation of the DC Background Study by reviewing the methodology and assumptions used in formulating the DC policies. The terms of reference and selection criteria for the DCAC were updated and approved by Council in Report LPS17-16 / FN-03-16 (re: 2017 Development Charge (DC) Update Work Plan, Terms of Reference and Council Appointments to the 2016-2018 Development Charges Advisory Committee (DCAC)). The Committee consists of 15 members representing developers, builders, businesses, councillors and rate payers. As shown in the following table, the DCAC held 4 meetings during October and November 2016, involving discussions regarding the growth plan and capital costs, DC calculations, competitive analysis and DC policies.

**Table 7-1  
DCAC Consultation Process**

Item Discussed	Date
1. Growth Plan	October 6, 2016
2. Water/Wastewater & Transportation Review and Capital Costs	October 20, 2016
3. DC Calculations / Competitiveness	November 3, 2016
4. DC Policies and Final Review	November 17, 2016

During this process relevant information was provided through staff presentations. Further supplementary information was also provided as requested by the committee. The information presented at the DCAC, including supplementary information, technical reports, minutes and agendas, is available on Halton's website ([www.halton.ca](http://www.halton.ca)).

The Key items reviewed and feedback provided by the DCAC was highlighted in Regional Report FN-36-16 (re: FN-36-16 - Update on the Activity of the Development Charges Advisory Committee (DCAC)).

### 7.2.2. Public Consultation Process

Once the DC Background Study is complete and released to the public, the work of the DCAC comes to an end and the broad public consultation occurs. As shown in the following table the DC Background Study is planned to be released to the public on December 14, 2016.

**Table 7-2  
Summary of Public Consultation Process**

Process	Date
1. Release of DC Background Study to the Public	December 14, 2016
2. Public Meeting under the DCA, 1997 (A&F Committee)	March 22, 2017
3. Final DC Proposals & Comments to A&F Committee	May 10, 2017
4. Proposed Passing of DC By-law(s) by Council	June 14, 2017
5. Advertise Notice of passage of DC By-law(s)	Within 20 days of passage
6. Last day for DC By-law(s) Appeal	40 days after passage

Halton's website will continue to be updated to keep the public informed during the public consultation process on meeting dates and information provided during the process.

Finally, during the preparation of the DC Background Study and public process, consultation with the 4 local municipalities will continue to take place through the Area Treasurers with the aim to promote consistency in DC policies among the Region and the local municipalities, which in turn would improve customer service and administrative efficiency.

### **7.3. The By-law Adoption Process**

Section 12 of the DCA indicates that before passing a DC By-law, Council must hold at least 1 public meeting, giving at least 20 clear days notice thereof, in accordance with the Regulation. Council must also ensure that the proposed by-law and background study are made available to the public at least 2 weeks prior to the (first) public meeting. Further, the DC Study must be made available at least 60 days prior to the passage of the DC By-law. Any person who attends such a meeting may make representations related to the proposed By-law.

If a proposed by-law is changed following such a meeting, the Council must determine whether a further meeting (under this section) is necessary (i.e. if the proposed by-law which is proposed for adoption has been changed in any respect, the Council should formally consider whether an additional public meeting is required, incorporating this determination as part of the final by-law or associated resolution). It is noted that Council's decision, once made, is final and not subject to review by a Court or the OMB.

As discussed in the previous sections, following the completion of the DCAC process and release of the DC Background Study on December 14, 2016, the Region will undertake an extensive public consultation process beyond standard practice and the requirement of the DCA. Further, as shown in Table 7-2, the Region's consultation process will continue until the by-law is adopted. The legislated Public Meeting will be held during the March 22, 2017 Administration and Finance (A&F) Committee meeting.

All of the public input will be reviewed and taken into consideration to finalize the Region's DC proposal. The final report containing the DC proposal will be presented to the A&F Committee on May 10, 2017. The DC by-law will then be considered for passage by Council on June 14, 2017, with the last date for appeal of the by-law then being 40 days after the passage of the By-law.

## **7.4. By-law Implementation**

### **7.4.1. Introduction**

Once the Region has calculated the charge, prepared the complete Background Study, carried out the public process and passed a new by-law, the emphasis shifts to implementation matters. These include transitional arrangements, notices, potential appeals and complaints, credits, front-ending agreements, subdivision agreement conditions and finally the collection of revenues and funding of projects. The following section overviews requirements in each case.

### **7.4.2. Transitional Period**

Although the by-law is scheduled to be passed on June 14, 2017, this Study proposes that the by-law come into force September 1, 2017 to allow for a transitional period to the new rates prior to expiration of By-law No. 48-12 on September 4, 2017.

### **7.4.3. Notice of Passage**

In accordance with s.13 of the DCA, when a DC by-law is passed, the municipal clerk shall give written notice of the passing and of the last day for appealing the by-law (the day that is 40 days after the day it was passed). Such notice must be given no later than 20 days after the day the by-law is passed (i.e. as of the day of newspaper publication or the mailing of the notice).

Section 10 of O. Reg. 82/98 further defines the notice requirements, which are summarized as follows:

- Notice may be given by publication in a newspaper, which is (in the Clerk's opinion) of sufficient circulation to give the public reasonable notice, or by personal service, fax or mail to every owner of land in the area to which the by-law relates.
- s.s.10(4) lists the persons/organizations who must be given notice.
- s.s.10(5) lists the 8 items which the notice must cover.

### **7.4.4. By-law Pamphlet**

In addition to the "notice" information, the municipality must prepare a "pamphlet" explaining each DC by-law in force, setting out:

- a description of the general purpose of the DCs;

- the “rules” for determining if a charge is payable in a particular case and for determining the amount of the charge;
- the services to which the DCs relate; and
- a general description of the general purpose of the Treasurer’s statement and where it may be obtained by the public.

Where a by-law is not appealed to the OMB, the pamphlet must be readied within 60 days after the by-law comes into force. Later dates apply to appealed by-laws.

The Region must give 1 copy of the most recent pamphlet without charge, to any person who requests one.

#### **7.4.5. Appeals**

Sections 13-19 of the DCA set out requirements relative to making and processing of a DC By-law appeal and OMB Hearing in response to an appeal. Any person or organization may appeal a DC By-law to the OMB by filing with the municipal clerk a notice of appeal, setting out the objection to the By-law and the reasons supporting the objection. This must be done by the last day for appealing the By-law, which is 40 days after the By-law is passed.

#### **7.4.6. Complaints**

A person required to pay a DC, or his agent, may complain to the Regional Council imposing the charge that:

- the amount of the charge was incorrectly determined;
- the credit to be used against the DC was incorrectly determined; or
- there was an error in the application of the DC.

Sections 20-25 of the DCA set out the requirements that exist, including the fact that a complaint may not be made later than 90 days after a DC (or any part of it) is payable. A complainant may appeal the decision of Regional Council to the OMB.





**APPENDIX A**  
**ANTICIPATED DEVELOPMENT IN THE REGION**  
**2017-2031**

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**APPENDIX A – PART 1**  
**RESIDENTIAL GROWTH FORECASTS**



# 1. RESIDENTIAL GROWTH FORECASTS

**Table A-1** provides an estimate for growth commencing in 2017, which is the starting point for this forecast and DC calculation. The forecast extends over 10-year and 15-year planning horizons from 2017-2031, and is based on the BPE, 2011. Over the 2017-2031 planning period, the Region's population is forecasted to reach 752,537 persons (excludes Census undercount), an increase of 196,830 persons from 2017-2031.

The 2031 target population and employment figures for the BPE are consistent with Section 3 of the 2006 Growth Plan for the Greater Golden Horseshoe (Places to Grow) and ROPA 39. Local knowledge regarding development activity and designated vacant urban land supply, as well as Official Plan (OP) policies related to future housing mix, are reflected in the forecasts, with extensive input from the local municipalities.

It is noted that based on a detailed review of the 2016 population and housing base for Halton Region, the Region is approximately 19,000 persons and 9,920 households below the 2016 estimates as per the BPE, 2011. This residential shortfall has been adjusted for accordingly in the DC calculation (Table A-7a to Table A-7c).

**Figure A-1** graphs the anticipated annual increase in the number of occupied dwelling units over the forecast period, with additional details provided in Table A-2 for the 2006-2015 period. Historical annual housing activity is based on Canadian Mortgage and Housing Corporation (CMHC) completion data, while the forecast of occupied dwelling units by type from 2015-2031 is based on the BPE, 2011. Historically, housing activity in Halton averaged 3,166 residential completions per year during the 2011-2015 period, which is slightly below the average residential housing activity experienced during the 2006-2010 period (i.e. 4,241 residential completions/year). In accordance with the BPE, 2011, the level of housing construction activity during the short-term forecast period (i.e. 2017-2021) is forecasted to average approximately 5,832 units annually, which is well above historical trends from 2006-2015. The relatively high level of forecast housing activity during the 2017-2021 period is largely a result of significant Greenfield development in North Oakville and Milton anticipated over this time period. Growth within Halton Region is projected to decline slightly thereafter to approximately 5,559 units/year from 2022-2031 and 5,221 units/year from 2027-2031. This gradual decline corresponds with the buildout of large portions of the Region's currently designated residential lands, both Greenfield and Built Boundary areas.

With respect to housing activity by structure type, single detached and semi-detached units comprised 54% of total permits issued over the past 10 years (2006-2015). The remaining 46% of the completions issued over this time period were in the form of medium-density (31%) and high-density (15%) housing. The percentage of low-density and medium-density housing units over the forecast period (2017-2031) is projected to decline to 45% and 20%, respectively, while high-density units are projected to increase significantly to 35%.

**Tables A-3a and A-3b** sets out the persons per unit (PPU) data as per the 2011 Census by type and age of unit in Halton. In comparison to the 2012 DC Background Study, housing occupancies in new low and medium-density housing units are forecasted to increase. In contrast, average housing occupancies in new apartment units are forecasted to decline. Over the 2017-2031 forecast period, the average PPU for new low-density housing units is 3.52. For medium- and high-density housing units, the forecast average PPU are 2.66 and 1.58, respectively. The analysis in Tables A-3a and A-3b reveal that low- and medium-density dwelling occupancies for new units in Halton will gradually decline over the 15-year forecast period.

**Table A-4** summarizes the PPU assumptions established for calculating DC rates for different types of dwelling units, based on Census data over the 2017-2031 period. Also presented is the PPU assumption used in calculating the general services DCs, which utilized a 10-year planning period. For multiple dwellings, average PPU levels are further summarized between units with less than and equal to or more than 3 bedrooms. For apartment dwellings, average PPU levels are summarized between units with less than and equal to or greater than 2 bedrooms.

**Table A-5** summarizes the Regional population forecast from 2017-2026. PPU assumptions used for the 10-year gross population forecast are based on Table A-4. The net population increase over the 10-year period is based on the BPE, 2011.

**Table A-6** summarizes the Regional population forecast from 2017-2031. PPU assumptions used for the 15-year gross population forecast are based on Table A-4. The net population increase over the 15-year period is based on the BPE, 2011.

**Tables A-6a through A-6c** summarizes the 15-year gross/net population forecast for the Halton's Built Boundary (in accordance with ROPA 38), Greenfield and Rural Areas.

**Table A-7a** provides the annual growth summary for the 10-year growth period from 2017-2026. This forecast is used for the DC calculation as it relates to general services. Adjustments have

been made for the difference between the 2017 beginning balance based on BPE and actual residential development. Further, adjustments have been made to include institutional units due to institutional population related growth (e.g. long term care development) being accounted for in residential growth.

**Table A-7b** provides the annual growth summary for the 15-year growth period from 2017-2031. This forecast is used for the DC calculation as it relates to roads and police services. Adjustments for actual growth and institutional units have been made as noted above. Due to timing of payment for road services (at subdivision), a unit deduction has also been made to account for the units that have already paid DCs but have not yet occupied.

**Table A-7c** provides the annual growth summary for the 15-year growth period from 2017-2031. This forecast is used for the DC calculation as it relates to water and wastewater services. In Table A-7c, the annual growth forecast has been allocated between Greenfield and Built Boundary areas. Rural areas have been deducted from the growth forecast as they are not serviceable by water and wastewater. Adjustments for institutional units have been made as noted above. Water/wastewater services do not require a unit deduction for actual growth as the shortfall is related to units that have already paid DCs through agreement.

**Table A-1**  
**Halton Region**  
**Residential Growth Forecast Summary**

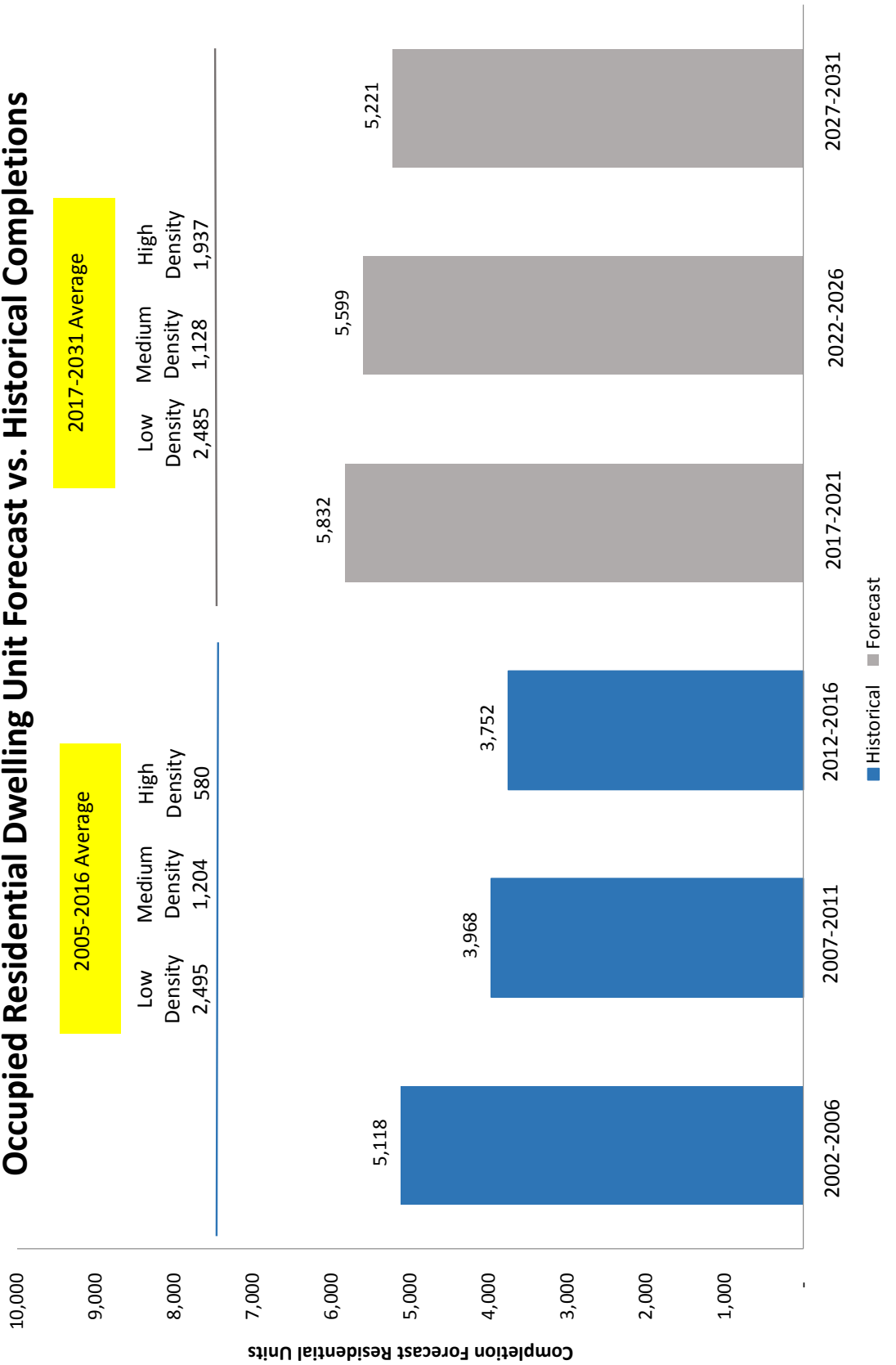
Year	Population <sup>1</sup>	Institutional Population	Population Net of Institutional	Dwelling Units			
				Singles & Semis (Low-Density)	Multiples (Medium-Density)	Apartments (High-Density)	Total
2016	555,707	7,653	548,054	129,635	36,783	38,876	205,293
2021	624,094	8,618	615,476	142,759	42,255	49,440	234,455
2026	688,895	9,531	679,363	153,615	48,655	60,180	262,449
2031	752,537	10,436	742,101	166,913	53,708	67,935	288,556
<b>2017-2026</b>	<b>133,188</b>	<b>1,878</b>	<b>131,309</b>	<b>23,980</b>	<b>11,872</b>	<b>21,304</b>	<b>57,156</b>
<b>2017-2031</b>	<b>196,830</b>	<b>2,783</b>	<b>194,047</b>	<b>37,278</b>	<b>16,925</b>	<b>29,060</b>	<b>83,263</b>
<b>% Housing Mix</b>							
<b>2017-2026</b>				<b>42%</b>	<b>21%</b>	<b>37%</b>	<b>100%</b>
<b>2017-2031</b>				<b>45%</b>	<b>20%</b>	<b>35%</b>	<b>100%</b>

Source: Population and housing forecasts explicitly based on June 2011 Halton Best Planning Estimates.

1. Population figure excludes net Census undercount.



**Figure A-1  
Halton Region  
Occupied Residential Dwelling Unit Forecast vs. Historical Completions**



**Table A-2**  
**Halton Region**  
**Historical Residential Housing Completions**  
**Years 2006-2015**

Year	Residential Completions			
	Low Density (Singles & Semis)	Medium Density (Townhouses)	High Density (Apartments)	Total
2006	2,681	1,405	177	4,263
2007	2,540	1,434	375	4,349
2008	3,480	1,875	0	5,355
2009	2,259	1,030	516	3,805
2010	2,138	736	559	3,433
Sub-total	13,098	6,480	1,627	21,205
<b>Average (2006-2010)</b>	<b>2,620</b>	<b>1,296</b>	<b>325</b>	<b>4,241</b>
% Breakdown	61.8%	30.6%	7.7%	100.0%
2011	1,389	1,018	491	2,898
2012	1,910	957	1,021	3,888
2013	1,315	1,298	599	3,212
2014	1,320	1,030	1,269	3,619
2015	1,079	533	599	2,211
Sub-total	7,013	4,836	3,979	15,828
<b>Average (2011-2015)</b>	<b>1,403</b>	<b>967</b>	<b>796</b>	<b>3,166</b>
% Breakdown	44.3%	30.6%	25.1%	100.0%
2006-2015 Total	20,111	11,316	5,606	37,033
<b>Average</b>	<b>2,011</b>	<b>1,132</b>	<b>561</b>	<b>3,703</b>
% Breakdown	54.3%	30.6%	15.1%	100.0%

Source:

Completions- Canada Mortgage and Housing Corporation (CMHC) Ontario Housing Market Report.

**Table A-3a**  
**Halton Region**  
**Summary of 10-Year Housing Occupancy Rates by Dwelling Type in New Units (PPU), 2017-2026**

Municipality	Forecast Period	Low Density			Medium Density			High Density			Total		
		Units	PPU	Population	Units	PPU	Population	Units	PPU	Population	Units	PPU	Population
TOTAL HALTON REGION	2017-2021	13,125	3.517	46,162	5,472	2.576	14,096	10,564	1.574	16,632	29,162	2.637	76,891
	2022-2026	10,856	3.474	37,708	6,400	2.452	15,689	10,739	1.455	15,629	27,995	2.466	69,026
	<b>Total 10-year</b>	<b>23,980</b>	<b>3.497</b>	<b>83,870</b>	<b>11,872</b>	<b>2.509</b>	<b>29,786</b>	<b>21,304</b>	<b>1.514</b>	<b>32,261</b>	<b>57,156</b>	<b>2.553</b>	<b>145,917</b>

Source: Halton Region Best Planning Estimates, June 2011. Forecast housing occupancy rates (persons per unit) by housing type are derived by Watson & Associates based on 2011 Statistics Canada custom tabulation.

**Table A-3b**  
**Halton Region**  
**Summary of Long-term Housing Occupancy Rates by Dwelling Type in New Units (PPU), 2017-2031**

Municipality	Forecast Period	Low Density			Medium Density			High Density			Total		
		Units	PPU	Population	Units	PPU	Population	Units	PPU	Population	Units	PPU	Population
TOTAL HALTON REGION	2017-2021	13,125	3.552	46,619	5,472	2.949	16,137	10,564	1.672	17,665	29,162	2.758	80,421
	2022-2026	10,856	3.506	38,061	6,400	2.588	16,565	10,739	1.569	16,849	27,995	2.693	71,474
	2027-2031	13,298	3.501	46,551	5,053	2.451	12,386	7,756	1.466	11,367	26,107	2.693	70,304
	<b>Total 15-year</b>	<b>37,278</b>	<b>3.520</b>	<b>131,230</b>	<b>16,925</b>	<b>2.664</b>	<b>45,088</b>	<b>29,060</b>	<b>1.579</b>	<b>45,881</b>	<b>83,263</b>	<b>2.669</b>	<b>222,200</b>

Source: Halton Region Best Planning Estimates, June 2011. Forecast housing occupancy rates (persons per unit) by housing type are derived by Watson & Associates based on 2011 Statistics Canada custom tabulation.

**Table A-4**  
**Halton Region 2017 Development Charge Study**  
**Housing Occupancy Rates By Dwelling Type in New Units (PPU) <sup>1</sup>**

<u>Residential Unit Category</u>	<u>Region-Wide</u>		<u>Area Specific</u>	
	<b>2017-2026 (General Services)</b>	<b>2017-2031 (Hard Services)<sup>2</sup></b>	<b>2017-2031 (Built Boundary)</b>	<b>2017-2031 (Greenfield)</b>
Single Family and Semi-Detached	3.497	3.520	3.516	3.520
Multiples <sup>3</sup>				
Multiples- Less Than 3 Bedrooms	1.952	2.044	2.027	2.054
Multiples - 3 or More Bedrooms	2.637	2.813	2.789	2.825
Apartments				
Apartments - Less than 2 Bedrooms	1.278	1.329	1.328	1.333
Apartments - 2 or More Bedrooms	1.673	1.725	1.724	1.730
Special Care or Special Need	1.100	1.100	1.100	1.100

1. Forecast occupancy rates (Persons Per Unit) by unit category and number of bedrooms are based on 2011 Statistics Canada custom tabulation provided by dwelling type and dwelling age.

2. Hard services refer to roads and police.

3. Multiples are defined as townhomes and apartments in duplexes.

**Table A-5  
Halton Region  
10 Year Growth Forecast  
2017-2026**

		Population (Net of Institutional)
Population to 2016 (1)		548,054
Occupants of New Housing Units, 2017 to 2026	<i>Units</i>	57,156
	<i>multiplied by persons per unit (2)</i>	2.553
	<i>gross population increase</i>	145,917
Decline in Housing Unit Occupancy, 2017 to 2026	<i>Units</i>	205,293
	<i>multiplied by ppu decline rate (3)</i>	-0.071
	<i>total decline in population</i>	-14,608
Population Estimate to 2026 (4)		679,363
<i>Net Population Increase, From 2017 To 2026</i>		131,309

(1) Population and housing forecasts explicitly based on June 2011 Halton Best Planning Estimates.

2016 population estimate is net of institutional, which is estimated at 7,653

(2) Average number of persons per unit (ppu.) is assumed to be:

Residential Unit Category	Persons Per Unit	% Distribution of Estimated Units	Weighted Persons Per Unit Average
<i>Single family &amp; semi-detached</i>	3.497	42%	1.467
<i>Multiples except apartments</i>	2.509	21%	0.521
<i>Apartments</i>	1.514	37%	0.564
<b>Total</b>		100%	2.553

Source: Unit mix derived from Halton Region Best Planning Estimates, 2011. Forecast persons per unit by residential unit category based on 2011 Statistics Canada custom tabulation provided by dwelling type and dwelling age.

(3) Decline occurs due to aging of the population and family life cycle changes, lower fertility rates and changing economic conditions.

(4) 2026 Population derived from Halton Region Best Planning Estimates, 2011. Note: 2026 population estimate is net of institutional population, which is estimated at 9,531

**Table A-6  
Halton Region  
Long Term Growth Forecast  
2017-2031**

		Population (Net of Institutional)
Population to 2016 (1)		548,054
Occupants of New Housing Units, 2017 to 2031	<i>Units</i>	83,263
	<i>multiplied by persons per unit (2)</i>	2.669
	<i>gross population increase</i>	222,200
		222,200
Decline in Housing Unit Occupancy, 2017 to 2031	<i>Units</i>	205,293
	<i>multiplied by ppu decline rate (3)</i>	-0.137
	<i>total decline in population</i>	-28,153
		-28,153
Population Estimate to 2031 (4)		742,101
<i>Net Population Increase, From 2017 To 2031</i>		194,047

(1) Population and housing forecasts explicitly based on June 2011 Halton Best Planning Estimates. 2016 population estimate is net of institutional, which is estimated at 7,653

(2) Average number of persons per unit (ppu.) is assumed to be:

Residential Unit Category	Persons Per Unit	% Distribution of Estimated Units	Weighted Persons Per Unit Average
<i>Single family &amp; semi-detached</i>	3.520	45%	1.576
<i>Multiples except apartments</i>	2.664	20%	0.542
<i>Apartments</i>	1.579	35%	0.551
<b>Total</b>		100%	2.669

Source: Unit mix derived from Halton Region Best Planning Estimates, 2011. Forecast persons per unit by residential unit category based on 2011 Statistics Canada custom tabulation provided by dwelling type and dwelling age.

(3) Decline occurs due to aging of the population and family life cycle changes, lower fertility rates and changing economic conditions.

(4) 2031 Population derived from Halton Region Best Planning Estimates, 2011. Note: 2031 population estimate is net of institutional population, which is estimated at 10,436

**Table A-6a  
Halton Region (Built Boundary)  
Long Term Growth Forecast  
2017-2031**

		Population (Net of Institutional)
Population to 2016 (1)		421,402
Occupants of New Housing Units, 2017 to 2031	<i>Units</i>	35,382
	<i>multiplied by persons per unit (2)</i>	2.027
	<i>gross population increase</i>	71,714
Decline in Housing Unit Occupancy, 2017 to 2031	<i>Units</i>	163,574
	<i>multiplied by ppu decline rate (3)</i>	-0.059
	<i>total decline in population</i>	-9,683
Population Estimate to 2031 (4)		483,433
<i>Net Population Increase, From 2017 To 2031</i>		62,031

(1) Population and housing forecasts explicitly based on June 2011 Halton Best Planning Estimates. 2016 population estimate is net of institutional, which is estimated at 6,142

(2) Average number of persons per unit (ppu.) is assumed to be:

Residential Unit Category	Persons Per Unit	% Distribution of Estimated Units	Weighted Persons Per Unit Average
<i>Single family &amp; semi-detached</i>	3.516	14%	0.492
<i>Multiples except apartments</i>	2.642	17%	0.441
<i>Apartments</i>	1.578	69%	1.094
<b>Total</b>		100%	2.027

Source: Unit mix derived from Halton Region Best Planning Estimates, 2011. Forecast persons per unit by residential unit category based on 2011 Statistics Canada custom tabulation provided by dwelling type and dwelling age.

(3) Decline occurs due to aging of the population and family life cycle changes, lower fertility rates and changing economic conditions.

(4) 2031 Population derived from Halton Region Best Planning Estimates, 2011. Note: 2031 population estimate is net of institutional population, which is estimated at 7,529

**Table A-6b  
Halton Region (Greenfield)  
Long Term Growth Forecast  
2017-2031**

		Population (Net of Institutional)
Population to 2016 (1)		104,200
Occupants of New Housing Units, 2017 to 2031	<i>Units</i>	47,610
	<i>multiplied by persons per unit (2)</i>	3.140
		149,504
Decline in Housing Unit Occupancy, 2017 to 2031	<i>Units</i>	33,944
	<i>multiplied by ppu decline rate (3)</i>	-0.492
		-16,699
Population Estimate to 2031 (4)		237,005
<i>Net Population Increase, From 2017 To 2031</i>		132,805

(1) Population and housing forecasts explicitly based on June 2011 Halton Best Planning Estimates. 2016 population estimate is net of institutional, which is estimated at 1,139

(2) Average number of persons per unit (ppu.) is assumed to be:

Residential Unit Category	Persons Per Unit	% Distribution of Estimated Units	Weighted Persons Per Unit Average
<i>Single family &amp; semi-detached</i>	3.520	67%	2.370
<i>Multiples except apartments</i>	2.676	23%	0.619
<i>Apartments</i>	1.583	10%	0.151
<b>Total</b>		100%	3.140

Source: Unit mix derived from Halton Region Best Planning Estimates, 2011. Forecast persons per unit by residential unit category based on 2011 Statistics Canada custom tabulation provided by dwelling type and dwelling age.

(3) Decline occurs due to aging of the population and family life cycle changes, lower fertility rates and changing economic conditions.

(4) 2031 Population derived from Halton Region Best Planning Estimates, 2011. Note: 2031 population estimate is net of institutional population, which is estimated at 2,526



**Table A-6c  
Halton Region (Rural)  
Long Term Growth Forecast  
2017-2031**

		Population (Net of Institutional)
Population to 2016 (1)		22,452
Occupants of New Housing Units, 2017 to 2031	<i>Units</i>	272
	<i>multiplied by persons per unit (2)</i>	3,609
	<i>gross population increase</i>	982
Decline in Housing Unit Occupancy, 2017 to 2031	<i>Units</i>	7,776
	<i>multiplied by ppu decline rate (3)</i>	-0.228
	<i>total decline in population</i>	-1,771
Population Estimate to 2031 (4)		21,662
<i>Net Population Increase, From 2017 To 2031</i>		-790

(1) Population and housing forecasts explicitly based on June 2011 Halton Best Planning Estimates. 2016 population estimate is net of institutional, which is estimated at 372

(2) Average number of persons per unit (ppu.) is assumed to be:

Residential Unit Category	Persons Per Unit	% Distribution of Estimated Units	Weighted Persons Per Unit Average
<i>Single family &amp; semi-detached</i>	3.577	102%	3.635
<i>Multiples except apartments</i>	2.642	0%	0.000
<i>Apartments</i>	1.567	-2%	-0.025
<b>Total</b>		100%	3.609

Source: Unit mix derived from Halton Region Best Planning Estimates, 2011. Forecast persons per unit by residential unit category based on 2011 Statistics Canada custom tabulation provided by dwelling type and dwelling age.

(3) Decline occurs due to aging of the population and family life cycle changes, lower fertility rates and changing economic conditions.

(4) 2031 Population derived from Halton Region Best Planning Estimates, 2011. Note: 2031 population estimate is net of institutional population, which is estimated at 381

**Table A-7a**  
**Halton Region Anticipated Annual Residential Growth for the Period 2017 to 2026**  
**(for General Services Development Charge Calculation)**

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Total 17-26
<b>Region Wide</b>											
<b>BPE:</b>											
Incremental Total New Units per BPE	5,832	5,832	5,832	5,832	5,832	5,599	5,599	5,599	5,599	5,599	57,156
Adjusted for SDE Units (3.497 PPU)	4,372	4,372	4,372	4,372	4,372	3,974	3,974	3,974	3,974	3,974	41,733
Add Unit Shortfall <sup>1</sup>	1,845	1,845	1,845	1,845	56	53	53	53	53	53	7,380
Add Institutional Population Unit	55	55	55	55	56	53	53	53	53	53	538
Adjusted for SDE Units 3.497 PPU)	6,272	6,272	6,272	6,272	4,428	4,027	4,027	4,027	4,027	4,027	49,651

1) Represents shortfall in units against BPE's

Table A-7b  
Halton Region Anticipated Annual Residential Development for the Period 2017 to 2031

		(For Roads Development Charge Calculation)															
		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total 17-31
<b>Adjustments</b>																	
<b>Dwelling Units per BPE:</b>																	
Urban Units		5,745	5,745	5,745	5,745	5,745	5,904	5,582	5,582	5,582	5,582	5,207	5,207	5,207	5,207	5,207	82,991
Rural Units		87	87	87	87	87	(305)	17	17	17	17	15	15	15	15	15	272
Incremental Total New Units per BPE		5,832	5,832	5,832	5,832	5,832	4,077	4,077	4,077	4,077	4,077	4,017	4,017	4,017	4,017	4,017	83,263
Adjusted for SDE Units (3,520 PPU)		4,528	4,528	4,528	4,528	4,528	4,077	4,077	4,077	4,077	4,077	4,017	4,017	4,017	4,017	4,017	63,111
Add Unit Shortfall <sup>1</sup>		1,845	1,845	1,845	1,845	-	-	-	-	-	-	-	-	-	-	-	7,380
Less Prepaid Units <sup>2</sup>		(478)	(478)	(478)	(478)	55	52	52	52	52	52	52	52	52	52	52	(1,912)
Add Institutional Population Unit		54	54	54	54	55	52	52	52	52	52	52	52	52	52	52	791
Adjusted for SDE Units (3,520 PPU)		5,950	5,950	5,950	5,950	4,583	4,129	4,129	4,129	4,129	4,129	4,068	4,068	4,068	4,068	4,068	69,370

		(For Police Development Charge Calculation)															
		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total 17-31
<b>Adjustments</b>																	
<b>Dwelling Units per BPE:</b>																	
Urban Units		5,745	5,745	5,745	5,745	5,745	5,904	5,582	5,582	5,582	5,582	5,207	5,207	5,207	5,207	5,207	82,991
Rural Units		87	87	87	87	87	(305)	17	17	17	17	15	15	15	15	15	272
Incremental Total New Units per BPE		5,832	5,832	5,832	5,832	5,832	4,077	4,077	4,077	4,077	4,077	4,017	4,017	4,017	4,017	4,017	83,263
Adjusted for SDE Units (3,520 PPU)		4,528	4,528	4,528	4,528	4,528	4,077	4,077	4,077	4,077	4,077	4,017	4,017	4,017	4,017	4,017	63,111
Add Unit Shortfall <sup>1</sup>		1,845	1,845	1,845	1,845	-	-	-	-	-	-	-	-	-	-	-	7,380
Add Institutional Population Unit		54	54	54	54	55	52	52	52	52	52	52	52	52	52	52	791
Adjusted for SDE Units (3,520 PPU)		6,428	6,428	6,428	6,428	4,583	4,129	4,129	4,129	4,129	4,129	4,068	4,068	4,068	4,068	4,068	71,282

1) Represents shortfall in units against BPE's  
2) Represents units that pre-paid roads development charges under Subdivision Agreement.

Table A-7c  
Halton Region Anticipated Annual Residential Development for the Period 2017 to 2031  
(for Water & Wastewater Development Charge Calculation)

Adjustments	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total 17-31
<b>GREENFIELD AREA</b>																
<b>DC Calculation</b>																
Incremental Total New Units per BPE	3,317	3,317	3,317	3,317	3,317	3,590	3,268	3,268	3,268	3,268	2,872	2,872	2,872	2,872	2,872	47,610
Adjusted for SDE (3.520)	3,052	3,052	3,052	3,052	3,052	3,114	2,796	2,796	2,796	2,796	2,581	2,581	2,581	2,581	2,581	42,468
Add Institutional Population Unit	29	29	29	29	29	30	26	26	26	26	24	24	24	24	24	394
<b>Net Greenfield Area</b>	<b>3,081</b>	<b>3,081</b>	<b>3,081</b>	<b>3,081</b>	<b>3,082</b>	<b>3,144</b>	<b>2,822</b>	<b>2,822</b>	<b>2,822</b>	<b>2,822</b>	<b>2,605</b>	<b>2,605</b>	<b>2,605</b>	<b>2,605</b>	<b>2,605</b>	<b>42,862</b>
<b>BUILT BOUNDARY</b>																
<b>DC Calculation:</b>																
Incremental Total New Units per BPE	2,428	2,428	2,428	2,428	2,428	2,314	2,314	2,314	2,314	2,314	2,334	2,334	2,334	2,334	2,334	35,382
Adjusted for SDE (3.516)	1,430	1,430	1,430	1,430	1,430	1,249	1,249	1,249	1,249	1,249	1,400	1,400	1,400	1,400	1,400	20,395
Add Institutional Population Unit	25	25	25	25	25	26	26	26	26	26	28	28	28	28	28	395
<b>Net Built Boundary</b>	<b>1,455</b>	<b>1,455</b>	<b>1,455</b>	<b>1,455</b>	<b>1,455</b>	<b>1,275</b>	<b>1,275</b>	<b>1,275</b>	<b>1,275</b>	<b>1,275</b>	<b>1,428</b>	<b>1,428</b>	<b>1,428</b>	<b>1,428</b>	<b>1,428</b>	<b>20,790</b>
<b>TOTAL REGION</b>	<b>4,536</b>	<b>4,536</b>	<b>4,536</b>	<b>4,536</b>	<b>4,537</b>	<b>4,419</b>	<b>4,097</b>	<b>4,097</b>	<b>4,097</b>	<b>4,097</b>	<b>4,032</b>	<b>4,032</b>	<b>4,032</b>	<b>4,032</b>	<b>4,032</b>	<b>63,652</b>

**APPENDIX A – PART 2**  
**NON-RESIDENTIAL GROWTH FORECASTS**



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## 2. NON-RESIDENTIAL GROWTH FORECASTS

**Table A-8** summarizes the BPE, 2011 employment forecast by major employment sector from 2017-2031 in 5-year increments. Major employment sectors include industrial, commercial/population related, and institutional employment. Work at home (WAH) employment and no fixed place of work (NFPOW) employment have also been separately identified, but excluded from the non-residential growth forecast when calculating the non-residential DC. Statistics Canada defines no fixed place of work (NFPOW) employees as "persons who do not go from home to the same work place location at the beginning of each shift". Such persons include building and landscape contractors, travelling salespersons, independent truck drivers, etc.

The impact on municipal services from WAH employees has already been included in the population forecast. The need for municipal services related to NFPOW employees has largely been included in the employment forecast by usual place of work (i.e. employment and TFA in the retail and accommodation sectors generated from NFPOW construction employment). Furthermore, since these employees have no fixed work address, they cannot be captured in the non-residential TFA calculation. For these reasons, work-at-home and NFPOW employment has been excluded from the capital needs.

Over the 15-year forecast period, Halton Region's existing employment base is forecasted to increase by approximately 101,500 employees, which represents an annual forecast employment growth rate of 2.0%. The largest share of employment growth within Halton Region is forecasted in the commercial sector, which is anticipated to comprise approximately 34% of total forecasted employment growth from 2017-2031. The industrial sector also represents a large share of forecasted employment growth across Halton Region, comprising approximately 33% of total employment growth over the 15-year employment forecast.

Based on a detailed review of the Halton Region 2016 employment base, it is estimated that the Halton Region employment base is approximately 31,200 employees below the 2016 employment estimate as per the BPE, 2011. This employment shortfall is concentrated in the industrial sector, while the commercial and institutional sectors are estimated to be collectively tracking above the BPE, 2011 employment forecast.

In order to estimate the percentage of industrial employment shortfall which is anticipated to occur in existing versus new industrial space, a review of recent industrial employment trends

within existing industrial building as well as a review of recent industrial vacancy rate trends was undertaken. Based on this review, it is estimated that 5% of the total 2016 industrial employment shortfall will be accommodated in existing industrial buildings over the 2017-2031 forecast period. The remaining 95% of the 2016 industrial employment shortfall is forecasted to be accommodated in new industrial space. With respect to the commercial and institutional sectors, 100% of the employment shortfall/surplus has been applied to new commercial/institutional space. This non-residential shortfall has been adjusted for accordingly in the DC calculation (Table A-11a to Table A-11c).

**Figure A-2** graphs the anticipated annual increase in the amount of TFA over the forecast period. Historical annual non-residential building activity (2005-2015) is based on both Statistics Canada non-residential building permit construction value data and Halton Region non-residential building permit data. Forecast TFA by sector is a derived total based on the BPE, 2011. The incremental TFA increase for the Halton Region is an additional 72.2 million sq.ft. over the 15-year period. Industrial construction is expected to comprise approximately 69% of the added TFA, while commercial and institutional are anticipated to comprise 19% and 12%, respectively.

**Table A-9** summarizes both employment growth and TFA for Halton Region annually from 2017-2031. TFA estimates are calculated in square feet, based on the following Region-wide employee density assumptions:

- 1,470 sq.ft. per employee for industrial;
- 400 sq.ft. per employee for commercial; and
- 700 sq.ft. per employee for institutional employment.

Forecast assumptions regarding average sq.ft. per employee are based on a detailed review of the 2010-2015 Halton Region Employment Surveys. The employee density assumptions above reflect a "bottom-up" approach to the forecast. For example, the average sq.ft. per employee for industrial development in the Built Boundary (800 to 1,750) is lower than the Greenfield and Rural Areas (900 to 2,000). In part, this accounts for the steady forecast of Greenfield construction along the Highway 401 corridor in the warehousing and distribution sector. Typically, the average number of sq.ft. per employee within the warehousing and distribution sector is much higher than the industrial average. The result of using this "bottom-up" approach



is that the average number of sq.ft. per employee varies from year to year depending on the weighting of employment growth by local municipality.

As previously discussed, over the 2017-2031 forecast period, a total of 72.2 million sq.ft. of non-residential TFA is forecasted to be added to Halton Region accordance with the BPE, 2011 employment forecast and the above-referenced floor space per worker (FSW) assumptions by major sector. In addition, to the non-residential TFA forecast derived from the 2017-2031 BPE forecast, an additional 45.5 million sq.ft. of non-residential TFA is forecasted associated with the 2016 employment shortfall previously discussed under Table A-8. Lastly, 1.1 million sq.ft. of TFA has been removed from the institutional employment forecast to account for institutional space related to special care facilities, which have already been captured in the population forecast.

**Tables A-9a to A-9c** provides similar information for Halton Region by Greenfield, Built Boundary and Rural Area.

**Table A-10** provides the employment sectors in the BPE forecast revised to the following sectors: retail; and non-retail (office and other employment). Retail and office employment have been disaggregated from the commercial/population-related total based on 2011 Census allocations of 72% retail and 28% office. It is reasonable to assume that over the forecast period a greater percentage of commercial development will shift towards the office sector due to increased market demand for office development, largely in Oakville and Burlington. Therefore, a gradual shift of commercial employees has been allocated to the office sector over the growth forecast period (i.e. retail employees are 71% of the commercial total in 2016, and decrease to 68% by 2031; based on the 2017-2031 increment, 59% is allocated to retail, and 41% is allocated to office). Based on the revised employment sectors, the largest share of employment growth within Halton Region is forecasted in the other employment sectors (i.e. industrial and institutional sectors), which are anticipated to comprise approximately 59% of total forecast employment growth from 2017-2031.

**Table A-10a** summarizes both employment growth and TFA for Halton Region annually from 2017-2031 based on the revised employment sectors (i.e. retail vs. non-retail).

- Retail - As per Table A-9, the average sq.ft. per employee for commercial (retail and office) is approximately 460 sq.ft. per employee. This assumption is based on a detailed review of the 2015 Halton Region Employment Survey.

- Non-retail - The average sq.ft. per employee for non-retail (i.e. office, industrial, and institutional) is approximately 1,030 sq.ft. per employee, which is the weighted average for all non-retail employment by usual place of work (i.e. industrial, office and institutional development).

Retail construction is expected to comprise approximately 12% of the added TFA (72.2 million), while non-retail is anticipated to comprise 88%.

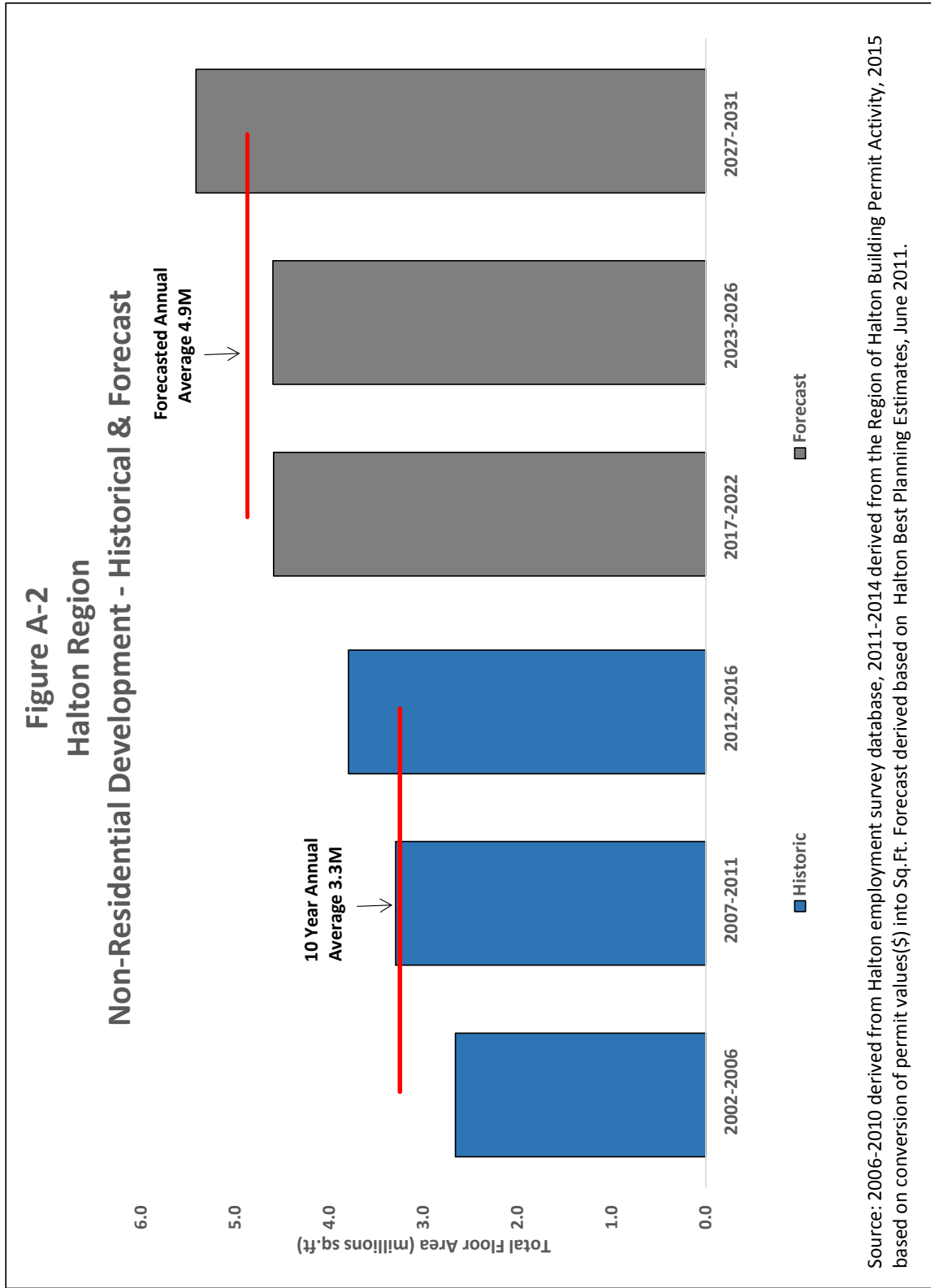
**Tables A-10b through A-10d** provides similar information for Halton Region by Greenfield, Built Boundary and Rural Area.

**Tables A-11a through A-11c** provides total non-residential TFA used for DC Calculations. Adjustments have been made for the difference between the 2017 beginning balance based on BPE and actual non-residential development. Further, adjustments have been made to the institutional TFA forecast due to special care/special needs (e.g. long term care development) being accounted for in residential growth.

**Table A-8**  
**Summary of Employment Growth Forecast by Major Sector**

Year	Employment					
	Commercial	Industrial	Institutional	Work at Home	No Fixed Place of Work	Total Employment
2016	103,667	101,282	29,566	25,474	28,504	288,493
2021	119,285	111,832	34,735	29,206	32,625	327,683
2026	126,611	121,511	39,853	31,945	35,789	355,709
2031	137,976	135,065	42,241	35,429	39,289	390,000
2017-2026	22,944	20,229	10,288	6,471	7,286	67,217
2017-2031	34,310	33,782	12,675	9,955	10,785	101,507

Source: 2016-2031 employment derived explicitly from the Halton Region Best Planning Estimates, 2011  
Adjustments by employment sector have been made to account for Work at Home and No Fixed Place of Work  
Employment.



Source: 2006-2010 derived from Halton employment survey database, 2011-2014 derived from the Region of Halton Building Permit Activity, 2015 based on conversion of permit values(\$\$) into Sq.Ft. Forecast derived based on Halton Best Planning Estimates, June 2011.

**Table A-9  
Halton Region - Employment/Total Floor Area Forecast, 2017-2031**

Cumulative Year	Employment					Total Employment	TFA Estimate (Sq.Ft.)			
	Commercial	Industrial	Institutional	Work at Home	No Fixed Place of Work		Commercial	Industrial	Institutional	Total Floor Area (TFA)
2016	103,667	101,282	29,566	25,474	28,504	<b>288,493</b>	42,179,934	103,957,343	14,049,925	<b>160,187,202</b>
2017	106,790	103,392	30,599	26,220	29,328	<b>296,331</b>	43,431,805	106,721,313	14,709,589	<b>164,862,708</b>
2018	109,914	105,502	31,633	26,967	30,152	<b>304,169</b>	44,683,677	109,485,283	15,369,254	<b>169,538,213</b>
2019	113,038	107,612	32,667	27,713	30,977	<b>312,007</b>	45,935,548	112,249,253	16,028,918	<b>174,213,719</b>
2020	116,162	109,722	33,701	28,459	31,801	<b>319,845</b>	47,187,419	115,013,223	16,688,582	<b>178,889,224</b>
2021	119,285	111,832	34,735	29,206	32,625	<b>327,683</b>	48,439,290	117,777,193	17,348,246	<b>183,564,730</b>
2022	120,606	113,763	35,743	29,757	33,419	<b>333,288</b>	48,959,064	120,659,390	18,121,193	<b>187,739,647</b>
2023	122,107	115,700	36,771	30,304	34,012	<b>338,894</b>	49,570,671	123,644,955	18,920,228	<b>192,135,854</b>
2024	123,608	117,637	37,798	30,851	34,604	<b>344,499</b>	50,182,277	126,630,520	19,719,263	<b>196,532,061</b>
2025	125,110	119,574	38,826	31,398	35,197	<b>350,104</b>	50,793,884	129,616,085	20,518,299	<b>200,928,268</b>
2026	126,611	121,511	39,853	31,945	35,789	<b>355,709</b>	51,405,491	132,601,651	21,317,334	<b>205,324,475</b>
2027	128,884	124,222	40,331	32,642	36,489	<b>362,567</b>	52,316,008	136,793,792	21,631,910	<b>210,741,710</b>
2028	131,157	126,932	40,808	33,339	37,189	<b>369,425</b>	53,226,525	140,985,934	21,946,486	<b>216,158,945</b>
2029	133,430	129,643	41,286	34,035	37,889	<b>376,283</b>	54,137,043	145,178,075	22,261,062	<b>221,576,180</b>
2030	135,703	132,354	41,763	34,732	38,589	<b>383,141</b>	55,047,560	149,370,217	22,575,638	<b>226,993,415</b>
2031	137,976	135,065	42,241	35,429	39,289	<b>390,000</b>	55,958,077	153,562,359	22,890,214	<b>232,410,650</b>
<b>Incremental</b>										
2016-2017	3,124	2,110	1,034	746	824	<b>7,838</b>	1,251,871	2,763,970	659,664	<b>4,675,506</b>
2017-2018	3,124	2,110	1,034	746	824	<b>7,838</b>	1,251,871	2,763,970	659,664	<b>4,675,506</b>
2018-2019	3,124	2,110	1,034	746	824	<b>7,838</b>	1,251,871	2,763,970	659,664	<b>4,675,506</b>
2019-2020	3,124	2,110	1,034	746	824	<b>7,838</b>	1,251,871	2,763,970	659,664	<b>4,675,506</b>
2020-2021	3,124	2,110	1,034	746	824	<b>7,838</b>	1,251,871	2,763,970	659,664	<b>4,675,506</b>
2021-2022	1,321	1,931	1,009	552	794	<b>5,605</b>	519,774	2,882,197	772,947	<b>4,174,917</b>
2022-2023	1,501	1,937	1,028	547	593	<b>5,605</b>	611,607	2,985,565	799,035	<b>4,396,207</b>
2023-2024	1,501	1,937	1,028	547	593	<b>5,605</b>	611,607	2,985,565	799,035	<b>4,396,207</b>
2024-2025	1,501	1,937	1,028	547	593	<b>5,605</b>	611,607	2,985,565	799,035	<b>4,396,207</b>
2025-2026	1,501	1,937	1,028	547	593	<b>5,605</b>	611,607	2,985,565	799,035	<b>4,396,207</b>
2026-2027	2,273	2,711	477	697	700	<b>6,858</b>	910,517	4,192,142	314,576	<b>5,417,235</b>
2027-2028	2,273	2,711	477	697	700	<b>6,858</b>	910,517	4,192,142	314,576	<b>5,417,235</b>
2028-2029	2,273	2,711	477	697	700	<b>6,858</b>	910,517	4,192,142	314,576	<b>5,417,235</b>
2029-2030	2,273	2,711	477	697	700	<b>6,858</b>	910,517	4,192,142	314,576	<b>5,417,235</b>
2030-2031	2,273	2,711	477	697	700	<b>6,858</b>	910,517	4,192,142	314,576	<b>5,417,235</b>
2017-2026	<b>22,944</b>	<b>20,229</b>	<b>10,288</b>	<b>6,471</b>	<b>7,286</b>	<b>67,217</b>	<b>9,225,557</b>	<b>28,644,308</b>	<b>7,267,409</b>	<b>45,137,273</b>
2027-2031	<b>11,366</b>	<b>13,554</b>	<b>2,387</b>	<b>3,484</b>	<b>3,500</b>	<b>34,290</b>	<b>4,552,586</b>	<b>20,960,708</b>	<b>1,572,880</b>	<b>27,086,174</b>
2017-2031	<b>34,310</b>	<b>33,782</b>	<b>12,675</b>	<b>9,955</b>	<b>10,785</b>	<b>101,507</b>	<b>13,778,143</b>	<b>49,605,016</b>	<b>8,840,289</b>	<b>72,223,448</b>

Source: 2016-2031 employment derived explicitly from the Halton Region Best Planning Estimates, 2011  
Adjustments by employment sector have been made to account for Work at Home and No Fixed Place of Work Employment.

**Notes:**

Figures may not add precisely due to rounding.

**Sq.Ft. per Employee Assumptions (2017-2031):**

Commercial	402
Industrial	1,468
Institutional	697

Note: Average sq. ft. per employee varies on annual basis.

**Table A-9a  
Halton Region (Built Boundary) - Employment/Total Floor Area Forecast, 2017-2031**

Cumulative Year	Employment						TFA Estimate (Sq.Ft.)			
	Commercial	Industrial	Institutional	Work at Home	No Fixed Place of Work	Total Employment	Commercial	Industrial	Institutional	Total Floor Area (TFA)
2016	88,149	86,168	23,760	21,252	23,965	<b>243,294</b>	35,259,599	87,416,624	12,002,850	<b>134,679,073</b>
2017	89,759	86,628	24,340	21,591	24,353	<b>246,671</b>	35,903,736	88,127,607	12,363,319	<b>136,394,663</b>
2018	91,370	87,087	24,921	21,930	24,741	<b>250,049</b>	36,547,873	88,838,591	12,723,788	<b>138,110,253</b>
2019	92,980	87,547	25,501	22,270	25,128	<b>253,426</b>	37,192,011	89,549,575	13,084,257	<b>139,825,842</b>
2020	94,590	88,006	26,082	22,609	25,516	<b>256,804</b>	37,836,148	90,260,559	13,444,726	<b>141,541,432</b>
2021	96,201	88,466	26,662	22,949	25,904	<b>260,181</b>	38,480,285	90,971,543	13,805,195	<b>143,257,022</b>
2022	96,617	88,625	26,862	23,046	26,019	<b>261,168</b>	38,646,606	91,169,917	13,938,496	<b>143,755,019</b>
2023	97,032	88,784	27,062	23,143	26,134	<b>262,155</b>	38,812,927	91,368,291	14,071,798	<b>144,253,016</b>
2024	97,448	88,942	27,262	23,240	26,250	<b>263,142</b>	38,979,249	91,566,665	14,205,100	<b>144,751,013</b>
2025	97,864	89,101	27,462	23,338	26,365	<b>264,129</b>	39,145,570	91,765,039	14,338,401	<b>145,249,010</b>
2026	98,280	89,260	27,661	23,435	26,480	<b>265,116</b>	39,311,891	91,963,412	14,471,703	<b>145,747,007</b>
2027	98,862	89,871	27,854	23,603	26,662	<b>266,851</b>	39,544,984	92,761,278	14,570,328	<b>146,876,589</b>
2028	99,445	90,481	28,046	23,770	26,844	<b>268,586</b>	39,778,076	93,559,143	14,668,952	<b>148,006,172</b>
2029	100,028	91,092	28,238	23,938	27,025	<b>270,321</b>	40,011,169	94,357,008	14,767,577	<b>149,135,754</b>
2030	100,611	91,702	28,430	24,106	27,207	<b>272,056</b>	40,244,262	95,154,873	14,866,201	<b>150,265,336</b>
2031	101,193	92,313	28,622	24,274	27,389	<b>273,791</b>	40,477,355	95,952,738	14,964,826	<b>151,394,919</b>
<b>Incremental</b>										
2016-2017	1,610	459	580	339	388	<b>3,377</b>	644,137	710,984	360,469	<b>1,715,590</b>
2017-2018	1,610	459	580	339	388	<b>3,377</b>	644,137	710,984	360,469	<b>1,715,590</b>
2018-2019	1,610	459	580	339	388	<b>3,377</b>	644,137	710,984	360,469	<b>1,715,590</b>
2019-2020	1,610	459	580	339	388	<b>3,377</b>	644,137	710,984	360,469	<b>1,715,590</b>
2020-2021	1,610	459	580	339	388	<b>3,377</b>	644,137	710,984	360,469	<b>1,715,590</b>
2021-2022	416	159	200	97	115	<b>987</b>	166,321	198,374	133,302	<b>497,997</b>
2022-2023	416	159	200	97	115	<b>987</b>	166,321	198,374	133,302	<b>497,997</b>
2023-2024	416	159	200	97	115	<b>987</b>	166,321	198,374	133,302	<b>497,997</b>
2024-2025	416	159	200	97	115	<b>987</b>	166,321	198,374	133,302	<b>497,997</b>
2025-2026	416	159	200	97	115	<b>987</b>	166,321	198,374	133,302	<b>497,997</b>
2026-2027	583	610	192	168	182	<b>1,735</b>	233,093	797,865	98,625	<b>1,129,582</b>
2027-2028	583	610	192	168	182	<b>1,735</b>	233,093	797,865	98,625	<b>1,129,582</b>
2028-2029	583	610	192	168	182	<b>1,735</b>	233,093	797,865	98,625	<b>1,129,582</b>
2029-2030	583	610	192	168	182	<b>1,735</b>	233,093	797,865	98,625	<b>1,129,582</b>
2030-2031	583	610	192	168	182	<b>1,735</b>	233,093	797,865	98,625	<b>1,129,582</b>
2017-2026	<b>10,131</b>	<b>3,092</b>	<b>3,901</b>	<b>2,183</b>	<b>2,515</b>	<b>21,822</b>	<b>4,052,292</b>	<b>4,546,789</b>	<b>2,468,853</b>	<b>11,067,934</b>
2027-2031	<b>2,914</b>	<b>3,052</b>	<b>961</b>	<b>839</b>	<b>909</b>	<b>8,674</b>	<b>1,165,463</b>	<b>3,989,326</b>	<b>493,123</b>	<b>5,647,912</b>
2017-2031	<b>13,044</b>	<b>6,144</b>	<b>4,862</b>	<b>3,022</b>	<b>3,424</b>	<b>30,497</b>	<b>5,217,756</b>	<b>8,536,115</b>	<b>2,961,975</b>	<b>16,715,846</b>

Source: 2016-2031 employment derived explicitly from the Halton Region Best Planning Estimates, 2011  
Adjustments by employment sector have been made to account for Work at Home and No Fixed Place of Work Employment.

**Notes:**

Figures may not add precisely due to rounding.

**Sq.Ft. per Employee Assumptions (2017-2031):**

Commercial	400
Industrial	1,389
Institutional	609

Note: Average sq. ft. per employee varies on annual basis.

**Table A-9b  
Halton Region (Greenfield Area) - Employment/Total Floor Area Forecast, 2017-2031**

Cumulative Year	Employment						TFA Estimate (Sq.Ft.)			
	Commercial	Industrial	Institutional	Work at Home	No Fixed Place of Work	Total Employment	Commercial	Industrial	Institutional	Total Floor Area (TFA)
2016	14,626	12,704	5,277	3,804	3,969	40,381	5,850,500	11,721,294	1,413,318	18,985,111
2017	16,137	14,344	5,726	4,209	4,403	44,818	6,454,659	13,752,225	1,706,909	21,913,792
2018	17,647	15,983	6,175	4,614	4,836	49,255	7,058,818	15,783,156	2,000,500	24,842,474
2019	19,157	17,623	6,623	5,019	5,270	53,692	7,662,977	17,814,087	2,294,091	27,771,155
2020	20,668	19,262	7,072	5,424	5,704	58,130	8,267,137	19,845,018	2,587,682	30,699,836
2021	22,178	20,902	7,521	5,829	6,138	62,567	8,871,296	21,875,949	2,881,273	33,628,517
2022	23,094	22,952	8,338	6,313	6,860	67,558	9,237,422	25,117,999	3,531,510	37,886,931
2023	24,165	24,725	9,163	6,760	7,334	72,147	9,666,031	27,893,725	4,193,120	41,752,876
2024	25,237	26,497	9,987	7,207	7,808	76,736	10,094,639	30,669,452	4,854,730	45,618,821
2025	26,308	28,270	10,811	7,654	8,282	81,325	10,523,247	33,445,178	5,516,340	49,484,765
2026	27,380	30,042	11,635	8,100	8,756	85,913	10,951,856	36,220,905	6,177,950	53,350,710
2027	29,068	32,133	11,920	8,628	9,272	91,022	11,627,371	39,597,301	6,392,573	57,617,245
2028	30,757	34,225	12,204	9,156	9,789	96,130	12,302,886	42,973,698	6,607,197	61,883,780
2029	32,446	36,316	12,488	9,684	10,305	101,239	12,978,401	46,350,094	6,821,820	66,150,315
2030	34,135	38,407	12,772	10,212	10,822	106,348	13,653,916	49,726,491	7,036,444	70,416,850
2031	35,824	40,499	13,056	10,740	11,338	111,456	14,329,431	53,102,887	7,251,067	74,683,385
<b>Incremental</b>										
2016-2017	1,510	1,639	449	405	434	4,437	604,159	2,030,931	293,591	2,928,681
2017-2018	1,510	1,639	449	405	434	4,437	604,159	2,030,931	293,591	2,928,681
2018-2019	1,510	1,639	449	405	434	4,437	604,159	2,030,931	293,591	2,928,681
2019-2020	1,510	1,639	449	405	434	4,437	604,159	2,030,931	293,591	2,928,681
2020-2021	1,510	1,639	449	405	434	4,437	604,159	2,030,931	293,591	2,928,681
2021-2022	915	2,051	818	485	723	4,991	366,126	3,242,050	650,237	4,258,414
2022-2023	1,072	1,772	824	447	474	4,589	428,608	2,775,726	661,610	3,865,945
2023-2024	1,072	1,772	824	447	474	4,589	428,608	2,775,726	661,610	3,865,945
2024-2025	1,072	1,772	824	447	474	4,589	428,608	2,775,726	661,610	3,865,945
2025-2026	1,072	1,772	824	447	474	4,589	428,608	2,775,726	661,610	3,865,945
2026-2027	1,689	2,091	284	528	516	5,109	675,515	3,376,396	214,624	4,266,535
2027-2028	1,689	2,091	284	528	516	5,109	675,515	3,376,396	214,624	4,266,535
2028-2029	1,689	2,091	284	528	516	5,109	675,515	3,376,396	214,624	4,266,535
2029-2030	1,689	2,091	284	528	516	5,109	675,515	3,376,396	214,624	4,266,535
2030-2031	1,689	2,091	284	528	516	5,109	675,515	3,376,396	214,624	4,266,535
2017-2026	12,753	17,338	6,358	4,297	4,787	45,533	5,101,356	24,499,611	4,764,632	34,365,599
2027-2031	8,444	10,457	1,421	2,639	2,582	25,543	3,377,575	16,881,982	1,073,118	21,332,675
2017-2031	21,197	27,794	7,779	6,936	7,369	71,075	8,478,931	41,381,593	5,837,749	55,698,274

Source: 2016-2031 employment derived explicitly from the Halton Region Best Planning Estimates, 2011  
Adjustments by employment sector have been made to account for Work at Home and No Fixed Place of Work Employment.

**Notes:**

Figures may not add precisely due to rounding.

**Sq.Ft. per Employee Assumptions (2017-2031):**

Commercial	400
Industrial	1,489
Institutional	750

Note: Average sq. ft. per employee varies on annual basis.

