

DEVELOPMENT CHARGES BACKGROUND STUDY



Consolidated Report

HEMSON Consulting Ltd

January 6, 2020

HEMSON

Consulting Ltd.

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Dear Mr. Pugliese:

**Re: City of Waterloo Development Charges Background Study –
Consolidated Report**

Hemson Consulting is pleased to submit this Development Charges Background Study for the City of Waterloo. The study is the culmination of several months of work by the consulting team, and City staff and Council.

The Consolidated Report reflects minor edits and corrections made since the initial release of the Background Study on October 17, 2019, and reflects the development charges rates approved by Council on December 16, 2019. It also reflects Council's decision to replace the previous three-tier apartment rate structure to a two-tier structure with rates for apartments with 3 bedrooms or less and 4 bedrooms or more.

We would like to thank you and other City staff for the valuable assistance throughout the course of the study, and we look forward to continuing to provide consulting services to the City in the future.

Yours truly,

HEMSON Consulting Ltd.



Stefan Krzeczunowicz
Associate Partner

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EXECUTIVE SUMMARY

The *Development Charges Act, 1997* (DCA), and its associated *Ontario Regulation 82/98* (O. Reg. 82/98), allow municipalities in Ontario to recover development-related capital costs from new development. This City of Waterloo Development Charges Background Study is presented as part of a process to establish development charge by-laws that comply with this legislation.

The City of Waterloo is growing and is also an attractive location for a variety of residential and non-residential development. The anticipated development in the City will increase the demand on municipal services. The City wishes to implement development charges to fund capital projects related to development in the City so that development continues to be serviced in a fiscally responsible manner.

A. PURPOSE OF 2019 DEVELOPMENT CHARGES BACKGROUND STUDY

1. Legislative Context

The City of Waterloo 2019 Development Charges (DC) Background Study is presented as part of the process to lead to the approval of a new DC by-law in compliance with the DCA. The study is prepared in accordance with the DCA and associated Regulations, including the legislative amendments that came into force on January 1, 2016.

It is anticipated that, pursuant to the *More Homes, More Choice Act, 2019*, the City will in 2020 pass a Community Benefits Charge By-Law under section 37 of the *Planning Act*, whereupon development charges for several (discounted) services calculated under this study will no longer be eligible for development charge funding.

2. Key Steps in Determining Future Development-Related Projects

In accordance with the DCA and associated regulation, several key steps are required to calculate development charges. This includes preparing a development forecast, establishing historical service levels, determining the increase in need for services arising from development and appropriate shares of costs, attributing costs to development types (i.e. residential and non-residential), and the final adjustments to the calculated charges using a cash flow analysis.

3. DC Eligible and Ineligible Costs

Development charges are intended to pay for the initial round of capital costs needed to service new development over an identified planning period. This is based on the

overlaying principle that “growth pays for growth”. However, the DCA and associated Regulation include several statutory adjustments and deductions that prevent these costs from fully being recovered by growth. Such adjustments include, but are not limited to: ineligible costs, including operating and maintenance costs; ineligible services, including, tourism facilities, parkland acquisition, etc.; a ten per cent discount on costs for “soft” or general services; deductions for costs that exceed historical service level caps; and statutory exemptions for specific uses (e.g. industrial expansions).

4. The Development-Related Capital Forecast is Subject to Change

It is recommended that Council adopt the development-related capital forecast developed for the purposes of the 2019 DC Background Study. However, it is recognized that the DC Study is a point-in-time analysis and there may be changes to project timing, scope and costs through the City’s normal annual budget process.

B. DEVELOPMENT FORECAST

The DCA requires that the City estimate “the anticipated amount, type and location of development” for which development charges may be imposed. The development forecast must cover both residential and non-residential development and be specific enough with regards to quantum, type, location and timing of development to allow the City to prepare a reasonable development-related capital program.

1. Residential and Non-Residential

The table below provides a summary of the anticipated residential and non-residential growth over the 2020-2029 and 2020-2041 planning periods. The development forecast is further discussed in Appendix A.

Development Forecast	2019 Estimate	General Services 2020 - 2029		Engineered Services 2020 - 2041	
		Growth	Total at 2029	Growth	Total at 2041
Residential					
Total Occupied Dwellings	42,490	7,327	49,816	15,778	58,268
Total Population					
Census (with undercount and students)	133,482	13,597	147,079	26,701	160,183
<i>Population In New Dwellings</i>		20,350		44,311	
Non-Residential					
Employment	70,625	7,827	78,452	18,375	89,000
Non-Residential Building Space (sq.ft.)		3,287,340		7,717,500	

C. CALCULATED DEVELOPMENT CHARGES

The tables below provides the development charges for residential and non-residential development based on the development forecasts.

Service	Residential Charge By Unit Type				Lodging House Per Bedroom
	Singles & Semis	Apartments		Multiples	
		3 Bedrooms or Less	4+ Bedrooms		
Total Discounted Services Charge	\$7,670	\$4,222	\$9,457	\$5,045	\$2,196
Total Non-Discounted Services Charge	\$8,107	\$4,462	\$9,996	\$5,332	\$2,321
TOTAL CHARGE PER UNIT	\$15,777	\$8,684	\$19,453	\$10,377	\$4,517

Service	Non-Residential Charge per Square Foot	Non-Residential Charge per Square Metre
Total Discounted Services Charge	\$1.09	\$11.73
Total Non-Discounted Services Charge	\$5.56	\$59.85
TOTAL CHARGE	\$6.65	\$71.58

D. CONSIDERATION OF AREA RATING

Based on discussions with City staff and external stakeholders, as well as an examination of the form and type of development charge eligible services provided in Waterloo, it is proposed that the City continue to calculate and collect development charges on a uniform, City-wide basis for all general and engineered services.

E. LONG-TERM CAPITAL AND OPERATING COSTS

On overview of the long-term capital and operating costs for the capital facilities and infrastructure to be included in the Development Charges by-law is provided in the study. This examination is required under the DCA. Additional details on the long-term capital and operating impact analysis are found in Appendix E. By 2029, the City's net operating costs are estimated to increase by about \$4.07 million per year. The services included in the analysis are Library, Fire Protection, Parks and Major Indoor Recreation Facilities, Cemeteries, Parking, Public Works and Fleet, and Roads and Related. For services not included in the analysis, the net operating costs will either be funded from other revenue sources (e.g. wastewater and water rates) or the capital costs have no net operating cost impact.

F. ASSET MANAGEMENT PLAN

A key function of the Asset Management Plan is to demonstrate that all assets proposed to be funded under the development charges by-law are financially sustainable over their full life cycle.

By 2030, the City will need to fund an additional \$3.12 million per annum in order to properly fund the full life cycle costs of new general services assets funded through the Development Charges By-Law. By 2042, the City will need to fund an additional \$1.79 million for new engineered services assets.

I INTRODUCTION

The *Development Charges Act, 1997* (DCA), and its associated *Ontario Regulation 82/98* (O. Reg. 82/98), allow municipalities in Ontario to recover development-related capital costs from new development. This City of Waterloo Development Charges Background Study is presented as part of a process to establish development charge by-laws that comply with this legislation.

The City of Waterloo is growing and is also an attractive location for a variety of residential and non-residential development. The anticipated development in the City will increase the demand on municipal services. The City wishes to implement development charges to fund capital projects related to development in the City so that development continues to be serviced in a fiscally responsible manner.

The DCA and O. Reg. 82/98 require that a development charges background study be prepared in which development charges are determined with reference to:

- A forecast of the amount, type and location of development anticipated in the City;
- The average capital service levels provided in the City over the ten-year period immediately preceding the preparation of the background study;
- A review of future capital projects, including an analysis of gross expenditures, funding sources, and net expenditures incurred or to be incurred by the City or its local boards to provide for the anticipated development, including the determination of the development-related and non-development-related components of capital projects; and
- An examination of the long-term capital and operating costs for the capital infrastructure required for each service to which the development charges by-laws would relate.

This study identifies the development-related net capital costs which are attributable to development that is forecast to occur in the City. The costs are apportioned to types of development (residential and non-residential) in a manner that reflects the increase in need for each service attributable to each type of development. The study therefore calculates development charges for each type of development.

The DCA provides for a period of public review and comment regarding the proposed development charges. This process includes considering and responding to comments received by members of the public about the calculated charges. Following completion of this process, and in accordance with the DCA and Council's review of this study, it is intended that Council will pass a new development charge by-law.

The remainder of this study sets out the information and analysis upon which the calculated development charges are based.

II THE METHODOLOGY USES A CITY-WIDE APPROACH TO ALIGN DEVELOPMENT-RELATED COSTS AND BENEFITS

Several key steps are required when calculating any development charge. However, specific circumstances arise in each municipality which must be reflected in the calculation. As such, in this study we have tailored our approach to the City of Waterloo's unique circumstances. The study calculates charges on a City-wide basis consistent with the City's previous development charges studies. This approach is focused on providing a reasonable alignment of development-related costs with the development that necessitates those costs.

A. CITY-WIDE CHARGES ARE PROPOSED

The DCA provides municipalities with flexibility to define services that will be included in the development charges by-laws, provided that its other provisions, as well as those of O. Reg. 82/98, are met. The DCA also requires that the by-laws designate the areas within which DCs shall be imposed. The development charges may apply to all lands in a municipality or to other designated development areas as specified in the by-laws.

For both general and engineered services, a range of capital infrastructure is available throughout the City, and all Waterloo residents and employees have access to this infrastructure. As new development occurs, new infrastructure will be needed in order to maintain overall service levels in the City. A widely accepted method of sharing the development-related capital costs for such City services is to apportion them over all anticipated growth. The following services are included in the development charge calculation:

- Library Services
- Protective Services
- Parks and Major Indoor Recreation Facilities
- Cemeteries
- Parking
- Public Works and Fleet
- Growth Studies
- Roads and Related Services
- Water Supply and Wastewater
- Storm Water Drainage and Control Services

- Engineering Studies

These services form a reasonable basis on which to plan and administer the City-wide development charges. It is noted that the analysis of each of these services examines the individual capital facilities and equipment that make them up. For example, Protective Services includes the fire stations and associated land, vehicles, furniture and equipment.

B. KEY STEPS WHEN DETERMINING DEVELOPMENT CHARGES FOR FUTURE DEVELOPMENT-RELATED PROJECTS

Several key steps are required when calculating development charges for future development-related projects. They are summarized below.

1. Development Forecast

The first step in the methodology requires that a development forecast be prepared for the ten-year period, 2020 to 2029, and long range period from 2020 to 2041, for each service area. The forecast of future residential and non-residential development used in this study was prepared in conjunction with the City's planning staff.

For the residential portion of the forecast, a projection of both the net population growth as well as the population growth in new housing units is required. The net population growth is equivalent to the population in new housing units less the change in population in existing units. The net population growth determines the need for additional facilities and provides the foundation for the development-related capital program.

When calculating the development charge, however, the development-related net capital costs are spread over the total additional population that will result from the addition of new housing units. This population in new units represents the population from which development charges will be collected.

The non-residential portion of the forecast estimates the amount of building space to be developed in the City over the planning periods. Factors for floor space per worker by employment category are used to convert the floorspace forecast into employment for the purposes of allocating development-related capital costs.

2. Service Categories and Historical Service Levels

The DCA states that the increase in the need for service attributable to anticipated development:

... must not include an increase that would result in 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...(s. 5. (1) 4.)

Historical ten-year average service levels thus form the basis for the development charge calculation. A review of the City's capital service levels for buildings, land, vehicles, equipment and so on has therefore been prepared for the calculation so that the portion of future capital projects that may be included in the development charge can be determined. The historical service levels used in this study have been calculated based on the period 2010 to 2019.

Historical service levels have not been calculated for the engineered services of Water Supply and Wastewater and Storm Water Drainage and Control Services as new infrastructure for these services is required to meet engineering standards set by health and environmental legislation.

3. Development-Related Capital Forecast and Analysis of Net Capital Costs to be Included in the Development Charges

A development-related capital forecast has been prepared by Hemson and City staff as part of the study. The forecast identifies development-related projects and their gross and net costs, after allowing for capital grants, subsidies or other contributions as required by the DCA s.5 (2). The capital forecast provides another cornerstone upon which development charges are based. The DCA requires that the increase in the need for service attributable to the anticipated development may include an increase:

... only if the council of the municipality has indicated that it intends to ensure that such an increase in need will be met. (s. 5. (1) 3.)

In conjunction with the DCA, s. 5 (1) 4 referenced above, these sections have the effect of requiring that the development charge be calculated on the lesser of the historical ten-year average service levels or the service levels embodied in future plans of the City. The development-related capital forecast prepared for this study ensures that development charges are only imposed to help pay for projects that have been or are intended to be purchased or built in order to accommodate future anticipated development. It is not sufficient in the calculation of development charges merely to have had the service in the past. There must also be a demonstrated commitment to continue to emplace facilities or infrastructure in the future. In this regard, O. Reg 82/98, s. 3 states that:

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 if the increase in service forms part of an official plan, capital forecast or similar expression of the intention of the council and the plan, forecast or similar expression of the intention of the council has been approved by the council.

For some projects in the development-related capital forecast, a portion of the project may confer benefits to existing residents. As required by the DCA, s. 5 (1) 6, these portions of projects and their associated net costs are the funding responsibility of the City from non-development charge sources. The amount of funding for such non-growth shares of projects is also identified as part of the preparation of the development-related capital forecast.

There is also a requirement in the DCA to reduce the applicable development charge by the amount of any “uncommitted excess capacity” that is available for a service. Such capacity is available to partially meet the future servicing requirements. Adjustments are made in the analysis to meet this requirement of the Act.

Finally, when calculating development charges, the development-related net capital costs must be reduced by ten per cent for all services except engineered services, such as roads and related and water/wastewater infrastructure, and protection services, such as fire (DCA, s. 5 (1) 8). The ten per cent discount is applied to other services, e.g. indoor recreation and public works, and the resulting funding responsibility from non-development charge sources is identified.

4. Attribution to Types of Development

The next step in the determination of development charges is the allocation of the development-related net capital costs between the residential and the non-residential sectors. In the City of Waterloo, the allocation is based on the consideration of such factors as projected changes in population and employment over the planning periods and the anticipated demand for services.

The residential component of the development charge is applied to different housing types based on average occupancy factors. The non-residential component is applied on the basis of gross building space in square metres.

5. Final Adjustment

The final determination of the development charge results from adjustments made to development-related net capital costs for each service and sector resulting from a cash flow analysis that takes account of the timing of projects and receipt of development charges. Interest earnings or borrowing costs are accounted for in the calculation as allowed under the DCA.

III DEVELOPMENT FORECAST

The following section provides a summary of the development forecasts that have been used as inputs to the development charges calculation for the City. The development forecasts were prepared in conjunction with the City's planning staff. A more detailed summary of the forecasts, including tables illustrating historical trends and forecast results, is provided in Appendix A.

The DCA requires that the City estimate "the anticipated amount, type and location of development" for which development charges may be imposed. The development forecast must cover both residential and non-residential development and be specific enough with regards to quantum, type, location and timing of development to allow the City to prepare a reasonable development-related capital program.

A. RESIDENTIAL FORECAST

Development charges are levied on residential development as a charge per new unit. Therefore, for the residential forecast, a projection of both the population growth as well as the population in new housing units is required.

- The population growth determines the need for additional facilities and provides the foundation for the development-related capital program.
- When calculating the development charge, however, the development-related net capital costs are spread over the total additional population that occupy new housing units. The population in new units represents the population from which development charges will be collected.

The total ten-year population in new units is forecast at 20,350. The total long-range population in new units to 2041 is forecast at 44,311.

B. NON-RESIDENTIAL FORECAST

Development charges are levied on non-residential development as a charge per unit of gross floor area (GFA). As with the residential forecast, the non-residential forecast requires both a projection of employment growth as well as a projection of the employment growth associated with new floor space in the City.

The City's employment growth is estimated at 7,827 jobs over the ten-year period to 2029 and 18,375 jobs over the long-range period to 2041. The total ten-year GFA growth is forecast at 3.29 million square feet, and the total long-range GFA growth to 2041 is forecast at 7.72 million square feet.

Table 1 summarizes the development charge development forecast for the City.

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TABLE 1

CITY OF WATERLOO
SUMMARY OF RESIDENTIAL AND NON-RESIDENTIAL
DEVELOPMENT FORECAST

Development Forecast	2019 Estimate	General Services 2020 - 2029		Engineered Services 2020 - 2041	
		Growth	Total at 2029	Growth	Total at 2041
Residential					
Total Occupied Dwellings	42,490	7,327	49,816	15,778	58,268
Total Population					
Census (with undercount and students)	133,482	13,597	147,079	26,701	160,183
<i>Population In New Dwellings</i>		<i>20,350</i>		<i>44,311</i>	
Non-Residential					
Employment	70,625	7,827	78,452	18,375	89,000
Non-Residential Building Space (sq.ft.)		3,287,340		7,717,500	

IV HISTORICAL CAPITAL SERVICE LEVELS

The DCA and O. Reg. 82/98 require that the development charges be set at a level no higher than the average service level provided in the City over the ten-year period immediately preceding the preparation of the background study, on a service by service basis.

For non-engineered services (library, fire protection, etc.) the legislative requirement is met by documenting service levels for the preceding ten years: in this case, for the period 2010 to 2019. Typically, service levels for non-engineered services are measured as a ratio of inputs per population or inputs per population and employment. With engineered services such as watermains, engineering and environmental/regulatory standards are used in lieu of inputs per capita.

O. Reg. 82/98 requires that when defining and determining historical service levels both the *quantity* and *quality* of service be taken into consideration. In most cases, the service levels are initially established in quantitative terms. For example, service levels for buildings are presented in terms of square feet per unit. The qualitative aspect is introduced by the consideration of the replacement monetary value of the facility or service. In the case of buildings, for example, the cost would be shown in terms of dollars per square foot to replace or construct a facility of the same quality. This approach helps to ensure that the development-related capital facilities that are to be charged to new development reflect not only the quantity (number and size) but also the quality (value or cost) of service provided by the City in the past. Both the quantitative and qualitative aspects of service levels used in the current analysis are based on information provided by City staff. This information is generally based on historical records and the City's and surrounding municipalities' experience with costs to acquire or construct similar facilities, equipment and infrastructure.

Table 2 summarizes service levels for all services included in the development charge calculation. Appendix B provides detailed historical inventory data upon which the calculation of service levels is based for the general services. Appendix C provides similar data for the engineered services.

CITY OF WATERLOO
SUMMARY OF AVERAGE HISTORIC SERVICE LEVELS 2010 - 2019

Service	2010 - 2019 Service Level Measure
1.0 LIBRARY SERVICES Buildings Land Materials Programing Equipment Furniture And Equipment Computer & Electronic Equipment	\$386 per capita \$180 per capita \$77 per capita \$97 per capita \$1 per capita \$24 per capita \$7 per capita
2.0 PROTECTIVE SERVICES Buildings Land Vehicle & Personal Equipment And Gear Vehicles Furniture & Equipment	\$174 per capita & employment \$97 per capita & employment \$25 per capita & employment \$13 per capita & employment \$29 per capita & employment \$12 per capita & employment
3.0 PARKS AND MAJOR INDOOR RECREATION FACILITIES Indoor Recreation Parks And Trails Park Facilities And Fleet Park Special Facilities	\$5,223 per capita \$2,921 per capita \$649 per capita \$1,464 per capita \$188 per capita
4.0 CEMETERIES Buildings Cemetery Land Other Infrastructure	\$266 per capita \$24 per capita \$233 per capita \$9 per capita
5.0 PARKING Parking Spaces Land for Parking Spaces Other Infrastructure	\$435 per capita & employment \$88 per capita & employment \$347 per capita & employment \$0 per capita & employment
6.0 PUBLIC WORKS AND FLEET Buildings Land Furniture & Equipment Fleet & Equipment	\$311 per capita \$131 per capita & employment \$80 per capita & employment \$17 per capita & employment \$83 per capita & employment
ROADS AND RELATED SERVICES Roads Bridges & Culverts Retaining Walls In Right Of Way Sidewalks & Bike Lanes	\$1,659 per capita & employment \$1,068 per capita & employment \$106 per capita & employment \$45 per capita & employment \$440 per capita & employment

V DEVELOPMENT-RELATED CAPITAL FORECAST

The DCA requires the Council of a municipality to express its intent to provide future capital facilities at the level incorporated in the development charges calculation. As noted above in Section II, O. Reg. 82/98, s. 3 states that:

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 if the increase in service forms part of an official plan, capital forecast or similar expression of the intention of the council and the plan, forecast or similar expression of the intention of the council has been approved by the council.

A. A DEVELOPMENT-RELATED CAPITAL FORECAST IS PROVIDED FOR COUNCIL'S APPROVAL

Based on the development forecasts summarized in Section III and detailed in Appendix A, City staff, in collaboration with the consultant, have developed a development-related capital forecast which sets out projects that are required to service anticipated development. For all general services, the capital plan covers the ten-year period from 2020 to 2029. For engineering services the capital plan covers the long range period from 2020 to 2041.

It is recommended that Council adopt the development-related capital forecast developed for the purposes of the development charges calculation. It is assumed that future capital budgets and forecasts will continue to bring forward the capital projects presented here as they will be needed to service the anticipated development in the City. It is however acknowledged that changes to the forecast presented here may occur through the City's normal capital budget process.

B. DEVELOPMENT-RELATED CAPITAL FORECAST FOR GENERAL SERVICES

A summary of the ten-year development-related capital program for General Services is presented in Table 3. The table shows that the gross cost of the City's capital forecast is estimated to be \$102.63 million. Grants or subsidies in the amount of \$4.64 million have been identified. As such, the net cost of the development-related capital program is \$98.00 million.

TABLE 3

CITY OF WATERLOO
SUMMARY OF DEVELOPMENT-RELATED CAPITAL PROGRAM
FOR GENERAL SERVICES 2020 - 2029
(in \$000)

Service	Gross Cost	Grants/ Subsidies	Municipal Cost	Total Net Capital Program									
				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
1.0 LIBRARY SERVICES	\$5,763.8	\$0.0	\$5,763.8	\$3,594.6	\$264.4	\$264.4	\$222.4	\$222.4	\$264.4	\$264.4	\$222.4	\$222.4	\$222.4
1.1 Buildings, Land & Furnishings	\$2,358.0	\$0.0	\$2,358.0	\$2,358.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
1.2 Strategic Initiatives	\$168.0	\$0.0	\$168.0	\$0.0	\$42.0	\$42.0	\$0.0	\$0.0	\$42.0	\$42.0	\$0.0	\$0.0	\$0.0
1.3 Material Acquisitions	\$2,223.6	\$0.0	\$2,223.6	\$222.4	\$222.4	\$222.4	\$222.4	\$222.4	\$222.4	\$222.4	\$222.4	\$222.4	\$222.4
1.4 Recovery of Negative Reserve Fund Balance	\$1,014.2	\$0.0	\$1,014.2	\$1,014.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2.0 PROTECTIVE SERVICES	\$11,136.9	\$0.0	\$11,136.9	\$318.0	\$0.0	\$45.0	\$6,132.3	\$4,641.6	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2.1 Buildings, Land & Furnishings	\$9,601.1	\$0.0	\$9,601.1	\$318.0	\$0.0	\$0.0	\$4,641.6	\$4,641.6	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2.2 Vehicles & Equipment	\$1,535.7	\$0.0	\$1,535.7	\$0.0	\$0.0	\$45.0	\$1,490.7	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
3.0 PARKS AND MAJOR INDOOR RECREATION FACILITIES	\$56,017.3	\$4,637.1	\$51,380.2	\$7,816.8	\$6,630.8	\$5,611.4	\$3,069.1	\$2,423.2	\$2,736.0	\$7,254.3	\$7,254.3	\$4,106.7	\$4,477.7
3.1 Indoor Recreation	\$13,218.1	\$2,642.1	\$10,576.1	\$2,642.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$1,983.5	\$1,983.5	\$1,983.5	\$1,983.5
3.2 Outdoor Recreation & Park Trails	\$41,214.9	\$1,995.0	\$39,219.9	\$5,016.3	\$6,472.4	\$5,453.0	\$2,910.7	\$2,264.7	\$2,577.6	\$5,112.4	\$5,112.4	\$1,964.7	\$2,335.7
3.3 Fleet	\$1,584.2	\$0.0	\$1,584.2	\$158.4	\$158.4	\$158.4	\$158.4	\$158.4	\$158.4	\$158.4	\$158.4	\$158.4	\$158.4
4.0 CEMETERIES	\$181.2	\$0.0	\$181.2	\$0.0	\$0.0	\$15.0	\$35.4	\$35.4	\$35.4	\$15.0	\$15.0	\$15.0	\$15.0
4.1 Buildings, Land & Equipment	\$181.2	\$0.0	\$181.2	\$0.0	\$0.0	\$15.0	\$35.4	\$35.4	\$35.4	\$15.0	\$15.0	\$15.0	\$15.0
5.0 PARKING	\$16,285.3	\$0.0	\$16,285.3	\$5,428.4	\$5,428.4	\$5,428.4	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
5.1 Facilities	\$16,285.3	\$0.0	\$16,285.3	\$5,428.4	\$5,428.4	\$5,428.4	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
6.0 PUBLIC WORKS AND FLEET	\$8,958.0	\$0.0	\$8,958.0	\$992.0	\$463.0	\$463.0	\$1,729.2	\$1,729.2	\$1,729.2	\$463.0	\$463.0	\$463.0	\$463.0
6.1 Buildings, Land & Equipment	\$5,377.7	\$0.0	\$5,377.7	\$0.0	\$175.5	\$175.5	\$1,441.7	\$1,441.7	\$1,441.7	\$175.5	\$175.5	\$175.5	\$175.5
6.2 Fleet	\$2,875.8	\$0.0	\$2,875.8	\$287.6	\$287.6	\$287.6	\$287.6	\$287.6	\$287.6	\$287.6	\$287.6	\$287.6	\$287.6
6.3 Recovery of Negative Reserve Fund Balance	\$704.5	\$0.0	\$704.5	\$704.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
7.0 GROWTH STUDIES	\$4,292.2	\$0.0	\$4,292.2	\$1,047.6	\$803.4	\$873.5	\$368.9	\$229.8	\$586.0	\$112.8	\$58.8	\$63.7	\$147.8
7.1 Planning and Development Studies (soft services compo	\$2,642.0	\$0.0	\$2,642.0	\$945.9	\$599.7	\$237.3	\$92.3	\$128.1	\$484.3	\$37.3	\$37.3	\$42.3	\$37.3
7.2 Library Studies	\$106.0	\$0.0	\$106.0	\$0.0	\$52.0	\$0.0	\$0.0	\$0.0	\$0.0	\$54.0	\$0.0	\$0.0	\$0.0
7.3 Parks and Recreation Studies	\$1,280.0	\$0.0	\$1,280.0	\$80.2	\$80.2	\$614.7	\$255.2	\$80.2	\$80.2	\$0.0	\$0.0	\$0.0	\$89.0
7.4 Parking Studies	\$264.2	\$0.0	\$264.2	\$21.4	\$71.4	\$21.4	\$21.4	\$21.4	\$21.4	\$21.4	\$21.4	\$21.4	\$21.4
TOTAL - 10 YEAR GENERAL SERVICES	\$102,634.5	\$4,637.1	\$97,997.5	\$19,197.4	\$13,590.0	\$12,700.8	\$11,557.3	\$9,281.5	\$5,351.0	\$8,109.4	\$8,013.4	\$4,870.7	\$5,325.9

Of the \$98.00 million net capital cost, approximately \$51.38 million (52 per cent) is related to capital works for the Parks and Major Indoor Recreation Facilities service. Another \$16.29 million (17 per cent) is required to fund Parking infrastructure. The cost of the Protective Services capital program totals \$11.14 million (11 per cent). Public Works and Fleet adds another \$8.96 million (9 per cent) to the capital forecast, and the Library Services costs total \$5.76 million (6 per cent). Growth Studies capital costs amounts to \$4.29 million, or 4 per cent of the total net cost. Finally, the cost of adding new cemeteries infrastructure totals approximately \$181,200 (0.2 per cent).