**Table A-9c  
Halton Region (Rural Areas) - Employment/Total Floor Area Forecast, 2017-2031**

Cumulative Year	Employment					Total Employment	TFA Estimate (Sq.Ft.)			
	Commercial	Industrial	Institutional	Work at Home	No Fixed Place of Work		Commercial	Industrial	Institutional	Total Floor Area (TFA)
2016	892	2,410	528	419	570	4,818	1,069,836	4,819,425	633,757	6,523,018
2017	895	2,421	533	421	573	4,841	1,073,411	4,841,481	639,361	6,554,252
2018	897	2,432	537	423	575	4,865	1,076,985	4,863,536	644,966	6,585,487
2019	900	2,443	542	425	578	4,888	1,080,560	4,885,591	650,570	6,616,721
2020	903	2,454	547	427	581	4,912	1,084,135	4,907,647	656,174	6,647,956
2021	906	2,465	551	428	584	4,935	1,087,710	4,929,702	661,779	6,679,190
2022	896	2,186	543	398	540	4,562	1,075,035	4,371,475	651,186	6,097,697
2023	910	2,191	546	401	543	4,591	1,091,713	4,382,939	655,310	6,129,962
2024	924	2,197	550	404	547	4,621	1,108,390	4,394,404	659,434	6,162,228
2025	938	2,203	553	407	550	4,650	1,125,067	4,405,869	663,558	6,194,493
2026	951	2,209	556	410	554	4,680	1,141,744	4,417,333	667,681	6,226,759
2027	953	2,218	558	411	555	4,694	1,143,653	4,435,213	669,009	6,247,876
2028	955	2,227	559	412	557	4,709	1,145,563	4,453,093	670,337	6,268,993
2029	956	2,235	560	413	559	4,723	1,147,472	4,470,973	671,665	6,290,111
2030	958	2,244	561	415	560	4,738	1,149,382	4,488,853	672,993	6,311,228
2031	959	2,253	562	416	562	4,753	1,151,291	4,506,733	674,321	6,332,346
<b>Incremental</b>										
2016-2017	3	11	5	2	3	23	3,575	22,055	5,604	31,235
2017-2018	3	11	5	2	3	23	3,575	22,055	5,604	31,235
2018-2019	3	11	5	2	3	23	3,575	22,055	5,604	31,235
2019-2020	3	11	5	2	3	23	3,575	22,055	5,604	31,235
2020-2021	3	11	5	2	3	23	3,575	22,055	5,604	31,235
2021-2022	(11)	(279)	(9)	(31)	(44)	(373)	(12,674)	(558,227)	(10,592)	(581,494)
2022-2023	14	6	3	3	3	29	16,677	11,465	4,124	32,266
2023-2024	14	6	3	3	3	29	16,677	11,465	4,124	32,266
2024-2025	14	6	3	3	3	29	16,677	11,465	4,124	32,266
2025-2026	14	6	3	3	3	29	16,677	11,465	4,124	32,266
2026-2027	2	9	1	1	2	15	1,909	17,880	1,328	21,117
2027-2028	2	9	1	1	2	15	1,909	17,880	1,328	21,117
2028-2029	2	9	1	1	2	15	1,909	17,880	1,328	21,117
2029-2030	2	9	1	1	2	15	1,909	17,880	1,328	21,117
2030-2031	2	9	1	1	2	15	1,909	17,880	1,328	21,117
2017-2026	60	(201)	28	(9)	(16)	(138)	71,908	(402,092)	33,924	(296,259)
2027-2031	8	45	6	6	9	73	9,547	89,400	6,640	105,587
2017-2031	68	(156)	34	(3)	(8)	(65)	81,456	(312,692)	40,564	(190,672)

Source: 2016-2031 employment derived explicitly from the Halton Region Best Planning Estimates, 2011  
Adjustments by employment sector have been made to account for Work at Home and No Fixed Place of Work Employment.

**Notes:**

Figures may not add precisely due to rounding.

**Sq.Ft. per Employee Assumptions (2017-2031):**

Commercial 1,200  
Industrial 2,000  
Institutional 1,200

Note: Average sq. ft. per employee varies on annual basis.



**Table A-10**  
**Summary of Employment Growth Forecast by Retail and Non-Retail**

Year	Employment				
	Retail	Non-Retail	Work @ Home	No Fixed Place of Work	Total Employment
2016	72,209	162,306	25,474	28,504	288,493
2021	83,266	182,586	29,206	32,625	327,683
2026	88,390	199,585	31,945	35,789	355,709
2031	96,237	219,045	35,429	39,289	390,000
2017-2026	16,181	37,279	6,471	7,286	67,217
2017-2031	24,028	56,739	9,955	10,785	101,507

Source: 2016-2031 employment derived explicitly from the Halton Region Best Planning Estimates, 2011

Adjustments by employment sector have been made to account for Work at Home and No Fixed Place of Work Employment.

**Table A-10a**  
**Halton Region - Employment/Total Floor Area Forecast, 2017-2031**

Cumulative Year	Employment					TFA Estimate (Sq.Ft.)		
	Retail	Non-Retail	Work at Home	No Fixed Place of Work	Total Employment	Retail	Non-Retail	Total Floor Area (TFA)
2016	70,299	164,216	25,474	28,504	<b>288,493</b>	32,209,444	127,977,758	<b>160,187,202</b>
2017	72,230	168,552	26,220	29,328	<b>296,331</b>	33,168,785	131,693,923	<b>164,862,708</b>
2018	74,149	172,901	26,967	30,152	<b>304,169</b>	34,126,146	135,412,067	<b>169,538,213</b>
2019	76,055	177,262	27,713	30,977	<b>312,007</b>	35,081,528	139,132,191	<b>174,213,719</b>
2020	77,950	181,635	28,459	31,801	<b>319,845</b>	36,034,929	142,854,295	<b>178,889,224</b>
2021	79,832	186,020	29,206	32,625	<b>327,683</b>	36,986,352	146,578,378	<b>183,564,730</b>
2022	80,571	189,541	29,757	33,419	<b>333,288</b>	37,378,273	150,361,374	<b>187,739,647</b>
2023	81,431	193,147	30,304	34,012	<b>338,894</b>	37,843,902	154,291,952	<b>192,135,854</b>
2024	82,286	196,757	30,851	34,604	<b>344,499</b>	38,308,897	158,223,164	<b>196,532,061</b>
2025	83,138	200,371	31,398	35,197	<b>350,104</b>	38,773,257	162,155,011	<b>200,928,268</b>
2026	83,986	203,989	31,945	35,789	<b>355,709</b>	39,236,983	166,087,492	<b>205,324,475</b>
2027	85,182	208,254	32,642	36,489	<b>362,567</b>	39,922,623	170,819,087	<b>210,741,710</b>
2028	86,366	212,531	33,339	37,189	<b>369,425</b>	40,606,342	175,552,603	<b>216,158,945</b>
2029	87,539	216,820	34,035	37,889	<b>376,283</b>	41,288,141	180,288,039	<b>221,576,180</b>
2030	88,700	221,121	34,732	38,589	<b>383,141</b>	41,968,018	185,025,397	<b>226,993,415</b>
2031	89,848	225,433	35,429	39,289	<b>390,000</b>	42,645,975	189,764,675	<b>232,410,650</b>
<b>Incremental</b>								
2016-2017	1,931	4,337	746	824	<b>7,838</b>	864,190	3,811,315	<b>4,675,506</b>
2017-2018	1,919	4,349	746	824	<b>7,838</b>	860,233	3,815,273	<b>4,675,506</b>
2018-2019	1,907	4,361	746	824	<b>7,838</b>	856,275	3,819,230	<b>4,675,506</b>
2019-2020	1,894	4,373	746	824	<b>7,838</b>	852,318	3,823,188	<b>4,675,506</b>
2020-2021	1,882	4,385	746	824	<b>7,838</b>	848,361	3,827,145	<b>4,675,506</b>
2021-2022	739	3,520	552	794	<b>5,605</b>	330,927	3,843,990	<b>4,174,917</b>
2022-2023	860	3,606	547	593	<b>5,605</b>	403,062	3,993,145	<b>4,396,207</b>
2023-2024	856	3,610	547	593	<b>5,605</b>	401,799	3,994,408	<b>4,396,207</b>
2024-2025	852	3,614	547	593	<b>5,605</b>	400,536	3,995,671	<b>4,396,207</b>
2025-2026	848	3,618	547	593	<b>5,605</b>	399,274	3,996,933	<b>4,396,207</b>
2026-2027	1,196	4,265	697	700	<b>6,858</b>	560,485	4,856,750	<b>5,417,235</b>
2027-2028	1,184	4,277	697	700	<b>6,858</b>	556,644	4,860,591	<b>5,417,235</b>
2028-2029	1,172	4,289	697	700	<b>6,858</b>	552,804	4,864,431	<b>5,417,235</b>
2029-2030	1,161	4,301	697	700	<b>6,858</b>	548,964	4,868,271	<b>5,417,235</b>
2030-2031	1,149	4,312	697	700	<b>6,858</b>	545,124	4,872,111	<b>5,417,235</b>
2017-2026	<b>13,687</b>	<b>39,773</b>	<b>6,471</b>	<b>7,286</b>	<b>67,217</b>	<b>6,216,976</b>	<b>38,920,298</b>	<b>45,137,273</b>
2027-2031	<b>5,862</b>	<b>21,444</b>	<b>3,484</b>	<b>3,500</b>	<b>34,290</b>	<b>2,764,020</b>	<b>24,322,154</b>	<b>27,086,174</b>
2017-2031	<b>19,549</b>	<b>61,218</b>	<b>9,955</b>	<b>10,785</b>	<b>101,507</b>	<b>8,980,996</b>	<b>63,242,452</b>	<b>72,223,448</b>

Source: 2016-2031 employment derived explicitly from the Halton Region Best Planning Estimates, 2011  
Adjustments by employment sector have been made to account for Work at Home and No Fixed Place of  
Work Employment.

**Notes:**

Figures may not add precisely due to rounding.

**Sq.Ft. per Employee Assumptions (2017-2031):**

Retail 459

Non-Retail 1,033

Note: Average sq. ft. per employee varies on annual basis.

**Table A-10b**  
**Halton Region (Built Boundary) - Employment/Total Floor Area Forecast, 2017-2031**

Cumulative Year	Employment					TFA Estimate (Sq.Ft.)		
	Retail	Non-Retail	Work at Home	No Fixed Place of Work	Total Employment	Retail	Non-Retail	Total Floor Area (TFA)
2016	59,565	138,512	21,252	23,965	<b>243,294</b>	27,004,615	107,674,458	<b>134,679,073</b>
2017	60,478	140,250	21,591	24,353	<b>246,671</b>	27,422,156	108,972,506	<b>136,394,663</b>
2018	61,385	141,993	21,930	24,741	<b>250,049</b>	27,837,657	110,272,596	<b>138,110,253</b>
2019	62,285	143,743	22,270	25,128	<b>253,426</b>	28,251,116	111,574,726	<b>139,825,842</b>
2020	63,180	145,499	22,609	25,516	<b>256,804</b>	28,662,534	112,878,898	<b>141,541,432</b>
2021	64,068	147,261	22,949	25,904	<b>260,181</b>	29,071,912	114,185,111	<b>143,257,022</b>
2022	64,219	147,884	23,046	26,019	<b>261,168</b>	29,152,274	114,602,745	<b>143,755,019</b>
2023	64,369	148,509	23,143	26,134	<b>262,155</b>	29,232,285	115,020,731	<b>144,253,016</b>
2024	64,518	149,134	23,240	26,250	<b>263,142</b>	29,311,945	115,439,068	<b>144,751,013</b>
2025	64,666	149,760	23,338	26,365	<b>264,129</b>	29,391,254	115,857,756	<b>145,249,010</b>
2026	64,813	150,388	23,435	26,480	<b>265,116</b>	29,470,211	116,276,796	<b>145,747,007</b>
2027	64,941	151,646	23,603	26,662	<b>266,851</b>	29,555,274	117,321,315	<b>146,876,589</b>
2028	65,065	152,907	23,770	26,844	<b>268,586</b>	29,639,353	118,366,818	<b>148,006,172</b>
2029	65,186	154,171	23,938	27,025	<b>270,321</b>	29,722,447	119,413,307	<b>149,135,754</b>
2030	65,304	155,439	24,106	27,207	<b>272,056</b>	29,804,556	120,460,780	<b>150,265,336</b>
2031	65,419	156,709	24,274	27,389	<b>273,791</b>	29,885,680	121,509,238	<b>151,394,919</b>
<b>Incremental</b>								
2016-2017	913	1,737	339	388	<b>3,377</b>	417,542	1,298,048	<b>1,715,590</b>
2017-2018	907	1,743	339	388	<b>3,377</b>	415,500	1,300,089	<b>1,715,590</b>
2018-2019	901	1,750	339	388	<b>3,377</b>	413,459	1,302,131	<b>1,715,590</b>
2019-2020	894	1,756	339	388	<b>3,377</b>	411,418	1,304,172	<b>1,715,590</b>
2020-2021	888	1,762	339	388	<b>3,377</b>	409,377	1,306,213	<b>1,715,590</b>
2021-2022	151	623	97	115	<b>987</b>	80,363	417,634	<b>497,997</b>
2022-2023	150	624	97	115	<b>987</b>	80,011	417,986	<b>497,997</b>
2023-2024	149	625	97	115	<b>987</b>	79,660	418,337	<b>497,997</b>
2024-2025	148	627	97	115	<b>987</b>	79,309	418,688	<b>497,997</b>
2025-2026	147	628	97	115	<b>987</b>	78,957	419,040	<b>497,997</b>
2026-2027	127	1,258	168	182	<b>1,735</b>	85,063	1,044,519	<b>1,129,582</b>
2027-2028	124	1,261	168	182	<b>1,735</b>	84,079	1,045,504	<b>1,129,582</b>
2028-2029	121	1,264	168	182	<b>1,735</b>	83,094	1,046,489	<b>1,129,582</b>
2029-2030	118	1,267	168	182	<b>1,735</b>	82,109	1,047,473	<b>1,129,582</b>
2030-2031	115	1,270	168	182	<b>1,735</b>	81,124	1,048,458	<b>1,129,582</b>
2017-2026	<b>5,249</b>	<b>11,876</b>	<b>2,183</b>	<b>2,515</b>	<b>21,822</b>	<b>2,465,596</b>	<b>8,602,338</b>	<b>11,067,934</b>
2027-2031	<b>606</b>	<b>6,321</b>	<b>839</b>	<b>909</b>	<b>8,674</b>	<b>415,469</b>	<b>5,232,443</b>	<b>5,647,912</b>
2017-2031	<b>5,855</b>	<b>18,196</b>	<b>3,022</b>	<b>3,424</b>	<b>30,497</b>	<b>2,881,065</b>	<b>13,834,781</b>	<b>16,715,846</b>

Source: 2016-2031 employment derived explicitly from the Halton Region Best Planning Estimates, 2011  
 Adjustments by employment sector have been made to account for Work at Home and No Fixed Place of Work Employment.

**Notes:**

Figures may not add precisely due to rounding.

**Sq.Ft. per Employee Assumptions (2017-2031):**

Retail                    492  
 Non-Retail              760

Note: Average sq. ft. per employee varies on annual basis.

Table A-10c

## Halton Region (Greenfield Area) - Employment/Total Floor Area Forecast, 2017-2031

Cumulative Year	Employment					TFA Estimate (Sq.Ft.)		
	Retail	Non-Retail	Work at Home	No Fixed Place of Work	Total Employment	Retail	Non-Retail	Total Floor Area (TFA)
2016	10,140	22,468	3,804	3,969	40,381	4,480,779	14,504,332	18,985,111
2017	11,155	25,051	4,209	4,403	44,818	4,924,132	16,989,660	21,913,792
2018	12,165	27,640	4,614	4,836	49,255	5,365,571	19,476,903	24,842,474
2019	13,169	30,235	5,019	5,270	53,692	5,805,095	21,966,060	27,771,155
2020	14,167	32,835	5,424	5,704	58,130	6,242,705	24,457,131	30,699,836
2021	15,159	35,442	5,829	6,138	62,567	6,678,400	26,950,117	33,628,517
2022	15,754	38,630	6,313	6,860	67,558	6,940,616	30,946,315	37,886,931
2023	16,454	41,599	6,760	7,334	72,147	7,248,341	34,504,535	41,752,876
2024	17,151	44,570	7,207	7,808	76,736	7,555,160	38,063,660	45,618,821
2025	17,845	47,544	7,654	8,282	81,325	7,861,074	41,623,691	49,484,765
2026	18,536	50,521	8,100	8,756	85,913	8,166,083	45,184,627	53,350,710
2027	19,604	53,518	8,628	9,272	91,022	8,639,752	48,977,493	57,617,245
2028	20,663	56,523	9,156	9,789	96,130	9,110,567	52,773,214	61,883,780
2029	21,713	59,537	9,684	10,305	101,239	9,578,527	56,571,788	66,150,315
2030	22,754	62,560	10,212	10,822	106,348	10,043,634	60,373,216	70,416,850
2031	23,787	65,592	10,740	11,338	111,456	10,505,887	64,177,498	74,683,385
<b>Incremental</b>								
2016-2017	1,016	2,583	405	434	4,437	443,353	2,485,328	2,928,681
2017-2018	1,010	2,589	405	434	4,437	441,439	2,487,243	2,928,681
2018-2019	1,004	2,595	405	434	4,437	439,524	2,489,157	2,928,681
2019-2020	998	2,601	405	434	4,437	437,610	2,491,072	2,928,681
2020-2021	992	2,606	405	434	4,437	435,695	2,492,986	2,928,681
2021-2022	596	3,188	485	723	4,991	262,216	3,996,198	4,258,414
2022-2023	700	2,969	447	474	4,589	307,725	3,558,220	3,865,945
2023-2024	697	2,971	447	474	4,589	306,819	3,559,125	3,865,945
2024-2025	694	2,974	447	474	4,589	305,914	3,560,031	3,865,945
2025-2026	691	2,977	447	474	4,589	305,009	3,560,936	3,865,945
2026-2027	1,068	2,997	528	516	5,109	473,669	3,792,866	4,266,535
2027-2028	1,059	3,005	528	516	5,109	470,815	3,795,720	4,266,535
2028-2029	1,050	3,014	528	516	5,109	467,961	3,798,574	4,266,535
2029-2030	1,041	3,023	528	516	5,109	465,107	3,801,428	4,266,535
2030-2031	1,033	3,032	528	516	5,109	462,253	3,804,282	4,266,535
2017-2026	8,396	28,053	4,297	4,787	45,533	3,685,303	30,680,295	34,365,599
2027-2031	5,251	15,071	2,639	2,582	25,543	2,339,804	18,992,871	21,332,675
2017-2031	13,647	43,123	6,936	7,369	71,075	6,025,108	49,673,167	55,698,274

Source: 2016-2031 employment derived explicitly from the Halton Region Best Planning Estimates, 2011 Adjustments by employment sector have been made to account for Work at Home and No Fixed Place of Work Employment.

**Notes:**

Figures may not add precisely due to rounding.

**Sq.Ft. per Employee Assumptions (2017-2031):**

Retail	441
Non-retail	1,152

Note: Average sq. ft. per employee varies on annual basis.

**Table A-10d**  
**Halton Region (Rural Intensification Areas) - Employment/Total Floor Area Forecast, 2017-2031**

Cumulative Year	Employment					TFA Estimate (Sq.Ft.)		
	Retail	Non-Retail	Work at Home	No Fixed Place of Work	Total Employment	Retail	Non-Retail	Total Floor Area (TFA)
2016	595	3,235	419	570	4,818	724,050	5,798,968	6,523,018
2017	597	3,251	421	573	4,841	727,345	5,826,907	6,554,252
2018	599	3,268	423	575	4,865	730,639	5,854,848	6,585,487
2019	601	3,284	425	578	4,888	733,931	5,882,790	6,616,721
2020	603	3,301	427	581	4,912	737,221	5,910,734	6,647,956
2021	605	3,317	428	584	4,935	740,510	5,938,681	6,679,190
2022	598	3,026	398	540	4,562	728,858	5,368,838	6,097,697
2023	608	3,040	401	543	4,591	744,184	5,385,778	6,129,962
2024	617	3,053	404	547	4,621	759,504	5,402,724	6,162,228
2025	627	3,066	407	550	4,650	774,818	5,419,675	6,194,493
2026	637	3,080	410	554	4,680	790,126	5,436,633	6,226,759
2027	638	3,090	411	555	4,694	791,878	5,455,998	6,247,876
2028	639	3,101	412	557	4,709	793,629	5,475,365	6,268,993
2029	640	3,111	413	559	4,723	795,378	5,494,733	6,290,111
2030	641	3,122	415	560	4,738	797,126	5,514,102	6,311,228
2031	642	3,132	416	562	4,753	798,873	5,533,473	6,332,346
<b>Incremental</b>								
2016-2017	2	17	2	3	23	3,296	27,939	31,235
2017-2018	2	17	2	3	23	3,294	27,941	31,235
2018-2019	2	17	2	3	23	3,292	27,942	31,235
2019-2020	2	17	2	3	23	3,290	27,944	31,235
2020-2021	2	17	2	3	23	3,288	27,946	31,235
2021-2022	(7)	(291)	(31)	(44)	(373)	(11,652)	(569,842)	(581,494)
2022-2023	10	13	3	3	29	15,326	16,940	32,266
2023-2024	10	13	3	3	29	15,320	16,946	32,266
2024-2025	10	13	3	3	29	15,314	16,952	32,266
2025-2026	10	13	3	3	29	15,308	16,957	32,266
2026-2027	1	11	1	2	15	1,752	19,365	21,117
2027-2028	1	11	1	2	15	1,751	19,367	21,117
2028-2029	1	11	1	2	15	1,749	19,368	21,117
2029-2030	1	11	1	2	15	1,748	19,369	21,117
2030-2031	1	11	1	2	15	1,747	19,371	21,117
2017-2026	42	(155)	(9)	(16)	(138)	66,076	(362,335)	(296,259)
2027-2031	5	53	6	9	73	8,747	96,840	105,587
2017-2031	47	(102)	(3)	(8)	(65)	74,823	(265,495)	(190,672)

Source: 2016-2031 employment derived explicitly from the Halton Region Best Planning Estimates, 2011 Adjustments by employment sector have been made to account for Work at Home and No Fixed Place of Work Employment.

**Notes:**

Figures may not add precisely due to rounding.

**Sq.Ft. per Employee Assumptions (2017-2031):**

Retail                    1,576  
Non-retail                2,599

Note: Average sq. ft. per employee varies on annual basis.

**Table A-11a  
Halton Region Anticipated Annual Non-Residential Growth for the Period 2017-2026  
(for General Services Development Charge Calculation)**

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Total 17-26
Incremental Total Sq.ft per BPE	4,675,506	4,675,506	4,675,506	4,675,506	4,675,506	4,174,917	4,396,207	4,396,207	4,396,207	4,396,207	45,137,275
Less Institutional Population Related Sq. ft.	(88,350)	(88,350)	(88,350)	(88,350)	(88,350)	(86,190)	(87,814)	(87,814)	(87,814)	(87,814)	(879,195)
<b>Total</b>	4,587,156	4,587,156	4,587,156	4,587,156	4,587,156	4,088,727	4,308,393	4,308,393	4,308,393	4,308,393	<b>44,258,080</b>

**Table A-11b**  
**Halton Region Anticipated Annual Non-Residential Development for the Period 2017 to 2031**  
**(For Police and Roads Development Charge Calculation)**

Adjustments	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total 17-31
Incremental Total Sq. ft per BPE	4,675,506	4,675,506	4,675,506	4,675,506	4,675,506	4,174,917	4,396,207	4,396,207	4,396,207	4,396,207	5,417,235	5,417,235	5,417,235	5,417,235	5,417,235	72,223,448
Add Sq. ft Shortfall	-	-	-	-	-	-	-	-	-	-	8,503,996	8,503,996	8,503,996	8,503,996	8,503,996	42,519,982
Less Institutional Population Related Sq. ft	(88,350)	(88,350)	(88,350)	(88,350)	(88,350)	(86,190)	(87,814)	(87,814)	(87,814)	(87,814)	(40,805)	(40,805)	(40,805)	(40,805)	(40,805)	(1,083,219)
<b>Total</b>	4,587,156	4,587,156	4,587,156	4,587,156	4,587,156	4,088,727	4,308,393	4,308,393	4,308,393	4,308,393	13,880,426	13,880,426	13,880,426	13,880,426	13,880,426	113,660,211

**Table A-11c**  
**Halton Region Anticipated Annual Non-Residential Development for the Period 2017 to 2031**  
**(for Water & Wastewater Development Charge Calculation)**

Adjustments	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total 17-31
<b>GREENFIELD AREA</b>																
Incremental Total Sq.ft per BPE	2,928,681	2,928,681	2,928,681	2,928,681	2,928,681	4,258,414	3,865,945	3,865,945	3,865,945	3,865,945	4,266,535	4,266,535	4,266,535	4,266,535	4,266,535	55,698,274
Add Sq. ft Shortfall	-	-	-	-	-	-	-	-	-	-	4,348,515	4,348,515	4,348,515	4,348,515	4,348,515	21,742,576
Less Institutional Population Related Sq. ft	(43,151)	(43,372)	(43,579)	(43,768)	(43,945)	(41,786)	(39,331)	(39,475)	(39,633)	(39,783)	(25,552)	(25,308)	(25,078)	(24,856)	(24,644)	(543,262)
<b>Net Greenfield Area</b>	<b>2,885,530</b>	<b>2,885,309</b>	<b>2,885,102</b>	<b>2,884,913</b>	<b>2,884,736</b>	<b>4,216,628</b>	<b>3,826,613</b>	<b>3,826,470</b>	<b>3,826,311</b>	<b>3,826,161</b>	<b>8,589,498</b>	<b>8,589,743</b>	<b>8,589,972</b>	<b>8,590,195</b>	<b>8,590,406</b>	<b>76,897,589</b>
<b>BUILT BOUNDARY</b>																
Incremental Total Sq.ft per BPE	1,715,590	1,715,590	1,715,590	1,715,590	1,715,590	497,997	497,997	497,997	497,997	497,997	1,129,582	1,129,582	1,129,582	1,129,582	1,129,582	16,715,846
Add Sq. ft Shortfall	-	-	-	-	-	-	-	-	-	-	4,155,481	4,155,481	4,155,481	4,155,481	4,155,481	20,777,406
Less Institutional Population Related Sq. ft	(45,198)	(44,978)	(44,771)	(44,581)	(44,405)	(44,404)	(48,483)	(48,339)	(48,181)	(48,031)	(15,252)	(15,497)	(15,726)	(15,949)	(16,161)	(539,957)
<b>Net Built Boundary</b>	<b>1,670,391</b>	<b>1,670,612</b>	<b>1,670,819</b>	<b>1,671,009</b>	<b>1,671,185</b>	<b>453,593</b>	<b>449,514</b>	<b>449,657</b>	<b>449,816</b>	<b>449,966</b>	<b>5,269,811</b>	<b>5,269,567</b>	<b>5,269,337</b>	<b>5,269,115</b>	<b>5,268,903</b>	<b>36,953,295</b>
<b>TOTAL REGION</b>	<b>4,555,921</b>	<b>4,555,921</b>	<b>4,555,921</b>	<b>4,555,921</b>	<b>4,555,921</b>	<b>4,670,221</b>	<b>4,276,127</b>	<b>4,276,127</b>	<b>4,276,127</b>	<b>4,276,127</b>	<b>13,859,309</b>	<b>13,859,309</b>	<b>13,859,309</b>	<b>13,859,309</b>	<b>13,859,309</b>	<b>113,850,883</b>



**APPENDIX B**  
**THE 2017-2031 WATER AND WASTEWATER  
SERVICING PROGRAM  
AND DEVELOPMENT CHARGE RECOVERABLE COSTS**

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## **B. THE 2017-2031 WATER AND WASTEWATER SERVICING PROGRAM AND DEVELOPMENT CHARGE RECOVERABLE COST**

This Appendix discusses the water and wastewater servicing program and related DC recoverable costs included in this Study.

Part 1 of this Appendix provides an overview of the 2017-2031 water/wastewater servicing program as set out in the Water and Wastewater “2017 Development Charges Water/Wastewater Technical Report” dated September 2016 (Technical Report).

Part 2 of this Appendix outlines the basis for allocating the related benefits for the purposes of DC calculations.

Part 3 of this Appendix sets out detailed 2017-2031 water/wastewater servicing program, including project descriptions, project cost, project-specific deductions for post-period benefit (oversizing) and benefit to existing development, and cost allocations for residential/non-residential benefit and Greenfield/Built Boundary.



**APPENDIX B – PART 1**  
**OVERVIEW OF WATER AND WASTEWATER SERVICING**  
**PROGRAM (2017-2031)**



# **1. OVERVIEW OF WATER AND WASTEWATER SERVICING PROGRAM (2017-2031)**

As part of the 2017 DC update process, a Technical Report has been prepared by GM Blue Plan Engineering which provides the basis for the development of costs and implementation timing of water and wastewater projects required to service population and employment growth in Halton Region between 2017 and 2031. The project costs and implementation timing set out in the Technical Report are based on work undertaken as part of the Sustainable Halton Water and Wastewater Master Plan as well as more recent technical studies undertaken in specific areas. This report incorporates the most up to date water and wastewater system information, including additional technical infrastructure review and analysis which has been completed since the 2011 Master Plan updates. This report identifies Halton's water and wastewater infrastructure requirements to service anticipated growth during the period between 2017 and 2031 (Appendix B – Parts 1 & 3), and establishes the basis for allocating the related benefits for the purpose of DC calculations (Appendix B – Part 2). An appropriate deduction has also been made from the capital expenditure program for capacity to service development anticipated post 2031.

The estimated cost of the program totals to \$1.16 billion between 2017 and 2031 (in 2017\$), with \$516 million allocated within the term of the proposed By-law (2017-2021).

The following summarizes the water and wastewater servicing program set out in the Technical Report, with detailed projects shown in Maps B-1 and B-2.

## **1.1. 2017-2031 Water Capital Program**

### **1.1.1. Milton Water Servicing**

- Milton lake-based service area includes areas outside the Milton core groundwater service area and consists of Zones M5L, new Zone Top Water Level (TWL) 250 m and a portion of new Zone TWL 223.5 m
- Water supply is from the existing lake-based water purification plants (WPPs), (Burlington, Oakville, Burloak) and is pumped through existing and proposed pumping stations (PSs) and reservoirs to Milton
- Small, isolated groundwater service areas will be transferred to the lake-based system. Most of the existing groundwater-serviced area (M5G) will remain on groundwater through 2031.

Components of the servicing strategy include:

- Zone 3/4/5 switchover projects to create new zones and adjust boundaries of existing zones
- Trunk linear and facility upgrades within Burlington and Oakville to supply water to the north
- Sub-trunk distribution network within Milton Greenfield growth areas along Trafalgar Road corridor, south of Britannia Road, and Tremaine Road
- Local infrastructure upgrades within core area of Milton through intensification program to meet demand projections and fire flow needs related to intensification growth
- Decommissioning of Walker's Line Well and PS
- Re-rating of Oakville and Burloak WPPs to provide additional treated water supply for growth – common to all lake-based service areas experiencing growth
- Boyne East Watermain Trunk

#### **1.1.2. Oakville Water Servicing**

- North Oakville Greenfield growth east of Sixteen Mile Creek to be predominantly serviced by Oakville supply system with supplemental flow from Burloak/Burlington WPPs into transmission network
- North Oakville lies mainly within new pressure Zone TWL 223.5 m (with small area within Zone TWL 250 m) and will be supplied by Eighth Line PS as well as through Pressure Reducing Valves (PRVs) down from pressure Zone TWL 250 m
- North Oakville west of Sixteen Mile Creek lies within existing Zone O3 and will be serviced via Zone 3 pumping from Oakville (Kitchen Z3) and Burlington (Washburn and Appleby Z3) via Dundas Street crossing

Components of the servicing strategy include:

- Re-rating Oakville and Burloak WPPs to provide additional treated water supply for growth
- Zone 3/4/5 switchover projects to service Zones TWL 223 m and TWL 250 m
- Sub-trunk distribution network within North Oakville Greenfield growth area
- Decommissioning of Burnhamthorpe Elevated Tower
- Zone O2 interconnection along Wyecroft Road
- Kitchen Booster PS expansion
- 407 Employment Area Watermain Trunk



### 1.1.3. Burlington Central Water Servicing

- The Burlington Central water servicing areas consists of areas within Zones B1 to B5 and B1A, generally south of the Hwy 407 and Dundas Street
- Water supply is provided from the Burlington WPP through existing transmission watermains, PSs and reservoirs in the Burlington system

Components of the servicing strategy include:

- Local infrastructure to be upgraded to meet demand projections and fire flow needs related to intensification growth

### 1.1.4. North Aldershot Water Servicing

- The North Aldershot Policy Area occupies a portion of Zone B2 and Zones B3B, B4A and B5A
- Supplied mainly from the Burlington WPP through existing transmission mains, PSs and reservoirs in the Burlington system, however due to topography, this area requires servicing from several pressure zones
- Transmission, pumping and storage upgrades are recommended however this area will require a separate study to refine infrastructure upgrades

### 1.1.5. Georgetown Water Servicing

- Provide new lake-based water supply to new Greenfield growth area in southwest Georgetown as well as transfer South Georgetown and Stewarttown to lake-based supply enabling the groundwater system to remain within sustainable yields.
- New lake-based pressure Zone G6L to be introduced
- Lake-based water storage capacity at the 22 Sideroad Reservoir to support growth
- Lake-based water supply will be from the existing lake-based WPPs and will be pumped through the existing and proposed PSs and reservoirs throughout the distribution system
- Water treatment capacity provisions for Norval and Glen Williams (currently only parts of these areas are serviced)

Components of the servicing strategy include:

- New Zone 6 PS and TWL 250 reservoir on Trafalgar Road
- Trafalgar Road Zone 6 feeder mains and sub-trunk distribution network within south Georgetown

- New Zone 6 Reservoir at 22<sup>nd</sup> Sideroad
- Zone 2 transmission upgrades, Burloak Zone 2 and Neyagawa Zone TWL 250 m PS capacity upgrades to supply water to upper zones
- Local infrastructure to be upgraded to meet demand projections and fire flow needs related to intensification growth

#### **1.1.6. Acton Water Servicing**

- Acton is supplied by local groundwater wells and operates under a single pressure zone A9G
- Increase transmission redundancy from the Third Line Reservoir

Components of the servicing strategy include:

- Transmission mains on No 32 Sideroad and RR 25 to support growth

## **1.2. 2017-2031 Wastewater Capital Program**

#### **1.2.1. Milton Wastewater Servicing**

- Milton lake-based wastewater service area generally consists of newer areas of Milton surrounding the Milton core. Milton core, as well as areas north of Main Street, are serviced by the existing Milton Wastewater Treatment Plant (WWTP)
- Upon future decommissioning of the Milton WWTP and construction of a new Wastewater Pumping Station (WWPS) to pump flows south, Milton will be entirely serviced by the Mid-Halton WWTP
- Future growth flow in Milton will be conveyed to the Mid-Halton WWTP via existing Boyne trunk sewer and 3 new WWPSs

Components of the servicing strategy include:

- South Tremaine WWPS and forcemain – servicing areas generally west of RR 25 and south of Britannia Road, including Milton Education Village
- Decommissioning of Boyne WWPS, transferring flow to new Boyne trunk sewer
- Trunk sewer infrastructure along Eighth Line, Trafalgar Road, Britannia Road, Fifth Line and Lower Base Line
- Trafalgar / Britannia WWPS and forcemain – servicing Greenfield growth flows along Trafalgar Road, Georgetown and Georgetown lake-based transfer area

- Lower Base Line WWPS and forcemain – servicing Greenfield growth areas in Georgetown, Georgetown lake-based transfer area, Milton (Trafalgar Road corridor and south of Britannia Road)
- Local infrastructure upgrades to meet flow projections related to intensification growth
- Mid-Halton WWTP treatment upgrades to provide additional wastewater treatment capacity for growth

### **1.2.2. Oakville Wastewater Servicing**

- North Oakville Greenfield growth east of Sixteen Mile Creek will flow to the Mid-Halton WWTP via North Oakville East WWPS and Third Line Trunk Sewer
- Oakville Urban Growth Centre (UGC), which is anticipated to experience intensification growth, will be serviced by the new Rebecca Trunk Sewer, which ultimately outlets to the Oakville SW WWTP

Components of the servicing strategy include:

- Sub-trunk sewers conveying south to Dundas Street trunk sewer and North Oakville East WWPS
- Local WWPS and sewer infrastructure upgrades to meet flow projections related to intensification growth
- West River WWPS capacity upgrades

### **1.2.3. Burlington Wastewater Servicing**

- Maintain conveyance to the Skyway WWTP via existing trunk sewers and WWPS throughout Burlington
- Growth flows within the Skyway WWTP catchment area are predominantly generated by intensification growth

Components of the servicing strategy include:

- Trunk sewer upgrades along Maple Avenue and Lakeshore Road just upstream of the Skyway WWTP
- Local WWPS and sewer infrastructure upgrades to meet flow projections related to intensification growth
- Junction Street WWPS capacity upgrades
- Diversion of wastewater flows from the Grandview WWPS (west area of Burlington)

#### 1.2.4. North Aldershot Wastewater Servicing

- The North Aldershot policy area is located north of Hwy 403, along Waterdown Road
- Currently, a gravity sewer is identified to service this area; the servicing scheme will be confirmed in the Area Servicing Plan

#### 1.2.5. Georgetown Wastewater Servicing

- Currently serviced exclusively by the stream-based Georgetown WWTP
- Upon completion of the lake-based trunk sewer infrastructure, 2 service areas can be transferred to the Mid-Halton WWTP catchment area: Existing Main St WWPS Drainage Area and Existing South Georgetown Area located south of Silver Creek
- New Greenfield growth areas in southwest Georgetown will also be serviced by the lake-based trunk sewer infrastructure

Components of this servicing strategy include:

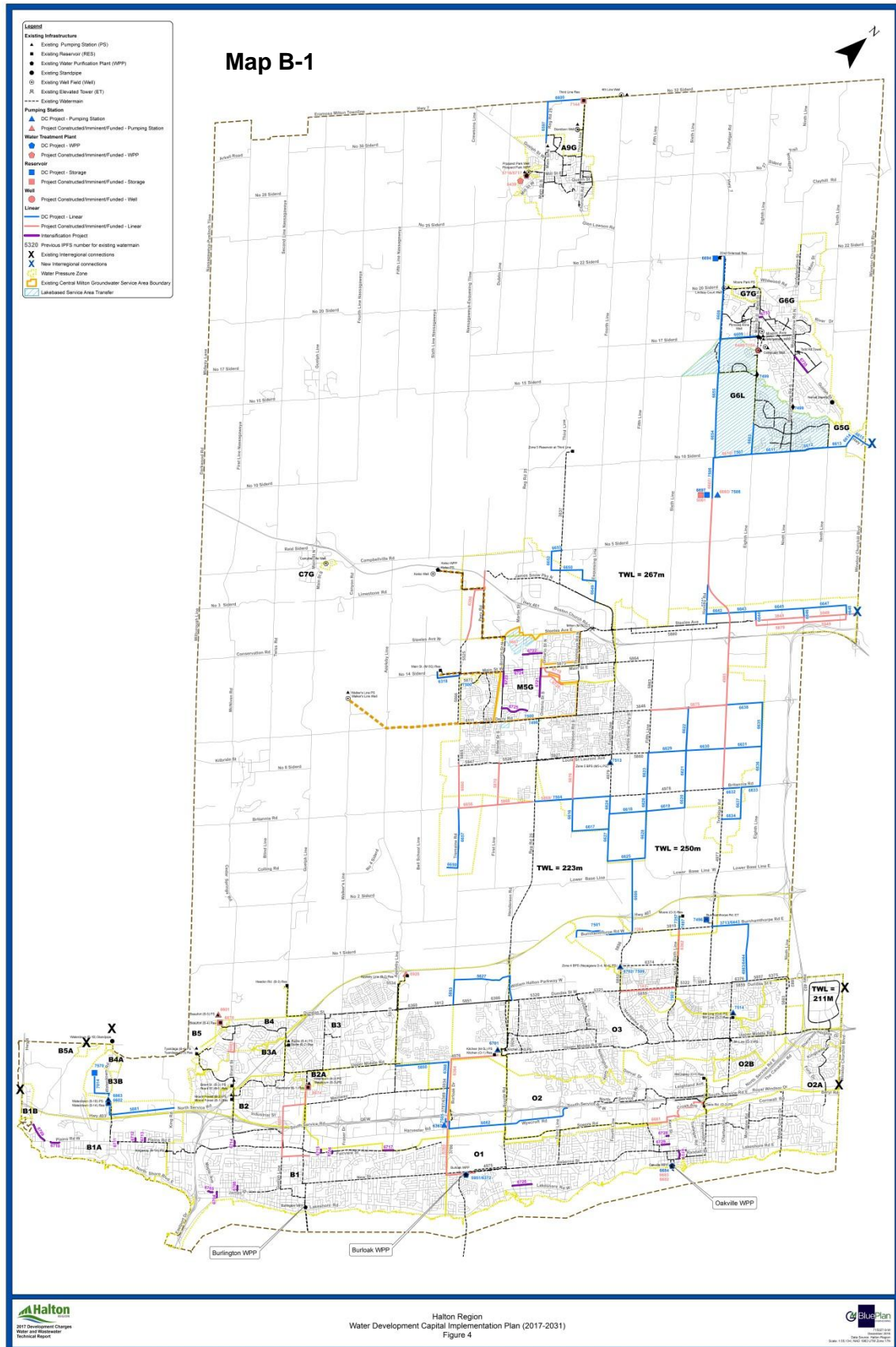
- Maintain capacity at the Georgetown WWTP
- Upgrade existing sewers and WWPSs to receive intensification flow
- Georgetown Lake-based transfer infrastructure: trunk sewers, PSs and forcemains along Eighth Line, Trafalgar Road, Britannia Road, Fifth Line and Lower Base Line
- Mid-Halton WWTP treatment upgrades to provide additional wastewater treatment capacity for growth

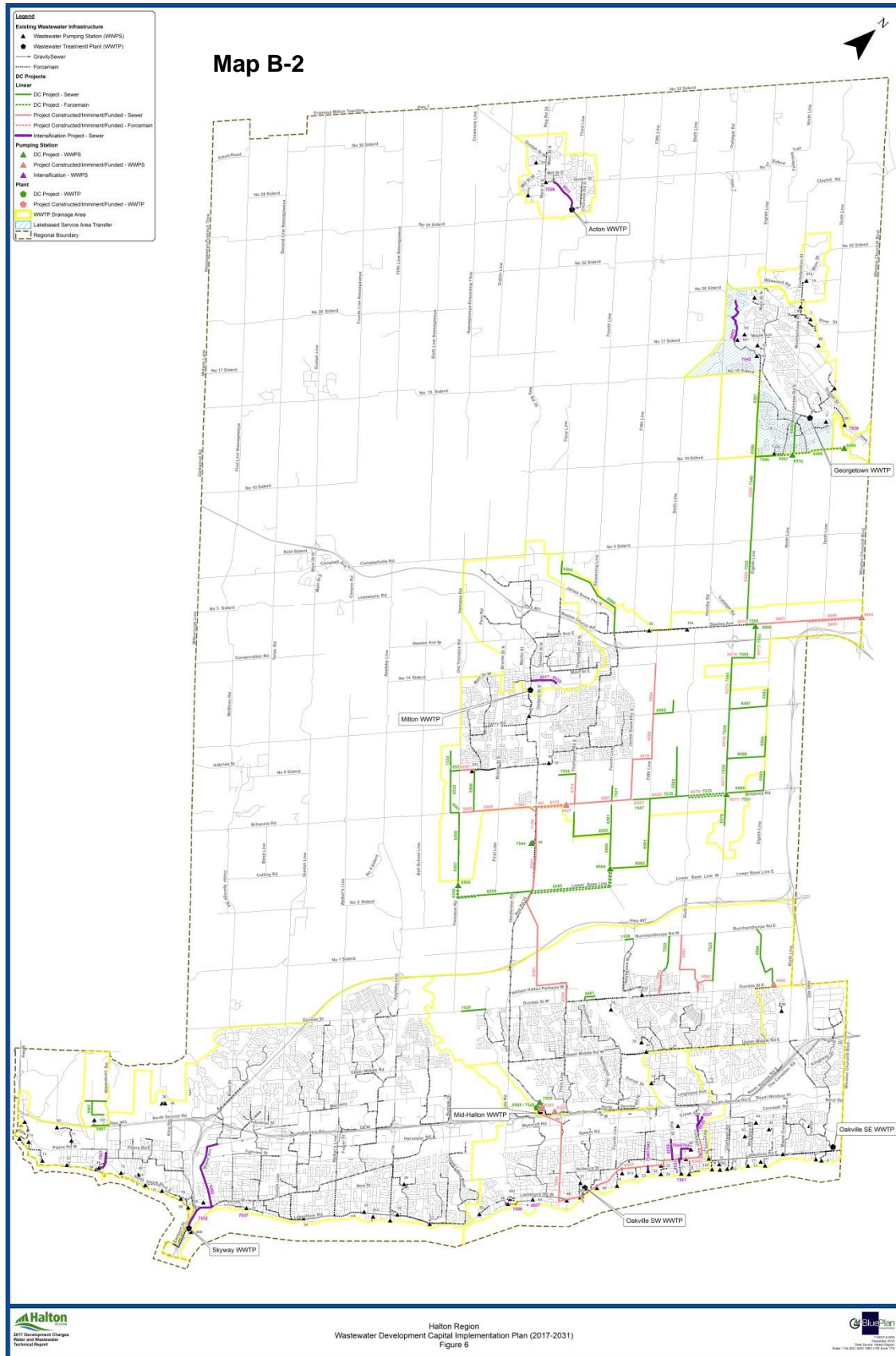
#### 1.2.6. Acton Wastewater Servicing

- Maintain conveyance to the Acton WWTP via existing and upgraded trunk sewers and WWPS

Components of this servicing strategy include:

- Trunk sewer twinning along existing Black Creek Trunk Sewer alignment
- Agnes Street WWPS upgrades





**APPENDIX B – PART 2**  
**WATER AND WASTEWATER DC CALCULATION**  
**ASSUMPTIONS**





## 2. WATER AND WASTEWATER DC CALCULATION ASSUMPTIONS

This section of Appendix B includes excerpts from GM Blue Plan Engineering's Technical Report that established DCA mandated assumptions for the DC calculation. Assuming local services are factored out, the statutory requirements of the calculation include:

- the Level of Service being provided;
- the Non-Growth or Benefit to Existing Development Deduction;
- the Post-Period Benefit or Oversizing Deduction;
- the Residential/Non-Residential Split;

In addition, this section outlines the methodology followed to allocate project costs between the Greenfield and Built Boundary areas, in order to present area specific DC calculations in this Study.

### 2.1. Level of Service

The water and wastewater capital program involved is consistent with the Region's historical water and wastewater service levels, based on s.s.4(3) of O.Reg. 82/98. These level of service measures are set out below:

The following water system criteria are used:

**Table B-1  
Water System Components Design Criteria**

Component	Condition / Description	Criteria
Feeder mains	Flow capacity	Convey maximum day demand while achieving water velocity guidelines
Local Water mains	Flow capacity	Convey the greater of: <ul style="list-style-type: none"> <li>• Maximum day demand plus fire flow demand, or</li> <li>• Peak hour demand</li> </ul> while achieving water velocity guidelines
Pumping Stations	With adequate zone storage available	Supply maximum day flow to zone and all subsequent zones
	Without adequate storage available	Supply peak hour flow to zone and maximum day flow to all subsequent zones
Storage (reservoirs, water towers)	A - Equalization	25% of maximum day demand
	B - Fire	Largest expected fire in zone (Based on land use)
	C - Emergency	Minimum of 25% of (A + B)
	Total volume	= A + B + C
Fire Flow	Minimum flow (Residential)	5,500 L / min for 2 hours @ minimum 140 kPa (20 psi)
	Minimum flow (Industrial / Commercial / Institutional)	15,000 L / min for 3 hours @ minimum 140 kPa (20 psi)
System Pressure	Minimum and maximum operating conditions	280 kPa (40 psi) to 700 kPa (100 psi)

**Table B-2  
Sustainable Halton Water Demand Criteria**

<b>Average Day Water Design Criteria</b>		
Lpcd*	Residential	265
L/emp/d**	Employment	225

\* Litres per capita per day

\*\* Litres per employee per day

<b>Max Day and Peak Hour Water Design Criteria</b>	<b>Max Day PF*</b>	<b>Peak Hour PF*</b>
Lake-Based Oakville, Burlington, Milton, Georgetown	1.9	3
Groundwater Based Milton, Georgetown, Acton	1.6	3

\* PF = peaking factor

The water demands associated with the respective projects are determined using the best planning estimate data for residential and non-residential users and applying the design criteria. For areas with sufficient storage volume, the forecast water supply requirements are based on maximum day demands. For areas without sufficient storage, the forecast water supply requirements are based on peak hour demands.

The following wastewater flow criteria are used:

**Table B-3  
Sustainable Halton Wastewater Flow Criteria**

<b>Plant (WWTP)</b>		
<b>Design Criteria</b>	<b>Average Flows</b>	
Lpcd	Residential	360
L/emp/d	Employment	310

<b>System (WWPS &amp; Sewers)</b>		
<b>Design Criteria</b>		
Lpcd	Residential	215 x PF
L/emp/d	Employment	185 x PF
L/s/ha*	Inflow and Infiltration Design Allowance	0.286

\* Litres per second per hectare

Total peak flows for new development are calculated by multiplying total dry weather flows by the PF specified in the Halton Linear Design Manual (based on Harmon formula) and adding the Inflow and Infiltration Design Allowance

The revised wastewater design criteria were used to estimate the 2017-2031 wastewater flows for each service area. For existing catchments and service areas, future flow rates were

calculated by adding the projected increase in flows (calculated with the above criteria) to the measured flow from existing service area.

Wastewater system capacity needs were developed on the following basis:

- Sewers and PS were sized for peak wet weather flow rate.
- WWTP capacity needs were sized based on the average day flow which includes an average level of the extraneous flow within the system.

The 2017-2031 wastewater flows associated with the respective projects are determined using the best planning estimates for residential and non-residential users and applying the design criteria.

## **2.2. Benefit to Existing Development**

The non-growth component has typically been identified for certain projects which benefit the existing service area. These components are associated with upgrades to the existing systems or facilities necessary to maintain service levels to existing residential and non-residential users. These projects may also involve upgrades or expansions which provide additional capacity to meet growth in the service area. When considering intensification, critical security/redundancy requirements and impacts on critical existing trunk infrastructure, additional projects within the existing service area were identified. It should also be noted that there were some benefit to existing (non-growth) components identified in a small number of infrastructure capital projects that are predominantly required to service growth in new urban areas.

With triggers ranging from growth to security/redundancy requirements, the growth-related and non-growth related needs and corresponding capacity and costs for each of these projects have been separately identified.

## **2.3. Residential vs. Non-Residential Split**

The DC eligible share of the capital program (2017-2031) has been split between benefit to residential development versus benefit to non-residential development within each DC By-law category. The residential/non-residential split is based on the percentage of the total anticipated flow increase to be generated by each class of development. This is the standard calculation approach which has been applied by other municipalities (eg. Peel Region, York Region) and was similarly used during the 2004, 2008 and 2012 Halton DC Updates.

The capacity category is based on Region-wide calculated flows. The Distribution-Greenfield category is based on flows calculated from the Greenfield areas only. The Distribution-Built Boundary category is based on flows calculated for the growth within the 2006 Urban Built Boundary only.

For water projects, the splits are based on the maximum day demand attributed to the growth from year 2017 to year 2031. Similarly, for wastewater projects, the splits are based on average day flows for the growth from 2017-2031.

As discussed in Appendix A, Work at home (WAH) employment and no fixed place of work (NFPOW) employment have also been separately identified, but excluded from the non-residential growth forecast when calculating the non-residential DC and service needs. WAH employees have already been included in the population forecast and the need for municipal services related to NFPOW employees has largely been included in the employment forecast by usual place of work.

Similar to WAH, adjustments have been made for institutional population based employment (e.g. long term care development) and the corresponding institutional TFA forecast being accounted for in the residential growth forecast.

Table B-4 summarizes the urban employment forecast excluding WAH, NFPOW and institutional population related employment, which is the basis for the water/wastewater demand and DC employment forecast.

**Table B-4  
Urban Residential and Non-Residential Growth**

<b>Year</b>	<b>Pop/Empl.</b>	<b>WAH</b>	<b>NFPOW</b>	<b>Institutional Employment Adjustment</b>	<b>Total</b>
<b>Residential</b>					
2016	532,883	-	-	-	532,883
2031	730,493	-	-	-	730,493
<b>Non-Residential</b>					
2016	283,675	(25,055)	(27,934)	(4,309)	226,375
2031	385,247	(35,013)	(38,727)	(5,862)	305,646

For the period 2017-2031, the anticipated levels of growth in residential and non-residential categories are:

Residential:  $730,493 - 532,883 = 197,610$

Non-Residential:  $305,646 - 226,375 = 79,271$

Based on the water and wastewater demand criteria (Tables B-2, B-3) and above growth projections, the residential/non-residential contributions demands and flows are shown in the following tables.

**Table B-5  
Water Demand Project Splits for Halton Region**

Category	Projected Increase in Water Demand, 2017-2031 (MLD)	Percentage
<b>Capacity (Region Wide)</b>		
Residential	99.5	75%
Non-Residential	33.9	25%
Total	<b>133.4</b>	<b>100%</b>
<b>Distribution (Greenfield)</b>		
Residential	67.6	74%
Non-Residential	23.8	26%
Total	<b>91.4</b>	<b>100%</b>
<b>Distribution (Built Boundary)</b>		
Residential	31.9	76%
Non-Residential	10.1	24%
Total	<b>42.0</b>	<b>100%</b>

**Table B-6  
Wastewater Project Splits for Halton Region**

Category	Projected Increase in Wastewater Generation, 2017-2031 (MLD)	Percentage
<b>Capacity (Region Wide)</b>		
Residential	71.1	74%
Non-Residential	24.6	26%
Total	<b>95.7</b>	<b>100%</b>
<b>Distribution (Greenfield)</b>		
Residential	48.3	74%
Non-Residential	17.3	26%
Total	<b>65.6</b>	<b>100%</b>
<b>Distribution (Built Boundary)</b>		
Residential	22.8	76%
Non-Residential	7.3	24%
Total	<b>30.1</b>	<b>100%</b>

## **2.4. Existing Excess Capacity**

The servicing strategies were developed in accordance with servicing policies identified in the Sustainable Halton Water and Wastewater Master Plan. Particularly for major facilities, the strategies are based on:

- Maximizing existing capacity in the facilities,
- Scheduling facility capacity expansions when a threshold of approximately 90% of existing rated capacity has been reached,
- Ensuring operational effectiveness, flexibility and security of supply,
- Maintaining appropriate level of service

Halton Region servicing strategies ensure that when facilities are expanded, there is still some existing capacity remaining, typically in the range of 5-10%. This is required to provide and maintain an adequate level of service throughout the systems. Each DC period has benefitted from previous existing capacity remaining, and future expansion will provide the same benefit. Under this program, there is no allowance for existing capacity at the existing facilities.

## **2.5. Post Period Benefit (Oversizing)**

Although the DC planning horizon is to year 2031, it is good engineering practice to provide sufficient capacity to meet servicing requirements beyond 20 years, particularly for larger diameter trunk piping and major structural components of major supply facilities that have a service life of over 50 years. In addition, the sizing and capacity determined for 2031 needs must also provide a sufficient level of service to the new growth areas, ensure efficient integration with existing infrastructure, and not negatively impact current operations of the systems. Even after making this latter allowance, some infrastructure has been sized to meet needs beyond the DC planning horizon.

Review of the infrastructure capacity indicated that oversizing was required for some of the trunk facilities. This review showed that for projects with smaller diameter pipes which typically serviced more localized areas, many of these localized areas had only marginal additional flows beyond 2031. The trunk projects which service larger areas service a larger amount of flows beyond 2031. Also, the smaller diameter infrastructure typically cannot be downsized without impacting the system such as water pressures and fire flows for the water system and increased

velocities and surcharging for the wastewater system. Accordingly, the oversizing requirements have been identified for some water feeder mains, wastewater trunk sewers and water and wastewater treatment plants.

Quantifying oversizing for these projects has been determined based on comparison of the infrastructure required to meet 2031 needs versus the recommended infrastructure sizing to meet longer term servicing needs. The difference in cost for the recommended size of infrastructure and the size of infrastructure to meet the 2031 horizon has been allocated as the oversizing cost. Any oversizing identified through this analysis has been deducted from the 2031 DC recoverable costs and is to be recovered through subsequent DC By-law(s) covering the post 2031 period.

It should be noted that the 2002 Master Plan as well as the 2007 Master Plan Update considered infrastructure sizing to an urban boundary built out scenario (2031) and post 2021 considerations respectively. Some projects previously oversized to meet the 2031 horizon are now integrated into the current Sustainable Halton program and now no longer have oversizing based on the current 2031 By-law period.

## **2.6. DC Eligible Infrastructure**

Water mains, sewers and water and wastewater facilities are DC eligible depending on criteria presented in the Local Service Guidelines within Appendix G. The minimum size criteria for DC eligible infrastructure are 400 mm diameter or greater for water mains and greater than 450 mm diameter for sewers.

The capital program contains projects which lie within the range of the minimum diameter criteria for DC eligible projects. It should be noted that there are certain exceptions with projects that are below the minimum size criteria because they service and benefit growth areas beyond the requirements of a single subdivision within the overall study area. Moreover, the trunk system in small communities such as Acton and Georgetown consists of pipes of smaller size than the trunk system in the lake-based system in South Halton. Since these pipes provide trunk distribution/conveyance for these small communities, they are also included in the capital program.

Based on conformity with Places To Grow, at least 40% of the future annual residential growth beyond 2015 will take place as intensification within the existing built area. This intensification

will impact local servicing as well as trunk servicing. The intensification demands and flows have been considered in the overall capacities of trunk infrastructure including feeder mains, trunk sewers, pumping stations, storage facilities and treatment plants. As noted, an independent analysis of intensification impact was undertaken. This analysis resulted in additional intensification projects located within the existing local systems (critical for implementation and to be considered based on monitoring, respectively). Given that these projects service future growth similar to Greenfield areas, the projects have been classified as DC eligible infrastructure regardless of their size.

## **2.7. DC By-law Structure**

For the 2017 DC Study, 2 different DC calculations are being provided in this Background Study as shown in Appendix C, E and F. The first calculation is a uniform Region-wide charge for all services. The second and alternative DC calculation is the same as the first, with the exception of the distribution/collection portion of the water and wastewater services (Appendix C). The cost of these sub-services (i.e. distribution/collection portion of the water and wastewater services) has been identified geographically so as to create an area specific charge for each type of development to be located in the Greenfield area vs. within the Built Boundary area.

Since 1999, the Region's W/WW DCs have been charged on an area specific basis to recognize the higher average costs in servicing the greenfield areas compared to the built boundary areas. The current area specific W/WW DC was established in 2012 (By-law No. 48-12), based on distribution/collection infrastructure required to service growth planned within the Built Boundary and Greenfield areas. The Built Boundary for the Greater Golden Horseshoe was established by the Provincial Growth Plan based on the 2006 Built Boundary. The remainder of the Regional urban area (i.e. outside the Built Boundary) was classified as Greenfield area.

Accordingly, an area specific charge is being proposed for the Greenfield and Built Boundary areas to support the Region's Growth Plan. The area specific W/WW DC rates were calculated based on the distribution/collection infrastructure required to service growth planned within the Greenfield and Built Boundary areas. The DC rates relating to the water and wastewater capacity (plant expansions for example) are calculated on a Region-wide basis given the difficulty in identifying area specific infrastructure related to capacity projects.



Table below illustrates the By-law structure based on area specific water/wastewater charges:

<b>1. Water/Wastewater:</b>	<b>Areas Applied</b>	<b>Planning Period</b>
A. Capacity	Region-wide	2017-2031
B. Distribution/Collection:	Area specific	2017-2031
(i) Greenfield		
(ii) Built Boundary		
<b>2. Roads</b>	Region-wide	2017-2031
<b>3. Police</b>	Region-wide	2017-2031
<b>4. Other General Services</b>	Region-wide	2017-2026

Accordingly, the total infrastructure program included in the revised Water and Wastewater Masterplan has been categorized to meet the DC By-Law structure as follows:

- Capacity
- Distribution/Collection – Greenfield
- Distribution/Collection – Built Boundary

The definition of infrastructure to be included in each DC By-Law structure category is described below.

#### Capacity

This category includes projects related to Region-wide needs of water supply/treatment and wastewater treatment.

The projects included under this definition are:

- All studies
- All projects related to the WPPs and Groundwater Well Fields, such as Burloak WPP expansion from 55 MLD to 165 MLD
- All projects related to the WWTPs, such as Mid-Halton WWTP expansion from 125 MLD to 175 MLD

This category also includes projects that support the transfer/conveyance of capacity and deferral/elimination of the need for immediate treatment plant or well field expansions.

The projects included under this definition are:

- Major trunk infrastructure that facilitate transmission of water from existing WPPs to Burlington, Oakville, Milton, and Halton Hills.
  - Zone 6 PS at Future Zone 4 (TWL 250 m) Reservoir
  - Zone 6 Feedermain to No. 10 Sideroad
- Major trunk infrastructure that supports conveyance of wastewater to existing WWTPs
  - Eighth Line Trunk Sewer (No. 10 Sideroad to Steeles Ave.)
  - New Sewer Inlet to Skyway WWTP

#### Distribution/Collection – Greenfield

This category includes projects that support Greenfield growth outside the current urban Built Boundary (2006) and within the new Sustainable Halton Urban Boundary (2031).

The projects under this definition can include:

- Infrastructure located in the Greenfield service area
- Infrastructure located within the Built Boundary that convey flow to future growth areas
- Infrastructure including pipes, pumping stations and storage facilities

#### Distribution/Collection – Built Boundary

This category includes projects that support growth within the current urban Built Boundary as defined under the Places to Growth process. This includes growth to 2031 associated with infill within the urban Built Boundary as well as intensification within the specific areas, such as the UGCs and corridors as identified under the Sustainable Halton Master Plan.

The projects under this definition can include:

- Infrastructure located within the urban Built Boundary
- Infrastructure servicing only intensification and infill growth within the urban Built Boundary
- Infrastructure identified under the UGCs and corridors servicing review

**APPENDIX B – PART 3**  
**THE DETAILED WATER AND WASTEWATER CAPITAL**  
**PROGRAM (2017–2031)**



### 3. THE DETAILED WATER AND WASTEWATER CAPITAL PROGRAM (2017-2031)

Table B-7 sets out the 2017-2031 Water Capital Program. The table provides project descriptions, an expenditure forecast in single year increments from 2017-2021, a 2017-2031 expenditure forecast in 5 year increments, a 2017-2031 consolidated forecast, project-specific deductions for post-period benefit (oversizing) and “Non-Growth” (Benefit to Existing Development) and a division of the net growth cost between residential and non-residential. The DC recoverable cost (“Net Growth”) is then allocated between Greenfield and Built Boundary benefiting areas.

Table B-8 sets out similar information as described above for the 2017-2031 Wastewater Capital Program.

The water and wastewater program costs involved are summarized as follows.

Service	Gross Cost	Less: Benefit to Existing Dev't	Less: Post Period Benefit	Net Growth	Residential Share				Non-residential Share			
					Capacity	Distrb'n /Collect'n - Greenfield	Distrb'n /Collect'n - Built bndry	Total	Capacity	Distrb'n /Collect'n - Greenfield	Distrb'n /Collect'n - Built bndry	Total
Water	\$ 535.1	\$ 11.4	\$ 43.6	\$ 480.1	\$ 143.3	\$ 194.9	\$ 19.5	\$ 357.7	\$ 47.7	\$ 68.5	\$ 6.2	\$ 122.4
Wastewater	625.7	95.8	18.0	511.9	87.3	260.7	31.5	379.6	30.7	91.6	10.0	132.3
<b>Total</b>	<b>\$ 1,160.8</b>	<b>\$ 107.2</b>	<b>\$ 61.6</b>	<b>\$ 992.0</b>	<b>\$ 230.6</b>	<b>\$ 455.7</b>	<b>\$ 51.1</b>	<b>\$ 737.3</b>	<b>\$ 78.4</b>	<b>\$ 160.1</b>	<b>\$ 16.1</b>	<b>\$ 254.6</b>

Note: May not add due to rounding

Table B-7

Halton Region  
 2017 Development Charge Study  
 Water Capital Projects - Total (\$2017, \$000's)

Unique ID	Description	2017	2018	2019	2020	2021	Sub-total		Total (2017-2031)	Bynd 2031 (Ovrszng)	Non-Growth	Net Growth	Residential	Non Residential
							(2017-2021)	(2022-2031)						
<b>Capacity - Region Wide (Plants, Reservoirs, Pipes &amp; Studies)</b>														
5951	Design of Burloak WPP Phase 2 Expansion from 55 to 165ML/d (OAK)	-	-	-	-	-	-	11,975	11,975	-	-	-11,975	8,981	2,994
6372	Construction of Burloak WPP Phase 2 Expansion from 55 to 165ML/d (OAK)	-	-	-	-	-	-	130,601	130,601	-	-	130,601	97,951	32,650
6684	Construction of Oakville WPP Re-rating from 109 to 130 ML/d (OAK)	-	10,000	-	-	-	10,000	-	10,000	-	1,000	9,000	6,750	2,250
6685	Bulk Water Stations on Existing Sites (REG)	-	-	399	-	1,598	1,997	-	1,997	-	-	1,997	1,498	499
7496	Decommissioning of Burnhamthorpe Water Tower (OAK)	-	-	-	-	-	-	1,000	1,000	-	50	950	713	237
7499	2 system PRV's on Mountain View and Eighth Line at the creek (Georgetown Lakebased Transfer Implementation) (Construction)	-	69	-	276	-	345	-	345	-	-	345	259	86
7502	Halton Water Master Plan (REG)	-	350	-	-	-	350	1,600	1,950	-	-	1,950	1,463	487
7506	750mm WM on Trailgar Rd from Zone 4 Reservoir to No 10 Siderd (Zone G6L) - Construction (HHGEO)	-	5,639	-	-	-	5,639	-	5,639	-	-	5,639	4,229	1,410
7508	20 ML/d Zone G6L Pumping Station at Zone 4 Reservoir - Construction (HHGEO)	-	4,880	-	-	-	4,880	-	4,880	-	-	4,880	3,660	1,220
7509	Neyagawa Pumping Station alterations to support Zone 3/4/5 Boundary Re-alignment (100 MLD) (OAK)	-	1,493	-	5,973	-	7,466	-	7,466	-	374	7,092	5,320	1,772
7510	Water Distribution System Analysis (REG)	110	110	110	110	110	550	1,100	1,650	-	-	1,650	1,245	405
7511	Water Supply Capacity Annual Monitoring Report (REG)	50	50	50	50	50	250	500	750	-	-	750	570	180
7512	System Wide Transient Analysis Modelling Study (REG)	-	500	-	-	-	500	-	500	-	-	500	375	125
7513	4th Line Pumping Station alterations to support Zone 3/4/5 Boundary Re-alignment (MIL)	-	377	-	1,507	-	1,884	-	1,884	-	94	1,790	1,343	447
7514	8th Line Zone 4 Pumping Station alterations to support Zone 3/4/5 Boundary Re-alignment (OAK)	-	900	-	3,600	-	4,500	-	4,500	-	225	4,275	3,206	1,069
7515	System PRV implementation to support Zone 3/4/5 Boundary Re-alignment (REG)	-	1,600	-	6,400	-	8,000	-	8,000	-	400	7,600	5,700	1,900
<b>Capacity - Total</b>		<b>160</b>	<b>25,968</b>	<b>559</b>	<b>17,916</b>	<b>1,758</b>	<b>46,361</b>	<b>146,776</b>	<b>193,137</b>	<b>-</b>	<b>2,143</b>	<b>190,994</b>	<b>143,263</b>	<b>47,731</b>

Table B-7

Halton Region  
2017 Development Charge Study  
Water Capital Projects - Total (\$2017, \$000's)

Unique ID	Description	2017	2018	2019	2020	2021	Sub-total		Total (2017-2031)	Bynd 2031 (Ovrszng)	Non-Growth	Net Growth	Residential	Non Residential
							(2017-2021)	2022-2031						
<b>Greenfield</b>														
3713	400mm WM on Burnhamthorpe Rd from Trafalgar Rd to new North Oakville road (Zone O4) (Design) (OAK)	-	468	-	-	-	468	-	468	-	-	468	346	122
4983	400mm WM on new North Oakville road from Burnhamthorpe Rd to Dundas St (Zone O4) (Design) (OAK)	-	635	-	-	-	635	-	635	-	-	635	470	165
5627	600mm WM through North Oakville Lands from Tremaine Rd to Bronte Rd (Zone O3) (OAK)	-	-	-	-	-	-	7,739	7,739	-	-	7,739	5,727	2,012
5850	1050mm WM on Upper Middle Rd from Burboak Drive to Appleby Line (Zone B2) (Construction) (BUR)	-	-	-	-	-	-	10,283	10,283	3,496	-	6,787	5,022	1,765
5853	600mm WM on Tremaine Rd from Dundas St to approximately 950 m north (North Oakville Lands) (Zone O3) (OAK)	-	-	-	-	-	-	1,422	1,422	-	-	1,422	1,052	370
5881	400 mm WM from Waterdown pumping station along North Service Rd to King Rd (Zone B2) (BUR)	-	-	-	-	-	-	7,055	7,055	-	-	7,055	5,221	1,834
6318	300mm WM on No 14 Siderd from Tremaine Rd. to Milton Reservoir (Zone M5G) (MIL)	-	279	1,520	-	-	1,799	-	1,799	-	1,349	450	333	117
6367	Burboak Pumping Station Phase 1, 60 ML/d (Zone B2) - Construction (BUR)	-	-	-	-	-	-	13,693	13,693	8,764	-	4,929	3,647	1,282
6368	1050mm WM on Burboak Dr from the QEW to Upper Middle Rd (Zone B2) - Construction (OAK)	-	-	-	-	-	-	9,766	9,766	4,102	-	5,664	4,191	1,473
6443	400mm WM on Burnhamthorpe Rd from Trafalgar Rd to new North Oakville road (Zone O4) (Construction) (OAK)	-	-	-	2,547	-	2,547	-	2,547	-	-	2,547	1,885	662
6444	400mm WM from Burnhamthorpe Rd to Dundas St on new North Oakville road (Zone O4) (Construction) (OAK)	-	-	-	3,461	-	3,461	-	3,461	-	-	3,461	2,561	900
6597	300mm WM on RR 25 from No. 32 Siderd to 640 m north of Wallace St. (Zone A9G) (HHACT)	-	-	-	-	-	-	1,430	1,430	-	-	1,430	1,059	371
6600	300 mm WM on No. 32 Siderd from RR 25 to 3rd Line Reservoir (Zone A9G) (HHACT)	-	-	-	-	-	-	1,333	1,333	-	-	1,333	987	346
6603	400mm WM on 8th Line from 10th Siderd to existing 400mm (Zone G6L) (HHGEO)	-	-	361	1,963	-	2,324	-	2,324	-	-	2,324	1,720	604
6608	750mm WM on Trafalgar from 15th Siderd to 22nd Siderd Lake Based Reservoir (Zone G6L) (HHGEO)	-	-	2,533	13,806	-	16,339	-	16,339	-	-	16,339	12,090	4,249
6609	400mm WM on 17th Siderd from Trafalgar Rd to Main St (Zone G6L) (HHGEO)	-	-	388	2,116	-	2,504	-	2,504	-	-	2,504	1,853	651
6611	600mm WM on No 10 Siderd from 8th Line to 9th Line (Zone G6L) (HHGEO)	-	612	3,339	-	-	3,951	-	3,951	-	-	3,951	2,924	1,027
6612	600mm WM on No 10 Siderd from 9th Line to 10th Line (Zone G6L) (HHGEO)	-	691	3,768	-	-	4,459	-	4,459	-	-	4,459	3,299	1,160
6613	600mm WM on No 10 Siderd from 10th Line to Adamson St S (Zone G6L) (HHGEO)	-	-	-	-	-	-	1,606	1,606	-	-	1,606	1,189	417
6614	600 mm WM on Adamson St from 10th Siderd to Guelph St (Zone G6L) (HHGEO)	-	-	-	-	-	-	2,661	2,661	-	-	2,661	1,969	692
6615	600mm WM on Guelph St from Adamson St to Bovaird Dr (Region of Peel) (Zone G6L) (HHGEO)	-	-	-	-	-	-	1,971	1,971	-	-	1,971	1,459	512
6616	400mm WM on Thompson Rd South from Britannia Rd to approx. 1,211 south (Zone M4) (MIL)	-	-	-	-	-	-	1,746	1,746	-	-	1,746	1,292	454
6617	400mm WM on new roadway south of Britannia Rd from Thompson Rd South to 4th Line (Zone M4) (MIL)	-	-	-	-	-	-	2,278	2,278	-	-	2,278	1,685	593
6618	400mm WM on new roadway south of Britannia Rd from 4th Line to 5th Line (Zone M4) (MIL)	-	-	-	-	-	-	2,314	2,314	-	-	2,314	1,713	601
6619	400mm WM on new roadway south of Britannia Rd from 5th Line to 6th Line (Zone M4) (MIL)	-	-	-	-	-	-	1,559	1,559	-	-	1,559	1,154	405

Table B-7

Halton Region  
2017 Development Charge Study  
Water Capital Projects - Total (\$2017, \$000's)

Unique ID	Description	2017	2018	2019	2020	2021	Sub-total		Total (2017-2031)	Bynd 2031 (Ovrszng)	Non-Growth	Net Growth	Residential	Non Residential
							(2017-2021)	(2022-2031)						
<b>Greenfield</b>														
6620	400mm WM on 6th Line from Britannia Rd to 600 m south (Zone M4) (MIL)	-	-	-	-	-	-	1,078	1,078	-	-	1,078	798	280
6621	400mm WM on 6th Line from Britannia Rd to future Louis St. Laurent Blvd. (Zone M4) (MIL)	-	-	-	-	-	-	2,763	2,763	-	-	2,763	2,044	719
6622	400mm WM on 6th Line from Derry Rd to future Louis St. Laurent Blvd (Zone M4) (MIL)	-	-	-	-	-	-	3,328	3,328	-	-	3,328	2,463	865
6623	400mm WM on 5th Line from Britannia Rd to future Louis St. Laurent Blvd (Zone M4) (MIL)	-	-	-	-	-	-	2,034	2,034	-	-	2,034	1,505	529
6624	400mm WM on 4th Line from Britannia Rd to 650 m south (Zone M4) (MIL)	-	-	-	-	-	-	724	724	-	-	724	535	189
6625	400mm WM on Lower Base Line (East) from 4th Line to 5th Line (Zone M4) (MIL)	-	-	-	-	-	-	2,714	2,714	-	-	2,714	2,009	705
6626	400mm WM on 5th Line from Britannia Rd to 650 m south (Zone M4) (MIL)	-	-	-	-	-	-	736	736	-	-	736	545	191
6627	400mm WM on 4th Line from 650 m south of Britannia Rd to Lower Base Line (West) (Zone M4) (MIL)	-	-	-	-	-	-	2,322	2,322	-	-	2,322	1,718	604
6628	400mm WM on 5th Line from 650 m south of Britannia Rd to Lower Base Line (West) (Zone M4) (MIL)	-	-	-	-	-	-	3,081	3,081	-	-	3,081	2,280	801
6629	600mm WM on Louis St. Laurent Ave from 5th Line to 6th Line (Zone M4) (MIL)	-	-	-	-	-	-	2,651	2,651	-	-	2,651	1,962	689
6630	600mm WM on Louis St. Laurent Ave from 6th Line to Trafalgar Rd (Zone M4) (MIL)	-	-	-	-	-	-	4,358	4,358	-	-	4,358	3,225	1,133
6631	400mm WM on Louis St. Laurent Ave from Trafalgar Rd to 8th Line (Zone M4) (MIL)	-	-	-	-	-	-	2,725	2,725	-	-	2,725	2,016	709
6632	400mm WM on Britannia Rd from Trafalgar Rd to 600 m east (Zone M4) (MIL)	-	-	-	-	-	-	1,071	1,071	-	-	1,071	792	279
6633	400mm WM on Britannia Rd from 600 m east of Trafalgar Rd to 8th Line (Zone M4) (MIL)	-	-	-	-	-	-	1,167	1,167	-	-	1,167	863	304
6634	400mm WM on new Milton Rd from Trafalgar Rd to approximately 700 m east (Zone M4) (MIL)	-	-	-	-	-	-	1,571	1,571	-	-	1,571	1,162	409
6635	400mm WM on 8th Line from Derry Rd. to future Louis St. Laurent Blvd (Zone M4) (MIL)	-	-	-	-	-	-	2,947	2,947	-	-	2,947	2,181	766
6636	400mm WM on 8th Line from Britannia Rd to future Louis St. Laurent Blvd (Zone M4) (MIL)	-	-	-	-	-	-	2,338	2,338	-	-	2,338	1,730	608
6637	400mm WM on new roadway from Britannia Rd to approx. 1,200 m south (Zone M4) (MIL)	-	-	-	-	-	-	1,679	1,679	-	-	1,679	1,243	436
6638	400mm WM on Derry Rd from Trafalgar Rd to 8th Line (Zone M4) (MIL)	-	-	-	-	-	-	1,528	1,528	-	-	1,528	1,130	398
6641	400 mm WM on Hornby Rd from Steeles Ave to Trafalgar Rd (Zone 250) (HHS)	-	-	-	-	-	-	2,368	2,368	-	-	2,368	1,753	615
6642	400 mm WM in the 401 growth corridor north of Steeles from Hornby Rd to Trafalgar Rd (Zone 250) (HHS)	-	-	-	-	-	-	1,810	1,810	-	-	1,810	1,340	470
6643	400 mm WM in the 401 growth corridor north of Steeles from Trafalgar Rd to approximately 400m east of 8th Line (Zone 250) (HHS)	-	-	-	-	-	-	2,640	2,640	-	-	2,640	1,954	686
6644	400mm WM in the 401 growth corridor from Steeles Ave to approximately 300 m north (Zone 250) (HHS)	-	-	-	-	-	-	1,141	1,141	-	-	1,141	845	296
6645	400mm WM in the 401 growth corridor north of Steeles Ave. from 1,000 m west of 9th Line to 900 m east of 9th Line (Zone 250) (HHS)	-	-	-	-	-	-	1,931	1,931	-	-	1,931	1,429	502
6646	400mm WM in the 401 growth corridor from Steeles Ave to approximately 330 m north (Zone 250) (HHS)	-	-	-	-	-	-	1,110	1,110	-	-	1,110	821	289



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Halton Region  
2017 Development Charge Study  
Water Capital Projects - Total (\$2017, \$000's)

Unique ID	Description	2017	2018	2019	2020	2021	Sub-total		Bynd 2031 (Ovrszng)	Net Growth	Residential	Non Residential
							(2017-2021)	(2022-2031)				
<b>Greenfield</b>												
6647	400mm WM in the 401 growth corridor north of Steeles Ave. from 600 m west of 10th Line to 1,000 m east of 10th Line (Zone 250), (HHS)	-	-	-	-	-	-	2,136	-	2,136	1,581	555
6648	400mm WM in the 401 growth corridor from Steeles Ave to 340 m north (Zone 250), (HHS)	-	-	-	-	-	-	1,512	-	1,512	1,118	394
6649	400mm WM on Esquering Line from James Snow Parkway to approximately 800 m north (Zone 267), (MIL)	-	-	-	-	-	-	1,270	-	1,270	940	330
6650	400mm WM on new roadway from Esquering Line to approximately 360 m west of Boston Church Rd (Zone 267)	-	-	-	-	-	-	3,443	-	3,443	2,548	895
6652	400mm WM on new roadway from 400 m west of Third Line to No 5 Siderd (Zone 267), (MIL)	-	-	-	-	-	-	1,177	-	1,177	871	306
6653	400mm WM on No 5 Siderd from approximately 400 m west of 3rd Line to 3rd Line (Zone 267), (MIL)	-	-	-	-	-	-	465	-	465	344	121
6654	750mm WM on Trafalgar Rd from 10th Siderd to approximately 1,700 m north of 10th Siderd (Zone G6L), (HHGEO)	840	-	-	4,583	-	5,423	-	-	5,423	4,013	1,410
6655	750mm WM on Trafalgar Rd from 1,700 m north of 10th Siderd to 15th Siderd (Zone G6L), (HHGEO)	753	-	-	4,108	-	4,861	-	-	4,861	3,597	1,264
6657	400mm WM on Tremaine Rd from Britannia Rd to 2,200 m south of Britannia Rd (Zone 223.5), (MIL)	-	-	-	-	-	-	3,632	-	3,632	2,687	945
6659	400mm WM on new road alignment from Tremaine Rd to approximately 360 m west (Zone 223.5), (MIL)	-	-	-	-	-	-	467	-	467	346	121
6662	600 mm WM on Wyecroft Rd from Burloak Dr to the 900mm WM on the SE corner of the 3rd line and QEW, (OAK)	-	-	-	-	-	-	16,341	-	16,341	12,092	4,249
6666	750mm WM on Neyagawa Blvd. from Burnhamthorpe Rd W to Lower Base Line W (MIL)	-	-	-	-	-	-	8,699	7,829	8,699	644	226
6694	10 ML Zone G6L Storage at 22nd Siderd (HHGEO)	-	-	-	-	-	-	11,660	-	11,660	8,629	3,031
6697	15 ML storage expansion at Zone M4 Reservoir (TWL = 250m) (HHGEO)	-	-	-	-	-	-	16,609	-	16,609	12,290	4,319
6701	Kitchen Zone O3 Pumping Station Expansion by 80 ML/d (OAK)	-	-	-	-	-	-	12,830	8,596	12,830	3,133	1,101
6702	40 ML/d Expansion at the Neyagawa Pumping Station (OAK)	-	-	-	-	-	-	7,200	-	7,200	5,328	1,872
6863	Waterdown Road Pumping Station Expansion (Zones B2, B3A & B5A) (BUR)	-	-	-	-	-	-	5,629	-	5,629	4,165	1,464
7014	400 mm WM from Waterdown Reservoir Pumping Station to new North Aldershd Reservoir (Zone B3A) (BUR)	-	-	-	-	-	-	2,437	-	2,437	1,803	634
7284	400mm WM and valve chamber to be constructed on Neyagawa Blvd (Regional Road 4) (OAK)	223	-	-	-	-	223	-	-	223	165	58
7357	400mm WM on Sixth Line from the proposed William Halton Parkway (RR-40) southward approximately 300m (OAK)	270	-	-	-	-	270	-	-	270	200	70
7497	400mm WM on Sixth Line from approximately 300m southward of William Halton Parkway (RR 40) to Burnhamthorpe Rd (OAK)	642	-	-	-	-	642	-	-	642	475	167
7498	Lake Based Servicing transfer of Derry Rd/RR. 25 area (MIL)	-	-	-	56	-	56	224	-	280	207	73
7501	400mm WM on new North Oakville Rd west of Neyagawa Blvd. (OAK)	-	-	600	-	-	3,000	-	-	3,000	2,220	780
7504	1200mm WM on Britannia Rd from 4th Line to RR 25 (Zone M4) - Construction (MIL)	-	25,000	-	-	-	25,000	-	8,000	17,000	12,580	4,420
7505	1050mm WM on Burloak Dr from Burloak Pumping Station to the QEW - Construction (OAK)	-	-	-	-	-	-	6,690	2,810	6,690	2,871	1,009
7507	600mm WM on 10th Siderd from Trafalgar Rd to 8th Line (Zone G6L) - Construction (HHGEO)	-	3,675	-	-	-	3,675	-	-	3,675	2,720	955
7570	4.5 ML North Aldershd in ground Reservoir (Zone B3B) (BUR)	-	-	-	-	-	-	5,623	-	5,623	4,161	1,462
<b>Greenfield - Total</b>		-	<b>34,088</b>	<b>12,509</b>	<b>32,640</b>	<b>2,400</b>	<b>81,637</b>	<b>226,715</b>	<b>43,597</b>	<b>263,406</b>	<b>194,919</b>	<b>68,487</b>

Table B-7

Halton Region  
 2017 Development Charge Study  
 Water Capital Projects - Total (\$2017, \$000's)

Unique ID	Description	2017	2018	2019	2020	2021	Sub-total		Total (2017-2031)	Bynd 2031 (Ovrszng)	Non-Growth	Net Growth	Residential	Non Residential
							(2017-2021)	(2022-2031)						
<b>Built Boundary</b>														
6602	7.5 ML storage expansion at Watdown Reservoir (existing site) (Zone B1A) (BUR)	-	-	-	-	-	-	8,305	8,305	-	7,724	581	441	140
6704	200mm WM on Brock Ave from Elgin Street to Lakeshore Rd (BUR)	-	-	-	91	-	91	363	454	-	-	454	345	109
6705	200mm WM on Regina Drive from Maple Avenue to Ecole Renaissance Schooyard (BUR)	-	-	-	75	-	75	302	377	-	-	377	287	90
6708	300mm WM on Elizabeth St from James St to approximately 95 m north (BUR)	-	-	-	-	-	-	192	192	-	-	192	146	46
6709	300mm WM on Plains Rd East from north of Grandview Rd to twinned section on Plains Rd (BUR)	-	492	1,968	-	-	2,460	-	2,460	-	-	2,460	1,870	590
6710	300mm WM on Plains Rd East (Twinned adjacent to 6709) (BUR)	-	-	-	-	-	-	671	671	-	-	671	510	161
6711	300mm WM on Birchwood Avenue from Plains Rd East southwards towards Fairwood Place East (BUR)	-	-	-	-	-	-	111	111	-	-	111	85	26
6712	300mm WM on Gallagher Rd from Plains Rd East to 160 m Northerly (BUR)	-	-	-	-	-	-	256	256	-	-	256	195	61
6713	300mm WM on Downsview Rd from Plains Rd East to Dowland Crescent (BUR)	-	-	-	-	-	-	238	238	-	-	238	180	58
6714	300mm WM on Brant St from Fairview St to 180 m northerly (BUR)	-	-	-	81	-	81	324	405	-	-	405	308	97
6715	300mm WM on Woodview Rd from Fairview St to 100 m Northerly (BUR)	-	-	-	46	-	46	185	231	-	-	231	176	55
6716	200mm WM on from end of Commerce Ct north to Fairview St (BUR)	-	-	-	74	-	74	296	370	-	-	370	281	89
6717	300mm WM on Fairview St from Appleby Line to Taylor Crescent (BUR)	-	-	-	200	-	200	800	1,000	-	-	1,000	760	240
6721	300mm WM on Ontario St South from Main St East to Parkway Drive East (MIL)	416	1,666	-	-	-	2,082	-	2,082	-	-	2,082	1,582	500
6722	300mm WM on Woodward Avenue between Martin St and Ontario St North (MIL)	410	1,366	-	-	-	1,776	-	1,776	-	-	1,776	1,350	426
6723	400mm WM on Bronte St between Main St West and Barton St (MIL)	-	-	-	-	-	-	1,212	1,212	-	-	1,212	921	291
6724	300mm WM on Main St East between James St and Martin St (MIL)	-	-	-	-	-	-	575	575	-	-	575	437	138
6725	300mm WM on Laurier Avenue between Bronte St and Commercial St (MIL)	-	-	-	-	-	-	2,436	2,436	-	-	2,436	1,851	585
6726	300mm WM on Sovereign St between Bronte Rd and East St (OAK)	-	419	-	1,678	-	2,097	-	2,097	-	-	2,097	1,593	504
6728	300mm WM on Cowan Ave between Kerr St and Inglewood Drive (OAK)	-	-	-	-	-	-	653	653	-	-	653	497	156
6729	300mm WM on Deane Ave between Kerr St and Felan Ave (OAK)	-	-	-	-	-	-	1,049	1,049	-	-	1,049	798	251
6731	300mm WM on Forsythe St between Rebecca St and Burnet St (OAK)	-	-	-	-	-	-	617	617	-	-	617	468	149
6733	300 mm Replacement on Cross St from Guelph St to Main St (HHGEO)	-	-	-	-	-	-	214	214	-	-	214	163	51
6735	300 mm replacement on Guelph St between Mountairview Rd North and Sinclair Ave (HHGEO)	-	391	-	1,564	-	1,955	-	1,955	-	-	1,955	1,486	469
7500	Milton West Looping - 400mm WM on Derry Rd from Santa Maria Blvd. to Bronte St South, and a 400 mm WM on Main St West from Scott	-	579	-	3,158	-	3,737	-	3,737	-	187	3,550	2,698	852
7503	300 mm WM on Sixth Line from Hays Blvd to River Glen Blvd. Project required to support Zone 3/4/5 Boundary Re-alignment (OAK)	-	30	-	120	-	150	-	150	-	8	142	108	34
<b>Built Boundary - Total</b>		826	4,943	1,968	7,087	-	14,824	18,799	33,623	-	7,919	25,704	19,536	6,168
<b>Total Water Projects</b>		986	64,999	15,036	57,643	4,158	142,822	392,290	535,112	43,597	11,411	480,104	357,718	122,386

Note: May not add due to rounding

Table B-8

Halton Region  
2017 Development Charge Study  
Wastewater Capital Projects - Total (\$2017, \$000's)

Unique ID	Description	2017	2018	2019	2020	2021	Sub-total		Bynd 2031 (Ovrszng)	Non-Growth	Net Growth	Residential	Non Residential
							(2017-2021)	2022-2031					
<b>Capacity - Region Wide</b>													
6588	Mid-Halton WWTP expansion from 125 ML/d to 175 ML/d (OAK)	1,995	-	17,957	-	79,809	99,761	-	-	36,911	62,850	46,509	16,341
7517	Halton Wastewater Master Plan (REG)	-	450	-	-	-	450	1,600	-	-	2,050	1,517	533
7518	Wastewater Collection System Analysis (REG)	110	110	110	110	110	550	1,100	-	-	1,650	1,215	435
7519	Wastewater Treatment Capacity Annual Monitoring Report (REG)	50	50	50	50	50	250	500	-	-	750	555	195
7521	Black Creek Monitoring Program (HHACT)	-	-	50	50	50	150	250	-	-	400	296	104
7528	North WWPS expansion of 1,200 L/s at Mid-Halton WWTP (OAK)	-	-	-	-	-	-	22,564	-	11,508	11,056	8,181	2,875
7532	New 2400 mm WWM inlet to Skyway WWTP parallel to QEW (BUR)	150	3,768	-	20,544	-	24,462	-	-	22,750	1,712	1,266	446
7536	Regional Sanitary Sewer System Invert Survey (REG)	-	350	-	-	-	350	-	-	-	350	259	91
7538	Peer Review of InfoWorks Model Calibration (REG)	-	100	-	-	-	100	-	-	-	100	74	26
7545	Flow Monitoring for Wastewater Model Calibration (REG)	-	325	-	-	-	325	-	-	-	325	241	84
7548	Mid-Halton WWTP expansion from 175 ML/d to 225 ML/d (Design)	-	-	-	-	-	-	18,000	18,000	-	-	-	-
7549	900 mm WWM on 8th Line from 10th Side Rd to 5th Side Rd - Construction (HHGEO)	-	-	24,072	-	-	24,072	-	-	-	24,072	17,813	6,259
7550	900 mm WWM on 8th Line from 5th Side Rd to Steeles Ave - Construction (HHGEO)	-	-	9,530	-	-	9,530	-	-	-	9,530	7,052	2,478
7552	1050 mm WWM on Steeles Ave from 8th Line to Crossing Easement - Construction (HHGEO)	-	-	3,156	-	-	3,156	-	-	-	3,156	2,335	821
<b>Capacity - Total</b>		<b>2,305</b>	<b>5,153</b>	<b>54,925</b>	<b>20,754</b>	<b>80,019</b>	<b>163,156</b>	<b>44,014</b>	<b>18,000</b>	<b>71,169</b>	<b>118,001</b>	<b>87,313</b>	<b>30,688</b>

Table B-8

Halton Region  
2017 Development Charge Study  
Wastewater Capital Projects - Total (\$2017, \$000's)

Unique ID	Description	2017	2018	2019	2020	2021	Sub-total		Total (2017-2031)	Bynd 2031 (Ovrszng)	Non-Growth	Net Growth	Residential	Non Residential
							(2017-2021)	2022-2031						
<b>Greenfield</b>														
4994	600 mm WWM on new North Oakville road from Burnhamthorpe Rd to Dundas St (OAK)	-	1,268	-	6,916	-	8,184	-	8,184	-	-	8,184	6,056	2,128
5906	750 mm WWM on new road alignment from Louis St. Laurent to Britannia Rd (MIL)	-	1,594	-	8,694	-	10,288	-	10,288	-	-	10,288	7,614	2,674
5907	300 mm WWM North Aldershot Servicing (BUR)	-	-	-	-	-	4,563	-	4,563	-	-	4,563	3,377	1,186
6481	450 mm WWM on internal road parallel to Dundas St from west of 16 Mile Creek Bridge to 190 m east of Proudfoot Trail (OAK)	-	-	75	-	405	480	-	480	-	-	480	356	124
6496	Twinnd 250mm WWFM from Norval WWPS to new WWPS #6570 at Mountainview Rd. (HHGEO)	-	-	-	-	-	1,333	-	1,333	-	-	1,333	987	346
6497	300 mm WWM on Derry Rd from 8th Line to Trafalgar Rd (MIL)	-	-	-	-	-	885	-	885	-	-	885	655	230
6498	450 mm WWM on new road from 8th Line to Trafalgar Rd (MIL)	-	-	-	-	-	1,651	-	1,651	-	-	1,651	1,222	429
6499	300 mm WWM on Britannia Rd from 8th Line to Trafalgar/Britannia WWPS (MIL)	-	-	-	-	-	1,148	-	1,148	-	-	1,148	849	299
6500	600 mm WWM on 4th Line from new road to Lower Base Line WWPS (MIL)	-	-	-	-	-	4,632	-	4,632	-	-	4,632	3,427	1,205
6501	450 mm WWM on 4th Line from south of Britannia Rd to new road (MIL)	-	-	-	-	-	3,722	-	3,722	-	-	3,722	2,755	967
6502	525 mm WWM on Thompson Rd and new internal road from south of Britannia to 4th Line (MIL)	-	-	-	-	-	2,520	-	2,520	-	-	2,520	1,865	655
6503	300 mm WWM on 8th Line from north of Derry Rd to Derry Rd (MIL)	-	-	-	-	-	537	-	537	-	-	537	397	140
6504	450 mm WWM on 8th Line from north of new road to new road (MIL)	-	-	-	-	-	864	-	864	-	-	864	639	225
6505	300 mm WWM on 8th Line from north of Britannia Rd to Britannia Rd (MIL)	-	-	-	-	-	424	-	424	-	-	424	314	110
6506	750 mm WWM on 9th Line from Argyl Rd to 10th Side Rd - Georgetown South Connection. (HHGEO)	-	1,290	-	7,030	-	8,320	-	8,320	-	-	8,320	6,157	2,163
6508	Decommissioning of HH WWPS #3, connection to new 8th Line trunk sewer and conversion of site to septage receiving facility (HHS)	-	-	157	-	157	628	-	785	-	-	785	581	204
6552	450mm WWM on new road alignment in Milton Education Village from Louis St Laurent extension to 1115 m south (MIL)	-	-	-	-	-	883	-	883	-	-	883	653	230
6553	450 mm WWM on Louis St Laurent extension from 340m west of Tremaine Rd to Tremaine Rd (MIL)	-	844	-	-	-	844	-	844	-	-	844	625	219
6554	600 mm WWM on Lower Base Line from WWFM discharge approx 650 m west of 1st Line to RR 25 (MIL)	-	-	-	-	-	9,034	-	9,034	-	-	9,034	6,685	2,349
6555	New 225 L/s WWPS on Tremaine Rd at Lower Base Line (MIL)	-	-	-	-	-	7,314	-	7,314	-	-	7,314	5,413	1,901
6556	Twin 400 mm WWFM from Tremaine WWPS to Lower Base Line, approx. 650 m west of 1st Line (MIL)	-	-	-	-	-	4,520	-	4,520	-	-	4,520	3,345	1,175
6557	600 mm WWM on Tremaine Rd from approximately 1500 m north of South Tremaine Rd WWPS to South Tremaine Rd WWPS (MIL)	-	-	-	-	-	6,583	-	6,583	-	-	6,583	4,872	1,711
6559	525 mm WWM on Tremaine Rd from Britannia Rd to 1050 m south of Britannia Rd (MIL)	-	-	-	-	-	4,629	-	4,629	-	-	4,629	3,425	1,204
6560	525 mm WWM on James Show Pkwy and new road alignment from Steeles Ave to Esquesing Line (MIL)	-	-	-	-	-	2,065	-	2,065	-	-	2,065	1,528	537
6561	450 mm WWM on new road and Britannia Rd from Milton Education Village to Tremaine Rd (MIL)	-	-	-	-	-	562	-	562	-	-	562	416	146
6562	450 mm WWM on new road from 440 m north of Derry Rd to Derry Rd and 525 mm WWM on Derry Rd from 725 m east of 5th Line to 5th	-	227	-	1,238	-	1,465	-	1,465	-	-	1,465	1,084	381
6564	525 mm WWM on new alignment from Esquesing Line to 3rd Line (MIL)	-	-	-	-	-	3,157	-	3,157	-	-	3,157	2,336	821
6567	Twinnd 300mm WWFM on 10th Side Rd from 9th Ln to New WW #9 (HHGEO)	-	157	849	-	-	1,006	-	1,006	-	-	1,006	744	262

Table B-8

Halton Region  
2017 Development Charge Study  
Wastewater Capital Projects - Total (\$2017, \$,000's)

Unique ID	Description	2017	2018	2019	2020	2021	Sub-total		Total (2017-2031)	Bynd 2031 (Ovrszng)	Non-Growth	Net Growth	Residential	Non Residential			
							(2017-2021)	2022-2031									
<b>Greenfield</b>																	
6570	360 L/s WWPS at 10 Side Rd/9th Line (HHGEO)	-	1,420	-	6,943	-	8,363	-	8,363	-	-	8,363	6,189	2,174			
6578	525 WWM on Trafalgar Rd from south of Britannia Rd to Britannia Rd/Trafalgar Rd WWPS (MIL)	-	-	-	-	-	4,389	-	4,389	-	-	4,389	3,248	1,141			
6581	1350 mm WWM on 5th Line from Britannia Rd to Lower Base Line (MIL)	-	-	-	-	-	15,678	-	15,678	-	-	15,678	11,602	4,076			
6582	1350 mm WWM on Lower Base Line from 5th Line to 4th Line (MIL)	-	-	-	-	-	10,003	-	10,003	-	-	10,003	7,402	2,601			
6583	525 mm WWM on new road from 1400 m north of Britannia Rd to Britannia Rd (MIL)	-	-	-	-	-	5,727	-	5,727	-	-	5,727	4,238	1,489			
6584	1,805 L/s WWPS at Lower Base Line and 4th Line (MIL)	-	607	-	-	-	607	29,762	30,369	-	-	30,369	22,473	7,896			
6585	Twinned 900 mm WWFM from Lower Base Line to RR 25 (MIL)	-	1,270	-	-	-	1,270	62,230	63,500	-	-	63,500	46,990	16,510			
6586	750 mm WWM on 8th Line from Argyl Rd to 10th Side Rd (HHGEO)	-	-	486	2,649	-	3,135	-	3,135	-	-	3,135	2,320	815			
6587	600 mm WWM on 8th Line from Miller Rd to Argyl Rd (HHGEO)	-	-	415	2,256	-	2,671	-	2,671	-	-	2,671	1,976	695			
6589	35 L/s WWPS on 10th Side Rd in Norval (HHGEO)	-	-	-	-	-	731	-	731	-	-	731	541	190			
7168	450 mm sewer on Burnhamthorpe Rd from Neyagawa Blvd. to King's Christian Collegiate (OAK)	-	130	-	-	-	130	-	130	-	-	130	96	34			
7520	600 mm WWM crossing Dundas St and 600 mm WWM on Dundas St from 900m west of Colonel Williams Parkway to Colonel Williams Parkway (Construction) (OAK)	-	-	3,849	-	-	3,849	-	3,849	-	-	3,849	2,848	1,001			
7522	525 mm WWM through developer subdivision from ID 5063 to Burnhamthorpe Rd W (OAK)	-	301	-	1,643	-	1,944	-	1,944	-	-	1,944	1,439	505			
7523	600 mm WWM on Trafalgar Rd from ID 5062 to Burnhamthorpe Rd East (OAK)	553	3,014	-	-	-	3,567	-	3,567	-	-	3,567	2,639	928			
7524	450 mm WWM through developer subdivision from ID 6114 on Thompson Rd westerly (MIL)	-	117	-	639	-	756	-	756	-	-	756	560	196			
7529	1050 mm WWM on Trafalgar Rd from Derry Rd to Golf Course - Construction (MIL)	-	-	7,307	-	-	7,307	-	7,307	-	-	7,307	5,407	1,900			
7530	1050 mm WWM on Trafalgar Rd from Golf Course to Britannia Rd / Trafalgar Rd WWPS - Construction (MIL)	-	-	11,134	-	-	11,134	-	11,134	-	-	11,134	8,239	2,895			
7531	525mm WWM on Fourth Line from Britannia Rd to approximately 900 m north (MIL)	-	673	-	3,664	-	4,337	-	4,337	-	-	4,337	3,209	1,128			
7533	Twinned 750 mm WWFM on Britannia Rd from Trafalgar Rd to 6th Line - Construction (MIL)	-	11,774	-	-	-	11,774	-	11,774	-	-	11,774	8,713	3,061			
7534	450 mm WWM on new road in Milton Education Village from 800m north of Louis St/Laurent extension to Louis St/Laurent extension (MIL)	-	-	-	-	-	634	-	634	-	-	634	469	165			
7535	1200 mm WWM on Britannia Rd from 6th Line to 5th Line - Construction (MIL)	-	13,707	-	-	-	13,707	-	13,707	-	-	13,707	10,143	3,564			
7547	1200 mm WWM on Britannia Rd to 5th Line to James Snow Pkwy - Construction (MIL)	-	5,812	-	-	-	5,812	-	5,812	-	-	5,812	4,301	1,511			
7551	1,200 L/s WWPS on Trafalgar Rd/ Britannia Rd - Construction (MIL)	-	334	21,773	-	-	22,107	-	22,107	-	-	22,107	16,359	5,748			
7553	1050 mm WWM 401 Crossing from Steeles Ave to Auburn Rd - Construction (MIL)	-	-	13,843	-	-	13,843	-	13,843	-	-	13,843	10,244	3,599			
7554	1050 mm WWM on Auburn Rd from Hwy 401 crossing easement to Trafalgar Rd - Construction (MIL)	-	-	4,473	-	-	4,473	-	4,473	-	-	4,473	3,310	1,163			
7555	1050 mm WWM on Trafalgar Rd from Auburn Rd to Derry Rd - Construction (MIL)	-	-	10,005	-	-	10,005	-	10,005	-	-	10,005	7,404	2,601			
<b>Greenfield Total</b>											<b>161,535</b>	<b>190,808</b>	<b>352,343</b>	<b>-</b>	<b>352,343</b>	<b>260,736</b>	<b>91,607</b>

Table B-8

Halton Region  
2017 Development Charge Study  
Wastewater Capital Projects - Total (\$2017, \$000's)

Unique ID	Description	2017	2018	2019	2020	2021	Sub-total		Total (2017-2031)	Bynd 2031 (Ovrszng)	Non-Growth	Net Growth	Residential	Non Residential
							(2017-2021)	2022-2031						
<b>Built Boundary</b>														
6492	825-900 mm WWM on Maple Avenue East Between Lakeshore Rd and Plains Rd East (BUR)	1,475	7,764	-	-	-	-	9,239	9,239	-	7,391	1,848	1,404	444
6493	375 mm WWM on Atwood Ave/Murno Circle and existing sewer alignment from Berton Blvd to Maple Ave (HHGEO)	-	-	422	2,304	-	-	2,726	2,726	-	2,126	600	456	144
6511	Twinning of 525 - 600 mm WWM from Elgin St South along Black Creek alignment to Acton WWTP (HHACT)	-	50	-	462	-	-	512	3,028	-	1,848	1,180	897	283
6515	300 mm WWM on Childs Drive between the south entrance of Satok Crescent and Nipissing Road (MIL)	-	-	-	-	-	-	445	445	-	-	445	339	106
6517	450 mm WWM on Oak St between Ontario St South and Fulton St (MIL)	-	-	-	-	-	-	1,115	1,115	-	-	1,115	847	268
6527	Twin 600 mm WWM on service road to Marine Drive WWPS from Marine Drive (OAK)	-	26	-	127	-	-	153	153	-	-	153	117	36
6530	300 mm WWM on Kerr St between Forster Park and Rebecca St (OAK)	-	-	-	149	-	-	149	957	-	-	957	727	230
6531	250 mm WWM on Chisholm/Rebecca St between Forsyth St and Chisholm St on Rebecca St and on Chisholm St between Rebecca St and 45 m north of Lakeshore Rd West (OAK)	-	-	-	-	-	-	233	233	-	-	233	177	56
6535	450 mm WWM on Trafalgar Rd from 10 m north of Inglehart Street North to Cross Ave (OAK)	-	-	-	-	-	-	1,273	1,273	-	-	1,273	968	305
6537	675 mm WWM on Trafalgar Rd, through GO lot and on Argus St from Spruce St to 60 m north of Cross Ave (OAK)	-	-	-	-	-	-	3,503	3,503	-	-	3,503	2,663	840
7526	Agnes St WWPS Strategy, Scoping Study, EA, Design and Construction (HHACT)	-	50	150	1,002	-	-	1,202	7,239	-	6,010	1,229	934	295
7527	Upsize WWM on Lasalle Park Road from Fairwood Pl to Lasalle WWPS (BUR)	-	-	137	-	546	-	683	683	-	-	683	519	164
7537	Junction St WWPS Capacity Upgrade to 150 L/s WWPS - Design and Construction (BUR)	-	2,455	-	9,822	-	-	12,277	12,277	-	-	12,277	9,331	2,946
7539	Norval WWPS - Capacity upgrade (HHGEO)	-	69	-	278	-	-	347	347	-	-	347	263	84
7540	Decommissioning of Riverside WWPS and Shorewood Place WWPS (OAK)	-	60	240	-	-	-	300	300	-	-	300	228	72
7541	Walker St WWPS - I/I reduction Program to gain capacity at the station, Scoping Study, Design and Construction (OAK)	-	-	286	-	-	-	286	2,347	-	-	2,347	1,783	564
7542	Main St WWPS Capacity Upgrade (HHGEO)	-	-	-	260	-	-	260	260	-	-	260	198	62
7543	Gravity Sewers from Decommissioned Riverside WWPS and Shorewood Place SPS to New Rebecca Trunk (OAK)	-	780	3,120	-	-	-	3,900	3,900	-	-	3,900	2,964	936
7544	Boyne WWPS - Decommissioning upon completion of gravity sewers #7159, #6382, #6381 (MIL)	-	20	80	-	-	-	100	100	-	-	100	76	24
7546	750 mm WWM on No 10 Side Road from WWPS #100 to Eighth Line (in order to decommission WWPS #100) (HHGEO)	-	694	3,783	-	-	-	4,477	4,477	-	-	4,477	3,402	1,075
7556	West River WWPS - Capacity Upgrade to 120 L/s WWPS - Design and Construction, including 450 mm inlet WWM to the station on Service Rd from West River St to West River WWPS (OAK)	-	2,315	-	9,259	-	-	11,574	11,574	-	7,291	4,283	3,255	1,028
<b>Built Boundary - Total</b>		<b>1,475</b>	<b>14,283</b>	<b>8,218</b>	<b>23,663</b>	<b>80,970</b>	<b>546</b>	<b>48,185</b>	<b>17,991</b>	<b>18,000</b>	<b>24,666</b>	<b>41,510</b>	<b>31,548</b>	<b>9,962</b>
<b>Total Wastewater Projects</b>		<b>4,333</b>	<b>63,975</b>	<b>137,352</b>	<b>86,246</b>	<b>80,970</b>	<b>372,876</b>	<b>252,813</b>	<b>625,689</b>	<b>18,000</b>	<b>95,835</b>	<b>511,854</b>	<b>379,597</b>	<b>132,257</b>

Note: May not add due to rounding

**APPENDIX C**  
**CALCULATION OF THE WATER AND WASTEWATER DC**  
**APPLICABLE TO DEVELOPMENT IN HALTON**

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**APPENDIX C – PART 1**  
**OVERVIEW OF THE WATER AND WASTEWATER DC**  
**CALCULATION**



# 1. OVERVIEW OF THE WATER AND WASTEWATER DC CALCULATION

## 1.1. DC Cash Flow Methodology

- 1.1.1. DC Reserve Fund Opening Balance – the full uncommitted DC reserve fund balance is shown as the opening balance in the cash flow calculation. The DC is calculated so as to fully consume that amount, leaving a nil reserve fund balance at the end of the period in 2031. Tables 5-4a and 5-4b in Chapter 5 provide detailed schedules of the DC reserve fund continuity.
- 1.1.2. Project Costs – the nominal cost is in 2017\$, as per Appendix B. The inflated cost (commencing in 2013) allows for average inflation of 2.0%/year, consistent with the increase in the Statcan Capital Cost Index over the previous 10-year period. This rate may vary, up or down, in any year or sequence of years. It will be matched by the change in the DC quantum, which is determined by the same index.
- 1.1.3. DC Credits – are added to the development-related expenditures, as they represent the equivalent of Regional expenditures for works previously provided by developers which are not part of the capital program and must be funded (Chapter 4).
- 1.1.4. External Debt – represent debt charges resulting from external debt previously incurred to fund the growth share of the water and wastewater infrastructure costs (Chapter 4).
- 1.1.5. Internal Debt – represents the outstanding balance owing to Regional Reserve for the previously funded growth share of water and wastewater infrastructure costs (Chapter 4).
- 1.1.6. Historical Post-period Benefit (Oversizing) – is the cost share of previously funded water and wastewater infrastructure that, under the existing DC by-laws, was considered to benefit growth beyond the eligible planning horizon. This cost share is recoverable under the 2017 DC by-law as these costs benefit the planning horizon to 2031 based on BPE, 2011 (Chapter 4).
- 1.1.7. SDE/Sq.Ft. Per Year – SDE are single-detached unit equivalents per year, i.e. the annual gross increase in serviced population divided by the average occupancy for

single detached units. This is the number of serviced SDE's that are expected to be subject to the DC (63,652 in total) (Table A-7C).

In the case of the non-residential DC calculation, the charge is per square foot of non-residential TFA and the costs are allocated over a total of 113,850,883 sq.ft. (Table A-11C).

- 1.1.8. DC Rates** – A DC is calculated, such that when it is inflated at 2.0%/year, the cash flow will produce a zero reserve fund balance in 2031.
- 1.1.9. Anticipated Revenues** – is the number of single detached equivalent units (SDE) or sq.ft. of non-residential TFA, multiplied by the required DC charge per SDE, or per square foot of non-residential TFA.
- 1.1.10. DC Reserve Fund Closing Balance Before Interest** – The opening balance, less the inflated development-related expenditures, credits, debt charges, oversizing, and other commitments, plus the anticipated DC revenues.
- 1.1.11. Interest Earnings/Costs** – provides for interest earnings on positive reserve fund balances at 3.5% per year and borrowing costs on negative balances at 3.5% per year.
- 1.1.12. DC Reserve Fund Closing Balance After Interest** – is the DC reserve fund closing balance before interest, plus interest incurred during the year on the average balance.

The water and wastewater DC rates have been calculated on both a Region-wide and area specific basis, and are presented in Parts 2 and 3 of Appendix C.

**APPENDIX C – PART 2**  
**CASH FLOWS FOR RESIDENTIAL**  
**WATER AND WASTEWATER DCs**

**Summary of Calculation Results - Per SDE**

Service	As Of April 1, 2016		New Calculated		
	Greenfield	Built Boundary	Region - Wide	Area Specific	
				Greenfield	Built Boundary
Water	\$ 10,387	\$ 4,950	\$ 6,005	\$ 7,582	\$ 2,743
Wastewater	10,828	6,707	7,335	8,967	3,957
<b>Total</b>	<b>\$ 21,215</b>	<b>\$ 11,658</b>	<b>\$ 13,340</b>	<b>\$ 16,548</b>	<b>\$ 6,700</b>

\*may not add due to rounding



Table C-1

Halton Region  
 2017 Development Charges Study  
 Water - Region-wide Residential

Year	DC Reserve Fund Opening Balance	Dev't Related Expenditures		Total Unfunded Capital Costs	Historical Oversizing	SDE per Year	DC Rates w. Inflation (%/Yr)	Anticipated Revenues	2012 Allocation Front End Interim Payback	DC Reserve Fund Closing Balance before Interest	Interest Earnings (3.5%) / Costs (3.5%)	DC Reserve Fund Closing Balance after Interest
		Normal	Inflated (2%/Yr)									
2017	67,977,220	(749,000)	(749,000)	(191,525,022)	(9,371,582)	4,536	6,005.30	27,240,465	141,487,890	35,059,970	1,803,151	36,863,121
2018	36,863,121	(41,447,000)	(42,275,940)	(1,775,374)	-	4,536	6,125.40	27,785,274	-	20,597,081	1,005,554	21,602,634
2019	21,602,634	(10,328,000)	(10,745,251)	(1,775,374)	-	4,536	6,247.91	28,340,988	-	37,422,997	1,032,949	38,455,946
2020	38,455,946	(42,198,000)	(44,780,855)	(1,775,374)	-	4,536	6,372.87	28,907,799	-	20,807,515	1,037,111	21,844,626
2021	21,844,626	(3,096,000)	(3,351,210)	(1,775,374)	-	4,537	6,500.33	29,490,490	-	46,208,532	1,190,930	47,399,462
2022	47,399,462	(11,204,000)	(12,370,121)	(1,775,374)	-	4,419	6,630.33	29,299,869	-	62,553,835	1,924,183	64,478,018
2023	64,478,018	(107,267,000)	(120,800,064)	(1,775,374)	-	4,097	6,762.94	27,710,268	-	(30,387,153)	596,590	(29,790,563)
2024	(29,790,563)	(30,276,000)	(34,777,607)	(1,775,374)	-	4,097	6,898.20	28,264,398	-	(38,079,147)	(1,187,720)	(39,266,867)
2025	(39,266,867)	(35,226,000)	(41,272,873)	(1,775,374)	-	4,097	7,036.16	28,829,763	-	(53,485,352)	(1,623,164)	(55,108,516)
2026	(55,108,516)	(55,267,000)	(66,049,181)	(1,775,374)	-	4,097	7,176.89	29,407,023	-	(93,526,048)	(2,601,105)	(96,127,153)
2027	(96,127,153)	(7,382,000)	(8,998,617)	(1,775,374)	-	4,032	7,320.42	29,519,340	-	(77,381,805)	(3,036,407)	(80,418,211)
2028	(80,418,211)	(4,080,000)	(5,072,967)	(1,775,374)	-	4,032	7,466.83	30,109,727	-	(57,156,826)	(2,407,563)	(59,564,389)
2029	(59,564,389)	(7,774,000)	(9,859,312)	(1,775,374)	-	4,032	7,616.17	30,711,941	-	(40,487,135)	(1,750,902)	(42,238,036)
2030	(42,238,036)	(788,000)	(1,019,362)	(1,775,374)	-	4,032	7,768.49	31,326,160	-	(13,706,613)	(979,031)	(14,685,645)
2031	(14,685,645)	(636,000)	(839,188)	(16,175,251)	-	4,032	7,923.86	31,952,663	-	252,579	(252,579)	(0)
<b>Total</b>		<b>(357,718,000)</b>	<b>(402,961,550)</b>	<b>(230,780,141)</b>	<b>(9,371,582)</b>	<b>63,652</b>		<b>438,896,166</b>	<b>141,487,890</b>		<b>(5,248,004)</b>	

Table C-2

Halton Region  
 2017 Development Charges Study  
 Wastewater - Region-wide Residential

Year	DC Reserve Fund Opening Balance	Dev't Related Expenditures		Total Unfunded Capital Costs	Historical Oversizing	SDE per Year	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	2012 Allocation Front End Interim Payback	DC Reserve Fund Closing Balance before Interest	Interest Earnings (3.5%) / Costs (3.5%)	DC Reserve Fund Closing Balance after Interest
		Nominal	Inflated (2%/Yr)									
2017	(62,079,894)	(1,688,000)	(1,688,000)	(186,411,067)	(6,681,995)	4,536	7,334.66	33,270,573	231,017,215	7,426,832	(956,429)	6,470,403
2018	6,470,403	(39,150,000)	(39,933,000)	(3,777,916)	-	4,536	7,481.36	33,935,984	-	(3,304,528)	55,403	(3,249,125)
2019	(3,249,125)	(96,542,000)	(100,442,297)	(3,775,582)	-	4,536	7,630.98	34,614,715	-	(72,852,289)	(1,331,775)	(74,184,064)
2020	(74,184,064)	(43,511,000)	(46,174,221)	(3,770,885)	-	4,536	7,783.60	35,306,998	-	(88,822,172)	(2,852,609)	(91,674,781)
2021	(91,674,781)	(38,077,000)	(41,215,769)	(3,763,584)	-	4,537	7,939.28	36,018,677	-	(100,635,457)	(3,365,429)	(104,000,886)
2022	(104,000,886)	(2,760,000)	(3,047,263)	(3,754,076)	-	4,419	8,098.06	35,785,859	-	(75,016,366)	(3,132,802)	(78,149,168)
2023	(78,149,168)	(17,291,000)	(19,472,474)	(2,389,342)	-	4,097	8,260.02	33,844,375	-	(66,166,610)	(2,525,526)	(68,692,136)
2024	(68,692,136)	(11,135,000)	(12,790,615)	(2,389,342)	-	4,097	8,425.22	34,521,170	-	(49,350,923)	(2,065,754)	(51,416,676)
2025	(51,416,676)	(70,528,000)	(82,634,793)	(2,389,342)	-	4,097	8,593.73	35,211,687	-	(101,229,123)	(2,671,301)	(103,900,425)
2026	(103,900,425)	(45,972,000)	(54,940,796)	(2,389,342)	-	4,097	8,765.60	35,916,733	-	(125,313,829)	(4,011,249)	(129,325,079)
2027	(129,325,079)	(2,716,000)	(3,310,789)	(2,389,342)	-	4,032	8,940.91	36,053,913	-	(98,971,296)	(3,995,187)	(102,966,483)
2028	(102,966,483)	(8,345,000)	(10,375,959)	(2,389,342)	-	4,032	9,119.73	36,774,992	-	(78,956,791)	(3,183,657)	(82,140,449)
2029	(82,140,449)	(424,000)	(537,735)	(2,389,342)	-	4,032	9,302.13	37,510,515	-	(47,557,010)	(2,269,706)	(49,826,715)
2030	(49,826,715)	(118,000)	(152,646)	(2,389,342)	-	4,032	9,488.17	38,260,701	-	(14,108,001)	(1,118,858)	(15,226,859)
2031	(15,226,859)	(1,340,000)	(1,768,102)	(21,769,043)	-	4,032	9,677.93	39,025,891	-	261,887	(261,887)	(0)
<b>Total</b>		<b>(379,597,000)</b>	<b>(418,484,457)</b>	<b>(246,136,886)</b>	<b>(6,681,995)</b>	<b>63,652</b>		<b>536,052,782</b>	<b>231,017,215</b>		<b>(33,686,765)</b>	



Table C-3

Year	DC Reserve Fund Opening Balance	Dev't Related Expenditures		Total Unfunded Capital Costs	Historical Oversizing	SDE per w. Inflation Year	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	2012 Allocation Front End Interim Payback	DC Reserve Fund Closing Balance before Interest	Interest Earnings (3.5%) / Costs (3.5%)	DC Reserve Fund Closing Balance after Interest
		Nominal	Inflated (2%/Yr)									
2017	30,374,500	(121,000)	(121,000)	(117,672,371)	(206,721)	4.536	1,361.47	6,175,718	141,487,890	60,038,016	1,582,219	61,620,235
2018	61,620,235	(18,564,000)	(18,935,280)	-	-	4.536	1,388.70	6,299,232		48,984,187	1,935,577	50,919,765
2019	50,919,765	(420,000)	(436,968)	-	-	4.536	1,416.47	6,425,219		56,908,016	1,886,986	58,795,002
2020	58,795,002	(12,783,000)	(13,565,422)	-	-	4.536	1,444.80	6,553,721		51,783,302	1,935,120	53,718,422
2021	53,718,422	(1,320,000)	(1,428,810)	-	-	4.537	1,473.70	6,685,824		58,975,436	1,972,143	60,947,578
2022	60,947,578	(9,102,000)	(10,049,343)	-	-	4.419	1,503.17	6,642,608		57,540,843	2,073,547	59,614,390
2023	59,614,390	(98,815,000)	(111,281,739)	-	-	4.097	1,533.23	6,282,228		(45,385,122)	249,012	(45,136,109)
2024	(45,136,109)	(121,000)	(138,991)	-	-	4.097	1,563.90	6,407,855		(38,867,245)	(1,470,059)	(40,337,304)
2025	(40,337,304)	(691,000)	(809,617)	-	-	4.097	1,595.18	6,536,030		(34,610,891)	(1,311,593)	(35,922,484)
2026	(35,922,484)	(121,000)	(144,606)	-	-	4.097	1,627.08	6,666,901		(29,400,189)	(1,143,147)	(30,543,336)
2027	(30,543,336)	(121,000)	(147,498)	-	-	4.032	1,659.62	6,692,365		(23,998,470)	(954,482)	(24,952,951)
2028	(24,952,951)	(721,000)	(896,473)	-	-	4.032	1,692.81	6,826,212		(19,023,212)	(769,583)	(19,792,795)
2029	(19,792,795)	(121,000)	(153,457)	-	-	4.032	1,726.67	6,962,741		(12,983,512)	(573,585)	(13,557,097)
2030	(13,557,097)	(121,000)	(156,526)	-	-	4.032	1,761.20	7,101,991		(6,611,632)	(352,953)	(6,964,585)
2031	(6,964,585)	(121,000)	(159,657)	-	-	4.032	1,796.43	7,244,026		119,784	(119,784)	0
<b>Total</b>		<b>(143,263,000)</b>	<b>(158,425,389)</b>	<b>(117,672,371)</b>	<b>(206,721)</b>	<b>63.652</b>		<b>99,502,672</b>	<b>141,487,890</b>		<b>4,939,419</b>	

Halton Region  
 2017 Development Charges Study  
 Water - Capacity Residential

Table C-4

Halton Region  
 2017 Development Charges Study  
 Water - Greenfield Residential

Year	DC Reserve Fund Opening Balance	Dev't Related Expenditures		Total Unfunded Capital Costs	Historical Oversizing	SDE per Year	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	DC Reserve Fund Closing Balance before Interest	Interest Earnings (3.5%) / Costs (3.5%)	DC Reserve Fund Closing Balance after Interest
		Nominal	Inflated (2%/Yr)								
2017	42,970,338	-	-	(72,980,954)	(9,164,861)	3,081	6,220.33	19,166,272	(20,009,205)	401,820	(19,607,385)
2018	(19,607,385)	(19,151,000)	(19,534,020)	(1,682,827)	-	3,081	6,344.74	19,549,598	(21,274,634)	(715,435)	(21,990,069)
2019	(21,990,069)	(8,412,000)	(8,751,845)	(1,682,827)	-	3,081	6,471.63	19,940,599	(12,484,142)	(603,299)	(13,087,441)
2020	(13,087,441)	(24,153,000)	(25,631,357)	(1,682,827)	-	3,081	6,601.07	20,339,401	(20,062,223)	(580,119)	(20,642,342)
2021	(20,642,342)	(1,776,000)	(1,922,400)	(1,682,827)	-	3,082	6,733.09	20,748,723	(3,498,846)	(422,471)	(3,921,316)
2022	(3,921,316)	(376,000)	(415,134)	(1,682,827)	-	3,144	6,867.75	21,589,875	15,570,597	203,862	15,774,460
2023	15,774,460	(8,423,000)	(9,485,666)	(1,682,827)	-	2,822	7,005.10	19,768,172	24,374,139	702,600	25,076,739
2024	25,076,739	(30,067,000)	(34,537,532)	(1,682,827)	-	2,822	7,145.21	20,163,457	9,019,837	596,690	9,616,527
2025	9,616,527	(33,511,000)	(39,263,478)	(1,682,827)	-	2,822	7,288.11	20,566,806	(10,762,971)	(20,063)	(10,783,034)
2026	(10,783,034)	(54,614,000)	(65,268,786)	(1,682,827)	-	2,822	7,433.87	20,978,522	(56,756,124)	(1,181,935)	(57,938,059)
2027	(57,938,059)	(3,633,000)	(4,428,607)	(1,682,827)	-	2,605	7,582.55	19,751,341	(44,298,152)	(1,789,134)	(46,087,286)
2028	(46,087,286)	(2,506,000)	(3,115,896)	(1,682,827)	-	2,605	7,734.20	20,146,368	(30,739,641)	(1,344,471)	(32,084,113)
2029	(32,084,113)	(7,653,000)	(9,705,854)	(1,682,827)	-	2,605	7,888.88	20,549,315	(22,923,479)	(962,633)	(23,886,112)
2030	(23,886,112)	(129,000)	(166,875)	(1,682,827)	-	2,605	8,046.66	20,960,281	(4,775,533)	(501,579)	(5,277,112)
2031	(5,277,112)	(515,000)	(679,532)	(15,332,061)	-	2,605	8,207.59	21,379,466	90,761	(90,761)	0
<b>Total</b>		<b>(194,919,000)</b>	<b>(222,906,981)</b>	<b>(110,189,766)</b>	<b>(9,164,861)</b>	<b>42,862</b>		<b>305,598,196</b>		<b>(6,306,927)</b>	

Table C-5

Halton Region  
 2017 Development Charges Study  
 Water - Built Boundary Residential

Year	DC Reserve Fund Opening Balance	Dev't Related Expenditures		Total Unfunded Capital Costs	Historical Oversizing	SDE per Year	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	2012 Allocation Front End Interim Payback	DC Reserve Fund Closing Balance before Interest	Interest Earnings (3.5%) / Costs (3.5%)	DC Reserve Fund Closing Balance after Interest
		Nominal	Inflated (2%/Yr)									
2017	(5,367,619)	(628,000)	(628,000)	(871,696)	-	1,455	1,381.47	2,009,821	-	(4,857,494)	(178,939)	(5,036,433)
2018	(5,036,433)	(3,732,000)	(3,806,640)	(92,547)	-	1,455	1,409.10	2,050,017	-	(6,885,604)	(208,636)	(7,094,239)
2019	(7,094,239)	(1,496,000)	(1,556,438)	(92,547)	-	1,455	1,437.28	2,091,018	-	(6,652,208)	(240,563)	(6,892,770)
2020	(6,892,770)	(5,262,000)	(5,584,076)	(92,547)	-	1,455	1,466.03	2,132,838	-	(10,436,556)	(303,263)	(10,739,820)
2021	(10,739,820)	-	-	(92,547)	-	1,455	1,495.35	2,175,975	-	(8,656,392)	(339,434)	(8,995,825)
2022	(8,995,825)	(1,726,000)	(1,905,643)	(92,547)	-	1,275	1,525.25	1,945,314	-	(9,048,703)	(315,779)	(9,364,482)
2023	(9,364,482)	(29,000)	(32,659)	(92,547)	-	1,275	1,555.76	1,984,220	-	(7,505,466)	(295,224)	(7,800,692)
2024	(7,800,692)	(88,000)	(101,084)	(92,547)	-	1,275	1,586.87	2,023,904	-	(5,970,420)	(240,994)	(6,211,414)
2025	(6,211,414)	(1,024,000)	(1,199,779)	(92,547)	-	1,275	1,618.61	2,064,382	-	(5,439,359)	(203,889)	(5,643,247)
2026	(5,643,247)	(532,000)	(635,789)	(92,547)	-	1,275	1,650.98	2,105,738	-	(4,265,846)	(173,409)	(4,439,255)
2027	(4,439,255)	(3,628,000)	(4,422,512)	(92,547)	-	1,428	1,684.00	2,404,120	-	(6,550,194)	(192,315)	(6,742,509)
2028	(6,742,509)	(853,000)	(1,060,598)	(92,547)	-	1,428	1,717.68	2,452,202	-	(5,443,453)	(213,254)	(5,656,707)
2029	(5,656,707)	-	-	(92,547)	-	1,428	1,752.04	2,501,246	-	(3,248,008)	(155,833)	(3,403,841)
2030	(3,403,841)	(538,000)	(695,960)	(92,547)	-	1,428	1,787.08	2,551,271	-	(1,641,077)	(88,286)	(1,729,363)
2031	(1,729,363)	-	-	(843,190)	-	1,428	1,822.82	2,602,297	-	29,743	(29,743)	0
<b>Total</b>		<b>(19,536,000)</b>	<b>(21,629,180)</b>	<b>(2,918,004)</b>	<b>-</b>	<b>20,790</b>		<b>33,094,364</b>	<b>-</b>		<b>(3,179,562)</b>	

Table C-6

Halton Region  
 2017 Development Charges Study  
 Wastewater - Capacity Residential

Year	DC Reserve Fund Opening Balance	Dev't Related Expenditures		Total Unfunded Capital Costs	Historical Oversizing	SDE per Year	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	2012 Allocation Front End Interim Payback	DC Reserve Fund Closing Balance before Interest	Interest Earnings (3.5%) / Costs (3.5%)	DC Reserve Fund Closing Balance after Interest
		Nominal	Inflated (2%/Yr)									
2017	(72,463,840)	(1,055,000)	(1,055,000)	(96,494,896)	(2,800,157)	4,536	533.81	2,421,418	231,017,215	60,624,741	(207,184)	60,417,557
2018	60,417,557	(1,220,000)	(1,244,400)	(1,388,574)	-	4,536	544.49	2,469,846	-	60,254,429	2,111,760	62,366,189
2019	62,366,189	(35,727,000)	(37,170,371)	(1,386,240)	-	4,536	555.38	2,519,244	-	26,328,823	1,552,163	27,880,985
2020	27,880,985	(1,219,000)	(1,293,613)	(1,381,543)	-	4,536	566.49	2,569,628	-	27,775,458	973,988	28,749,446
2021	28,749,446	(37,362,000)	(40,441,830)	(1,374,242)	-	4,537	577.82	2,621,424	-	(10,445,203)	320,324	(10,124,879)
2022	(10,124,879)	(155,000)	(171,133)	(1,364,734)	-	4,419	589.37	2,604,480	-	(9,056,266)	(335,670)	(9,391,936)
2023	(9,391,936)	(747,000)	(841,243)	-	-	4,097	601.16	2,463,179	-	(7,770,000)	(300,334)	(8,070,334)
2024	(8,070,334)	(155,000)	(178,046)	-	-	4,097	613.18	2,512,436	-	(5,735,944)	(241,610)	(5,977,554)
2025	(5,977,554)	(155,000)	(181,607)	-	-	4,097	625.45	2,562,692	-	(3,596,469)	(167,545)	(3,764,015)
2026	(3,764,015)	(1,791,000)	(2,140,411)	-	-	4,097	637.96	2,614,005	-	(3,290,421)	(123,453)	(3,413,874)
2027	(3,413,874)	(118,000)	(143,841)	-	-	4,032	650.72	2,623,988	-	(933,727)	(76,083)	(1,009,810)
2028	(1,009,810)	(7,255,000)	(9,020,681)	-	-	4,032	663.73	2,676,468	-	(7,354,022)	(146,367)	(7,500,389)
2029	(7,500,389)	(118,000)	(149,653)	-	-	4,032	677.00	2,729,999	-	(4,920,042)	(217,358)	(5,137,400)
2030	(5,137,400)	(118,000)	(152,646)	-	-	4,032	690.54	2,784,598	-	(2,505,448)	(133,750)	(2,639,198)
2031	(2,639,198)	(118,000)	(155,698)	-	-	4,032	704.36	2,840,288	-	45,392	(45,392)	0
<b>Total</b>		<b>(87,313,000)</b>	<b>(94,340,172)</b>	<b>(103,390,229)</b>	<b>(2,800,157)</b>	<b>63,652</b>		<b>39,013,693</b>	<b>231,017,215</b>			<b>2,963,489</b>

Table C-7

Halton Region  
 2017 Development Charges Study  
 Wastewater - Greenfield Residential

Year	DC Reserve Fund Opening Balance	Dev't Related Expenditures		Total Unfunded Capital Costs	Historical Oversizing	SDE per Year	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	2012 Allocation Front End Interim Payback	DC Reserve Fund Closing Balance before Interest	Interest Earnings (3.5%) / Costs (3.5%)	DC Reserve Fund Closing Balance after Interest
		Nominal	Inflated (2%/Yr)									
2017	24,217,856	(409,000)	(409,000)	(72,798,595)	(3,881,838)	3,081	8,432.85	25,983,539	-	(26,888,039)	(46,728)	(26,934,767)
2018	(26,934,767)	(32,960,000)	(33,619,200)	(2,180,183)	-	3,081	8,601.50	26,503,209	-	(36,230,941)	(1,105,400)	(37,336,341)
2019	(37,336,341)	(54,915,000)	(57,133,566)	(2,180,183)	-	3,081	8,773.53	27,033,286	-	(69,616,804)	(1,871,680)	(71,488,484)
2020	(71,488,484)	(30,953,000)	(32,847,571)	(2,180,183)	-	3,081	8,949.00	27,573,939	-	(78,942,299)	(2,632,539)	(81,574,838)
2021	(81,574,838)	(300,000)	(324,730)	(2,180,183)	-	3,082	9,127.98	28,128,853	-	(55,950,898)	(2,406,700)	(58,357,599)
2022	(58,357,599)	(465,000)	(513,398)	(2,180,183)	-	3,144	9,310.54	29,269,195	-	(31,781,985)	(1,577,443)	(33,359,427)
2023	(33,359,427)	(15,552,000)	(17,514,078)	(2,180,183)	-	2,822	9,496.75	26,799,528	-	(26,254,160)	(1,043,238)	(27,297,398)
2024	(27,297,398)	(10,980,000)	(12,612,569)	(2,180,183)	-	2,822	9,686.69	27,335,413	-	(14,754,737)	(735,912)	(15,490,649)
2025	(15,490,649)	(66,168,000)	(77,526,358)	(2,180,183)	-	2,822	9,880.42	27,882,229	-	(67,314,961)	(1,449,098)	(68,764,059)
2026	(68,764,059)	(43,908,000)	(52,474,125)	(2,180,183)	-	2,822	10,078.03	28,440,389	-	(94,977,978)	(2,865,486)	(97,843,464)
2027	(97,843,464)	(2,598,000)	(3,166,948)	(2,180,183)	-	2,605	10,279.59	26,776,711	-	(76,413,884)	(3,049,504)	(79,463,387)
2028	(79,463,387)	-	-	(2,180,183)	-	2,605	10,485.18	27,312,245	-	(54,331,326)	(2,341,407)	(56,672,733)
2029	(56,672,733)	(306,000)	(388,082)	(2,180,183)	-	2,605	10,694.89	27,858,517	-	(31,382,481)	(1,540,966)	(32,923,448)
2030	(32,923,448)	-	-	(2,180,183)	-	2,605	10,908.78	28,415,659	-	(6,687,971)	(693,200)	(7,381,171)
2031	(7,381,171)	(1,222,000)	(1,612,403)	(19,863,421)	-	2,605	11,126.96	28,983,945	-	126,949	(126,949)	(0)
<b>Total</b>		<b>(260,736,000)</b>	<b>(290,142,026)</b>	<b>(121,004,398)</b>	<b>(3,881,838)</b>	<b>42,862</b>		<b>414,296,656</b>			<b>(23,486,250)</b>	