This capital program incorporates those projects identified to be related to development anticipated in the next ten years. It is not implied that all of these costs are to be recovered from new development by way of development charges (see the following Section VI for the method and determination of net capital costs attributable to development). Portions of this capital program may relate to replacement of existing capital facilities, shares of projects that benefit existing development, or development anticipated to occur beyond the 2020-2029 planning period. In addition to these reductions, the amounts shown on Table 3 have not been reduced by the ten per cent deduction for various “soft” services as required by s. 5 (1) 8 of the DCA.

After these reductions, the remaining development-related capital costs are brought forward to the development charge calculation. Further details on the capital plans for each individual general service are available in Appendix B.

C. DEVELOPMENT-RELATED CAPITAL FORECAST FOR ENGINEERING SERVICES

Table 4 presents a summary of the development-related capital forecast for the City’s engineering infrastructure over the period 2020 to 2041. The table shows that the gross cost of the City’s engineered service capital forecast is estimated to be \$192.19 million. Grants, subsidies, and other contributions account for \$30.71 million, leaving \$161.48 million in net City costs.

Further details on the development charges calculations for the engineering services are available in Appendix C.

CITY OF WATERLOO
SUMMARY OF DEVELOPMENT-RELATED CAPITAL PROGRAM
FOR ENGINEERING SERVICES 2020 - 2041
(in \$000)

Service	Gross Cost	Grants/ Subsidies	Municipal Cost	Total Net Municipal Cost of the Engineering Services Capital Program										
				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
1.0 ROADS AND RELATED	\$79,828.8	\$20,964.0	\$58,864.9	\$21,675.5	\$8,136.3	\$2,531.4	\$1,860.3	\$4,157.1	\$5,437.1	\$3,837.2	\$3,531.8	\$4,333.6	\$3,364.7	\$0.0
1.1 New Construction and Reconstruction Projects	\$63,451.8	\$20,964.0	\$42,487.8	\$14,732.6	\$7,006.6	\$1,132.8	\$540.5	\$3,220.3	\$4,500.3	\$2,900.4	\$2,595.1	\$3,414.1	\$2,445.2	\$0.0
1.2 Active Transportation Projects	\$10,566.1	\$0.0	\$10,566.1	\$2,281.3	\$746.6	\$1,015.5	\$936.7	\$936.7	\$936.7	\$936.7	\$936.7	\$919.5	\$919.5	\$0.0
1.3 Road Debentures (Principal Payments)	\$4,147.4	\$0.0	\$4,147.4	\$2,998.1	\$383.1	\$383.1	\$383.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
1.4 Recovery of Negative Reserve Fund Balance	\$1,663.5	\$0.0	\$1,663.5	\$1,663.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2.0 WATER SUPPLY AND WASTEWATER	\$64,229.0	\$7,103.3	\$57,125.7	\$18,366.3	\$15,649.1	\$5,741.2	\$2,414.6	\$2,715.0	\$2,347.8	\$1,491.1	\$3,312.2	\$1,491.1	\$3,597.4	\$0.0
2.1 Outstanding Debenture	\$3,661.6	\$0.0	\$3,661.6	\$2,404.1	\$419.1	\$419.1	\$419.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2.2 Water Projects	\$17,364.1	\$590.1	\$16,774.0	\$3,703.2	\$3,207.2	\$2,393.7	\$996.3	\$1,259.6	\$817.1	\$492.0	\$1,924.8	\$492.0	\$1,488.2	\$0.0
2.3 Wastewater Projects	\$43,203.3	\$6,513.1	\$36,690.2	\$12,259.0	\$12,022.8	\$2,928.4	\$999.1	\$1,455.3	\$1,530.7	\$999.1	\$1,387.3	\$999.1	\$2,109.3	\$0.0
3.0 STORMWATER DRAINAGE AND CONTROL SERVICES	\$41,101.6	\$2,449.7	\$38,651.9	\$9,313.7	\$10,380.9	\$3,027.9	\$2,416.5	\$3,586.5	\$3,182.9	\$1,212.5	\$2,074.6	\$1,389.2	\$2,067.2	\$0.0
3.1 Stormwater Debentures	\$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
3.2 Stormwater Projects	\$41,101.6	\$2,449.7	\$38,651.9	\$9,313.7	\$10,380.9	\$3,027.9	\$2,416.5	\$3,586.5	\$3,182.9	\$1,212.5	\$2,074.6	\$1,389.2	\$2,067.2	\$0.0
3.3 Committed Excess Capacity Projects	\$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
4.0 ENGINEERING STUDIES	\$7,029.7	\$194.0	\$6,835.7	\$1,288.3	\$531.7	\$549.7	\$236.6	\$313.7	\$481.7	\$656.2	\$526.2	\$236.6	\$231.7	\$674.4
4.1 Roads and Related	\$1,981.5	\$0.0	\$1,981.5	\$98.1	\$348.1	\$98.1	\$98.1	\$98.1	\$348.1	\$98.1	\$98.1	\$98.1	\$98.1	\$250.0
4.2 Water Supply and Wastewater	\$1,177.8	\$0.0	\$1,177.8	\$294.4	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$294.4	\$0.0	\$0.0	\$0.0	\$294.4
4.3 Storm Drainage and Control Services	\$588.9	\$0.0	\$588.9	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$294.4	\$0.0	\$0.0	\$0.0
4.4 Other Infrastructure Services (hard services component only)	\$2,366.2	\$194.0	\$2,172.2	\$126.5	\$176.5	\$444.5	\$131.4	\$126.5	\$126.5	\$256.5	\$126.5	\$131.4	\$126.5	\$130.0
4.5 Planning and Development Studies (hard services component only)	\$153.3	\$0.0	\$153.3	\$7.1	\$7.1	\$7.1	\$7.1	\$89.1	\$7.1	\$7.1	\$7.1	\$7.1	\$7.1	\$0.0
4.6 Recovery of Negative Reserve Fund Balance	\$762.1	\$0.0	\$762.1	\$762.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
TOTAL - ENGINEERING SERVICES	\$192,189.1	\$30,710.9	\$161,478.2	\$50,643.8	\$34,698.0	\$11,850.3	\$6,928.0	\$10,772.2	\$11,449.4	\$7,196.9	\$9,444.7	\$7,450.5	\$9,261.1	\$674.4

CITY OF WATERLOO
SUMMARY OF DEVELOPMENT-RELATED CAPITAL PROGRAM
FOR ENGINEERING SERVICES 2020 - 2041
(in \$000)

Service	Total Net Municipal Cost of the Engineering Services Capital Program										
	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
1.0 ROADS AND RELATED	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
1.1 New Construction and Reconstruction Projects	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
1.2 Active Transportation Projects	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
1.3 Road Debentures (Principal Payments)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
1.4 Recovery of Negative Reserve Fund Balance	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2.0 WATER SUPPLY AND WASTEWATER	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2.1 Outstanding Debenture	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2.2 Water Projects	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2.3 Wastewater Projects	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
3.0 STORMWATER DRAINAGE AND CONTROL SERVICES	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
3.1 Stormwater Debentures	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
3.2 Stormwater Projects	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
3.3 Committed Excess Capacity Projects	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
4.0 ENGINEERING STUDIES	\$0.0	\$0.0	\$4.9	\$130.0	\$250.0	\$294.4	\$294.4	\$134.9	\$0.0	\$0.0	\$0.0
4.1 Roads and Related	\$0.0	\$0.0	\$0.0	\$0.0	\$250.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
4.2 Water Supply and Wastewater	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$294.4	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
4.3 Storm Drainage and Control Services	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$294.4	\$0.0	\$0.0	\$0.0	\$0.0
4.4 Other Infrastructure Services (hard services component only)	\$0.0	\$0.0	\$4.9	\$130.0	\$0.0	\$0.0	\$0.0	\$134.9	\$0.0	\$0.0	\$0.0
4.5 Planning and Development Studies (hard services component only)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
4.6 Recovery of Negative Reserve Fund Balance	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
TOTAL - ENGINEERING SERVICES	\$0.0	\$0.0	\$4.9	\$130.0	\$250.0	\$294.4	\$294.4	\$134.9	\$0.0	\$0.0	\$0.0

VI PROPOSED DEVELOPMENT CHARGES ARE CALCULATED IN ACCORDANCE WITH THE DCA

This section summarizes the calculation of development charges for each service and the resulting total development charge by type of development. For all services, the calculation of the “unadjusted” per capita (residential) and per square metre (non-residential) charges is reviewed. Adjustments to these amounts resulting from a cashflow analysis that accounts for interest earnings and borrowing costs are also discussed.

For residential development, an adjusted total per capita amount is applied to different housing types on the basis of average occupancy factors. For non-residential development the proposed development charge rates are based on gross floor area (GFA) of building space.

It is noted that the calculation of the development charges does not include any provision for exemptions required under the DCA, for example, the exemption for enlargements of up to fifty per cent on existing industrial buildings. Such legislated exemptions, or other exemptions which Council may choose to provide, will result in a loss of development charge revenue for the affected types of development. Any such revenue loss may not be offset, however, by increasing other portions of the calculated charge.

A. DEVELOPMENT CHARGE CALCULATION

A summary of the “unadjusted” residential and non-residential development charges for the general services is presented in Table 5. Further details of the calculation for each individual general service are available in Appendix B. Appendix C contains further details of the calculations for the engineered services.

1. Unadjusted Residential and Non-Residential Development Charge Rates

The capital forecast for the general services incorporates those projects identified to be related to development anticipated in the next ten years. However, not all of the capital costs are to be recovered from new development by way of development charges. Table 5 shows that \$17.09 million of the capital forecast relates to replacement of existing capital facilities or for shares of projects that provide benefit existing development. Another share of the forecast, \$10.08 million, is either attributable to development beyond 2029 (and can therefore only be recovered under

future development charge studies) or represents a service level increase in the City. In addition, \$8.18 million has been committed to projects in the capital forecast from existing development charge reserve funds. Finally, the capital costs are reduced by the legislated ten per cent discount for various “soft” services as mandated by s. 5 (1) 8. of the DCA, totaling \$6.01 million. The remaining amount of \$56.64 million is deemed to be eligible for recovery through DCs in the 2020 to 2029 period. This amount is then allocated to new residential development (\$50.54 million) and non-residential development (\$6.10 million).

The total net development related capital costs eligible for recovery for the general services results in unadjusted development charges for each service expressed as a per capita charge for residential development and a charge per square metre of new gross floor area (GFA) for non-residential development. These unadjusted development charges are displayed at the right of Table 5.

Table 6 presents the “unadjusted” residential and non-residential development charges for the engineering infrastructure. It shows that of the total net cost of the capital program, \$60.31 million is considered to replace existing infrastructure or to benefit the existing community. All remaining costs are considered to be necessary to support development occurring before 2041, and thus no post-2041 benefit share has been identified. A total existing reserve fund balance of \$8.36 million has been removed from the development charges calculation. After these deductions, the remaining \$92.81 million is carried forward to the development charge calculation. This amount is then allocated to new residential development (\$65.90 million) and non-residential development (\$26.92 million).

The allocation of engineering service costs yields unadjusted charges for each service expressed as a per capita charge for residential development and a charge per square foot for new non-residential development.

2. Adjusted Residential and Non-Residential Development Charge Rates

Final adjustments to the “unadjusted” development charge rates are made through a cashflow analysis. The analysis, details of which are included in Appendices B and C, considers the borrowing cost and interest earnings associated with the timing of expenditures and development charge receipts for each service category. Table 7 summarizes the results of the adjustment for the residential component of the development charge rate. As shown, the adjusted per capita rate is increased by \$546 from \$3,971 per capita to \$4,517 per capita after the cashflow analysis.

Table 7 also provides the calculated rates by residential unit with the total charge per unit ranging from a high of \$19,453 per unit for apartments with four or more bedrooms to a low of \$8,684 for apartments with three bedrooms or less. The rate per single- or semi-detached unit is \$15,777.

The calculated unadjusted and adjusted non-residential development charge rates are presented in Table 8. The calculated adjusted rate for new non-residential development is \$6.65 per square foot (\$71.58 per square metre), which represents an increase of \$1.30 per square foot (\$13.99 per square metre) from the unadjusted rate of \$5.35 per square foot (\$57.59 per square metre).

CITY OF WATERLOO
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
10-YEAR CAPITAL PROGRAM FOR GENERAL SERVICES

10 Year Growth in Population in New Units	20,350
10 Year Growth in Square Feet	3,287,340

Service	Development-Related Capital Program (2020 - 2029)						Residential Share		Non-Residential Share	
	Net Municipal Cost (\$000)	Replacement & Benefit to Existing (\$000)	Required Service Discount (\$000)	DC Reserve Commitments (\$000)	Post-2029 Benefit (\$000)	Total Costs Eligible for DC Recovery (\$000)	%	(\$000)	%	(\$000)
	1.0 LIBRARY SERVICES	\$5,763.8	\$134.4	\$461.5	\$0.0	\$441.8	\$4,726.0	100%	\$4,726.0	0%
Unadjusted Development Charge Per Capita								\$232.23		\$0.00
Unadjusted Development Charge Per Sq.Ft										\$0.00
2.0 PROTECTIVE SERVICES	\$11,136.9	\$0.0	\$0.0	\$1,168.3	\$6,236.7	\$3,731.8	72%	\$2,686.9	28%	\$1,044.92
Unadjusted Development Charge Per Capita								\$132.03		\$0.32
Unadjusted Development Charge Per Sq.Ft										\$0.32
3.0 PARKS AND MAJOR INDOOR RECREATION FACILITIES	\$51,380.2	\$15,597.3	\$3,578.3	\$2,074.8	\$0.0	\$30,129.8	100%	\$30,129.8	0%	\$0.00
Unadjusted Development Charge Per Capita								\$1,480.55		\$0.00
Unadjusted Development Charge Per Sq.Ft										\$0.00
4.0 CEMETERIES	\$181.2	\$162.0	\$1.9	\$17.2	\$0.0	\$0.0	100%	\$0.0	0%	\$0.00
Unadjusted Development Charge Per Capita								\$0.00		\$0.00
Unadjusted Development Charge Per Sq.Ft										\$0.00
5.0 PARKING	\$16,285.3	\$0.0	\$1,628.5	\$4,899.1	\$1,364.4	\$8,393.3	72%	\$6,043.2	28%	\$2,350.12
Unadjusted Development Charge Per Capita								\$296.96		\$0.71
Unadjusted Development Charge Per Sq.Ft										\$0.71
5.0 PUBLIC WORKS AND FLEET	\$8,958.0	\$268.9	\$0.0	\$0.0	\$2,035.0	\$6,654.1	72%	\$4,790.9	28%	\$1,863.14
Unadjusted Development Charge Per Capita								\$235.42		\$0.57
Unadjusted Development Charge Per Sq.Ft										\$0.57
6.0 GROWTH STUDIES	\$4,292.2	\$927.6	\$336.5	\$25.5	\$0.0	\$3,002.7	72%	\$2,161.9	28%	\$840.76
Unadjusted Development Charge Per Capita								\$106.24		\$0.26
Unadjusted Development Charge Per Sq.Ft										\$0.26
TOTAL 10 YEAR GENERAL SERVICES	\$97,997.5	\$17,090.2	\$6,006.7	\$8,184.8	\$10,078.0	\$56,637.8		\$50,538.9		\$6,098.9
Unadjusted Development Charge Per Capita								\$2,483.43		
Unadjusted Development Charge Per Sq.ft										\$1.86

TABLE 6

**CITY OF WATERLOO
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
2020-2041 CAPITAL PROGRAM FOR ENGINEERED SERVICES**

2020-2041 Growth in Population in New Units	44,311
2020-2041 Non-Residential Floorspace Growth in Square Feet	7,717,500

Service	Development-Related Capital Program (2020 - 2041)						Residential		Non-Residential	
	Net Municipal Cost (\$000)	Replacement & Benefit to Existing (\$000)	Required Service Discount (\$000)	DC Reserve Commitments (\$000)	Post-2041 Benefit (\$000)	Total Costs Eligible for DC Recovery (\$000)	Share %	(\$000)	Share %	(\$000)
1.0 ROADS AND RELATED	\$58,864.9	\$21,392.7	\$0.0	\$0.0	\$0.0	\$37,472.2	71.0%	\$26,605.3	29.0%	\$10,866.94
Unadjusted Development Charge Per Capita								\$600.42		
Unadjusted Development Charge Per Sq.Ft										\$1.41
2.0 WATER AND WASTEWATER SUPPLY	\$57,125.7	\$18,459.4	\$0.0	\$4,905.4	\$0.0	\$33,760.9	71.0%	\$23,970.3	29.0%	\$9,790.67
Unadjusted Development Charge Per Capita								\$540.95		
Unadjusted Development Charge Per Sq.Ft										\$1.27
3.0 STORMWATER DRAINAGE AND CONTROL SERVICES	\$38,651.9	\$18,006.4	\$0.0	\$3,450.9	\$0.0	\$17,194.6	71.0%	\$12,208.2	29.0%	\$4,986.44
Unadjusted Development Charge Per Capita								\$275.51		
Unadjusted Development Charge Per Sq.Ft										\$0.65
4.0 ENGINEERING STUDIES	\$6,835.7	\$2,450.9	\$0.0	\$0.0	\$0.0	\$4,384.8	71.0%	\$3,113.2	29.0%	\$1,271.60
Unadjusted Development Charge Per Capita								\$70.26		
Unadjusted Development Charge Per Sq.Ft										\$0.16
TOTAL 21 YEAR ENGINEERED SERVICES	\$161,478.2	\$60,309.3	\$0.0	\$8,356.3	\$0.0	\$92,812.6		\$65,896.9		\$26,915.6
Residential								\$1,487.14		
Unadjusted Development Charge Per Capita										
Non-Residential										\$3.49
Unadjusted Industrial Development Charge Per Square Foot										

TABLE 7
CITY OF WATERLOO
RESIDENTIAL DEVELOPMENT CHARGES BY UNIT TYPE
CITY-WIDE DEVELOPMENT CHARGES

Service	Unadjusted Charge Per Capita	Adjusted Charge Per Capita	Residential Charge By Unit Type (1)				Lodging House Per Bedroom
			Singles & Semis	Apartments		Multiples	
				3 Bedrooms or Less	4+ Bedrooms		
Library Services	\$232	\$260	\$908	\$500	\$1,120	\$597	\$260
Protective Services	\$132	\$140	\$489	\$269	\$603	\$322	\$140
Parks and Major Indoor Recreation Facilities	\$1,481	\$1,485	\$5,187	\$2,855	\$6,395	\$3,412	\$1,485
Cemeteries	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Parking	\$297	\$337	\$1,177	\$648	\$1,451	\$774	\$337
Public Works and Fleet	\$235	\$241	\$842	\$463	\$1,038	\$554	\$241
Growth Studies	\$106	\$114	\$398	\$219	\$491	\$262	\$114
Subtotal General Services	\$2,483	\$2,577	\$9,001	\$4,954	\$11,098	\$5,921	\$2,577
Roads and Related Services	\$600	\$791	\$2,763	\$1,521	\$3,406	\$1,817	\$791
Water Supply and Wastewater	\$541	\$717	\$2,504	\$1,378	\$3,088	\$1,647	\$717
Stormwater Drainage and Control Services	\$276	\$351	\$1,226	\$675	\$1,512	\$806	\$351
Engineering Studies	\$70	\$81	\$283	\$156	\$349	\$186	\$81
Subtotal Engineered Services	\$1,487	\$1,940	\$6,776	\$3,730	\$8,355	\$4,456	\$1,940
TOTAL CHARGE PER UNIT	\$3,971	\$4,517	\$15,777	\$8,684	\$19,453	\$10,377	\$4,517
(1) Based on Persons Per Unit Of:			3.49	1.92	4.31	2.30	1.00

TABLE 8
CITY OF WATERLOO
NON-RESIDENTIAL DEVELOPMENT CHARGES PER SQUARE FOOT
CITY-WIDE DEVELOPMENT CHARGES

Service	Unadjusted Charge per Square Foot	Adjusted Charge per Square Foot	Unadjusted Charge per Square Metre	Adjusted Charge per Square Metre
Library Services	\$0.00	\$0.00	\$0.00	\$0.00
Protective Services	\$0.32	\$0.34	\$3.44	\$3.66
Parks and Major Indoor Recreation Facilities	\$0.00	\$0.00	\$0.00	\$0.00
Cemeteries	\$0.00	\$0.00	\$0.00	\$0.00
Parking	\$0.71	\$0.81	\$7.64	\$8.72
Public Works and Fleet	\$0.57	\$0.58	\$6.14	\$6.24
Growth Studies	\$0.26	\$0.28	\$2.80	\$3.01
Subtotal General Services	\$1.86	\$2.01	\$20.02	\$21.64
Roads and Related Services	\$1.41	\$1.89	\$15.18	\$20.34
Water Supply and Wastewater	\$1.27	\$1.71	\$13.67	\$18.41
Stormwater Drainage and Control Services	\$0.65	\$0.84	\$7.00	\$9.04
Engineering Studies	\$0.16	\$0.20	\$1.72	\$2.15
Subtotal Engineered Services	\$3.49	\$4.64	\$37.57	\$49.94
TOTAL CHARGE	\$5.35	\$6.65	\$57.59	\$71.58

**B. COMPARISON OF 2019 NEWLY CALCULATED DEVELOPMENT CHARGES
WITH CHARGES CURRENTLY IN FORCE IN CITY OF WATERLOO**

Table 9 presents a comparison of the newly calculated residential and non-residential development charges with currently imposed development charge rates (as of January 1, 2019). It demonstrates that the newly calculated residential development charge rate for singles and semis is decreasing slightly, by one percentage point.

As seen in Table 10, the newly calculated development charge rates for non-residential development decreases by 6 per cent.

TABLE 9
CITY OF WATERLOO
RESIDENTIAL DEVELOPMENT CHARGES
CURRENT VS. CALCULATED DEVELOPMENT CHARGES

Service	Current Residential Charge / SDU	Calculated Residential Charge / SDU	Difference in Charge	
Library Services	\$584	\$908	\$324	55%
Protective Services	\$521	\$489	(\$32)	-6%
Parks and Major Indoor Recreation Facilities	\$4,015	\$5,187	\$1,172	29%
Cemeteries	\$17	\$0	(\$17)	-100%
Parking	\$1,583	\$1,177	(\$406)	-26%
Public Works and Fleet	\$984	\$842	(\$142)	-14%
Growth Studies	\$405	\$398	(\$7)	-2%
Subtotal General Services	\$8,109	\$9,001	\$892	11%
Roads and Related Services	\$2,268	\$2,763	\$495	22%
Water Supply and Wastewater	\$3,806	\$2,504	(\$1,302)	-34%
Stormwater Drainage and Control Services	\$1,276	\$1,226	(\$50)	-4%
Engineering Studies	\$422	\$283	(\$139)	-33%
Subtotal Engineered Services	\$7,772	\$6,776	(\$996)	-13%
TOTAL CHARGE	\$15,881	\$15,777	(\$104)	-1%

TABLE 10
CITY OF WATERLOO
NON-RESIDENTIAL DEVELOPMENT CHARGES
CURRENT VS. CALCULATED DEVELOPMENT CHARGES

Service	Non-Residential (\$/Square Metre)			
	Current Non-Residential Charge	Calculated Non-Residential Charge	Difference in Charge	
Library Services	\$0.44	\$0.00	(\$0.44)	-100%
Protective Services	\$3.53	\$3.66	\$0.13	4%
Parks and Major Indoor Recreation Facilities	\$3.06	\$0.00	(\$3.06)	-100%
Cemeteries	\$0.00	\$0.00	\$0.00	0%
Parking	\$10.32	\$8.72	(\$1.60)	-16%
Public Works and Fleet	\$3.30	\$6.24	\$2.94	89%
Growth Studies	\$2.64	\$3.01	\$0.37	14%
Subtotal General Services	\$23.29	\$21.64	(\$1.65)	-7%
Roads and Related Services	\$15.91	\$20.34	\$4.43	28%
Water Supply and Wastewater	\$25.78	\$18.41	(\$7.37)	-29%
Stormwater Drainage and Control Services	\$8.65	\$9.04	\$0.39	5%
Engineering Studies	\$2.86	\$2.15	(\$0.71)	-25%
Subtotal Engineered Services	\$53.20	\$49.94	(\$3.26)	-6%
TOTAL CHARGE	\$76.49	\$71.58	(\$4.91)	-6%

VII COST OF GROWTH ANALYSIS

This section provides a brief examination of the long-term capital and operating costs as well as the asset management-related annual provisions for the capital facilities and infrastructure to be included in the DC by-law. This examination is required as one of the provisions of the DCA. Additional details on the cost of growth analysis, including asset management analysis is included in Appendix E.