Table C-8

Halton Region  
 2017 Development Charges Study  
 Wastewater - Built Boundary Residential

Year	DC Reserve Fund Opening Balance	Dev't Related Expenditures		Total Unfunded Capital Costs	Historical Oversizing	SDE per Year	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	2012 Allocation Front End Interim Payback	DC Reserve Fund Closing Balance before Interest	Interest Earnings (3.5%) / Costs (3.5%)	DC Reserve Fund Closing Balance after Interest
		Nominal	Inflated (2%/Yr)									
2017	(13,833,911)	(224,000)	(224,000)	(17,117,576)	-	1,455	3,423.66	4,980,882	-	(26,194,604)	(700,499)	(26,895,103)
2018	(26,895,103)	(4,970,000)	(5,069,400)	(209,159)	-	1,455	3,492.13	5,080,500	-	(27,093,162)	(944,795)	(28,037,957)
2019	(28,037,957)	(5,900,000)	(6,138,360)	(209,159)	-	1,455	3,561.97	5,182,110	-	(29,203,366)	(1,001,723)	(30,205,089)
2020	(30,205,089)	(11,339,000)	(12,033,038)	(209,159)	-	1,455	3,633.21	5,285,752	-	(37,161,533)	(1,178,916)	(38,340,449)
2021	(38,340,449)	(415,000)	(449,209)	(209,159)	-	1,455	3,705.88	5,392,658	-	(33,606,158)	(1,259,066)	(34,865,224)
2022	(34,865,224)	(2,140,000)	(2,362,733)	(209,159)	-	1,275	3,779.99	4,821,015	-	(32,616,100)	(1,180,923)	(33,797,023)
2023	(33,797,023)	(992,000)	(1,117,153)	(209,159)	-	1,275	3,855.59	4,917,436	-	(30,205,899)	(1,120,051)	(31,325,950)
2024	(31,325,950)	-	-	(209,159)	-	1,275	3,932.70	5,015,784	-	(26,519,324)	(1,012,292)	(27,531,617)
2025	(27,531,617)	(4,205,000)	(4,926,828)	(209,159)	-	1,275	4,011.36	5,116,100	-	(27,551,503)	(963,955)	(28,515,457)
2026	(28,515,457)	(273,000)	(326,260)	(209,159)	-	1,275	4,091.59	5,218,592	-	(23,832,284)	(916,085)	(24,748,370)
2027	(24,748,370)	-	-	(209,159)	-	1,428	4,173.42	5,958,062	-	(18,999,466)	(765,587)	(19,765,053)
2028	(19,765,053)	(1,090,000)	(1,355,278)	(209,159)	-	1,428	4,256.89	6,077,224	-	(15,252,266)	(612,803)	(15,865,069)
2029	(15,865,069)	-	-	(209,159)	-	1,428	4,342.02	6,198,768	-	(9,875,459)	(450,459)	(10,325,918)
2030	(10,325,918)	-	-	(209,159)	-	1,428	4,428.86	6,322,744	-	(4,212,333)	(254,419)	(4,466,753)
2031	(4,466,753)	-	-	(1,905,622)	-	1,428	4,517.44	6,449,198	-	76,824	(76,824)	0
<b>Total</b>		<b>(31,548,000)</b>	<b>(34,002,259)</b>	<b>(21,742,259)</b>	<b>-</b>	<b>20,790</b>		<b>82,016,826</b>	<b>-</b>		<b>(12,438,398)</b>	

**APPENDIX C – PART 3**  
**CASH FLOWS FOR NON-RESIDENTIAL**  
**WATER AND WASTEWATER DCs**

**Summary of Calculation Results - Per Sq. Ft**

Service	As Of April 1, 2016		Region - Wide	New Calculated	
	Greenfield	Built Boundary		Area Specific	
				Greenfield	Built Boundary
Water	\$ 3.60	\$ 1.79	\$ 2.22	\$ 2.76	\$ 1.07
Wastewater	4.10	2.78	2.96	3.54	1.75
<b>Total</b>	<b>\$ 7.70</b>	<b>\$ 4.57</b>	<b>\$ 5.18</b>	<b>\$ 6.30</b>	<b>\$ 2.82</b>





Table C-9

Halton Region  
 2017 Development Charges Study  
 Water - Region-wide Non-residential

Year	DC Reserve Fund Opening Balance	Dev't Related Expenditures		DC Credits	Total Unfunded Capital Costs	Historical Oversizing	Sq. Ft. per Year	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	DC Reserve Fund Closing Balance before Interest	Interest Earnings (3.5%) / Costs (3.5%)	DC Reserve Fund Closing Balance after Interest
		Nominal	Inflated (2%/Yr)									
2017	-	(237,000)	(237,000)	(153,109)	(87,606,330)	(3,732,831)	4,555,921	2.217	10,101,330	(81,627,941)	(1,428,489)	(83,056,430)
2018	(83,056,430)	(14,093,000)	(14,374,860)	(242,544)	(2,055,576)	-	4,555,921	2.262	10,303,356	(89,426,054)	(3,018,443)	(92,444,498)
2019	(92,444,498)	(3,568,000)	(3,712,147)	(242,544)	(2,055,576)	-	4,555,921	2.307	10,509,423	(87,945,342)	(3,156,822)	(91,102,164)
2020	(91,102,164)	(14,407,000)	(15,288,824)	(242,544)	(2,055,576)	-	4,555,921	2.353	10,719,612	(97,969,496)	(3,308,754)	(101,278,250)
2021	(101,278,250)	(1,062,000)	(1,149,543)	(242,544)	(2,055,576)	-	4,555,921	2.400	10,934,004	(93,791,909)	(3,413,728)	(97,205,637)
2022	(97,205,637)	(3,709,000)	(4,095,036)	(111,832)	(2,055,576)	-	4,670,221	2.448	11,432,484	(92,035,596)	(3,311,722)	(95,347,317)
2023	(95,347,317)	(35,901,000)	(40,430,357)	(22,397)	(666,695)	-	4,276,127	2.497	10,677,116	(125,789,649)	(3,869,897)	(129,659,546)
2024	(129,659,546)	(10,637,000)	(12,218,569)	(22,397)	(666,695)	-	4,276,127	2.547	10,890,658	(131,676,549)	(4,573,382)	(136,249,930)
2025	(136,249,930)	(12,323,000)	(14,438,359)	(22,397)	(666,695)	-	4,276,127	2.598	11,108,472	(140,268,909)	(4,839,080)	(145,107,988)
2026	(145,107,988)	(19,398,000)	(23,182,406)	(22,397)	(666,695)	-	4,276,127	2.650	11,330,641	(157,648,844)	(5,298,245)	(162,947,089)
2027	(162,947,089)	(2,460,000)	(2,998,726)	-	(666,695)	-	13,859,309	2.703	37,458,088	(129,154,421)	(5,111,776)	(134,266,197)
2028	(134,266,197)	(1,388,000)	(1,725,804)	-	(666,695)	-	13,859,309	2.757	38,207,250	(98,451,445)	(4,072,559)	(102,524,004)
2029	(102,524,004)	(2,729,000)	(3,461,032)	-	(658,100)	-	13,859,309	2.812	38,971,395	(67,671,741)	(2,978,426)	(70,650,166)
2030	(70,650,166)	(254,000)	(328,576)	-	(658,100)	-	13,859,309	2.868	39,750,823	(31,886,019)	(1,794,383)	(33,680,403)
2031	(33,680,403)	(220,000)	(290,285)	-	(5,995,882)	-	13,859,309	2.926	40,545,840	579,270	(579,270)	0
<b>Total</b>		<b>(122,386,000)</b>	<b>(137,931,523)</b>	<b>(1,324,704)</b>	<b>(109,196,460)</b>	<b>(3,732,831)</b>	<b>113,850,883</b>		<b>302,940,493</b>		<b>(50,754,975)</b>	

Table C-10

Halton Region  
 2017 Development Charges Study  
 Wastewater - Region-wide Non-residential

Year	DC Reserve Fund Opening Balance	Dev't Related Expenditures		DC Credits	Total Unfunded Capital Costs	Historical Oversizing	Sq. Ft. per Year	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	DC Reserve Fund Closing Balance before Interest	Interest Earnings (3.5%) / Costs (3.5%)	DC Reserve Fund Closing Balance after Interest
		Nominal	Inflated (2%/Yr)									
2017	-	(587,000)	(587,000)	(304,912)	(144,177,061)	(4,492,843)	4,555,921	2.963	13,497,141	(136,064,675)	(2,381,132)	(138,445,807)
2018	(138,445,807)	(13,579,000)	(13,850,580)	(547,194)	(2,074,052)	-	4,555,921	3.022	13,767,084	(141,150,549)	(4,892,936)	(146,043,485)
2019	(146,043,485)	(33,712,000)	(35,073,965)	(547,194)	(2,074,052)	-	4,555,921	3.082	14,042,426	(169,696,270)	(5,525,446)	(175,221,716)
2020	(175,221,716)	(14,885,000)	(15,796,081)	(547,194)	(2,074,052)	-	4,555,921	3.144	14,323,274	(179,315,769)	(6,204,406)	(185,520,175)
2021	(185,520,175)	(13,364,000)	(14,465,623)	(547,194)	(2,074,052)	-	4,555,921	3.207	14,609,740	(187,997,305)	(6,536,556)	(194,533,861)
2022	(194,533,861)	(893,000)	(985,944)	(267,790)	(2,074,052)	-	4,670,221	3.271	15,275,797	(182,585,850)	(6,599,595)	(199,185,445)
2023	(189,185,445)	(6,040,000)	(6,802,021)	(25,507)	(1,065,636)	-	4,276,127	3.336	14,266,493	(182,812,116)	(6,509,957)	(189,322,074)
2024	(189,322,074)	(3,911,000)	(4,492,510)	(25,507)	(1,065,636)	-	4,276,127	3.403	14,551,822	(180,353,904)	(6,469,330)	(186,823,234)
2025	(186,823,234)	(24,629,000)	(28,856,799)	(25,507)	(1,065,636)	-	4,276,127	3.471	14,842,859	(201,928,317)	(6,803,152)	(208,731,469)
2026	(208,731,469)	(16,146,000)	(19,295,965)	(25,507)	(1,065,636)	-	4,276,127	3.541	15,139,716	(213,978,861)	(7,397,431)	(221,376,291)
2027	(221,376,291)	(955,000)	(1,164,140)	-	(1,065,636)	-	13,859,309	3.611	50,050,551	(173,555,516)	(6,911,307)	(180,466,822)
2028	(180,466,822)	(2,894,000)	(3,598,325)	-	(1,065,636)	-	13,859,309	3.684	51,051,562	(134,079,221)	(5,504,556)	(139,583,777)
2029	(139,583,777)	(149,000)	(188,968)	-	(1,065,636)	-	13,859,309	3.757	52,072,593	(88,765,788)	(3,996,117)	(92,761,905)
2030	(92,761,905)	(42,000)	(54,331)	-	(1,065,636)	-	13,859,309	3.832	53,114,045	(40,767,827)	(2,336,770)	(43,104,598)
2031	(43,104,598)	(471,000)	(621,474)	-	(9,708,897)	-	13,859,309	3.909	54,176,326	741,357	(741,357)	0
<b>Total</b>		<b>(132,257,000)</b>	<b>(145,833,727)</b>	<b>(2,863,509)</b>	<b>(172,781,304)</b>	<b>(4,492,843)</b>	<b>113,850,883</b>		<b>404,781,430</b>		<b>(78,810,047)</b>	

Table C-11

Halton Region  
 2017 Development Charges Study  
 Water - Capacity Non-residential

Year	DC Reserve Fund Opening Balance	Dev't Related Expenditures		DC Credits	Total Unfunded Capital Costs	Historical Oversizing	Sq. Ft. per Year	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	2012 Allocation Front End Interim Payback	DC Reserve Fund Closing Balance before Interest	Interest Earnings (3.5%) / Costs (3.5%)	DC Reserve Fund Closing Balance after Interest
		Nominal	Inflated (2%/Yr)										
2017	-	(39,000)	(39,000)	(70,134)	(43,096,804)	(593,995)	4,555,921	0.929	4,232,796	-	(39,567,137)	(692,425)	(40,259,562)
2018	(40,259,562)	(6,185,000)	(6,308,700)	(105,181)	(951,190)	-	4,555,921	0.948	4,317,452	-	(43,307,181)	(1,462,418)	(44,769,599)
2019	(44,769,599)	(139,000)	(144,616)	(105,181)	(951,190)	-	4,555,921	0.967	4,403,801	-	(41,566,784)	(1,510,887)	(43,077,671)
2020	(43,077,671)	(4,259,000)	(4,519,685)	(105,181)	(951,190)	-	4,555,921	0.986	4,491,877	-	(44,161,850)	(1,526,692)	(45,688,541)
2021	(45,688,541)	(438,000)	(474,105)	(105,181)	(951,190)	-	4,555,921	1.006	4,581,714	-	(42,637,303)	(1,545,702)	(44,183,005)
2022	(44,183,005)	(3,033,000)	(3,348,677)	(48,858)	(951,190)	-	4,670,221	1.026	4,790,594	-	(43,741,136)	(1,538,672)	(45,279,809)
2023	(45,279,809)	(32,936,000)	(37,091,285)	(13,811)	-	-	4,276,127	1.046	4,474,070	-	(77,910,836)	(2,155,836)	(80,066,672)
2024	(80,066,672)	(39,000)	(44,799)	(13,811)	-	-	4,276,127	1.067	4,563,551	-	(75,561,731)	(2,723,497)	(78,285,228)
2025	(78,285,228)	(229,000)	(288,310)	(13,811)	-	-	4,276,127	1.089	4,654,822	-	(73,912,528)	(2,663,461)	(76,575,988)
2026	(76,575,988)	(39,000)	(46,609)	(13,811)	-	-	4,276,127	1.110	4,747,918	-	(71,888,490)	(2,598,128)	(74,486,618)
2027	(74,486,618)	(39,000)	(47,541)	-	-	-	13,859,309	1.133	15,696,195	-	(58,837,964)	(2,333,180)	(61,171,144)
2028	(61,171,144)	(239,000)	(297,166)	-	-	-	13,859,309	1.155	16,010,119	-	(45,458,192)	(1,866,013)	(47,324,205)
2029	(47,324,205)	(39,000)	(49,461)	-	-	-	13,859,309	1.178	16,330,321	-	(31,043,346)	(1,371,432)	(32,414,778)
2030	(32,414,778)	(39,000)	(50,451)	-	-	-	13,859,309	1.202	16,656,928	-	(15,808,301)	(843,904)	(16,652,205)
2031	(16,652,205)	(39,000)	(51,460)	-	-	-	13,859,309	1.226	16,990,066	-	286,402	(286,402)	0
<b>Total</b>		<b>(47,731,000)</b>	<b>(52,781,865)</b>	<b>(594,961)</b>	<b>(47,852,752)</b>	<b>(593,995)</b>	<b>113,850,883</b>		<b>126,942,222</b>	<b>-</b>		<b>(25,118,650)</b>	

Table C-12

Halton Region  
 2017 Development Charges Study  
 Water - Greenfield Non-residential

Year	DC Reserve Fund Opening Balance	Dev't Related Expenditures		DC Credits	Total Unfunded Capital Costs	Historical Oversizing	Sq. Ft. per Year	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	2012 Allocation Front End Interim Payback	DC Reserve Fund Closing Balance before Interest	Interest Earnings (3.5%) / Costs (3.5%)	DC Reserve Fund Closing Balance after Interest
		Nominal	Inflated (2%/Yr)										
2017	-	-	-	(82,975)	(46,177,625)	(3,138,836)	2,885,530	1.834	5,291,236	-	(44,108,201)	(771,894)	(44,880,095)
2018	(44,880,095)	(6,728,000)	(6,862,560)	(137,363)	(1,070,081)	-	2,885,309	1.870	5,396,648	-	(47,553,451)	(1,617,587)	(49,171,038)
2019	(49,171,038)	(2,957,000)	(3,076,463)	(137,363)	(1,070,081)	-	2,885,102	1.908	5,504,186	-	(47,950,759)	(1,699,631)	(49,650,390)
2020	(49,650,390)	(8,487,000)	(9,006,472)	(137,363)	(1,070,081)	-	2,884,913	1.946	5,613,901	-	(54,250,405)	(1,818,264)	(56,068,669)
2021	(56,068,669)	(624,000)	(675,438)	(137,363)	(1,070,081)	-	2,884,736	1.985	5,725,829	-	(52,225,721)	(1,895,152)	(54,120,873)
2022	(54,120,873)	(132,000)	(145,739)	(62,973)	(1,070,081)	-	4,216,628	2.025	8,536,851	-	(46,862,815)	(1,767,215)	(48,630,029)
2023	(48,630,029)	(2,956,000)	(3,328,936)	(8,585)	(632,389)	-	3,826,613	2.065	7,902,184	-	(44,697,755)	(1,633,236)	(46,330,992)
2024	(46,330,992)	(10,570,000)	(12,141,608)	(8,585)	(632,389)	-	3,826,470	2.106	8,059,925	-	(51,053,648)	(1,704,231)	(52,757,879)
2025	(52,757,879)	(11,771,000)	(13,791,603)	(8,585)	(632,389)	-	3,826,311	2.148	8,220,783	-	(58,969,673)	(1,955,232)	(60,924,905)
2026	(60,924,905)	(19,190,000)	(22,933,826)	(8,585)	(632,389)	-	3,826,161	2.191	8,384,871	-	(76,114,835)	(2,398,195)	(78,513,030)
2027	(78,513,030)	(1,275,000)	(1,554,218)	-	(632,389)	-	8,589,498	2.235	19,199,991	-	(61,499,646)	(2,450,222)	(63,949,868)
2028	(63,949,868)	(881,000)	(1,095,413)	-	(632,389)	-	8,589,743	2.280	19,584,549	-	(46,093,121)	(1,925,752)	(48,018,873)
2029	(48,018,873)	(2,690,000)	(3,411,570)	-	(623,794)	-	8,589,972	2.326	19,976,773	-	(32,077,465)	(1,401,686)	(33,479,151)
2030	(33,479,151)	(45,000)	(58,212)	-	(623,794)	-	8,590,195	2.372	20,376,837	-	(13,784,321)	(827,111)	(14,611,431)
2031	(14,611,431)	(181,000)	(238,826)	-	(5,683,326)	-	8,590,406	2.420	20,784,885	-	251,302	(251,302)	0
<b>Total</b>		<b>(68,487,000)</b>	<b>(78,320,883)</b>	<b>(729,742)</b>	<b>(62,253,276)</b>	<b>(3,138,836)</b>	<b>76,897,589</b>		<b>168,559,449</b>			<b>(24,116,710)</b>	

Table C-13

Halton Region  
 2017 Development Charges Study  
 Water - Built Boundary Non-residential

Year	DC Reserve Fund Opening Balance	Dev't Related Expenditures		DC Credits	Total Unfunded Capital Costs	Historical Oversizing	Sq. Ft. per Year	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	2012 Allocation Front End Interim Payback	DC Reserve Fund Closing Balance before Interest	Interest Earnings (3.5%) / Costs (3.5%)	DC Reserve Fund Closing Balance after Interest
		Nominal	Inflated (2%/Yr)										
2017	-	(198,000)	(198,000)	-	1,668,099	-	1,670,391	0.143	239,248	-	1,709,347	29,914	1,739,260
2018	1,739,260	(1,180,000)	(1,203,600)	-	(34,306)	-	1,670,612	0.146	244,065	-	745,420	43,482	788,902
2019	788,902	(472,000)	(491,069)	-	(34,306)	-	1,670,819	0.149	248,977	-	512,505	22,775	535,280
2020	535,280	(1,661,000)	(1,762,666)	-	(34,306)	-	1,671,009	0.152	253,986	-	(1,007,707)	(8,267)	(1,015,974)
2021	(1,015,974)	-	-	-	(34,306)	-	1,671,185	0.155	259,093	-	(791,187)	(31,625)	(822,813)
2022	(822,813)	(544,000)	(600,620)	-	(34,306)	-	453,593	0.158	71,729	-	(1,386,009)	(38,654)	(1,424,663)
2023	(1,424,663)	(9,000)	(10,135)	-	(34,306)	-	449,514	0.161	72,506	-	(1,396,598)	(49,372)	(1,445,970)
2024	(1,445,970)	(28,000)	(32,163)	-	(34,306)	-	449,657	0.165	73,980	-	(1,438,459)	(50,478)	(1,488,937)
2025	(1,488,937)	(323,000)	(378,446)	-	(34,306)	-	449,816	0.168	75,486	-	(1,826,203)	(58,015)	(1,884,218)
2026	(1,884,218)	(169,000)	(201,971)	-	(34,306)	-	449,966	0.171	77,021	-	(2,043,473)	(68,735)	(2,112,207)
2027	(2,112,207)	(1,146,000)	(1,396,968)	-	(34,306)	-	5,269,811	0.175	920,083	-	(2,623,397)	(82,873)	(2,706,271)
2028	(2,706,271)	(268,000)	(333,224)	-	(34,306)	-	5,269,567	0.178	938,441	-	(2,135,359)	(84,729)	(2,220,088)
2029	(2,220,088)	-	-	-	(34,306)	-	5,269,337	0.182	957,168	-	(1,297,225)	(61,553)	(1,358,778)
2030	(1,358,778)	(170,000)	(219,913)	-	(34,306)	-	5,269,115	0.185	976,270	-	(636,727)	(34,921)	(671,648)
2031	(671,648)	-	-	-	(312,556)	-	5,268,903	0.189	995,756	-	11,552	(11,552)	0
<b>Total</b>		<b>(6,168,000)</b>	<b>(6,828,776)</b>	<b>-</b>	<b>909,569</b>	<b>-</b>	<b>36,953,295</b>		<b>6,403,811</b>	<b>-</b>		<b>(484,604)</b>	

Table C-14

Year	DC Reserve Fund Opening Balance	Dev't Related Expenditures		DC Credits	Total Unfunded Capital Costs	Historical Oversizing	Sq. Ft. per Year	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	2012 Allocation Front End Interim Payback	DC Reserve Fund Closing Balance before Interest	Interest Earnings (3.5%) / Costs (3.5%)	DC Reserve Fund Closing Balance after Interest
		Nominal	Inflated (2%/Yr)										
2017	-	(372,000)	(372,000)	(113,714)	(90,384,637)	(2,193,555)	4,555,921	1.251	5,698,911	-	(87,364,994)	(1,528,887)	(88,893,882)
2018	(88,893,882)	(429,000)	(437,580)	(193,935)	(552,393)	-	4,555,921	1.276	5,812,889	-	(84,264,901)	(3,030,279)	(87,295,179)
2019	(87,295,179)	(12,554,000)	(13,061,182)	(193,935)	(552,393)	-	4,555,921	1.301	5,929,147	-	(95,173,542)	(3,193,203)	(98,366,745)
2020	(98,366,745)	(429,000)	(455,258)	(193,935)	(552,393)	-	4,555,921	1.327	6,047,730	-	(93,520,602)	(3,358,029)	(96,878,630)
2021	(96,878,630)	(13,128,000)	(14,210,169)	(193,935)	(552,393)	-	4,555,921	1.354	6,168,685	-	(105,666,443)	(3,544,539)	(109,210,982)
2022	(109,210,982)	(55,000)	(60,724)	(94,282)	(552,393)	-	4,670,221	1.381	6,449,915	-	(103,468,467)	(3,721,890)	(107,190,357)
2023	(107,190,357)	(263,000)	(296,181)	(14,060)	-	-	4,276,127	1.409	6,023,755	-	(101,476,843)	(3,651,676)	(105,128,519)
2024	(105,128,519)	(55,000)	(63,178)	(14,060)	-	-	4,276,127	1.437	6,144,230	-	(99,061,527)	(3,573,326)	(102,634,853)
2025	(102,634,853)	(55,000)	(64,441)	(14,060)	-	-	4,276,127	1.466	6,267,115	-	(96,446,239)	(3,483,919)	(99,930,158)
2026	(99,930,158)	(630,000)	(752,908)	(14,060)	-	-	4,276,127	1.495	6,392,457	-	(94,304,670)	(3,399,109)	(97,703,779)
2027	(97,703,779)	(42,000)	(51,198)	-	-	-	13,859,309	1.525	21,132,893	-	(76,622,084)	(3,050,703)	(79,672,786)
2028	(79,672,786)	(2,550,000)	(3,170,604)	-	-	-	13,859,309	1.555	21,555,551	-	(61,287,840)	(2,466,811)	(63,754,651)
2029	(63,754,651)	(42,000)	(53,266)	-	-	-	13,859,309	1.586	21,986,662	-	(41,821,255)	(1,847,578)	(43,668,834)
2030	(43,668,834)	(42,000)	(54,331)	-	-	-	13,859,309	1.618	22,426,395	-	(21,296,770)	(1,136,898)	(22,433,668)
2031	(22,433,668)	(42,000)	(55,418)	-	-	-	13,859,309	1.651	22,874,923	-	385,837	(385,837)	(0)
<b>Total</b>		<b>(30,688,000)</b>	<b>(33,158,440)</b>	<b>(1,039,977)</b>	<b>(93,146,603)</b>	<b>(2,193,555)</b>	<b>113,850,883</b>		<b>170,911,258</b>	<b>-</b>		<b>(41,372,684)</b>	

Halton Region  
 2017 Development Charges Study  
 Wastewater - Capacity Non-Residential

Table C-15

Year	DC Reserve Fund Opening Balance	Dev't Related Expenditures		DC Credits	Total Unfunded Capital Costs	Historical Oversizing	Sq. Ft. per Year	DC Rates w. Inflation (%/Yr)	Anticipated Revenues	2012 Allocation Front End Interim Payback	DC Reserve Fund Closing Balance before Interest	Interest Earnings (3.5%) / Costs (3.5%)	DC Reserve Fund Closing Balance after Interest
		Nominal	Inflated (%/Yr)										
2017	-	(144,000)	(144,000)	(191,199)	(48,694,079)	(2,299,288)	2,885,530	2.291	6,609,782	-	(44,718,783)	(782,579)	(45,501,362)
2018	(45,501,362)	(11,579,000)	(11,810,580)	(353,259)	(1,428,375)	-	2,885,309	2.336	6,741,462	-	(52,352,114)	(1,712,436)	(54,064,549)
2019	(54,064,549)	(19,294,000)	(20,073,478)	(353,259)	(1,428,375)	-	2,885,102	2.383	6,875,798	-	(69,043,863)	(2,154,397)	(71,198,260)
2020	(71,198,260)	(10,876,000)	(11,541,696)	(353,259)	(1,428,375)	-	2,884,913	2.431	7,012,854	-	(77,508,738)	(2,602,372)	(80,111,111)
2021	(80,111,111)	(105,000)	(113,655)	(353,259)	(1,428,375)	-	2,884,736	2.479	7,152,673	-	(74,853,727)	(2,711,885)	(77,565,611)
2022	(77,565,611)	(163,000)	(179,965)	(173,508)	(1,428,375)	-	4,216,628	2.529	10,664,187	-	(68,683,272)	(2,559,355)	(71,242,628)
2023	(71,242,628)	(5,464,000)	(6,153,351)	(11,447)	(972,352)	-	3,826,613	2.580	9,871,364	-	(68,508,414)	(2,445,643)	(70,954,058)
2024	(70,954,058)	(3,856,000)	(4,429,332)	(11,447)	(972,352)	-	3,826,470	2.631	10,068,414	-	(66,298,775)	(2,401,925)	(68,700,699)
2025	(68,700,699)	(23,247,000)	(27,237,566)	(11,447)	(972,352)	-	3,826,311	2.684	10,269,357	-	(66,652,708)	(2,718,685)	(69,371,392)
2026	(89,371,392)	(15,430,000)	(18,440,278)	(11,447)	(972,352)	-	3,826,161	2.738	10,474,334	-	(98,321,136)	(3,284,619)	(101,605,756)
2027	(101,605,756)	(913,000)	(1,112,942)	-	(972,352)	-	8,589,498	2.792	23,984,522	-	(79,706,528)	(3,172,965)	(82,879,493)
2028	(82,879,493)	-	-	-	(972,352)	-	8,589,743	2.848	24,464,909	-	(59,386,936)	(2,469,663)	(61,876,599)
2029	(61,876,599)	(107,000)	(135,702)	-	(972,352)	-	8,589,972	2.905	24,954,873	-	(38,029,779)	(1,748,362)	(39,778,141)
2030	(39,778,141)	-	-	-	(972,352)	-	8,590,195	2.963	25,454,631	-	(15,295,862)	(963,795)	(16,259,657)
2031	(16,259,657)	(429,000)	(566,056)	-	(8,858,998)	-	8,590,406	3.022	25,964,362	-	279,650	(279,650)	(0)
<b>Total</b>		<b>(91,607,000)</b>	<b>(101,938,604)</b>	<b>(1,823,533)</b>	<b>(72,473,767)</b>	<b>(2,299,288)</b>	<b>76,897,589</b>		<b>210,563,522</b>			<b>(32,028,330)</b>	

Halton Region  
 2017 Development Charges Study  
 Wastewater - Greenfield Non-Residential

Table C-16

Halton Region  
 2017 Development Charges Study  
 Wastewater - Built Boundary Non-residential

Year	DC Reserve Fund Opening Balance		Dev't Related Expenditures		DC Credits	Total Unfunded Capital Costs	Historical Oversizing	Sq. Ft. per Year	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	2012 Allocation Front End Interim Payback	DC Reserve Fund Closing Balance before Interest	Interest Earnings (3.5%) / Costs (3.5%)	DC Reserve Fund Closing Balance after Interest
	DC Reserve Fund Opening Balance	DC Reserve Fund Opening Balance	DC Reserve Fund Opening Balance	DC Reserve Fund Opening Balance										
2017	-	(71,000)	(71,000)	(71,000)	-	(5,098,346)	-	1,670,391	0.497	829,708	-	(4,339,638)	(75,944)	(4,415,581)
2018	(4,415,581)	(1,571,000)	(1,571,000)	(1,602,420)	-	(93,284)	-	1,670,612	0.507	846,414	-	(5,264,871)	(169,408)	(5,434,279)
2019	(5,434,279)	(1,864,000)	(1,864,000)	(1,939,306)	-	(93,284)	-	1,670,819	0.517	863,449	-	(6,603,420)	(210,660)	(6,814,079)
2020	(6,814,079)	(3,580,000)	(3,580,000)	(3,798,125)	-	(93,284)	-	1,671,009	0.527	880,818	-	(9,825,670)	(291,196)	(10,116,866)
2021	(10,116,866)	(131,000)	(131,000)	(141,799)	-	(93,284)	-	1,671,185	0.538	898,529	-	(9,453,419)	(342,480)	(9,795,899)
2022	(9,795,899)	(675,000)	(675,000)	(745,255)	-	(93,284)	-	453,593	0.548	248,756	-	(10,385,681)	(353,178)	(10,738,859)
2023	(10,738,859)	(313,000)	(313,000)	(352,489)	-	(93,284)	-	449,514	0.559	251,450	-	(10,933,182)	(379,261)	(11,312,443)
2024	(11,312,443)	-	-	-	-	(93,284)	-	449,657	0.571	256,561	-	(11,149,166)	(393,078)	(11,542,244)
2025	(11,542,244)	(1,327,000)	(1,327,000)	(1,554,792)	-	(93,284)	-	449,816	0.582	261,784	-	(12,928,536)	(428,239)	(13,356,774)
2026	(13,356,774)	(86,000)	(86,000)	(102,778)	-	(93,284)	-	449,966	0.594	267,109	-	(13,285,728)	(466,244)	(13,751,971)
2027	(13,751,971)	-	-	-	-	(93,284)	-	5,269,811	0.605	3,190,830	-	(10,654,425)	(427,112)	(11,081,537)
2028	(11,081,537)	(344,000)	(344,000)	(427,721)	-	(93,284)	-	5,269,567	0.618	3,254,496	-	(8,348,046)	(340,018)	(8,688,064)
2029	(8,688,064)	-	-	-	-	(93,284)	-	5,269,337	0.630	3,319,441	-	(5,461,907)	(247,624)	(5,709,531)
2030	(5,709,531)	-	-	-	-	(93,284)	-	5,269,115	0.643	3,385,687	-	(2,417,128)	(142,217)	(2,559,345)
2031	(2,559,345)	-	-	-	-	(849,899)	-	5,268,903	0.655	3,453,262	-	44,018	(44,018)	(0)
<b>Total</b>		<b>(9,962,000)</b>	<b>(9,962,000)</b>	<b>(10,736,683)</b>	<b>-</b>	<b>(7,160,934)</b>	<b>-</b>	<b>36,953,295</b>		<b>22,208,292</b>	<b>-</b>		<b>(4,310,675)</b>	



**APPENDIX D**  
**THE 2017-2031 ROADS SERVICING PROGRAM**  
**AND DEVELOPMENT CHARGE RECOVERABLE COSTS**

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**APPENDIX D – PART 1**  
**OVERVIEW OF ROADS CAPITAL PROGRAM (2017-2031)**



## 1. OVERVIEW OF ROADS CAPITAL PROGRAM (2017-2031)

“Halton Region 2017 Transportation Development Charges Technical Report” by EISo Consulting Inc. (the Technical Report), sets out the methodology involved in detail, in identifying the Region’s 2017-2031 development-related transportation capital program. A project-specific listing is contained in Part 3 of this Appendix.

Halton Region uses a demand forecasting model for its long term transportation planning. The first major update occurred in 2004, when the model calibration was updated to reflect the observed travel patterns in the 2001 Transportation Tomorrow Survey (TTS). Subsequent refinements and updates occurred during 2006/2007 as part of the DC Update Study. With the release of the 2006 TTS data, the model was updated to support Sustainable Halton, the Regional Official Plan Amendment (ROPA) 38, and the Halton Region Transportation Master Plan (2031) – The Road to Change. The model has been updated once again to include the release of the 2011 TTS data. The updated model maintains the core functions, procedures and updated network. The model is used for network-wide analysis and overview including comparison of the network characteristics between the current year and the 2031 planning horizon.

The Halton Region Transportation Master Plan (TMP) developed a sustainable and integrated plan that considered all modes of travel (automobile, transit, cycling, and walking) to accommodate growth in Halton Region to the year 2031 as established through ROPA 38. The TMP provides strategies, policies and tools required to meet the Region’s transportation needs in a safe and cost effective manner. ROPA 38 brought the Regional Official Plan into conformity with the Provincial Growth Plan for the Greater Golden Horseshoe and established a growth plan for Halton to accommodate 780,000 (752,537 excluding the Census undercount) persons and 390,000 jobs by 2031.

A technical review of the transportation network and capital projects identified in the 2011 TMP was undertaken which focused on the following key elements:

- Updating the transportation demand forecasting model with current travel pattern characteristics (based on 2011 TTS);
- Reviewing existing and future transportation network screenline capacities to 2031; and

- Validating the long range Transportation Capital Implementation Plan to 2031 (i.e. project scope, timing, need and cost) as identified in the 2011 TMP, including potential timing shifts of previously identified infrastructure projects.

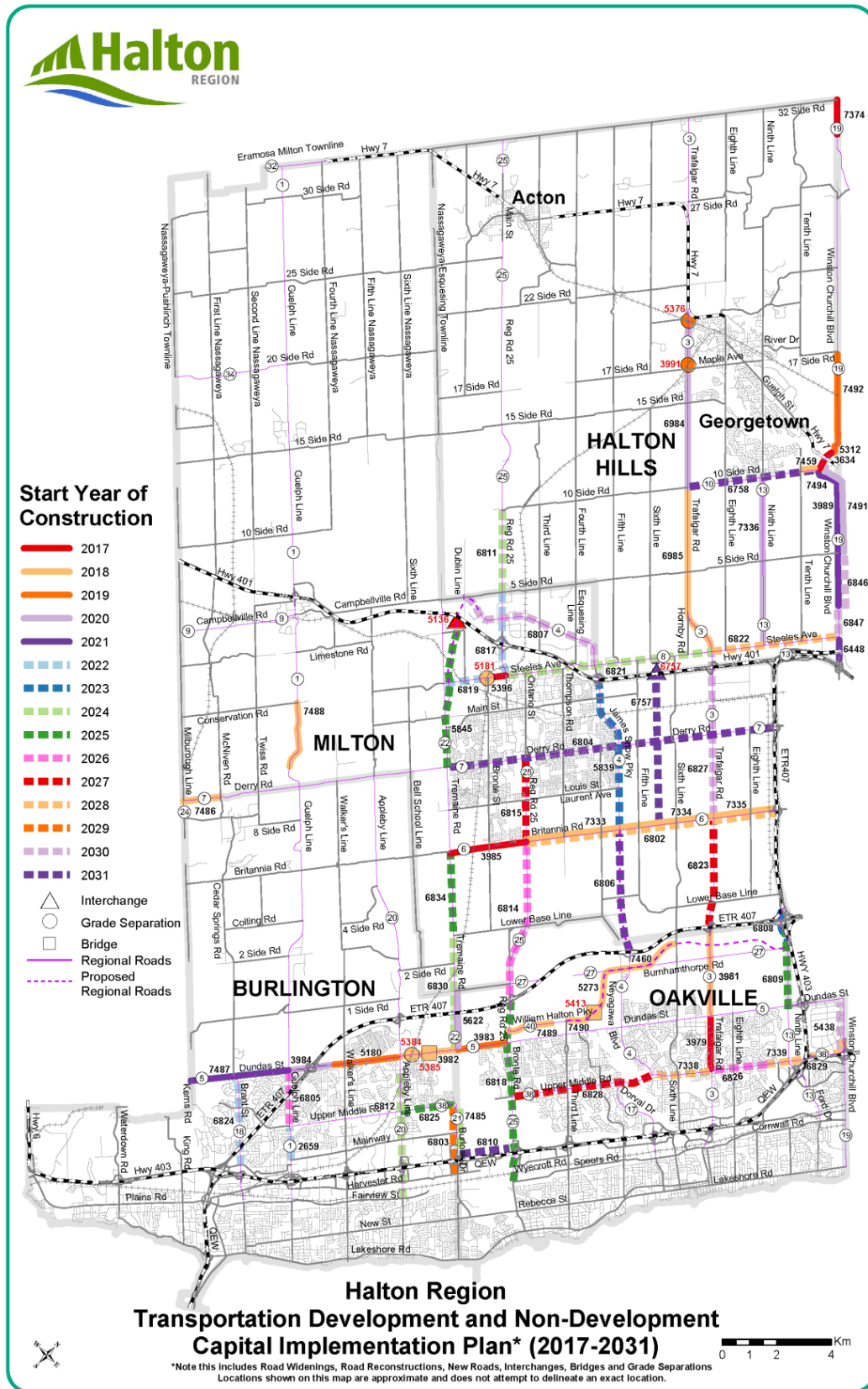
The model output was used to undertake a network analysis, in order to identify system capacity improvements. The need for improvements was also identified through separate studies, such as class environmental assessments, road condition assessments, traffic impact studies, and other studies prepared in support of development applications. The resultant Capital Roads Plan includes the following types of projects:

- Reconstruction (no widening)
- Road Widening without Reconstruction
- Road Widening with Reconstruction
- New Alignment
- Traffic Management
- Provincial Freeway Interchanges
- Railway Grade Separations
- Structures (bridges and culverts)
- Studies and Programs

These initiatives are presented in Map D-1 below.

The estimated cost of the program totals to \$2.19 billion between 2017 and 2031 (in 2017\$), with \$791 million allocated within the term of the proposed by-law (2017-2021).

MAP D-1: ROADS DC PROJECTS (2017-2031)



2016  
 Public Works  
 TRN\_DC\_16-31/Line\_2017\_2022





**APPENDIX D – PART 2**  
**ROADS DC CALCULATION ASSUMPTIONS**



## 2. ROADS DC CALCULATION ASSUMPTIONS

This appendix includes excerpts from EIIso Consulting Inc's 2017 Transportation Development Charges Technical Report (the Technical Report) that established DCA mandated assumptions for the DC calculation.

### 2.1. Benefit to Existing Development

#### 2.1.1. Road Reconstruction (No Widening)

Costs of road reconstruction without widening have been allocated to Benefit to Existing (BTE), and therefore 100% of the cost has been removed from the DC calculation, as these projects are not considered to involve significant capacity-related improvements.

#### 2.1.2. Road Widening without Reconstruction

Road widening projects are undertaken to accommodate increased traffic volumes associated with new growth; however, existing lanes are typically resurfaced as part of the widening. As a result, existing residents (Non-Growth) benefit from the renewal of the road surface, as well as improved intersections, signals, and other assets that exist in the corridor.

The following sub-sections present the calculation of BTE for existing pavement replacement and other cost components from which there would be a benefit to non-growth.

##### 2.1.2.1. Value of Resurfacing Existing Pavement

The BTE of the resurfacing is considered to be the Used Value of the pavement, which is to be resurfaced to its original (unused) condition. The corresponding benefit to Growth is the cost associated with new lanes, plus any Residual Value remaining in existing roads. First, the value of resurfacing the existing lanes was calculated with the following equation:

$$\frac{\text{Value of Resurfacing}}{\text{Existing Lanes}} = \text{Benchmark (BM) cost for resurfacing (\$/km)} \times \text{length of project (km)} \quad (1)$$

To allocate this value between Growth and Non-Growth, the Residual Value of the existing lanes was calculated based on the net book value remaining in the asset as calculated in accordance with the Public Sector Accounting Board's (PSAB) guideline PS 3150 for accounting and reporting of Tangible Capital Assets (TCA). More specifically, the current condition of the road surface was determined based on the Region's road asset inventory, and the cumulative depreciation to the proposed year of construction was estimated based on a linear rate of

depreciation. The asset's proportions of Residual Value and Used Value were then calculated using the following equations:

$$\% \text{ Residual Value} = \frac{\text{Original Book Value} - \text{Cumulative Depreciation}}{\text{Original Book Value}} \times 100\% \quad (2)$$

$$\% \text{ Used Value} = 100\% - \% \text{ Residual Value} \quad (3)$$

The BTE of resurfacing the existing lanes was then calculated with the following equation:

$$BTE_{\text{Resurfacing Existing Lanes}} = \% \text{ Used Value} \times \text{Value of Resurfacing Existing Lanes} \quad (4)$$

### 2.1.2.2. Additional Cost Components

Since roads are widened primarily to accommodate Growth, the Engineering and Contingency costs were allocated entirely to Growth. However, modifications to intersections and signals associated with the widening, benefit both Growth and Non-Growth, and were allocated 50% BTE.

Where widening work includes rehabilitation of existing bridges, grade separations and culverts, the BTE would typically reflect the existing asset value, with TCA-based calculations similar to those done for pavement. However, because the amounts were small relative to the total project cost, BTE of 100% was allocated for simplicity.

For projects where costs were available from more detailed studies (i.e. Environmental Assessment studies), these values were used in place of the BM cost estimates. The costs were broken down into Engineering, Design, Property, Utility Relocates and Construction. Engineering, Design, Property and Utility Relocates were assigned 0% BTE. These factors are consistent with the factors applied where BM cost breakdowns were used. Further, Construction costs were assigned 13% BTE, based on the average BTE calculated for widening projects where the BM cost breakdowns were used.

### 2.1.2.3. Overall BTE

The resulting BTE for each project was obtained by summing the BTE credit for existing pavement value with the credits for each additional cost component, as described in the following equation:

$$\begin{aligned}
 BTE = & BTE_{\text{Resurfacing Existing Lanes}} \\
 & + BTE_{\text{Intersection Modifications}} \\
 & + BTE_{\text{New Signals and Signal Modifications}} \\
 & + BTE_{\text{Bridge Rehabilitation}} \\
 & + BTE_{\text{Grade Separation Rehabilitation}} \\
 & + BTE_{\text{Culvert Rehabilitation}}
 \end{aligned} \tag{5}$$

Where

$$\begin{aligned}
 BTE_{\text{Resurfacing Existing Lanes}} &= \% \text{ Used Value} \times \text{Value of Resurfacing Existing Lanes} \\
 BTE_{\text{Intersection Modifications}} &= 50\% \times \text{Cost of Intersection Modifications} \\
 BTE_{\text{New Signals and Signal Modifications}} &= 50\% \times \text{Cost of New Signals and Signal Modifications} \\
 BTE_{\text{Bridge Rehabilitation}} &= 100\% \times \text{Cost of Bridge Rehabilitation} \\
 BTE_{\text{Grade Separation Rehabilitation}} &= 100\% \times \text{Cost of Grade Separation Rehabilitation} \\
 BTE_{\text{Culvert Rehabilitation}} &= 100\% \times \text{Cost of Culvert Rehabilitation}
 \end{aligned}$$

### 2.1.3. Road Widening with Reconstruction

Road widening projects are primarily undertaken to accommodate increased traffic volumes associated with new growth. In some cases, the increased development changes the character of the corridor from rural to urban, so road widening projects may be accompanied by reconstruction of the roadway to an urban cross-section. When widening projects include reconstruction of existing lanes, existing residents (Non-Growth) benefit from the renewal of the roadway, intersection improvements, signals and other assets, as well as the engineering and design associated with reconstruction.

The following sub-sections present the calculation of BTE for existing pavement replacement and other cost components from which there would be a benefit to non-growth from a road widening with reconstruction of the existing lanes.

#### 2.1.3.1. Value of Reconstructing Existing Pavement and Sub-Base

The BTE of the reconstruction of existing lanes is calculated using the methodology previously explained for road widenings in Equation (1). Then the proportions of Residual and Used Values of the existing lanes were calculated using Equations (2) and (3). The BTE of reconstructing the existing lanes was then calculated using Equation (6), below.

$$BTE_{\text{Reconstructing Existing Lanes}} = \% \text{ Used Value} \times \text{Value of Reconstructing Existing Lanes} \tag{6}$$

### 2.1.3.2. Additional Cost Components

Since projects involving widening with reconstruction benefit both Growth and Non-Growth, the following cost components have been assigned 50% BTE:

- Engineering and Design
- Contingency
- Intersection and Signal Modifications

Where widening work includes rehabilitation of existing bridges, grade separations and culverts, the BTE would typically reflect the existing asset value, with TCA-based calculations similar to those done for pavement. However, because the amounts were small relative to the total project cost, BTE of 100% were assigned for simplicity.

For projects where costs were available from more detailed studies (i.e. Environmental Assessment studies), these values were used in place of the BM cost estimates. Engineering and Design were assigned 50% BTE, and costs for Property and Utility Relocates were assigned 0% BTE. These factors are consistent with the factors applied where BM costing was used. Further, Construction costs were assigned 25% BTE, based on the average BTE calculated for this project type for projects where the detailed cost breakdown was used.

### 2.1.3.3. Overall BTE

The resulting BTE for each project was obtained by summing the BTE for existing pavement value with the BTE for each additional cost component, as shown in Equation (7) below.

$$\begin{aligned}
 & BTE_{\text{Reconstructing Existing Lanes}} \\
 & + BTE_{\text{Intersection Modifications}} \\
 & + BTE_{\text{New Signals and Signal Modifications}} \\
 BTE = & + BTE_{\text{Bridge Rehabilitation}} \\
 & + BTE_{\text{Grade Separation Rehabilitation}} \\
 & + BTE_{\text{Culvert Rehabilitation}} \\
 & + BTE_{\text{Engineering Design and Contingency}}
 \end{aligned} \tag{7}$$

Where

$BTE_{\text{Reconstructing Existing Lanes}}$	=	% Used Value x Value of Reconstructing Existing Lanes
$BTE_{\text{Intersection Modifications}}$	=	50% x Cost of Intersection Modifications
$BTE_{\text{New Signals and Signal Modifications}}$	=	50% x Cost of New Signals and Signal Modifications
$BTE_{\text{Bridge Rehabilitation}}$	=	100% x Cost of Bridge Rehabilitation
$BTE_{\text{Grade Separation Rehabilitation}}$	=	100% x Cost of Grade Separation Rehabilitation
$BTE_{\text{Culvert Rehabilitation}}$	=	100% x Cost of Culvert Rehabilitation
$BTE_{\text{Engineering Design and Contingency}}$	=	50% x Cost of Engineering Design and Contingency

#### **2.1.4. New Alignments**

New alignments are constructed to accommodate the increased capacity needs associated with Growth. As such, the costs of new alignment projects were allocated 0% BTE (100% to Growth).

#### **2.1.5. Traffic Management**

The Roads Capital Program 2017-2031 includes several projects in the Traffic Management category, for example:

- Traffic signal (new, modifications)
- Auxiliary lanes (new turning lanes (or lengthening of existing turning lanes))
- New intersections
- At-Grade Railroad crossings

These projects are required to accommodate the additional traffic created by growth and for existing development. As such, traffic management projects were allocated 50% to Growth and 50% to Existing.

#### **2.1.6. Provincial Freeway Interchanges**

The Region attributes the cost of provincial freeway interchange projects 100% to Growth.

Some projects in the Roads Capital Program may involve the Region's share of costs for new or improved interchanges on the provincial freeway system. These improvements create new access points and reduce congestion at upstream and downstream interchanges. The projects are implemented to provide additional capacity in the road network to serve Growth. An existing road user might benefit from these interchanges (if the trip length is reduced) but the benefit is offset in most cases by the increased traffic congestion created by growth. For new or improved freeway interchanges, the provincial share is typically to accommodate long distance travel and to improve operational issues at existing interchanges, with the Region's share of costs to accommodate transportation pressures due to growth only.

#### **2.1.7. Railway Grade Separations**

There are 17 existing and planned railway crossings in Halton Region. One of these crossings is of an abandoned line (Steeles Avenue between Regional Road 25 and Ontario Street), 8 are grade separated and 7 are warranted for grade separation by 2031 under the current Regional

Roads Capital Projects. The remaining crossing (Guelph Line between McLaren Rd and Campbell Ave) does not meet the grade separation warrant by 2031.

#### 2.1.7.1. Widening of Existing Railway Grade Separations

Railway grade separations are widened to accommodate increased capacity needs associated with Growth; however, Non-Growth benefits from a renewal of the existing deck of the grade separation structure. The BTE of the rehabilitation of the existing grade separation deck structure is calculated using the same methodology as explained for road widenings. For grade separations, the value of the existing deck replacement has been calculated using the BM cost for deck reconstruction, as shown in Equation (8).

$$\text{Value of Existing Deck} = \text{BM cost for deck reconstruction } (\$/m^2) \times \text{existing surface area } (m^2) \quad (8)$$

Then the proportions of Residual and Used Values were calculated using equations (9) and (10)

$$\% \text{ Residual Value} = \frac{\text{Original Book Value} - \text{Cumulative Depreciation}}{\text{Original Book Value}} \times 100\% \quad (9)$$

$$\% \text{ Used Value} = 100\% - \% \text{ Residual Value} \quad (10)$$

The BTE of reconstructing the existing deck was then calculated using Equation (11).

$$\text{BTE}_{\text{Reconstruction of Existing Deck}} = \% \text{ Used Value} \times \text{Value of Rehabilitating Existing Deck} \quad (11)$$

Since railway grade separations are primarily widened to accommodate Growth, no BTE deductions are allocated for other cost components, such as engineering, design, and construction.

#### 2.1.7.2. Construction of New Grade Separations

Where there is currently a level crossing in place, construction of a grade-separation benefits Growth by increasing the capacity of the roadway, but also benefits Existing development in terms of safety improvement and the elimination for existing road users of the possibility of delays due to train movements. The Exposure Index at the crossing is a standard measure of safety, and is calculated as the product of the number of train movements per day times the average annual daily traffic. The higher the index, the greater the need for a grade separation, hence the greater the safety benefit to existing users.

For new railway grade separations, the Region allocates a BTE to the full project cost according to Table D-1. The allocation applied at each level rail crossing is based on the actual exposure index and a prorating between the ranges.



**Table D-1  
Grade Separation Benefit to Existing Development – Safety**

<b>Exposure Index</b>	<b>Benefit to Existing Development</b>
200,000	5%
400,000	10%
600,000	15%
800,000	20%
1,000,000	25%

### **2.1.8. Structures (Bridges and Culverts)**

The capital roads plan may include rehabilitation and replacement of road-related structures, such as bridges. In cases where the structures are being replaced or installed to allow for roadway capacity increases, such as new roads or road widening, the residual value method has been applied to determine BTE. New structures are constructed when roads are widened or realigned to accommodate growth. As such, costs of new structures are allocated 100% to Growth.

### **2.1.9. Off-Road Active Transportation**

The new Off-Road Active Transportation (AT) is moving from the Local DC to the Regional DC for cost recovery. The Region assumed responsibility for the financing of new Off-Road AT Infrastructure (i.e. sidewalks, multi-use paths) within the Region's right-of-way. The local municipalities retain ownership, operating & maintenance responsibilities. There is a cost neutral condition for the "Growth" component when looking at the combined Regional and Local Municipality DC for this item. The AT infrastructure needs have been incorporated in the 2017 Development and Non-Development capital program.

New Off-Road AT facilities to be implemented by Halton Region by 2031 fall mainly in the growth areas, as the existing areas are well served by these facilities. Therefore, the majority of the costs associated with these facilities should be borne by Growth. It is recognized that there is some minor benefit to existing development within the areas of implementation; hence a split of 90% / 10% is assigned to Growth and Non-Growth, respectively, consistent with the split applied when this cost was under local municipality jurisdiction.

### 2.1.10. Studies and Programs

The Region allocates costs for studies and programmes as presented in Table D-2 below.

**Table D-2  
Cost Allocating for Studies and Programmes**

Studies and Programs	Growth	BTE
Transportation Master Plan	100%	0%
Active Transportation Master Plan	100%	0%
Data Management Group	100%	0%
Transportation Tomorrow Survey	100%	0%
Cordon Counts (TTS)	100%	0%
Traffic and Screenline Counts	50%	50%
Urban Design Guidelines	100%	0%
Development Charges Transportation Background Study	100%	0%
Smart Commute Travel Demand	50%	50%
Active Transportation Initiatives	50%	50%
Other Growth-Related Studies	100%	0%
Operational Improvement or Maintenance Studies	0%	100%

### 2.1.11. Summary of Cost Allocation

Halton Region's allocation of cost to Growth as presented in this appendix is summarized in Table D-3.

**Table D-3  
Cost Allocation Summary**

Project Type	Growth Share (%)
Road Reconstruction (no Widening)	0%
Road Widening (no Reconstruction)	100% with the following deductions: <ul style="list-style-type: none"> <li>• deduction for existing roadway based on the used value of the existing lanes and the BM cost of resurfacing</li> <li>• 50% deduction for intersection modifications and additions</li> <li>• 50% deduction for signal modifications</li> <li>• 100% deduction for rehabilitation of bridges, grade separations and culverts</li> <li>• If non-BM costing is used, a 13% deduction is assigned to construction costs</li> </ul>

Project Type	Growth Share (%)
Road Widening with Reconstruction	100% with the following deductions: <ul style="list-style-type: none"> <li>• deduction for existing roadway based on the used value of the existing lanes and the BM cost of reconstruction</li> <li>• 50% deduction for engineering and contingency costs</li> <li>• 50% deduction for intersection modifications and additions</li> <li>• 50% deduction for signal modifications</li> <li>• 100% deduction for rehabilitation of bridges, grade separations and culverts</li> <li>• if non-BM costing is used, a 50% deduction is assigned for engineering and design, and a 25% deduction is assigned to construction costs</li> </ul>
New Roads and Alignments	100%
Traffic Management	50%
Provincial Freeway Interchanges	100%
Grade Separations – Widening	100% less deduction for rehabilitation of the existing structure, based on used value of the structure and the BM cost of rehabilitation
Grade Separations – New	100% less BTE based on exposure index
Structures – Widening	100% less deduction for rehabilitation of the existing structure, based on used value of the structure and the BM cost of rehabilitation
Structures – New	100%
Off-Road Active Transportation	90%
Studies and Programs	BTE based on type of study or program

## 2.2. Previous 10-Year Service Level

The DCA requires that the future level of service created by the infrastructure capacity improvement program that generated DCs does not exceed the average level of service that has been provided in the previous 10-year period. The level of service is measured in terms of both Quantity (lane km per capita) and Quality (undepreciated replacement cost, as well as volume/capacity ratios (v/c) or operating speed on regional roads).

Based on the Service Level analysis for Quantity and Quality, there is not an increase in the 10-year service level, as discussed below. The 10-year Service Level review is consistent with the methodologies presented in the 2012 DC Transportation Background Study.

### 2.2.1. Service Level – Quantity

The lane km per capita of DC eligible roads was calculated as 1.93 lane km per 1,000 population in 2007 and estimated at 1.97 lane km per 1,000 population in 2016 (with an estimated population of 556,210). The average for the 10-year period is 1.94 lane km per 1,000 population. Table D-4 presents the lane km and population from 2007 to 2016.

**Table D-4  
Historical Population and Regional Roadway Lane Kilometres**

Year	Lane kms <sup>(1)</sup>	Population <sup>(2)</sup>	Lane kms per 1,000 population
2007	877.6	453,700	1.93
2008	881.8	467,200	1.89
2009	919.2	480,000	1.92
2010	943.0	492,100	1.92
2011 <sup>(2)</sup>	963.0	501,669	1.92
2012	980.4	509,929	1.92
2013	1,013.6	519,144	1.95
2014	1,047.6	527,866	1.98
2015	1,080.2	536,287	2.01
2016 <sup>(3)</sup>	1,097.2	556,210	1.97
		<b>Average =</b>	<b>1.94</b>

Notes:

- (1) Based on Halton Region Roads Needs Study
- (2) Population figure based on 2011 Census
- (3) Lane kms are estimated for 2016

The DC eligible roads calculation for 2031 is 1.89 lane kilometres per 1,000 population (2031 population of 752,537 and 1,428.4 lane kilometres). This value is lower than the average for 2007 to 2016 presented in Table D-4 (1.94). Therefore, there is no Quantity increase over the previous 10-year service level.

### **2.2.2. Service Level – Quality (Regional Roadway Network Replacement Value)**

Ontario Regulation 82/98, an amendment to the DCA, states in Section 4(1) under Level of Service that:

*For the purposes of paragraph 4 of subsection 5(1) of the Act, both the quantity and quality of a service shall be taken into account in determining the level of service and the average level of service. In determining the quality of a service under subsection (1), the replacement cost of municipal capital works, exclusive of any allowance for depreciation, shall be the amount used.*

This regulation is to ensure the design standards and replacement cost of Regional roadways is not exceeded in the 10-year history analysed through the DC process.

As reported in 2011, the Region is shifting to a more urban municipality where the rural lane kilometres represented about 70% of the network in 2002, to where there is an almost even split between the Region's rural and urban lane kilometres in 2011. By 2031, the urban lane kilometres will make up almost 90% of the Region's lane-kilometres.

As there has been no change to the BM costing of the Roads Capital Projects, the conclusions from the previous study carry over to this study in that the future BM cost of 2-lane rural roadways is lower than the previous 10-year average, while the BM costs of 4-lane and 6-lane roadways (rural, semi-urban and urban) are slightly higher. Replacement value is only one measure of service level, and the apparent improvement in this category is outweighed by the decreases in the quantity as well as network performance measures of service level.

### **2.2.3. Service Level – Quality (Additional Measures)**

The transportation network was also measured based on the v/c and Mean Speed for Provincial, Regional, and Local roads, as well as Network-wide.

#### **2.2.3.1 Volume to Capacity Ratio**

If the v/c is increasing, it means that the roads are more congested, the operating speed is generally lower and a typical trip takes longer to accomplish. Hence the service level is lower if the v/c is increasing. The base year (2011 TTS) performance measures result in a Regional Road Mean v/c of 0.72 and a Total Network (Provincial, Regional and Local) Mean v/c of 0.71, as shown in Table D-5.

The 2031 road network, with all infrastructure capacity improvements in place, yields a projected Mean v/c of 0.70 and 0.71 for the Regional roads and Total Network, respectively. The level of service will essentially remain the same for both networks. Hence, the previous 10-year period service level has not been exceeded.

### **2.2.3.2 Mean Speed**

The base year performance measures result in a Regional Road Mean Speed of 52 km/h and a Total Network Mean Speed of 52 km/h, as shown in Table D-5.

The 2031 road network, with all infrastructure capacity improvements in place, yields a projected Mean Speed of 56 km/h and 54 km/h for the Regional roads and Total Network, respectively. The level of service will essentially remain the same for both networks. Hence, the previous 10-year period service level has not been exceeded.

### **Summary**

The 2031 Service Level created by the DC eligible infrastructure improvements has been assessed on both a Quality and Quantity basis and compared to the average service levels in the previous 10-year period. As discussed above, there are minor changes between 2011 and 2031 which, within the context of the model accuracy, are insignificant. Overall, the planned capital projects do not result in a tangible increase in service level over the previous 10-year period; therefore, there is no basis for a level of service deduction.

**Table D-5  
Road Jurisdictions (Centroid Connectors Excluded)**

	Provincial	Regional	Local	Total
<b>One-way links - 2011</b>				
Total length (km)	138	316	1,126	1,581
Lane km	400	434	1,246	2,080
Mean v/c	0.88	0.72	0.59	0.71
Mean speed (km/h)	56	52	47	52
<b>One-way links - 2031</b>				
Total length (km)	148	362	1,172	1,682
Lane km	508	763	1,369	2,640
Mean v/c	0.84	0.70	0.63	0.71
Mean speed (km/h)	60	56	46	54
<b>One-way links - Change (2011 vs. 2031)</b>				
Total length (km)	10	46	46	101
Lane km	108	329	123	560
Mean v/c	-0.04	-0.02	0.04	0.00
Mean speed (km/h)	4	4	-1	2
<b>One-way links - % Change</b>				
Total length (km)	7.2%	14.6%	4.1%	6.4%
Lane km	27.0%	75.8%	9.9%	26.9%
Mean v/c	-4.5%	-2.8%	6.8%	0.0%
Mean speed (km/h)	7.1%	7.7%	-2.1%	3.8%

### **2.3. Traffic Flow Through Analysis**

Travel on the Regional road network includes trips that are Internal; Internal/External or Through. “Through” trips are defined as the trips, which travel through the Region without stopping (i.e. both trip origin and destination are outside the Region). Future “through” trips have been produced from the Travel Demand Forecasting Model based on the analysis of origin/destination patterns of the traffic zones that are external to the Region, including zones in the rest of the GTA, Hamilton, Guelph, Waterloo, and Wellington.

The current and future capacity potential of provincial highways in Halton Region relative to the existing and forecasted through trips has been assessed. In general, there is sufficient capacity on the provincial highway system in Halton Region to accommodate “through” trips now and in the future. People travelling between Hamilton and Peel Region, for instance, certainly have the capacity available on provincial highways to make this long distance trip. In fact, people making “through” trips in the PM peak may choose to use Halton Regional roads for part of their trip. Reasons might include incidents or congestion on the provincial highways.

To the extent that some “through” trips use Regional roads and hence add to the pressure to improve the Regional road network, this effect is more than offset by the larger number of internal or internal/external trips that do use the provincial highways and hence reduce the pressure to improve the Regional road network.

The function of 407 ETR is considered the same as a provincial highway in accommodating longer distance (through) trips in that the province still owns the corridor and has built “expansion triggers” into the agreement with the private operator to ensure that additional capacity will be provided as growth in travel occurs.

In reviewing the total road network in Halton Region, it is clear that provincial facilities have or can be expanded to provide sufficient capacity for all “through” trips up to the 2031-planning horizon. The impact that some “through” trips cause by choosing to use Regional roads is more than offset by internal and internal/external trips that choose to use provincial facilities and hence reduce the pressure for Regional road improvements.

The Region creates the capacity in its road network to accommodate internal and internal/external trips. Some of these trips choose to use the provincial facilities, which create the opportunity for some through trips to use the Regional road system. To gauge these effects, a simulation of PM peak hour road use within Halton Region was conducted and the vehicle km for each trip pattern on provincial, regional and municipal roads is summarized in Table D-6.

On an absolute basis there are 59,159 vehicle kilometres of “through” trips on regional roads vs. 122,249 vehicle kilometres of internal Halton trips on provincial roads and 590,715 vehicle kilometres of trips on provincial roads where either the trip origin or destination is in Halton Region in 2031. These figures have been highlighted in Table D-6 for ease of reference.

Based on the assessment in this section, it is recommended that there be no deduction in DCs for “through” trips.



**Table D-6  
PM Peak Hour Road Use within Halton Region**

<b>2011 Simulation</b>						
	<b>Trips</b>	<b>Provincial</b>	<b>Regional</b>	<b>Local</b>	<b>Total</b>	<b>Reg+Local</b>
<b><i>Vehicle km by Jurisdiction (Excludes centroid connectors)</i></b>						
Internal	59,953	81,553	137,063	205,092	423,708	342,155
Inbound	29,183	233,445	125,309	100,153	458,907	225,461
Outbound	27,847	227,212	96,144	88,954	412,309	185,097
Through	N/A	474,570	48,668	33,761	556,999	82,430
<b>Total</b>	<b>116,983</b>	<b>1,016,780</b>	<b>407,184</b>	<b>427,960</b>	<b>1,851,923</b>	<b>835,143</b>
<b><i>Distribution of vehicle km</i></b>						
Internal	51%	8%	34%	48%	23%	41%
Inbound	25%	23%	31%	23%	25%	27%
Outbound	24%	22%	24%	21%	22%	22%
Through		47%	12%	8%	30%	10%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b><i>Mean travel distance per trip (km)</i></b>						
Internal		1.4	2.3	3.4	7.1	5.7
Inbound		8.0	4.3	3.4	15.7	7.7
Outbound		8.2	3.5	3.2	14.8	6.6
<b>2031 Simulation</b>						
	<b>Trips</b>	<b>Provincial</b>	<b>Regional</b>	<b>Local</b>	<b>Total</b>	<b>Reg+Local</b>
<b><i>Vehicle km by Jurisdiction (Excludes centroid connectors)</i></b>						
Internal	98,370	122,249	329,587	322,884	774,721	652,471
Inbound	30,734	257,767	151,440	99,152	508,359	250,592
Outbound	35,780	332,948	135,385	114,573	582,906	249,958
Through	N/A	607,078	59,159	39,689	705,926	98,848
<b>Total</b>	<b>164,884</b>	<b>1,320,043</b>	<b>675,571</b>	<b>576,298</b>	<b>2,571,912</b>	<b>1,251,869</b>
<b><i>Distribution of vehicle km</i></b>						
Internal	60%	9%	49%	56%	30%	52%
Inbound	19%	20%	22%	17%	20%	20%
Outbound	22%	25%	20%	20%	23%	20%
Through		46%	9%	7%	27%	8%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b><i>Mean travel distance per trip (km)</i></b>						
Internal		1.2	3.4	3.3	7.9	6.6
Inbound		8.4	4.9	3.2	16.5	8.2
Outbound		9.3	3.8	3.2	16.3	7.0

**Table D-6 (Cont.)  
PM Peak Hour Road Use within Halton Region**

<b>Change (2031 - 2011)</b>						
	<b>Trips</b>	<b>Provincial</b>	<b>Regional</b>	<b>Local</b>	<b>Total</b>	<b>Reg+Local</b>
<b><i>Vehicle km by Jurisdiction (Excludes centroid connectors)</i></b>						
Internal	38,417	40,697	192,524	117,792	351,013	310,316
Inbound	1,551	24,322	26,131	-1,000	49,452	25,131
Outbound	7,933	105,736	39,241	25,619	170,597	64,860
Through	N/A	132,509	10,491	5,927	148,927	16,418
<b>Total</b>	<b>47,901</b>	<b>303,264</b>	<b>268,387</b>	<b>148,338</b>	<b>719,989</b>	<b>416,726</b>
<b><i>Distribution of vehicle km</i></b>						
Internal	80%	13%	72%	79%	49%	74%
Inbound	3%	8%	10%	-1%	7%	6%
Outbound	17%	35%	15%	17%	24%	16%
Through		44%	4%	4%	21%	4%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b><i>Mean travel distance per trip (km)</i></b>						
Internal		-0.1	1.1	-0.1	0.8	0.9
Inbound		0.4	0.6	-0.2	0.8	0.4
Outbound		1.1	0.3	0.0	1.5	0.3

## **2.4. Residential and Non-Residential Splits**

### **2.4.1. Calculation of Split based on Number of Trips Associated with New Residents and Employment**

In the past, Growth-Related DCs were allocated between residential and non-residential land uses based on trips attributed to Population and Employment Growth. This methodology now reflects both the growing percentage of jobs in the Work-at-Home (WAH) and No-Fixed-Place-of-Work (NFPOW) categories and that these jobs generate trips from a “residential” unit as opposed to a non-residential facility.