A. ASSET MANAGEMENT PLAN

Tables 11 and 12 provide the calculated annual asset management contribution for both the gross capital expenditures and the share related to the 2020-2029 and 2020-2041 DC recoverable portions. The year 2030 and 2042 have been included to calculate the annual contribution for these periods as the expenditures in 2029 and 2041 will not trigger asset management contributions until 2030 and 2042, respectively. As shown in Table 11, by 2030 the City should fund an additional \$3.12 million per annum in order to fund the full life cycle costs of the new assets related to the general services supported under the development charges by-law.

Table 12 provides a separate analysis of the annual provisions required for the Engineered Services capital program as the program extends to 2041. As shown in Table 12, the annual provision in 2042 amounts to \$1.79 million.

General Services	2020-2029 Capital Program		Calculated AMP Annual Provision by 2030	
	DC Recoverable	Non-DC Funded	DC Related	Non-DC Related
Library Services	\$5,138,000	\$625,000	\$318,000	\$68,000
Protective Services	\$4,900,000	\$6,237,000	\$226,000	\$192,000
Parks And Major Indoor Recreation Facilities	\$35,783,000	\$20,234,000	\$1,700,000	\$912,000
Cemeteries	\$19,000	\$162,000	\$1,000	\$5,000
Parking	\$14,693,000	\$1,592,000	\$426,000	\$46,000
Public Works And Fleet	\$6,654,000	\$2,304,000	\$452,000	\$71,000
Growth Studies	\$3,365,000	\$928,000	\$0	\$0
Total	\$70,552,000	\$32,082,000	\$3,123,000	\$1,294,000

Engineered Services	2020-2041 Capital Program		Calculated AMP Annual Provision by 2042	
	DC Recoverable	Non-DC Funded	DC Related	Non-DC Related
Roads And Related Services	\$37,472,000	\$42,357,000	\$978,000	\$1,244,000
Water Supply And Wastewater	\$38,666,000	\$25,563,000	\$552,000	\$325,000
Storm Water Drainage And Control Services	\$20,646,000	\$20,456,000	\$259,000	\$258,000
Engineering Studies	\$4,385,000	\$2,645,000	\$0	\$0
Total	\$101,169,000	\$91,021,000	\$1,789,000	\$1,827,000

B. LONG-TERM CAPITAL AND OPERATING COSTS

Appendix E summarizes the estimated increase in net operating costs that the City will experience for additions associated with the planned capital forecast. These estimates are based on information provided by City staff.

By 2029, the City's net operating costs are estimated to increase by \$4.07 million. The most significant portion of this increase relates to operating costs arising from increased Parks and Major Indoor Recreation Facilities services.

Appendix E also summarizes the components of the development-related capital program that will require funding from non-development charge sources. Of the \$259.48 million in the 2020-2029 and 2020-2041 net capital programs, about \$83.41 million will need to be financed from non-development charge sources over the planning periods. This includes about \$6.01 million in respect of the mandatory ten per cent discount required by the DCA for "soft" services and about \$77.40 million for shares of projects related to capital replacement and for non-growth shares of projects that provide benefit to the existing community.

Council is made aware of these factors so that they understand the financial implications of the quantum and timing of the projects included in the development-related capital forecast in this study.

C. THE PROGRAM IS DEEMED TO BE FINANCIALLY SUSTAINABLE

In summary, the asset management plan and long-term capital and operating analysis contained in Appendix E demonstrates that the City can afford to invest and operate the identified general and engineered services infrastructure over the ten-year and long-term planning period.

Importantly, the City's annual budget review allows staff to continue to monitor and implement mitigating measures should the program become less sustainable.

VIII DEVELOPMENT CHARGES POLICY & ADMINISTRATION

This section addresses the requirement under the DCA for Council to consider area rating for development charges as well as development charge by-law policies and administration.

A. CONSIDERATION OF AREA RATING

In accordance with the DCA, Council must give consideration to the use of area rating, also known as area-specific development charges, as part of the DC Background Study. As part of the City's 2019 DC update, the appropriateness of implementing area-specific development charges for the various City services was examined.

The DCA permits the City to designate, in its DC By-law, the areas where development charges shall be imposed. The charges may apply to all lands in the City or to other designated development areas as specified in the DC By-law.

The following was considered with respect to area-specific development charges:

- Is the use of area-specific charges appropriate for some or all services?
- Are there any data limitations with calculating an area-specific development charge?

Area-specific development charges are typically considered when there is clear benefit to a particular area (including the population or population and employment), and have been implemented mostly in standalone green field developments.

Based on discussions with staff, and the analysis of the delivery of services, it is proposed that the City continue to calculate and collect DCs on a uniform, City-wide basis. The following table provides a description of the servicing needs for general and engineered services.

City Services Considered	Servicing Needs
General Services	<p>Services such as Library, Parks and Major Indoor Recreation Facilities, and Cemeteries are available to all residents in the City and are driven and planned for based on City-wide population growth.</p> <p>Protective Services, Parking, Public Works and Fleet, and Growth Studies are provided to all residents and employees in the City and are driven and planned for based on City-wide population or population and employment growth.</p>
Engineered Services	<p>Roads and Related services are provided through a City-wide network and planned based on City-wide population and employment growth.</p> <p>For services such as Water, Wastewater and Storm Water Drainage, a network of ponds, linear infrastructure and treatment facilities are used to provide services to City-wide population and employment growth.</p>

It is noted that through this DC study process and the City's previous DC study processes, thorough examinations of the appropriateness of area-specific DCs for Water, Wastewater, and Storm Water Drainage and Control services have been undertaken. Through extensive discussions with City staff and stakeholders, it was determined that a City-wide approach would continue to be most appropriate for a number of reasons, including the following:

- Due to the nature of Water, Wastewater, and Drains servicing in the City, it is difficult to accurately assign benefitting areas for all capital projects; and
- There is the potential for issues of fairness due to the timing of certain projects and the historical City-wide approach to development charges. For example, certain locations may require major infrastructure upgrades in the near term, while others have seen similar recent projects funded on a City-wide basis.

B. DEVELOPMENT CHARGES ADMINISTRATION

Many of the administrative requirements of the DCA will be similar to those presently followed by the City. However, changes will likely be required in the collection practices for the new development charges. In this regard:

- It is recommended that current practices regarding collection of development charges and by-law administration continue to the extent possible. However, the City will need to examine how collection and administration practices may

need to change in order to accommodate the new provisions in the DCA enacted through Bill 108, the *More Homes, More Choice Act*.

- As required under the DCA, the City should continue codify any rules regarding application of the by-laws and any exemptions within the development charges by-laws proposed for adoption.
- It is recommended that the City continue to report policies consistent with the requirements of the DCA.
- It is recommended that Council adopt the development-related capital forecast included in this background study for City-wide services, subject to annual review through the City's normal capital budget process.

APPENDIX A

DEVELOPMENT FORECAST

APPENDIX A

DEVELOPMENT FORECAST

This appendix summarizes the development forecast used to prepare the 2019 Development Charges (DC) Background Study for the City of Waterloo. The forecast method and key assumptions are discussed. The results of the forecasts are set out in the following tables:

Historical Development

- A.1 Population, Households and Employment
- A.2 Housing Completions by Unit Type
- A.3 Non-Residential Floorspace
- A.4 Households by Period of Construction Showing Household Size

Forecast Development

- A.5 Population, Households and Employment
- A.6 Population, Household and Employment Growth
- A.7 Household Growth by Unit Type
- A.8 Population in New Units by Unit Type
- A.9 Non-Residential Space Forecast

A. FORECAST APPROACH AND KEY ASSUMPTIONS

The *Development Charges Act (DCA)* requires the City to estimate “the anticipated amount, type and location of development” for which development charges may be imposed. The development forecast must cover both residential and non-residential development and be specific enough with regards to quantum, type, location and timing of development to allow the City to prepare a reasonable development-related capital program. A ten-year development forecast, from mid-year 2020 to mid-year 2029, has been used for all development charge eligible general services in the City. For the engineering services of roads and related works, water and wastewater, stormwater, and engineering studies, a long-term forecast from 2020 to 2041 has been used.

The development forecasts are based on forecasts of development occurring within the City’s approved development areas. The forecasts are premised on the City

achieving population and employment targets established for Waterloo under the approved Region of Waterloo Official Plan (ROP).¹

The Region has recently adopted a “moderate growth forecast” for the purposes of long-term infrastructure planning and development charge calculations. The moderate growth forecast assumes that the Region will achieve the 2031 population and employment targets established by the Provincial *Growth Plan for the Greater Golden Horseshoe* in 2041. The delay in achieving the targets recognizes slower than anticipated growth in recent years. In keeping with the Region’s practice, the forecasts in this study assume the same ten year delay in achieving the population and employment targets for the City.

The City’s forecasts draw on a range of data including Statistics Canada Census data, Canada Mortgage Housing Corporation (CMHC) housing market information, and the City’s own building permit and development application data. Studies of local student populations, as well as consultations with the City staff, are the basis of the forecast of student populations.

B. KEY ASSUMPTIONS, DEFINITIONS, AND HISTORICAL TRENDS

The overall pattern of development in the City of Waterloo over the last 20 years has been one of steady and sustained growth, with growth slowing somewhat between 2006 and 2011 during the 2008 financial crisis and subsequent recession. Historical population, household, and employment figures are presented in Table 1. Population figures in the table include:

- the permanent resident population of the City as recorded in the Census;
- an estimate of Census net under-coverage of 3.3%; and
- an estimate of full-time students who reside in off-campus housing in Waterloo but whose permanent residence is outside the City.

Full-time students are included in all population figures in this study because the need for municipal services is in part driven by development triggered by student growth.

¹ That is a population of 140,000 and employment of 89,000 by 2031.

Population figures shown in Table 1 represent mid-year estimates. For development charges purposes, a ten-year historical period of 2010 to 2019 is used for calculating services levels.

Employment figures presented in Table 1 represent “place of work” employment data and are based on the Census. Place of work employment data record where people work rather than their place of residence. Table 1 shows that over the last 20 years, the rate of employment growth in the City has been roughly equivalent to the rate of population growth. As a result, the City’s activity rate (the ratio of employment to permanent population) has remained steady at about 62%.

Details on recent housing growth in the City are provided in Table 2. The overall market share of single and semi-detached units over the last decade has been 28%, though the number of units completed in any one year varies. The market share of row houses and apartments over the same period has been 10% and 61% respectively. As with the single and semi-detached unit types, the number of completions in any given year is variable.

Table 3 shows the amount of non-residential floorspace (GFA) constructed in the City through new construction and additions since 2012. Construction activity has been relatively steady, with most years experiencing more than 500,000 sq.ft. of new space. The majority of new floorspace over the last 8 years (53%) has been in institutional buildings.

Table 4 provides details on historical housing occupancy patterns in Waterloo. The overall average occupancy level in the City for single and semi-detached units is 2.57 persons per housing unit (PPU). Occupancy levels for recently constructed units, between 2006 and 2016, are higher than the overall average and are used in the development charges calculation since they better reflect the number of people that are likely to reside in new development. The average PPU of single and semi-detached units built in the City in the period 2006 to 2016 is 3.49. Average PPUs for recently constructed row housing and apartments are 2.30 and 2.07 respectively.

C. FORECAST METHOD AND RESULTS

Development charges are levied on residential development as a charge per new unit. Therefore, for the residential forecast, a projection of both the *population growth* as well as the *population in new housing units* is required.

- The *population growth*² determines the need for additional facilities and provides the foundation for the development-related capital program.
- When calculating the development charge, however, the development-related net capital costs are spread over the total additional population that occupy new housing units. This *population in new units* represents the population from which development charges will be collected.

Development charges are levied on non-residential development as a charge per m² of Gross Floor Area (GFA). As with the residential forecast, the non-residential forecast requires both a projection of *employment growth* as well as a projection of the *employment growth associated with new floorspace* in the City.

1. Residential Forecast

The residential development forecast is based on forecasts of population, households, and housing units by type in the City. Tables 5 and 6 summarize the population and household growth forecast. The tables show that the City's population is forecast to increase over the ten-year forecast period by 13,597, from 133,482 in 2019 to 147,079 in 2029, of which about 700 (5%) represents student growth. The number of households will increase by 7,327, from 42,490 in 2019 to 49,816 in 2029. The City's overall average PPU (including students) is forecast to continue to fall over the same period.

Population growth in the new dwelling units is estimated by applying the following PPUs to the housing unit forecast: 3.49 for single and semi-detached units; 2.30 for rows; and 2.07 for apartments. The assumptions are informed by the historical occupancy patterns for permanently occupied units set out in Table 4. For forecasting purposes, it is assumed that the average occupancy of apartments is: 1.25 for apartments with 1 bedroom or less; 2.22 for apartments with 2-3 bedrooms; and 4.31 for apartments with 4-5 bedrooms.

The total forecast population in new housing units over the 2020 to 2029 period is 20,350. Over the long-term to 2041 the forecast population in new housing units is 44,311 (see Tables 7 and 8).

2. Non-Residential Forecast

Non-residential development charges are calculated on a per unit of gross floor area (GFA) basis. Therefore, as per the *DCA*, a forecast of non-residential building space has been developed. As with the residential forecast, the GFA forecast covers the ten-year period from 2020 to 2029 for general services and 2020 to 2041 for engineering services.

² Commonly referred to as "net population growth" in the context of development charges.

The GFA forecast is based on the forecast of employment (see Tables 5 and 6). Four types of employment are distinguished in forecast—traditional industrial, commercial, office, and institutional. The following factors have been used to convert the employment forecast into building space estimates:

Traditional Industrial Employment	1,000 sq.ft. per employee
Commercial Employment	450 sq.ft. per employee
Office Employment	225 sq.ft. per employee
Institutional Employment	550 sq.ft. per employee

These factors are informed by discussions with City staff.

The GFA forecasts are provided in Table 9. The total GFA growth is forecast at 3,287,340 sq.ft. over the ten-year period of which the highest component relates to institutional development (1,735,569 sq.ft. or 53%). Over the long-term period to 2041 the total GFA forecast is 7,717,500 sq.ft.

TABLE A.1
Historical Population, Households & Employment

Mid-Year	Population					Households				Employment			
	Permanent ¹	Students (F/T)	Total	Growth	Growth %	Total	Growth	Growth %	HH Size	Total	Growth	Growth %	Activity Rate ²
1996	81,067	8,973	90,040			29,135			2.78	45,045			55.6%
1997	82,781	9,185	91,966	1,926	2.1%	29,802	667	2.3%	2.78	47,218	2,173	4.8%	57.0%
1998	84,531	9,402	93,933	1,967	2.1%	30,484	682	2.3%	2.77	49,496	2,278	4.8%	58.6%
1999	86,318	9,624	95,942	2,009	2.1%	31,182	698	2.3%	2.77	51,883	2,387	4.8%	60.1%
2000	88,143	9,852	97,995	2,053	2.1%	31,896	714	2.3%	2.76	54,386	2,503	4.8%	61.7%
2001	90,005	10,085	100,090	2,095	2.1%	32,625	729	2.3%	2.76	57,009	2,623	4.8%	63.3%
2002	92,172	10,553	102,725	2,635	2.6%	33,416	791	2.4%	2.76	58,136	1,127	2.0%	63.1%
2003	94,391	11,042	105,433	2,708	2.6%	34,226	810	2.4%	2.76	59,286	1,150	2.0%	62.8%
2004	96,664	11,554	108,218	2,785	2.6%	35,056	830	2.4%	2.76	60,459	1,173	2.0%	62.5%
2005	98,991	12,090	111,081	2,863	2.6%	35,906	850	2.4%	2.76	61,655	1,196	2.0%	62.3%
2006	101,374	12,650	114,024	2,943	2.6%	36,775	869	2.4%	2.76	62,874	1,219	2.0%	62.0%
2007	101,644	13,411	115,055	1,031	0.9%	36,923	148	0.4%	2.75	63,153	279	0.4%	62.1%
2008	101,915	14,218	116,133	1,078	0.9%	37,071	148	0.4%	2.75	63,433	280	0.4%	62.2%
2009	102,186	15,073	117,259	1,126	1.0%	37,220	149	0.4%	2.75	63,715	282	0.4%	62.4%
2010	102,458	15,980	118,438	1,179	1.0%	37,370	150	0.4%	2.74	63,998	283	0.4%	62.5%
2011	102,731	16,940	119,671	1,233	1.0%	37,520	150	0.4%	2.74	64,282	284	0.4%	62.6%
2012	103,991	17,139	121,130	1,459	1.2%	38,076	556	1.5%	2.73	65,092	810	1.3%	62.6%
2013	105,266	17,341	122,607	1,477	1.2%	38,640	564	1.5%	2.72	65,912	820	1.3%	62.6%
2014	106,557	17,545	124,102	1,495	1.2%	39,212	572	1.5%	2.72	66,742	830	1.3%	62.6%
2015	107,863	17,751	125,614	1,512	1.2%	39,793	581	1.5%	2.71	67,583	841	1.3%	62.7%
2016	109,185	17,960	127,145	1,531	1.2%	40,381	588	1.5%	2.70	68,433	850	1.3%	62.7%
2017	111,234	17,590	128,824	1,679	1.3%	41,084	703	1.7%	2.71	69,156	723	1.1%	62.2%
2018	113,321	17,900	131,221	2,397	1.9%	41,787	703	1.7%	2.71	69,887	731	1.1%	61.7%
2019	115,447	18,035	133,482	2,261	1.7%	42,490	703	1.7%	2.72	70,625	738	1.1%	61.2%
<i>Growth 2010 - 2019</i>				16,223			5,270				6,910		

Source: Statistics Canada, Census of Canada 1996-2016.

Note 1: Includes an estimate of Census net undercoverage of 3.3%.

Note 2: Activity rate is the ratio of total employment over permanent population.

TABLE A.2
Historical Housing Completions by Unit Type

Year	Housing Completions - Units			
	Singles/Semis	Rows	Apartments	Total
2010	135	35	173	343
2011	81	33	444	558
2012	104	26	483	613
2013	156	52	537	745
2014	150	64	662	876
2015	221	23	974	1,218
2016	225	218	1,630	2,073
2017	340	58	615	1,013
2018	279	12	1,218	1,509
2019	67	38	181	286
Total	3,852	1,431	8,352	13,635
<i>Average '10-'18</i>	188	58	748	994
<i>Average '14-'18</i>	243	75	1,020	1,338

Historical Housing Completions - Shares By Unit Type

Mid-Year	Housing Completions - Units			
	Singles/Semis	Rows	Apartments	Total
2010	39%	10%	50%	100%
2011	15%	6%	80%	100%
2012	17%	4%	79%	100%
2013	21%	7%	72%	100%
2014	17%	7%	76%	100%
2015	18%	2%	80%	100%
2016	11%	11%	79%	100%
2017	34%	6%	61%	100%
2018	18%	1%	81%	100%
2019	23%	13%	63%	100%
Total	28%	10%	61%	100%

Source: Canada Mortgage and Housing Corporation (CMHC), Housing Market Tables, South Central Ontario
 Note: 2019 figures are as of August 2019.

TABLE A.3
Historical Non-Residential Floorspace

Year	GFA in Sq.Ft. (New and Additions)				
	Commercial	Industrial	Office	Institutional	Total
2012	120,787	5,096	160,868	276,429	563,180
2013	29,247	8,654	25,467	433,974	497,342
2014	41,065	7,407	1,637	61,026	111,135
2015	235,720	53,999	119,703	176,018	585,440
2016	180,007	15,286	77,118	245,734	518,145
2017	10,827	70,526	110,804	419,956	612,113
2018	75,072	0	103,659	11,906	190,637
2019	2,045	0	0	5,221	7,266
Total	694,770	160,968	599,256	1,630,264	3,085,258
Average '12-'18	98,961	22,995	85,608	232,149	439,713
Average '15-'18	88,635	28,604	97,194	225,865	440,298

Source: City of Waterloo Building Permit Data (excludes mixed use development).

Note: 2019 figures are as of March 2019.

Historical Non-Residential Floorspace - Shares By Type

Year	GFA in Sq.Ft. (New and Additions)				
	Commercial	Industrial	Office	Institutional	Total
2012	21%	1%	29%	49%	100%
2013	6%	2%	5%	87%	100%
2014	37%	7%	1%	55%	100%
2015	40%	9%	20%	30%	100%
2016	35%	3%	15%	47%	100%
2017	2%	12%	18%	69%	100%
2018	39%	0%	54%	6%	100%
2019	28%	0%	0%	72%	100%
Total	23%	5%	19%	53%	100%

TABLE A.4
Historical Households by Period of Construction Showing Household Size

	Period of Construction										Period of Construction Summaries		
	Pre-1946	1946-1960	1961-1970	1971-1980	1981-1990	1991-1995	1996-2000	2001-2006	2006-2010	2011-2015	Pre-2006	2006-2016	Total
Singles and Semis													
Household Population	3,115	4,995	5,725	9,415	14,345	4,975	9,355	11,640	4,805	2,670	63,565	7,475	71,040
Households	1,130	2,075	2,290	3,560	5,005	1,645	2,875	3,515	1,370	770	22,095	2,140	24,235
Household Size	2.76	2.41	2.50	2.64	2.87	3.02	3.25	3.31	3.51	3.47	2.88	3.49	2.93
Rows													
Household Population	80	340	645	1,895	2,390	1,745	1,880	1,455	1,010	805	10,430	1,815	12,245
Households	40	95	245	715	1,075	715	795	615	435	355	4,295	790	5,085
Household Size	2.00	3.58	2.63	2.65	2.22	2.44	2.36	2.37	2.32	2.27	2.43	2.30	2.41
Apartments													
Household Population	615	1,145	2,300	3,265	2,865	1,225	1,005	1,250	925	3,635	13,670	4,560	18,230
Households	395	700	1,405	1,900	1,735	750	535	625	480	1,720	8,045	2,200	10,245
Household Size	1.56	1.64	1.64	1.72	1.65	1.63	1.88	2.00	1.93	2.11	1.70	2.07	1.78
1 Bedroom or Less													
Household Population	210	300	745	790	620	225	200	170	185	590	3,260	775	4,035
Households	180	255	585	650	510	170	140	130	150	470	2,620	620	3,240
Household Size	0.86	0.85	0.79	0.82	0.82	0.76	0.70	0.76	0.81	0.80	1.24	1.25	1.25
2 - 3 Bedrooms													
Household Population	320	800	1,475	2,265	2,140	880	670	900	470	2,280	9,450	2,750	12,200
Households	195	420	800	1,190	1,185	555	360	410	235	1,010	5,115	1,245	6,360
Household Size	0.61	0.53	0.54	0.53	0.55	0.63	0.54	0.46	0.50	0.44	1.85	2.21	1.92
4-5 Bedrooms													
Household Population	45	0	0	175	35	0	90	175	215	690	520	905	1,425
Households	15	15	30	65	30	30	40	80	85	225	305	310	615
Household Size	0.33	-	-	0.37	0.86	-	0.44	0.46	0.40	0.33	1.70	2.92	2.32
All Units													
Household Population	3,810	6,480	8,670	14,575	19,600	7,945	12,240	14,345	6,740	7,110	87,665	13,850	101,515
Households	1,565	2,870	3,940	6,175	7,815	3,110	4,205	4,755	2,285	2,845	34,435	5,130	39,565
Household Size	2.43	2.26	2.20	2.36	2.51	2.55	2.91	3.02	2.95	2.50	2.55	2.70	2.57

Source: Statistics Canada, 2016 Census Special Run

TABLE A.5
Population, Households & Employment Forecast Summary

Mid-Year	Permanent Population ¹	(F/T) Student Population ²	Total Population				
			Incl. Students	Households	Employment	Household Size	Activity Rate
2020	117,613	18,060	135,673	43,193	71,371	2.72	60.7%
2021	119,820	18,083	137,903	43,896	72,125	2.73	60.2%
2022	120,893	18,163	139,056	44,612	72,887	2.71	60.3%
2023	121,975	18,243	140,218	45,329	73,657	2.69	60.4%
2024	123,067	18,323	141,390	46,045	74,435	2.67	60.5%
2025	124,169	18,403	142,572	46,761	75,222	2.66	60.6%
2026	125,282	18,483	143,765	47,478	76,017	2.64	60.7%
2027	126,298	18,563	144,861	48,257	76,820	2.62	60.8%
2028	127,323	18,643	145,966	49,037	77,632	2.60	61.0%
2029	128,356	18,723	147,079	49,816	78,452	2.58	61.1%
2030	129,397	18,803	148,200	50,596	79,281	2.56	61.3%
2031	130,447	18,883	149,330	51,375	80,119	2.54	61.4%
2032	131,500	18,963	150,463	52,062	80,966	2.53	61.6%
2033	132,561	19,043	151,604	52,749	81,822	2.51	61.7%
2034	133,630	19,123	152,753	53,436	82,687	2.50	61.9%
2035	134,708	19,203	153,911	54,123	83,561	2.49	62.0%
2036	135,795	19,283	155,078	54,810	84,444	2.48	62.2%
2037	136,723	19,363	156,086	55,501	85,336	2.46	62.4%
2038	137,658	19,443	157,101	56,193	86,238	2.45	62.6%
2039	138,599	19,523	158,122	56,884	87,149	2.44	62.9%
2040	139,546	19,603	159,149	57,576	88,070	2.42	63.1%
2041	140,500	19,683	160,183	58,268	89,000	2.41	63.3%

Source: City of Waterloo; Hemson Consulting Ltd.; Statistics Canada, Census of Canada 2016.

Note 1: Forecast includes Census undercount of 3.3%.

Note 2: Accounts for students living in off-campus housing.

TABLE A.6
Forecast Population, Household & Employment Summary

Mid-Year	Population Growth	Household Growth	Employment Growth
2020	2,191	703	746
2021	2,230	703	754
2022	1,153	716	762
2023	1,162	716	770
2024	1,172	716	778
2025	1,182	716	787
2026	1,193	716	795
2027	1,096	780	803
2028	1,105	780	812
2029	1,113	780	820
2030	1,121	780	829
2031	1,130	780	838
2032	1,133	687	847
2033	1,141	687	856
2034	1,149	687	865
2035	1,158	687	874
2036	1,167	687	883
2037	1,008	692	892
2038	1,015	692	902
2039	1,021	692	911
2040	1,027	692	921
2041	1,034	692	930
2020-2029	13,597	7,327	7,827
2020-2041	26,701	15,778	18,375

TABLE A.7
Household Growth by Unit Type

Mid-Year	Permanently Occupied			Student Occupied			Total			
	Singles/ Semis	Townhomes	Multiples/ Apartments	Singles/ Semis	Townhomes	Multiples/ Apartments	Singles/ Semis	Townhomes	Multiples/ Apartments	Total
2020	291	91	297	0	1	24	291	91	321	703
2021	291	91	297	0	1	24	291	91	321	703
2022	303	107	281	0	1	24	303	108	305	716
2023	303	107	281	0	1	24	303	108	305	716
2024	303	107	281	0	1	24	303	108	305	716
2025	303	107	281	0	1	24	303	108	305	716
2026	303	107	281	0	1	24	303	108	305	716
2027	346	114	294	0	1	24	346	115	318	780
2028	346	114	294	0	1	24	346	115	318	780
2029	346	114	294	0	1	24	346	115	318	780
2030	346	114	294	0	1	24	346	115	318	780
2031	346	114	294	0	1	24	346	115	318	780
2032	319	100	243	0	1	24	319	100	267	687
2033	319	100	243	0	1	24	319	100	267	687
2034	319	100	243	0	1	24	319	100	267	687
2035	319	100	243	0	1	24	319	100	267	687
2036	319	100	243	0	1	24	319	100	267	687
2037	331	98	237	0	1	24	331	99	261	692
2038	331	98	237	0	1	24	331	99	261	692
2039	331	98	237	0	1	24	331	99	261	692
2040	331	98	237	0	1	24	331	99	261	692
2041	331	98	237	0	1	24	331	99	261	692
2020-2029	3,134	1,061	2,881	0	8	243	3,134	1,069	3,124	7,327
2020-2041	7,078	2,280	5,871	0	17	534	7,078	2,296	6,404	15,778

Source: City of Waterloo; Hemson Consulting Ltd.; Statistics Canada, Census of Canada 2016.

TABLE A.8
Forecast Population in New Units by Unit Type*

Mid-Year	Permanently Occupied			Student Occupied			Total
	Singles/ Semis	Townhomes	Multiples/ Apartments	Singles/ Semis	Townhomes	Multiples/ Apartments	Population in New Units*
2020	1,015	208	615	0	2	97	1,938
2021	1,015	208	615	0	2	97	1,938
2022	1,058	247	583	0	2	97	1,987
2023	1,058	247	583	0	2	97	1,987
2024	1,058	247	583	0	2	97	1,987
2025	1,058	247	583	0	2	97	1,987
2026	1,058	247	583	0	2	97	1,987
2027	1,209	263	609	0	2	97	2,180
2028	1,209	263	609	0	2	97	2,180
2029	1,209	263	609	0	2	97	2,180
2030	1,209	263	609	0	2	97	2,180
2031	1,209	263	609	0	2	97	2,180
2032	1,115	229	504	0	2	97	1,947
2033	1,115	229	504	0	2	97	1,947
2034	1,115	229	504	0	2	97	1,947
2035	1,115	229	504	0	2	97	1,947
2036	1,115	229	504	0	2	97	1,947
2037	1,157	226	492	0	2	97	1,973
2038	1,157	226	492	0	2	97	1,973
2039	1,157	226	492	0	2	97	1,973
2040	1,157	226	492	0	2	97	1,973
2041	1,157	226	492	0	2	97	1,973
2020-2029	10,948	2,438	5,972	0	23	970	20,350
2020-2041	24,722	5,237	12,168	0	50	2,134	44,311

*Based on PPU in new permanently occupied units of 3.49 for singles/semis, 2.30 for townhomes, and 2.07 for apartments (see Table A.3). PPUs for new student units have been provided by the City and are assumed to be 3.00 for townhomes and 4.00 for multiples/apartments.

TABLE A.9
Non-Residential Space (GFA) Forecast

Employment Density Assumptions

Traditional Industrial Employment	1,000 sq.ft. per employee
Commercial Employment	450 sq.ft. per employee
Office Employment	225 sq.ft. per employee
Institutional Employment	550 sq.ft. per employee
Total Employment	420 sq.ft. per employee

Mid-Year	Total Emp	Employment Growth	
		Emp Growth	Space (sq.ft.)
2020	71,371	746	313,320
2021	72,125	754	316,680
2022	72,887	762	320,040
2023	73,657	770	323,400
2024	74,435	778	326,760
2025	75,222	787	330,540
2026	76,017	795	333,900
2027	76,820	803	337,260
2028	77,632	812	341,040
2029	78,452	820	344,400
2030	79,281	829	348,180
2031	80,119	838	351,960
2032	80,966	847	355,740
2033	81,822	856	359,520
2034	82,687	865	363,300
2035	83,561	874	367,080
2036	84,444	883	370,860
2037	85,336	892	374,640
2038	86,238	902	378,840
2039	87,149	911	382,620
2040	88,070	921	386,820
2041	89,000	930	390,600
2020 - 2029		7,827	3,287,340
2020 - 2041		18,375	7,717,500

Employment By Type (sq.ft.)			
Commercial	Industrial	Office	Institutional
70,515	16,386	61,000	165,419
71,271	16,561	61,655	167,193
72,027	16,737	62,309	168,967
72,784	16,913	62,963	170,741
73,540	17,088	63,617	172,515
74,391	17,286	64,353	174,510
75,147	17,462	65,007	176,284
75,903	17,637	65,661	178,058
76,754	17,835	66,397	180,054
77,510	18,011	67,051	181,828
78,361	18,209	67,787	183,824
79,211	18,406	68,523	185,819
80,062	18,604	69,259	187,815
80,913	18,802	69,995	189,811
81,763	18,999	70,731	191,806
82,614	19,197	71,467	193,802
83,465	19,395	72,203	195,798
84,316	19,592	72,939	197,793
85,261	19,812	73,757	200,011
86,112	20,010	74,492	202,006
87,057	20,229	75,310	204,224
87,907	20,427	76,046	206,219
739,841	171,916	640,014	1,735,569
1,736,882	403,598	1,502,524	4,074,497

Source: City of Waterloo; Hemson Consulting Ltd.; Statistics Canada, Census of Canada 2016.

APPENDIX B

GENERAL SERVICES

TECHNICAL APPENDIX

APPENDIX B

GENERAL SERVICES TECHNICAL APPENDIX INTRODUCTION AND OVERVIEW

This appendix provides the detailed analysis undertaken to establish the development charge rates for each of the general services in the City of Waterloo. Seven general services have been analysed:

Appendix B.1	Library Service
Appendix B.2	Protective Services
Appendix B.3	Parks and Major Indoor Recreation Facilities
Appendix B.4	Cemeteries
Appendix B.5	Parking
Appendix B.6	Public Works and Fleet
Appendix B.7	Growth Studies

Every service, with the exception of Growth Studies, contains a set of three tables. The tables provide the background data and analysis undertaken to arrive at the calculated development charge rates for that particular service. An overview of the content and purpose of each of the tables is given below.

The benefits of all of the general services are deemed to be City-wide for the purposes of calculating a development charge.

TABLE 1 HISTORICAL SERVICE LEVELS

Table 1 presents the data used to determine the ten-year historical service level. The *DCA* and *O. Reg. 82/98* require that development charges be set at a level no higher than the average service level provided in the City over the ten-year period immediately preceding the preparation of the background study, on a service-by-service basis. For the purpose of this study, the historical inventory period has been defined as 2010 to 2019.

O. Reg. 82/98 requires that when defining and determining historical service levels both the quantity and quality of service be taken into consideration. In most cases, the service levels are initially established in quantitative terms. For example, service levels for buildings are presented in terms of square feet. The qualitative aspect is introduced by considering the monetary value of the facility or service. In the case of buildings, for example, the cost would be shown in terms of cost per square foot to replace or construct a facility of the same quality. This approach helps to ensure that the development-related capital facilities that are to be funded by new growth reflect not

only the quantity (number and size) but also the quality (replacement value or cost) of service provided by the City in the past. Both the quantitative and qualitative aspects of service levels used in the current analysis are based on information provided by municipal staff. This information is generally based on historical records and experience with costs to acquire or construct similar facilities, equipment and infrastructure.

The final page of Table 1 shows the calculation of the “maximum allowable”, net of uncommitted excess capacity and the legislated ten per cent reduction (for all applicable services). The maximum allowable is defined as the ten-year historical service level (expressed as either \$/capita or \$/capita & employment) multiplied by the forecast increase in net population growth, or net population and employment growth, over the planning period. The resulting figure is the value of capital infrastructure that must be constructed for that particular service so that the ten-year historical service level is maintained.

There is also a requirement in the *DCA* to consider “excess capacity” within the City’s existing infrastructure that may be available to partially meet the future servicing requirements. If Council has expressed its intent before or at the time the capacity was created to recoup the cost of providing the capacity from new development, it is considered “committed excess capacity” under the *DCA*, and the associated capital cost is eligible for recovery. Should uncommitted excess capacity exist, it is determined whether or not this capacity will be available to service new development and, if so, deductions to maximum allowable funding envelope are required.

**TABLE 2 2020 – 2029 DEVELOPMENT-RELATED CAPITAL PROGRAM &
CALCULATION OF THE UNADJUSTED DEVELOPMENT CHARGE**

The *DCA* requires that Council express its intent to provide future capital facilities to support future growth. Based on the growth forecasts presented in Appendix A, a development-related capital program which sets out the projects required to service anticipated growth for the ten-year period from 2020 to 2029 has been developed.

To determine the share of the program that is eligible for recovery through development charges, the project costs are reduced by any anticipated grants or subsidies, “benefit to existing” shares and the legislated “10 per cent reduction” for any eligible services.

A benefit to existing share represents that portion of a capital project that will benefit existing development. It could, for example, represent a portion of a new facility that, at least in part, replaces a facility that is demolished, redeployed or will otherwise not be available to serve its former function (a “replacement” share). The benefit to existing share of the capital program is not deemed to be development-related and is therefore removed from the development charge calculation. The capital cost for replacement shares will require funding from non-development charge sources, typically property taxes or user fees.

When calculating development charges, the development-related net capital cost must be reduced by 10 per cent for all services except protection services and engineered services (*DCA* s.5 (1) 8). The 10 per cent discount is therefore applied to all general services considered in this appendix with the exception of Protective Services and Public Works and Fleet. As with replacement shares, the 10 per cent reduction must be funded from non-development charge sources.

The capital program less any replacement or benefit to existing shares, 10 per cent discount, yields the development-related costs. Although deemed development-related, not all of the net development-related capital program may be recoverable from development charges in the period from 2020 to 2029. For some of the services, a portion of the capital program will service growth that will not occur until after 2029. This portion of the capital program is either deemed “pre-built” service capacity to be considered as committed excess capacity to be recovered under future development.

The remaining portion of the net capital program represents the development-related cost that may be included in the development charge. In all cases, as required, this amount is equal to or less than the maximum allowable capital amount as calculated on the final page of Table 1. The result is the discounted development-related net capital cost that is eligible for recovery against growth over the period from 2020 to 2029.

Calculation of the Unadjusted Development Charge Rates

The section below the capital program displays the calculation of the “unadjusted” development charge rates. The term “unadjusted” development charge is used to distinguish the charge that is calculated prior to cash flow financing considerations. The cash flow analysis is shown in Table 3.

The first step when determining the unadjusted development charge rate is to allocate the growth-related net capital cost between the residential and non-residential sectors.

For all general services with the exception of Library Service, Cemetery Service, and Parks and Major Indoor Recreation Facilities, the growth-related costs have been allocated 72 per cent residential and 28 per cent non-residential. The allocation is based on the anticipated shares of population in new units and employment growth over the ten-year forecast period.

The development-related costs associated with the Library Service, Cemetery Service, and Parks and Major Indoor Recreation Facilities have been allocated 100 per cent to the residential sector because the need for these services is driven by residential development.

The residential share of the 2020-2029 DC eligible costs are then divided by the forecast population growth in new units. This gives the unadjusted residential development charge per capita. The non-residential growth-related net capital costs are divided by the forecast increase in non-residential gross floor area (GFA). This yields a charge per square foot of new non-residential GFA.

TABLE 3 CASH FLOW ANALYSIS

A cash flow analysis is also undertaken to account for the timing of projects and receipt of development charges. Interest earnings or borrowing costs are, therefore, accounted for in the calculation as allowed under the *DCA*. Based on the development forecast, the analysis calculates the development charges rate that is required to finance the net development-related capital spending plan including provisions for any borrowing costs or interest earnings on the reserve funds. The cash flow analysis is designed so that the closing cash balance at the end of the planning period is as close to nil as possible.

In order to determine appropriate development charges rates reflecting borrowing and earnings necessary to support the net development-related funding requirement, assumptions are used for the inflation rate and interest rate. An inflation rate of 2.0 per cent is used for the funding requirements, an interest rate of 3.5 per cent is used for positive opening balances, and a rate of 5.5 per cent is used for negative opening balances.

Table 3 displays the results of the cash flow analysis and provides the adjusted or final per capita residential and per square foot (of GFA) non-residential development charges.

APPENDIX B.1

LIBRARY SERVICES

APPENDIX B.1

LIBRARY SERVICES

The Waterloo Public Library provides library services from three branches as well as online. The Library provides a wide range of resources in a variety of formats as well as a number of programs to City residents.

TABLE 1 2010-2019 HISTORICAL SERVICE LEVELS

The Table 1 displays the Library Services ten-year historical inventory for buildings, land, materials, and furniture and equipment (excluding computer equipment). The building space amounts to 60,127 square feet and is valued at \$23.5 million. The library buildings occupy 1.10 hectares of land worth \$9.7 million. The collection materials located at all branches are valued at \$12.6 million, programming equipment at \$95,400 and furniture and equipment associated with the branches is valued at \$3.1 million. Computer and electronic equipment for public use at the three branches is valued at \$913,400.

The 2019 full replacement value of the inventory of capital assets for library services amounts to \$49.9 million and the ten-year historical average service level is \$386.20 per capita. The historical service level multiplied by the ten-year forecast of net population growth results in a ten-year maximum allowable funding envelope of \$5.3 million (13,597 net population growth X historical service level of \$386.20/capita).

Library Services costs must be reduced by ten per cent as required under the *DCA*. As such, the net maximum allowable funding envelope brought forward to the development charges calculation is reduced to \$4.7 million.

TABLE 2 2020 – 2029 DEVELOPMENT-RELATED CAPITAL PROGRAM & CALCULATION OF THE UNADJUSTED DEVELOPMENT CHARGE

The Library Service capital program includes costs associated with a new library branch, the implementation of key projects identified in the City's Library Strategic Plan, and maintaining collection materials at historical service levels.

The City will be constructing a new East Side Library branch and the remaining cost to be funded after 2019 DC reserve draws in 2020 is \$2.4 million. An amount of \$235,800 has been removed from the net cost in accordance with the 10 per cent capital cost deduction under the *DCA*. The remaining \$2.1 million development-

related capital cost of the East Side Library project can be recovered through development charges in the planning period (2020-2029) and has been included in the DC rate calculations.

Another component of the City's capital program relates to funding the various strategic planning initiatives identified in the City's Library Strategic Plan in the amount of \$168,000. Given that these projects will largely benefit existing library users, a \$134,400 share has been excluded from the development charge calculation. An amount of \$3,360 has also been removed from the net cost to reflect the 10 per cent capital cost deduction under the *DCA*. The first two years of these expenditures will be funded through the DCs in this period in the amount of \$15,120 and has been included in the DC rate calculations. The remaining \$15,120 is to be recovered from development post 2029.

The Library Services capital program also includes a provision of \$2.2 million to cover the cost of materials acquisitions for the City's book and non-book collections over the ten-year planning period required to maintain the average historical service level for collections. An amount of \$222,360 has been removed from the net cost in accordance with the 10 per cent capital cost deduction under the *DCA*. The resulting \$1.6 million will be funded through development charges over the period 2020-2029 and has been included in the DC calculations. The remaining \$426,706 is deemed to benefit development post 2029.

The remaining capital cost included in the program is the recovery of a negative DC reserve fund balance of \$1.0 million, all of which is included in the DC rate calculations.

Altogether, the ten-year development-related capital program for the Library Services totals to \$5.8 million. The City anticipates receiving no grants or subsidies to offset the cost of the program. The benefit to existing shares related to the strategic planning implementation amount to \$134,400. The legislated 10 per cent discount on new projects amounts to \$461,520, and is netted off the net cost of the projects. There are no reserve funds available to offset the costs. A post-period benefit share of \$441,826, being that portion of eligible capital costs that exceed the funding envelope, has been identified for this service.

The 2020–2029 DC costs eligible for recovery amount to \$4.7 million, which is allocated entirely against future residential development in the City of Waterloo. This results in an unadjusted development charge of \$232.23 per capita.

TABLE 3 CASH FLOW AND RESERVE FUND ANALYSIS

The cash flow analysis is set out in Table 3. It considers the timing of the projects against the timing of the development charge revenues to determine adjusted calculated rates. After cash flow and reserve fund consideration, the residential calculated charge increases to \$260 per capita.

The following table summarizes the calculation of the Library Service development charge:

LIBRARY SERVICES SUMMARY						
10-year Hist.	2020 - 2029		Unadjusted		Adjusted	
Service Level	Development-Related Capital Program		Development Charge		Development Charge	
per capita	Total	Net DC Recoverable	\$/capita	\$/sq.ft	\$/capita	\$/sq.ft
\$386.20	\$5,763,791	\$4,726,045	\$232.23	\$0.00	\$260	\$0.00

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TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
LIBRARY SERVICES

BUILDINGS Branch Name	# of Square Feet										UNIT COST (\$/sq. ft.)	
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019		
Main Branch - 35 Albert Street	35,200	35,200	35,200	35,200	35,200	35,200	35,200	35,200	35,200	35,200	35,200	\$390
McCormick Branch - 500 Parkside Drive	3,384	3,384	3,384	3,384	3,384	3,384	3,384	3,384	3,384	3,384	3,384	\$390
John M Harper Branch	-	21,543	21,543	21,543	21,543	21,543	21,543	21,543	21,543	21,543	21,543	\$390
Total (sq.ft.)	38,584	60,127	60,127	60,127	60,127	60,127	60,127	60,127	60,127	60,127	60,127	
Total (\$000)	\$15,047.8	\$23,449.5	\$23,449.5	\$23,449.5	\$23,449.5	\$23,449.5	\$23,449.5	\$23,449.5	\$23,449.5	\$23,449.5	\$23,449.5	

LAND Branch Name	# of Hectares										UNIT COST (\$/ha)	
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019		
Main Branch - 35 Albert Street	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	\$10,400,000
McCormick Branch - 500 Parkside Drive	-	-	-	-	-	-	-	-	-	-	-	\$0
John M Harper Branch	-	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	\$1,612,000
Total (ha)	0.90	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	
Total (\$000)	\$9,360.0	\$9,682.4	\$9,682.4	\$9,682.4	\$9,682.4	\$9,682.4	\$9,682.4	\$9,682.4	\$9,682.4	\$9,682.4	\$9,682.4	

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TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
LIBRARY SERVICES

MATERIALS Type of Collection	# of Collection Materials										UNIT COST (\$/item)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Hardcover Books	280,787	277,253	267,517	271,950	270,377	268,472	270,844	261,439	257,584	254,684	\$33
Paperback Books	58,159	63,649	60,683	59,822	58,222	57,457	54,358	51,544	50,488	49,529	\$10
eBooks	7,817	13,252	18,580	24,264	28,845	32,063	47,669	48,300	52,612	58,211	\$38
Subscriptions -All Periodicals	340	453	325	372	308	308	308	318	293	287	\$158
Subscriptions - Electronic	76	66	38	45	45	45	27	27	37	32	\$2,890
DVDs	13,120	19,850	21,181	21,865	23,330	23,014	22,227	21,375	21,609	22,670	\$29
Music CDs	9,592	14,941	12,990	13,829	14,186	14,066	13,786	13,670	12,758	13,154	\$19
CD Audiobooks	5,429	5,404	5,708	5,530	5,609	5,688	5,469	5,737	5,431	5,431	\$50
Multimedia Kits	1,593	1,758	1,798	1,699	1,712	1,341	1,235	1,229	1,233	1,188	\$29
CDROM Software	130	26	25	23	13	1	-	-	-	-	\$280
Microforms	9	9	9	9	9	9	8	8	8	8	\$2,730
Toys	201	189	187	-	-	-	-	-	-	-	\$36
Topographical Maps	248	248	251	251	251	251	251	251	251	251	\$22
History Collections (e.g. photos, maps)	1	1	1	1	1	1	1	1	1	1	\$56,450
eBooks (NetLibrary subscription)	1	1	-	-	-	-	-	-	-	-	\$5,900
Waterloo Chronicle digital archive	-	-	-	-	-	-	-	-	1	1	\$68,400
Games	26	26	26	26	26	26	26	26	26	26	\$24
Total (#)	377,529	397,126	389,319	399,686	402,934	402,742	416,209	403,925	402,332	405,474	
Total (\$000)	\$11,435.0	\$11,839.5	\$11,601.6	\$11,999.6	\$12,146.5	\$12,176.6	\$12,719.8	\$12,393.1	\$12,486.8	\$12,616.3	

PROGRAMING EQUIPMENT Type of Collection	# of Programming Equipment										UNIT COST (\$/item)
	58159	58160	58161	58162	58163	58164	58165	58166	58167	58168	
Tools & Technology	1	1	1	1	1	1	1	1	1	1	\$71,300
Programming Furniture	1	1	1	1	1	1	1	1	1	1	\$16,000
Musical Instruments	1	1	1	1	1	1	1	1	1	1	\$5,400
Toys, Games	1	1	1	1	1	1	1	1	1	1	\$2,650
Total (#)	4	4	4	4	4	4	4	4	4	4	
Total (\$000)	\$95.4	\$95.4	\$95.4	\$95.4	\$95.4	\$95.4	\$95.4	\$95.4	\$95.4	\$95.4	\$95.4

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TABLE 1CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
LIBRARY SERVICES

FURNITURE AND EQUIPMENT Branch Name	Total Value of Furniture and Equipment (\$)									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Main Branch - 35 Albert Street										
Shelving/ Racks and Other General Office Equipment	\$1,830,000	\$1,830,000	\$1,830,000	\$1,830,000	\$1,830,000	\$1,830,000	\$1,830,000	\$1,830,000	\$1,830,000	\$1,830,000
McCormick Branch - 500 Parkside Drive										
Shelving/ Racks and Other General Office Equipment	\$176,000	\$176,000	\$176,000	176,000	176,000	176,000	176,000	176,000	176,000	\$176,000
John M Harper Branch										
Shelving/ Racks and Other General Office Equipment	-	\$1,120,000	\$1,120,000	\$1,120,000	\$1,120,000	\$1,120,000	\$1,120,000	\$1,120,000	\$1,120,000	\$1,120,000
Total (\$000)	\$2,006.0	\$3,126.0	\$3,126.0	\$3,126.0	\$3,126.0	\$3,126.0	\$3,126.0	\$3,126.0	\$3,126.0	\$3,126.0

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TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
LIBRARY SERVICES

COMPUTER & ELECTRONIC EQUIPMENT Branch Name	# of Computer & Electronic and Equipment (\$)										UNIT COST (\$/item)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Main Branch - 35 Albert Street											
Public Catalogues	11	11	11	11	11	10	10	10	10	10	\$ 1,160
Public Internet and catalogue (booked computers)	34	34	34	34	34	34	28	28	28	27	\$ 1,160
Public Game computers	4	4	4	4	4	-	-	-	-	-	\$ 1,160
Public Booking/printing station	2	2	2	2	2	1	1	1	1	1	\$ 1,160
Public Monitors	40	40	40	40	40	40	36	36	36	36	\$ 180
Public Monitor Privacy Screens	24	24	24	24	24	24	20	20	20	20	\$ 120
Public Printers B&W	1	1	1	1	1	1	1	1	1	1	\$ 780
Public Printers Colour	1	1	1	1	1	1	1	1	1	1	\$ 620
Coin Operated payment device	1	1	1	1	1	1	1	1	1	1	\$ 2,500
Main Computers Service Desks	9	9	9	9	9	8	8	8	6	6	\$ 830
Main- Bookshute and holds computers	3	3	3	3	3	3	3	3	2	2	\$ 830
Main- monitors Service Desks	9	9	9	9	9	8	8	8	6	6	\$ 180
Main printers -Service Desks	3	3	3	3	3	3	3	3	3	3	\$ 830
Main RFID - Self Checkouts	6	6	6	6	6	6	6	6	7	7	\$ 14,820
Main gates	3	3	3	3	3	3	3	3	3	3	\$ 9,310
Main Pads/Readers	14	14	14	14	14	12	12	10	10	10	\$ 1,770
Microfilm Machine	2	2	2	2	2	2	2	2	2	2	\$ 1,160
VHS to DVD Converter	-	-	-	-	-	-	1	1	1	1	\$ 830
iPads for Lending - Early Literacy	-	-	-	-	6	6	6	6	6	6	\$ 730

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TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
LIBRARY SERVICES

COMPUTER & ELECTRONIC EQUIPMENT Branch Name	# of Computer & Electronic and Equipment (\$)										UNIT COST (\$/item)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
No Location specified											
Public Bar code scanners	20	20	20	16	16	16	12	12	12	12	\$ 160
Public Receipt Printers	3	3	3	3	3	3	3	3	3	3	\$ 420
Public Headphones	-	-	98	98	98	98	98	50	50	50	\$ 16
Public WiFi Controller	1	1	1	1	2	2	2	2	2	2	\$ 1,660
Public Wi Fi Access Points	8	8	8	8	12	12	12	12	14	14	\$ 1,560
RFID Receipt Printers	18	18	18	18	18	18	18	18	17	17	\$ 420
RFID Bar Code scanners	25	25	25	23	23	23	20	20	17	17	\$ 160
RFID Support and Maintenance	1	1	1	1	1	1	1	1	1	1	\$ 42,280
Innovative Server - hosted at KPL	1	1	1	1	1	1	1	1	1	1	\$ 15,600
Millennium integrated library system (ILS)	1	1	1	1	1	1	1	1	1	1	\$ 124,800
Innovative support and maintenance	1	1	1	1	1	1	1	1	1	1	\$ 56,680