As discussed in Appendix A, Part 2, Work at home (WAH) employment and no fixed place of work (NFPOW) employment have been separately identified, but excluded from the non-residential growth forecast when calculating the non-residential DC and service needs. WAH employees have already been included in the population forecast and the need for municipal services related to NFPOW employees has largely been included in the employment forecast by usual place of work.

Similar to WAH, adjustments have been made for institutional population based employment (e.g. long term care development) and the corresponding institutional square footage forecast

due to special care/special needs being accounted for in residential growth. This adjustment was made for the Transportation Technical Report and the corresponding impact is noted below.

Table D-8 summarizes the employment forecast excluding WAH, NFPOW and institutional population related employment, which is the basis for the transportation trip generation and DC employment forecast.

**Table D-7  
Residential and Non-Residential Growth**

Year	Pop/Empl.	WAH	NFPOW	Institutional Employment Adjustment	Total
<b>Residential</b>					
2016	555,707	-	-	-	555,707
2031	752,537	-	-	-	752,537
<b>Non-Residential</b>					
2016	288,493	(25,474)	(28,504)	(4,309)	230,206
2031	390,000	(35,429)	(39,289)	(5,862)	309,420

For the period 2017-2031, the anticipated levels of growth in Residential and Non-Residential categories are:

Residential:  $752,537 - 555,707 = 196,830$

Non-Residential:  $309,420 - 230,206 = 79,214$

Table D-8 contains the trip rates derived from the 2011 Transportation Tomorrow Survey (TTS) to represent the mean trip rate for Halton Region for Residential and Non-Residential trips. These trip rates include WAH and NFPOW as generating trips from “Residential”. The previous total trip rates from the 2012 DC Study, where WAH and NFPOW were considered under “Non-Residential” column, are also presented in the table.

**Table D-8**  
**Mean Trip Rates Used as Input to the**  
**Halton Region PM Peak Period Model**

<b>Trip Type</b>	<b>Trip Rate - Residential</b>		<b>Trip Rate - Non-Res</b>	
<b>Origins in Halton Region</b>	<b>(2017)</b>	<b>(2012)</b>	<b>(2017)</b>	<b>(2012)</b>
Work	0.000	0.000	0.470	0.389
Home	0.098	0.079	0.000	0.000
Other	0.088	0.085	0.167	0.121
<b>Destinations in Halton Region</b>				
Home	0.277	0.286	0.000	0.000
Non-Home	0.087	0.084	0.202	0.150
<b>Total Origins + Destinations</b>	<b>0.549</b>	<b>0.534</b>	<b>0.839</b>	<b>0.660</b>

Using the updated trip rates and the growth projections, the Residential/Non-Residential split can be calculated as shown below. This equation shows that the employment trip rate was adjusted by 10% to better balance trip characteristics between these trip types in the AM and PM conditions.

$$\text{Residential Share} = \frac{(196,830 \times 0.549) \times 100}{(196,830 \times 0.549) + (79,214 \times 0.839)/1.1 \text{ AM Peak Factor}} = 64\%$$

Based on the above calculation, the Residential/Non-Residential split recommended for this program is calculated as 64% / 36%, respectively (vs. 62% / 38% per the 2012 DC Study).

#### **2.4.2. Non-Residential Distribution Among Retail / Non-Retail**

The non-residential DC share (36%) may be further divided among different types of non-residential land uses to reflect the differences in associated trip-making behaviour. The non-residential DC share was distributed among 2 different land use types:

- Retail
- Non-Retail

The methodology for allocating the non-residential DC share among the non-residential land use categories followed the steps as outlined below:

- Obtain the automobile PM Peak trip generation rate for each land use type
- Adjust the automobile trip rates to account for transit trips as appropriate for each land use. These rates reflect targets established by the TMP, with adjustments made to reflect travel behaviour differences associated with each land use type.

- Adjust the automobile trip rates for Pass-by and Diverted trips as appropriate for each land use category.
- Define the forecasted Growth for each land use for 2017-2031
- Calculate the total number of automobile trips associated with Growth of each land use by multiplying the adjusted trip generation rate by the Growth forecasted for 2017-2031.
- Calculate the total non-residential trips by summing the number of automobile trips generated by each land use type.
- Calculate the percentage of trips contributed by each land use type by dividing the number of trips for that land use type by the total non-residential trips.
- Prorate the percentages such that they sum to the non-residential share by multiplying by the non-residential component.

Following the above methodology, the PM peak trip rate and adjustments were made as presented in **Table D-9**. The allocation among the 2 non-residential land uses was derived and with the growth for each land use type defined, the individual land use trip contribution could then be determined as presented in **Table D-10**.

**Table D-9  
Weighted Trip Generation Rates (PM Peak)**

(1) Category	(2) Rate <sup>1</sup>	(3) Transit/ Diverted/ Pass-By Trip Reduction	(4) Net Rate (Auto)  (100%-3) x (2)	(5) Category Weight <sup>2</sup>	(6) Trip Gen. X GFA Weight  (4x5)
<b>Retail</b>					
Retail Trade (eg. Shopping Centre)	3.71	35%	2.41	46%	1.12
Finance & Insurance (eg. Bank and Financial Office)	3.31	8%	3.05	12%	0.37
Entertainment/Recreation (eg. Cinemas, fitness, recreation)	4.41	0%	4.41	8%	0.34
Food Services (eg. Restaurant, fast food)	13.53	46%	7.26	22%	1.60
Other Services (eg. auto care/personal services)	2.54	2%	2.49	12%	0.29
Total Retail					<b>3.72</b>
<b>Non-Retail</b>					
Industrial (eg. Light, Warehouse, Manufacturing)	0.67	1%	0.66	91%	0.60
Institutional (eg. Schools, Community centres, hospitals, place of worship)	1.23	0%	1.23	2%	0.03
Office (eg. general office, medical office)	1.85	13%	1.60	6%	0.10
Accommodation (eg. hotel/motel)	0.88	0%	0.88	0%	0.00
Total Non-Retail					<b>0.73</b>

May not add due to rounding

<sup>1</sup> Derived from Institute of Transportation Engineers Trip Generation Manual

<sup>2</sup> Weighting derived from Halton Region Employment Survey

**Table D-10  
Calculation of Retail / Non-Retail Split**

(1) Category	(2) Sq. Ft	(3) PM Peak Trip Rates	(4) PM Peak Trips (1) x (2)	(5) % Trips	(6) Revenue (Uninflated) (Total Revenues x (4))	(7) \$DC (5) / (1)
Retail	8,489,630	3.72	31,558,242	29%	\$ 224,298,772	<b>\$ 26.42</b>
Non-Retail	105,170,581	0.73	77,179,816	71%	548,552,039	<b>\$ 5.22</b>
Total	113,660,211		108,738,058	100%	\$ 772,850,811	

## 2.5. Grants, Subsidies and Developer Contributions

The transportation improvement costs, which are to form the basis for DCs in Halton Region, must include deductions for any financial considerations through grants, subsidies or developer contributions. Where contributions have been provided, the cost was subtracted from the gross cost of the project.

Where projects in the Roads Capital Projects involve new or improved interchanges with the provincial freeway system, only costs to be borne by the Region are included in the DC calculation and the sharing of these costs between Existing development and Growth is as set out in the BTE methodology.

**Appendix B** (of the Technical Report) includes the Halton Region Procedures for Development Related Construction on Regional Roads, including both major and minor intersection works.

## 2.6. Post Period Benefit (Oversizing)

Post period benefit is not explicitly referenced in the DCA but has been applied where clear upsizing for future benefit is involved. Post period benefit deductions allowed during the current DC update will be recovered in DC updates for the post-2031 period. Correspondingly, the current DC update will recover post period benefit deductions allowed in earlier DC updates.

Post period benefit was determined by consideration of the recommended timing of the project relative to the planning period for the DC Background Study and is consistent with the methodologies presented in the 2012 DC Transportation Background Study.

A deduction for post period benefit has been made for selected major infrastructure improvements in the last 5 years (2026-2031) of the capital program. This deduction is proportional to the degree to which the v/c on the major improvement in 2031 is less than the average v/c on the associated screenline.

As an example, if a road widening scheduled for 2029 results in a v/c of 0.75 in 2031 and the average v/c on the associated screenline in 2031 is 0.85, then a deduction for excess capacity is appropriate. The deduction applied to the project's DC chargeable component would be:

$$\frac{.85 - .75}{.85} \times 100 = 12\%.$$





**APPENDIX D – PART 3**  
**THE DETAILED ROADS AND RELATED CAPITAL PROGRAM**



### 3. THE DETAILED ROADS AND RELATED CAPITAL PROGRAM

- 3.1. Table D-11 sets out the 2017-2031 Roads Capital Program. The table provides project descriptions, a 2017-2021 annualized expenditure forecast, 2022-2031 and 2017-2031 consolidated forecasts, project-specific deductions for post-period benefit (oversizing) and “Non-Growth” (Benefit to Existing Development). The DC recoverable cost (“Net Growth”) is then allocated between Residential and Non-residential benefit.

The Region-wide roads program costs involved are summarized as follows (in \$Thousands):

Service	Gross Cost	Less: Benefit to Existing	Less: Post-Period Benefit	Net Growth	Residential Share	Residential Share
Roads	\$2,189,966	\$ 388,744	\$ 105,720	\$ 1,695,502	\$ 1,085,121	\$ 610,381

Note: May not add due to rounding

Table D-11

Halton Region  
2017 Development Charge Study  
Roads Capital Projects - Total (\$2017, \$000's)

Unique ID	Description	2017	2018	2019	2020	2021	Sub-total (2017-2021)	2022-2031	Total (2017-2031)	Bynd 2031 (Ovrszng)	Non-Growth	Net Growth	Residential	Non Residential
7488	Guelph Line Reconstruction (CONSTRUCTION ONLY), 1km North of Derry Road to Conservation Road (MIL) (Regional Road 1)	-	6,824	-	-	-	6,824	-	6,824	-	6,824	-	-	-
6445	Guelph Line at Harvester Road - Intersection Improvements (BUR) (Regional Road 1)	-	5,212	-	-	-	5,212	-	5,212	-	2,606	2,606	1,668	938
2659	Guelph Line - Widening - 4 to 6 lanes from Mainway to Upper Middle Road (BUR) (Regional Road 1)	-	-	-	1,217	1,550	2,767	7,883	10,649	-	1,384	9,265	5,930	3,335
6805	Guelph Line - Widening from 4 to 6 lanes from Upper Middle Rd. to Dundas St. (BUR) (Regional Road 1)	-	-	-	-	-	-	17,337	17,337	-	1,907	15,430	9,875	5,555
7438	Guelph Line & 1 Side Road - Intersection Improvements (BUR) (Regional Road 1)	535	374	2,138	-	-	3,047	-	3,047	-	1,523	1,523	975	548
3979	Trafalgar Road - Widening - 4 to 6 Lanes from Upper Middle Road to Dundas Street (OAK) (Regional Road 3)	14,651	-	-	-	-	14,651	-	14,651	-	2,198	12,453	7,970	4,483
3981	Trafalgar Road - Widening - 4 to 6 Lanes from Dundas St. to Hwy 407 (OAK) (Regional Road 3)	-	28,464	-	-	-	28,464	-	28,464	-	5,693	22,771	14,573	8,198
3991	Trafalgar Road - Grade Separation at CN Crossing North of Maple Ave (HHS) (Regional Road 3)	3,122	305	26,824	-	-	30,252	-	30,252	-	2,420	27,832	17,812	10,019
5376	Trafalgar Road - Grade Separation at Metrolinx Crossing South of Hwy 7 (HHS) (Regional Road 3)	-	305	17,086	-	-	17,391	-	17,391	-	2,609	14,782	9,461	5,322
6985	Trafalgar Road - Widening - 2 to 4 Lanes from Steeles Avenue to 10 Side Road (HHS) (Regional Road 3)	-	27,557	-	-	-	27,557	-	27,557	-	6,338	21,219	13,580	7,639
6984	Trafalgar Road - Widening - 2 to 4 Lanes from 10 Side Road to Hwy 7 (HHS) (Regional Road 3)	2,034	-	1,017	49,121	-	52,172	-	52,172	-	11,478	40,694	26,044	14,650
6823	Trafalgar Road - Widening from 4 to 6 lanes from Highway 407 to Britannia Rd. (MIL) (Regional Road 3)	-	-	-	-	-	-	33,116	33,116	-	2,649	30,466	19,498	10,968
6827	Trafalgar Road - Widening from 4 to 6 lanes from Britannia Rd. to Steeles Avenue (MIL/HHS) (Regional Road 3)	-	-	-	-	-	-	69,617	69,617	-	5,569	64,047	40,990	23,057
5839	James Snow Parkway - Widening from 2 to 6 Lanes from Britannia Road to Hwy 401 (MIL) (Regional Road 4)	-	825	-	4,330	3,604	8,759	29,764	38,523	-	1,926	36,597	23,422	13,175
6807	James Snow Parkway - Widening from 4 to 6 lanes from Highway 401 to Tremaine Road (MIL) (Regional Road 4)	-	-	-	-	-	-	59,450	59,450	-	2,378	57,072	36,526	20,546
6806	James Snow Parkway - New 6-lane road from Highway 407 to Britannia Road (MIL) (Regional Road 4)	-	-	-	-	-	-	46,145	46,145	-	-	46,145	29,533	16,612
3942	Dundas Street - Widening - 4 to 6 lanes from Bronte Road to Proudfoot Trail (OAK) (Regional Road 5)	1,322	-	-	-	-	1,322	-	1,322	-	-	1,322	846	476
5436	Dundas Street - Widening - 4 to 6 lanes from Neyagawa Blvd. to Oak Park Blvd. (OAK) (Regional Road 5)	2,770	-	-	-	-	2,770	-	2,770	-	-	2,770	1,773	997
5180	Dundas Street - Widening 4 to 6 lane from North Hampton to Appleby Line (BUR) (Regional Road 5)	-	-	15,458	-	-	15,458	-	15,458	-	3,710	11,748	7,519	4,229
5384	Dundas Street - Grade Separation at CNR Crossing between Appleby Line and Tremaine Rd (BUR) (Regional Road 5)	-	17,268	-	-	-	17,268	-	17,268	-	-	17,268	11,051	6,216
3983	Dundas Street Widening from 4 to 6-Lanes from Tremaine Rd to Bronte Rd (OAK) (Regional Road 5)	-	-	13,929	-	-	13,929	-	13,929	-	2,925	11,004	7,042	3,961
5385	Dundas Street - Bronte Creek Bridge between Appleby Line and Tremaine Rd (BUR) (Regional Road 5)	-	43,953	-	-	-	43,953	-	43,953	-	1,758	42,195	27,005	15,190
3982	Dundas Street - Widening from 4 to 6-Lanes (excluding CNR & Bronte Ck Bridges) from Appleby Line to Tremaine Rd (BUR) (Regional Road 5)	-	12,157	-	-	-	12,157	-	12,157	-	1,702	10,455	6,691	3,764
3984	Dundas Street - Widening 4 to 6-Lanes from Guelph Line to North Hampton (BUR) (Regional Road 5)	-	2,412	681	18,166	-	21,259	-	21,259	-	4,464	16,795	10,749	6,046

Table D-11

Halton Region  
2017 Development Charge Study  
Roads Capital Projects - Total (\$2017, \$000's)

Unique ID	Description	2017	2018	2019	2020	2021	Sub-total (2017-2021)	2022-2031	Total (2017-2031)	Bynd 2031 (Ovrszng)	Non-Growth	Net Growth	Residential	Non Residential
7487	Dundas Street - Widening 4 to 6-Lanes from Guelph Line to Halton/Hamilton Boundary including improvements at Brant Street (BUR) (Regional Road 5)	-	988	3,884	834	23,141	28,847	-	28,847	-	11,250	17,597	11,262	6,335
3985	Britannia Road - Widening - 2 to 6 Lanes from Tremaine Rd to Regional Road 25 (MIL) (Regional Road 6)	17,289	-	-	-	-	17,289	-	17,289	-	2,939	14,350	9,184	5,166
7333	Britannia Road (CONSTRUCTION ONLY) - Widening 2 to 4 lanes from Regional Road 25 to James Snow Parkway (MIL) (Regional Road 6)	-	31,566	-	-	-	31,566	-	31,566	-	5,051	26,515	16,970	9,545
7334	Britannia Road (CONSTRUCTION ONLY) - Widening - 2 to 4 lanes from James Snow Parkway to Trafalgar Rd (MIL) (Regional Road 6)	-	28,493	-	-	-	28,493	-	28,493	-	4,559	23,934	15,318	8,616
7335	Britannia Road - Widening - 2 to 4 lanes from Trafalgar Road to Highway 407 (MIL) (Regional Road 6)	-	11,402	-	-	-	11,402	-	11,402	-	2,622	8,779	5,619	3,161
6802	Britannia Road - Widening from 4 to 6 lanes from Regional Road 25 to Highway 407 (MIL) (Regional Road 6)	-	-	-	-	-	-	57,480	57,480	-	13,220	44,260	28,326	15,933
7486	Derry Road (CONSTRUCTION ONLY) - Reconstruction from Milborough Line to McNiven Road (MIL) (Regional Road 7)	-	3,051	-	-	-	3,051	-	3,051	-	3,051	-	-	-
6804	Derry Road - Widening from 4 to 6 lanes from Tremaine Rd. to Highway 407 (MIL) (Regional Road 7)	-	-	-	-	-	-	90,416	90,416	1,808	6,203	82,405	52,739	29,666
6819	Steeles Avenue - Widening from 2 to 4 lanes from Tremaine Road to Industrial Drive (MIL) (Regional Road 8)	825	-	1,498	3,325	226	5,875	10,515	16,390	-	3,442	12,948	8,287	4,661
5396	Steeles Avenue - Widening 2 to 4 lanes from Industrial Drive to Martin Street (MIL) (Regional Road 8)	2,543	-	-	-	-	2,543	-	2,543	-	-	2,543	1,627	915
5181	Steeles Avenue Grade Separation at CN crossing west of Bronte Street (MIL) (Regional Road 8)	-	11,273	-	-	-	11,273	-	11,273	-	-	11,273	7,215	4,058
6821	Steeles Avenue - Widening from 4 to 6 lanes from Regional Road 25 to Trafalgar (MIL/HHS) (Regional Road 8)	-	-	-	825	-	825	61,453	62,278	-	5,605	56,673	36,271	20,402
6822	Steeles Avenue - Widening from 4 to 6 lanes (with RBL) from Trafalgar to Winston Churchill Boulevard (HHS) (Regional Road 8)	-	-	-	-	-	-	46,051	46,051	15,197	1,543	29,311	18,759	10,552
5428	Campbellville Gateway Feature (MIL) (Regional Road 9)	25	-	-	-	-	25	-	25	-	13	13	8	5
7459	10 Side Road (CONSTRUCTION ONLY) - 2 Lane Reconstruction/Realignment to intersection at Winston Churchill Blvd. (HHS) (Regional Road 10)	-	4,068	-	-	-	4,068	-	4,068	-	4,068	-	-	-
6758	10 Side Road - Widening from 2 to 4 lanes from Trafalgar Rd to Winston Churchill Blvd. (HHS) (Regional Road 10)	-	-	-	-	-	-	36,185	36,185	6,151	6,307	23,726	15,185	8,542
7336	Ninth Line - Widening 2 to 4-lanes from Steeles Ave to 10 Side Rd (HHS) (Regional Road 13)	-	3,400	4,302	25,189	-	32,892	-	32,892	-	10,854	22,038	14,104	7,934
6808	Ninth Line - Widening from 2 to 4 lanes from Burnhamthorpe Rd. to Highway 407 (OAK) (Regional Road 13)	-	-	-	1,550	2,038	3,588	10,929	14,517	-	3,629	10,888	6,968	3,920
6809	Ninth Line - Widening from 2 to 4 lanes from Dundas St. to Burnhamthorpe Rd. (OAK) (Regional Road 13)	-	-	-	-	1,528	1,528	15,285	16,813	-	3,363	13,450	8,608	4,842
6824	Brant Street - Widening from 4 to 6 lanes from North Service Road to Dundas Street (BUR) (Regional Road 18)	-	825	-	2,348	7,534	10,707	16,974	27,681	-	2,491	25,190	16,121	9,068
7491	Winston Churchill Blvd. - 2 lane Reconstruction from 5 Side Road to 10 Side Road (HHS) (Regional Road 19)	-	-	7,628	8,244	-	15,871	-	15,871	-	15,871	-	-	-
7492	Winston Churchill Blvd. (CONSTRUCTION ONLY) - 2 lane Reconstruction from Old Pine Road to 17 Side Road (HHS) (Regional Road 19)	-	-	2,438	-	-	2,438	-	2,438	-	2,438	-	-	-
3634	Winston Churchill Blvd. - 2 lane Reconstruction from 10 Side Road to Credit River Bridge (HHS) (Regional Road 19)	2,732	-	-	-	-	2,732	-	2,732	-	2,732	-	-	-
5312	Winston Churchill Blvd. - 2 lane Reconstruction from Credit River Bridge to Old Pine Road (HHS) (Regional Road 19)	1,768	812	4,810	-	-	7,390	-	7,390	-	7,390	-	-	-

Table D-11

Halton Region  
 2017 Development Charge Study  
 Roads Capital Projects - Total (\$2017, \$000's)

Unique ID	Description	2017	2018	2019	2020	2021	Sub-total (2017-2021)	2022-2031	Total (2017-2031)	Byrd 2031 (Ovrszng)	Non-Growth	Net Growth	Residential	Non Residential
3989	Winston Churchill Blvd. - Widening - 2 to 4 Lanes from 2km south of 5 Side Road to potential by-pass - Halton's share (HHS) (Regional Road 19)	-	806	-	1,208	7,317	9,332	-	9,332	-	3,826	5,506	3,524	1,982
6448	Winston Churchill Blvd. - Widening 4-6 Lanes from Hwy 401 to Steeles Avenue (Halton's Share) (HHS) (Regional Road 19)	-	-	501	-	2,305	2,806	-	2,806	-	449	2,357	1,508	849
6846	Winston Churchill Blvd. - Widening from 4 to 6 lanes from 2km south of 5 Side Road to 5 Side Road (Halton's share) (HHS) (Regional Road 19)	-	-	-	-	-	-	5,936	5,936	2,909	787	2,240	1,434	807
6847	Winston Churchill Boulevard Widening 5-7 Lanes from Steeles Ave to 2 km south of 5 Side Road (Halton's Share) (HHS) (Regional Road 19)	-	-	-	-	-	-	3,612	3,612	1,770	608	1,234	790	444
5438	Winston Churchill Blvd. - Widening from 4 to 6 Lanes from Dundas St to Upper Middle Rd / QEW (Halton's Share) (OAK) (Regional Road 19)	-	-	-	-	-	-	9,656	9,656	773	2,132	6,752	4,321	2,431
7374	Winston Churchill Boulevard - Reconstruction from Terra Cotta to Ballinfad Rd/32 Side Road (Regional Road 19)	283	1,550	-	-	-	1,833	-	1,833	-	1,833	-	-	-
6449	Appleby Line at Harvester Road - Intersection Improvements (BUR) (Regional Road 20)	-	3,775	-	-	-	3,775	-	3,775	-	1,888	1,888	1,208	680
6812	Appleby Line - Widening from 4 to 6 lanes from Fairview Street to Taywood Drive (BUR) (Regional Road 20)	-	-	-	5,576	-	5,576	42,786	48,361	-	8,221	40,140	25,690	14,450
6803	Burloak Drive - Widening from 4 to 6 lanes from Harvester Rd. to Upper Middle Rd. (BUR/OAK) (Regional Road 21)	-	-	-	-	-	-	30,166	30,166	9,955	10,106	10,106	6,488	3,638
7485	Burloak Drive (CONSTRUCTION ONLY) - 4 lane urbanization from north of QEW to Upper Middle Road (BUR/OAK) (Regional Road 21)	-	-	-	-	-	-	4,384	4,384	-	438	3,945	2,525	1,420
5408	Tremaine Road Grade Separation at CN (MIL) (Regional Road 22)	203	-	-	-	-	203	-	203	-	-	203	130	73
5409	Tremaine Road - New Bridge over 16 Mile Creek north of Steeles Avenue (MIL) (Regional Road 22)	254	-	-	-	-	254	-	254	-	-	254	163	92
5138	Tremaine Road - new 4-lane Roadway from Tremaine Road (IC)n to JSP (MIL) (Regional Road 22)	1,017	-	-	-	-	1,017	-	1,017	-	-	1,017	651	366
5135	Tremaine Road - New 4-lane roadway from 16 Mile Creek to Tremaine Road (MIL) (Regional Road 22)	864	-	-	-	-	864	-	864	-	-	864	553	311
5134	Tremaine Road - New 4-lane roadway from Steeles Avenue to 16 Mile Creek (MIL) (Regional Road 22)	712	-	-	-	-	712	-	712	-	-	712	456	256
5136	Tremaine Road - New 4-lane roadway from Tremaine Road (IC)s to Tremaine Road (IC)n (MIL) (Regional Road 22)	6,847	-	-	-	-	6,847	-	6,847	-	-	6,847	4,382	2,465
5622	Tremaine Road - Reconstruction from Dundas Street to No. 1 Side Road (BUR/OAK) (Regional Road 22)	-	793	95	4,495	-	5,382	-	5,382	-	5,382	-	-	-
5845	Tremaine Road - Widening 4 to 6 lanes from Derry Road to Hwy 401 (MIL) (Regional Road 22)	-	-	-	825	-	825	75,201	76,026	-	20,527	55,499	35,519	19,980
6830	Tremaine Road - Widening from 2 to 4 lanes from Dundas St. to Lower Base Line (BUR/OAK) (Regional Road 22)	-	-	550	-	10,353	10,903	30,365	41,268	-	12,381	28,888	18,488	10,400
6834	Tremaine Road - Widening from 2 to 4 lanes from Lower Base Line to Britannia Rd. (MIL) (Regional Road 22)	-	-	-	550	-	550	27,075	27,625	-	5,801	21,824	13,967	7,857
6817	Regional Road 25 - Widening from 4 to 6 lanes from Steeles Avenue to 5 Side Rd. (MIL) (Regional Road 25)	825	-	3,643	1,785	431	6,684	25,347	32,031	-	4,484	27,547	17,630	9,917
6811	Regional Road 25 - Widening from 2 to 4 lanes from 5 Side Rd. to 10 Side Rd. (HHS) (Regional Road 25)	-	-	550	-	1,057	1,607	11,706	13,313	-	2,663	10,650	6,816	3,834

Table D-11

Halton Region  
2017 Development Charge Study  
Roads Capital Projects - Total (\$2017, \$000's)

Unique ID	Description	2017	2018	2019	2020	2021	Sub-total (2017-2021)	2022-2031	Total (2017-2031)	Bynd 2031 (Ovrszng)	Non-Growth	Net Growth	Residential	Non Residential
6818	Regional Road 25 - Widening from 4 to 6 lanes from Speers Rd. to Highway 407 (OAK) (Regional Road 25)	-	-	825	-	7,166	7,991	58,152	66,143	-	6,614	59,529	38,098	21,430
6814	Regional Road 25 - Widening from 4 to 6 lanes from Highway 407 to Britannia Rd. (MIL) (Regional Road 25)	-	-	-	825	-	825	53,648	54,473	-	5,447	49,026	31,376	17,649
6815	Regional Road 25 - Widening from 4 to 6 lanes from Britannia Rd to Derry Rd. (MIL) (Regional Road 25)	-	-	-	-	-	-	24,011	24,011	2,881	1,056	20,073	12,847	7,226
7343	Regional Road 25 - Realignment at Lower Base Line Intersection (OAK/MIL)	2,776	-	-	-	-	2,776	-	2,776	-	2,582	194	124	70
7489	William Halton Parkway (CONSTRUCTION ONLY) - 2 to 4 Lanes from Old Bronte Road to Hospital Gate (OAK) (Regional Road 40)	-	2,543	7,156	-	-	9,698	-	9,698	-	-	9,698	6,207	3,491
7490	William Halton Parkway (CONSTRUCTION ONLY) - New 4-lane road from Third Line to Sixteen Mile Creek. (OAK) (Regional Road 40)	-	2,245	-	-	-	2,245	-	2,245	-	-	2,245	1,436	808
7460	William Halton Parkway (CONSTRUCTION ONLY) - New 4-lane road from Sixth Line to Neyagawa Boulevard (OAK) (Regional Road 40)	-	12,204	-	-	-	12,204	-	12,204	-	-	12,204	7,811	4,393
5413	William Halton Parkway - New 4-lane Bridge over 16 Mile Creek (OAK) (Regional Road 40)	-	43,412	-	-	-	43,412	-	43,412	-	-	43,412	27,783	15,628
5273	William Halton Parkway - New 4-lane road from Sixteen Mile Creek to Neyagawa Blvd. (OAK) (Regional Road 40)	-	13,318	-	-	-	13,318	-	13,318	-	-	13,318	8,523	4,794
7337	Upper Middle Road - Intersection Operational Improvements (OAK) (Regional Road 38)	-	5,345	-	-	-	5,345	-	5,345	-	2,673	2,673	1,710	982
6825	Upper Middle Road - Widening from 4 to 6 lanes from Appleby Line to Bur Oak Drive (BUR) (Regional Road 38)	-	-	-	825	-	825	16,556	17,381	-	1,043	16,338	10,457	5,882
7338	Upper Middle Road - Widening from 4 to 6 lanes from Neyagawa Blvd. to Trafalgar Rd. (OAK) (Regional Road 38)	-	-	-	-	-	-	15,552	15,552	4,043	1,956	9,552	6,113	3,439
7339	Upper Middle Road - Widening from 4 to 6 lanes from Grand Blvd to Ninth Line (OAK) (Regional Road 38)	-	-	-	-	-	-	7,805	7,805	1,171	929	5,705	3,651	2,054
6826	Upper Middle Road - Widening from 4 to 6 lanes from Trafalgar Road to Grand Blvd. (OAK) (Regional Road 38)	-	-	-	-	-	-	19,941	19,941	-	2,592	17,349	11,103	6,246
6828	Upper Middle Road - Widening from 4 to 6 lanes from Bronte Rd. to Neyagawa Blvd. (OAK) (Regional Road 38)	-	-	-	-	-	-	43,416	43,416	15,631	1,388	26,397	16,894	9,503
6829	Upper Middle Road - Widening from 4 to 6 lanes from Ninth Line to Winston Churchill Blvd. (OAK) (Regional Road 38)	-	-	-	-	-	-	23,027	23,027	17,732	635	4,661	2,983	1,678
6757	"5 1/2 Line" - New 6-lane road from Britannia Road. to Steeles Avenue and Interchange at Highway 401 (MIL)	-	-	-	-	-	-	112,014	112,014	6,721	-	105,293	67,388	37,906
6810	North Service Road New 4-lane road from Bur Oak Drive to Bronte Road (BUR/OAK)	-	-	-	-	-	-	25,305	25,305	18,979	-	6,326	4,049	2,277
7494	Norval Bypass (HHS)	-	1,523	-	4,258	17,739	23,519	-	23,519	-	-	23,519	15,052	8,467
6853	Centre-median landscaping Improvements (Region-wide)	-	-	156	-	104	259	521	780	-	780	-	-	-
6854	New Traffic Signals - Development (Region-wide)	-	1,719	1,719	1,719	1,719	6,875	17,187	24,062	-	-	24,062	15,400	8,662
6855	New Signalized Intersections (Region-wide)	500	628	1,256	628	1,256	4,267	9,418	13,686	-	6,843	6,843	4,379	2,463
5641	Traffic Signal Controller, timer and signing upgrades various intersections (Region-wide)	480	780	780	780	780	3,600	7,038	10,638	-	5,319	5,319	3,404	1,915
6856	Traffic Signal Interconnect (Region-wide)	-	157	157	157	157	626	1,568	2,195	-	2,195	-	-	-
6857	Operational Improvements (Region-wide)	-	523	523	523	523	2,093	5,235	7,328	-	7,328	-	-	-
5746	LED Street Light Replacement Program (Region-wide)	651	651	651	651	651	2,733	1,314	4,047	-	4,047	-	-	-
6106	Retaining Wall Repairs (Region-wide)	-	51	51	51	51	203	675	879	-	879	-	-	-
5642	Bridge Inspections & Evaluation Studies (Region-wide)	41	127	41	132	41	381	636	1,017	-	1,017	-	-	-
4743	Retrofit & Replacement Noise Attenuation Barriers - Various Locations (Region-wide)	-	998	998	998	998	3,991	9,979	13,970	-	13,970	-	-	-
5173	Misc. Bridges & Culverts Rehabilitation & Replacement Program (Region-wide)	1,723	837	837	837	837	5,071	8,372	13,443	-	13,443	-	-	-
4370	Emergency Diversion Route Signing for Road Closure Action Plan (Region-wide)	-	-	261	157	-	418	313	731	-	731	-	-	-
7142	Miscellaneous Works Related to Road Resurfacing (Region-wide)	1,129	970	766	465	1,078	4,408	6,376	10,783	-	10,783	-	-	-

Table D-11

Halton Region  
 2017 Development Charge Study  
 Roads Capital Projects - Total (\$2017, \$000's)

Unique ID	Description	2017	2018	2019	2020	2021	Sub-total (2017-2021)	2022-2031	Total (2017-2031)	Bynd 2031 (Ovrszng)	Non-Growth	Net Growth	Residential	Non Residential
7567	Misc. R.O.W. Purchases and Road Dedication Engineering & Surveys (Region-wide)	-	209	209	209	209	837	2,095	2,932	-	2,932	-	-	-
5017	Transportation Infrastructure Management System (Region-wide)	105	105	105	105	105	524	1,050	1,573	-	1,573	-	-	-
7968	MTO Highway Studies (Region-wide)	-	131	131	131	131	525	1,312	1,837	-	-	1,837	1,175	661
5196	Smart Commute Travel Demand Management Initiative (Region-wide)	356	356	356	356	356	1,780	3,560	5,339	-	2,670	2,670	1,709	961
5425	Speed Reduction Education & Enforcement Campaign (Region-wide)	-	52	52	52	52	207	521	728	-	728	-	-	-
7375	Active Transportation Infill Projects (Region-wide)	-	3,230	1,374	442	-	5,046	1,099	6,146	-	3,073	3,073	1,967	1,106
7493	Active Transportation New Off Road Capital Projects (Region-wide)	-	4,729	513	2,879	242	8,362	28,156	36,519	-	3,652	32,867	21,035	11,832
5426	Active Transportation Initiatives (Region-wide)	51	51	51	51	51	254	1,048	1,302	-	651	651	417	234
5431	Traffic and Screen Line Counts & Studies (Region-wide)	187	157	157	157	261	918	1,776	2,694	-	1,347	1,347	862	485
5432	Road Needs Study Update (Region-wide)	56	56	56	56	56	280	561	841	-	841	-	-	-
5643	Traffic Operations & Safety Related Studies (Region-wide)	168	168	168	168	168	839	1,680	2,519	-	2,519	-	-	-
5644	Region-wide Traffic Operations Study Update	323	-	-	-	-	323	1,047	1,370	-	1,370	-	-	-
5444	Transportation Master Plan Study (Region-wide)	-	1,046	-	-	-	1,046	2,093	3,139	-	-	3,139	2,009	1,130
6832	Data Management Group (Region-wide)	157	157	157	157	157	785	1,570	2,355	-	-	2,355	1,507	848
6833	Transportation Tomorrow Survey (Region-wide)	-	-	-	-	105	105	209	314	-	-	314	201	113
7569	Urban Design Guidelines (Region-wide)	-	157	-	-	-	157	314	471	-	-	471	301	169
6831	Active Transportation Master Plan (Region-wide)	-	203	-	-	-	203	744	948	-	-	948	607	341
6836	Regional Road 25/Third Line Alignment Options (MIL)	-	-	-	523	-	523	-	523	-	-	523	335	188
6837	DC Background Study (Region-wide)	-	-	-	-	471	471	942	1,413	-	-	1,413	904	509
6858	Cordon Count Data (Region-wide)	52	52	52	52	52	312	624	937	-	-	937	599	337
6838	Growth Management Studies (Region-wide)	523	523	523	523	523	2,616	5,232	7,849	-	-	7,849	5,023	2,826
6885	Vehicle Replacements - Transportation (Region-wide)	40	80	-	27	-	147	257	403	-	403	-	-	-
7398	New Vehicle - Road Operations (Region-wide)	80	-	-	-	-	80	80	160	-	160	-	-	-
7376	Appleby Line Drainage Issues (BUR)	183	-	-	-	-	183	509	183	-	92	92	59	33
7377	Intelligent Transportation System Implementation (Region-wide)	509	-	-	-	-	509	-	509	-	254	254	163	92
7378	Landscape Guidelines (Region-wide)	203	-	-	-	-	203	-	203	-	203	-	130	73
<b>Total</b>		<b>70,913</b>	<b>347,948</b>	<b>127,111</b>	<b>148,480</b>	<b>96,654</b>	<b>791,106</b>	<b>1,398,860</b>	<b>2,189,966</b>	<b>105,720</b>	<b>388,744</b>	<b>1,695,502</b>	<b>1,085,121</b>	<b>610,381</b>

Note: May not add due to rounding.



**APPENDIX E**  
**CALCULATION OF THE ROADS DC APPLICABLE TO  
DEVELOPMENT IN HALTON**

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**APPENDIX E – PART 1**  
**OVERVIEW OF ROADS DC CALCULATION**



# 1. OVERVIEW OF ROADS DC CALCULATION

## 1.1. DC Cash Flow Methodology

- 1.1.1. DC Reserve Fund Opening Balance – the full uncommitted DC reserve fund balance is shown as the opening balance in the cash flow calculation. The DC is calculated so as to fully consume that amount, leaving a nil reserve fund balance at the end of the period in 2031. The reserve fund balances as well as detailed schedules of the reserve fund continuity are provided in Chapter 5.
- 1.1.2. Project Costs – The nominal cost is in 2017\$, as per Appendix D. The inflated cost (commencing in 2018) allows for average inflation of 2%/year, as approximated by the increase in the Statcan Capital Cost Index over the previous 10-year period. This rate may vary, up or down, in any year or sequence of years. It will be matched by the change in the DC quantum, which is determined by the same index.
- 1.1.3. DC Credits – are added to the development-related expenditures, as they represent the equivalent of Regional expenditures for works previously provided by developers which are not part of the capital program and must be funded (Chapter 4).
- 1.1.4. External Debt Charges – represent debt charges resulting from external debt previously incurred to fund the non-residential share of the road infrastructure costs (Chapter 4).
- 1.1.5. Internal Debt Charges – represent the balance owing to the Regional reserve for previously incurred Regional funding of the non-residential share of the road infrastructure costs (Chapter 4).
- 1.1.6. Unfunded Capital – represents unfunded capital works approved by Council to 2016 but not financed (Chapter 4).
- 1.1.7. Historical Post-period Benefit (Oversizing) – is the cost share of previously funded roads infrastructure that, under the existing DC by-laws, was considered to benefit growth beyond the eligible planning horizon. This cost share is recoverable under the 2017 DC by-law as a result of the expanded planning horizon from 2021 to 2031 based on the 2011 Best Planning Estimates (Chapter 4).
- 1.1.8. SDE/Sq.Ft. Per Year – are single-detached unit equivalents per year, i.e. the annual gross increase in population divided by the average occupancy for single detached units.

This is the number of SDE's that are expected to be subject to the Roads DC (69,370 in total).

In the case of the non-residential DC calculation, the charge is per square foot of non-residential TFA and the costs are allocated over a total of 113,660,211 sq.ft.

- 1.1.9. DC Rates** – A DC is calculated, such that when it is inflated at 2%/year, the cash flow will produce a zero balance in 2031.
- 1.1.10. Anticipated Revenues** – is the number of SDE or sq.ft. of non-residential TFA, multiplied by the required DC charge per SDE, or per square foot of non-residential TFA.
- 1.1.11. DC Reserve Fund Closing Balance Before Interest** – The opening balance, less the inflated development-related expenditures, credits, debt charges and other commitments, plus the anticipated DC revenues.
- 1.1.12. Interest Earnings/Costs** – provides for interest earnings on positive reserve fund balances at 3.5% per year and borrowing costs on negative balances at 3.5% per year.
- 1.1.13. DC Reserve Fund Closing Balance After Interest** – is the DC reserve fund closing balance before interest, plus interest incurred during the year on the average balance.

The cash flow calculations for roads are presented in Parts 2 and 3 of this appendix. The non-residential roads DC rate has also been calculated based on a retail/non-retail split as well as a uniform average charge and are presented in part 3 (Table E-3) of this Appendix.

**APPENDIX E – PART 2**  
**CASH FLOWS FOR**  
**REGION-WIDE RESIDENTIAL**  
**ROADS DCs**

**SUMMARY OF CALCULATION RESULTS**

	<u>Per SDE</u>
New Calculated	\$16,827
Existing Charge (As of April 2016)	\$14,121





Table E-1

Halton Region  
 2017 Development Charges Study  
 Roads - Residential

Year	DC Reserve Fund Opening Balance	Dev't Related Expenditures		Historical Oversizing	SDE per Year	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	DC Reserve Fund Closing Balance before Interest	Interest Earnings (3.5%) / Costs (3.5%)	DC Reserve Fund Closing Balance after Interest
		Nominal	Inflated (2%/Yr)							
2017	(43,776,913)	(33,087,323)	(33,087,323)	(3,242,341)	5,950	16,827	100,111,475	(13,524,953)	(1,002,783)	(14,527,736)
2018	(14,527,736)	(182,520,548)	(186,170,959)	-	5,950	17,163	102,113,704	(98,584,990)	(1,979,473)	(100,564,463)
2019	(100,564,463)	(56,381,988)	(58,659,820)	-	5,950	17,507	104,156,004	(55,068,280)	(2,723,573)	(57,791,853)
2020	(57,791,853)	(65,594,536)	(69,609,446)	-	5,950	17,857	106,239,098	(21,162,201)	(1,381,696)	(22,543,897)
2021	(22,543,897)	(46,309,664)	(50,127,069)	-	4,583	18,214	83,478,481	10,807,516	(205,387)	10,602,129
2022	10,602,129	(67,138,968)	(74,126,846)	-	4,129	18,578	76,714,775	13,190,058	416,363	13,606,421
2023	13,606,421	(49,610,456)	(55,869,431)	-	4,129	18,950	78,249,070	35,986,060	867,868	36,853,929
2024	36,853,929	(85,301,409)	(97,984,506)	-	4,129	19,329	79,813,840	18,683,263	971,901	19,655,164
2025	19,655,164	(100,578,447)	(117,843,681)	-	4,129	19,715	81,410,333	(16,778,185)	50,347	(16,727,838)
2026	(16,727,838)	(57,389,996)	(68,586,357)	-	4,129	20,109	83,040,406	(2,273,789)	(332,528)	(2,606,317)
2027	(2,606,317)	(76,776,090)	(93,589,625)	-	4,068	20,512	83,450,408	(12,745,534)	(268,657)	(13,014,192)
2028	(13,014,192)	(65,000,569)	(80,820,037)	-	4,068	20,922	85,119,416	(8,714,813)	(380,258)	(9,095,070)
2029	(9,095,070)	(15,871,140)	(20,128,443)	-	4,068	21,340	86,821,859	57,598,345	848,807	58,447,153
2030	58,447,153	(67,859,889)	(87,784,003)	-	4,068	21,767	88,558,241	59,221,391	2,059,200	61,280,590
2031	61,280,590	(115,700,161)	(152,663,906)	-	4,068	22,203	90,329,350	(1,053,966)	1,053,966	0
<b>Total</b>		<b>(1,085,121,183)</b>	<b>(1,247,051,452)</b>	<b>(3,242,341)</b>	<b>69,370</b>	<b>290,991</b>	<b>1,329,606,460</b>		<b>(2,005,902)</b>	



**APPENDIX E – PART 3**  
**CASH FLOWS FOR**  
**REGION-WIDE NON-RESIDENTIAL**  
**ROADS DCs**

**SUMMARY OF CALCULATION RESULTS**

	<u>Per Sq.Ft. TFA</u>
New Calculated:	
Uniform Non-residential DC	\$ 6.80
Retail	\$26.42
Non-Retail	\$ 5.22
Existing Charge (As of April 2016):	
Retail	\$23.10
Non-Retail	\$ 5.33



Table E-2

Halton Region  
2017 Development Charges Study  
Roads - Non-residential

Year	DC Reserve Fund Opening Balance	Dev't Related Expenditures		DC Credits	Unfunded Capital/Internal Debt Charges	External Debt Charges	Historical Oversizing	Sq. Ft. per Year	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	DC Reserve Fund Closing Balance before Interest	Interest Earnings (3.5%) / Costs (3.5%)	DC Reserve Fund Closing Balance after Interest
		Nominal	Inflated (2%/Yr)										
2017	-	(18,611,619)	(18,611,619)	(33,819)	(122,175,166)	(357,309)	(2,160,859)	4,587,156	6.800	31,191,102	(112,147,670)	(1,962,584)	(114,110,254)
2018	(114,110,254)	(102,667,808)	(104,721,164)	(33,819)				4,587,156	6.936	31,814,924	(187,050,314)	(5,270,310)	(192,320,624)
2019	(192,320,624)	(31,714,868)	(32,996,149)	(33,819)				4,587,156	7.074	32,451,222	(192,899,369)	(6,741,350)	(199,640,719)
2020	(199,640,719)	(36,896,926)	(39,155,313)	(33,819)				4,587,156	7.216	33,100,247	(205,729,605)	(7,093,981)	(212,823,585)
2021	(212,823,585)	(26,049,186)	(28,196,476)	(33,819)				4,587,156	7.360	33,762,252	(207,291,629)	(7,352,016)	(214,643,645)
2022	(214,643,645)	(37,765,670)	(41,696,351)	-				4,088,727	7.507	30,695,606	(225,644,391)	(7,705,041)	(233,349,431)
2023	(233,349,431)	(27,905,881)	(31,426,555)	-		-		4,308,393	7.658	32,991,612	(231,784,374)	(8,139,842)	(239,924,216)
2024	(239,924,216)	(47,982,042)	(55,116,284)	-		-		4,308,393	7.811	33,651,444	(261,389,056)	(8,772,982)	(270,162,039)
2025	(270,162,039)	(56,575,377)	(66,287,071)	-		-		4,308,393	7.967	34,324,473	(302,124,636)	(10,015,017)	(312,139,653)
2026	(312,139,653)	(32,281,873)	(38,579,826)	-		-		4,308,393	8.126	35,010,962	(315,708,517)	(10,987,343)	(326,695,860)
2027	(326,695,860)	(43,186,551)	(52,644,164)	-		-		13,880,426	8.289	115,051,355	(264,288,669)	(10,342,229)	(274,630,898)
2028	(274,630,898)	(36,562,820)	(45,461,271)	-		-		13,880,426	8.465	117,352,382	(202,739,787)	(8,353,987)	(211,093,774)
2029	(211,093,774)	(8,927,516)	(11,322,249)	-		-		13,880,426	8.624	119,699,430	(102,716,594)	(5,491,661)	(108,208,275)
2030	(108,208,275)	(38,171,188)	(49,378,501)	-		-		13,880,426	8.796	122,093,418	(35,493,358)	(2,514,779)	(38,008,137)
2031	(38,008,137)	(65,081,341)	(85,873,447)	-		-		13,880,426	8.972	124,535,287	653,703	(653,703)	0
<b>Total</b>		<b>(610,380,665)</b>	<b>(701,466,442)</b>	<b>(169,096)</b>	<b>(122,175,166)</b>	<b>(357,309)</b>	<b>(2,160,859)</b>	<b>113,660,211</b>		<b>927,725,716</b>		<b>(101,396,844)</b>	

**Table E-3**

Halton Region  
 2017 Development Charges Study  
 Roads - Non-residential

**Uniform Non-Residential DC**

	Revenue (Uninflated)	Sq. Ft	DC Rate \$
Total Non-Residential	\$ 772,850,811	113,660,211	\$ 6.80

**Differentiated Non-Residential DC**

Non-Residential Category	Trip Gen. %	Revenue (Uninflated)	Sq. Ft	DC Rate \$
Retail	29%	\$ 224,298,772	8,489,630	\$ 26.42
Non-Retail	71%	\$ 548,552,039	105,170,581	\$ 5.22

**APPENDIX F****CALCULATION OF GENERAL SERVICES DEVELOPMENT  
CHARGES APPLICABLE TO DEVELOPMENT IN HALTON  
(2017-2026)****(i.e. GROWTH STUDIES, POLICE, PARAMEDIC SERVICES,  
FACILITIES, SOCIAL HOUSING, WASTE DIVERSION AND  
WATERFRONT PARKS)**

	<b><u>Page</u></b>
<b>1. DC Calculation Overview</b>	<b>F1-1</b>
<b>2. Growth Studies</b>	<b>F2-1</b>
<b>3. Halton Regional Police Service</b>	<b>F3-1</b>
<b>4. Paramedic Services</b>	<b>F4-1</b>
<b>5. Facilities</b>	<b>F5-1</b>
<b>6. Social Housing</b>	<b>F6-1</b>
<b>7. Waste Diversion</b>	<b>F7-1</b>
<b>8. Waterfront Parks</b>	<b>F8-1</b>

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## **F.1 DC CALCULATION OVERVIEW**



## F.1 SUMMARY OF THE CHARGE

The DCs in this section have been calculated on the same cash flow basis as described in Appendix B. The charges are determined for the services in this section to produce a zero reserve fund balance at the end of 2026 for each of the services involved, except for the Police Services cash flow which will result in a zero reserve fund balance at the end of 2031.

The following (Table F-1) summarizes the estimated total project cost over the next 10-year planning horizon (2017-2026) for all services except police services which utilizes a 15-year planning horizon (2017-2031). Table F-2 summarizes the proposed DCs.

**Table F-1**  
**Summary of Capital Project Costs for General Services (2017\$) (000's)**

Services	Gross Cost 2017-2026	Less:				Total	Net Growth	
		Non-Growth (BTE)	Post Period Benefit	Grants, Subsidies & Contributions	10% Statutory Deduction		Residential	Non- Residential
Growth Studies	\$ 16,556	\$ 4,600	\$ -	\$ -	\$ 93	\$ 11,863	\$ 8,435	\$ 3,428
Police*	115,776	36,664	25,731	-	-	53,380	37,808	15,572
Paramedics	25,520	8,390	10,146	-	698	6,286	5,544	742
Facilities	11,755	3,625	1,208	-	450	6,471	5,625	846
Social Housing	95,000	47,500	-	-	4,750	42,750	42,750	-
Waste Diversion	9,840	4,841	1,736	-	326	2,937	2,790	147
Waterfront Parks	40,085	9,754	18,161	2,320	985	8,864	8,421	443
<b>Total</b>	<b>\$ 314,532</b>	<b>\$ 115,374</b>	<b>\$ 56,983</b>	<b>\$ 2,320</b>	<b>\$ 7,303</b>	<b>\$132,551</b>	<b>\$ 111,373</b>	<b>\$ 21,178</b>

\*Capital costs for Police are forecast to 2031

**Table F-2**  
**Proposed General Services Development Charges**

Services	Residential (SDE)	Non- Residential (SQ.FT.)
Growth Studies	\$ 228.34	\$ 0.127
Police	540.90	0.159
Paramedics	147.76	0.024
Facilities	127.63	0.020
Social Housing	821.20	n/a
Waste Diversion	56.43	0.003
Waterfront Parks	176.30	0.010
<b>Total</b>	<b>\$ 2,098.56</b>	<b>\$ 0.344</b>



## **F.2 CALCULATION ASSUMPTIONS AND LEVEL OF SERVICE FOR GROWTH STUDIES**



## F.2 GROWTH STUDIES

The Region of Halton will be required to undertake a number of studies over the 2017-2026 period related to its proposed capital program for accommodating new development. These studies include growth studies (DC, feasibility, financing and service allocation studies), and Official Plan update and implementation studies.

No deduction has been made for benefit to existing development for the growth studies, as these are directly related to meeting the needs of growth. Official Plan studies are required to manage growth and development within the Region; however, not all components are related exclusively to growth (e.g. healthy communities, environmentally sensitive and natural areas, etc.). For this reason, and based on practice elsewhere, a 50% deduction for benefit to existing development has been made for Official Plan update and implementation studies.

The residential/non-residential cost allocation was based on the ratio of forecast net population growth (including institutional population) from 2017-2026 to population plus employment growth (excluding work at home and no fixed place of work) for the same period:

$$\frac{133,188 \text{ additional persons}}{133,188 \text{ persons} + 53,460 \text{ additional employees}} = \begin{array}{l} 71.4\% \text{ residential and} \\ 28.6\% \text{ non-residential} \end{array}$$

The capital program also includes funding for the growth share of the Region's Growth Management Study (Sustainable Halton) that was initiated in 2006 and interim-financed from 2011 to 2016 from Regional reserves. The purpose of this study is to help the Region meet Provincial requirements for both the Greenbelt and Places to Grow. At the time the expenditure was approved by Council, it was determined that the growth share would be funded by DCs. The portion of the study costs that is still to be recovered from growth has been included in the DC calculation. The allocation between residential and non-residential development reflects the unfunded amount from each of these reserve funds. The amounts to be recovered are net of the growth portion already funded from the DC Reserve Fund. There is no post-period benefit (oversizing) resulting from these projects.

**CAPITAL COSTS COVERED IN THE DC CALCULATION**  
Halton Region

**Table F-3**

**SERVICE: Growth Studies**

Increased Service Needs Attributable to Anticipated Development 2017-2026	Timing	2017 \$ Gross Capital Cost Est.	Benefit to Existing Development/ U.E.C.	Eligible Increase in Need	Post Period Benefit	Less:		Sub Total	Other (e.g. 10% Statutory Deduction) <sup>3</sup>	Net Costs Benefiting New Development	Potential DC Recoverable Cost	
						Grants, Subsidies & Other Contributions Attrib. to New Development	Development				Residential Share	Non-Res. Share
<b>Already Completed</b>												
Growth Management Study (unfunded portion of DC recoverable share) <sup>1,2</sup>	<2016	\$ 2,678,207		\$ 2,678,207				\$ 2,678,207		\$ 2,678,207	\$ 1,876,842	\$ 801,366
<b>Cost to be Incurred During Term of Proposed By-law</b>												
Growth Studies	2017	305,000	-	305,000				305,000	3,050	301,950	215,592	86,358
Regional OP Updates	2017	1,000,000	500,000	500,000				500,000	5,000	495,000	353,430	141,570
Growth Studies	2018	305,000	-	305,000				305,000	3,050	301,950	215,592	86,358
Regional OP Updates	2018	1,350,000	675,000	675,000				675,000	6,750	668,250	477,131	191,120
Growth Studies	2019	305,000	-	305,000				305,000	3,050	301,950	215,592	86,358
Regional OP Updates	2019	350,000	175,000	175,000				175,000	1,750	173,250	123,701	49,550
Growth Studies	2020	814,000	-	814,000				814,000	8,140	805,860	575,384	230,476
Regional OP Updates	2020	350,000	175,000	175,000				175,000	1,750	173,250	123,701	49,550
Growth Studies	2021	610,000	-	610,000				610,000	6,100	603,900	431,185	172,715
Regional OP Updates	2021	350,000	175,000	175,000				175,000	1,750	173,250	123,701	49,550
<b>Cost to be Incurred Post By-law Term.</b>												
<b>By-law Term (I.e. beyond 2021)</b>												
Growth Studies	2022	305,000	-	305,000				305,000	3,050	301,950	215,592	86,358
Regional OP Updates	2022	2,000,000	1,000,000	1,000,000				1,000,000	10,000	990,000	706,860	283,140
Growth Studies	2023	305,000	-	305,000				305,000	3,050	301,950	215,592	86,358
Regional OP Updates	2023	1,000,000	500,000	500,000				500,000	5,000	495,000	353,430	141,570
Growth Studies	2024	305,000	-	305,000				305,000	3,050	301,950	215,592	86,358
Regional OP Updates	2024	1,350,000	675,000	675,000				675,000	6,750	668,250	477,131	191,120
Growth Studies	2025	814,000	-	814,000				814,000	8,140	805,860	575,384	230,476
Regional OP Updates	2025	350,000	175,000	175,000				175,000	1,750	173,250	123,701	49,550
Growth Studies	2026	610,000	-	610,000				610,000	6,100	603,900	431,185	172,715
Regional OP Updates	2026	1,100,000	550,000	550,000				550,000	5,500	544,500	388,773	155,727
<b>Total Estimated Capital Cost</b>		<b>\$ 16,556,207</b>	<b>\$ 4,600,000</b>	<b>\$ 11,956,207</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 11,956,207</b>	<b>\$ 92,780</b>	<b>\$ 11,863,427</b>	<b>\$ 8,435,089</b>	<b>\$ 3,428,338</b>

<sup>1</sup> The gross cost shown represents the DC Recoverable Share still to be funded through development charges including interest charges.  
<sup>2</sup> The allocation between residential and non-residential development was based on the allocation in the previous DC Studies. The figures shown are the net of funding received to date.  
<sup>3</sup> A 1% deduction has been made for most studies as it is expected that 90% of the studies are related to transportation, water, sewer and police which are not subject to the 10% statutory deduction.



Table F-4

**Halton Region  
2017 Development Charges Study  
Cash Flow - Growth Studies - Residential**

Year	DC Reserve Fund Opening Balance	Development Related Expenditures Nominal Project Cost	Development Related Expenditures Project Cost Inflated at 2%	Single Detached Unit Equivalents (Building Permits)	SDE per Year Inflated at (2%) Starting in 2018	Anticipated Revenues	Annual Surplus/ (Deficit)	3.5% / 3.5% RF Interest Earnings / (Cost)	DC Reserve Fund Closing Balance after Interest
2017	\$ (2,714,987)	\$ (2,445,864)	\$ (2,445,864)	6,272	\$ 228.34	\$ 1,432,169	\$ (3,728,682)	\$ (130,504)	\$ (3,859,186)
2018	(3,859,186)	(692,723)	(706,577)	6,272	232.90	1,460,813	(3,104,950)	(108,673)	(3,213,623)
2019	(3,213,623)	(339,293)	(353,000)	6,272	237.56	1,490,029	(2,076,594)	(72,681)	(2,149,275)
2020	(2,149,275)	(699,085)	(741,874)	6,272	242.31	1,519,829	(1,371,320)	(47,996)	(1,419,316)
2021	(1,419,316)	(554,885)	(600,625)	4,428	247.16	1,094,385	(925,557)	(32,394)	(957,951)
2022	(957,951)	(922,452)	(1,018,462)	4,027	252.10	1,015,221	(961,192)	(33,642)	(994,834)
2023	(994,834)	(569,022)	(640,812)	4,027	257.15	1,035,525	(600,120)	(21,004)	(621,124)
2024	(621,124)	(692,723)	(795,721)	4,027	262.29	1,056,233	(360,612)	(12,621)	(373,233)
2025	(373,233)	(699,085)	(819,089)	4,027	267.53	1,077,361	(114,962)	(4,024)	(118,986)
2026	(118,986)	(819,958)	(979,925)	4,027	272.89	1,098,911	-	-	-
<b>Total</b>		<b>\$ (8,435,089)</b>	<b>\$ (9,101,949)</b>	<b>49,651</b>		<b>\$ 12,280,476</b>		<b>\$ (463,540)</b>	

Note: Numbers may not add due to rounding

Table F-5

Halton Region  
2017 Development Charges Study  
Cash Flow - Growth Studies - Non-Residential

Year	DC Reserve Fund Opening Balance	Development Related Expenditures Nominal Project Cost	Development Related Expenditures Project Cost Inflated at 2%	Sq. Ft. of Gross Floor Area	per Sq. Ft. per Year Inflated at 2% Starting in 2018	Anticipated Revenues	Annual Surplus/ (Deficit)	3.5% / 3.5% RF Interest Earnings / (Cost)	DC Reserve Fund Closing Balance after Interest
2017	\$ (2,039,338)	\$ (1,029,293)	\$ (1,029,293)	4,587,156	\$ 0.127	\$ 584,498	\$ (2,484,133)	\$ (86,945)	\$ (2,571,078)
2018	(2,571,078)	(277,477)	(283,027)	4,587,156	0.130	596,188	(2,257,916)	(79,027)	(2,336,944)
2019	(2,336,944)	(135,907)	(141,398)	4,587,156	0.133	608,112	(1,870,229)	(65,458)	(1,935,687)
2020	(1,935,687)	(280,025)	(297,165)	4,587,156	0.135	620,274	(1,612,578)	(56,440)	(1,669,019)
2021	(1,669,019)	(222,265)	(240,587)	4,587,156	0.138	632,680	(1,276,925)	(44,692)	(1,321,618)
2022	(1,321,618)	(369,498)	(407,955)	4,088,727	0.141	575,213	(1,154,360)	(40,403)	(1,194,763)
2023	(1,194,763)	(227,928)	(256,684)	4,308,393	0.143	618,238	(833,208)	(29,162)	(862,370)
2024	(862,370)	(277,477)	(318,734)	4,308,393	0.146	630,603	(550,501)	(19,268)	(569,769)
2025	(569,769)	(280,025)	(328,094)	4,308,393	0.149	643,215	(254,648)	(8,913)	(263,561)
2026	(263,561)	(328,442)	(392,519)	4,308,393	0.152	656,080	0	0	0
<b>Total</b>		<b>\$ (3,428,338)</b>	<b>\$ (3,695,456)</b>	<b>44,258,080</b>		<b>\$ 6,165,102</b>		<b>\$ (430,307)</b>	

Note: Numbers may not add due to rounding

## **F.3 CALCULATION ASSUMPTIONS AND LEVEL OF SERVICE FOR HALTON REGIONAL POLICE SERVICE**



## F.3 HALTON REGIONAL POLICE SERVICE

### 1. Facilities

In 2016, the Halton Regional Police Service (HRPS) was operating out of 12 locations with a TFA of 238,391 sq.ft. excluding administrative space. The average cost per sq.ft. of this TFA is estimated to be \$349 (2017\$) including land, building, equipment, site work, etc. Building values were indexed from 2012. Land values have been estimated based on information from the 2016 Competitiveness Study and an assumption of 33% lot coverage. Employment land costs were estimated for each municipality for 2016 and indexed to 2017\$ as follows:

Land Cost per Acre	2016	2017
Oakville	\$ 895,000	\$ 910,215
Burlington	\$ 712,000	\$ 724,104
Milton	\$ 666,000	\$ 677,322
Halton Hills	\$ 329,000	\$ 334,593

As permitted by the DCA, the capital program for Police will incorporate the needs of growth to 2031. The Region has identified 3 growth-related capital expenditures over the next 15 years:

- Debt for new Police Headquarters, 2485 North Service Road, Oakville – The Region issued a 30-year sinking fund debenture in the amount of \$62.5 million for the construction of the new 232,445 sq.ft. HRPS Headquarters of which 223,157 sq.ft. will be allocated to operational (non-administrative) space. The growth-related principal and discounted growth-related interest payments have been included in the capital program for police services. The 223,157 sq.ft. of operations space in the new headquarters will expand on and replace the existing 90,814 sq.ft. of operations space in the current headquarters building (including the HRPS portion of shared space at the Halton Regional Centre). Therefore the new headquarters will provide an additional 132,343 sq.ft. of operation TFA and is being constructed to facilitate growth out to 2039. The eligible increase in need for the total project is calculated as 57% (132,343 sq.ft. of new operations space/232,445 sq.ft. TFA) with the balance deducted as benefit to existing development. The total project cost of the facility is approximately \$77 million, of which \$62.5 million is to be financed from the sinking fund debenture. Since the benefit to existing development is 43%, the total non-growth amount of the total cost is approximately \$33.2 million. The total growth-related portion of the project would be approximately \$43.85 million. The Region has funded \$151,000 from the reserve fund

which leaves \$43.70 million as the growth-related portion remaining. As the debt financing of \$62.50 million contains the \$43.70 million in growth-related costs as well as non-growth related costs, the growth-related portion of the financing is approximately 70%. The forecast for this service is 2017-2031, which results in a post-period benefit of approximately 35% which is deducted from the growth-related share for future recovery. These percentages have been applied to both the principal and interest payments included in the calculation.

- Consolidation of 11 Division and 12 Division Stations in Georgetown and Milton, respectively, with a new 1 District station in Milton. The new facility will replace the existing 31,099 sq. ft. in the 2 existing stations and provide 31,901 sq.ft. of additional space for a TFA of 63,000 sq.ft. The total cost of the new 1 District station is estimated at approximately \$27.5 million including construction, land, site servicing and furnitures, fixtures and equipment (FFE). Therefore, approximately 51% of the cost of the new headquarters (31,901 additional sq.ft. / 63,000 total sq.ft.) can be attributed to increased capacity and therefore growth-related.
- Establishment of a 1 District substation in Georgetown within the (former) 11 Division station. With the consolidation of the 11 and 12 Division stations, the Region plans to renovate 3,000 sq.ft. of TFA within the existing 11 Division police station to provide for a renovated station in Georgetown. The proposed cost is approximately \$200,000. This additional facility is required due to anticipated growth and is therefore 100% growth-related.