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TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
LIBRARY SERVICES

COMPUTER & ELECTRONIC EQUIPMENT (CONT'D) Branch Name	# of Computer & Electronic and Equipment (\$)										UNIT COST (\$/item)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
McCormick Branch - 500 Parkside Drive											
Public Booking/printing station	1	1	1	1	1	1	1	1	1	1	\$ 1,160
Public Catalogues	2	2	2	2	2	2	2	2	2	2	\$ 1,160
Public Coin operated payment device	1	1	1	1	1	1	1	1	1	1	\$ 2,500
Public Game computers	1	1	1	1	-	-	-	-	-	-	\$ 1,160
Public Internet and catalogue (booked computers)	8	8	8	8	8	8	8	8	8	8	\$ 1,160
Public Monitors	9	9	9	9	9	9	9	9	9	9	\$ 180
Public Monitor Privacy Screen	2	2	2	2	2	2	2	2	2	2	\$ 120
Public Printers B&W	1	1	1	1	1	1	1	1	1	1	\$ 730
Public Printers Colour	1	1	1	1	1	1	1	1	1	1	\$ 830
RFID Pads/Readers	3	3	3	3	3	3	3	3	3	3	\$ 1,770
RFID Self Checkouts	1	1	1	1	1	1	1	1	1	1	\$ 14,820
Service Desk Computers	2	2	2	2	2	2	2	2	2	2	\$ 830
Service Desk Monitors	2	2	2	2	2	2	2	2	2	2	\$ 160
Service Desk Printers	1	1	1	1	1	1	1	1	1	1	\$ 620

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TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
LIBRARY SERVICES

COMPUTER & ELECTRONIC EQUIPMENT (CONT'D) Branch Name	# of Computer & Electronic and Equipment (\$)										UNIT COST (\$/item)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Harper Branch											
Public Booking/printing station	-	1	1	1	1	1	1	1	1	1	\$ 1,160
Public Catalogues	-	9	9	6	6	6	6	6	6	6	\$ 1,160
Public Coin operated payment device	-	1	1	1	1	1	1	1	1	1	\$ 2,500
Public Game computers	-	4	4	4	-	-	-	-	-	-	\$ 1,160
Public Internet and catalogue (booked computers)	-	16	16	16	16	16	18	18	18	18	\$ 1,160
Public Monitors	-	22	22	22	19	19	19	19	19	19	\$ 160
Public Printers B&W	-	1	1	1	1	1	1	1	1	1	\$ 1,040
Public Printers Colour	-	1	1	1	1	1	1	1	1	1	\$ 520
RFID 7 Bin sorter	-	1	1	1	1	1	1	1	1	1	\$ 208,000
RFID Gates	-	1	1	1	1	1	1	1	1	1	\$ 13,520
RFID Pads/Readers	-	4	4	4	5	5	5	5	5	5	\$ 1,770
RFIDSelf Checkouts	-	4	4	4	4	4	4	4	4	4	\$ 14,820
Service Desks Book chute and holds computers	-	3	3	3	3	3	3	3	3	3	\$ 1,160
Service Desks Computers	-	4	4	4	3	3	3	3	3	3	\$ 1,160
Service Desk Printers	-	1	1	1	1	1	1	1	1	1	\$ 210
Lending Laptop and iPad Kiosk	-	-	-	-	-	-	-	1	1	1	\$ 36,400
Total (#)	281	354	452	443	446	436	418	369	363	360	
Total (\$000)	\$543.3	\$881.8	\$883.4	\$879.0	\$885.6	\$874.1	\$867.9	\$900.0	\$914.2	\$913.4	

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TABLE 1

CITY OF WATERLOO
CALCULATION OF SERVICE LEVELS
LIBRARY SERVICES

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Historical Population	118,438	119,671	121,130	122,607	124,102	125,614	127,145	128,824	131,221	133,482

INVENTORY SUMMARY (\$000)

Buildings	\$15,047.8	\$23,449.5	\$23,449.5	\$23,449.5	\$23,449.5	\$23,449.5	\$23,449.5	\$23,449.5	\$23,449.5	\$23,449.5
Land	\$9,360.0	\$9,682.4	\$9,682.4	\$9,682.4	\$9,682.4	\$9,682.4	\$9,682.4	\$9,682.4	\$9,682.4	\$9,682.4
Materials	\$11,435.0	\$11,839.5	\$11,601.6	\$11,999.6	\$12,146.5	\$12,176.6	\$12,719.8	\$12,393.1	\$12,486.8	\$12,616.3
Programing Equipment	\$95.4	\$95.4	\$95.4	\$95.4	\$95.4	\$95.4	\$95.4	\$95.4	\$95.4	\$95.4
Furniture And Equipment	\$2,006.0	\$3,126.0	\$3,126.0	\$3,126.0	\$3,126.0	\$3,126.0	\$3,126.0	\$3,126.0	\$3,126.0	\$3,126.0
Computer & Electronic Equipment	\$543.3	\$881.8	\$883.4	\$879.0	\$885.6	\$874.1	\$867.9	\$900.0	\$914.2	\$913.4
Total (\$000)	\$38,487.3	\$49,074.6	\$48,838.3	\$49,231.9	\$49,385.4	\$49,404.0	\$49,941.0	\$49,646.4	\$49,754.3	\$49,883.0

SERVICE LEVEL (\$/capita)

											Average Service Level
Buildings	\$127.05	\$195.95	\$193.59	\$191.26	\$188.95	\$186.68	\$184.43	\$182.03	\$178.70	\$175.68	\$180.43
Land	\$79.03	\$80.91	\$79.93	\$78.97	\$78.02	\$77.08	\$76.15	\$75.16	\$73.79	\$72.54	\$77.16
Materials	\$96.55	\$98.93	\$95.78	\$97.87	\$97.88	\$96.94	\$100.04	\$96.20	\$95.16	\$94.52	\$96.99
Programing Equipment	\$0.81	\$0.80	\$0.79	\$0.78	\$0.77	\$0.76	\$0.75	\$0.74	\$0.73	\$0.71	\$0.76
Furniture And Equipment	\$16.94	\$26.12	\$25.81	\$25.50	\$25.19	\$24.89	\$24.59	\$24.27	\$23.82	\$23.42	\$24.05
Computer & Electronic Equipment	\$4.59	\$7.37	\$7.29	\$7.17	\$7.14	\$6.96	\$6.83	\$6.99	\$6.97	\$6.84	\$6.81
Total (\$/capita)	\$324.96	\$410.08	\$403.19	\$401.54	\$397.94	\$393.30	\$392.79	\$385.38	\$379.16	\$373.71	\$386.20

CITY OF WATERLOO
CALCULATION OF MAXIMUM ALLOWABLE
LIBRARY SERVICES

10-Year Funding Envelope Calculation

10 Year Average Service Level 2010 - 2019	\$386.20
Net Population Growth 2020 - 2029	13,597
Maximum Allowable Funding Envelope	\$5,251,161
Less: 10% Legislated Reduction	\$525,116
Discounted Maximum Allowable Funding Envelope	\$4,726,045

CITY OF WATERLOO
DEVELOPMENT-RELATED CAPITAL PROGRAM
LIBRARY SERVICES

DC Project Number	Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs		Total Development Related Costs	Development Related Costs			
						Replacement & BTE Shares	10% Reduction		DC Reserve Commitments	2020-2029	Post 2029	
	1.0 LIBRARY SERVICES											
	1.1 Buildings, Land & Furnishings											
801(2019)	1.1.1 East Side Library Branch	2020 - 2020	\$ 2,358,000	\$ -	\$ 2,358,000	\$ -	\$ 235,800	\$ 2,122,200	\$ -	\$ 2,122,200	\$ -	
	Subtotal Buildings, Land & Furnishings		\$ 2,358,000	\$ -	\$ 2,358,000	\$ -	\$ 235,800	\$ 2,122,200	\$ -	\$ 2,122,200	\$ -	
	1.2 Strategic Initiatives											
806	1.2.1 Strategic Plan Implementation	2021 - 2022	\$ 84,000	\$ -	\$ 84,000	\$ 67,200	\$ 1,680	\$ 15,120	\$ -	\$ 15,120	\$ -	
806	1.2.2 Strategic Plan Implementation	2025 - 2026	\$ 84,000	\$ -	\$ 84,000	\$ 67,200	\$ 1,680	\$ 15,120	\$ -	\$ -	\$ 15,120	
	Subtotal Strategic Initiatives		\$ 168,000	\$ -	\$ 168,000	\$ 134,400	\$ 3,360	\$ 30,240	\$ -	\$ 15,120	\$ 15,120	
	1.3 Material Acquisitions											
803	1.3.1 Book Collection	2020 - 2029	\$ 1,736,501	\$ -	\$ 1,736,501	\$ -	\$ 173,650	\$ 1,562,851	\$ -	\$ 1,136,145	\$ 426,706	
804	1.3.2 Library Growth - Non Book Collection	2020 - 2029	\$ 487,100	\$ -	\$ 487,100	\$ -	\$ 48,710	\$ 438,390	\$ -	\$ 438,390	\$ -	
	Subtotal Material Acquisitions		\$ 2,223,601	\$ -	\$ 2,223,601	\$ -	\$ 222,360	\$ 2,001,241	\$ -	\$ 1,574,535	\$ 426,706	
	1.4 Recovery of Negative Reserve Fund Balance											
	1.4.1 Balance as at September 30, 2019	2020 - 2020	\$ 1,014,190	\$ -	\$ 1,014,190	\$ -	\$ -	\$ 1,014,190	\$ -	\$ 1,014,190	\$ -	
	Subtotal Recovery of Negative Reserve Fund Balance		\$ 1,014,190	\$ -	\$ 1,014,190	\$ -	\$ -	\$ 1,014,190	\$ -	\$ 1,014,190	\$ -	
	TOTAL LIBRARY SERVICES		\$ 5,763,791	\$ -	\$ 5,763,791	\$ 134,400	\$ 461,520	\$ 5,167,871	\$ -	\$ 4,726,045	\$ 441,826	

Residential Development Charge Calculation

Residential Share of 2020 - 2029 DC Eligible Costs	100%	\$4,726,045
10-Year Growth in Population in New Units		20,350
Unadjusted Development Charge Per Capita		\$232.23

Non-Residential Development Charge Calculation

Non-Residential Share of 2020 - 2029 DC Eligible Costs	0%	\$0
10-Year Growth in Square Feet		3,287,340
Unadjusted Development Charge Per Square Foot		\$0.00

2020 - 2029 Net Funding Envelope \$4,726,045

Reserve Fund Balance

Balance as at September 30, 2019	\$3,708,810
2019 Capital Budget Draws	<u>\$4,723,000</u>
Total Uncommitted Reserve Funds	(\$1,014,190)

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TABLE 3

CITY OF WATERLOO
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
LIBRARY SERVICES
RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

LIBRARY SERVICES	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	TOTAL
OPENING CASH BALANCE	\$0.0	(\$2,866.8)	(\$2,672.9)	(\$2,447.7)	(\$2,194.5)	(\$1,919.7)	(\$1,621.8)	(\$1,299.4)	(\$892.3)	(\$453.3)	
2020 - 2029 RESIDENTIAL FUNDING REQUIREMENTS											
- Library Service (New Projects): Non Inflated	\$3,293.8	\$165.0	\$165.0	\$157.5	\$157.5	\$157.5	\$157.5	\$157.5	\$157.5	\$157.5	\$4,726.0
- Library Service (New Projects): Inflated	\$3,293.8	\$168.3	\$171.7	\$167.1	\$170.4	\$173.8	\$177.3	\$180.9	\$184.5	\$188.2	\$4,876.0
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,938	1,938	1,987	1,987	1,987	1,987	1,987	2,180	2,180	2,180	20,350
REVENUE											
- DC Receipts: Inflated	\$503.8	\$513.8	\$537.5	\$548.2	\$559.2	\$570.4	\$581.8	\$651.2	\$664.2	\$677.5	\$5,807.6
INTEREST											
- Interest on Opening Balance	\$0.0	(\$157.7)	(\$147.0)	(\$134.6)	(\$120.7)	(\$105.6)	(\$89.2)	(\$71.5)	(\$49.1)	(\$24.9)	(\$900.3)
- Interest on In-year Transactions	(\$76.7)	\$6.0	\$6.4	\$6.7	\$6.8	\$6.9	\$7.1	\$8.2	\$8.4	\$8.6	(\$11.6)
TOTAL REVENUE	\$427.1	\$362.2	\$396.9	\$420.2	\$445.3	\$471.8	\$499.7	\$588.0	\$623.5	\$661.1	\$4,895.7
CLOSING CASH BALANCE	(\$2,866.8)	(\$2,672.9)	(\$2,447.7)	(\$2,194.5)	(\$1,919.7)	(\$1,621.8)	(\$1,299.4)	(\$892.3)	(\$453.3)	\$19.7	

2020 Adjusted Charge Per Capita	\$260
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Allocation of Capital Program	
Residential Sector	100.0%
Non-Residential Sector	0.0%
Rates for 2020	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX B.2

PROTECTIVE SERVICES

APPENDIX B.2

PROTECTIVE SERVICES

Waterloo Fire Rescue provides for fire suppression, emergency preparedness, fire prevention, and public education throughout the City.

TABLE 1 2010-2019 HISTORICAL SERVICE LEVELS

The Protective Services Department inventory of capital assets includes four fire stations and a community development facility with a combined area of 49,741 square feet, valued at approximately \$18.8 million. The buildings occupy roughly 2.26 hectares of land which is valued at \$4.8 million. Personal firefighting equipment, communications equipment, and other station equipment add another \$2.7 million to the inventory. The 22 vehicles associated with the fire stations in the City have a replacement value of \$5.8 million. Furniture and equipment are valued at \$2.3 million.

The current value of the capital infrastructure including building, land, vehicles, furniture and equipment is approximately \$34.3 million and has provided the City with a ten-year average historical service level of \$174.19 per capita and employee.

The calculated maximum allowable recoverable through development charges is \$3.7 million (21,424 net population and employment growth X historical service level of \$174.19).

No uncommitted excess capacity has been identified in Protective Services. The full maximum allowable funding envelope of \$3.7 million is therefore brought forward to the development charges calculation.

TABLE 2 2020 – 2029 DEVELOPMENT-RELATED CAPITAL PROGRAM & CALCULATION OF THE UNADJUSTED DEVELOPMENT CHARGE

The 2020 to 2029 development-related capital program consists of an expansion to the fire rescue facility and an additional storage facility space as well as new vehicles and equipment to service development in the City. No grants, other subsidies or replacement shares have been identified for the capital program.

A Fire Rescue expansion is planned for 2023 at a gross cost of \$9.3 million. A portion of this project (\$6.3 million) is deemed to benefit development beyond 2029, and as such, this amount will be considered for recovery in subsequent development charges

by-laws. The remaining \$3.0 million is related to growth between 2020 and 2029 and has been included in the DC rate calculations. The Storage facility space is planned for 2020 at a cost of \$318,000, all of which is intended to be paid for by existing DC reserves.

The capital program also provides for the purchase of additional vehicles and equipment. In total, a provision of \$1.5 million has been made to purchase these vehicles and equipment. No benefit to existing shares have been identified as all of the capital costs are for new assets in addition to the existing compliment to service future development in the City. A portion of \$850,269 is funded from the existing DC reserve fund balance. The remaining \$685,462 is related to growth between 2020 and 2029 and has been included in the DC rate calculations.

Altogether, the ten-year capital forecast for Protective Services amounts to \$11.1 million. Reserve fund balance of \$1.2 million is committed against projects identified in the capital program. Finally, \$6.2 million is considered a post-period benefit.

The remaining \$3.7 million is related to development between 2020 and 2029 and, given that protection services are exempt from the 10 per cent reduction of capital costs imposed by the *DCA*, the full amount is included in the present calculation.

The development-related cost is allocated 72 per cent, or \$2.7 million, against new residential development, and 28 per cent, or \$1.0 million, against non-residential development. The allocation between residential and non-residential development is based on shares of forecasted population and employment growth. This yields an unadjusted development charge of \$132.03 per capita and \$0.32 per square foot respectively.

TABLE 3 CASH FLOW ANALYSIS

After cash flow consideration, the calculated residential charge increases to \$140 per capita and the non-residential charge increases to \$0.34 per square foot.

The following table summarizes the calculation of the Protective Services development charge.

PROTECTIVE SERVICES SUMMARY						
10-year Hist.	2020 - 2029		Unadjusted		Adjusted	
Service Level	Development-Related Capital Program		Development Charge		Development Charge	
per pop & emp	Total	Net DC Recoverable	\$/capita	\$/sq.ft	\$/capita	\$/sq.ft
\$174.19	\$11,136,863	\$3,731,847	\$132.03	\$0.32	\$140	\$0.34

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APPENDIX B.2
TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PROTECTIVE SERVICES

BUILDINGS Station Name	# of Square Feet										UNIT COST (\$/sq. ft.)	
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019		
Station #1 - Weber Street North	12,670	12,670	12,670	12,670	12,670	12,670	12,670	12,670	12,670	12,670	12,670	\$385
Station #1 - Weber Street North - Shed	140	140	140	140	140	140	140	140	140	140	140	\$34
Station #1 - Weber Street North - Storage Shed	800	800	800	800	800	800	800	800	800	800	800	\$94
Station #2 Headquarters - 470 Columbia Street W	20,800	20,800	20,800	20,800	20,800	20,800	20,800	20,800	20,800	20,800	20,800	\$385
Westmount Emergency Services Station	300	300	300	300	300	300	300	300	300	300	300	\$385
Station #3 - Northfield Drive	8,790	8,790	8,790	8,790	8,790	8,790	8,790	8,790	8,790	8,790	8,790	\$385
Station #4 - University Avenue East	-	6,141	6,141	6,141	6,141	6,141	6,141	6,141	6,141	6,141	6,141	\$385
Station #4 - University Avenue East - Shed	-	100	100	100	100	100	100	100	100	100	100	\$46
Total (sq.ft.)	43,500	49,741	49,741	49,741	49,741	49,741	49,741	49,741	49,741	49,741	49,741	
Total (\$000)	\$16,465.6	\$18,834.4	\$18,834.4	\$18,834.4	\$18,834.4	\$18,834.4	\$18,834.4	\$18,834.4	\$18,834.4	\$18,834.4	\$18,834.4	

LAND Station Name	# of Hectares										UNIT COST (\$/ha)	
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019		
Station #1 - Weber Street North	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	\$2,180,000
Station #2 Headquarters - 470 Columbia Street W	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	\$2,180,000
Westmount Emergency Services Station	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	\$2,180,000
Station #3 - Northfield Drive	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	\$2,180,000
Station #4 - University Avenue East	-	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	\$1,720,000
Total (ha)	1.93	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	
Total (\$000)	\$4,207.4	\$4,775.0	\$4,775.0	\$4,775.0	\$4,775.0	\$4,775.0	\$4,775.0	\$4,775.0	\$4,775.0	\$4,775.0	\$4,775.0	

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APPENDIX B.2
TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PROTECTIVE SERVICES

VEHICLE & PERSONAL EQUIPMENT AND GEAR Description	# of Items										UNIT COST (\$/item)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Air Bags	9	9	9	9	9	9	9	9	9	9	\$1,850
Communication equipment	67	67	67	67	67	67	67	67	67	67	\$5,090
Defibrillators	-	-	8	8	8	8	8	8	8	8	\$4,260
Extrication Equipment	36	48	48	48	48	48	48	48	48	48	\$7,130
Fire Hose	343	343	343	343	343	343	343	343	343	343	\$540
Fire Prevention Officers Equipment	1	19	22	23	23	23	23	23	23	23	\$520
Hazardous Materials Specialized Equipment	16	17	17	19	19	21	21	21	21	21	\$1,140
Massimo Rad 57	6	6	6	6	6	6	6	6	6	6	\$4,680
Miscellaneous equipment	126	181	230	230	230	241	241	241	241	241	\$2,200
Personal Protective Equipment	370	750	750	750	750	870	870	870	870	870	\$1,310
Water Rescue Equipment	18	33	33	33	33	33	33	33	33	33	\$260
Total (#)	992	1,473	1,533	1,536	1,536	1,669	1,669	1,669	1,669	1,669	
Total (\$000)	\$1,613.0	\$2,331.8	\$2,475.2	\$2,478.0	\$2,478.0	\$2,661.7	\$2,661.7	\$2,661.7	\$2,661.7	\$2,661.7	

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APPENDIX B.2
TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PROTECTIVE SERVICES

VEHICLES Vehicle Type	# of Vehicles										UNIT COST (\$/vehicle)	
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019		
Aerial 1	1	1	1	1	1	1	1	1	1	1	1	\$1,560,000
Car 1 SUV	-	-	-	-	-	1	1	1	1	1	1	\$36,000
Car 11 Honda Civic	1	1	1	1	1	1	1	1	1	1	1	\$29,000
Car 2 SUV	-	-	-	-	1	1	1	1	1	1	1	\$36,000
Car 23	1	1	1	1	1	1	1	1	1	1	1	\$36,000
Car 3 SUV	-	-	-	-	-	1	1	1	1	1	1	\$36,000
Car 4 Sedan	-	-	1	1	1	1	1	1	1	1	1	\$29,000
Car 5 Ford Fiest	-	1	1	1	1	1	1	1	1	1	1	\$21,000
Car 6 Ford E150 Van	-	-	-	-	1	1	1	1	1	1	1	\$36,000
Car 7 Honda Civic	1	1	1	1	1	1	1	1	1	1	1	\$29,000
Car 8 Public Education	-	-	-	-	1	1	1	1	1	1	1	\$47,000
Car 9 Ford Fiesta	-	-	1	1	1	1	1	1	1	1	1	\$29,000
Pump 1	1	1	1	1	1	1	1	1	1	1	1	\$624,000
Pump 12	1	1	1	1	1	1	1	1	1	1	1	\$624,000
Pump 2	1	1	1	1	1	1	1	1	1	1	1	\$624,000
Pump 3	1	1	1	1	1	1	1	1	1	1	1	\$624,000
Pump 4	1	1	1	1	1	1	1	1	1	1	1	\$624,000
Service 1	1	1	1	1	1	1	1	1	1	1	1	\$47,000
Tanker 1	-	-	-	1	1	1	1	1	1	1	1	\$624,000
Training 1	-	-	-	-	1	1	1	1	1	1	1	\$47,000
Hazmat Trailer	1	1	1	1	1	1	1	1	1	1	1	\$31,000
Technical Rescue Trailer	-	-	-	-	-	-	-	-	-	-	1	\$16,000
Total (#)	11	12	14	15	19	21	21	21	21	21	22	
Total (\$000)	\$4,852.0	\$4,873.0	\$4,931.0	\$5,555.0	\$5,721.0	\$5,793.0	\$5,793.0	\$5,793.0	\$5,793.0	\$5,793.0	\$5,809.0	

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APPENDIX B.2
TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PROTECTIVE SERVICES

FURNITURE & EQUIPMENT	Total Value of Furniture & Equipment (\$)									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Station #1 - Weber Street North	\$595,000	\$595,000	\$595,000	\$595,000	\$595,000	\$595,000	\$595,000	\$595,000	\$595,000	\$595,000
Station #2 Headquarters - 470 Columbia Street W	961,000	\$961,000	\$961,000	\$961,000	\$961,000	\$961,000	\$961,000	\$961,000	\$961,000	\$961,000
Westmount Emergency Services Station	14,000	\$14,000	\$14,000	\$14,000	\$14,000	\$14,000	\$14,000	\$14,000	\$14,000	\$14,000
Station #3 - Northfield Drive	\$406,000	\$406,000	\$406,000	\$406,000	\$406,000	\$406,000	\$406,000	\$406,000	\$406,000	\$406,000
Station #4 - University Avenue East	-	284,000	284,000	284,000	284,000	284,000	284,000	284,000	\$284,000	\$284,000
Total (\$000)	\$1,976.0	\$2,260.0	\$2,260.0	\$2,260.0	\$2,260.0	\$2,260.0	\$2,260.0	\$2,260.0	\$2,260.0	\$2,260.0

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APPENDIX B.2
TABLE 1

CITY OF WATERLOO
CALCULATION OF SERVICE LEVELS
PROTECTIVE SERVICES

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Historical Population	118,438	119,671	121,130	122,607	124,102	125,614	127,145	128,824	131,221	133,482
Historical Employment	<u>63,998</u>	<u>64,282</u>	<u>65,092</u>	<u>65,912</u>	<u>66,742</u>	<u>67,583</u>	<u>68,433</u>	<u>69,156</u>	<u>69,887</u>	<u>70,625</u>
Total Historical Population & Employment	182,436	183,953	186,222	188,519	190,844	193,197	195,578	197,980	201,108	204,107

INVENTORY SUMMARY (\$000)

Buildings	\$16,465.6	\$18,834.4	\$18,834.4	\$18,834.4	\$18,834.4	\$18,834.4	\$18,834.4	\$18,834.4	\$18,834.4	\$18,834.4
Land	\$4,207.4	\$4,775.0	\$4,775.0	\$4,775.0	\$4,775.0	\$4,775.0	\$4,775.0	\$4,775.0	\$4,775.0	\$4,775.0
Vehicle & Personal Equipment And Gear	\$1,613.0	\$2,331.8	\$2,475.2	\$2,478.0	\$2,478.0	\$2,661.7	\$2,661.7	\$2,661.7	\$2,661.7	\$2,661.7
Vehicles	\$4,852.0	\$4,873.0	\$4,931.0	\$5,555.0	\$5,721.0	\$5,793.0	\$5,793.0	\$5,793.0	\$5,793.0	\$5,809.0
Furniture & Equipment	\$1,976.0	\$2,260.0	\$2,260.0	\$2,260.0	\$2,260.0	\$2,260.0	\$2,260.0	\$2,260.0	\$2,260.0	\$2,260.0
Total (\$000)	\$29,114.0	\$33,074.2	\$33,275.6	\$33,902.4	\$34,068.4	\$34,324.1	\$34,324.1	\$34,324.1	\$34,324.1	\$34,340.1

SERVICE LEVEL (\$/pop & emp)											Average Service Level
Buildings	\$90.25	\$102.39	\$101.14	\$99.91	\$98.69	\$97.49	\$96.30	\$95.13	\$93.65	\$92.28	\$96.72
Land	\$23.06	\$25.96	\$25.64	\$25.33	\$25.02	\$24.72	\$24.41	\$24.12	\$23.74	\$23.39	\$24.54
Vehicle & Personal Equipment And Gear	\$8.84	\$12.68	\$13.29	\$13.14	\$12.98	\$13.78	\$13.61	\$13.44	\$13.24	\$13.04	\$12.80
Vehicles	\$26.60	\$26.49	\$26.48	\$29.47	\$29.98	\$29.98	\$29.62	\$29.26	\$28.81	\$28.46	\$28.51
Furniture & Equipment	\$10.83	\$12.29	\$12.14	\$11.99	\$11.84	\$11.70	\$11.56	\$11.42	\$11.24	\$11.07	\$11.61
Total (\$/pop & emp)	\$159.58	\$179.80	\$178.69	\$179.84	\$178.51	\$177.66	\$175.50	\$173.37	\$170.68	\$168.25	\$174.19

CITY OF WATERLOO
CALCULATION OF MAXIMUM ALLOWABLE
PROTECTIVE SERVICES

10-Year Funding Envelope Calculation	
10 Year Average Service Level 2010 - 2019	\$174.19
Net Population & Employment Growth 2020 - 2029	21,424
Maximum Allowable Funding Envelope	\$3,731,847

CITY OF WATERLOO
DEVELOPMENT-RELATED CAPITAL PROGRAM
PROTECTIVE SERVICES

DC Project Number	Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs		Total Development Related Costs	Development Related Costs		
						Replacement & BTE Shares	0% Reduction		DC Reserve Commitments	2020-2029	Post 2029
2.0 PROTECTIVE SERVICES											
2.1 Buildings, Land & Furnishings											
304	2.1.1 Fire Rescue Expansion	2023 - 2024	\$ 9,283,132	\$ -	\$ 9,283,132	\$ -	\$ -	\$ 9,283,132	\$ -	\$ 3,046,384	\$ 6,236,748
306	2.1.2 Storage Facility Space	2020 - 2020	\$ 318,000	\$ -	\$ 318,000	\$ -	\$ -	\$ 318,000	\$ 318,000	\$ -	\$ -
	Subtotal Buildings, Land & Furnishings		\$ 9,601,132	\$ -	\$ 9,601,132	\$ -	\$ -	\$ 9,601,132	\$ 318,000	\$ 3,046,384	\$ 6,236,748
2.2 Vehicles & Equipment											
305	2.2.1 Personal Protective Equipment and Uniforms-New Personnel	2023 - 2023	\$ 136,231	\$ -	\$ 136,231	\$ -	\$ -	\$ 136,231	\$ 136,231	\$ -	\$ -
308	2.2.2 New Fire Pumper-Rescue Quint	2023 - 2023	\$ 1,155,000	\$ -	\$ 1,155,000	\$ -	\$ -	\$ 1,155,000	\$ 714,038	\$ 440,962	\$ -
309	2.2.3 New Fire Pumper-Rescue Quint-Equipment	2023 - 2023	\$ 199,500	\$ -	\$ 199,500	\$ -	\$ -	\$ 199,500	\$ -	\$ 199,500	\$ -
307	2.2.4 Fire Prevention Officer Equipment and Vehicle	2022 - 2022	\$ 45,000	\$ -	\$ 45,000	\$ -	\$ -	\$ 45,000	\$ -	\$ 45,000	\$ -
	Subtotal Vehicles & Equipment		\$ 1,535,731	\$ -	\$ 1,535,731	\$ -	\$ -	\$ 1,535,731	\$ 850,269	\$ 685,462	\$ -
TOTAL PROTECTIVE SERVICES			\$ 11,136,863	\$ -	\$ 11,136,863	\$ -	\$ -	\$ 11,136,863	\$ 1,168,269	\$ 3,731,847	\$ 6,236,748

Residential Development Charge Calculation		
Residential Share of 2020 - 2029 DC Eligible Costs	72%	\$2,686,930
10-Year Growth in Population in New Units		20,350
Unadjusted Development Charge Per Capita		\$132.03
Non-Residential Development Charge Calculation		
Non-Residential Share of 2020 - 2029 DC Eligible Costs	28%	\$1,044,917
10-Year Growth in Square Feet		3,287,340
Unadjusted Development Charge Per Square Foot		\$0.32

2020 - 2029 Net Funding Envelope	\$3,731,847
Reserve Fund Balance	
Balance as at September 30, 2019	\$1,168,269
2019 Capital Budget Draws	\$0
Total Uncommitted Reserve Funds	\$1,168,269

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APPENDIX B.2
TABLE 3

CITY OF WATERLOO
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
PROTECTIVE SERVICES
RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

PROTECTIVE SERVICES	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	TOTAL
OPENING CASH BALANCE	\$0.0	\$276.0	\$567.3	\$847.3	(\$518.4)	(\$1,457.3)	(\$1,225.0)	(\$973.5)	(\$670.4)	(\$343.4)	
2020 - 2029 RESIDENTIAL FUNDING REQUIREMENTS											
- Protective Services: Non Inflated	\$0.0	\$0.0	\$32.4	\$1,557.8	\$1,096.7	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$2,686.9
- Protective Services (New Projects): Inflated	\$0.0	\$0.0	\$33.7	\$1,653.2	\$1,187.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$2,874.0
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,938	1,938	1,987	1,987	1,987	1,987	1,987	2,180	2,180	2,180	20,350
REVENUE											
- DC Receipts: Inflated	\$271.3	\$276.7	\$289.4	\$295.2	\$301.1	\$307.1	\$313.3	\$350.6	\$357.6	\$364.8	\$3,127.1
INTEREST											
- Interest on Opening Balance	\$0.0	\$9.7	\$19.9	\$29.7	(\$28.5)	(\$80.2)	(\$67.4)	(\$53.5)	(\$36.9)	(\$18.9)	(\$226.2)
- Interest on In-year Transactions	\$4.7	\$4.8	\$4.5	(\$37.3)	(\$24.4)	\$5.4	\$5.5	\$6.1	\$6.3	\$6.4	(\$18.0)
TOTAL REVENUE	\$276.0	\$291.2	\$313.7	\$287.5	\$248.2	\$232.3	\$251.4	\$303.2	\$327.0	\$352.3	\$2,882.9
CLOSING CASH BALANCE	\$276.0	\$567.3	\$847.3	(\$518.4)	(\$1,457.3)	(\$1,225.0)	(\$973.5)	(\$670.4)	(\$343.4)	\$8.9	

2020 Adjusted Charge Per Capita	\$140
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Allocation of Capital Program	
Residential Sector	72.0%
Non-Residential Sector	28.0%
Rates for 2020	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

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TABLE 3

**CITY OF WATERLOO
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
PROTECTIVE SERVICES
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)**

PROTECTIVE SERVICES	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	TOTAL
OPENING CASH BALANCE	\$0.00	\$108.36	\$223.88	\$333.56	(\$195.44)	(\$556.93)	(\$461.29)	(\$356.63)	(\$242.24)	(\$117.28)	
2020 - 2029 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Protective Services: Non Inflated	\$0.0	\$0.0	\$12.6	\$605.8	\$426.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$1,044.9
- Fire Protection (New Projects): Inflated	\$0.0	\$0.0	\$13.1	\$642.9	\$461.7	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$1,117.7
NEW NON-RESIDENTIAL DEVELOPMENT											
- Growth in Square Feet	313,320	316,680	320,040	323,400	326,760	330,540	333,900	337,260	341,040	344,400	3,287,340
REVENUE											
- DC Receipts: Inflated	\$106.5	\$109.8	\$113.2	\$116.7	\$120.3	\$124.1	\$127.8	\$131.7	\$135.9	\$139.9	\$1,225.9
INTEREST											
- Interest on Opening Balance	\$0.0	\$3.8	\$7.8	\$11.7	(\$10.7)	(\$30.6)	(\$25.4)	(\$19.6)	(\$13.3)	(\$6.5)	(\$82.8)
- Interest on In-year Transactions	\$1.9	\$1.9	\$1.8	(\$14.5)	(\$9.4)	\$2.2	\$2.2	\$2.3	\$2.4	\$2.4	(\$6.8)
TOTAL REVENUE	\$108.4	\$115.5	\$122.8	\$113.9	\$100.2	\$95.6	\$104.7	\$114.4	\$125.0	\$135.9	\$1,136.3
CLOSING CASH BALANCE	\$108.4	\$223.9	\$333.6	(\$195.4)	(\$556.9)	(\$461.3)	(\$356.6)	(\$242.2)	(\$117.3)	\$18.6	

2020 Adjusted Charge Per Square Foot **\$0.34**

Allocation of Capital Program	
Residential Sector	72.0%
Non-Residential Sector	28.0%
Rates for 2020	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX B.3

***PARKS AND MAJOR INDOOR RECREATION
FACILITIES***

APPENDIX B.3

PARKS AND MAJOR INDOOR RECREATION FACILITIES

The City of Waterloo offers its residents a wealth of recreation opportunities through various arenas, facilities, parks and sports fields.

TABLE 1 2010-2019 HISTORICAL SERVICE LEVELS

The ten-year historical inventory of capital assets for Parks and Major Indoor Recreation Facilities includes more than 675,544 square feet of indoor recreation building space. The largest of these facilities are RIM Park, the Waterloo Memorial Recreation Complex, and the Albert McCormick Community Centre. The current replacement value for the buildings is \$247.8 million. The land associated with the buildings amount to 21.01 hectares, and is valued at \$95.3 million. The fixtures, furniture and equipment found in the arenas and community centres have a total value of \$24.8 million.

The City has nearly 472 hectares of parkland and open space (including the Grey Silo Golf Course). The combined cost to develop the DC recoverable parkland and its associated trail network is \$85.1 million.

The departments are also responsible for constructing and operating park facilities including baseball diamonds, soccer pitches, tennis courts, water play facilities, playgrounds, skateboard parks, basketball courts, public squares, and bleachers. The facilities have a total value of \$137.4 million. Park special facilities Public Squares, Splash Parks, outdoor rinks and related fleet and equipment add a further \$109.0 million to the Parks and Major Indoor Recreation Facilities inventory.

The combined value of capital assets for Parks and Major Indoor Recreation Facilities totals \$614.0 million. The ten-year historical average service level is \$5,222.64 per capita, and this, multiplied by the ten-year forecast growth in net population, results in a maximum allowable funding envelope of \$71.0 million.

Parks and Major Indoor Recreation Facilities is a service for which development-related capital costs must be reduced by ten per cent under the *DCA*. The resulting net maximum allowable funding envelope brought forward to the development charges calculation is reduced to \$63.9 million.

**TABLE 2 2020 – 2029 DEVELOPMENT-RELATED CAPITAL PROGRAM &
CALCULATION OF THE UNADJUSTED DEVELOPMENT CHARGE**

The 2020–2029 development-related capital program for Parks and Major Indoor Recreation Facilities amounts to \$56.1 million. It includes land acquisition and development of the West Side Recreation Facility, several outdoor recreation and trail features, as well as new sports field equipment and signage.

The indoor recreation component of the capital program includes a land acquisition cost for the new west side recreation facility in 2020 valued at \$5.3 million. Contributions from parkland acquisition reserve make up fifty per cent of the gross costs of \$2.6 million. An amount of \$1.1 million has also been removed from the gross cost in accordance with the 10 per cent capital cost deduction under the *DCA*. The entire positive reserve fund balance valued at \$2.1 million has been applied to offset the cost of the capital project. The remaining \$303,077 development-related capital cost can be recovered through development charges in this period (2020-2029) and has been included in the DC rate calculations. The construction of the facility is valued \$7.9 million which is reduced by the legislated 10 per cent of \$793,400. The remaining \$7.1 million is included in the DC rate calculation.

The outdoor recreation component of the capital program amounts to \$41.2 million. This provides for several new outdoor recreation development projects throughout the City. The projects range from the design and construction of various types of parks, trail and bikeways expansions, the addition of new splash pads, the expansion of new park facilities (ball hoops, tennis courts, etc.), and various sport fields facilities. Uptown neighbourhoods public space additions and station area planning implementation costs are reduced by approximately \$2.0 million which is funded through cash-in-lieu funds. A portion of these costs (\$15.6 million) are deemed to benefit the existing community, and therefore will not be recovered from development charges. The legislated 10 per cent discount of \$2.4 million is also netted off the development charges calculation. The remaining \$21.3 million will be funded through development charges over the period 2020-2029 and has been included in the DC rate calculations.

The ten-year development-related capital program for fleet and equipment attributed to amounts to the Parks and Major Indoor Recreation Facilities service totals \$1.6 million. The ten per cent legislated reduction of \$158,422 has been netted off and the remaining cost of \$1.4 million will be funded through development charges over this period (2020-2029).

Altogether, the Parks and Major Indoor Recreation Facilities DC capital program amounts to \$56.0 million. Contributions from other City funding sources including parkland acquisition reserves amount to \$4.6 million. A benefit to existing share of \$15.6 million is also removed from DC calculation as is \$3.6 million that represents the mandatory 10% capital cost reduction under the *DCA*. Finally, \$2.1 million is available in the Recreation and Parks DC reserve fund balance. No post-period benefit shares have been identified for this service.

The 2020–2029 DC costs eligible for recovery amount to \$30.1 million which is allocated entirely against future residential development in the City of Waterloo. This results in an unadjusted development charge of \$1,480.55 per capita.

TABLE 3 CASH FLOW AND RESERVE FUND ANALYSIS

After cash flow and reserve fund consideration, the residential calculated charge increases slightly to \$1,485 per capita.

The following table summarizes the calculation of the parks and major indoor recreation facilities development charge:

PARKS AND MAJOR INDOOR RECREATION FACILITIES						
10-year Hist.	2020 - 2029		Unadjusted		Adjusted	
Service Level	Development-Related Capital Program		Development Charge		Development Charge	
per capita	Total	Net DC Recoverable	\$/capita	\$/sq.ft	\$/capita	\$/sq.ft
\$5,222.64	\$56,017,261	\$30,129,835	\$1,480.55	\$0.00	\$1,485	\$0.00

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TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PARKS AND MAJOR INDOOR RECREATION FACILITIES
INDOOR RECREATION

BUILDINGS Facility Name	# of Square Feet										UNIT COST (\$/sq. ft.)	
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019		
404 Wing Rotary Centre - Main Building (Adult Centre)	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	\$384
404 Wing Rotary Centre - Storage Sheds	325	325	325	325	325	325	325	325	325	325	325	\$176
Adult Recreation Centre - Main Building	16,926	16,926	16,926	16,926	16,926	16,926	16,926	16,926	16,926	16,926	16,926	\$233
Albert McCormick Community Centre - Main Building Community Centre + Library	69,613	69,613	69,613	69,613	69,613	69,613	69,613	69,613	69,613	69,613	69,613	\$323
Erbsville Community Centre - Main Building (KW YMCA Early Years Centre)	5,844	5,844	5,844	5,844	5,844	5,844	5,844	5,844	5,844	5,844	5,844	\$267
YMCA - Main Building (Stock Family YMCA)	-	47,231	47,231	47,231	47,231	47,231	47,231	47,231	47,231	47,231	47,231	\$385
Bechtel Park - Main Building (Manulife Financial Soccer and Sports Complex)	27,205	27,205	27,205	27,205	27,205	27,205	27,205	27,205	27,205	27,205	27,205	\$178
Bechtel Park - Storage (Manulife Financial Soccer and Sports Complex)	400	400	400	400	400	400	400	400	400	400	400	\$299
Moses Springer Community Centre - Main Building	44,205	44,205	44,205	44,205	44,205	44,205	44,205	44,205	44,205	44,205	44,205	\$292
RIM Park - Main Building (Manulife Financial Sportsplex and Healthy Living Centre)	317,225	317,225	317,225	317,225	317,225	317,225	317,225	317,225	317,225	317,225	317,225	\$385
Rink in the Park - Main Building (Granit Club)	33,779	33,779	33,779	33,779	33,779	33,779	33,779	33,779	33,779	33,779	33,779	\$246
Waterloo Memorial Recreation Complex - Main Building	106,291	106,291	106,291	106,291	106,291	106,291	106,291	106,291	106,291	106,291	106,291	\$478
Waterloo Memorial Recreation Complex - Storage Portable	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	-	\$77
Waterloo Memorial Recreation Complex - Maintenance Portable	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	-	\$127
Total (sq.ft.)	630,313	677,544	677,544	677,544	677,544	677,544	677,544	677,544	677,544	677,544	675,544	
Total (\$000)	\$229,864.6	\$248,048.5	\$248,048.5	\$248,048.5	\$248,048.5	\$248,048.5	\$248,048.5	\$248,048.5	\$248,048.5	\$248,048.5	\$247,844.5	

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CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PARKS AND MAJOR INDOOR RECREATION FACILITIES
INDOOR RECREATION

LAND Facility Name	# of Hectares										UNIT COST (\$/ha)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
404 Wing Rotary Centre - Main Building (Adult Centre)	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	\$2,080,000
Adult Recreation Centre - Main Building	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	11,648,000
Albert McCormick Community Centre - Main Building Community Centre + Library)	3.03	3.03	3.03	3.03	3.03	3.03	3.03	3.03	3.03	3.03	2,080,000
Erbville Community Centre - Main Building (KW YMCA Early Years Centre)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	312,000
YMCA - Main Building (Stock Family YMCA)	-	2.82	2.82	2.82	2.82	2.82	2.82	2.82	2.82	2.82	2,080,000
Bechtel Park - Main Building (Manulife Financial Soccer and Sports Complex)	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	2,080,000
Moses Springer Community Centre - Main Building	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	2,080,000
RIM Park - Main Building (Manulife Financial Sportsplex and Healthy Living Centre)	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1,768,000
Rink in the Park - Main Building (Granit Club)	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	6,864,000
Waterloo Memorial Recreation Complex - Main Building	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	11,648,000
Total (ha)	18.19	21.01	21.01	21.01	21.01	21.01	21.01	21.01	21.01	21.01	
Total (\$000)	\$89,390.9	\$95,256.5	\$95,256.5	\$95,256.5	\$95,256.5	\$95,256.5	\$95,256.5	\$95,256.5	\$95,256.5	\$95,256.5	\$95,256.5

FURNITURE & EQUIPMENT Facility Name	Total Value of Furniture & Equipment (\$)									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
404 Wing Rotary Centre - Main Building (Adult Centre)	\$249,600	\$249,600	\$249,600	\$249,600	\$249,600	\$249,600	\$249,600	\$249,600	\$249,600	\$249,600
Adult Recreation Centre - Main Building	\$394,376	\$394,376	\$394,376	\$394,376	\$394,376	\$394,376	\$394,376	\$394,376	\$394,376	\$394,376
Albert McCormick Community Centre - Main Building Community Centre + Library)	\$2,248,500	\$2,248,500	\$2,248,500	\$2,248,500	\$2,248,500	\$2,248,500	\$2,248,500	\$2,248,500	\$2,248,500	\$2,248,500
Erbville Community Centre - Main Building (KW YMCA Early Years Centre)	\$156,035	\$156,035	\$156,035	\$156,035	\$156,035	\$156,035	\$156,035	\$156,035	\$156,035	\$156,035
YMCA - Main Building (Stock Family YMCA)	\$0	\$1,820,000	\$1,820,000	\$1,820,000	\$1,820,000	\$1,820,000	\$1,820,000	\$1,820,000	\$1,820,000	\$1,820,000
Bechtel Park - Main Building (Manulife Financial Soccer and Sports Complex)	\$484,249	\$484,249	\$484,249	\$484,249	\$484,249	\$484,249	\$484,249	\$484,249	\$484,249	\$484,249
Moses Springer Community Centre - Main Building	\$1,290,786	\$1,290,786	\$1,290,786	\$1,290,786	\$1,290,786	\$1,290,786	\$1,290,786	\$1,290,786	\$1,290,786	\$1,290,786
RIM Park - Main Building (Manulife Financial Sportsplex and Healthy Living Centre)	\$12,210,000	\$12,210,000	\$12,210,000	\$12,210,000	\$12,210,000	\$12,210,000	\$12,210,000	\$12,210,000	\$12,210,000	\$12,210,000
Rink in the Park - Main Building (Granit Club)	\$830,963	\$830,963	\$830,963	\$830,963	\$830,963	\$830,963	\$830,963	\$830,963	\$830,963	\$830,963
Waterloo Memorial Recreation Complex - Main Building	\$5,080,000	\$5,080,000	\$5,080,000	\$5,080,000	\$5,080,000	\$5,080,000	\$5,080,000	\$5,080,000	\$5,080,000	\$5,080,000
Total (\$000)	\$22,944.5	\$24,764.5	\$24,764.5	\$24,764.5	\$24,764.5	\$24,764.5	\$24,764.5	\$24,764.5	\$24,764.5	\$24,764.5

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CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PARKS AND MAJOR INDOOR RECREATION FACILITIES
PARKS AND TRAILS

CITY-WIDE PARKS Park Name	# of Hectares										UNIT COST (\$/ha)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Class 1 - Major Parks	209	210	210	198	198	198	198	198	198	198	\$91,500
Class 2 - Community Parks	30	30	30	30	30	30	34	34	34	34	\$91,500
Class 3 - Culturally Significant Parks	4	4	4	4	4	4	4	4	4	4	\$91,500
Class 4 - Neighbourhood Parks	83	83	85	85	85	85	94	95	96	108	\$91,500
Class 5 - Pedestrian Links and Linear Parks	27	28	28	28	28	28	18	18	18	18	\$91,500
Class 9 - Special Agreement Parks	18	18	18	18	18	18	35	37	37	37	\$91,500
Passive Park (Extracted from Environmental Reserve)	4	4	4	4	4	4	4	4	4	4	\$91,500
Grey Silo Golf Course	64	64	64	64	64	64	64	64	64	64	\$204,900
Grey Silo Parking Lot/Buildings/Practice Tee	5	5	5	5	5	5	5	5	5	5	\$91,500
Total (#)	444	445	447	435	435	435	456	459	460	472	
Total (\$000)	\$47,815.9	\$47,982.3	\$48,165.3	\$47,067.3	\$47,067.3	\$47,067.3	\$48,935.0	\$49,256.1	\$49,301.9	\$50,445.6	

TRAILS Type of Trail	# of Kilometres										UNIT COST (\$/km)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Community Trails (KM)	91	91	91	91	91	91	91	102	100	100	\$311,000
Walkway Links (KM)	18	18	18	18	18	18	18	18	17	17	\$208,000
Total (#)	109	109	109	109	109	109	109	120	117	117	
Total (\$000)	\$32,045.0	\$32,045.0	\$32,045.0	\$32,045.0	\$32,045.0	\$32,045.0	\$32,045.0	\$35,466.0	\$34,636.0	\$34,698.2	

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CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PARKS AND MAJOR INDOOR RECREATION FACILITIES
PARK FACILITIES AND FLEET

PLAYGROUNDS Park Name	# of Playgrounds										UNIT COST (\$/unit)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Alexandra Park	1	1	1	1	1	1	1	1	1	1	\$33,390
Angler Way Park	1	1	1	1	1	1	1	1	1	1	\$4,550
Anndale Park	1	1	1	1	1	1	1	1	1	1	\$43,780
Atlantic Park	1	1	1	1	1	1	1	1	1	1	\$4,510
Auburn Park	1	1	1	1	1	1	1	1	1	1	\$43,060
Autumn Willow Park	-	-	-	1	1	1	1	1	1	1	\$33,390
Basswood Park	1	1	1	1	1	1	1	1	1	1	\$3,780
Bechtel Park Facility Playstructure	1	1	1	1	1	1	1	1	1	1	\$41,600
Birchmount Park	1	1	1	1	1	1	1	1	1	1	\$5,120
Black Cherry Park	1	1	1	1	1	1	1	1	1	1	\$17,090
Blue Beech Park	1	1	1	1	1	1	1	1	1	1	\$40,920
Bluenose Park	1	1	1	1	1	1	1	1	1	1	\$28,790
Bluestream Park	1	1	1	1	1	1	1	1	1	1	\$41,750
Bolingbrooke Park	1	1	1	1	1	1	1	1	1	1	\$26,210
Bonn Park # 3	1	1	1	1	1	1	1	1	1	1	\$3,600
Bonn Park # 5	1	1	1	1	1	1	1	1	1	1	\$28,790
Bordeaux Park	1	1	1	1	1	1	1	1	1	1	\$10,230
Brighton Park	-	-	1	1	1	1	1	1	1	1	\$38,350
Butternut Park	1	1	1	1	1	1	1	1	1	1	\$4,120
Canewood Park	1	1	1	1	1	1	1	1	1	1	\$36,040
Carriage Way Park (Deerfoot Park)	-	-	-	-	1	1	1	1	1	1	\$72,430
Chesapeake Park	1	1	1	1	1	1	1	1	1	1	\$9,100
Columbia Forest Court Park	1	1	1	1	1	1	1	1	1	1	\$4,120
Conservation Meadow Park	1	1	1	1	1	1	1	1	1	1	\$31,200
Cornerbrook Park	1	1	1	1	1	1	1	1	1	1	\$36,040
Creekside Park	1	1	1	1	1	1	1	1	1	1	\$15,350
Culpepper Park	1	1	1	1	1	1	1	1	1	1	\$38,220
Deer Run Park	1	1	1	1	1	1	1	1	1	1	\$52,090
Dunvegan Park	1	1	1	1	1	1	1	1	1	1	\$112,480
Eastbridge Green	1	1	1	1	1	1	1	1	1	1	\$34,940

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CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PARKS AND MAJOR INDOOR RECREATION FACILITIES
PARK FACILITIES AND FLEET