The allocation of the net DC recoverable costs between residential and non-residential development has been made in proportion to the ratio of new population to new employment over the next 15 years calculated as follows:

$$\frac{196,830 \text{ additional persons}}{196,830 \text{ persons} + 80,767 \text{ additional employees}} = \begin{array}{l} 70.9\% \text{ residential and} \\ 29.1\% \text{ non-residential} \end{array}$$

## **2. Vehicles and Equipment**

The number of police vehicles in the HRPS fleet has increased from 314 in 2011 to 352 in 2016. This inventory includes marked and unmarked cruisers, vans, pick up trucks, etc. The value of these vehicles includes equipment. For example, cruisers are equipped with radio/transmitter, computer/workstation, roof lights and siren with control console.

The inclusion of police cars as part of DC's is considered to be permissible based on having an

equivalent useful life of 7 years or more. Fleet expansions are clearly growth-related and the police service is given special treatment in the DCA along with sewer, water and roads. The vehicles have an anticipated useful lifetime of beyond 7 years, based on 1 shift per day use, which is the normal basis for determining use. The 7 years is a DC minimum threshold. The vehicles are actually used “24/7” and, as a result, are only used in a patrol function for several years. Many are subsequently used for non-patrol car functions (e.g. training) or replacement vehicles while vehicles are being repaired, or are even sold and used by others.

The Police inventory of equipment also includes equipment for individual officers. The value of the equipment varies from a base amount of \$5,600 for all sworn officers to \$17,900 for members of the K-9 Unit.

The Region intends to continue to increase its inventory of vehicles, generally consistent with the increase in uniform staff. Over the next 15 years, it is estimated that 65 vehicles will be added to the fleet, including 21 marked cruisers and 30 unmarked sedans.

In addition, it is estimated that the force will increase by 227 officers during the 2017-2031 period.

No deduction for benefit to existing development has been made, as the eligible increase in need will only maintain current levels of service and not provide any change in service provision or measurable benefit to existing development. A post period benefit deduction has been made in the latter years of the capital program to remain within the service level cap.

The net DC recoverable costs have been allocated 70.9% to residential development and 29.1% to non-residential development, consistent with the approach taken for facilities.

### **3. Radio Trunking Equipment**

As the Region continues to grow, it is necessary to make improvements to the radio system. For example, in 2016, the Region invested \$498,600 to install a Radio System Disaster Resilience solution. Over the next 15 years, the Region will be required to make further investments in radio trunking equipment. The Region anticipates the need to erect additional transmission towers (as many as 1 in each municipality) to maintain 95% “in building” radio coverage and 97% “out of building radio coverage” for officers throughout the Region. This need is driven by increases in population, employment, building density, Regional infrastructure, commercial activities (signage, etc.) and increases in the number of officers. For example, radio coverage

declines over time as buildings obstruct sight lines so, as the number of buildings increase, the Region will need to erect more towers. A total of \$2.9 million has been allocated for system improvements (2017-2031) including the cost of a study to be undertaken in 2017.

The transmission towers are considered to be largely growth-related and therefore will be subject to only a modest 10% benefit to existing (BTE) deduction that reflects the fact while the Region's goal is to maintain 95% "in building" and 97% "out of building" radio coverage, it has not always done so. This reduction in coverage was partially offset in the past, by the installation of cell phones in police vehicles.

In addition, HRPS will require 1 radio for each uniformed officer added and 1 mobile workstation for each additional police vehicle. No deduction is made for BTE for these expenditures. There is no post-period benefit (oversizing) resulting from these expenditures beyond the reduction required to remain within the service level cap.

The net DC recoverable costs have been allocated 70.9% to residential development and 29.1% to non-residential development, based on the ratio of new population to new employment.

#### **4. Commitments to Carry into DC**

The Region has commitments to carry into the DC calculation related to unfunded amounts for capital works included in previous DC Studies that still require DC funding. These include, external debt charges, internal debt charges, and historical under/over payments since the 2012 By-law.

In 1996/7, HRPS invested approximately \$10.5 million in radio trunking equipment to allow for communication between officers and dispatch etc. The significant growth in the north-end and poor signals due to a number of new high-rise buildings in the whole Region has led to a declining quality of signals and the Region has purchased a replacement system in 2011. The Police Department's share of the new system, which is shared by the Region and others, cost \$23.9 million. A portion of this amount, is still to be funded from DCs.

The total commitments to carry into the DC calculation is \$3.7 million. This amount is not divided between residential and non-residential development in the same manner as the capital works for police services. When the Region collects residential DCs, the funds are deposited into the residential reserve fund; similarly, non-residential DC payments are deposited into the



non-residential reserve fund. Therefore, the residential amount to carry into the DC is \$2.6 million and the non-residential amount is \$1.1 million.

Halton Region  
2017 Development Charges Background Study  
Average Level of Service

Table F-6

Description	Quantity - Sq. ft. of Floor Space										2017 Value (Incl land) (\$/sq.ft.)	Weighted Average Sq. Ft.	Cost	
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016				
<b>Facilities:</b>														
Police HQ - 1151 Bronte Rd., Oakville - Non-Admin	82,026	82,026	82,026	82,026	75,520	80,101	80,101	80,101	80,101	80,101	80,101	334	804,130	\$ 268,579,408
Police HQ - 1151 Bronte Rd., Oakville - Shared Facilities	10,713	10,713	10,713	10,713	10,713	10,713	10,713	10,713	10,713	10,713	10,713	334	107,130	\$ 35,781,420
Police HQ - Safety Village & Police Classroom	3,456	3,456	3,456	3,456	3,456	3,456	3,456	3,456	3,456	3,456	3,456	190	34,560	\$ 6,566,400
District 1 - Div 11 - 217 Guelph Street, Georgetown	10,200	10,200	10,200	10,200	10,200	10,200	10,200	10,200	10,200	10,200	10,200	287	102,000	\$ 29,274,000
District 1 - Div 12 - 490 Chiles Drive, Milton	20,452	20,452	20,452	20,452	20,889	20,889	20,889	20,889	20,889	20,889	20,889	311	207,202	\$ 64,439,822
District 2 - Div 20 - 1229 White Oaks Blvd., Oakville	18,000	18,000	18,000	18,000	-	-	-	-	-	-	-	327	54,000	\$ 17,658,000
District 2 - Div 20 - 95 Oak Walk Drive Oakville	39,669	39,669	39,669	39,669	70,002	70,002	70,002	70,002	70,002	70,002	70,002	396	490,014	\$ 194,045,544
District 3 - Div 30 - 3800 Southampton Blvd, Burlington	187,720	188,220	188,220	240,222	234,163	238,144	238,391	238,391	238,391	238,391	238,391	349	2,230,007	\$ 778,820,275
<b>Store Front Offices:</b>														
District 1 - Div 10 - Unit #3, 315 Queen Street, Acton	1,350	1,350	1,350	1,350	1,350	1,350	1,350	1,350	1,350	1,350	1,350	287	13,500	\$ 3,874,500
District 1 - Div 12 - Office at Campbellville Fire Station	120	120	120	120	120	120	120	120	120	120	120	311	1,200	\$ 373,200
District 1 - Div 12 - Office at Premium Outlet Mall	300	300	300	300	300	300	300	300	300	300	300	741	230,451	\$ 74,100,000
District 2 - 36 East Street, Oakville	100	100	100	100	100	100	100	100	100	100	100	327	300	\$ 98,100
District 2 - 1180 Dorval Drive, Oakville	100	100	100	100	100	100	100	100	100	100	100	327	300	\$ 98,100
District 2 - 146 Lakeshore Road, Oakville	100	100	100	100	100	100	100	100	100	100	100	327	300	\$ 98,100
District 2 - 352 Kerr Street, Oakville	300	300	300	300	300	300	300	300	300	300	300	327	3,000	\$ 981,000
District 2 - Marine Unit 2340 Ontario Street, Oakville	800	800	800	800	800	800	800	800	800	800	800	327	7,200	\$ 2,354,400
District 3 - 460 Brant Street, Burlington	534	534	534	534	534	534	534	534	534	534	534	314	5,340	\$ 1,676,760
District 3 - 4100 Dundas St., Burlington	300	300	300	300	300	300	300	300	300	300	300	314	1,500	\$ 471,000
District 3 - 2241 Kilbride St., Burlington	100	100	100	100	100	100	100	100	100	100	100	314	500	\$ 157,000
<b>Total</b>	<b>187,720</b>	<b>188,220</b>	<b>188,220</b>	<b>240,222</b>	<b>234,163</b>	<b>238,144</b>	<b>238,391</b>	<b>238,391</b>	<b>238,391</b>	<b>238,391</b>	<b>238,391</b>	<b>349</b>	<b>2,230,007</b>	<b>\$ 778,820,275</b>
Population	451,910	464,593	481,083	491,953	501,649	508,040	516,987	524,099	531,712	536,708	536,708			
Per Capita Service Level	0.4154	0.4051	0.3912	0.4883	0.4668	0.4688	0.4606	0.4549	0.4483	0.4442	0.4442			
<b>10 Year Average</b>	<b>2007-2016</b>													
Quantity per capita	0.4444													
Quality (\$/sq.ft.)	\$ 349.25													
Combined Quantity/Quality Level (\$/capita)	\$ 155.20													
<b>DC Amount (before deductions)</b>														
Forecast Population (net)	196,830													
\$ per Capita	\$ 155.20													
Eligible Amount	\$ 30,548,956													

Service:  
Type of Capital Asset  
Police Facilities  
Non-Administrative Space

Halton Region  
2017 Development Charges Background Study  
Average Level of Service  
Table F-7

Description	Quantity - No. of Vehicles										2017 Value (\$/Vehicle)	Weighted Average # of Vehicles	Cost	
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016				
<b>Vehicles:</b>														
Marked Cruisers	100	106	117	119	119	119	121	119	132	134	67,200	1,188	\$ 79,833,600	
Unmarked Vehicles	93	94	94	94	94	111	124	123	127	127	37,200	1,081	40,213,200	
Marked Cruisers - Supervisors	4	8	7	6	6	6	6	6	6	6	69,300	61	4,227,300	
Standard Commercial Vans	4	5	5	4	4	8	8	8	8	8	37,200	62	2,306,400	
Specialized Commercial Vans	9	9	9	9	9	9	9	9	9	9	77,600	90	6,984,000	
Passenger Vans	40	36	37	40	40	36	36	36	37	36	31,000	378	11,718,000	
Pick up Trucks	4	12	20	20	20	20	6	6	6	7	41,400	107	4,429,800	
Open Trailer	2	2	2	2	1	5	5	5	5	5	5,200	33	171,600	
Enclosed Trailer	1	3	3	3	3	1	1	1	1	1	51,700	18	930,600	
Standard Trucks	6	6	3	5	5	5	5	5	5	5	25,500	25	637,500	
Specialized Trucks	3	3	2	2	2	3	3	3	3	4	87,900	28	2,461,200	
Mobile Command Unit (old)	1	1	1	1	1	1	1	1	1	1	191,600	9	1,724,400	
Mobile Command Unit	-	-	-	-	-	-	-	-	-	-	552,300	1	552,300	
Mobile Command Unit (Small)	6	6	6	6	6	6	7	7	7	7	376,500	1	376,500	
Motorcycle	3	2	1	3	3	3	3	3	3	3	37,200	64	2,380,800	
Boats	3	2	1	1	1	1	1	1	1	1	387,900	27	10,473,300	
Tactical Response Unit/EDU	1	1	1	1	1	1	1	1	1	1	170,700	10	1,707,000	
<b>Total</b>	<b>277</b>	<b>298</b>	<b>308</b>	<b>314</b>	<b>314</b>	<b>315</b>	<b>331</b>	<b>328</b>	<b>346</b>	<b>352</b>	<b>\$ 53,763</b>	<b>3,183</b>	<b>\$171,127,500</b>	
Population	451,910	464,593	481,083	491,953	501,649	508,040	516,987	524,099	531,712	536,708				
Per Capita Service Level	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0007			0.0007	
10 Year Average														
Quantity per capita														
Quality (\$/vehicle)														
Combined Quantity/Quality Level (\$/capita)														
DC Amount (before deductions)														
Forecast Population (net)														
\$ per Capita														
Eligible Amount														

Halton Region  
 2017 Development Charges Background Study  
 Average Level of Service

Table F-8

Description	Quantity - No. of Officers										2017 Value (\$/officer)	Weighted Average		
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		# of Officers	Cost	
<b>Sworn Officers:</b>														
Tactical Respond Unit	14	14	14	14	14	14	14	14	14	14	14	\$ 17,100	140	\$ 2,394,000
K-9 Unit	3	4	5	5	5	5	5	5	6	7	7	17,900	52	930,800
Motorcycle Unit	20	20	20	20	20	20	20	20	20	20	20	8,500	200	1,700,000
Other Sworn Officers	526	544	564	575	590	604	620	627	636	641	641	5,600	5,927	33,191,200
<b>Subtotal - Authorized Strength</b>	<b>563</b>	<b>582</b>	<b>603</b>	<b>614</b>	<b>629</b>	<b>643</b>	<b>659</b>	<b>667</b>	<b>677</b>	<b>682</b>	<b>682</b>		<b>6,319</b>	<b>38,216,000</b>
<b>Other Officers:</b>														
Summons, Escort, Special Cst	23	23	23	23	27	30	31	31	31	31	31	3,200	273	873,600
Special Cst in Training	20	20	20	20	20	20	20	20	20	20	20	3,200	200	640,000
Police Cadets												2,900	50	145,000
Auxiliary Cst	50	51	51	51	51	51	65	65	65	65	65	3,000	565	1,695,000
<b>Subtotal - Other Officers</b>	<b>93</b>	<b>94</b>	<b>100</b>	<b>100</b>	<b>104</b>	<b>107</b>	<b>122</b>	<b>122</b>	<b>122</b>	<b>122</b>	<b>124</b>		<b>1,088</b>	<b>3,353,600</b>
<b>Total</b>	<b>656</b>	<b>676</b>	<b>703</b>	<b>714</b>	<b>733</b>	<b>750</b>	<b>781</b>	<b>789</b>	<b>799</b>	<b>806</b>	<b>806</b>	<b>\$ 5,612</b>	<b>7,407</b>	<b>\$ 41,569,600</b>

Population	451,910	464,593	481,083	491,953	501,649	508,040	516,987	524,099	531,712	536,708
Per Capita Service Level	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015

10 Year Average	2007-2016
Quantity per capita	0.0015
Quality (\$/officer)	\$ 5,612
Combined Quantity/Quality Level (\$/capita)	\$ 8.42

DC Amount (before deductions)	
Forecast Population (net)	196,830
\$ per Capita	\$ 8.42
Eligible Amount	\$ 1,656,975

Halton Region  
2017 Development Charges Background Study  
Average Level of Service

Table F-9

Description	Value of Radio Trunking Equipment (2017 \$)										2017 Value	
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Value
<b>Radio Equipment:</b>												
Value of Radio Trunking-Harris	\$ 16,618,178	\$ 16,618,178	\$ 16,618,178	\$ 16,618,178	\$ 16,618,178	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Value of Radio Trunking-Motorola	-	-	-	-	-	17,425,842	19,078,798	19,138,158	19,158,649	19,815,580	-	n/a
Motorola End User Equipment	-	-	-	-	-	5,925,364	5,963,135	5,908,561	5,842,441	6,042,772	-	-
Mobile Workstation Equipment - new	-	-	-	-	-	-	1,489,799	1,565,393	1,547,876	1,625,774	-	-
Mobile Workstation Equipment - old	1,717,291	1,717,291	1,717,291	1,717,291	1,717,291	-	-	-	-	-	-	-
<b>Total</b>	\$ 18,335,469	\$ 18,335,469	\$ 18,335,469	\$ 18,335,469	\$ 18,335,469	\$ 25,068,497	\$ 26,531,733	\$ 26,612,112	\$ 26,548,966	\$ 27,484,126	-	-
Population	451,910	464,593	481,083	491,963	501,649	508,040	516,987	524,099	531,712	536,708	-	-
Per Capita Service Level	\$ 40.57	\$ 39.47	\$ 38.11	\$ 37.27	\$ 36.55	\$ 49.34	\$ 51.32	\$ 50.78	\$ 49.93	\$ 51.21	-	-
10 Year Average	2007-2016											
Combined Quantity/Quality Level (\$/capita)	\$ 44.46											
DC Amount (before deductions)	196,830											
Forecast Population (net)	\$ 44.46											
Eligible Amount	\$ 8,751,062											

Notes  
Radio trunking values have been indexed to 2017 \$.

**INFRASTRUCTURE COSTS COVERED IN THE DC CALCULATION**  
Halton Region

**Table F-10**

**SERVICE: Police**

Increased Service Needs Attributable to Anticipated Development 2017-2031	Timing	Gross Capital Cost Est.	Benefit to Existing Development/ U.E.C.	Eligible Increase in Need	Post Period Benefit	Less:		Less: Other (e.g. 10% Statutory Deduction)	Potential DC Recoverable Cost		
						Grants, Subsidies & Other Contributions Attrib. to New Development	Sub Total		Net Costs Benefiting New Development	Residential Share 70.9%	Non-Res. Share 29.1%
<b>Already Constructed</b>											
Police - Commitments to Carry in 2017 DC	<2016	3,693,802		3,693,802					3,693,802	2,580,629	1,113,173
<b>Cost to be Incurred During Term of Proposed By-law (i.e. 2016-2020)</b>											
Debt for New HQ - 2485 North Service Road, Oakville - Principal	2017+	62,500,000	18,800,087	43,699,913	15,199,970				28,499,943	20,206,460	8,293,484
Debt for New HQ - 2485 North Service Road, Oakville - Growth Related Discounted Interest	2017+	13,319,714	4,006,588	9,313,125	3,239,348				6,073,777	4,306,308	1,767,469
Equipment	2017	66,700		66,700					66,700	47,290	19,410
Additional Vehicles	2017	105,500		105,500					105,500	74,800	30,701
Radio Equipment	2017	24,800		24,800					24,800	17,583	7,217
District 1 Facility	2017	7,000,000	3,455,444	3,544,556	1,362,105				2,182,451	1,547,358	635,093
Transmission Tower Study	2017	100,000		100,000					100,000	70,900	29,100
Equipment	2018	66,700		66,700					66,700	47,290	19,410
Additional Vehicles	2018	353,700		353,700					353,700	250,773	102,927
Radio Equipment	2018	62,100		62,100					62,100	44,029	18,071
Transmission Tower	2018	1,400,000	140,000	1,260,000					1,260,000	893,340	366,660
District 1 Facility	2018	17,505,000	8,641,079	8,863,921	3,406,234				5,457,686	3,869,500	1,588,187
Equipment	2019	66,700		66,700					66,700	47,290	19,410
Additional Vehicles	2019	312,400		312,400					312,400	221,492	90,908
Radio Equipment	2019	24,800		24,800					24,800	17,583	7,217
District 1 Substation	2019	200,000		200,000					200,000	141,800	58,200
District 1 Facility	2019	3,000,000	1,480,905	1,519,095	583,759				935,336	663,153	272,183
Equipment	2020	66,700		66,700					66,700	47,290	19,410
Additional Vehicles	2020	317,500		317,500					317,500	225,108	92,393
Radio Equipment	2020	62,100		62,100					62,100	44,029	18,071
<b>Cost to be Incurred Post Term of Proposed By-law (i.e. beyond 2020)</b>											
Equipment	2021	139,300		139,300					139,300	98,764	40,536
Additional Vehicles	2021	401,300		401,300					401,300	284,522	116,778
Radio Equipment	2021	24,800		24,800					24,800	17,583	7,217

**INFRASTRUCTURE COSTS COVERED IN THE DC CALCULATION**  
**Halton Region**

**Table F-10**

**SERVICE: Police**

Increased Service Needs Attributable to Anticipated Development 2017-2031	Timing	Gross Capital Cost Est.	Benefit to Existing Development/ U.E.C.	Eligible Increase in Need	Post Period Benefit	Less:		Less: Other (e.g. 10% Statutory Deduction)	Potential DC Recoverable Cost			
						Grants, Subsidies & Other Contributions Attrib. to New Development	Sub Total		Net Costs Benefiting New Development	Residential Share 70.9%	Non-Res. Share 29.1%	
<b>Cost to be Incurred Post Term of Proposed By-Law (i.e. beyond 2020)</b>												
Equipment	2022	86,200		86,200					86,200	61,116	25,084	
Additional Vehicles	2022	276,200		276,200					276,200	195,826	80,374	
Radio Equipment	2022	86,900		86,900					86,900	61,612	25,288	
Equipment	2023	86,200		86,200					86,200	61,116	25,084	
Additional Vehicles	2023	183,100		183,100					183,100	129,818	53,282	
Radio Equipment	2023	49,600		49,600					49,600	35,166	14,434	
Equipment	2024	86,200		86,200					86,200	61,116	25,084	
Additional Vehicles	2024	276,200		276,200					276,200	195,826	80,374	
Radio Equipment	2024	86,900		86,900					86,900	61,612	25,288	
Equipment	2025	86,200		86,200					86,200	61,116	25,084	
Additional Vehicles	2025	105,500		105,500					105,500	74,800	30,701	
Radio Equipment	2025	49,600		49,600					49,600	35,166	14,434	
Equipment	2026	125,500		125,500					125,500	88,980	36,521	
Additional Vehicles	2026	276,200		276,200					276,200	195,826	80,374	
Radio Equipment	2026	86,900		86,900					86,900	61,612	25,288	
Equipment	2027	84,600		84,600					84,600	59,981	24,619	
Additional Vehicles	2027	105,500		105,500					105,500	74,800	30,701	
Radio Equipment	2027	49,600		49,600					49,600	35,166	14,434	
Transmission Tower	2027	1,400,000	140,000	1,260,000	565,128				694,872	492,664	202,208	
Equipment	2028	84,600		84,600	84,600				0	0	0	
Additional Vehicles	2028	276,200		276,200	276,200				0	0	0	
Radio Equipment	2028	86,900		86,900	86,900				0	0	0	
Equipment	2029	84,600		84,600	84,600				0	0	0	
Additional Vehicles	2029	105,500		105,500	105,500				0	0	0	
Radio Equipment	2029	49,600		49,600	49,600				0	0	0	
Equipment	2030	84,600		84,600	84,600				0	0	0	
Additional Vehicles	2030	276,200		276,200	276,200				0	0	0	
Radio Equipment	2030	86,900		86,900	86,900				0	0	0	
Equipment	2031	84,600		84,600	84,600				0	0	0	
Additional Vehicles	2031	105,500		105,500	105,500				0	0	0	
Radio Equipment	2031	49,600		49,600	49,600				0	0	0	
<b>Total Estimated Capital Cost</b>		<b>\$ 115,775,515</b>	<b>\$ 36,664,104</b>	<b>\$ 79,111,412</b>	<b>\$ 25,731,344</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$ 53,380,068</b>	<b>\$ 37,808,191</b>	<b>\$ 15,571,877</b>	

Table F-11

Halton Region  
2017 Development Charges Study  
Cash Flow Calculation - Police - Residential

Year	DC Reserve Fund Opening Balance	Development Related Expenditures Nominal Project Cost	Development Related Expenditures Project Cost Inflated at 2%	Total Debt Payments	Detached Unit Equivalents (Building Permits)	SDE per Year Inflated at 2% Starting in 2018	Anticipated Revenues	Annual Surplus/ (Deficit)	3.5% / 3.5% RF Interests Earnings / (Cost)	DC Reserve Fund Closing Balance after Interest
2017	\$ (372,856)	\$ (4,338,559)	\$ (4,338,559)	\$ (1,601,267)	6,428	\$ 540.90	\$ 3,476,676	\$ (2,836,006)	\$ (99,260)	\$ (2,935,266)
2018	(2,935,266)	(5,104,932)	(5,207,031)	(1,601,267)	6,428	551.72	3,546,210	(6,197,354)	(216,907)	(6,414,262)
2019	(6,414,262)	(1,091,318)	(1,135,408)	(1,601,267)	6,428	562.75	3,617,135	(5,533,802)	(193,683)	(5,727,485)
2020	(5,727,485)	(316,427)	(335,795)	(1,601,267)	6,428	574.01	3,689,477	(3,975,070)	(139,127)	(4,114,197)
2021	(4,114,197)	(400,869)	(433,913)	(1,601,267)	4,583	585.49	2,683,453	(3,465,925)	(121,307)	(3,587,232)
2022	(3,587,232)	(318,554)	(351,709)	(1,601,267)	4,129	597.20	2,466,030	(3,074,178)	(107,596)	(3,181,774)
2023	(3,181,774)	(226,100)	(254,625)	(1,601,267)	4,129	609.14	2,515,351	(2,522,315)	(88,281)	(2,610,597)
2024	(2,610,597)	(318,554)	(365,918)	(1,601,267)	4,129	621.33	2,565,651	(2,012,130)	(70,425)	(2,082,555)
2025	(2,082,555)	(171,082)	(200,449)	(1,601,267)	4,129	633.75	2,616,971	(1,267,300)	(44,356)	(1,311,656)
2026	(1,311,656)	(346,417)	(414,001)	(1,601,267)	4,129	646.43	2,669,370	(657,553)	(23,014)	(680,568)
2027	(680,568)	(662,612)	(807,720)	(1,601,267)	4,068	659.36	2,682,550	(407,004)	(14,245)	(421,249)
2028	(421,249)	-	-	(1,601,267)	4,068	672.54	2,736,201	713,685	24,979	738,664
2029	738,664	-	-	(1,601,267)	4,068	685.99	2,790,927	1,928,324	67,491	1,995,815
2030	1,995,815	-	-	(1,601,267)	4,068	699.71	2,846,744	3,241,292	113,445	3,354,737
2031	3,354,737	-	-	(6,258,414)	4,068	713.71	2,903,677	0	0	0
<b>Total</b>	<b>\$ (13,295,423)</b>	<b>\$ (13,845,128)</b>	<b>\$ (13,845,128)</b>	<b>\$ (28,676,151)</b>	<b>71,282</b>		<b>\$ 43,806,422</b>		<b>\$ (912,287)</b>	

Note: Numbers may not add due to rounding



Table F-12

**Halton Region  
2017 Development Charges Study  
Cash Flow Calculation - Police - Non-Residential**

Year	DC Reserve Fund Opening Balance	Development Related Expenditures Nominal Project Cost	Development Related Expenditures Project Cost Inflated at 2%	Total Debt Payments	Sq. Ft. of Gross Floor Area	per Sq. Ft. per Year Inflated at 2% Starting in 2018	Anticipated Revenues	Annual Surplus/ (Deficit)	3.5% / 3.5% RF Interest Earnings / (Cost)	DC Reserve Fund Closing Balance after Interest
2017	\$ (1,460,498)	\$ (1,834,693)	\$ (1,834,693)	\$ (657,220)	4,587,156	\$ 0.159	\$ 727,970	\$ (3,224,441)	\$ (112,855)	\$ (3,337,296)
2018	(3,337,296)	(2,095,254)	(2,137,159)	(657,220)	4,587,156	0.162	742,530	(5,389,146)	(188,620)	(5,577,766)
2019	(5,577,766)	(447,918)	(466,014)	(657,220)	4,587,156	0.165	757,380	(5,943,619)	(208,027)	(6,151,645)
2020	(6,151,645)	(129,873)	(137,823)	(657,220)	4,587,156	0.168	772,528	(6,174,159)	(216,096)	(6,390,255)
2021	(6,390,255)	(164,531)	(178,094)	(657,220)	4,587,156	0.172	787,979	(6,437,590)	(225,316)	(6,662,906)
2022	(6,662,906)	(130,746)	(144,354)	(657,220)	4,088,727	0.175	716,406	(6,748,074)	(236,183)	(6,984,257)
2023	(6,984,257)	(92,800)	(104,508)	(657,220)	4,308,393	0.179	769,992	(6,975,991)	(244,160)	(7,220,151)
2024	(7,220,151)	(130,746)	(150,186)	(657,220)	4,308,393	0.182	785,392	(7,242,165)	(253,476)	(7,495,641)
2025	(7,495,641)	(70,218)	(82,272)	(657,220)	4,308,393	0.186	801,100	(7,434,032)	(260,191)	(7,694,223)
2026	(7,694,223)	(142,183)	(169,921)	(657,220)	4,308,393	0.190	817,122	(7,704,242)	(269,648)	(7,973,891)
2027	(7,973,891)	(271,960)	(331,518)	(657,220)	13,880,427	0.193	2,685,188	(6,277,441)	(219,710)	(6,497,151)
2028	(6,497,151)	-	-	(657,220)	13,880,427	0.197	2,738,892	(4,415,479)	(154,542)	(4,570,021)
2029	(4,570,021)	-	-	(657,220)	13,880,427	0.201	2,793,669	(2,433,571)	(85,175)	(2,518,746)
2030	(2,518,746)	-	-	(657,220)	13,880,427	0.205	2,849,543	(326,423)	(11,425)	(337,848)
2031	(337,848)	-	-	(2,568,686)	13,880,427	0.209	2,906,534	0	0	0
<b>Total</b>	<b>\$ (5,510,924)</b>	<b>\$ (5,510,924)</b>	<b>\$ (5,736,543)</b>	<b>\$ (11,769,760)</b>	<b>113,660,213</b>		<b>\$ 21,652,225</b>		<b>\$ (2,685,423)</b>	

Note: Numbers may not add due to rounding



## **F.4 CALCULATION ASSUMPTIONS AND LEVEL OF SERVICE FOR PARAMEDIC SERVICES**



## F.4 PARAMEDIC SERVICES

### 1. Paramedic Facilities

In 2016, the Region was operating out of 13 buildings located throughout Halton. The average cost per square foot for the stations in the inventory is \$373, including land, site works, and FFE but excluding vehicles. The majority of the values were indexed from those in the 2012 DC Background Study, whereas the value for Station 14 in Oakville was based on recent construction cost. The storage facilities located on South Service Road and Davis Road were estimated based on the RS Means value for construction of a brick veneer warehouse. As discussed in Section F.3, land values have been estimated based on information from the 2016 Competitiveness Study and an assumption of 33% lot coverage.

The Region's capital plans involve an expansion to the Paramedic Services Headquarters. Design work will be undertaken in 2017 with construction scheduled for 2019. The current facility, shared with Woodlands Operations Centre is 60,000 sq.ft. The portion of the existing facility that is attributable to Paramedic services is 15,083 sq.ft. which includes shared space (i.e. hallways, washrooms and other common areas shared with the Operations service). The Region is planning to construct a 40,000 sq.ft. expansion to accommodate current Paramedic staff as well as the additional staff and space required for growth. As a result, the portion of the space that is considered replacement and therefore benefits existing development is 37.7% (15,083 sq.ft./40,000 sq.ft.) The expansion of this facility for Paramedic services is to be constructed in 2019 and accommodate growth out to 2030. As the forecast period for the capital works is 2017-2026, the number of years outside of the forecast period is 4, which results in a post-period benefit of 33.33% (4 years/12 years). A further deduction for post period benefit has been made as the eligible cost for this project exceeds the service level cap.

The allocation of costs attributable to growth between residential and non-residential development has been made based on the ratio of forecast increased population to employment, with population weighted at 3 times employment, in order to reflect the disproportional use of this service by residents, in comparison to employees. This reflects the fact that employees are in the Region 1,500-2,000 hours/year, in comparison with residents who are generally in the Region in excess of 5,000 hours/year and include a larger number of seniors' requirements. Therefore, the calculation for the residential share is:

$$\frac{133,188 \text{ additional persons} \times 3}{133,188 \times 3 + 53,460 \text{ additional employees}} = \begin{array}{l} 88.2\% \text{ residential and} \\ 11.8\% \text{ non-residential} \end{array}$$

## **2. Vehicles and Equipment**

The Region's inventory of vehicles for Paramedic services includes ambulance vehicles, emergency response units, support service vehicles and an emergency support unit. These vehicles have been valued based on 2017\$ (including equipment) and reflect recent purchase experience.

The Region will require additional (i.e. non-replacement) ambulance vehicles to provide service to new development. The 10 year capital program includes the acquisition of 7 additional ambulances, 12 additional emergency response units, and 2 transit connect support units. Typically these vehicles are kept in service for 4½ to 6 years for ambulances and 3 to 4 years for emergency response units. Ambulances and emergency response units are included in the calculation because these vehicles have an anticipated useful lifetime beyond 7 years, based on 1 shift per day use, which is the normal basis for determining use. The 7 years is a DC minimum threshold. The vehicles are actually used "24/7" and as a result, are used for the equivalent of 7 years or more. In addition, many are subsequently used as replacement vehicles, donated to St. John's Ambulance or are sold and used by others for additional years.

The benefit to existing development has been assessed as 5% for vehicles and equipment, as these are required almost exclusively for additional calls; however, by placing these vehicles in new or relocated stations, they may provide a marginally improved level of service to the general area in which they are located. There is no post-period benefit (oversizing) resulting from these projects beyond the reduction for service level cap.

The allocation of DC recoverable costs between residential and non-residential development is 88.2% and 11.8%, respectively, consistent with the approach used for ambulance stations.

Halton Region  
2017 Development Charges Background Study  
Average Level of Service

Table F-13

Type of Capital Asset	Description	Quantity - Sq.Ft. of Floor Space										2017 Value with land, site works, etc.		Weighted Average		
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	(\$/sq.ft.)	Sq Ft.	Cost		
Paramedic Services Stations	Ambulance Services Headquarters (1179 Bronte) (T6703A)	14,085	14,085	14,085	14,085	14,085	14,085	14,085	14,085	14,085	14,085	14,085	14,085	395	140,850	\$ 55,635,750
	Ambulance Services Headquarters (1179 Bronte) (T6703A) (common/core area)	998	998	998	998	998	998	998	998	998	998	998	998	395	9,980	3,942,100
	Action (T6704A)	2,525	2,525	2,525	2,525	2,525	2,525	2,525	2,525	2,525	2,525	2,525	2,525	355	25,250	8,963,750
	Burlington West (Aldershot, 1018 Willowbrook)	2,230	2,230	2,230	2,230	2,230	2,230	2,230	2,230	2,230	2,230	2,230	2,230	382	22,300	8,518,600
	Burlington Central (455 Cumberland Ave)	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900	382	19,000	7,258,000
	Georgetown (17 Guelph St) (T6710A)	2,000	2,000	2,000	-	-	-	-	-	-	-	-	-	355	6,000	2,130,000
	Milton Central (T6707A)	4,740	4,740	4,740	4,740	4,740	4,740	4,740	4,740	4,740	4,740	4,740	4,740	379	47,400	17,964,600
	Oakville Northeast (T6708A)	3,120	3,120	3,120	3,120	3,120	3,120	3,120	3,120	3,120	3,120	3,120	3,120	395	31,200	12,324,000
	Oakville Central (215 Wycroft) / Oakville Southwest	6,000	-	-	-	-	-	-	-	-	-	-	-	395	6,000	2,370,000
	Milton Campbellville (Reid Sideroad) (T6709A)	2,340	2,340	2,340	2,340	2,340	2,340	2,340	2,340	2,340	2,340	2,340	2,340	282	23,400	6,598,800
	Burlington East (Corporate Drive) (T6706A)	-	-	-	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	277	14,000	3,878,000
	Burlington North (Brant Street) (T6705A) under construction 2006	3,066	3,066	3,066	3,066	3,066	3,066	3,066	3,066	3,066	3,066	3,066	3,066	382	30,660	11,712,120
	53 Maple Avenue (Georgetown)	-	-	-	3,912	3,912	3,912	3,912	3,912	3,912	3,912	3,912	3,912	355	27,384	9,721,320
	Station 12 Oakville SE (1080 Cornwall Rd)	-	-	-	3,063	3,063	3,063	3,063	3,063	3,063	3,063	3,063	3,063	395	21,441	8,469,195
	Station 14 Oakville NW (3019 Pine Glen Rd)	-	-	-	-	-	-	-	-	-	-	-	-	487	12,188	5,935,556
Oakville South Service Rd. storage	-	-	-	-	-	-	-	-	-	-	-	-	285	8,956	2,552,460	
Davis Road	-	4,060	4,060	2,050	2,050	2,050	2,050	2,050	2,050	2,050	2,050	2,050	285	18,370	5,235,450	
<b>Total</b>	<b>43,004</b>	<b>41,064</b>	<b>41,064</b>	<b>46,029</b>	<b>46,029</b>	<b>46,029</b>	<b>46,029</b>	<b>46,029</b>	<b>46,029</b>	<b>46,029</b>	<b>46,029</b>	<b>46,029</b>	<b>54,551</b>	<b>464,379</b>	<b>\$ 173,209,701</b>	

Population	451,910	464,593	481,083	491,953	501,649	508,040	516,987	524,099	531,712	536,708
Per Capita Service Level	0.0952	0.0884	0.0854	0.0936	0.0918	0.0906	0.0890	0.0878	0.1026	0.1016

10 Year Average	
Quantity per capita	0.0926
Quality (\$/sq.ft.)	\$ 372.99
Combined Quantity/Quality Level (\$/capita)	\$ 34.54

DC Amount (before deductions)	133,188
Forecast Population (net)	\$ 34.54
Eligible Amount	\$ 4,600,190

Halton Region  
 2017 Development Charges Background Study  
 Average Level of Service  
 Service: Paramedic Services  
 Type of Capital Asset: Vehicles  
 Table F-14

Description	Quantity - No. of Vehicles										2017 Value (\$/vehicle)	Weighted Average		
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		# of Vehicles	Cost	
Ambulance Vehicles	22	24	27	27	29	30	31	31	32	32	32	\$ 262,900	285	\$ 74,926,500
ERU Paramedic (Explorer)	4	4	4	4	4	6	6	6	6	6	6	136,000	50	6,800,000
ERU Management (Expedition)	2	2	2	2	2	2	2	2	3	3	4	149,800	23	3,445,400
SSU Transit Connect	1	1	1	1	1	1	1	1	1	1	1	46,300	10	463,000
SSU Cube Van	1	1	1	1	1	1	1	1	1	1	1	92,100	10	921,000
ESU Emergency Support Unit	1	1	1	1	1	1	1	1	1	1	1	358,400	10	3,584,000
<b>Total</b>	<b>31</b>	<b>33</b>	<b>36</b>	<b>36</b>	<b>38</b>	<b>41</b>	<b>42</b>	<b>42</b>	<b>44</b>	<b>45</b>	<b>45</b>	<b>\$ 232,319</b>	<b>388</b>	<b>\$ 90,139,900</b>

Population	451,910	464,583	481,083	491,953	501,649	508,040	516,987	524,099	531,712	536,708
Service Level Per 1,000 persons	0.0686	0.0710	0.0748	0.0732	0.0758	0.0807	0.0812	0.0801	0.0828	0.0838

	2007-2016
10 Year Average	
Quantity per 1,000 persons	0.0772
Quality (\$/Vehicle)	\$ 232,319
Combined Quantity/Quality Level (\$/1,000 persons)	\$ 17,935
Combined Quantity/Quality Level (\$/capita)	\$ 17.94

DC Amount (before deductions)	133,188
Forecast Population (net)	\$ 17.90
Eligible Amount	\$ 2,384,065



INFRASTRUCTURE COSTS COVERED IN THE DC CALCULATION  
Halton Region

SERVICE: Paramedic Services

Table F-15

Increased Service Needs Attributable to Anticipated Development 2017-2026	Timing	Gross Capital Cost Est.	Benefit to Existing Development/ U.E.C.	Eligible Increase in Need	Post Period Benefit	Less:		Less: Other Statutory Deduction)	Potential DC Recoverable Cost		Non-Residential Share 11.8%
						Grants, Subsidies & Other Contributions Attrib. to New Development	Sub Total		Net Costs Benefiting New Development	Residential Share 88.2%	
<b>Already Constructed</b>											
<b>Cost to be Incurred During Term of Proposed By-law</b>											
Ambulance Services- Headquarters Expansion	2017	1,800,000	678,735	1,121,265	600,000	-	521,265	52,127	469,139	413,780	56,358
One Ambulance	2017	262,900	13,145	249,755		-	249,755	24,976	224,780	198,256	26,524
One Emergency Response Unit- Paramedics	2018	136,000	6,800	129,200		-	129,200	12,920	116,280	102,559	13,721
One Emergency Response Unit- Management	2018	149,800	7,490	142,310		-	142,310	14,231	128,079	112,966	15,113
One Support Unit- Transit Connect	2018	46,300	2,315	43,985		-	43,985	4,399	39,587	34,915	4,671
Two Ambulances	2019	525,800	26,290	499,510		-	499,510	49,951	449,559	396,511	53,048
Two Emergency Response Units- Paramedics	2019	272,100	13,605	258,495		-	258,495	25,850	232,646	205,193	27,452
Ambulance Services- Headquarters Expansion	2019	19,950,000	7,522,646	12,427,354	7,416,819	-	5,010,535	501,053	4,509,481	3,977,362	532,119
One Emergency Response Unit- Paramedics	2020	136,000	6,800	129,200		-	129,200	12,920	116,280	102,559	13,721
One Emergency Response Unit- Paramedics	2021	136,000	6,800	129,200		-	129,200				
One Emergency Response Unit- Management	2021	149,800	7,490	142,310		-	142,310				
<b>Cost to be Incurred Post By-law Term (i.e. beyond 2021)</b>											
One Ambulance	2022	262,900	13,145	249,755	249,755	-					
One Emergency Response Unit- Paramedics	2023	136,000	6,800	129,200	129,200	-					
Master Plan	2023	150,000	7,500	142,500	142,500	-					
One Ambulance	2024	262,900	13,145	249,755	249,755	-					
One Emergency Response Unit- Paramedics	2024	136,000	6,800	129,200	129,200	-					
Two Emergency Response Units- Management	2024	299,500	14,975	284,525	284,525	-					
One Support Unit- Transit Connect	2024	46,300	2,315	43,985	43,985	-					
One Emergency Response Unit- Paramedics	2025	136,000	6,800	129,200	129,200	-					
Two Ambulances	2026	525,800	26,290	499,510	499,510	-					
<b>Total Estimated Capital Cost</b>		<b>\$ 25,520,100</b>	<b>\$ 8,389,886</b>	<b>\$ 17,130,214</b>	<b>\$ 10,145,959</b>	<b>\$ -</b>	<b>\$ 6,984,255</b>	<b>\$ 698,425</b>	<b>\$ 6,285,829</b>	<b>\$ 5,544,101</b>	<b>\$ 741,728</b>

Level of Service Summary	Eligible Amount
Stations	\$ 4,600,190
Vehicles	2,384,065
Total	\$ 6,984,255

Table F-16

Halton Region  
2017 Development Charges Study  
Cash Flow Calculation - Paramedics - Residential

Year	DC Reserve Fund Opening Balance	Development Related Expenditures Nominal Project Cost	Development Related Expenditures Project Cost Inflated at 2%	Single Detached Unit Equivalents (Building Permits)	\$147.76 SDE per Year Inflated at 2% Starting in 2018	Anticipated Revenues	Annual Surplus/ (Deficit)	3.5% / 3.5% RF Interest Earnings / (Cost)	DC Reserve Fund Closing Balance after Interest
2017	\$ (1,526,753)	\$ (612,036)	\$ (612,036)	6,272	\$ 147.76	\$ 926,764	\$ (1,212,024)	\$ (42,421)	\$ (1,254,445)
2018	(1,254,445)	(250,440)	(255,449)	6,272	150.71	945,300	(564,594)	(19,761)	(584,355)
2019	(584,355)	(4,579,067)	(4,764,061)	6,272	153.73	964,206	(4,384,210)	(153,447)	(4,537,658)
2020	(4,537,658)	(102,559)	(108,836)	6,272	156.80	983,490	(3,663,004)	(128,205)	(3,791,210)
2021	(3,791,210)	-	-	4,428	159.94	708,182	(3,083,027)	(107,906)	(3,190,933)
2022	(3,190,933)	-	-	4,027	163.14	656,955	(2,533,978)	(88,689)	(2,622,668)
2023	(2,622,668)	-	-	4,027	166.40	670,094	(1,952,574)	(68,340)	(2,020,914)
2024	(2,020,914)	-	-	4,027	169.73	683,494	(1,337,420)	(46,810)	(1,384,230)
2025	(1,384,230)	-	-	4,027	173.12	697,166	(687,064)	(24,047)	(711,111)
2026	(711,111)	-	-	4,027	176.59	711,111	0	0	0
<b>Total</b>	<b>\$ (5,544,101)</b>	<b>\$ (5,740,382)</b>	<b>\$ (5,740,382)</b>	<b>49,651</b>		<b>\$ 7,946,761</b>		<b>\$ (679,626)</b>	

Note: Numbers may not add due to rounding

Table F-17

Halton Region  
2017 Development Charges Study  
Cash Flow Calculation - Paramedics - Non-Residential

Year	DC Reserve Fund Opening Balance	Development Related Expenditures Nominal Project Cost	Development Related Expenditures Project Cost Inflated at 2%	Sq. Ft. of Gross Floor Area	\$0.024 per Sq. Ft. per Year Inflated at 2% Starting in 2018	Anticipated Revenues	Annual Surplus/ (Deficit)	3.5% / 3.5% RF Interest Earnings / (Cost)	DC Reserve Fund Closing Balance after Interest
2017	\$ (288,436)	\$ (81,882)	\$ (81,882)	4,587,156	\$ 0.024	\$ 111,721	\$ (258,597)	\$ (9,051)	\$ (267,648)
2018	(267,648)	(33,506)	(34,176)	4,587,156	0.025	113,955	(187,869)	(6,575)	(194,444)
2019	(194,444)	(612,619)	(637,369)	4,587,156	0.025	116,234	(715,579)	(25,045)	(740,624)
2020	(740,624)	(13,721)	(14,561)	4,587,156	0.026	118,559	(636,626)	(22,282)	(658,908)
2021	(658,908)	-	-	4,587,156	0.026	120,930	(537,978)	(18,829)	(556,808)
2022	(556,808)	-	-	4,088,727	0.027	109,946	(446,862)	(15,640)	(462,502)
2023	(462,502)	-	-	4,308,393	0.027	118,170	(344,332)	(12,052)	(356,384)
2024	(356,384)	-	-	4,308,393	0.028	120,533	(235,851)	(8,255)	(244,106)
2025	(244,106)	-	-	4,308,393	0.029	122,944	(121,162)	(4,241)	(125,403)
2026	(125,403)	-	-	4,308,393	0.029	125,403	0	0	0
<b>Total</b>		<b>\$ (741,728)</b>	<b>\$ (767,988)</b>	<b>44,258,080</b>		<b>\$ 1,178,393</b>		<b>\$ (121,970)</b>	

Note: Numbers may not add due to rounding



## **F.5 CALCULATION ASSUMPTIONS AND LEVEL OF SERVICE FOR FACILITIES (HEALTH, SOCIAL SERVICES AND PUBLIC WORKS)**



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## **F.5 FACILITIES (HEALTH, SOCIAL SERVICES AND PUBLIC WORKS)**

### **1. Health Department Floor Space**

The Health Department provides Public Health programs to residents and businesses of the Region of Halton including: communicable disease and infection control, dental health, baby and parent health, healthy environments, heart health and cancer prevention, tobacco use prevention, mental health promotion and services, substance abuse prevention, sexual health, immunization, rabies control, injury prevention, food safety and health promotion. An increase in population will require an increase in staffing to deliver these programs (field operations over and above headquarters administration). Program staff is accommodated at 7 satellite offices throughout the Region as well as the Halton Regional Centre. Space at the Regional Centre that is used for general headquarters administration of the Health Department has not been included in the inventory. In 2012, the average value of the TFA occupied by the Health Department was assumed to be \$252/sq.ft. including an allowance for furniture, fixtures and site work but excluding land. This amount has been increased to \$268 to reflect 2017\$, based on changes in the non-residential construction cost index. The average value of health department facility space in 2017\$ is \$325 including land, site works and FFE.

The Region anticipates the need to increase workstations for staff by approximately 1.43% per year for the next 10 years. These workstations are for different types of staff including public health inspectors, public health nurses, registered nurses, dieticians, etc. It is anticipated that each additional workstation would require an average of 222 gross square feet of floor space including both workstation space and a share of support space requirements such as meeting rooms, etc.

This requirement may be accommodated through the use of space at the Regional Centre that will become available when the new Police Headquarters is completed as well as leased space for field offices and any excess need that may exceed the capacity of the Regional Centre. The cost of providing additional space is forecast to be \$368 per sq.ft., including land, furnishings, fixtures, parking areas, etc., based on information derived from the Accommodation Plan and increased to 2017\$.

No deduction has been made for benefit to existing development, as the capital program is intended to provide new floor space at or below the current level of service. There is also no

post-period benefit (oversizing) resulting from the capital program. While the focus of the Health Department's programs is directed to residents of the Region, a portion is related to non-residential uses (e.g. health hazard investigation and food safety). The Region has reviewed its allocation of staffing to the various programs as well as the relative demand for these services between residential and non-residential uses. As a result, it was determined that 12% of program staff can be allocated to non-residential needs. Therefore, the calculated DC recoverable costs have been allocated 88% to residential growth and 12% to non-residential development.

## **2. Social Service Space**

The Social Service Department of Halton is responsible for children's services (including day care), housing services, income and employment services and services to seniors. The demand for these population-related services is expected to increase as the Region grows.

The Social Services Department operates out of the Halton Regional Centre and 690 Dorval Drive, as well as several satellite offices. Space at the Regional Centre that used for general administration of the Social Services Department has not been included in the inventory. As with Health Department floor space, the average value of the existing TFA occupied by the Social Services Department has been established at \$268/sq.ft., including an allowance for site work, furnishings and fixtures. Including land, the average value of the Region's Social Services facilities is \$326<sup>1</sup>.

An average annual increase in staffing workstations of 1.43% is anticipated. The capital cost for accommodating additional program employees has been calculated using the same space requirement and cost per sq.ft. assumptions used in Section 6.1 (i.e. 222 sq.ft. per workstation and \$368 per sq.ft.).

No deduction has been made for benefit to existing development as the capital program is intended to provide new floor space at the current level of service. There is also no post-period benefit (oversizing) resulting from the capital program. As the programs involved relate to residents of Halton Region, the DC recoverable costs have been allocated entirely to residential growth.

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<sup>1</sup> The small difference in average value compared with Health Service space is due to the variations in land value throughout the Region



### **3. Operations Centre Space**

The Region of Halton maintains 3 operations facilities: North, Woodlands and Skyway, with a TFA of 90,832 sq.ft. at an average value of \$215/sq.ft., including land, site works and FFE.

Over the forecast period, 2017-2026, the Region plans to expand the Woodland Operations Centre. As stated in the Paramedics services discussion, the Woodlands facility is a shared facility between Paramedics and Operations. The Region plans to construct a 40,000 sq.ft expansion to the existing 60,000 sq. ft. facility. The capital program includes the cost of design work in 2017 as well as construction scheduled for 2019. Currently, Operations occupies 40,540 sq.ft. of this facility including a portion of shared space. Paramedic services will vacate their current space (15,083 sq.ft.) and move to the additional space while Operations will expand into this space and the Region will expend approximately \$7.3 million to retrofit both the former Paramedic space and a portion of the existing Operations space to increase capacity and improve functionality. It is assumed that 50% of the cost of this retrofit is growth-related with the balance benefiting existing development. This project is to be undertaken in 2019 and will accommodate growth to 2030, so as with Paramedics services, 33.33% of the costs can be attributed to development occurring post 2026.

The residential/non-residential split of the net growth-related costs are calculated by averaging the residential/non-residential splits for Water and Wastewater. The resulting allocation to residential development is 75% and the allocation to non-residential development is 25%.

**Halton Region  
2017 Development Charges Background Study  
Average Level of Service**

**Table F-18**

Service:

Health Department

Type of Capital Asset

Non-Administrative Space

Description	Quantity - Sq. Ft.										2017 Value with land, site works, etc. (\$/sq.ft.)	Weighted Average Cost		
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		Sq Ft.	Cost	
93 Main St. South, Georgetown	2,700	2,700	2,700	2,700	2,700	2,700	-	-	-	-	-	291	16,200	\$ 4,714,200
280 Guelph Street, Georgetown	-	-	-	-	-	-	3,758	3,758	3,758	3,758	3,758	291	15,033	4,374,480
19 Willow St., Acton	667	667	667	948	948	948	1,573	1,573	1,573	1,573	291	11,137	3,240,867	-
5353 Lakeshore Road, Unit 2, Burlington	3,381	3,381	3,381	3,381	3,381	3,381	-	-	-	-	318	16,905	5,375,790	-
3350 Fairview Street, Burlington	-	-	-	-	-	-	3,230	3,230	3,230	3,230	318	16,150	5,135,700	-
217 Main St. East, Milton	5,010	5,010	5,010	5,010	5,010	5,010	5,010	5,010	5,010	5,010	315	50,100	15,781,500	-
Halton Regional Centre	19,612	15,261	15,261	15,261	15,261	15,261	15,261	15,261	15,261	15,261	331	156,961	51,954,091	-
Halton Regional Centre (share of common area)	15,073	14,129	14,129	14,129	14,129	14,129	14,129	14,129	14,129	14,129	331	142,234	47,079,454	-
690 Dorval Dr., Oakville - Comm Health	-	10,084	10,084	10,084	10,084	10,084	10,084	10,084	10,084	10,084	331	90,756	30,040,236	-
690 Dorval Dr., Oakville - Comm Health (share of common area)	-	4,419	4,419	4,419	4,419	4,419	4,419	4,419	4,419	4,419	331	39,771	13,164,201	-
372 Queen St, Acton	1,121	1,121	1,121	1,121	1,121	1,121	1,121	1,121	1,121	1,121	291	11,210	3,262,110	-
232 South Service Road, Oakville	-	-	-	2,604	2,604	2,604	3,615	3,615	3,615	3,615	331	23,283	7,706,673	-
<b>Total</b>	<b>47,564</b>	<b>56,772</b>	<b>56,772</b>	<b>59,657</b>	<b>59,657</b>	<b>60,517</b>	<b>62,200</b>	<b>62,200</b>	<b>62,200</b>	<b>62,200</b>	<b>325</b>	<b>589,740</b>	<b>\$ 191,829,302</b>	

Population	451,910	464,593	481,083	491,953	501,649	508,040	516,987	524,099	531,712	536,708
Per Capita Service Level	0.1053	0.1222	0.1180	0.1213	0.1189	0.1191	0.1203	0.1187	0.1170	0.1159

Notes:

	2007-2016
10 Year Average	
Quantity per capita	0.1177
Quality (\$/sq.ft.)	\$ 325
Combined Quantity/Quality Level (\$/capita)	\$ 38.29

DC Amount (before deductions)	
Forecast Population (net)	133,188
\$ per Capita	\$ 38.29
Eligible Amount	\$ 5,099,132

1. TFA excludes space at the Halton Regional Centre occupied by administrative staff

**Halton Region  
2017 Development Charges Background Study  
Average Level of Service** Table F-19

Description	Quantity - Sq. Ft.										2017 Value with land, site works, etc. (\$/sq.ft.)		Weighted Average	
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016			Sq Ft.	Cost
Halton Regional Centre	6,004	6,004	6,004	6,004	6,004	6,004	6,004	6,004	6,004	6,004	6,004	\$	60,040	\$ 19,873,327
Halton Regional Centre (share of common area)	4,614	5,558	5,558	5,558	5,558	5,558	5,558	5,558	5,558	5,558	5,558		54,636	18,084,516
690 Dorval Dr., Oakville - HCHC	4,168	4,168	4,168	4,168	4,168	4,168	4,168	4,168	4,168	4,168	4,168		41,680	13,796,080
690 Dorval Dr., Oakville - NPH	1,962	1,962	1,962	1,962	1,962	1,962	1,962	1,962	1,962	1,962	1,962		19,620	6,494,220
690 Dorval Dr., Oakville - I & E	6,295	6,295	6,295	6,295	6,295	6,295	6,295	6,295	6,295	6,295	6,295		62,950	20,836,450
690 Dorval Dr., Oakville - Child Serv	8,892	8,892	8,892	8,892	8,892	8,892	8,892	8,892	8,892	8,892	8,892		88,920	29,432,520
690 Dorval Dr., Oakville (share of common area)	9,341	9,341	9,341	9,341	9,341	9,341	9,341	9,341	9,341	9,341	9,341		93,410	30,918,710
440 Elizabeth Dr., Burlington - I & E	4,999	4,999	4,999	4,999	4,999	4,999	4,999	4,999	4,999	4,999	4,999		70,650	22,466,700
232 Guelph St., Georgetown - I & E	2,886	2,886	2,886	2,886	2,886	2,886	2,886	2,886	2,886	2,886	2,886		14,430	4,199,130
19 Willow St. N Acton - I & E	1,333	1,333	1,333	-	-	-	-	-	-	-	-		3,999	1,163,709
93 Main St., Georgetown	-	-	-	-	2,889	-	-	-	-	-	-		2,889	840,699
470 Bronte St., Milton	-	-	-	7,050	7,050	7,050	7,050	7,050	7,050	7,050	7,050		49,350	15,545,250
2441 Lakeshore, Oakville I & E	-	-	-	-	6,410	6,410	6,410	6,410	6,410	6,410	6,410		38,460	12,730,260
235 Guelph St., Georgetown	-	-	2,020	2,020	2,020	2,020	2,020	2,020	2,020	2,020	2,020		16,160	4,702,560
280 Guelph Street, Georgetown	-	-	-	-	-	-	759	759	759	759	759		3,036	883,350
<b>Total</b>	<b>50,494</b>	<b>51,438</b>	<b>53,458</b>	<b>59,175</b>	<b>68,474</b>	<b>66,831</b>	<b>67,590</b>	<b>67,590</b>	<b>67,590</b>	<b>67,590</b>	<b>67,590</b>	<b>\$</b>	<b>620,230</b>	<b>\$ 201,967,482</b>

Population	451,910	464,593	481,083	491,953	501,649	508,040	516,987	524,099	531,712	536,708
Per Capita Service Level	0.1117	0.1107	0.1111	0.1203	0.1366	0.1315	0.1307	0.1290	0.1271	0.1259

	2007-2016
Quantity per capita	0.1235
Quality (\$/sq.ft.)	\$ 325.63
Combined Quantity/Quality Level (\$/capita)	\$ 40.22

DC Amount (before deductions)	
Forecast Population (net)	133,188
\$ per Capita	\$ 40.22
Eligible Amount	\$ 5,356,250

Note: TFA at the Halton Regional Centre excludes space occupied by Headquarters administrative staff.

**Halton Region  
2017 Development Charges Background Study  
Average Level of Service**

**Table F-20**

Service: Facilities (Operations)  
Type of Capital Asset: Operations Space

Description	Quantity - Sq. Ft. of Floor Space										2017 Value with land, site works, etc. (\$/sq.ft.)	Weighted Average	
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		Sq Ft.	Cost
North Operations Centre	24,300	32,551	32,551	32,551	39,370	39,370	39,370	39,370	39,370	39,370	168	358,173	\$ 60,173,064
Woodlands Operations Centre	40,540	40,540	40,540	40,540	40,540	40,540	40,540	40,540	40,540	40,540	250	405,400	101,350,000
Woodlands Operations Centre (share of common area)	2,872	2,872	2,872	2,872	2,872	2,872	2,872	2,872	2,872	2,872	250	28,720	7,180,000
Skyway Operations Building	8,050	8,050	8,050	8,050	8,050	8,050	8,050	8,050	8,050	8,050	237	80,500	19,078,500
<b>Total</b>	<b>75,762</b>	<b>84,013</b>	<b>84,013</b>	<b>84,013</b>	<b>90,832</b>	<b>90,832</b>	<b>90,832</b>	<b>90,832</b>	<b>90,832</b>	<b>90,832</b>	<b>215</b>	<b>872,793</b>	<b>\$ 187,781,564</b>

Population	451,910	464,593	481,083	491,953	501,649	508,040	516,987	524,099	531,712	536,708
Per Capita Service Level	0.1676	0.1808	0.1746	0.1708	0.1811	0.1788	0.1757	0.1733	0.1708	0.1692

	2007-2016
Quantity per capita	0.1743
Quality (\$/sq.ft.)	\$ 215.15
Combined Quantity/Quality Level (\$/capita)	\$ 37.50

DC Amount (before deductions)	
Forecast Population (net)	133,188
\$ per Capita	\$ 37.50
Eligible Amount	\$ 4,994,640

INFRASTRUCTURE COSTS COVERED IN THE DC CALCULATION  
Halton Region

Table F-21

SERVICE: Facilities

Increased Service Needs Attributable to Anticipated Development 2017-2026	Timing	Gross Capital Cost Est.	Benefit to Existing Development/ U.E.C.	Eligible Increase in Need	Post Period Benefit	Less:		Sub Total	Less:Other (e.g.10% Statutory Deduction)	Net Costs Benefiting New Development	Potential DC Recoverable	Residential Share	Non-Residential Share
						Grants, Subsidies & Other Contributions Attrib. to New Development	Development						
<b>Cost to be Incurred During Term of Proposed By-law</b>													
Woodlands Operation Center Expansion (Ops)	2017	600,000	300,000	300,000	100,000			200,000	-	200,000	176,000	24,000	24,000
Office Space for Health Program Staff	2017	232,500		232,500				232,500	23,250	209,250	184,140	25,110	25,110
Office Space for Social Services Program Staff	2017	189,800		189,800				189,800	18,980	170,820	170,820	-	-
Office Space for Health Program Staff	2018	235,800		235,800				235,800	23,580	212,220	186,754	25,466	25,466
Office Space for Social Services Program Staff	2018	192,500		192,500				192,500	19,250	173,250	173,250	-	-
Office Space for Health Program Staff	2019	239,200		239,200				239,200	23,920	215,280	189,446	25,834	25,834
Office Space for Social Services Program Staff	2019	195,200		195,200				195,200	19,520	175,680	175,680	-	-
Woodlands Operation Center Expansion (Ops)	2019	6,650,000	3,325,000	3,325,000	1,108,333			2,216,667	-	2,216,667	1,662,500	554,167	554,167
Office Space for Health Program Staff	2020	242,600		242,600				242,600	24,260	218,340	192,139	26,201	26,201
Office Space for Social Services Program Staff	2020	198,000		198,000				198,000	19,800	178,200	178,200	-	-
Office Space for Health Program Staff	2021	246,000		246,000				246,000	24,600	221,400	194,832	26,568	26,568
Office Space for Social Services Program Staff	2021	200,900		200,900				200,900	20,090	180,810	180,810	-	-
<b>Cost to be Incurred Post By-law Term (i.e. beyond 2021)</b>													
Office Space for Health Program Staff	2022	249,600		249,600				249,600	24,960	224,640	197,683	26,957	26,957
Office Space for Social Services Program Staff	2022	203,700		203,700				203,700	20,370	183,330	183,330	-	-
Office Space for Health Program Staff	2023	253,100		253,100				253,100	25,310	227,790	200,455	27,335	27,335
Office Space for Social Services Program Staff	2023	206,700		206,700				206,700	20,670	186,030	186,030	-	-
Office Space for Health Program Staff	2024	256,700		256,700				256,700	25,670	231,030	203,306	27,724	27,724
Office Space for Social Services Program Staff	2024	209,600		209,600				209,600	20,960	188,640	188,640	-	-
Office Space for Health Program Staff	2025	260,400		260,400				260,400	26,040	234,360	206,237	28,123	28,123
Office Space for Social Services Program Staff	2025	212,600		212,600				212,600	21,260	191,340	191,340	-	-
Office Space for Health Program Staff	2026	264,100		264,100				264,100	26,410	237,690	209,167	28,523	28,523
Office Space for Social Services Program Staff	2026	215,600		215,600				215,600	21,560	194,040	194,040	-	-
<b>Total Estimated Capital Cost</b>		<b>\$ 11,754,600</b>	<b>\$ 3,625,000</b>	<b>\$ 8,129,600</b>	<b>\$ 1,208,333</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 6,921,267</b>	<b>\$ 450,460</b>	<b>\$ 6,470,807</b>	<b>\$ 5,624,800</b>	<b>\$ 846,007</b>	<b>\$ 846,007</b>

Level of Service Summary

Health Facilities	\$ 5,099,132
Social Services	5,356,250
Facility Ops	4,994,640
<b>Total</b>	<b>\$ 15,450,022</b>

Table F-22

Halton Region  
2017 Development Charges Study  
Cash Flow Calculation - Facilities - Residential

Year	DC Reserve Fund Opening Balance	Development Related Expenditures Nominal Project Cost	Development Related Expenditures Project Cost Inflated at 2%	Single Detached Unit Equivalents (Building Permits)	\$127.63 SDE per Year Inflated at 2% Starting in 2018	Anticipated Revenues	Annual Surplus/ (Deficit)	3.5% / 3.5% RF Interest Earnings / (Cost)	DC Reserve Fund Closing Balance after Interest
2017	\$ (653,402)	\$ (530,960)	\$ (530,960)	6,272	\$ 127.63	\$ 800,490	\$ (383,872)	\$ (13,436)	\$ (397,308)
2018	(397,308)	(360,004)	(367,204)	6,272	130.18	816,499,340	51,988	1,820	53,807
2019	53,807	(2,027,626)	(2,109,543)	6,272	132.78	832,829,520	(1,222,906)	(42,802)	(1,265,707)
2020	(1,265,707)	(370,339)	(393,007)	6,272	135.44	849,485,914	(809,228)	(28,323)	(837,551)
2021	(837,551)	(375,642)	(406,607)	4,428	138.15	611,690,074	(632,468)	(22,136)	(654,605)
2022	(654,605)	(381,013)	(420,669)	4,027	140.91	567,442,509	(507,831)	(17,774)	(525,606)
2023	(525,606)	(386,485)	(435,245)	4,027	143.73	578,791,360	(382,059)	(13,372)	(395,431)
2024	(395,431)	(391,946)	(450,223)	4,027	146.60	590,365,566	(255,289)	(8,935)	(264,224)
2025	(264,224)	(397,577)	(465,825)	4,027	149.53	602,174,531	(127,874)	(4,476)	(132,350)
2026	(132,350)	(403,207)	(481,870)	4,027	152.53	614,219,707	0	0	0
<b>Total</b>		<b>\$ (5,624,800)</b>	<b>\$ (6,061,152)</b>	<b>49,651</b>		<b>\$ 6,863,988</b>		<b>\$ (149,434)</b>	

Note: Numbers may not add due to rounding

Table F-23

**Halton Region  
2017 Development Charges Study  
Cash Flow Calculation - Facilities - Non-Residential**

Year	DC Reserve Fund Opening Balance	Development Related Expenditures Nominal Project Cost	Development Related Expenditures Project Cost Inflated at 2%	Sq. Ft. of Gross Floor Area	\$0.020 per Sq. Ft. per Year Inflated at 2% Starting in 2018	Anticipated Revenues	Annual Surplus/ (Deficit)	3.5% / 3.5% RF Interest Earnings / (Cost)	DC Reserve Fund Closing Balance after Interest
2017	\$ (8,191)	\$ (49,110)	\$ (49,110)	4,587,156	\$ 0.020	\$ 90,685	\$ 33,384	\$ 1,168	\$ 34,552
2018	34,552	(25,466)	(25,976)	4,587,156	0.020	92,498,457	101,075	3,538	104,613
2019	104,613	(580,000)	(603,432)	4,587,156	0.021	94,348,426	(404,471)	(14,156)	(418,628)
2020	(418,628)	(26,201)	(27,804)	4,587,156	0.021	96,235,394	(350,197)	(12,257)	(362,454)
2021	(362,454)	(26,568)	(28,758)	4,587,156	0.021	98,160,102	(293,051)	(10,257)	(303,308)
2022	(303,308)	(26,957)	(29,762)	4,088,727	0.022	89,244,149	(243,827)	(8,534)	(252,361)
2023	(252,361)	(27,335)	(30,783)	4,308,393	0.022	95,919,536	(187,224)	(6,553)	(193,777)
2024	(193,777)	(27,724)	(31,846)	4,308,393	0.023	97,837,927	(127,785)	(4,472)	(132,258)
2025	(132,258)	(28,123)	(32,951)	4,308,393	0.023	99,794,685	(65,414)	(2,289)	(67,703)
2026	(67,703)	(28,523)	(34,087)	4,308,393	0.024	101,790,579	0	0	0
<b>Total</b>		<b>\$ (846,007)</b>	<b>\$ (894,510)</b>	<b>44,258,080</b>		<b>\$ 956,514</b>		<b>\$ (53,813)</b>	

Note: Numbers may not add due to rounding





## **F.6 CALCULATION ASSUMPTIONS AND LEVEL OF SERVICE FOR SOCIAL HOUSING**



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## F.6 SOCIAL HOUSING

The Region of Halton administers approximately 4,834 social housing units, including:

- a) 1,961 units owned by Halton Community Housing Corporation (HCHC) - Halton Region is the sole shareholder in this corporation;
- b) 334 units at the Oakville Seniors Citizen's Residence (OSCR);
- c) Approximately 120 units where the Region provided capital for privately-owned market rent buildings where the Region contracts with the owners to provide rent supplements and directs who occupies those units;
- d) Approximately 1,381 units owned by private non-profit organizations that include housing co-operatives, which receive funding from the Region; and
- e) Federally funded private non-profit units and provincially funded rent supplement units that are not included in the above.

In establishing the historic level of service for social housing in the Region, only HCHC, OSCR, and 2 recently constructed private sector projects that received significant funding from the Region were considered. The historic level of service is 0.0046 units per capita.

The Region's 2016 Budget and Business Plan for the Social Housing program was prepared based on the 2006 Comprehensive Housing Strategy and the 2014 Comprehensive Housing Strategy Update, and provided for an increased Region contribution to 2024. This contribution amount is reassessed annually during the budget process. The Region has indicated its intention to fund, on average, 55-90 units per year over the 2017-2026 period. The specifics of who would construct, own and operate the units have not yet been determined. The Region may potentially develop some units directly or they may be community based. Thus, the 2017-2026 capital program included in the DC calculation involves the addition of approximately 550-900 units at a total cost of approximately \$95 million.

Based on the current service level of 0.0046 units per capita and a net population increase of 133,188 persons for the period, only 613 of these units are within the service level cap. Assuming an average 2017 contribution of \$160,327/unit (based on contributions to recent developments) the DC eligible amount is approximately \$98.3 million. This approach to calculating the service level cap assumes that the quality of the new units to be provided will be similar to the existing HCHC supply in terms of unit size and configuration (mix of unit types).

In determining an appropriate deduction for benefit to existing development, consideration was based on the existing and future demand for social housing units among the existing population and the potential for occupants of new development to access the units. Factors were considered such as size of the wait list, average wait times, annual availability (turn-over) of existing units and the current gap in social housing to meet the needs of the existing population as identified by the Region. On this basis, a 50% deduction for benefit to existing development has been made. It is expected that as the service gap is addressed over time, this deduction would be reduced in future studies. There is no post-period benefit (oversizing) resulting from the capital program.

As this service is directly related to population, the DC recoverable costs have been allocated fully to residential development.

**Halton Region  
2017 Development Charges Background Study  
Average Level of Service**

**Table F-24**

Service: Social Housing  
Type of Capital Asset: Housing Units

Description	Quantity - # of units											
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		
10-32(EVEN) Holmesway Place (ACTON)	12	12	12	12	12	12	12	12	12	12	12	12
34-44(EVEN) Holmesway Place (ACTON)	6	6	6	6	6	6	6	6	6	6	6	6
8 Durham Street	89	89	89	89	89	89	89	89	89	89	89	89
17 Elizabeth Drive	52	52	52	52	52	52	52	52	52	52	52	52
46 Holmesway Place (ACTON)	12	12	12	12	12	12	12	12	12	12	12	12
3 Hyde Park Drive	24	24	24	24	24	24	24	24	24	24	24	24
11 Sargent Road	38	38	38	38	38	38	38	38	38	38	38	38
1478-1494 Elm Road	54	54	54	54	54	54	54	54	54	54	54	54
271 Kerr Street	242	242	242	242	242	242	242	242	242	242	242	242
287-359 Margaret Drive	48	48	48	48	48	48	48	48	48	48	48	48
284-320 (EVEN) Maurice Drive	60	60	60	60	60	60	60	60	60	60	60	60
1220 Glen Valley Road	55	55	55	55	55	55	55	55	55	55	55	55
2250 Golden Briar Trail	88	88	88	88	88	88	88	88	88	88	88	88
2301 Sheridan Garden Drive	51	51	51	51	51	51	51	51	51	51	51	51
2299 Brays Lane	56	56	56	56	56	56	56	56	56	56	56	56
1531 Sixth Line	32	32	32	32	32	32	32	32	32	32	32	32
1150 Dorval Drive	50	50	50	50	50	50	50	50	50	50	50	50
4100 Longmoor Drive	109	109	109	109	109	109	109	109	109	109	109	109
5250 Pinedale Avenue	141	141	141	141	141	141	141	141	141	141	141	141
254-278, 282-360 Burloak Drive	54	54	54	54	54	54	54	54	54	54	54	54
1300 Maple Crossing Boulevard	91	91	91	91	91	91	91	91	91	91	91	91
2300 Walkers Line	57	57	57	57	57	57	57	57	57	57	57	57
513-515 Walkers Line & 4105 Longmoor Drive	129	129	129	129	129	129	129	129	129	129	129	129
410 John Street	126	126	126	126	126	126	126	126	126	126	126	126
708 & 710 Bramt Court	16	16	16	16	16	16	16	16	16	16	16	16
111 Ontario Street North	36	36	36	36	36	36	36	36	36	36	36	36
40 Ontario Street South	88	88	88	88	88	88	88	88	88	88	88	88
2220 Lakeshore Rd W & 2222 Lakeshore Rd. W. (OSCR)	336	336	336	336	336	336	336	336	336	336	336	336
St. Andrews/Bonnie Place												
New Horizons												
Ontario Street												
<b>Total</b>	<b>2,152</b>	<b>2,152</b>	<b>2,152</b>	<b>2,152</b>	<b>2,417</b>	<b>2,417</b>	<b>2,417</b>	<b>2,417</b>	<b>2,417</b>	<b>2,417</b>	<b>2,417</b>	<b>2,417</b>

Population	451,910	464,593	481,083	491,953	501,649	508,040	516,987	524,099	531,712	536,708
Per Capita Service Level	0.0048	0.0046	0.0045	0.0044	0.0048	0.0048	0.0047	0.0046	0.0045	0.0045

	2007-2016
Quantity per capita	0.0046
Forecast Population (net)	133,188
Eligible Amount (number of units)	613*

\* The cost to the Region of providing Social Housing units is variable; but for these particular units, the average contribution is assumed to be \$160,327 per unit. It is expected that the quality of the new units to be provided will be similar to the existing HCHC units in terms of unit size and configuration (mix of unit type).

**INFRASTRUCTURE COSTS COVERED IN THE DC CALCULATION  
Halton Region**

**Table F-25**

**SERVICE: Social Housing**

Increased Service Needs Attributable to Anticipated Development 2017-2026	Timing	Gross Capital Cost Est.	Benefit to Existing Development/ U.E.C.	Eligible Increase in Need	Post Period Benefit	Less:		Sub Total	Less:Other (e.g.10% Statutory Deduction)	Net Costs Benefiting New Development	Potential DC Recoverable Cost	
						Grants, Subsidies & Other Contributions Attrib. to New Development	Development				Residential Share 100%	Non- Residential Share 0%
<b>Cost to be Incurred During Term of Proposed By-law</b>												
Contribution to additional units	2017	8,500,000	4,250,000	4,250,000				4,250,000	425,000	3,825,000	3,825,000	3,825,000
Contribution to additional units	2018	9,000,000	4,500,000	4,500,000				4,500,000	450,000	4,050,000	4,050,000	4,050,000
Contribution to additional units	2019	9,000,000	4,500,000	4,500,000				4,500,000	450,000	4,050,000	4,050,000	4,050,000
Contribution to additional units	2020	9,000,000	4,500,000	4,500,000				4,500,000	450,000	4,050,000	4,050,000	4,050,000
Contribution to additional units	2021	9,400,000	4,700,000	4,700,000				4,700,000	470,000	4,230,000	4,230,000	4,230,000
<b>Cost to be Incurred Post By-law Term (i.e. beyond 2021)</b>												
Contribution to additional units	2022	9,450,000	4,725,000	4,725,000				4,725,000	472,500	4,252,500	4,252,500	4,252,500
Contribution to additional units	2023	9,450,000	4,725,000	4,725,000				4,725,000	472,500	4,252,500	4,252,500	4,252,500
Contribution to additional units	2024	11,200,000	5,600,000	5,600,000				5,600,000	560,000	5,040,000	5,040,000	5,040,000
Contribution to additional units	2025	10,000,000	5,000,000	5,000,000				5,000,000	500,000	4,500,000	4,500,000	4,500,000
Contribution to additional units	2026	10,000,000	5,000,000	5,000,000				5,000,000	500,000	4,500,000	4,500,000	4,500,000
<b>Total Estimated Capital Cost</b>		<b>\$ 95,000,000</b>	<b>\$ 47,500,000</b>	<b>\$ 47,500,000</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 47,500,000</b>	<b>\$ 4,750,000</b>	<b>\$ 42,750,000</b>	<b>\$ 42,750,000</b>	<b>\$ 42,750,000</b>

Eligible Amount  
613 units

Level of Service Summary  
Social Housing

Table F-26

Halton Region  
2017 Development Charges Study  
Cash Flow Calculation - Social Housing - Residential

Year	DC Reserve Fund Opening Balance	Development Related Expenditures Nominal Project Cost	Development Related Expenditures Project Cost Inflated at 2%	Single Detached Unit Equivalents (Building Permits)	\$821.20 SDE per Year Inflated at 2% Starting in 2018	Anticipated Revenues	Annual Surplus/ (Deficit)	3.5% / 3.5% RF Interest Earnings / (Cost)	DC Reserve Fund Closing Balance after Interest
2017	\$ 1,444,859	\$ (3,825,000)	\$ (3,825,000)	6,272	\$ 821.20	\$ 5,150,673	\$ 2,770,532	\$ 96,969	\$ 2,867,501
2018	2,867,501	(4,050,000)	(4,131,000)	6,272	837.62	5,253,687	3,990,187	139,657	4,129,844
2019	4,129,844	(4,050,000)	(4,213,620)	6,272	854.37	5,358,762	5,274,985	184,624	5,459,610
2020	5,459,610	(4,050,000)	(4,297,892)	6,272	871.46	5,465,935	6,627,653	231,968	6,859,621
2021	6,859,621	(4,230,000)	(4,578,688)	4,428	888.89	3,935,861	6,216,794	217,588	6,434,381
2022	6,434,381	(4,252,500)	(4,695,104)	4,027	906.67	3,651,154	5,390,432	188,665	5,579,097
2023	5,579,097	(4,252,500)	(4,789,006)	4,027	924.80	3,724,177	4,514,269	157,999	4,672,268
2024	4,672,268	(5,040,000)	(5,789,376)	4,027	943.30	3,798,651	2,681,543	93,854	2,775,397
2025	2,775,397	(4,500,000)	(5,272,467)	4,027	962.16	3,874,634	1,377,564	48,215	1,425,779
2026	1,425,779	(4,500,000)	(5,377,917)	4,027	981.41	3,952,138	0	0	0
<b>Total</b>		<b>\$ (42,750,000)</b>	<b>\$ (46,970,069)</b>	<b>49,651</b>		<b>\$ 44,165,672</b>		<b>\$ 1,359,539</b>	

Note: Numbers may not add due to rounding





## **F.7 CALCULATION ASSUMPTIONS AND LEVEL OF SERVICE FOR WASTE DIVERSION**



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## F.7 WASTE DIVERSION

The Region is responsible for waste diversion and disposal in Halton including waste collection. Recent amendments to the DCA, through Bill 73, have removed waste diversion from the list of ineligible services. The Region's key waste diversion activities include blue box (recyclables), green cart (compostable), and yard waste. Diversion accounted for over 57% of waste managed by the Region in 2016.

The Region's waste diversion assets are comprised of facilities, vehicles and equipment.

### 1. Facilities

Blue Box and green cart materials collected by the Region's contractors are taken to 1 of several locations including the Region owned transfer station at the Halton Waste Management Site (HWMS) and 2 private transfer stations under contract to the Region.

In addition, a number of other buildings at the HWMS have been apportioned to waste diversion. For example, yard waste is processed at a Region owned container station located there. In addition, a share of the administrative building has been allocated to diversion.

The service level calculation also includes a share of the City of Hamilton's Central Waste Processing facility which has been under contract to process Halton's compostable material since 2008. Halton waste has accounted for up to 40% of the processing capacity at this facility annually.

### 2. Vehicles

The Region contracts out the collection of diverted waste from residential households as well as designated downtown commercial areas. Under the current contract, combined vehicles are used to pick up blue box and green cart materials that are placed at the curbside. Separate vehicles are used to collect yard waste and bulk waste. These vehicles along with their estimated replacement value are included in the service level calculation table. These vehicles are typically kept in service for 8 years.

In addition, the Region owns a number of waste management vehicles most of which are used to supervise collection and therefore, involved in both waste diversion and disposal. For this reason, the vehicles with a useful life of 7 years or more have been included in the calculation and have been assigned a percentage that approximates the portion that is applicable to waste diversion only.

### **3. Equipment**

The Region of Halton provides containers to all households for curbside and multi-residential collection of blue box materials and organic waste including blue bins, green carts and kitchen catchers for low and medium density units and blue carts, blue bags, green totes and kitchen catchers for apartment units. The historical service level for these items has been calculated and included in the service level cap.

### **4. Capital Program**

The Region's 10 year capital program for Waste Diversion includes:

- The construction of a transfer station and organics processing facility at the Halton Waste Management Site. This facility would process all Halton's green cart waste eliminating the need to contract this service to the City of Hamilton. This facility would also replace the current transfer station at the Halton Waste Management site which accepts both green cart and blue box material. The transfer station component of the new facility would be designed to offload both blue box and green cart material. The transfer station and organics processing facility would be sized to accommodate future growth. While this project is planned to meet the needs of growth, a portion represents replacement of existing facilities. For this reason, a 68% attribution to 'benefit to existing development' has been made based on the assumed growth versus the current population. It is assumed that both components will be sized to meet the needs of growth to 2041.
- An expansion to the Region's yard waste composting facility at the Halton Waste Management Site. This facility will need to be expanded in order to provide capacity to service growth. As the existing facility is adequate to accommodate current demand, no deduction has been made for benefit to existing development.
- An allowance for contracted vehicles used for the collection of blue box, green cart and other diverted materials. As noted earlier, the Region contracts with private operators for the collection of waste. The contract price reflects, in part, the capital cost of vehicles purchased by the private operator. The vehicles required for diversion have been included in the service level calculation. As the Region continues to grow, more vehicles will be required and this cost will be reflected in the contract prices. The capital cost was calculated by multiplying the number of waste diversion vehicles per capita in 2016 by the forecast population increase for the next 10 years to arrive at an estimate of the

number of vehicles required. This estimate was multiplied by the average cost per waste collection vehicle.

In addition, the capital program includes the cost of undertaking feasibility and/or benefits studies for the transfer station and organics processing facility and the expansion to the yard waste composting facility.

**Halton Region  
2017 Development Charges Background Study  
Average Level of Service**

**Table F-27**

Service: Waste Diversion  
Type of Capital Asset: Facility Space

Description	Quantity - Sq. Ft. of Floor Space											2017 Value (\$/sq.ft.)	2017 Value incl. Land, Site Works, etc (\$/sq.ft.)	Diversion %	Weighted Average of Diversion	
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017 Value (\$/sq.ft.)				Sq Ft.	Cost
5400 Regional Rd 25, Milton	15,057	15,057	15,057	15,057	15,057	15,057	15,057	15,057	15,057	15,057	15,057	103	\$ 168	150,569	\$ 25,295,574	
Leterink Transfer Station - 55 Armstrong Ave, Halton Hills	8,411	8,411	8,411	8,411	8,411	8,411	8,411	8,411	8,411	8,411	8,411	132	177	84,110	\$ 14,887,470	
Norjohn Transfer Station - 5030 Mainway, Burlington <sup>1</sup>	53,128	53,128	53,128	53,128	53,128	53,128	53,128	53,128	53,128	53,128	46,431	100	167	524,583	\$ 87,605,393	
Centralized Compost Facility (Hamilton) <sup>2</sup>	376	30,652	41,722	43,984	42,605	43,375	46,215	46,913	47,051	46,821	100	100	167			
<b>Total</b>	<b>76,972</b>	<b>107,248</b>	<b>118,318</b>	<b>120,580</b>	<b>119,201</b>	<b>119,971</b>	<b>122,811</b>	<b>123,509</b>	<b>123,647</b>	<b>116,721</b>			<b>\$ 168</b>	<b>759,282</b>	<b>\$ 127,788,437</b>	

Population	451,910	464,593	481,083	491,953	501,649	508,040	516,987	524,099	531,712	536,708
Per Capita Service Level	0.1703	0.2308	0.2459	0.2451	0.2376	0.2361	0.2376	0.2357	0.2325	0.2175

2007-2016	
Quantity per capita	0.2289
Quality (\$/sq.ft.)	\$ 168.31
Combined Quantity/Quality Level (\$/capita)	\$ 38.53

DC Amount (before deductions)	
Forecast Population (net)	133,186
\$ per Capita	\$ -38.53
Eligible Amount	\$ 5,131,103

<sup>1</sup> Norjohn floor space excludes floor area attributed to waste disposal.  
<sup>2</sup> Centralized Compost Facility is 115,000 sq.ft. in area. Area included is based on Halton's utilization of the facility.

Halton Region  
2017 Development Charges Background Study  
Average Level of Service

Table F-28

Service: Type of Capital Asset	Waste Diversion Vehicles	Quantity - Number of Vehicles										2017 Value (\$/vehicle)	Diversion %	Weighted Average Cost		
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016			Vehicles	Cost	
<b>Waste Management - Located at Landfill</b>																
3/4 Ton 4x4 P/U Crew Cab	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.60	\$ 25,980
1 Ton 4x4 Ext Cab P/U Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.50	\$ 21,500
3/4 Ton Ext Cab 4x4 P/U	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.60	\$ 24,180	
Street Flushers	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.70	\$ 170,100	
<b>Waste Management - Recycling</b>																
1/2 Ton Ext Cab 4x4 P/U	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	7.50	\$ 225,000
1/2 Ton Ext Cab 4x4 P/U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.75	\$ 110,625
1/2 Ton 4x4 Ext Cab P/U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.75	\$ 98,625
1/2 Ton Ext Cab 4x4 P/U	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	7.50	\$ 197,250	
1/2 Ton Pick Up Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.75	\$ 16,500
F150 Ext Cab 4x4 P/U Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.00	\$ 102,000
Ford Escape Hybrid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.00	\$ 74,000
Escape 4x4	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	9.00	\$ 234,000	
Haul-All	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	2.50	\$ 344,450	
1/2 Ton Pick Up Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.00	\$ 53,000
<b>Miller Contract Trucks</b>																
Recyclable Material (side-loader with 4-5 tonne capacity)	18.0														18.00	\$ 4,849,200
Combined Recyclable and Organic Waste (top side loading with no capaction, average weight 2.8 tonnes)		40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	320.00	\$ 86,208,000
Split Rearpackers (average load 5.8 tonnes)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	27.00	\$ 7,273,800	
Yard Waste (side-loading vehicles 5 tonnes)	2.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	50.00	\$ 13,470,000	
Metal Items and Appliances (standard cube van with tailgate lifting mechanism)	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	13.00	\$ 483,600	
<b>Total</b>	<b>24</b>	<b>50</b>	<b>50</b>	<b>49</b>	<b>49</b>	<b>51</b>	<b>51</b>	<b>51</b>	<b>51</b>	<b>52</b>	<b>43</b>	<b>\$ 241,410</b>	<b>472</b>	<b>\$ 113,981,810</b>		

Population	451,910	464,593	481,083	491,953	501,649	508,040	516,987	524,089	531,712	536,708
Per Capita Service Level	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

10 Year Average	2007-2016
Quantity per capita	0.0001
Quality (\$/vehicle)	\$ 241,410
Combined Quantity/Quality Level (\$/capita)	\$ 24.14

DC Amount (before deductions)	
Forecast Population (net)	133,188
\$ per Capita	\$ 24.14
Eligible Amount	\$ 3,215,294

Halton Region  
2017 Development Charges Background Study  
Average Level of Service

Table F-29

Service: Type of Capital Asset	Waste Diversion Equipment	Quantity - Items										2017 Value (\$/item)	Weighted Average Item	Cost			
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016						
Blue Bins (16 gallon)	138,624	143,942	147,267	150,067	152,475	155,317	-	-	-	-	-	-	-	5.85	887,692	\$ 5,197,049	
Blue Bins (22 gallon)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.18	643,779	\$ 3,980,720
Blue Carts (Apartments) (6 gallon)	-	-	-	880	880	880	880	880	880	880	880	880	880	4.09	6,160	\$ 25,180	
Blue Carts (Apartments) (95 gallon)	26,947	26,947	27,463	28,022	28,513	29,534	30,133	31,402	32,661	34,774	36,887	39,000	41,113	53.39	296,397	\$ 15,825,370	
Blue Bags	26,947	26,947	27,463	28,022	28,513	29,534	30,133	31,402	32,661	34,774	36,887	39,000	41,113	1.00	296,397	\$ 296,397	
Blue Wheeled Carts (Comm. & BJA)	-	-	-	-	-	-	-	-	-	-	-	-	-	66.11	3,000	\$ 198,315	
Green Carts	138,624	143,942	147,267	150,067	152,475	155,317	157,911	160,217	161,707	163,945	166,183	168,421	170,659	16.27	1,531,471	\$ 24,920,103	
Kitchen Catchers	165,571	170,889	174,730	178,089	180,988	184,851	188,044	191,619	194,368	197,117	200,866	203,615	206,364	4.07	1,827,868	\$ 7,435,768	
Green Totes (Apartments) (95 gallon)	26,947	26,947	27,463	28,022	28,513	29,534	30,133	31,402	32,661	34,774	36,887	39,000	41,113	41.70	296,397	\$ 12,358,860	
Green Cart Bag Liners	-	-	147,267	-	-	-	-	-	-	-	-	-	-	0.53	147,267	\$ 78,316	
Black Wheeled Carts (Comm. & BJA)	-	-	-	-	-	-	-	-	-	-	-	-	-	66.11	9,000	\$ 594,945	
<b>Total</b>	<b>523,660</b>	<b>539,614</b>	<b>698,920</b>	<b>563,169</b>	<b>572,357</b>	<b>584,967</b>	<b>595,145</b>	<b>607,139</b>	<b>616,645</b>	<b>643,812</b>	<b>\$ 11.93</b>	<b>\$ 70,911,026</b>					
Population	451,910	464,593	481,083	491,953	501,849	508,040	516,987	524,099	531,742	536,708							
Per Capita Service Level	1.1588	1.1615	1.4528	1.1448	1.1410	1.1514	1.1512	1.1584	1.1587	1.1596							
10 Year Average		2007-2016															
Quantity per capita		1,1879															
Quality (\$/item)		\$ 11.93															
Combined Quantity/Quality Level (\$/capita)		\$ 14.17															
DC Amount (before deductions)		133,188															
\$ per Capita		\$ 14.17															
Eligible Amount		\$ 1,887,016															



**INFRASTRUCTURE COSTS COVERED IN THE DC CALCULATION  
Halton Region**

**Table F-30**

**SERVICE: Waste Diversion**

Increased Service Needs Attributable to Anticipated Development 2017-2026	Timing	Diversion %	Gross Capital Cost Est.	Benefit to Existing Development/ U.E.C.	Eligible Increase in Need	Post Period Benefit	Less:		Less: Other (e.g. 10% Statutory Deduction)	Potential DC Recoverable Cost				
							Grants, Subsidies & Other Contributions Attrib. to New Development	Sub Total		Net Costs Benefiting New Development	Residential Share 95%	Non-Residential Share 5%		
<b>Cost to be Incurred During Term of Proposed By-law</b>														
Transfer Station - Organics - Study	2017	100%	100,000	25,000	75,000			7,500		67,500	64,125	3,375		
Yard Waste Composting Facility Capacity - Study	2017	100%	50,000		50,000			5,000		45,000	42,750	2,250		
Yard Waste Composting Facility Expansion - Construction	2018	100%	300,000		300,000	195,652		10,435		93,913	89,217	4,696		
Transfer Station - Organics - Construction	2019	100%	7,100,000	4,816,173	2,283,827	1,540,289		74,354		669,184	635,725	33,459		
Provision for additional vehicles	2017-2021	100%	1,144,950		1,144,950			114,495		1,030,455	978,932	51,523		
<b>Cost to be Incurred Post By-law Term (i.e. beyond 2021)</b>														
Provision for additional vehicles	2022-2026	100%	1,144,950		1,144,950			114,495		1,030,455	978,932	51,523		
<b>Total Estimated Capital Cost</b>			<b>\$ 9,839,900</b>	<b>\$ 4,841,173</b>	<b>\$ 4,998,727</b>	<b>\$ 1,735,941</b>	<b>\$ -</b>	<b>\$ 3,262,785</b>	<b>\$ 326,279</b>	<b>\$ 2,936,507</b>	<b>\$ 2,789,682</b>	<b>\$ 146,825</b>		

Level of Service Summary:

Facilities	\$ 5,131,103
Vehicles	3,215,294
Carts & Containers	1,887,016
<b>Total</b>	<b>\$ 10,233,413</b>

Table F-31

Halton Region  
2017 Development Charges Study  
Cash Flow Calculations - Waste Diversion - Residential

Year	DC Reserve Fund Opening Balance	Development Related Expenditures Nominal Project Cost	Development Related Expenditures Project Cost Inflated at 2%	Single Detached Unit Equivalents (Building Permits)	\$56.43 SDE per Year Inflated at 2% Starting in 2018	Anticipated Revenues	Annual Surplus/ (Deficit)	3.5% / 3.5% RF Interest Earnings / (Cost)	DC Reserve Fund Closing Balance after Interest
2017	\$ -	\$(302,661)	\$(302,661)	6,272	\$ 56.43	\$ 353,964	\$ 51,303	\$ 1,796	\$ 53,098
2018	53,098	(285,004)	(290,704)	6,272	57.56	361,044	123,438	4,320	127,758
2019	127,758	(831,511)	(865,104)	6,272	58.71	368,264	(369,081)	(12,918)	(381,999)
2020	(381,999)	(195,786)	(207,770)	6,272	59.89	375,630	(214,140)	(7,495)	(221,635)
2021	(221,635)	(195,786)	(211,926)	4,428	61.09	270,480	(163,080)	(5,708)	(168,788)
2022	(168,788)	(195,786)	(216,164)	4,027	62.31	250,914	(134,038)	(4,691)	(138,729)
2023	(138,729)	(195,786)	(220,487)	4,027	63.55	255,933	(103,284)	(3,615)	(106,898)
2024	(106,898)	(195,786)	(224,897)	4,027	64.83	261,051	(70,745)	(2,476)	(73,221)
2025	(73,221)	(195,786)	(229,395)	4,027	66.12	266,272	(36,344)	(1,272)	(37,616)
2026	(37,616)	(195,786)	(233,983)	4,027	67.44	271,599	0	0	0
<b>Total</b>		<b>\$ (2,789,682)</b>	<b>\$ (3,003,092)</b>	<b>49,651</b>		<b>\$ 3,035,151</b>		<b>\$ (32,059)</b>	

Note: Numbers may not add due to rounding

**Table F-32**  
**Halton Region**  
**2017 Development Charges Study**  
**Cash Flow Calculation - Waste Diversion - Non-Residential**

Year	DC Reserve Fund Opening Balance	Development Related Expenditures Nominal Project Cost	Development Related Expenditures Project Cost Inflated at 2%	Sq. Ft. of Gross Floor Area	\$0.003 per Sq. Ft. per Year Inflated at 2% Starting in 2018	Anticipated Revenues	Annual Surplus/ (Deficit)	3.5% / 3.5% RF Interest Earnings / (Cost)	DC Reserve Fund Closing Balance after Interest
2017	\$ -	\$ (15,930)	\$ (15,930)	4,587,156	0.003	\$ 15,389	\$ (540)	\$ (19)	\$ (559)
2018	(559)	(15,000)	(15,300)	4,587,156	0.003	15,697	(162)	(6)	(168)
2019	(168)	(43,764)	(45,532)	4,587,156	0.003	16,011	(29,689)	(1,039)	(30,728)
2020	(30,728)	(10,305)	(10,935)	4,587,156	0.004	16,331	(25,332)	(887)	(26,218)
2021	(26,218)	(10,305)	(11,154)	4,587,156	0.004	16,658	(20,714)	(725)	(21,439)
2022	(21,439)	(10,305)	(11,377)	4,088,727	0.004	15,145	(17,671)	(619)	(18,290)
2023	(18,290)	(10,305)	(11,605)	4,308,393	0.004	16,278	(13,617)	(477)	(14,093)
2024	(14,093)	(10,305)	(11,837)	4,308,393	0.004	16,603	(9,327)	(326)	(9,653)
2025	(9,653)	(10,305)	(12,073)	4,308,393	0.004	16,935	(4,791)	(168)	(4,959)
2026	(4,959)	(10,305)	(12,315)	4,308,393	0.004	17,274	0	0	0
<b>Total</b>		<b>\$ (146,825)</b>	<b>\$ (158,057)</b>	<b>44,258,080</b>		<b>\$ 162,322</b>		<b>\$ (4,265)</b>	

Note: Numbers may not add due to rounding



## **F.8 CALCULATION ASSUMPTIONS AND LEVEL OF SERVICE FOR WATERFRONT PARKS**



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## F.8 WATERFRONT PARKS

The Halton Region Official Plan identifies 3 Regional Waterfront Parks: Bronte Harbour, Burlington Beach, and Burloak Park. These 3 locations provide approximately 45 acres of developed parks along the waterfront in Burlington and Oakville. All of these parks have been developed to some degree including amenities such as washrooms, playground structures, trails, pavilions etc.

Development of waterfront parks includes additional expenses not incurred at other municipal parks particularly related to shoreline protection including retaining walls, breakwalls and other barriers such as groynes.

The Region has expended funds over a number of years to develop waterfront parks. For example, the Region:

- contributed \$2.5 million to the construction of the Spencer Smith Park Pier;
- invested over \$6.2 million for infrastructure, studies and pavilions at Burlington Beach prior to 2008;
- expended over \$4 million for the development of Burloak Park between 2000 and 2011.

In assigning an average cost per acre for the development of the waterfront parks, consideration was given to a range of factors:

1. Experience with the initial development costs of recently acquired properties in the Burlington Beach Area indicates an average cost of \$1.8 million per acre for site restoration (including demolition of buildings and grading/seeding of land);
2. The Town of Oakville's 2013 DC study valued developed parks at an average cost of approximately \$400,000 per acre in 2016 \$. This amount reflected the cost of basic park development excluding amenities such as trails, play structures, playing fields etc.;
3. As noted above, waterfront park development involves a number of expenditures that are unique including shoreline protection work, installation of groynes in the case of Burloak Park, and the construction of a breakwall at Bronte Harbour.

Based on the foregoing, an average park development cost per acre of \$600,000 has been assumed in calculating the average quality level of service.

The average level of service provided over the previous 10 years has been an investment by the Region of approximately \$53.16 per capita.

The buildings at Bronte Harbour have been valued separately. Within the 3 waterfront parks, Halton provides approximately 37,000 sq.ft. of floor space for buildings such as the Bronte Harbour Banquet Facility, public washrooms, offices, etc. Other amenities considered in the service level calculation include a gazebo and playground at Burloak Park and contributions to the wharf at Burlington Beach Park. The 10-year average level of service provided by the Region was an average investment of \$20.79 per capita.

The capital program for park development over the next 10 years includes development at all 3 Regional Waterfront Parks: Bronte, Burloak, and Burlington Beach.

Development of Bronte Waterfront Park has been identified and is planned to complete the Central Area Master Plan. This includes development of the performance plaza, sail feature, and irrigation system. These costs will be shared 50/50 with the Town, thus \$274,500 has been included in the DC calculations (after the 10% mandatory deduction).

Development planned for Burloak Waterfront Park includes a water play area, a gateway plaza area and demonstration garden. The cost totals \$1.5 million net of any grants. Oakville and Burlington will contribute towards the development of this park and these amounts have been deducted in calculating the DC recoverable share.

The Region of Halton has approved the 2015 Burlington Beach Regional Waterfront Park Master Plan. The plan calls for the development of 6 distinct areas of the park programmed to function as a continuous and complementary waterfront park, as follows:

Area 1: Spencer Smith Park;

Area 2: The Living Shoreline;

Area 3: The Strand;

Area 4: The Wind Beach;

Area 5: The Commons; and

Area 6: The Skyway and Federal Pier.

In order to facilitate the development of these areas, it will be necessary to relocate the Hydro Towers situated on these lands. The cost of this work has been included in the capital program.

Implementation of the plan is expected to take place incrementally, over a number of years. Timing will be dependant, in part, on the opportunities for acquisition of the remaining privately



held properties within Area 5. Further, Area 6 is located largely on lands under the control of the Government of Canada and will require Federal approval prior to proceeding. It is planned the development of Areas 1, 2, 3, 4, and 6 will occur between 2016 and 2020 with development of the remaining area, The Commons, planned for 2026.

From 2017-2026, it is anticipated that the Region will expend \$36 million on development of this park including \$12 million to relocate the Hydro Towers. A 25% deduction for benefit to existing development has been made for the park development costs scheduled for the 2017-2020 period and a 50% deduction has been applied to the hydro tower relocation costs.

For the initial development planned for the Spencer Smith Park which involves a promenade and shade structure, the cost will be offset by \$625,000 in subsidy from the Canada 150 Community Infrastructure Fund.

The net DC recoverable costs have been allocated 95% to residential development and 5% to non-residential development, consistent with the approach taken for waterfront park development.

**Halton Region  
2017 Development Charges Background Study  
Average Level of Service** Table F-33

Service: Type of Capital Asset	Description	Quantity - No. of Developed Parkland Acres										2017 Value (\$/acre)	Weighted Average		
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		# of Acres	Cost	
Waterfront Parks Parkland Development	Burlington Beach Waterfront Park	0.44	0.44	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.87	0.99	\$ 600,000	6	\$ 3,400,560
	Burlington Waterfront Park	13.15	13.15	13.15	13.15	13.15	13.15	13.15	13.15	14.06	14.06	14.06	\$ 600,000	134	\$ 80,546,400
	Bronte Harbour	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	\$ 600,000	303	\$ 181,680,000
<b>Total</b>		<b>43.88</b>	<b>43.88</b>	<b>43.92</b>	<b>43.92</b>	<b>43.92</b>	<b>43.92</b>	<b>43.92</b>	<b>43.92</b>	<b>43.92</b>	<b>45.21</b>	<b>45.33</b>	<b>\$ 600,000</b>	<b>443</b>	<b>\$ 265,626,960</b>
Population		451,910										516,987	536,708		
Service Level Per 1,000 persons		0.097										0.086	0.084		
10 Year Average		2007-2016													
Quantity per 1,000 persons		0.0886													
Quality (\$/Acre)		\$ 600,000													
Combined Quantity/Quality Level (\$/1,000 persons)		\$ 53,160													
Combined Quantity/Quality Level (\$/capita)		\$ 53.16													
DC Amount (before deductions)		133,188													
\$ per Capita		\$ 53.16													
Eligible Amount		\$ 7,080,274													

**Halton Region  
2017 Development Charges Background Study  
Average Level of Service** Table F-34

Description	Quantity - Sq.ft./ item										2017 Value Incl. Site Works (\$/sq.ft./item)	Weighted Average			
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		Sq.ft. of Amenities	Cost		
Bronte Harbour															
Banquet Facility	33,260	32,460	32,460	32,460	32,460	32,460	32,460	32,460	32,460	32,460	32,460	\$	226	325,400	\$ 73,540,400
Public Washroom and Boaters Shower	3,810	3,810	3,810	3,810	3,810	3,810	3,810	3,810	3,810	3,810	3,810	\$	46	38,100	\$ 1,752,600
Marina Offices	667	667	667	667	667	667	667	667	667	667	667	\$	263	6,670	\$ 1,754,210
Burlington Beach															
Contribution to Wharf	1	1	1	1	1	1	1	1	1	1	1	\$	2,500,000	10	\$ 25,000,000
Burloak Park															
Gazebo	1	1	1	1	1	1	1	1	1	1	1	\$	75,000	10	\$ 750,000
Playground	1	1	1	1	1	1	1	1	1	1	1	\$	100,000	10	\$ 1,000,000
<b>Total</b>	<b>37,740</b>	<b>36,940</b>	<b>36,940</b>	<b>36,940</b>	<b>36,940</b>	<b>36,940</b>	<b>36,940</b>	<b>36,940</b>	<b>36,940</b>	<b>36,940</b>	<b>36,940</b>	<b>\$</b>	<b>280,38</b>	<b>370,200</b>	<b>\$ 103,797,210</b>
Population	451,910	464,593	481,083	491,953	501,649	508,040	516,987	524,099	531,712	536,708					
Service Level Per 1,000 persons	83.512	79.510	76.785	75.088	73.637	72.711	71.452	70.483	69.474	68.827					
10 Year Average	2007-2016														
Quantity per 1,000 persons	74.1480														
Quality (\$/sq.ft./item)	\$ 280														
Combined Quantity/Quality Level (\$/1,000 persons)	\$ 20,790														
Combined Quantity/Quality Level (\$/capita)	\$ 20.79														
DC Amount (before deductions)															
Forecast Population (net)	133,188														
\$ per Capita	\$ 20.79														
Eligible Amount	\$ 2,768,979														

Table F-35

**INFRASTRUCTURE COSTS COVERED IN THE DC CALCULATION**  
Halton Region

**SERVICE: Waterfront Parks**

Increased Service Needs Attributable to Anticipated Development 2017-2026	Timing	2017 \$ Gross Capital Cost Est.	Benefit to Existing Development/ U.E.C.	Eligible Increase in Need	Post Period Benefit	Less: Grants, Subsidies & Other Contributions Attrib. to New Development	Sub Total	Less: Other (e.g. 10% Statutory Deduction)	Potential DC Recoverable Cost			
									Net Costs Benefiting New Development	Residential Share 95%	Non-Residential Share 5%	
<b>Cost to be Incurred During Term of Proposed By-law</b>												
Burlington Waterfront Park Development	2017	\$ 2,863,261		\$ 2,863,261		\$ 1,363,261	\$ 1,500,000	\$ 150,000	\$ 1,350,000	\$ 1,282,500	\$ 67,500	
Bronte Waterfront Park	2017	610,000		610,000		305,000	305,000	30,500	274,500	260,775	13,725	
Burlington Beach - Spencer Smith Park	2017-2020	3,218,000	804,500	2,413,500		652,054	1,761,446	176,145	1,585,301	1,506,036	79,265	
Burlington Beach - Living Shoreline	2017-2020	2,768,000	692,000	2,076,000			2,076,000	207,600	1,868,400	1,774,980	93,420	
Burlington Beach - The Strand	2017-2020	4,403,000	1,100,750	3,302,250		2,755,443	546,807	54,681	492,126	467,520	24,606	
Burlington Beach - Wind Beach	2017-2020	1,221,000	305,250	915,750			915,750	91,575	824,175	782,966	41,209	
Burlington Beach - The Skyway and Federal Pier	2017-2020	2,999,000	749,750	2,249,250			2,249,250	224,925	2,024,325	1,923,109	101,216	
Burlington Beach - Relocate Hydro Towers	2017-2020	12,204,000	6,102,000	6,102,000			-	-	-	-	-	
Burlington Waterfront Park Development	2019	550,000		550,000			495,000	49,500	445,500	423,225	22,275	
<b>Cost to be Incurred Post By-law Term (i.e. beyond 2021)</b>												
Burlington Beach - The Commons	2026	9,249,000		9,249,000			-	-	-	-	-	
<b>Total Estimated Capital Cost</b>		<b>\$ 40,085,261</b>	<b>\$ 9,754,250</b>	<b>\$ 30,331,011</b>	<b>\$ 18,161,443</b>	<b>\$ 2,320,315</b>	<b>\$ 9,849,253</b>	<b>\$ 984,925</b>	<b>\$ 8,864,328</b>	<b>\$ 8,421,111</b>	<b>\$ 443,216</b>	

Eligible Amount  
\$ 7,080,274  
2,768,979  
\$ 9,849,253

Level of Service Summary  
Development  
Amenities  
Total

Table F-36

Halton Region  
2017 Development Charges Study  
Cash Flow Calculations - Parks - Residential

Year	DC Reserve Fund Opening Balance	Development Related Expenditures Nominal Project Cost	Development Related Expenditures Project Cost Inflated at 2%	Single Detached Unit Equivalents (Building Permits)	\$176.30 SDE per Year Inflated at 2% Starting in 2018	Anticipated Revenues	Annual Surplus/ (Deficit)	3.5% / 3.5% RF Interest Earnings / (Cost)	DC Reserve Fund Closing Balance after Interest
2017	\$ -	\$ (3,156,928)	\$ (3,156,928)	6,272	\$ 176.30	\$ 1,105,791	\$ (2,051,137)	\$ (71,790)	\$ (2,122,927)
2018	(2,122,927)	(1,613,653)	(1,645,926)	6,272	179.83	1,127,907	(2,640,946)	(92,433)	(2,733,379)
2019	(2,733,379)	(2,036,878)	(2,119,168)	6,272	183.42	1,150,465	(3,702,081)	(129,573)	(3,831,654)
2020	(3,831,654)	(1,613,653)	(1,712,421)	6,272	187.09	1,173,474	(4,370,601)	(152,971)	(4,523,572)
2021	(4,523,572)	-	-	4,428	190.83	844,985	(3,678,588)	(128,751)	(3,807,338)
2022	(3,807,338)	-	-	4,027	194.65	783,861	(3,023,477)	(105,822)	(3,129,298)
2023	(3,129,298)	-	-	4,027	198.54	799,539	(2,329,760)	(81,542)	(2,411,301)
2024	(2,411,301)	-	-	4,027	202.52	815,527	(1,595,774)	(55,852)	(1,651,626)
2025	(1,651,626)	-	-	4,027	206.57	831,840	(819,787)	(28,693)	(848,479)
2026	(848,479)	-	-	4,027	210.70	848,479	0	0	0
<b>Total</b>		<b>\$ (8,421,111)</b>	<b>\$ (8,634,443)</b>	<b>49,651</b>		<b>\$ 9,481,868</b>		<b>\$ (847,425)</b>	

Note: Numbers may not add due to rounding

**Table F-37**  
**Halton Region**  
**2017 Development Charges Study**  
**Cash Flow Calculation - Parks - Non-Residential**

Year	DC Reserve Fund Opening Balance	Development Related Expenditures Nominal Project Cost	Development Related Expenditures Project Cost Inflated at 2%	Sq. Ft. of Gross Floor Area	\$0.010 per Sq. Ft. per Year Inflated at 2% Starting in 2018	Anticipated Revenues	Annual Surplus/ (Deficit)	3.5% / 3.5% RF Interest Earnings / (Cost)	DC Reserve Fund Closing Balance after Interest
2017	\$ -	\$ (166,154)	\$ (166,154)	4,587,156	0.010	\$ 48,077	\$ (118,077)	\$ (4,133)	\$ (122,210)
2018	(122,210)	(84,929)	(86,628)	4,587,156	0.011	49,038	(159,800)	(5,593)	(165,393)
2019	(165,393)	(107,204)	(111,535)	4,587,156	0.011	50,019	(226,909)	(7,942)	(234,851)
2020	(234,851)	(84,929)	(90,127)	4,587,156	0.011	51,019	(273,959)	(9,589)	(283,547)
2021	(283,547)	-	-	4,587,156	0.011	52,040	(231,508)	(8,103)	(239,611)
2022	(239,611)	-	-	4,088,727	0.012	47,313	(192,298)	(6,730)	(199,028)
2023	(199,028)	-	-	4,308,393	0.012	50,852	(148,176)	(5,186)	(153,362)
2024	(153,362)	-	-	4,308,393	0.012	51,869	(101,493)	(3,552)	(105,046)
2025	(105,046)	-	-	4,308,393	0.012	52,906	(52,139)	(1,825)	(53,964)
2026	(53,964)	-	-	4,308,393	0.013	53,964	0	0	0
<b>Total</b>		<b>\$ (443,216)</b>	<b>\$ (454,444)</b>	<b>44,258,080</b>		<b>\$ 507,097</b>		<b>\$ (52,653)</b>	

Note: Numbers may not add due to rounding

**APPENDIX G**  
**LOCAL SERVICE GUIDELINES**

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# 1. LOCAL SERVICE POLICY

## 1.1. Water and Wastewater

The following guideline sets out in general the size of water and wastewater infrastructure that constitutes a DC project. Other infrastructure will be treated as a local service, which is the direct responsibility of a landowner under a development agreement.

### 1.1.1. Watermains

- Internal to the development (servicing of vacant lands)
  - Greater than 400 mm:  
DC main
  - 400 mm or less:  
Developer responsibility within subdivision agreement
  
- External to the development (mains on existing roads but requiring a local connection)
  - 400 mm or greater:  
DC main
  - Less than 400 mm:  
Developer responsibility within subdivision agreement

An exception to these policies is feeder mains required to connect from a well or reservoir to the network. All feeder mains are considered to be DC projects regardless of the size of the main.

External watermains of any size required for a development to be connected to an existing local main are considered to be the developers' responsibility.

### 1.1.2. Booster Stations and Reservoirs

- All water booster pumping station and reservoir projects are considered to be DC projects.

### 1.1.3. Wastewater Mains

- Internal or external (i.e., local connection) to the development
  - Greater than 450 mm:  
DC main
  - 450 mm or less:  
Developer responsibility within subdivision agreement

### 1.1.4. Lift Stations

- Lift stations internal to a development and fed by mains which qualify for the DC project list are considered to be DC projects. Lift stations fed by mains that do not qualify for the DC project list are the responsibility of the developer.
- Existing lift stations that have to be expanded as part of a new development are the responsibility of the benefiting developer and will be dealt with as part of the subdivision agreement.

The above policy guidelines are general principles by which staff will be guided in considering development applications. However, each application will be considered on its own merits having regard to, among other factors, the nature, type and location of the development and any existing and proposed development in the surrounding area, these policy guidelines, the location and type of services required and their relationship to the proposed development and existing and proposed development in the area, and subsection 59(2) of the DCA.

## 1.2. Roads

The following guideline sets out in general the size of road and related infrastructure that constitutes a DC project versus a local service, which is the direct responsibility of a landowner under a development agreement.

### 1.2.1. Collector Roads

- Collector Roads Internal to Development – Direct developer responsibility under s.59 of the DCA (as a local service)
- Collector Roads External to Development – If local service within the area to which the plan relates, direct developer responsibility under s.59 of the DCA; otherwise,

include in DC calculation to the extent permitted under s.5(1) of the DCA (dependent on local circumstances)

### **1.2.2. Arterial Roads**

- New Arterial Roads and Arterial Road Improvements – Include as part of road costing funded through DCs

### **1.2.3. Traffic Signals and Intersection Improvements**

- New Arterial Roads and Arterial Road Improvements – Include as part of road costing funded through DCs
- Local Streets/Private Entrances/Entrances to Specific Developments – Direct developer responsibility under s.59 of the DCA (as a local service)
- New Minor Arterial/Collector Road Intersections with Regional Roads – Include as part of Regional DC calculation as per Procedures for Development Related Construction on Regional Roads, Major and Minor Intersection Works
- Existing Minor Arterial/Collector Road Intersections with Regional Roads – Include as part of Regional DC calculation as per Procedures for Development Related Construction on Regional Roads, Major and Minor Intersection Works
- Intersection Improvements/Signalization on Other Roads Due to Development Growth Increasing Traffic – Include in DC calculation, based on 10 year standards (excluding private entrance signals), as required under s.5(1) of the DCA

### **1.2.4. Streetlights**

- Streetlights on Regional (Arterial) Roads – Include in Regional DC (based on 10 year standards as per s.5(1) of the DCA), **or**, in exceptional circumstances, may be direct developer responsibility through local service provisions (s.59 of the DCA)

### **1.2.5. Sidewalks/Multi-Use Paths**

- Sidewalks/Multi-Use Paths on Regional (Arterial) Roads – Include in area municipal DC (based on 10 year standards as per s.5(1) of the DCA), **or**, in exceptional circumstances, may be direct developer responsibility through local service provision (s.59 of DCA)

- Other Sidewalks/Multi-Use Paths External to Development (which are a local service related to a plan of subdivision or within the area to which the plan relates) – Direct developer responsibility as a local service provision (under s.59 of DCA)

#### **1.2.6. Bikelanes/Bikepaths**

- Bikelanes Within Road Allowances – Include in DC road costs (Regional and area municipal), consistent with the service standard provisions of the DCA, s.5(1)
- Bikepaths Outside Road Allowances – Include in area municipal DCs consistent with the service standard provisions of the DCA, s.5(1)

#### **1.2.7. Noise Abatement Measures**

- Internal to Development – Direct developer responsibility through local service provisions (s.59 of DCA)
- External to Development – Noise walls required as a result of growth, include in Regional / area municipal DCs

#### **1.2.8. Traffic Control Systems**

- Include in DC calculation appropriate shares, based on 10 year standards, as required under s.5(1) of the DCA

#### **1.2.9. Land Acquisition for Road Allowances**

- Land Acquisition for Arterial Roads – Dedication under the *Planning Act* subdivision provisions (s.51) through development lands; in areas with limited or no development, include in Regional DC (to the extent eligible)
- Land Acquisition for Major Intersections and Grade Separations (beyond normal dedication requirements) – Include in the DC to the extent eligible.

The above policy guidelines are general principles by which staff will be guided in considering development applications. However, each application will be considered on its own merits having regard to, among other factors, the nature, type and location of the development and any existing and proposed development in the surrounding area, these policy guidelines, the location and type of services required and their relationship to the proposed development and existing and proposed development in the area, and subsection 59(2) of the DCA.

**APPENDIX H**  
**ASSET MANAGEMENT PLAN AND LONG TERM CAPITAL  
AND OPERATING COST EXAMINATION**

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This appendix presents the examination required under s.s.10(2)(c) of the DCA of the Asset Management Plan (AMP) and long-term capital and operating costs for capital infrastructure required for each service to which the By-law relates.

## 1. Asset Management Plan

As outlined in Section 6.12, the recent changes to the DCA (new clause 10(2)(c.2)) require that the Background Study must include an AMP related to new infrastructure. Subsection 10 (3) of the DCA provides:

The AMP shall,

- (a) deal with all assets whose capital costs are proposed to be funded under the DC by-law;
- (b) demonstrate that all the assets mentioned in clause (a) are financially sustainable over their full life cycle;
- (c) contain any other information that is prescribed; and
- (d) be prepared in the prescribed manner.

It has been the Region's long standing practice to prepare the Region's 10-year budget forecast based on the AMP. The 10 year budget forecast is updated through the annual budget process based on the latest information available including the existing long-term AMP, building condition assessments, results of studies such as master plans, optimization studies etc. For the purpose of the 2017 DC By-law update, the 10-year budget forecast has been extended to 2031 to cover the planning horizon based on the long-term AMP, incorporating the infrastructure identified for the 2017 DC update, and building condition assessments.

The long-term budget forecast (2017-2031) shown in table H-1 (a and b) and H-2 (a and b) has been prepared based on:

- 2017 Budget and Business Plan Forecast
- Master Plans (e.g. W/WW and Transportation, Paramedic Services Master Plan (MO-14-15), Waterfront MasterPlan (LPS54-15 & LPS59-15) and Museum Masterplan (LPS62-14))
- Current AMP
- Asset Conditions (e.g. 2013 Infrastructure Condition Report Card - PW-24-15/FN-39-15/LPS109-15)
- Building Condition Assessments

- Capital Needs Assessments
- Asset Failure Data (e.g. water main breakages)
- Optimization studies (e.g. Annual Transportation Progress Report – PW-19-15)
- Refined costs estimates (e.g. based on detailed design)
- Construction schedules

The forecast also incorporates the following assumptions:

- Growth Assumptions
  - forecasted assessment growth is 1.5% per year to reflect moderate growth
  - water and wastewater customer growth is estimated to be 1.6%, consumption growth is budgeted at -3.5% in 2017 and 0% thereafter
- Provincial Subsidies
  - Subsidy identified for many programs does not keep pace with the increase in cost and demand for service
  - In particular, public health subsidy is expected at 0% increase in the forecast
- Demands for Services particularly in Social Services and Health Services
  - Increased demands are reflected in the 2017 Budget based on a 5% increase in caseloads at the Ontario Works office and demands for other services
- Performance of the Region's Investment Portfolio
  - A continued low interest rate environment will make it challenging to generate the current level of returns
- Growth-related Infrastructure
  - Future Allocation Programs will continue to be subject to an update of the DC by-law and Development Financing Plan
- Future Liabilities
  - Halton Region budgets reserve transfers for Tangible Capital Assets based on anticipated future capital replacement requirements
- Cost Increases
  - The Operating Forecast has been prepared to maintain the tax impact for Regional services at or below inflation based on the following key assumptions:
    - General inflation of 2.0%
    - Interest on reserves of 3.4%
    - Debt financing rate of 5.0%
    - Assessment growth of 1.5% per year



- Provincial subsidies will maintain current proportionate share
- Water customer growth of 1.2% to 1.6%
- Water consumption growth of -3.5% to 0%

Table H-1 illustrates Halton's tax-supported budget and forecast over the next 15 years which has been extended from the 2017 Budget and Business Plan. The Tax forecast to 2031 projects that tax rate increases are close to the rate of inflation, which is consistent with the 10 year tax forecast in the current (2017) and previous budgets.

Table H-2 illustrates Halton's rate-supported budget and forecast over the 15 years which has been extended from the 2017 Budget and Business Plan. Included in this business plan are the impacts of the proposed water and wastewater servicing program to service anticipated growth in the forecast period. The forecast to 2031 projects that the rate increases are in the 4% to 5% range, which is consistent with the 10 year rate forecast in the current (2017) and previous budgets.

Table H-1a

Capital Budget & Forecast Summary of Tax Capital Budget & Financing (\$'000s)															
Gross Cost	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
<b>Program Expenditures</b>															
Transportation	\$ 2,189,963	\$ 70,914	\$ 347,951	\$ 127,113	\$ 148,482	\$ 96,656	\$ 93,658	\$ 165,918	\$ 198,267	\$ 113,314	\$ 151,140	\$ 150,260	\$ 56,825	\$ 123,920	\$ 213,888
Planning	242,872	22,384	28,704	14,412	27,852	11,560	12,260	14,880	13,860	23,350	12,280	12,000	12,390	11,850	11,860
Waste Management	65,254	1,887	1,861	10,575	951	16,789	2,263	640	3,461	1,244	18,956	925	1,321	604	2,148
Asset Management	104,880	6,030	6,053	31,187	5,762	3,764	4,105	3,241	4,335	3,535	7,324	6,204	7,114	5,772	6,460
Information Technology	64,813	3,977	4,150	3,176	3,900	4,481	3,782	4,235	4,531	4,406	5,636	4,918	4,521	3,969	4,702
Paramedic Services	37,465	2,368	2,921	1,698	1,523	1,967	2,398	4,720	3,098	2,293	2,355	2,284	1,408	4,638	1,962
Services for Seniors	9,750	650	650	650	650	650	650	650	650	650	650	650	650	650	650
Financial Planning & Budgets	7,017	305	305	305	814	610	305	305	814	610	305	305	305	814	610
Public Health	3,542	-	513	331	168	345	110	227	110	123	356	188	396	445	108
Children's Services	750	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Police	95,608	10,056	26,023	7,777	4,767	4,166	3,698	4,228	3,927	3,638	5,837	5,992	3,677	4,042	4,077
<b>Total</b>	<b>\$ 2,821,915</b>	<b>\$ 118,621</b>	<b>\$ 419,182</b>	<b>\$ 197,273</b>	<b>\$ 194,919</b>	<b>\$ 141,037</b>	<b>\$ 123,311</b>	<b>\$ 199,094</b>	<b>\$ 233,103</b>	<b>\$ 153,213</b>	<b>\$ 204,869</b>	<b>\$ 183,776</b>	<b>\$ 88,657</b>	<b>\$ 156,754</b>	<b>\$ 246,515</b>
<b>Financing</b>															
Tax Reserves	\$ 1,561,629	\$ 72,101	\$ 221,672	\$ 128,312	\$ 124,274	\$ 91,111	\$ 69,547	\$ 109,115	\$ 124,373	\$ 87,165	\$ 110,619	\$ 91,507	\$ 52,902	\$ 78,038	\$ 110,754
Rate Reserves	13,450	1,090	280	7,021	179	687	474	181	274	382	649	360	561	244	602
Dev't Charges - Resid.	1,225,626	38,515	188,636	61,264	69,937	48,873	52,951	89,400	108,012	65,192	93,181	91,562	34,796	78,029	134,791
Dev't Charges - Non Res.	7,197	551	944	676	529	366	348	398	443	474	420	347	398	443	368
External Rcvry	6,363	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debtentures	7,650	-	7,650	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>\$ 2,821,915</b>	<b>\$ 118,621</b>	<b>\$ 419,182</b>	<b>\$ 197,273</b>	<b>\$ 194,919</b>	<b>\$ 141,037</b>	<b>\$ 123,311</b>	<b>\$ 199,094</b>	<b>\$ 233,103</b>	<b>\$ 153,213</b>	<b>\$ 204,869</b>	<b>\$ 183,776</b>	<b>\$ 88,657</b>	<b>\$ 156,754</b>	<b>\$ 246,515</b>

Table H-1b

Operating Budget Forecast (2017-2031) For Tax Supported Services															
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
<b>(\$'000s)</b>	<b>Requested Budget</b>	<b>Forecast</b>	<b>Forecast</b>	<b>Forecast</b>	<b>Forecast</b>	<b>Forecast</b>	<b>Forecast</b>	<b>Forecast</b>	<b>Forecast</b>	<b>Forecast</b>	<b>Forecast</b>	<b>Forecast</b>	<b>Forecast</b>	<b>Forecast</b>	<b>Forecast</b>
Operating Program	171,549	179,567	188,331	196,564	205,813	214,867	225,646	236,066	248,023	258,619	271,964	287,372	301,750	316,488	331,270
State of Good Repair	77,970	79,612	80,693	82,820	84,230	86,380	88,760	87,924	88,329	90,134	89,812	87,890	87,522	87,256	87,547
<b>Region:</b>															
Net Expenditures	\$ 249,520	\$ 259,179	\$ 269,024	\$ 279,384	\$ 290,042	\$ 301,247	\$ 312,406	\$ 323,990	\$ 336,352	\$ 348,753	\$ 361,776	\$ 375,262	\$ 389,272	\$ 403,744	\$ 418,817
Tax Impact (after assessment)	1.9%	2.3%	2.3%	2.3%	2.3%	2.3%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
<b>Halton Regional Police Service:</b>															
Net Expenditures	\$ 144,940	\$ 150,359	\$ 156,609	\$ 162,643	\$ 168,845	\$ 175,232	\$ 181,870	\$ 188,775	\$ 195,948	\$ 203,405	\$ 211,141	\$ 219,199	\$ 227,576	\$ 236,383	\$ 245,475
Tax Impact (after assessment)	2.0%	2.2%	2.6%	2.3%	2.3%	2.2%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%
<b>Region Including Police:</b>															
Net Expenditures	\$ 394,460	\$ 409,539	\$ 425,633	\$ 442,027	\$ 458,887	\$ 476,479	\$ 494,276	\$ 512,765	\$ 532,300	\$ 552,158	\$ 572,917	\$ 594,461	\$ 616,847	\$ 640,127	\$ 664,291
Tax Impact (after assessment)	1.9%	2.3%	2.4%	2.3%	2.3%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
<b>Assessment Growth Assumption</b>	<b>1.7%</b>	<b>1.5%</b>	<b>1.5%</b>	<b>1.5%</b>	<b>1.5%</b>	<b>1.5%</b>	<b>1.5%</b>	<b>1.5%</b>	<b>1.5%</b>	<b>1.5%</b>	<b>1.5%</b>	<b>1.5%</b>	<b>1.5%</b>	<b>1.5%</b>	<b>1.5%</b>

Table H-2a

Capital Budget & Forecast Summary of Rate Capital Budget & Financing (\$000s)															
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
<b>Development</b>															
Water	\$ 535,142	\$ 988	\$ 15,038	\$ 57,646	\$ 4,161	\$ 14,915	\$ 143,181	\$ 61,634	\$ 47,591	\$ 82,565	\$ 9,842	\$ 12,345	\$ 10,503	\$ 2,608	\$ 7,119
Wastewater	625,693	4,334	137,353	86,246	80,970	10,199	23,331	15,046	95,157	64,420	3,671	20,445	573	18,160	1,811
Sub-total	1,160,835	5,322	128,983	143,892	85,131	25,114	166,512	76,680	142,748	146,985	13,513	32,790	11,076	20,768	8,930
<b>State-Of-Good-Repair</b>															
Water	989,195	30,713	49,551	39,159	55,426	62,073	86,238	103,322	77,539	74,562	77,364	59,536	89,927	74,028	68,832
Wastewater	865,985	47,880	20,631	61,965	48,568	27,210	63,622	43,507	66,841	77,292	70,863	85,667	57,533	73,151	80,252
Sub-total	1,855,180	78,593	70,182	102,890	87,727	82,636	129,745	144,326	144,380	151,854	148,226	145,203	147,461	147,178	149,084
<b>Total</b>	<b>\$ 3,016,015</b>	<b>\$ 83,915</b>	<b>\$ 199,165</b>	<b>\$ 231,619</b>	<b>\$ 167,767</b>	<b>\$ 150,809</b>	<b>\$ 296,257</b>	<b>\$ 221,006</b>	<b>\$ 287,128</b>	<b>\$ 298,839</b>	<b>\$ 161,739</b>	<b>\$ 177,993</b>	<b>\$ 158,537</b>	<b>\$ 167,946</b>	<b>\$ 158,014</b>
<b>Financing</b>															
Dev't Charges - Res.	\$ 798,891	\$ 2,438	\$ 88,573	\$ 106,870	\$ 85,709	\$ 13,964	\$ 124,558	\$ 60,585	\$ 105,754	\$ 102,958	\$ 10,098	\$ 19,302	\$ 8,198	\$ 20,472	\$ 8,239
Rate Capital Reserves	1,962,426	80,651	82,887	111,128	116,615	132,241	129,755	145,871	144,420	160,335	148,226	154,409	147,461	147,178	149,084
Infstr. Invstmnt Rvl. Fnd.	254,698	826	27,705	37,283	29,295	14,429	41,944	14,550	36,954	35,546	3,415	4,282	2,878	296	691
<b>Total</b>	<b>\$ 3,016,015</b>	<b>\$ 83,915</b>	<b>\$ 199,165</b>	<b>\$ 231,619</b>	<b>\$ 167,767</b>	<b>\$ 150,809</b>	<b>\$ 296,257</b>	<b>\$ 221,006</b>	<b>\$ 287,128</b>	<b>\$ 298,839</b>	<b>\$ 161,739</b>	<b>\$ 177,993</b>	<b>\$ 158,537</b>	<b>\$ 167,946</b>	<b>\$ 158,014</b>

Table H-2b

Operating Budget Forecast (2017-2031) For Rate Supported Services															
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
<b>(\$000's)</b>															
Requested Budget	116,886	120,244	123,916	127,783	131,727	135,496	139,425	143,460	147,629	151,954	159,928	177,202	196,237	216,353	237,617
Operating Program	90,193	98,020	105,848	114,800	123,671	133,332	143,477	154,337	164,510	174,566	182,252	182,297	182,337	182,384	182,432
State of Good Repair	\$ 207,079	\$ 218,264	\$ 229,764	\$ 242,583	\$ 255,398	\$ 268,828	\$ 282,902	\$ 297,797	\$ 312,139	\$ 326,520	\$ 342,181	\$ 359,499	\$ 378,574	\$ 398,737	\$ 420,048
<b>Total Gross Expenditures</b>	<b>(18,388)</b>	<b>(18,480)</b>	<b>(18,600)</b>	<b>(18,727)</b>	<b>(18,854)</b>	<b>(18,986)</b>	<b>(19,120)</b>	<b>(19,258)</b>	<b>(19,392)</b>	<b>(19,530)</b>	<b>(19,530)</b>	<b>(19,530)</b>	<b>(19,530)</b>	<b>(19,530)</b>	<b>(19,530)</b>
<b>Total Revenues</b>	<b>\$ 188,711</b>	<b>\$ 199,784</b>	<b>\$ 211,163</b>	<b>\$ 223,856</b>	<b>\$ 236,544</b>	<b>\$ 249,842</b>	<b>\$ 263,782</b>	<b>\$ 278,539</b>	<b>\$ 292,746</b>	<b>\$ 306,989</b>	<b>\$ 322,650</b>	<b>\$ 339,968</b>	<b>\$ 359,044</b>	<b>\$ 379,207</b>	<b>\$ 400,518</b>
Net Program Impact	1.6%	1.6%	1.5%	1.5%	1.4%	1.4%	1.4%	1.4%	1.2%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Customer Growth	-3.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Consumption Growth	52,913	52,913	52,913	52,913	52,913	52,913	52,913	52,913	52,913	52,913	52,913	52,913	52,913	52,913	52,913
Annual Water Consumption m <sup>3</sup> (000s)	5.1%	5.2%	5.0%	5.3%	5.0%	5.0%	4.9%	4.9%	4.5%	4.3%	4.5%	4.8%	5.0%	5.0%	5.0%
<b>Rate Increase</b>															

## **2. LONG RANGE CAPITAL AND OPERATING COST EXAMINATION**

This appendix presents the examination required under s.s.10(2)(c) of the DCA of the long-term capital and operating costs for capital infrastructure required for each service to which the By-law relates.