PLAYGROUNDS (CONT'D) Park Name	# of Playgrounds										UNIT COST (\$/unit)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Exmoor Park	1	1	1	1	1	1	1	1	1	1	\$27,120
Forwell Park	1	1	1	1	1	1	1	1	1	1	\$33,990
Glen Acres Park	1	1	1	1	1	1	1	1	1	1	\$34,070
Goldthread Park	1	1	1	1	1	1	1	1	1	1	\$10,920
Haida Park	1	1	1	1	1	1	1	1	1	1	\$31,010
Heasley Park	1	1	1	1	1	1	1	1	1	1	\$38,770
Interlaken Park	1	1	1	1	1	1	1	1	1	1	\$25,630
Jacob Green	1	1	1	1	1	1	1	1	1	1	\$26,520
Kingscourt Park	1	1	1	1	1	1	1	1	1	1	\$34,740
Klosters Park	1	1	1	1	1	1	1	1	1	1	\$10,920
Lakeshore Optimist Park	1	1	1	1	1	1	1	1	1	1	\$30,690
Laurelwood Park	1	1	1	1	1	1	1	1	1	1	\$37,510
Lausanne Park	1	1	1	1	1	1	1	1	1	1	\$32,950
Lucerne Park	-	-	1	1	1	1	1	1	1	1	\$20,250
Mary Allen Park	1	1	1	1	1	1	1	1	1	1	\$57,070
Maverick Park	-	-	1	1	1	1	1	1	1	1	\$44,770
Moses Springer Park Reserve	1	1	1	1	1	1	1	1	1	1	\$37,130
Mountain Maple Park	1	1	1	1	1	1	1	1	1	1	\$4,120
Old Oak Park	1	1	1	1	1	1	1	1	1	1	\$46,800
Old Post Park	1	1	1	1	1	1	1	1	1	1	\$54,270
Pinebrook Park	1	1	1	1	1	1	1	1	1	1	\$49,140
Pinerow Park	1	1	1	1	1	1	1	1	1	1	\$30,580
Red River Park	-	-	-	-	-	-	-	1	1	1	\$30,580
Regency Park	1	1	1	1	1	1	1	1	1	1	\$41,600
Rideau River Park	-	-	1	1	1	1	1	1	1	1	\$32,760

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CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PARKS AND MAJOR INDOOR RECREATION FACILITIES
PARK FACILITIES AND FLEET

PLAYGROUNDS (CONT'D) Park Name	# of Playgrounds										UNIT COST (\$/unit)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
RIM Park - Grey Silo Play Structure	1	1	1	1	1	1	1	1	1	1	\$42,580
RIM Park North Playground Equipment	1	1	1	1	1	1	1	1	1	1	\$40,460
RIM Park South Playground Equipment	1	1	1	1	1	1	1	1	1	1	\$24,020
Royal Beech Park	1	1	1	1	1	1	1	1	1	1	\$37,000
Royal Fern Park	1	1	1	1	1	1	1	1	1	1	\$4,120
Rummelhardt Park	1	1	1	1	1	1	1	1	1	1	\$28,790
Salzburg Park	1	1	1	1	1	1	1	1	1	1	\$24,720
Sandowne Park	1	1	1	1	1	1	1	1	1	1	\$38,220
Star Flower Park	1	1	1	1	1	1	1	1	1	1	\$3,780
Sundew Park	-	-	-	-	-	1	1	1	1	1	\$41,600

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CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PARKS AND MAJOR INDOOR RECREATION FACILITIES
PARK FACILITIES AND FLEET

PLAYGROUNDS (CONT'D) Park Name	# of Playgrounds										UNIT COST (\$/unit)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Thorndale Park	1	1	1	1	1	1	1	1	1	1	\$38,220
University Downs Park	1	1	1	1	1	1	1	1	1	1	\$41,600
Wasaga Park	-	-	1	1	1	1	1	1	1	1	\$43,680
Waterloo Park - Basketball court & Swings	1	1	1	1	1	1	1	1	1	1	\$20,800
Waterloo Park - Playstructure & Skatepark	1	1	1	1	1	1	1	1	1	1	\$126,780
Waterloo Park - Playground #2	1	1	1	1	1	1	1	1	1	1	\$15,600
West Wind Park	1	1	1	1	1	1	1	1	1	1	\$52,730
Westvale Park	1	1	1	1	1	1	1	1	1	1	\$29,530
White Elm Park	1	1	1	1	1	1	1	1	1	1	\$23,250
Whitecap Park	1	1	1	1	1	1	1	1	1	1	\$27,320
Winterberry Park	-	1	1	1	1	1	1	1	1	1	\$10,920
Wintermeyer Park	1	1	1	1	1	1	1	1	1	1	\$28,600
Woolgrass Park	1	1	1	1	1	1	1	1	1	1	\$43,680
Westmount Sports Park	-	-	-	-	-	1	1	1	1	1	\$15,880
Avens Park	-	-	-	-	-	-	1	1	1	1	\$15,670
Wild Rye Park	-	-	-	-	-	-	-	1	1	1	\$28,430
Mary Allen Park (expansion)	-	-	-	-	-	-	-	-	1	1	\$208,000
Rock Elm Park	-	-	-	-	-	1	1	1	1	1	\$41,600
Clair Lake Park	-	-	-	-	-	-	-	1	1	1	\$39,670
Werni Park	-	-	-	-	-	1	1	1	1	1	\$41,600
Wismer Park	-	-	-	-	-	-	-	-	1	1	\$41,600
Total (#)	68	69	74	75	76	80	81	84	86	86	
Total (\$000)	\$2,138.2	\$2,149.1	\$2,329.0	\$2,362.3	\$2,434.8	\$2,575.5	\$2,591.1	\$2,689.8	\$2,939.4	\$2,939.4	

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TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PARKS AND MAJOR INDOOR RECREATION FACILITIES
PARK FACILITIES AND FLEET

BASEBALL DIAMONDS Park Name	# of Diamonds										UNIT COST (\$/unit)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Lit											
Bechtel Park Ball Stadium	1	1	1	1	1	1	1	1	1	1	\$2,496,000
Waterloo Park	2	2	2	2	2	2	2	2	2	2	\$624,000
Hillside Park	2	2	2	2	2	2	2	2	2	2	\$624,000
RIM Park South (RIM Diamonds 1,2,3)	3	3	3	3	3	3	3	3	3	3	\$624,000
Unlit											
Lexington Park	1	1	1	1	1	1	1	1	1	1	\$312,000
Waterloo Park	2	2	2	2	2	2	2	2	2	2	\$312,000
Kingscourt Park	1	1	1	1	1	1	1	1	1	1	\$78,000
Auburn Park	1	1	1	1	1	1	1	1	1	1	\$78,000
Regency Park	1	1	1	1	1	1	1	1	1	1	\$78,000
Laurelwood Park	1	1	1	1	1	1	1	1	1	1	\$78,000
Red River Park	1	1	1	1	1	1	1	1	1	1	\$78,000
West Wind Park	1	1	1	1	1	1	1	1	1	1	\$78,000
University Downs Park	1	1	1	1	1	1	1	1	1	1	\$78,000
Eastbridge Green	1	1	1	1	1	1	1	1	1	1	\$78,000
RIM Park North (RIM Diamonds 4,5,6)	3	3	3	3	3	3	3	3	3	3	\$312,000
Wintermeyer Park	1	1	1	1	1	1	1	1	1	1	\$78,000

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TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PARKS AND MAJOR INDOOR RECREATION FACILITIES
PARK FACILITIES AND FLEET

BASEBALL DIAMONDS CONT'D Park Name	# of Diamonds										UNIT COST (\$/unit)	
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019		
School Property Diamonds Programmed by City												
Ceaderbrae	1	1	1	1	1	1	1	1	1	1	1	\$57,000
Centennial	1	1	1	1	1	1	1	1	1	1	1	\$57,000
Keatsway	1	1	1	1	1	1	1	1	1	1	1	\$57,000
Lincoln Heights	1	1	1	1	1	1	1	1	1	1	1	\$57,000
MacGregor	1	1	1	1	1	1	1	1	1	1	1	\$57,000
Mary Johnston	1	1	1	1	1	1	1	1	1	1	1	\$57,000
N.A. MacEachern	1	1	1	1	1	1	1	1	1	1	1	\$57,000
Northlake Woods	1	1	1	1	1	1	1	1	1	1	1	\$57,000
Our Lady of Lourdes	1	1	1	1	1	1	1	1	1	1	1	\$57,000
Sandowne	1	1	1	1	1	1	1	1	1	1	1	\$57,000
Sir Edgar Bauer	1	1	1	1	1	1	1	1	1	1	1	\$57,000
St. Agnes	1	1	1	1	1	1	1	1	1	1	1	\$57,000
WCI	1	1	1	1	1	1	1	1	1	1	1	\$57,000
Winston Churchill	1	1	1	1	1	1	1	1	1	1	1	\$57,000
Total (#)	37	37	37	37	37	37	37	37	37	37	37	
Total (\$000)	\$10,236.0	\$10,236.0	\$10,236.0	\$10,236.0	\$10,236.0	\$10,236.0	\$10,236.0	\$10,236.0	\$10,236.0	\$10,236.0	\$10,236.0	

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TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PARKS AND MAJOR INDOOR RECREATION FACILITIES
PARK FACILITIES AND FLEET

SOCCER FIELDS Park Name	# of fields										UNIT COST (\$/unit)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Astro Turf											
RIM Park	-	2	2	2	2	2	2	2	2	2	\$2,080,000
Grass - Lit											
Bechtel Park	3	3	3	3	3	3	3	3	3	3	\$406,000
RIM	6	6	6	6	6	6	6	6	6	6	\$406,000
Westmount Sports Park	-	-	-	-	-	-	2	2	2	2	\$406,000
Grass - Unlit											
Bechtel Park	3	3	3	3	3	3	4	4	4	4	\$208,000
Bluebeech Link	-	-	-	-	1	1	1	1	1	1	\$78,000
Lexington Park	2	2	2	2	2	2	2	2	2	2	\$130,000
Waterloo Park	2	2	2	2	2	2	2	2	2	2	\$208,000
Northfield Park	1	1	1	1	1	1	1	1	1	1	\$78,000
Northfield Pond	1	1	1	1	1	1	1	1	1	1	\$78,000
Old Oak Park	-	-	-	-	2	2	3	3	3	3	\$78,000
Pinebrook Park	1	1	1	1	1	1	1	1	1	1	\$78,000
Regency Park	1	1	1	1	1	1	1	1	1	1	\$78,000
Laurelwood Park	1	1	1	1	1	1	1	1	1	1	\$78,000
Eastbridge Sports Park	2	2	2	2	2	2	1	1	1	1	\$208,000
RIM Park	-	-	-	-	-	-	-	1	1	1	\$208,000
Westmount Sports Park	-	-	-	-	-	-	1	1	1	1	\$208,000
Community Fellowship Fields	3	3	3	3	3	3	3	3	3	3	\$78,000
Conservation Meadow Park	1	1	1	1	1	1	1	1	1	1	\$78,000
School Property Fields Programmed by City											
Bluevale	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	\$10,000
Lester B. Pearson	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	\$10,000
Lincoln Heights	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	\$10,000
WCI	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	\$10,000
Total (#)	31	33	33	33	36	36	40	41	41	41	
Total (\$000)	\$6,112.0	\$10,272.0	\$10,272.0	\$10,272.0	\$10,506.0	\$10,506.0	\$11,604.0	\$11,812.0	\$11,812.0	\$11,812.0	

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TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PARKS AND MAJOR INDOOR RECREATION FACILITIES
PARK FACILITIES AND FLEET

TENNIS COURTS Park Name	# of Courts										UNIT COST (\$/unit)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Lit											
Bechtel Park	4	4	4	4	4	4	4	4	4	4	\$104,000
Warrington Park	2	2	2	2	2	2	2	2	2	2	\$104,000
St Moritz Park	-	-	-	-	-	1	1	1	1	1	\$104,000
Dunvegan Park	1	1	1	1	1	1	1	1	1	1	\$104,000
Pinebrook Park	1	1	1	1	1	1	1	1	1	1	\$104,000
Unlit											
Heasley Park	2	2	2	2	2	2	2	2	2	2	\$78,000
Total (#)	10	10	10	10	10	11	11	11	11	11	
Total (\$000)	\$988.0	\$988.0	\$988.0	\$988.0	\$988.0	\$1,092.0	\$1,092.0	\$1,092.0	\$1,092.0	\$1,092.0	

BASKETBALL COURTS Park Name	# of courts										UNIT COST (\$/unit)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
McCrae (lights)	1	1	1	1	1	1	1	1	1	1	\$104,000
Dunvegan (shared with Tennis Courts)	2	2	2	2	2	2	2	2	2	2	\$26,000
Pinebrook (shared with Tennis Courts)	1	1	1	1	1	1	1	1	1	1	\$26,000
Waterloo Park	1	1	1	1	1	1	1	1	1	1	\$26,000
Mary Allen	1	1	1	1	1	1	1	1	1	1	\$104,000
Vista Hills Park	-	-	-	-	-	1	1	1	1	1	\$26,000
Total (#)	6	6	6	6	6	7	7	7	7	7	
Total (\$000)	\$312.0	\$299.0	\$299.0	\$299.0	\$299.0	\$325.0	\$325.0	\$338.0	\$338.0	\$338.0	

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TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PARKS AND MAJOR INDOOR RECREATION FACILITIES
PARK FACILITIES AND FLEET

VOLLEYBALL COURTS (outdoor sand) Park Name	# of Courts										UNIT COST (\$/unit)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
RIM Park (unlit)	4	4	4	4	4	4	4	4	4	4	\$78,000
Total (#)	4	4	4	4	4	4	4	4	4	4	
Total (\$000)	\$312.0	\$312.0	\$312.0	\$312.0	\$312.0	\$312.0	\$312.0	\$312.0	\$312.0	\$312.0	\$312.0

SKATEBOARD PARKS Park Name	# of skateboard parks										UNIT COST (\$/unit)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Father David Bauer Drive	-	1	1	1	1	1	1	1	1	1	\$764,000
Total (metres)	-	1	1	1	1	1	1	1	1	1	
Total (\$000)	\$0.0	\$764.0	\$764.0	\$764.0	\$764.0	\$764.0	\$764.0	\$764.0	\$764.0	\$764.0	\$764.0

CRICKET FIELDS Park Name	# of Fields										UNIT COST (\$/unit)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Waterloo Park	1	1	1	1	1	1	1	1	1	1	\$125,000
Laurel Creek	1	1	1	1	1	1	1	1	1	1	\$104,000
Total (#)	2	2	2	2	2	2	2	2	2	2	
Total (\$000)	\$229.0	\$229.0	\$229.0	\$229.0	\$229.0	\$229.0	\$229.0	\$229.0	\$229.0	\$229.0	\$229.0

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TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PARKS AND MAJOR INDOOR RECREATION FACILITIES
PARK FACILITIES AND FLEET

BLEACHERS Type of Structure	# of Bleachers										UNIT COST (\$/unit)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Auburn Park	-	-	-	-	-	-	2	2	2	2	\$7,300
Regency Park	-	-	-	-	-	-	2	2	2	2	\$7,300
Laurel Cricket	-	-	-	-	-	-	2	2	2	2	\$7,300
Lexington Park	6	6	6	6	6	6	6	6	6	6	\$7,300
Bechtel Park	8	8	8	8	8	8	8	10	10	10	\$7,300
Hillside Park	17	17	17	17	17	17	12	12	12	12	\$7,300
Waterloo Park	16	16	16	16	16	16	16	16	16	16	\$7,300
RIM	23	23	23	23	23	23	23	23	23	23	\$7,300
Westmount Sportspark	-	-	-	-	-	-	4	4	4	4	\$7,300
Mobile Bleacher	2	2	1	1	1	1	1	1	1	1	\$64,500
Eastbridge Green	-	-	-	-	-	-	-	-	2	2	\$7,300
Laurelwood Park	-	-	-	-	-	-	-	-	2	2	\$7,300
Total (#)	72	72	71	71	71	71	76	78	82	82	
Total (\$000)	\$640.0	\$640.0	\$575.5	\$575.5	\$575.5	\$575.5	\$612.0	\$626.6	\$655.8	\$655.8	

PUBLIC SQUARES Park Name	# of Public Squares										UNIT COST (\$/unit)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Uptown Public Square	1	1	1	1	1	1	1	1	1	1	\$3,040,000
Total (#)	1	1	1	1	1	1	1	1	1	1	
Total (\$000)	\$3,040.0	\$3,040.0	\$3,040.0	\$3,040.0	\$3,040.0	\$3,040.0	\$3,040.0	\$3,040.0	\$3,040.0	\$3,040.0	\$3,040.0

SPLASH PARK Park Name	# of Splash Pads										UNIT COST (\$/splash pad)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Lions Lagoon (Waterloo Park)	1	1	1	1	1	1	1	1	1	1	\$1,976,000
Total (#)	1	1	1	1	1	1	1	1	1	1	
Total (\$000)	\$1,976.0	\$1,976.0	\$1,976.0	\$1,976.0	\$1,976.0	\$1,976.0	\$1,976.0	\$1,976.0	\$1,976.0	\$1,976.0	\$1,976.0

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TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PARKS AND MAJOR INDOOR RECREATION FACILITIES
PARK FACILITIES AND FLEET

OUTDOOR RINKS Park Name	# of Rinks										UNIT COST (\$/unit)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Angler Way Park	-	-	-	-	-	-	1	1	-	-	\$9,400
Anndale Park	1	1	1	1	1	1	1	1	-	-	\$9,400
Autumn Willow Park	-	-	-	-	-	-	1	1	1	1	\$9,400
Blue Beech Park	1	1	1	1	1	-	-	-	-	-	\$9,400
Bluenose	1	1	1	1	1	1	1	-	-	-	\$9,400
Bluestream	1	1	1	1	1	1	1	1	1	1	\$9,400
Bolingbrooke	-	-	1	1	1	1	1	1	1	1	\$9,400
Carriage Way Park	-	-	-	-	-	-	1	1	-	-	\$9,400
Conservation Meadows	1	1	1	1	1	1	1	-	1	1	\$9,400
Cornerbrook	1	1	1	1	1	1	1	1	-	-	\$9,400
Craikleith	1	1	1	1	1	1	1	-	-	-	\$9,400
Culpepper	1	1	1	1	1	1	1	1	1	1	\$9,400
Dunvegan	2	2	2	2	2	2	2	2	2	2	\$9,400
Eastbridge Green (West)	-	-	-	-	-	-	1	1	1	1	\$9,400
Eastbridge Green (East)	-	-	-	-	-	-	1	1	-	-	\$9,400
Empire	1	1	1	1	1	1	1	-	-	-	\$9,400
Haida Park	1	1	1	1	1	1	1	1	-	-	\$9,400

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TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PARKS AND MAJOR INDOOR RECREATION FACILITIES
PARK FACILITIES AND FLEET

OUTDOOR RINKS - CONTINUED Park Name	# of Rinks										UNIT COST (\$/unit)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Kingscourt	-	1	1	1	1	1	1	-	-	-	\$9,400
Laurelwood	1	1	1	1	1	1	1	1	-	-	\$9,400
Lexington School	1	1	1	1	1	1	1	-	-	-	\$9,400
Lourdes school	1	1	1	1	1	1	1	1	-	-	\$9,400
Mary Allen	1	1	1	1	1	1	1	-	-	-	\$9,400
McCrae	1	1	1	1	1	1	1	1	-	-	\$9,400
Pinebrook	2	2	2	2	2	2	2	2	2	2	\$9,400
Regency Park	1	1	-	-	-	-	-	-	-	-	\$9,400
Roselea Park	-	-	-	-	-	-	-	1	1	1	\$9,400
St Matthew school	1	1	1	-	-	-	-	-	-	-	\$9,400
St. Moritz	-	-	-	-	-	1	1	1	1	1	\$9,400
Stillmeadow	1	1	1	1	1	1	1	1	1	1	\$9,400
Thorndale	1	1	1	1	1	1	1	1	1	1	\$9,400
University Downs	1	1	1	1	1	1	1	1	1	1	\$9,400
Vermont	1	1	1	1	1	1	1	1	1	1	\$9,400
Warrington Park	1	1	1	1	1	1	1	1	1	1	\$9,400
West Wind	1	1	1	1	1	1	1	1	1	1	\$9,400
Westvale	1	1	1	1	1	1	1	-	-	-	\$9,400
Winston Churchill school	1	1	1	1	1	1	1	-	-	-	\$9,400
Total (#)	29	30	30	29	29	29	34	26	18	18	
Total (\$000)	\$159,912.8	\$169,312.8	\$159,922.2	\$150,522.2	\$150,522.2	\$159,912.8	\$159,959.8	\$122,322.2	\$94,075.2	\$94,075.2	

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TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PARKS AND MAJOR INDOOR RECREATION FACILITIES
PARK FACILITIES AND FLEET

FLEET AND EQUIPMENT Park Name	# of Fleet and Small Equipment										UNIT COST (\$/vehicle)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Forklift/Boomlift	3	3	3	3	5	5	6	6	6	6	\$36,600
Ice Resurfacer	7	7	9	8	8	8	8	8	10	10	\$88,100
Loader/Backhoe	2	2	2	2	4	2	2	2	2	2	\$303,200
Small Equipment	17	17	17	18	18	19	20	20	20	21	\$10,400
Speciality Equip. (Large)	4	4	5	4	4	4	4	5	5	5	\$246,000
Specialty Equip. (Med)	7	7	7	7	8	7	8	8	10	10	\$90,700
Trackless	2	2	2	2	2	3	3	3	3	3	\$209,700
Tractor	5	5	7	6	7	7	7	8	8	8	\$58,600
Trailer	26	26	27	28	29	30	31	34	35	35	\$8,800
Truck - Light duty	24	24	27	26	28	29	31	33	33	33	\$53,400
Truck - Med Duty	7	7	7	8	8	8	9	10	9	9	\$81,600
Turf Equipment	22	22	21	19	26	29	29	26	27	27	\$41,200
Turf Utility Vehicle	11	11	13	15	16	11	11	10	11	11	\$21,200
Van-SUV	13	13	13	14	14	17	15	16	15	16	\$38,900
Total (#)	150	150	160	160	177	179	184	189	194	196	
Total (\$000)	\$7,567.9	\$7,567.9	\$8,277.5	\$7,931.1	\$9,185.2	\$8,904.7	\$9,161.8	\$9,575.3	\$9,883.6	\$9,932.9	

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TABLE 1CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PARKS AND MAJOR INDOOR RECREATION FACILITIES
PARK SPECIAL FACILITIES

SPECIAL FACILITIES, FIELD HOUSES & WORK SHEDS Description	# of Facilities										UNIT COST (\$/unit)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Bechtel Park - Storage & Utility Building	1	1	1	1	1	1	1	1	1	1	\$286,000
Eastbridge Park - Storage & Electrical Sheds	1	1	1	1	1	1	1	1	1	1	\$182,000
Hillside Park - Optimist Building	1	1	1	1	1	1	1	1	1	1	\$322,000
Hillside Park - Washrooms & Storage building	1	1	1	1	1	1	1	1	1	1	\$733,000
Lexington Park - Washrooms	1	1	1	1	1	1	1	1	1	1	\$208,000
Waterloo Park - Boardwalk, Hospitality Centre, Grist Mill & Dock	1	1	1	1	1	1	1	1	1	1	\$884,000
Waterloo Park - Park Inn	1	1	1	1	1	1	1	1	1	1	\$156,000
Waterloo Park - Washrooms	1	1	1	1	1	1	1	1	1	1	\$130,000
Waterloo Park - Service Centre	1	1	1	1	1	1	1	1	1	1	\$858,000
Waterloo Park - Workshop & Potters Workshop	1	1	1	1	1	1	1	1	1	1	\$593,000
Waterloo Park - Animal Farmstead	1	1	1	1	1	1	1	1	1	1	\$2,184,000
Waterloo Park - Other structures & assets	1	1	1	1	1	1	1	1	1	1	\$260,000
Grey Silo Golf Course (e.g. clubhouse, cart buildings, etc.)	1	1	1	1	1	1	1	1	1	1	\$6,448,000
Westmount Sports Park - Washrooms	-	-	-	-	-	1	1	1	1	1	\$244,000
Mary Allen Park - Shelter	-	-	-	-	-	-	-	-	1	1	\$104,000
Total (#)	13	13	13	13	13	14	14	14	15	15	
Total (\$000)	\$13,244.0	\$13,244.0	\$13,244.0	\$13,244.0	\$13,244.0	\$13,488.0	\$13,488.0	\$13,488.0	\$13,592.0	\$13,592.0	

PARK BRIDGES Park Name	# of Bridges										UNIT COST (\$/unit)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Bridges (Pedestrian)	36	36	36	36	36	36	36	34	34	34	\$251,000
Total (#)	36	36	36	36	36	36	36	34	34	34	
Total (\$000)	\$9,036.0	\$9,036.0	\$9,036.0	\$9,036.0	\$9,036.0	\$9,036.0	\$9,036.0	\$8,534.0	\$8,534.0	\$8,534.0	

APPENDIX B.3
TABLE 1CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PARKS AND MAJOR INDOOR RECREATION FACILITIES
PARK SPECIAL FACILITIES

PARK BANDSTANDS/GAZEBOS Park Name	# of Items										UNIT COST (\$/unit)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Waterloo Park - Bandshell	1	1	1	1	1	1	1	1	1	1	\$104,000
Waterloo Park - West Side Pavillion/Gazebos/boardwalks/Pergola's	1	1	1	1	1	1	1	1	1	1	\$159,000
Hillside Park - Gazebo & picnic shelter	1	1	1	1	1	1	1	1	1	1	\$52,000
Hillside Park - Main large picnic shelter	1	1	1	1	1	1	1	1	1	1	\$478,000
Westmount Sports Park - Outdoor Pavilion - sunshade structure	-	-	-	-	-	-	1	1	1	1	\$52,000
Moses Springer Park (Pavillion/Picnic Shelter)	1	1	1	1	1	1	1	1	1	1	\$16,000
Total (#)	5	5	5	5	5	5	6	6	6	6	
Total (\$000)	\$809.0	\$809.0	\$809.0	\$809.0	\$809.0	\$809.0	\$861.0	\$861.0	\$861.0	\$861.0	