### **2.1. Tax-supported Services**

The Region's proposed DC By-law includes charges for the following tax-supported services:

- Roads
- Growth Studies
- Police Services
- Paramedic Services
- Facilities
- Social Housing
- Waste Diversion
- Waterfront Parks

The examination of the growth and non-growth capital program and its impacts on the operating budget have been shown in the section above. The expected tax rate increases are a reflection of the increased budget provisions to support the roads capital program as well as new ambulance stations, comprehensive housing strategy (social housing), expansion of police and Regional facilities.

### **2.2. Rate-supported Services**

The Region's proposed DC By-law includes charges for the following rate-supported services:

- Water
- Wastewater

The impacts of the proposed water and wastewater servicing program to service anticipated growth in the forecast period is demonstrated in section 1 above.

The Region intends to implement the projects set out in this Study through its usual practice of preparing financial plans prior to the release of water and wastewater capacity. These plans will consider the projects (including roads) to be financed under the Plan and may use a combination of various financing techniques. The financial plan may also consider the staging of projects and, therefore, the timing and sequence of development to achieve the fiscal objectives of the Region under the Region's current Official Plan. Accordingly, the timing of some of the projects which are to be DC funded may be modified from what is shown in this Background Study. These modifications may be necessitated by the specifics of the financial plans to be prepared for water, wastewater and road servicing. The infrastructure implementation and financial plan will commence following the passing of the 2017 DC By-law.



**APPENDIX I**  
**PROPOSED DEVELOPMENT CHARGE BY-LAW (2017)**

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## THE REGIONAL MUNICIPALITY OF HALTON BY-LAW NO. <\*>-17

A BY-LAW TO ESTABLISH WATER, WASTEWATER, ROADS AND GENERAL SERVICES DEVELOPMENT CHARGES FOR THE REGIONAL MUNICIPALITY OF HALTON (BUILT BOUNDARY AND GREENFIELD AREAS) AND TO REPEAL BY-LAW NO. 48-12 as amended.

WHEREAS subsection 2(1) of the **Act** provides that the council of a municipality may by by-law impose development charges against land to pay for increased capital costs required because of increased needs for services arising from the development of the land in the area to which the by-law applies;

AND WHEREAS **Council** has before it the **Study**;

AND WHEREAS the **Study** and the proposed development charges by-law were made available to the public, **Council** gave notice to the public and held a meeting open to the public, through its Administration and Finance Committee, pursuant to section 12 of the **Act** on <\*>, and **Council**, through its Administration and Finance Committee, considered the **Study**, received written submissions and heard comments and representations concerning the **Study** from all persons who applied to be heard;

AND WHEREAS at a meeting open to the public held on <\*>, **Council** adopted the recommendations in Report No. FN-<\*>-<\*>, thereby updating its capital budget and forecast where appropriate and thereby indicating that it intends that the increase in the need for services to service the anticipated development will be met;

AND WHEREAS at a meeting open to the public held on <\*>, **Council** adopted the recommendations in Report No. FN-<\*>-<\*> thereby expressing its intention that development-related post <\*> capacity identified in the **Study** shall be paid for by development charges or other similar charges;

AND WHEREAS at a meeting open to the public held on <\*>, **Council** approved the **Study** and adopted the recommendations in Report No. FN-<\*>-<\*> thereby determining that no further public meetings were required under section 12 of the **Act**.

NOW THEREFORE THE COUNCIL OF THE REGIONAL MUNICIPALITY OF HALTON HEREBY ENACTS AS FOLLOWS:

### Definitions

1. THAT in this By-law:

- (a) “**accessory commercial building**” means a building that is naturally or normally incidental to or subordinate in purpose and is exclusively devoted to the principal commercial use on the lot;

- (b) “**accessory dwelling**” means a dwelling unit that is naturally or normally incidental to or subordinate in purpose and is exclusively devoted to a single detached dwelling or a semi-detached dwelling;
- (c) “**Act**” means the *Development Charges Act, 1997*, S.O. 1997, c. 27, as amended or successor legislation;
- (d) “**agricultural development**” means a *bona fide* farming operation, including greenhouses which are not connected to Regional water services or wastewater services, sod farms and farms for the breeding and boarding of horses, and includes, but is not limited to, barns, silos and other ancillary buildings to such agricultural development but excluding any component thereof that is a residential use, a commercial use or a retail development, including but not limited to the breeding, boarding and/or grooming of household pets;
- (e) “**air-supported structure**” means a structure consisting of a pliable membrane that achieves and maintains its shape and support by internal air pressure;
- (f) “**apartment dwelling**” means a building containing more than one dwelling unit where the units are connected by an interior corridor. Despite the foregoing, an apartment dwelling includes those stacked townhouse dwellings and/or back-to-back townhouse dwellings that are developed on a block approved for development at a minimum density of sixty (60) units per net hectare pursuant to plans and drawings approved under section 41 of the *Planning Act*;
- (g) “**back-to-back townhouse dwelling**” means a building containing four or more dwelling units separated vertically by a common wall, including a rear common wall, that do not have rear yards;
- (h) “**bedroom**” means a habitable room of at least seven square metres (7 m<sup>2</sup>), including a den, study, loft, or other similar area, but does not include a living room, dining room, kitchen or other space;
- (i) “**board of education**” means an English-language district school board, an English-language separate district school board, a French-language district school board and a French-language separate district school board;
- (j) “**building**” means a permanent enclosed structure occupying an area greater than ten square metres (10 m<sup>2</sup>) and despite the foregoing includes, but is not limited to:
  - (i) an above-grade storage tank;
  - (ii) an air-supported structure;
  - (iii) an industrial tent;
  - (iv) a roof-like structure over a gas-bar or service station; and
  - (v) an area attached to and/or ancillary to a retail development delineated by one or more walls or part walls, a roof-like structure or any of them;

- (k) **“Built Boundary”** means that part of the Region shown as Built Boundary on Schedule “A” to this By-law and includes that part of the Region shown as Natural Heritage System that is within the Built Boundary area shown on Schedule “A” to this By-law;
- (l) **“charitable dwelling”** means a part of a residential building or a part of the residential portion of a mixed-use building maintained and operated by a corporation approved under the *Long-Term Care Homes Act, 2007* S.O. 2007, c.8, as amended or successor legislation as a home or joint home, an institution, or nursing home for persons requiring residential, specialized or group care and includes a children’s residence under the *Child and Family Services Act, R.S.O. 1990, c. C.11*, as amended or successor legislation, and a home for special care under the *Homes for Special Care Act, R.S.O. 1990, c. H.12*, as amended or successor legislation;
- (m) **“commercial use”** means land, buildings or portions thereof used, designed or intended for a non-residential use that is not retail or industrial, and includes uses which serve academic, medical/dental, and cultural needs that are not located within or part of a retail development;
- (n) **“correctional group home”** means a residential building or the residential portion of a mixed-use building containing a single housekeeping unit supervised on a twenty-four (24) hour basis on site by agency staff on a shift rotation basis, and funded wholly or in part by any government or its agency, or by public subscription or donation, or by any combination thereof, and licensed, approved or supervised by the Ministry of Correctional Services as a detention or correctional facility under any general or special act as amended or successor legislation. A correctional group home may contain an office provided that the office is used only for the operation of the correctional group home in which it is located;
- (o) **“Council”** means the Council of the Region;
- (p) **“development”** means the construction, erection or placing of one or more buildings on land or the making of an addition or alteration to a building that has the effect of increasing the size or usability and/or changing the use thereof and development shall include redevelopment;
- (q) **“dwelling unit”** means either (i) a room or suite of rooms used, designed or intended for residential use by one or more persons living together, in which culinary and sanitary facilities are provided for the exclusive use of such person or persons, or (ii) in the case of a special care/special need dwelling, either (1) a room or suite of rooms used, designed or intended for use by one person with or without exclusive sanitary and/or culinary facilities, or (2) a room or suite of rooms used, designed or intended for use by more than one person with no more than two persons sharing a bedroom and with sanitary facilities directly connected and accessible to each room, or (3) every seven square metres (7 m<sup>2</sup>) of area within a room or suite of rooms used, designed or intended for use by more than one person as a bedroom;

- (r) **“existing industrial building”** shall have the same meaning as the term is defined in the Regulation, and shall not include self-storage facilities and retail warehouses;
- (s) **“garden suite”** means a building containing one (1) dwelling unit where the garden suite is detached from and ancillary to an existing single detached dwelling or semi-detached dwelling on the lands and such building is designed to be portable;
- (t) **“grade”** means the average level of proposed finished ground adjoining a building at all exterior walls;
- (u) **“Greenfield”** means that part of the Region shown as Greenfield on Schedule “A” to this By-law and includes that part of the Region shown as Natural Heritage System that is within the Greenfield area shown on Schedule “A” to this By-law;
- (v) **“group home”** means a residential building or the residential portion of a mixed-use building containing a single housekeeping unit which may or may not be supervised on a twenty-four (24) hour basis on site by agency staff on a shift rotation basis, and funded wholly or in part by any government or its agency, or by public subscription or donation, or by any combination thereof and licensed, approved or supervised by the Province of Ontario for the accommodation of persons under any general or special act as amended or successor legislation;
- (w) **“high density apartment”** means an apartment dwelling of a minimum of four (4) storeys or containing more than one hundred thirty (130) dwelling units per net hectare pursuant to plans and drawings approved under Section 41 of the *Planning Act*;
- (x) **“industrial”** means non-retail uses where the land or buildings, or portions thereof are intended or designed for manufacturing, producing, processing, storing or distribution of something, including research or development in connection with manufacturing, producing or processing something, and the retail sale by a manufacturer, producer or processor of something that they have manufactured, produced or processed, if the retail sales are at the site where the manufacturing, production or processing takes place, as well as office space that is ancillary to the producing, processing, storing or distribution of something at the site, but shall not include self-storage facilities or retail warehouses;
- (y) **“local municipality”** means The Corporation of the City of Burlington, The Corporation of the Town of Oakville, The Corporation of the Town of Milton or The Corporation of the Town of Halton Hills;
- (z) **“lot”** means a lot, block or parcel of land capable of being legally and separately conveyed;
- (aa) **“mezzanine”** means an intermediate floor assembly between the floor and ceiling of any room or storey and includes an interior balcony;
- (bb) **“mixed-use”** means the use, design or intended use of the same land or building for a combination of non-residential development and residential development;

- (cc) “**multiple dwelling**” means a building containing more than one dwelling unit or one or more dwelling units above the first storey of a building containing a non-residential use but a multiple dwelling does not include an accessory dwelling, a single detached dwelling, a semi-detached dwelling, an apartment dwelling, or a special care/special need dwelling;
- (dd) “**Natural Heritage System**” means that part of the Region shown as Natural Heritage System on Schedule “A” to this By-law and areas identified as Natural Heritage System on Schedule “A” to this By-law reflect part of the Region’s Natural Heritage System. The Natural Heritage System is shown on Schedule “A” to this By-law for illustrative purposes only and does not impact the categorization of the land to which the Natural Heritage System overlay is shown as either Rural Area, Greenfield Area or Built Boundary for the purposes of this By-law;
- (ee) “**net hectare**” means the total land area of a lot after conveyance or dedication of public road allowances, park and school sites and other lands for public use;
- (ff) “**non-residential development**” means land, buildings or portions thereof used, designed or intended for a non-residential use;
- (gg) “**non-residential use**” means the use of land, buildings or portions thereof for any purpose other than for a residential use;
- (hh) “**non-retail development**” means any non-residential development which is not a retail development, and shall include offices that are not part of a retail development;
- (ii) “**nursing home**” means a residential building or the residential portion of a mixed-use building licensed as a nursing home by the Province of Ontario;
- (jj) “**owner**” means the owner of land or a person who has made application for an approval for the development of land;
- (kk) “**place of worship**” means any building or part thereof that is exempt from taxation as a place of worship pursuant to paragraph 3 of section 3 of the *Assessment Act*, R.S.O. 1990, c. A.31, as amended or successor legislation;
- (ll) “**Planning Act**” means the *Planning Act*, R.S.O. 1990, c. P.13, as amended or successor legislation;
- (mm) “**redevelopment**” means the construction, erection or placing of one or more buildings on land where all or part of a building on such land has previously been demolished, or changing the use of all or part of a building from a residential use to a non-residential use or from a non-residential use to a residential use, or changing all or part of a building from one type of residential use to another type of residential use or from one type of non-residential use to another type of non-residential use;

- (nn) “**Region**” refers to the geographic area of the Regional Municipality of Halton or the corporation of The Regional Municipality of Halton, as the context requires;
- (oo) “**Regulation**” means O. Reg. 82/98, as amended or successor regulation;
- (pp) “**residential development**” means land, buildings or portions thereof used, designed or intended for residential use and includes but not limited to a single detached dwelling, a semi-detached dwelling, a multiple dwelling, an apartment dwelling, a garden suite, a special care/special need dwelling, an accessory dwelling and the residential portion of a mixed-use building;
- (qq) “**residential use**” means the use of land, buildings or portions thereof as living accommodation for one or more persons;
- (rr) “**restricted flow**” means a restriction on the demand for water or the discharge of wastewater of three and twenty-two one-hundredths cubic metres (3.22 m<sup>3</sup>) per hectare per day imposed on lands described in Schedules “D-1” and “D-2” to this By-law;
- (ss) “**retail**” means lands, buildings, structures or any portions thereof, used, designed or intended to be used for the sale, lease or rental or offer for sale, lease or rental of any manner of goods, commodities, services or entertainment to the public, for consumption or use, whether directly or through membership, but shall exclude commercial, industrial, hotels/motels, as well as offices not located within or as part of a retail development, and self-storage facilities;
- (tt) “**retail development**” means a development of land or buildings which are designed or intended for retail;
- (uu) “**retirement home or lodge**” means a residential building or the residential portion of a mixed-use building which provides accommodation primarily for retired persons or couples where each private bedroom or living accommodation has a separate private bathroom and separate entrance from a common hall but where common facilities for the preparation and consumption of food are provided, and common lounges, recreation rooms and medical care facilities may also be provided;
- (vv) “**roads services**” includes, but is not limited to, road construction, widening, rehabilitation, resurfacing and reconstruction, grade separations, intersections, signalization, signage, bridges, overpasses, interchanges, and noise attenuation barriers;
- (ww) “**Rural Area**” means that part of the Region shown as Rural on Schedule “A” to this By-law and includes that part of the Region shown as Natural Heritage System within the Rural Area shown on Schedule “A” to this By-law;
- (xx) “**seasonal structure**” means a building placed or constructed on land and used, designed or intended for use for a non-residential purpose during a single season of the year where such building is designed to be easily demolished or removed from the land at the end of the season;

- (yy) “**semi-detached dwelling**” means a building divided vertically into two dwelling units each of which has a separate entrance and access to grade;
- (zz) “**services**” means services designated in this By-law or in an agreement under section 44 of the Act;
- (aaa) “**single detached dwelling**” means a completely detached building containing only one (1) dwelling unit;
- (bbb) “**special care/special need dwelling**” means a residential building or portion thereof:
- (i) containing two or more dwelling units which units have a common entrance from street level;
  - (ii) where the occupants have the right to use in common with other occupants halls, stairs, yards, common rooms and accessory buildings;
  - (iii) that is designed to accommodate persons with specific needs, including but not limited to, independent permanent living arrangements; and
  - (iv) where support services, such as meal preparation, grocery shopping, laundry, housekeeping, nursing, respite care and attendant services are provided at various levels;
- and includes, but is not limited to, retirement homes or lodges, charitable dwellings, nursing homes, group homes (including correctional group homes) and hospices;
- (ccc) “**stacked townhouse dwelling**” means a building containing two or more dwelling units where each dwelling unit is separated horizontally from another dwelling unit by a common wall;
- (ddd) “**storey**” means that portion of a building between the surface of a floor and the floor, ceiling or roof immediately above it with the first storey being that with the floor closest to grade and having its ceiling more than six feet (6 ft.) (one and eighty three hundredths metres 1.83 m.) above grade;
- (eee) “**Study**” means the report entitled “2017 Development Charges Background Study for Water, Wastewater, Roads & General Services Development Charges” dated December 14, 2016, and any amendments thereafter or addenda thereto;
- (fff) “**temporary building**” means a building used, designed or intended for use for a non-residential purpose, other than a seasonal structure and a temporary venue, or for a residential purpose, other than a garden suite, that is constructed or placed upon land and which is demolished or removed from the land within three (3) years of building permit issuance, and includes, but is not limited to, sales trailers, office trailers and industrial tents provided they meet the criteria in this definition;

- (ggg) “**temporary venue**” means a building that is placed or constructed on land and is used, designed or intended for use for a particular event where the event has a duration of one (1) week or less and the building is erected immediately before beginning of the event and is demolished or removed from the land immediately following the end of the event;
- (hhh) “**total floor area**”:
- (i) includes the sum of the total areas of the floors in a building whether at, above or below grade, measured:
    - (1) between the exterior faces of the exterior walls of the building;
    - (2) from the centre line of a common wall separating two uses; or
    - (3) from the outside edge of a floor where the outside edge of the floor does not meet an exterior or common wall; and
  - (ii) includes the area of a mezzanine;
  - (iii) excludes those areas used exclusively for parking garages or structures; and
  - (iv) where a building has only one wall or does not have any walls, the total floor area shall be the total of the area directly beneath any roof-like structure of the building;
- (iii) “**wastewater services**” means all facilities, buildings, services and things related to sanitary services, including but not limited to, all works for the collection, transmission, treatment and disposal of sewage; and
- (jjj) “**water services**” means all facilities, buildings, services and things related to the provision of water, including but not limited to, all works for the collection, production, treatment, storage, supply, transmission and distribution of water.

## Rules

2. THAT for the purpose of complying with section 6 of the Act:
- (a) the area to which this By-law applies shall be the area described in section 4 of this By-law;
  - (b) the rules developed under paragraph 9 of subsection 5(1) of the Act for determining if development charges are payable under this By-law in any particular case and for determining the amount of the charges shall be as set forth in sections 7 through 21, inclusive, of this By-law;
  - (c) the rules for exemptions, relief, credits and adjustments shall be as set forth in sections 22 through 32, inclusive, of this By-law;



- (d) the indexing of charges shall be in accordance with section 19 of this By-law;
- (e) there shall be no phasing-in;
- (f) there shall only be a demolition credit in accordance with section 30 of this By-law;
- (g) in addition to the rules set out in the Act and this By-law, the rules for the calculation of the development charge payable under this By-law for the lands described in Schedules “D-1” and “D-2” to this By-law are set out in Schedule “E” to this By-law; and
- (h) except as set out in the Act and this By-law, there are no other credits, exemptions, relief or adjustments in respect of any land in the area to which this By-law applies.

### Schedules

3. THAT the following Schedules to this By-law form an integral part of this By-law:

Schedule “A”	Map of the Regional Municipality of Halton;
Schedule “B-1”	Built Boundary Residential Development Charges;
Schedule “B-2”	Greenfield Residential Development Charges;
Schedule “C-1”	Built Boundary Non-Residential Development Charges;
Schedule “C-2”	Greenfield Non-Residential Development Charges;
Schedule “D-1” and “D-2”	Descriptions of Lands to which Schedule “E” Applies; and
Schedule “E”	Rules Applicable to the Lands described in Schedules “D-1” and “D-2”.

### Lands Affected

- 4. THAT this By-law applies to all lands in the geographic area of the Region, being all of the lands shown on Schedule “A” to this By-law. For greater certainty, the lands described in Schedule “D-1” and “D-2” are lands also shown on Schedule “A”.
- 5. THAT the boundaries on Schedule “A” to this By-law are fixed when they are formed by a combination of such well defined features such as roads, railways, electrical transmission lines, municipal and property boundaries, original township lot or concession lines, streams and topographic features.
- 6. THAT where:
  - (a) the boundaries on Schedule “A” to this By-law are not fixed in accordance with the Section 5 of this By-law, the boundary shall be determined by the Region’s Director of Planning Services and Chief Planning Officer; and
  - (b) a parcel of land is within two or more areas shown on Schedule “A” to this By-law, the development charges applicable to the area in which each part of the parcel is located shall be applied.

### **Other Development Charges**

7. THAT the development of land in the Region may be subject to one or more development charges by-laws of the Region and the development charges under this By-law are in addition to any other development charges that may be applicable to such development.

### **Designation of Services**

8. THAT it is hereby declared by Council that all development of land within the area to which this By-law applies will increase the need for services.
9. THAT the development charges under this By-law applicable to a development shall apply without regard to the services required or used by a particular development.
10. THAT development charges under this By-law shall be imposed for the following categories of services to pay for the increased capital costs required because of increased needs for services arising from development:
  - (a) water services;
  - (b) wastewater services;
  - (c) roads services;
  - (d) growth studies;
  - (e) police services;
  - (f) paramedic services;
  - (g) social housing;
  - (h) waterfront parks;
  - (i) facilities; and
  - (j) waste diversion.

### **Approvals for Development**

11. THAT development charges under this By-law shall be imposed against all lands or buildings within the area to which this By-law applies if the development of such lands or buildings requires any of the following:
  - (a) the passing of a zoning by-law or of an amendment thereto under section 34 of the *Planning Act*;

- (b) the approval of a minor variance under section 45 of the *Planning Act*;
  - (c) a conveyance of land to which a by-law passed under subsection 50(7) of the *Planning Act* applies;
  - (d) the approval of a plan of subdivision under section 51 of the *Planning Act*;
  - (e) a consent under section 53 of the *Planning Act*;
  - (f) the approval of a description under section 9 of the *Condominium Act, 1998*, S.O. 1998, c. 19, as amended or successor legislation; or
  - (g) the issuance of a permit under the *Building Code Act, 1992*, S.O. 1992, c. 23, as amended or successor legislation, in relation to a building.
12. THAT no more than one development charge under this By-law for each service designated in section 10 of this By-law shall be imposed upon any lands or buildings to which this By-law applies even though two or more of the actions described in section 11 of this By-law are required before the lands or buildings can be developed or redeveloped.
13. THAT notwithstanding sections 12 and 20 of this By-law, if
- (a) two or more of the actions described in section 11 of this By-law occur at different times, or
  - (b) a second or subsequent building permit is issued
- resulting in increased, additional or different development, then additional development charges under this By-law, shall be imposed and shall be paid in respect of such increased, additional or different development permitted by such action or permit.
14. THAT where a development requires an approval described in section 11 of this By-law after the issuance of a building permit and no development charges have been paid, then development charges under this By-law shall be paid prior to the granting of the approval required under section 11 of this By-law.
15. THAT nothing in this By-law prevents Council from requiring, in an agreement under section 51 of the *Planning Act* or as a condition of consent or an agreement respecting same under section 53 of the *Planning Act*, that the owner, at his or her own expense, install such local services related to or within the area to which a plan of subdivision relates, as Council may require, in accordance with the Region's applicable local services policies in effect at the time.

#### **Calculation of Development Charges under this By-law**

16. THAT the development charges under this By-law with respect to the development of any land or buildings shall be calculated as follows:

- (a) in the case of residential development including a dwelling unit accessory to a non-residential development, or the residential portion of a mixed-use development, based upon the number and type of dwelling units; or
- (b) in the case of non-residential development, or the non-residential portion of a mixed-use development, based upon the total floor area of such development.

### **Amount of Charge – Residential**

17. THAT, subject to section 7 of this By-law, for development for residential purposes, development charges shall be imposed on all residential development, including a dwelling unit accessory to a non-residential development and the residential component of a mixed-use building, according to the number and type of dwelling units on lands within that part of the Region shown on Schedule “A” to this By-law as:

- (a) Built Boundary - the development charges payable shall be the Total Urban Charges shown on Schedule “B-1” to this By-law;
- (b) Greenfield Area - the development charges payable shall be the Total Urban Charges shown on Schedule “B-2” to this By-law; and
- (c) Rural - the development charges payable shall be as follows:
  - (i) the Total Rural Charges shown on Schedule “B-1” to this By-law;
  - (ii) where at the time a building permit is issued for the development, a connection of the building to:
    - (1) Built Boundary water services is proposed, the Specific Urban Charge for water services shown on Schedule “B-1” to this By-law shall be payable; and
    - (2) Greenfield water services is proposed, the Specific Urban Charge for water services shown on Schedule “B-2” to this By-law shall be payable; and
  - (iii) at the time a building permit is issued for the development, a connection of the building to:
    - (1) Built Boundary wastewater services is proposed, the Specific Urban Charge for wastewater services shown on Schedule “B-1” to this By-law shall be payable; and
    - (2) Greenbelt wastewater services is proposed, the Specific Urban Charge for wastewater services shown on Schedule “B-2” to this By-law shall be payable.

### **Amount of Charge - Non-Residential**

18. THAT, subject to section 7 of this By-law, for development for non-residential purposes, development charges shall be imposed on all non-residential development, and, in the case

of a mixed-use building, on the non-residential component of the mixed-use building, according to the total floor area of the non-residential component on lands within that part of the Region shown on Schedule "A" to this By-law as:

- (a) Built Boundary - the development charges payable shall be the Total Urban Charges shown on Schedule "C-1" to this By-law;
- (b) Greenfield Area - the development charges payable shall be the Total Urban Charges shown on Schedule "C-2" to this By-law; and
- (c) Rural - the development charges payable shall be as follows:
  - (i) the Total Rural charges shown on Schedule "C-1" to this By-law;
  - (ii) where at the time a building permit is issued for the development, a connection of the building to:
    - (1) Built Boundary water services is proposed, the Specific Urban Charge for water services shown on Schedule "C-1" to this By-law shall be payable; and
    - (2) Greenfield water services is proposed, the Specific Urban Charge for water services shown on Schedule "C-2" to this By-law shall be payable; and
  - (iii) at the time a building permit is issued for the development, a connection of the building to:
    - (1) Built Boundary wastewater services is proposed, the Specific Urban Charge for wastewater services shown on Schedule "C-1" to this By-law shall be payable; and
    - (2) Greenbelt wastewater services is proposed, the Specific Urban Charge for wastewater services shown on Schedule "C-2" to this By-law shall be payable.

### **Indexing of Development Charges**

19. THAT the development charges set out in Schedules "B-1", "B-2", "C-1" and "C-2" of this By-law shall be adjusted without amendment to this By-law on April 1<sup>st</sup> of each year, commencing April 1st, 2018, in accordance with the Statistics Canada Quarterly, *Construction Price Statistics*, or any successor thereto.

### **Timing of Calculation and Payment**

20. (1) THAT subject to subsections (2) to (9), inclusive, the development charges under this By-law shall be calculated as of, and shall be payable on, the date a building permit is issued in relation to a building on land to which the development charges under this By-law apply.

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- (2) THAT despite subsection (1), in the case of residential development, the water services, wastewater services and roads services components of the development charges under this By-law shall be payable with respect to an approval of a plan of subdivision under section 51 of the *Planning Act* or a consent under section 53 of the *Planning Act* at the time of execution of the subdivision agreement or an agreement entered into as a condition of a consent.
  - (3) THAT despite subsection (2), in the case of a high density apartment, the water services, wastewater services and roads services components of the development charges under this By-law shall be payable on the date a building permit is issued in relation to the high density apartment on lands to which the development charges under this By-law apply.
  - (4) THAT, subject to any applicable exemptions, relief or adjustments in this By-law, development charges payable under this By-law shall be calculated as follows:
    - (a) in the case of residential development, including a dwelling unit accessory to a non-residential development, or the residential portion of a mixed-use development, based upon:
      - (i) the proposed number and type of dwelling units; and
      - (ii) with respect to blocks intended for future development, the maximum number of dwelling units permitted under the then applicable zoning;
    - (b) in the case of non-residential development, or the non-residential portion of a mixed-use development, based upon the total floor area proposed to be constructed.
  - (5) THAT, if at the time of issuance of a building permit or permits for any residential development for which payments have been made pursuant to subsection (2), the total number and/or type of dwelling units for which building permits have been and are being issued is greater than that used for the calculation and payment referred to in subsection (2), an additional payment shall be required and shall be calculated by multiplying the applicable development charges for those services shown in Schedule “B-1” or “B-2” to this By-law, as may be appropriate, subject to the adjustments in section 19 of this By-law, by the difference between the number and type of dwelling units for which building permits have been and are being issued and the number and type of dwelling units for which payments have been made pursuant to subsection (2) and this subsection.
  - (6) THAT subject to subsection (8), if following the issuance of all building permits for all development in a subdivision and for all development in a block within that subdivision that had been intended for future development and for which payments have been made pursuant to subsections (2) and (4), the total number and/or type of dwelling units for which building permits have been issued is less than that used for the calculation and payment referred to in subsection (2), a refund shall become payable by the Region to the person who originally made
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the payment referred to in subsection (2), which refund shall be calculated by multiplying the amounts of the development charges in effect at the time such payments were made by the difference between the number and type of dwelling units for which payments were made pursuant to subsection (2) and the number and type of dwelling units for which building permits were issued.

- (7) THAT subsections (5) and (6) shall apply with necessary modifications to a development for which development charges have been paid pursuant to a condition of consent or pursuant to an agreement respecting same.
- (8) THAT any refunds payable pursuant to subsections (6) and (7) shall be calculated and paid without interest.
- (9) THAT notwithstanding subsections (1) to (7), inclusive, the Region may require and, where so required, an owner shall enter into an agreement, including the provision of security for the owner's obligations under the agreement, pursuant to section 27 of the Act. The terms of such agreement shall then prevail over the provisions of this section dealing with the timing of payments but may not amend or alter any other provisions or sections of this By-law.

### **Payment by Money**

21. THAT payment of development charges under this By-law shall be by certified cheque or bank draft.

### **Rules with Respect to Exemptions for Intensification of Existing Housing**

22. (1) THAT development charges shall not be imposed with respect to approvals related to the residential development of land or buildings that would have the effect only of:
  - (a) permitting the enlargement of an existing dwelling unit;
  - (b) creating one (1) or two (2) additional dwelling units in an existing single detached dwelling;
  - (c) creating one (1) additional dwelling unit in an existing semi-detached dwelling; or
  - (d) creating one (1) additional dwelling unit in any other existing residential building.
- (2) THAT notwithstanding clauses (1)(b) to (d), inclusive, development charges under this By-law shall be imposed with respect to the creation of one (1) or two (2) additional dwelling units if the total floor area of the additional one (1) or two (2) dwelling units exceeds the total floor area of the existing dwelling unit in clauses (1)(b) or (1)(c) or the smallest existing dwelling unit in clause (1)(d).

**Rules with Respect to Expansion of Existing Industrial Building**

23. (1) THAT if a development includes the enlargement of the total floor area of an existing industrial building, the amount of the development charges under this By-law that is payable shall be calculated as follows:
- (a) if the total floor area is enlarged by fifty percent (50%) or less, the amount of the development charges under this By-law in respect of the enlargement is zero; or
  - (b) if the total floor area is enlarged by more than fifty percent (50%), development charges under this By-law are payable on the amount by which the enlargement exceeds fifty percent (50%) of the total floor area before the enlargement.
- (2) THAT for the purpose of interpreting the definition of “existing industrial building” contained in the Regulation, regard shall be had to the classification of the lands in question pursuant to the *Assessment Act*, R.S.O. 1990, c. A.31 as amended or successor legislation and in particular:
- (a) whether the lands fall within a tax class such that taxes on the lands are payable at the industrial tax rate; and
  - (b) whether more than fifty percent (50%) of the total floor area of the building has an industrial property code for assessment purposes.
- (3) THAT for greater certainty in applying the exemption in this section, the total floor area of an existing industrial building is enlarged where there is a *bona fide* increase in the size of the existing industrial building, the enlarged area is attached to the existing industrial building, there is a direct means of ingress and egress from the existing industrial building to and from the enlarged area for persons, goods and equipment and the existing industrial building and the enlarged area are used for or in connection with an industrial purpose as set out in subsection 1(1) of the Regulation. Without limiting the generality of the foregoing, the exemption in this section shall not apply where the enlarged area is attached to the existing industrial building by means only of a tunnel, bridge, canopy, corridor or other passage-way, or through a shared below-grade connection such as a service tunnel, foundation, footing or a parking facility.

**Rules with Respect to Commercial Expansion**

24. THAT no development charges shall be payable under this By-law for:
- (a) the expansion of an existing building on the same lot that is used for a commercial use provided the expansion must be incidental to or subordinate in purpose and exclusively devoted to the commercial use in the existing building or an accessory commercial building; and
  - (b) the expansion of the existing building on the lot or the accessory commercial building that is:



- (i) the first 3,000 sq. ft. (278.7 sq. m.) of the expansion of the existing building on the lot or the accessory commercial building;
- (ii) at least six months must have elapsed since the last building permit has been issued for a building containing a commercial use on the lot; and
- (iii) the owner provides proof satisfactory to the Region's Commissioner of Finance and/or Treasurer or designate that the existing commercial building(s) is (or are) being used for a commercial use on the date an application is made for a building permit for the building expansion or the accessory commercial building.

### **Lot Coverage Relief**

25. THAT where there is a non-residential development, the development charges payable pursuant to this By-law shall be calculated in accordance with the following:

- (a) for the portion of the total floor area of such development that is less than or equal to one (1.0) times the area of the lot, one hundred percent (100%) of the non-residential development charges payable pursuant to this By-law are applicable to that portion;
- (b) for the portion of the total floor area of such development that is greater than one (1.0) times the area of the lot, no development charges shall be payable; and
- (c) for the purposes of this section, where a building or buildings exist on the lot on the date of building permit issuance, the lot coverage shall be calculated as if no building(s) existed on the lot on that date.

### **Exemptions for Certain Buildings**

26. (1) THAT the following are exempt from the payment of development charges under this By-law:

- (b) by reason of section 3 of the Act:
  - (i) land and buildings owned by and used for the purposes of any local municipality, the Region or any local board unless such buildings or parts thereof are used, designed or intended for use primarily for or in connection with any commercial use or retail development or both; and
  - (ii) land and buildings owned by and used for the purposes of a board of education unless such buildings or parts thereof are used, designed or intended for use primarily for or in connection with any commercial use and/or retail development; and
- (c) by this By-law:

- (i) land and buildings used as hospitals governed by the *Public Hospitals Act*, R.S.O. 1990, c. P.40, as amended or successor legislation unless such buildings or parts thereof are used, designed or intended for use primarily for or in connection with any commercial use and/or retail development;
  - (ii) land and buildings owned by and used for the purposes of a conservation authority unless such buildings or parts thereof are used primarily for or in connection with any commercial use and/or retail development;
  - (iii) land and buildings used exclusively as a place of worship;
  - (iv) seasonal structures; and
  - (v) temporary venues.
- (2) THAT for the purposes of this section only, “local board” means a municipal service board, transportation commission, public library board, board of health, police services board, planning board, or any other board, commission, committee, body or local authority established or exercising any power under any Act with respect to the affairs or purposes of one or more municipalities but excluding a school board, a conservation authority and any municipal services corporation that is not deemed to be a local board under O. Reg. 599/06 made under the *Municipal Act, 2001*, S.O. 2001, c. 25, as amended or successor legislation and any corporation created under the *Electricity Act, 1998*, S.O. 1998, c. 15, Schedule A, as amended or successor legislation.

### **Agricultural Development**

27. THAT agricultural development shall be exempt from the payment of development charges under this By-law.

### **Rules with Respect to Temporary Buildings**

28. THAT notwithstanding any other provision of this By-law, a temporary building shall be exempt at the time the building permit is issued for such building from the payment of development charges under this By-law provided that:

- (a) prior to the issuance of the building permit for the temporary building, the owner shall have:
  - (i) entered into an agreement with the Region under section 27 of the Act in a form and having a content satisfactory to the Region’s Commissioner of Finance and/or Treasurer or designate agreeing to pay the development charges otherwise payable under this By-law in respect of the temporary building if, within three (3) years of building permit issuance or any extension permitted in writing by the Region’s Commissioner of Finance and/or Treasurer or designate, the owner has not provided to the Region evidence, to the satisfaction of the Region’s

Commissioner of Finance and/or Treasurer or designate, that the temporary building was demolished or removed from the lands within three (3) years of building permit issuance or any extension herein provided; and

- (ii) provided to the Region securities in the form of a certified cheque, bank draft or a letter of credit acceptable to the Region's Commissioner of Finance and/or Treasurer or designate in the full amount of the development charges otherwise payable under this By-law as security for the owner's obligations under the agreement described in clause (a)(i) and subsection (c);
- (b) within three (3) years of building permit issuance or any extension granted in accordance with the provisions in clause (a)(i), the owner shall provide to the Region evidence, to the satisfaction of the Region's Commissioner of Finance and/or Treasurer or designate, that the temporary building was demolished or removed from the lands within three (3) years of building permit issuance or any extension herein provided, whereupon the Region shall return the securities provided pursuant to clause (a)(ii) without interest;
- (c) if the owner does not provide satisfactory evidence of the demolition or removal of the temporary building in accordance with subsection (b), the temporary building shall be deemed conclusively not to be a temporary building for the purposes of this By-law and the Region shall, without prior notification to the owner, draw upon the securities provided pursuant to clause (a)(ii) and transfer the amount so drawn into the appropriate development charges reserve funds; and
- (d) the timely provision of satisfactory evidence of the demolition or removal of the temporary building in accordance with subsection (b) shall be solely the owner's responsibility.

### **Rules with Respect to Garden Suites**

29. THAT notwithstanding any other provisions of this By-law, a garden suite shall be exempt at the time a building permit is issued for the garden suite from the payment of development charges under this By-law provided that:

- (a) a by-law has been passed by the applicable local municipality under sections 39 and 39.1 of the *Planning Act* authorizing the temporary use of the garden suite;
- (b) prior to the issuance of the building permit for the garden suite, the owner shall have entered into an agreement with the Region under section 27 of the Act in a form and having a content satisfactory to the Region's Commissioner of Finance and/or Treasurer or designate, to be registered on title to the lands under section 34 of this By-law as a charge, agreeing to pay the development charges otherwise payable under this By-law in respect of the garden suite if the garden suite is not removed from the lands within sixty (60) days of the expiry of the by-law, including any extensions thereof, described in subsection (a) or if, before that date, the lands on which the garden suite is situate are sold provided the development charges shall not be payable upon such sale if the purchaser has

entered into an agreement with the Region under this subsection and the by-law, including any extensions thereof, described in subsection (a) has not expired;

- (c) within ninety (90) days of the expiry of the by-law, including any extensions thereof, described in subsection (a), the owner shall provide to the Region evidence, to the satisfaction of the Region's Commissioner of Finance and/or Treasurer or designate, that the garden suite was removed from the lands within sixty (60) days of the expiry of the by-law, including any extensions thereof, described in subsection (a), whereupon the Region shall provide to the owner a release of the agreement described in subsection (b) and apply to the land registrar to delete from title to the lands any notice of the agreement registered against title to the lands under section 36 of this By-law;
- (d) if the owner does not provide satisfactory evidence of the removal of the garden suite in accordance with subsection (c), the garden suite shall be deemed conclusively not to be a garden suite for the purposes of this By-law and the Region may, without prior notification to the owner, add the development charges payable under this By-law to the tax roll for the lands to be collected in the same manner as taxes;
- (e) for the purpose of subsection (d), the development charges payable under this By-law shall be the development charges payable under this By-law for an accessory dwelling on the date the building permit was issued for the garden suite; and
- (f) the timely provision of satisfactory evidence of the removal of the garden suite in accordance with subsection (c) shall be solely the owner's responsibility.

### **Rules with Respect to Redevelopment – Demolitions**

30. THAT in the case of a demolition of all or part of a building:

- (a) a credit shall be allowed against the development charges otherwise payable pursuant to this By-law, provided that where a demolition permit has been issued and has not been revoked:
  - (i) before August 18, 2008, a building permit has been issued for the redevelopment within ten (10) years from the date the demolition permit was issued; and
  - (ii) from and after August 18, 2008, a building permit has been issued for the redevelopment within five (5) years from the date the demolition permit was issued;
- (b) the credit shall be calculated based on the portion of the building used for a residential use that has been demolished by multiplying the number and type of dwelling units demolished, or in the case of a building used for a non-residential use that has been demolished by multiplying the non-residential total floor area demolished, by the relevant development charges under this By-law in effect on the date when the development charges are payable pursuant to this By-law with respect to the redevelopment;

- (c) no credit shall be allowed where the demolished building or part thereof would have been exempt pursuant to this By-law;
- (d) where the amount of any credit pursuant to this section exceeds, in total, the amount of the development charges otherwise payable under this By-law with respect to the redevelopment, the excess credit shall be reduced to zero and shall not be carried forward unless the carrying forward of such excess credit is expressly permitted by a phasing plan for the redevelopment that is acceptable to the Region's Commissioner of Finance and/or Treasurer or designate; and
- (e) despite Subsection 30(a) above, where the building cannot be demolished until the new building has been erected, the owner shall notify the Region in writing and pay the applicable development charges for the new building in full and if the existing building is demolished not later than twelve (12) months from the date a building permit is issued for the new building, the Region shall provide a refund calculated in accordance with this section to the owner without interest. If more than twelve (12) months is required to demolish the existing building, the owner shall make a written request to the Region and the Region's Commissioner of Finance and/or Treasurer or designate may extend the time in which the existing building must be demolished in his or her sole and absolute discretion and upon such terms and conditions as he or she considers necessary or desirable and such decision shall be made prior to the issuance of the first building permit for the new building.
- (f) despite Subsection 30(a), where an owner has submitted an application pursuant to the provisions of the *Planning Act*, and such application has been accepted by the local municipality before the expiration of any demolition credits as noted in Subsection 30(a)(i) or (ii) above, but a building permit has not been issued within the timeframes provided for in the applicable Subsection, the owner may request in writing to the Region's Commissioner of Finance and/or Treasurer and the Region's Commissioner of Finance and/or Treasurer, or such designate, may extend the time for the expiration of the demolition credits solely upon such terms and conditions as he or she considers necessary or desirable and such decision shall be made prior to the issuance of the first building permit for the new building, provided that in no case shall any single extension be for a period greater than one (1) year from the date of the request from the owner seeking an extension pursuant to this Subsection.

### **Rules with Respect to Redevelopment – Conversions**

31. THAT in the case of a conversion of all or part of a building:

- (a) a credit shall be allowed against the development charges otherwise payable under this By-law;
- (b) the credit shall be calculated based on the portion of the building that is being converted by multiplying the number and type of dwelling units being converted or the non-residential total floor area being converted by the relevant development charges under this By-law in effect on the date when the development charges are payable pursuant to this By-law with respect to the redevelopment;

- (c) where the amount of any credit pursuant to this section exceeds, in total, the amount of the development charges otherwise payable under this By-law with respect to the redevelopment, the excess credit shall be reduced to zero and shall not be carried forward unless the carrying forward of such excess credit is expressly permitted by a phasing plan for the redevelopment that is acceptable to the Region's Commissioner of Finance and/or Treasurer or designate.
- (d) despite subsections (a) to (c) above, where there is a conversion of an existing non-retail development to a retail development, the incremental development charges otherwise payable pursuant to this By-law shall be reduced by the greater of:
  - (ii) the development charges that would be payable on the first nine hundred and thirty square metres (930 m<sup>2</sup>) (ten thousand square feet (10,000 sq. ft.) of the total non-retail floor area being converted to a retail development; or
  - (iii) twenty-five percent (25%) of the development charges otherwise payable on the total non-retail floor area being converted to retail development.
- (g) notwithstanding subsections (a) to (d) above, no credit shall be allowed where the building or part thereof prior to conversion would have been exempt pursuant to this By-law or any predecessor thereof.

### **Exemptions, Relief, Credits and Adjustments Not Cumulative**

31. THAT only one (1) of the applicable exemption(s), relief, credit(s) or adjustment(s) set out in sections 22 to 31, inclusive, of this By-law shall be applicable to a development. Where the circumstances of a development are such that more than one (1) type of exemption, relief, credit or adjustment could apply, only one (1) type of exemption, relief, credit or adjustment shall apply and it shall be the exemption, relief, credit or adjustment that results in the lowest development charges being payable under this By-law.

### **Interest**

32. THAT the Region shall pay interest on a refund under subsections 18(3), 25(2) and section 36 of the Act at a rate equal to the Bank of Canada rate on the date this By-law comes into force.

### **Front Ending Agreements**

33. THAT the Region may enter into one or more agreements under section 44 of the Act.

### **Repeals**

34. THAT By-law No. 48-12, as amended being a by-law to establish water, wastewater, roads and general services development charges for The Regional Municipality of Halton (Built Boundary and Greenfield Areas) and to repeal By-law No. 62-08, is hereby repealed on the date this By-law comes into force and effect.

### **Registrations**

35. THAT a certified copy of this By-law and a copy or notice of any agreement authorized by this By-law may be registered in the Land Registry Office (No. 20) as against title to any land to which this By-law or any such agreement applies in accordance with the provisions of this By-law or Sections 42 and 56 of the Act, or any predecessor thereto.

**Date By-law Effective**

36. THAT this By-law comes into force and effect on <\*>.

**Headings for Reference Only**

37. THAT the headings inserted in this By-law are for convenience of reference only and shall not affect the construction or interpretation of this By-law.

**Severability**

38. THAT if, for any reason, any provision, section, subsection, paragraph or clause of this By-law is held invalid, it is hereby declared to be the intention of Council that all the remainder of this By-law shall continue in full force and effect until repealed, re-enacted or amended, in whole or in part or dealt with in any other way.

**Short Title**

39. THAT the short title of this By-law is the “Halton Built Boundary and Greenfield Area Water, Wastewater, Roads and General Services Development Charges By-law, 2017”.

READ and PASSED this <\*> day of April, <\*>.

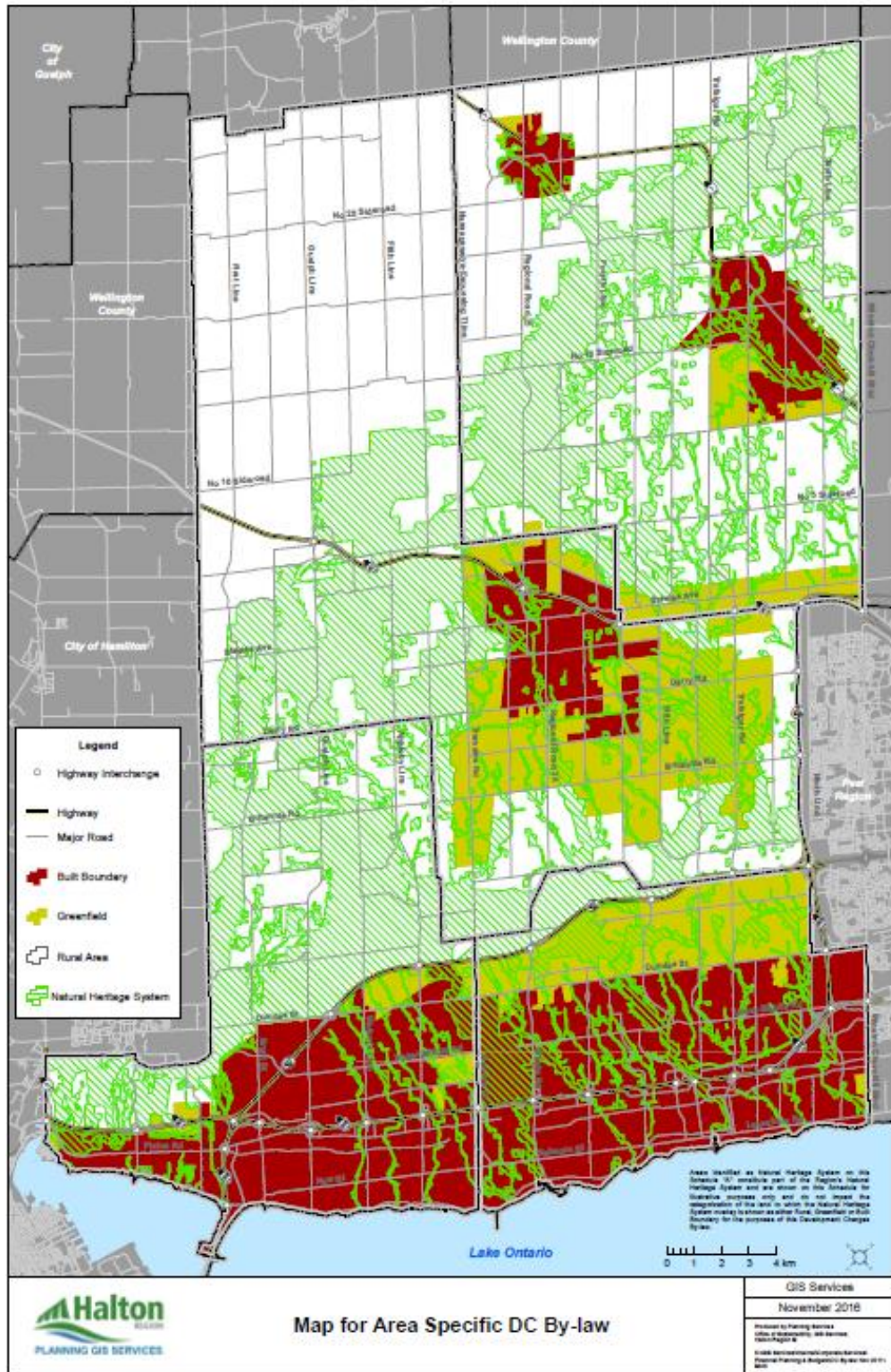
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REGIONAL CHAIR

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REGIONAL CLERK

### SCHEDULE "A" TO BY-LAW No. <\*>-17





**THE REGIONAL MUNICIPALITY OF HALTON  
SCHEDULE "B-1" TO BY-LAW NO. <\*>-17**

**BUILT BOUNDARY URBAN AND RURAL RESIDENTIAL DEVELOPMENT CHARGES PER DWELLING UNIT\***

	<b>Single and Semi Detached Dwelling</b>	<b>Multiple Dwelling (3 or More Bedrooms)</b>	<b>Multiple Dwelling (Less Than 3 Bedrooms)</b>	<b>Apartment Dwelling (2 or More Bedrooms)</b>	<b>Apartment Dwelling (Less Than 2 Bedrooms)</b>	<b>Special Care/ Special Need and Accessory Dwelling</b>
<b>Region-Wide (Urban and Rural):</b>						
<b>General Services:</b>						
Growth Studies	\$ 228.34	\$ 172.16	\$ 127.44	\$ 109.23	\$ 83.44	\$ 71.82
Police	540.90	407.83	301.89	258.74	197.65	170.12
Paramedics	147.76	111.41	82.47	70.68	53.99	46.47
Facilities	127.63	96.23	71.23	61.05	46.64	40.14
Social Housing	821.20	619.17	458.33	392.82	300.07	258.28
Waste Diversion	56.43	42.55	31.50	27.00	20.62	17.75
Waterfront Parks	176.30	132.93	98.40	84.33	64.42	55.45
<b>Sub-Total</b>	<b>\$ 2,098.56</b>	<b>\$ 1,582.28</b>	<b>\$ 1,171.26</b>	<b>\$ 1,003.85</b>	<b>\$ 766.83</b>	<b>\$ 660.03</b>
<b>Roads:</b>	\$ 16,826.72	\$ 13,446.01	\$ 9,770.23	\$ 8,245.42	\$ 6,352.56	\$ 5,257.95
<b>Total (Urban and Rural)</b>	<b>\$ 18,925.28</b>	<b>\$ 15,028.29</b>	<b>\$ 10,941.49</b>	<b>\$ 9,249.27</b>	<b>\$ 7,119.39</b>	<b>\$ 5,917.98</b>
<b>Specific Urban Charges:</b>						
Water	\$ 2,742.94	\$ 2,183.68	\$ 1,586.89	\$ 1,344.48	\$ 1,035.74	\$ 857.60
Wastewater	3,957.47	3,142.12	2,283.57	1,940.18	1,494.56	1,237.83
<b>Total</b>	<b>\$ 6,700.41</b>	<b>\$ 5,325.80</b>	<b>\$ 3,870.46</b>	<b>\$ 3,284.66</b>	<b>\$ 2,530.30</b>	<b>\$ 2,095.43</b>
<b>Total Urban Charges</b>	<b>\$ 25,625.69</b>	<b>\$ 20,354.09</b>	<b>\$ 14,811.95</b>	<b>\$ 12,533.93</b>	<b>\$ 9,649.69</b>	<b>\$ 8,013.41</b>
<b>Total Rural Charges</b>	<b>\$ 18,925.28</b>	<b>\$ 15,028.29</b>	<b>\$ 10,941.49</b>	<b>\$ 9,249.27</b>	<b>\$ 7,119.39</b>	<b>\$ 5,917.98</b>

\* Residential development charges are subject to indexing in accordance with section 19 of the By-law

**THE REGIONAL MUNICIPALITY OF HALTON  
SCHEDULE "B-2" TO BY-LAW NO. <\*>-17**

**GREENFIELD URBAN AND RURAL RESIDENTIAL DEVELOPMENT CHARGES PER DWELLING UNIT\***

	Single and Semi Detached Dwelling	Multiple Dwelling (3 or More Bedrooms)	Multiple Dwelling (Less Than 3 Bedrooms)	Apartment Dwelling (2 or More Bedrooms)	Apartment Dwelling (Less Than 2 Bedrooms)	Special Care/ Special Need and Accessory Dwelling
<b>Region-Wide (Urban and Rural):</b>						
<b>General Services:</b>						
Growth Studies	\$ 228.34	\$ 172.16	\$ 127.44	\$ 109.23	\$ 83.44	\$ 71.82
Police	540.90	407.83	301.89	258.74	197.65	170.12
Paramedics	147.76	111.41	82.47	70.68	53.99	46.47
Facilities	127.63	96.23	71.23	61.05	46.64	40.14
Social Housing	821.20	619.17	458.33	392.82	300.07	258.28
Waste Diversion	56.43	42.55	31.50	27.00	20.62	17.75
Waterfront Parks	176.30	132.93	98.40	84.33	64.42	55.45
<b>Sub-Total</b>	<b>\$ 2,098.56</b>	<b>\$ 1,582.28</b>	<b>\$ 1,171.26</b>	<b>\$ 1,003.85</b>	<b>\$ 766.83</b>	<b>\$ 660.03</b>
<b>Roads:</b>	\$ 16,826.72	\$ 13,446.01	\$ 9,770.23	\$ 8,245.42	\$ 6,352.56	\$ 5,257.95
<b>Total (Urban and Rural)</b>	<b>\$ 18,925.28</b>	<b>\$ 15,028.29</b>	<b>\$ 10,941.49</b>	<b>\$ 9,249.27</b>	<b>\$ 7,119.39</b>	<b>\$ 5,917.98</b>
<b>Specific Urban Charges:</b>						
Water	\$ 7,581.80	\$ 6,079.53	\$ 4,419.81	\$ 3,723.95	\$ 2,869.32	\$ 2,369.06
Wastewater	8,966.66	7,193.63	5,230.15	4,405.66	3,394.63	2,801.76
<b>Total</b>	<b>\$ 16,548.46</b>	<b>\$ 13,273.16</b>	<b>\$ 9,649.96</b>	<b>\$ 8,129.61</b>	<b>\$ 6,263.95</b>	<b>\$ 5,170.82</b>
<b>Total Urban Charges</b>	<b>\$ 35,473.74</b>	<b>\$ 28,301.45</b>	<b>\$ 20,591.45</b>	<b>\$ 17,378.88</b>	<b>\$ 13,383.34</b>	<b>\$ 11,088.80</b>
<b>Total Rural Charges</b>	<b>\$ 18,925.28</b>	<b>\$ 15,028.29</b>	<b>\$ 10,941.49</b>	<b>\$ 9,249.27</b>	<b>\$ 7,119.39</b>	<b>\$ 5,917.98</b>

\* Residential development charges are subject to indexing in accordance with section 19 of the By-law

**THE REGIONAL MUNICIPALITY OF HALTON  
SCHEDULE "C-1" TO BY-LAW NO. <\*>-17**

**BUILT BOUNDARY URBAN AND RURAL NON-RESIDENTIAL DEVELOPMENT CHARGES\***

**PER SQUARE FOOT OF TOTAL FLOOR AREA**

	<u>Retail</u>	<u>Non-Retail</u>
<b>Region-Wide Charges (Urban and Rural):</b>		
<b>General Services:</b>		
Growth Studies	\$ 0.127	\$ 0.127
Police	0.159	0.159
Paramedics	0.024	0.024
Facilities	0.020	0.020
Waste Diversion	0.003	0.003
Waterfront Parks	0.010	0.010
<b>Sub-Total</b>	<b>\$ 0.343</b>	<b>\$ 0.343</b>
<b>Roads:</b>	26.420	5.216
<b>Total</b>	<b>\$ 26.763</b>	<b>\$ 5.559</b>
<b>Specific Urban Charges:</b>		
Water	\$ 1.072	\$ 1.072
Wastewater	1.748	1.748
<b>Total</b>	<b>\$ 2.820</b>	<b>\$ 2.820</b>
<b>Total Urban Charges</b>	<b>\$ 29.583</b>	<b>\$ 8.379</b>
<b>Total Rural Charges</b>	<b>\$ 26.763</b>	<b>\$ 5.559</b>

**PER SQUARE METRE OF TOTAL FLOOR AREA**

	<u>Retail</u>	<u>Non-Retail</u>
<b>Region-Wide Charges (Urban and Rural):</b>		
<b>General Services:</b>		
Growth Studies	\$ 1.367	\$ 1.367
Police	1.711	1.711
Paramedics	0.258	0.258
Facilities	0.215	0.215
Waste Diversion	0.032	0.032
Parks	0.108	0.108
<b>Sub-Total</b>	<b>\$ 3.691</b>	<b>\$ 3.691</b>
<b>Roads:</b>	284.383	56.145
<b>Total (Urban and Rural)</b>	<b>\$ 288.074</b>	<b>\$ 59.836</b>
<b>Specific Urban Charges:</b>		
Water - Distribution	\$ 11.539	\$ 11.539
Wastewater - Distribution	18.816	18.816
<b>Total</b>	<b>\$ 30.355</b>	<b>\$ 30.355</b>
<b>Total Urban Charges</b>	<b>\$ 318.429</b>	<b>\$ 90.191</b>
<b>Total Rural Charges</b>	<b>\$ 288.074</b>	<b>\$ 59.836</b>

\*Non-residential development charges are subject to indexing in accordance with section 19 of the By-Law

**THE REGIONAL MUNICIPALITY OF HALTON  
SCHEDULE "C-2" TO BY-LAW NO. <\*>-17**

**GREENFIELD URBAN AND RURAL NON-RESIDENTIAL DEVELOPMENT CHARGES\***

**PER SQUARE FOOT OF TOTAL FLOOR AREA**

	<u>Retail</u>	<u>Non-Retail</u>
<b>Region-Wide Charges (Urban and Rural):</b>		
<b>General Services:</b>		
Growth Studies	\$ 0.127	\$ 0.127
Police	0.159	0.159
Paramedics	0.024	0.024
Facilities	0.020	0.020
Waste Diversion	0.003	0.003
Waterfront Parks	0.010	0.010
<b>Sub-Total</b>	<b>\$ 0.343</b>	<b>\$ 0.343</b>
<b>Roads:</b>	<b>26.420</b>	<b>5.216</b>
<b>Total</b>	<b>\$ 26.763</b>	<b>\$ 5.559</b>
<b>Specific Urban Charges:</b>		
Water	\$ 2.763	\$ 2.763
Wastewater	3.542	3.542
<b>Total</b>	<b>\$ 6.304</b>	<b>\$ 6.304</b>
<b>Total Urban Charges</b>	<b>\$ 33.067</b>	<b>\$ 11.863</b>
<b>Total Rural Charges</b>	<b>\$ 26.763</b>	<b>\$ 5.559</b>

**PER SQUARE METRE OF TOTAL FLOOR AREA**

	<u>Retail</u>	<u>Non-Retail</u>
<b>Region-Wide Charges (Urban and Rural):</b>		
<b>General Services:</b>		
Growth Studies	\$ 1.367	\$ 1.367
Police	1.711	1.711
Paramedics	0.258	0.258
Facilities	0.215	0.215
Waste Diversion	0.032	0.032
Parks	0.108	0.108
<b>Sub-Total</b>	<b>\$ 3.691</b>	<b>\$ 3.691</b>
<b>Roads:</b>	<b>\$ 284.383</b>	<b>\$ 56.145</b>
<b>Total (Urban and Rural)</b>	<b>\$ 288.074</b>	<b>\$ 59.836</b>
<b>Specific Urban Charges:</b>		
Water - Distribution	\$ 29.738	\$ 29.738
Wastewater - Distribution	\$ 38.123	\$ 38.123
<b>Total</b>	<b>\$ 67.861</b>	<b>\$ 67.861</b>
<b>Total Urban Charges</b>	<b>\$ 355.935</b>	<b>\$ 127.697</b>
<b>Total Rural Charges</b>	<b>\$ 288.074</b>	<b>\$ 59.836</b>

\*Non-residential development charges are subject to indexing in accordance with section 19 of the By-Law

**THE REGIONAL MUNICIPALITY OF HALTON**  
**SCHEDULE “D-1”**  
**TO BY-LAW NO. <\*>-17**  
**Schedule “E” applies to all or part of the following lands:**

Parcel D-1.2	Block 12, Plan M-537
Parcel D-1.3	Block 13, Plan M-530
Parcel D-1.4	Part Block 32, Plan M-537
Parcel D-1.5	Part Block 34, Plan M-537; RP 20R17950 Parts 2, 3, 4
Parcel D-1.6	Block 35 & Part Block 34, Plan M-537; 20R17950 Part 1 (includes a portion of what was previously D-1.5 on By-law 48-12)
Parcel D-1.7	Block 36, Plan M-537
Parcel D-1.11	Blocks 12 & 20, Plan M-530 and Parts 3 & 4, 20R9270 (includes what was previously D-1.13 on By-law 48-12)
Parcel D-1.12	Block 14, Plan M-530
Parcel D-1.14	Part E1/2 Lot 4, Conc. 2 (Parts 1, 2, 3 & 6, 20R-9733) - Block 3, Plan M-952 - Block 16, Plan M-952 - Part Block 4, Plan M-952; RP 20R16880 Part 2 - Part Block 4, Plan M-952; 20R19423 Parts 5 to 7 - Block 17, Plan M-952
Parcel D-1.15	Pt Lots 3 and 4, Conc. 3 (Parts 2, 12 to 15, 17 & 18, 20R-10272) (2701 Highpoint - includes what was previously D-2.7 on By-law 48-12) and Part Lot 3, Conc. 3 (Parts 9, 10, 14, 15, 20R-13631)

**THE REGIONAL MUNICIPALITY OF HALTON  
SCHEDULE “D-2”  
TO BY-LAW NO. <\*>-17**

**Schedule “E” applies to all or part of the following lands:**

Parcel D-2.1	Part Lots 2 & 3, Conc. 3 (Parts 1, 3 and 10, 20R-12697)
Parcel D-2.2	Block 7, Plan M-537
Parcel D-2.3	Blocks 5 & 6, Plan M-537
Parcel D-2.4	Blocks 17 to 29, inclusive, Plan M-537
Parcel D-2.5	Block 16, Plan M-537
Parcel D-2.6	Blocks 1 to 4, inclusive, Plan M-537

**THE REGIONAL MUNICIPALITY OF HALTON  
SCHEDULE “E”  
TO BY-LAW NO. <\*>-17**

**Rules Applicable to the Lands described in Schedule “D-1” and “D-2”**

Where the development of the lands described in Schedules “D-1” and “D-2” to this By-law requires a building permit or sections 13 or 14 of this By-law or section 3 of this Schedule “E” applies, the following are additional rules for the calculation of the water and wastewater development charges payable under this By-law for the lands described in those Schedules:

1. For the development of lands described in Schedules “D-1” and “D-2” to this By-law that are occupied by one or more buildings:
  - (a) if the water services and wastewater services components of the development charge imposed by By-law No. 65-99, By-law No. 117-99, By-law No. 102-03, By-law 62-08, By-law 48-12 or this By-law have been paid, then no further water and wastewater development charges are payable under this By-law for any change in the use of the existing building provided that, subject to the exemptions in the Act and this By-law, any addition to the existing building or any new building erected on the lands shall pay the charge imposed by this By-law; or
  - (b) if the lands are subject to a restricted flow and if the development of the lands or any change in use of any existing building on the lands impose a water or wastewater demand (including the demand imposed by any existing building on the lands) in excess of the restricted flow, then the water and wastewater development charges under this By-law shall be imposed as follows:
    - (i) where there has been a change in use, the charge shall be imposed on the total floor area of the existing building; or
    - (ii) where there has been an addition to such building or an additional building has been constructed on the lands, the charge shall be imposed on the aggregate total floor area of the existing building and the total floor area of the addition or of any additional building,

provided that where the charge is imposed a credit shall be recognized in respect of the existing portion of any existing building (in the case of clause 1(b)(i)) or the aggregate total floor area of the existing building and the total floor area of the addition or of any additional building (in the case of clause 1(b)(ii)) of twenty-four and seven-tenths percent (24.7%) in the case of an industrial development and a credit of fifteen and eleven one-hundredths percent (15.11%) in the case of a retail or commercial development of the charge imposed under this By-law and provided that the total demand for water services and wastewater services shall be determined through a water usage report using Sentence 8.2.1.3(2) and Table 8.2.1.3.B from O. Reg. 350/06; or

- (c) if the lands are subject to a restricted flow and if the development of the lands or any change in use of any existing building on the lands does not impose a water or wastewater demand that is greater than the restricted flow, then no water and wastewater development charges are payable under this By-law. The total demand for water services and wastewater services shall be determined through a water usage report using Sentence 8.2.1.3(2) and Table 8.2.1.3.B from O. Reg. 350/06.
2. For the development of lands described in Schedule “D-1” to this By-law that are vacant:
- (a) if the development does not impose a water or wastewater demand that is greater than the restricted flow, then no water or wastewater development charge is payable under this By-law; or
- (b) if the development imposes a water or wastewater demand in excess of the restricted flow, then the water and wastewater development charges under this By-law shall be imposed and a credit shall be recognized of twenty-four and seven-tenths percent (24.7%) in the case of an industrial development and a credit of fifteen and eleven one-hundredths percent (15.11%) in the case of a retail or commercial development of the charge imposed under this By-law;
- (c) provided that the total demand for water services and wastewater services shall be determined through a water usage report using Sentence 8.2.1.3(2) and Table 8.2.1.3.B from O. Reg. 350/06.
3. If a development of the lands described in Schedules “D-1” and “D-2” of this By-law does not require a building permit but does require one or more of the approvals described in section 11 of this By-law, including without limiting the generality of the foregoing, the issuing of any other permit under the *Building Code Act, 1992*, S.O. 1992, c. 23, as amended or successor legislation, then, notwithstanding section 20 of this By-law, the water and wastewater development charges shall nonetheless be payable in respect of any development permitted by such approval where such development imposes an increased demand for water services or wastewater services.
4. Once lands or any portion thereof as described in Schedules “D-1” and “D-2” are developed, or have credits applied against the lands in accordance with the provisions of this Schedule “E”, said lands shall be removed from Schedules “D-1” and “D-2”, without need for an amendment to this By-law, and the provisions of Schedule “E” shall no longer continue apply to same.