MISCELLANEOUS Description	# of Items										UNIT COST (\$/unit)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Rinkboards (uptown square)	1	1	1	1	1	1	1	1	1	1	\$49,000
Signage	1	1	1	1	1	1	1	1	1	1	\$142,500
Moloks	17	17	17	17	17	17	17	25	50	50	\$6,240
Black Garbage Drums	500	500	500	500	500	500	500	500	500	500	\$50
Dog waste Units	-	-	-	-	-	-	-	3	7	7	\$4,680
Fountains	2	2	2	2	2	2	2	2	2	2	\$26,000
Total (#)	521	521	521	521	521	521	521	532	561	561	
Total (\$000)	\$374.6	\$374.6	\$374.6	\$374.6	\$374.6	\$374.6	\$374.6	\$438.5	\$613.3	\$613.3	

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APPENDIX B.3
TABLE 1

CITY OF WATERLOO
CALCULATION OF SERVICE LEVELS
PARKS AND MAJOR INDOOR RECREATION FACILITIES

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Historical Population	118,438	119,671	121,130	122,607	124,102	125,614	127,145	128,824	131,221	133,482

INVENTORY SUMMARY (\$000)

Indoor Recreation	\$342,200.0	\$368,069.6	\$368,069.6	\$368,069.6	\$368,069.6	\$368,069.6	\$368,069.6	\$368,069.6	\$368,069.6	\$368,069.6	\$367,865.6
Parks And Trails	\$79,860.9	\$80,027.3	\$80,210.3	\$79,112.3	\$79,112.3	\$79,112.3	\$80,980.0	\$84,722.1	\$83,937.9	\$85,143.8	\$85,143.8
Park Facilities And Fleet	\$193,463.9	\$207,785.8	\$199,220.2	\$189,507.1	\$191,067.7	\$200,448.5	\$201,902.7	\$165,012.9	\$137,353.0	\$137,402.3	\$137,402.3
Park Special Facilities	\$23,463.6	\$23,463.6	\$23,463.6	\$23,463.6	\$23,463.6	\$23,707.6	\$23,759.6	\$23,321.5	\$23,600.3	\$23,600.3	\$23,600.3
Total (\$000)	\$638,988.5	\$679,346.3	\$670,963.6	\$660,152.6	\$661,713.1	\$671,337.9	\$674,711.9	\$641,126.1	\$612,960.7	\$614,011.9	\$614,011.9

SERVICE LEVEL (\$/capita)	Average Service Level										
Indoor Recreation	\$2,889.28	\$3,075.67	\$3,038.63	\$3,002.03	\$2,965.86	\$2,930.16	\$2,894.87	\$2,857.15	\$2,804.96	\$2,755.92	\$2,921.45
Parks And Trails	\$674.28	\$668.73	\$662.18	\$645.25	\$637.48	\$629.80	\$636.91	\$657.66	\$639.67	\$637.87	\$648.98
Park Facilities And Fleet	\$1,633.46	\$1,736.31	\$1,644.68	\$1,545.65	\$1,539.60	\$1,595.75	\$1,587.97	\$1,280.92	\$1,046.73	\$1,029.37	\$1,464.04
Park Special Facilities	\$198.11	\$196.07	\$193.71	\$191.37	\$189.07	\$188.73	\$186.87	\$181.03	\$179.85	\$176.80	\$188.16
Total (\$/capita)	\$5,395.13	\$5,676.77	\$5,539.20	\$5,384.30	\$5,332.01	\$5,344.45	\$5,306.61	\$4,976.76	\$4,671.21	\$4,599.96	\$5,222.64

CITY OF WATERLOO
CALCULATION OF MAXIMUM ALLOWABLE
PARKS AND MAJOR INDOOR RECREATION FACILITIES

10-Year Funding Envelope Calculation	
10 Year Average Service Level 2010 - 2019	\$5,222.64
Net Population Growth 2020 - 2029	13,597
Maximum Allowable Funding Envelope	\$71,012,236
Less: 10% Legislated Reduction	\$7,101,224
Discounted Maximum Allowable Funding Envelope	\$63,911,012

CITY OF WATERLOO
DEVELOPMENT-RELATED CAPITAL PROGRAM
PARKS AND MAJOR INDOOR RECREATION FACILITIES

DC Project Number	Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs		Total Development Related Costs	Development Related Costs		
						Replacement & BTE Shares	10% Reduction		DC Reserve Commitments	2020-2029	Post 2029
3.0 PARKS AND MAJOR INDOOR RECREATION FACILITIES											
3.1 Indoor Recreation											
228	3.1.1 West Side Recreation Facility - Land Acquisition	2020 - 2020	\$ 5,284,144	\$ 2,642,072	\$ 2,642,072	\$ -	\$ 264,207	\$ 2,377,865	\$ 2,074,788	\$ 303,077	\$ -
222	3.1.2 West Side Recreation Facility Development	2026 - 2029	\$ 7,934,000	\$ -	\$ 7,934,000	\$ -	\$ 793,400	\$ 7,140,600	\$ -	\$ 7,140,600	\$ -
	Subtotal Indoor Recreation		\$ 13,218,144	\$ 2,642,072	\$ 10,576,072	\$ -	\$ 1,057,607	\$ 9,518,465	\$ 2,074,788	\$ 7,443,677	\$ -
3.2 Outdoor Recreation & Park Trails											
223	3.2.1 Park Amenity Upgrades	2020 - 2029	\$ 1,588,751	\$ -	\$ 1,588,751	\$ 706,112	\$ 88,264	\$ 794,375	\$ -	\$ 794,375	\$ -
230	3.2.2 Leash Free Dog Park	2020 - 2021	\$ 216,750	\$ -	\$ 216,750	\$ 11,921	\$ 20,483	\$ 184,346	\$ -	\$ 184,346	\$ -
231	3.2.3 Neighbourhood Action Sports Parks	2020 - 2023	\$ 2,583,750	\$ -	\$ 2,583,750	\$ 142,106	\$ 244,164	\$ 2,197,479	\$ -	\$ 2,197,479	\$ -
232	3.2.4 Park Strategy Implementation	2020 - 2029	\$ 4,870,375	\$ -	\$ 4,870,375	\$ 3,537,042	\$ 133,333	\$ 1,200,000	\$ -	\$ 1,200,000	\$ -
235	3.2.5 Splash Pads Construction	2020 - 2022	\$ 1,500,000	\$ -	\$ 1,500,000	\$ 82,500	\$ 141,750	\$ 1,275,750	\$ -	\$ 1,275,750	\$ -
236	3.2.6 Vista Hills Programmable Soccer Field- Partnership with WRDSB	2029 - 2029	\$ 371,000	\$ -	\$ 371,000	\$ -	\$ 37,100	\$ 333,900	\$ -	\$ 333,900	\$ -
237	3.2.7 Waterloo Park - New East/West Park Crossing	2021 - 2021	\$ 900,000	\$ -	\$ 900,000	\$ 300,000	\$ 60,000	\$ 540,000	\$ -	\$ 540,000	\$ -
238	3.2.8 Waterloo Park - Public Open Space Improvements	2026 - 2027	\$ 5,669,486	\$ -	\$ 5,669,486	\$ 1,889,829	\$ 377,966	\$ 3,401,692	\$ -	\$ 3,401,692	\$ -
242	3.2.9 Outdoor Sports Field Strategy Implementation	2020 - 2029	\$ 1,792,500	\$ -	\$ 1,792,500	\$ 796,667	\$ 99,583	\$ 896,250	\$ -	\$ 896,250	\$ -
246	3.2.10 Park Signage Replacement Program - City wide	2020 - 2029	\$ 110,000	\$ -	\$ 110,000	\$ 98,111	\$ 1,189	\$ 10,700	\$ -	\$ 10,700	\$ -
248	3.2.11 Playground Upgrades/Expansion - City Wide	2020 - 2029	\$ 1,578,000	\$ -	\$ 1,578,000	\$ 1,224,667	\$ 35,333	\$ 318,000	\$ -	\$ 318,000	\$ -
249	3.2.12 Sportsfield Upgrades - City wide	2020 - 2029	\$ 830,000	\$ -	\$ 830,000	\$ 741,111	\$ 8,889	\$ 80,000	\$ -	\$ 80,000	\$ -
252	3.2.13 Waterloo Park - Master Plan Implementation	2020 - 2022	\$ 2,168,333	\$ -	\$ 2,168,333	\$ 722,778	\$ 144,556	\$ 1,301,000	\$ -	\$ 1,301,000	\$ -
252	3.2.14 Waterloo Park - Master Plan Implementation	2023 - 2029	\$ 3,721,665	\$ -	\$ 3,721,665	\$ 1,240,555	\$ 248,111	\$ 2,232,999	\$ -	\$ 2,232,999	\$ -
253	3.2.15 Westmount Sports Park Pedestrian Bridge	2025 - 2027	\$ 938,620	\$ -	\$ 938,620	\$ -	\$ 93,862	\$ 844,758	\$ -	\$ 844,758	\$ -
582	3.2.16 Hydro Corridor Trail - South of Columbia St.	2020 - 2021	\$ 567,000	\$ -	\$ 567,000	\$ -	\$ 56,700	\$ 510,300	\$ -	\$ 510,300	\$ -
583	3.2.17 Trails in New Development Areas-NW Waterloo	2020 - 2029	\$ 2,500,000	\$ -	\$ 2,500,000	\$ -	\$ 250,000	\$ 2,250,000	\$ -	\$ 2,250,000	\$ -
580	3.2.18 City Wide - Var. Neighborhood New Park Dev.	2020 - 2022	\$ 341,280	\$ -	\$ 341,280	\$ -	\$ 34,128	\$ 307,152	\$ -	\$ 307,152	\$ -
580	3.2.19 City Wide - Var. Neighborhood New Park Dev.	2023 - 2029	\$ 350,000	\$ -	\$ 350,000	\$ -	\$ 35,000	\$ 315,000	\$ -	\$ 315,000	\$ -
584	3.2.20 Uptown Neighbourhoods Public Space Additions	2020 - 2025	\$ 660,000	\$ 495,000	\$ 165,000	\$ -	\$ 16,500	\$ 148,500	\$ -	\$ 148,500	\$ -
708	3.2.21 Laurel Creek Trail around Conservation Area	2022 - 2025	\$ 1,090,000	\$ -	\$ 1,090,000	\$ 784,444	\$ 30,556	\$ 275,000	\$ -	\$ 275,000	\$ -
709	3.2.22 Market Trail Stage 2 Construction	2021 - 2022	\$ 1,000,000	\$ -	\$ 1,000,000	\$ 722,222	\$ 27,778	\$ 250,000	\$ -	\$ 250,000	\$ -
720	3.2.23 Trail Lighting Retrofit Program	2021 - 2029	\$ 505,000	\$ -	\$ 505,000	\$ 224,444	\$ 28,056	\$ 252,500	\$ -	\$ 252,500	\$ -
631	3.2.24 Station Area Planning Implementation	2020 - 2022	\$ 5,362,390	\$ 1,500,000	\$ 3,862,390	\$ 2,372,764	\$ 148,963	\$ 1,340,663	\$ -	\$ 1,340,663	\$ -
	Subtotal Outdoor Recreation & Trails		\$ 41,214,900	\$ 1,995,000	\$ 39,219,900	\$ 15,597,274	\$ 2,362,263	\$ 21,260,363	\$ -	\$ 21,260,363	\$ -

CITY OF WATERLOO
DEVELOPMENT-RELATED CAPITAL PROGRAM
PARKS AND MAJOR INDOOR RECREATION FACILITIES

DC Project Number	Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs		Total Development Related Costs	Development Related Costs		
						Replacement & BTE Shares	10% Reduction		DC Reserve Commitments	2020-2029	Post 2029
420	3.3 Fleet	2020 - 2029									
	3.3.1 Fleet Equipment Expansion		\$ 1,584,217	\$ -	\$ 1,584,217	\$ -	\$ 158,422	\$ 1,425,795	\$ -	\$ 1,425,795	\$ -
	Subtotal Fleet		\$ 1,584,217	\$ -	\$ 1,584,217	\$ -	\$ 158,422	\$ 1,425,795	\$ -	\$ 1,425,795	\$ -
	TOTAL PARKS AND MAJOR INDOOR RECREATION FACILITIES		\$ 56,017,261	\$ 4,637,072	\$ 51,380,189	\$ 15,597,274	\$ 3,578,291	\$ 32,204,623	\$ 2,074,788	\$ 30,129,835	\$ -

Residential Development Charge Calculation		
Residential Share of 2020 - 2029 DC Eligible Costs	100%	\$30,129,835
10-Year Growth in Population in New Units		20,350
Unadjusted Development Charge Per Capita		\$1,480.55
Non-Residential Development Charge Calculation		
Non-Residential Share of 2020 - 2029 DC Eligible Costs	0%	\$0
10-Year Growth in Square Feet		3,287,340
Unadjusted Development Charge Per Square Foot		\$0.00

2020 - 2029 Net Funding Envelope	\$63,911,012
Reserve Fund Balance	
Balance as at September 30, 2019	\$15,490,788
2019 Capital Budget Draws	<u>\$13,416,000</u>
Total Uncommitted Reserve Funds	\$2,074,788

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APPENDIX B.3
TABLE 3

CITY OF WATERLOO
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
PARKS AND MAJOR INDOOR RECREATION FACILITIES
RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

PARKS AND MAJOR INDOOR RECREATION FACILITIES	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	TOTAL
OPENING CASH BALANCE	\$0.0	(\$465.5)	(\$1,374.6)	(\$1,398.5)	(\$160.2)	\$1,777.6	\$3,509.0	\$1,425.7	(\$435.7)	(\$26.8)	
2020 - 2029 RESIDENTIAL FUNDING REQUIREMENTS											
- Parks And Major Indoor Recreation Facilities: Non Inflated	\$3,330.2	\$3,720.2	\$2,901.6	\$1,732.4	\$1,183.1	\$1,464.7	\$4,857.1	\$4,857.1	\$2,874.7	\$3,208.6	\$30,129.8
- Parks And Major Indoor Recreation Facilities: Inflated	\$3,330.2	\$3,794.6	\$3,018.9	\$1,838.5	\$1,280.6	\$1,617.1	\$5,469.9	\$5,579.3	\$3,368.2	\$3,834.6	\$33,131.9
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,938	1,938	1,987	1,987	1,987	1,987	1,987	2,180	2,180	2,180	20,350
REVENUE											
- DC Receipts: Inflated	\$2,877.2	\$2,934.7	\$3,069.7	\$3,131.1	\$3,193.7	\$3,257.6	\$3,322.8	\$3,719.2	\$3,793.6	\$3,869.5	\$33,169.1
INTEREST											
- Interest on Opening Balance	\$0.0	(\$25.6)	(\$75.6)	(\$76.9)	(\$8.8)	\$62.2	\$122.8	\$49.9	(\$24.0)	(\$1.5)	\$22.6
- Interest on In-year Transactions	(\$12.5)	(\$23.6)	\$0.9	\$22.6	\$33.5	\$28.7	(\$59.0)	(\$51.2)	\$7.4	\$0.6	(\$52.6)
TOTAL REVENUE	\$2,864.7	\$2,885.5	\$2,995.0	\$3,076.8	\$3,218.4	\$3,348.5	\$3,386.6	\$3,717.9	\$3,777.1	\$3,868.6	\$33,139.1
CLOSING CASH BALANCE	(\$465.5)	(\$1,374.6)	(\$1,398.5)	(\$160.2)	\$1,777.6	\$3,509.0	\$1,425.7	(\$435.7)	(\$26.8)	\$7.2	

2020 Adjusted Charge Per Capita

\$1,485

Allocation of Capital Program

Residential Sector	100.0%
Non-Residential Sector	0.0%

Rates for 2020

Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX B.4

CEMETERY SERVICES

APPENDIX B.4

CEMETERIES

The City of Waterloo provides cemetery services at two locations: Parkview Cemetery; and Mount Hope Cemetery.

TABLE 1 2010-2019 HISTORICAL SERVICE LEVELS

The ten-year historical inventory of capital assets for Cemetery includes 10,966 square feet of building space with a replacement value of \$3.0 million. The 18 hectares of land associated with the Cemeteries are valued at \$32.8 million. Other infrastructure and facilities add another \$1.3 million to the value of the inventory.

The total value of the inventory of capital assets for Cemeteries is estimated to be \$37.0 million. The ten-year historical average service level is \$265.61 per capita. The historical service level multiplied by the ten-year forecast of net population growth results in a ten-year maximum allowable funding envelope of \$3.6 million (13,597 net population growth X historical service level of \$265.61/capita).

Finally, Cemetery Services must be reduced by ten per cent as required under the *DCA*. The resulting net maximum allowable funding envelope brought forward to the development charges calculation is reduced to \$3.3 million.

TABLE 2 2020 – 2029 DEVELOPMENT-RELATED CAPITAL PROGRAM AND CALCULATION OF THE UNADJUSTED DEVELOPMENT CHARGES

The ten-year development-related capital plan for Cemetery service totals \$181,152 and relates to the expansion and development of the Parkview cemetery. For the purpose of calculating a development charge, the Parkview cemetery additions are assumed to service the City's cemetery needs until 2029, notwithstanding that it is likely that the City will need to acquire and develop more cemetery land to meet demand.

The \$181,152 million gross cost is entirely related to increasing the capacity of current cemetery at the Parkview site. However, a significant portion of that capacity will be required to accommodate deaths in the existing base population of the City rather than population growth. A "benefit to existing" share totaling \$162,041 of the gross cost has therefore been calculated and has been excluded from the development charge calculation. The legislated 10 per cent discount on new projects amounts to \$1,911,

and is netted off of the development charges calculation. The remaining \$17,200 is fully funded by the existing DC Cemeteries reserve fund balance.

Therefore, no charge has been calculated for this service.

TABLE 3 CASH FLOW ANALYSIS

No cashflow analysis has been completed for this service.

The following table summarizes the calculation of the cemeteries development charge.

CEMETERIES SUMMARY						
10-year Hist. Service Level per capita	2020 - 2029 Development-Related Capital Program		Unadjusted Development Charge		Adjusted Development Charge	
	Total	Net DC Recoverable	\$/capita	\$/sq.ft	\$/capita	\$/sq.ft
\$265.61	\$181,152	\$0	\$0.00	\$0.00	\$0	\$0.00

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APPENDIX B.4
TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
CEMETERIES

BUILDINGS	# of Square Feet										UNIT COST (\$/sq.ft)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Parkview Storage 2 (Large Shed in Compound)	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	\$144
Parkview Chapel/Crematorium	4,720	4,720	4,720	4,720	4,720	4,720	4,720	4,720	4,720	4,720	\$339
Parkview Cemetery Offices/Service Building	3,446	3,446	3,446	3,446	3,446	3,446	3,446	3,446	3,446	3,446	\$264
Parkview Storage Building (Red Shed)	400	400	400	400	400	400	400	400	400	400	\$81
Parkview Storage Shed (Pump House)	200	200	200	200	200	200	200	200	200	200	\$26
Mount Hope Storage	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	\$290
Total (sq.ft)	10,966	10,966	10,966	10,966	10,966	10,966	10,966	10,966	10,966	10,966	
Total (\$000)	\$3,010.2	\$3,010.2	\$3,010.2	\$3,010.2	\$3,010.2	\$3,010.2	\$3,010.2	\$3,010.2	\$3,010.2	\$3,010.2	

CEMETERY LAND	# of Hectares										UNIT COST (\$/ha)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Parkview	11.0	11.0	11.0	11	11	11	11	14	14	14	\$1,716,000
Mount Hope	4.0	4.0	4.0	4	4	4	4	4	4	4	\$2,184,000
Total (ha)	15	15	15	15	15	15	15	18	18	18	
Total (\$000)	\$27,612.0	\$27,612.0	\$27,612.0	\$27,612.0	\$27,612.0	\$27,612.0	\$27,612.0	\$32,760.0	\$32,760.0	\$32,760.0	

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APPENDIX B.4
TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
CEMETERIES

OTHER INFRASTRUCTURE	# of Items										UNIT COST (\$/item)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Columbarium Dome B	72	72	72	72	72	72	72	72	72	72	\$434
Columbarium Dome C	72	72	72	72	72	72	72	72	72	72	\$434
Columbarium Dome D	72	72	72	72	72	72	72	72	72	72	\$434
Columbarium Dome A	84	84	84	84	84	84	84	84	84	84	\$434
Columbarium Feature Walls 1-4	104	104	104	104	208	208	208	208	208	208	\$520
Columbarium Dome - Section F-Feature B	-	-	84	84	84	84	84	84	84	84	\$434
Arbor Columbaria 1 - 5	-	-	-	-	-	-	-	-	144	144	\$686
Artistic Impression Columbaria	-	-	-	-	-	-	-	-	62	62	\$624
Columbarium Walls 1-3	480	480	480	480	480	480	480	480	480	480	\$520
Parkview / Mount Hope											
Retorts	2	2	2	2	2	2	2	2	2	2	\$223,600
Miscellaneous crematorium equipment	1	1	1	1	1	1	1	1	1	1	\$10,400
Chapel Furniture	1	1	1	1	1	1	1	1	1	1	\$4,160
Office furniture at office	1	1	1	1	1	1	1	1	1	1	\$22,880
Cooler in Crematorium	1	1	1	1	1	1	1	1	1	1	\$5,200
Chapel Niches	-	-	-	164	164	164	164	164	164	164	\$364
Estimated small engine equipment	1	1	1	1	1	1	1	1	1	1	\$31,200
Grave Set up Equipment	1	1	1	1	1	1	1	1	1	1	\$36,400
Total (#)	892	892	976	1,140	1,244	1,244	1,244	1,244	1,450	1,450	
Total (\$000)	\$991.3	\$991.3	\$1,027.8	\$1,087.5	\$1,141.6	\$1,141.6	\$1,141.6	\$1,141.6	\$1,279.0	\$1,279.0	

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APPENDIX B.4
TABLE 1

CITY OF WATERLOO
CALCULATION OF SERVICE LEVELS
CEMETERIES

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Historical Population	118,438	119,671	121,130	122,607	124,102	125,614	127,145	128,824	131,221	133,482

INVENTORY SUMMARY (\$000)

Buildings	\$3,010.2	\$3,010.2	\$3,010.2	\$3,010.2	\$3,010.2	\$3,010.2	\$3,010.2	\$3,010.2	\$3,010.2	\$3,010.2
Cemetery Land	\$27,612.0	\$27,612.0	\$27,612.0	\$27,612.0	\$27,612.0	\$27,612.0	\$27,612.0	\$32,760.0	\$32,760.0	\$32,760.0
Other Infrastructure	\$991.3	\$991.3	\$1,027.8	\$1,087.5	\$1,141.6	\$1,141.6	\$1,141.6	\$1,141.6	\$1,279.0	\$1,279.0
Total (\$000)	\$31,613.5	\$31,613.5	\$31,650.0	\$31,709.7	\$31,763.8	\$31,763.8	\$31,763.8	\$36,911.8	\$37,049.2	\$37,049.2

SERVICE LEVEL (\$/capita)											Average Service Level
Buildings	\$25.42	\$25.15	\$24.85	\$24.55	\$24.26	\$23.96	\$23.68	\$23.37	\$22.94	\$22.55	\$24.07
Cemetery Land	\$233.13	\$230.73	\$227.95	\$225.21	\$222.49	\$219.82	\$217.17	\$254.30	\$249.66	\$245.43	\$232.59
Other Infrastructure	\$8.37	\$8.28	\$8.48	\$8.87	\$9.20	\$9.09	\$8.98	\$8.86	\$9.75	\$9.58	\$8.95
Total (\$/capita)	\$266.92	\$264.17	\$261.29	\$258.63	\$255.95	\$252.87	\$249.82	\$286.53	\$282.34	\$277.56	\$265.61

CITY OF WATERLOO
CALCULATION OF MAXIMUM ALLOWABLE
CEMETERIES

10-Year Funding Envelope Calculation	
10 Year Average Service Level 2010 - 2019	\$265.61
Net Population Growth 2020 - 2029	13,597
Maximum Allowable Funding Envelope	\$3,611,499
Less: 10% Legislated Reduction	\$361,150
Discounted Maximum Allowable Funding Envelope	\$3,250,349

CITY OF WATERLOO
DEVELOPMENT-RELATED CAPITAL PROGRAM
CEMETERIES

DC Project Number	Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs		Total Development Related Costs	Development Related Costs			
						Replacement & BTE Shares	10% Reduction		DC Reserve Commitments	2020-2029	Post 2029	
	4.0 CEMETERIES											
	4.1 Buildings, Land & Equipment											
260	4.1.1 Parkview Chapel Niche Wall Additions	2023 - 2025	\$ 61,200	\$ -	\$ 61,200	\$ 54,533	\$ 667	\$ 6,000	\$ 6,000	\$ -	\$ -	
261	4.1.2 Parkview Columbarium Features	2022 - 2029	\$ 119,952	\$ -	\$ 119,952	\$ 107,508	\$ 1,244	\$ 11,200	\$ 11,200	\$ -	\$ -	
	Subtotal Buildings, Land & Equipment		\$ 181,152	\$ -	\$ 181,152	\$ 162,041	\$ 1,911	\$ 17,200	\$ 17,200	\$ -	\$ -	
	TOTAL CEMETERIES		\$ 181,152	\$ -	\$ 181,152	\$ 162,041	\$ 1,911	\$ 17,200	\$ 17,200	\$ -	\$ -	

Residential Development Charge Calculation		
Residential Share of 2020 - 2029 DC Eligible Costs	100%	\$0
10-Year Growth in Population in New Units		20,350
Unadjusted Development Charge Per Capita		\$0.00
Non-Residential Development Charge Calculation		
Non-Residential Share of 2020 - 2029 DC Eligible Costs	0%	\$0
10-Year Growth in Square Feet		3,287,340
Unadjusted Development Charge Per Square Foot		\$0.00

2020 - 2029 Net Funding Envelope	\$3,250,349
Reserve Fund Balance	
Balance as at September 30, 2019	\$52,967
2019 Capital Budget Draws	\$0
Total Uncommitted Reserve Funds	\$52,967

APPENDIX B.5

PARKING

APPENDIX B.5

PARKING

The City of Waterloo's Parking Services is responsible for planning, managing, rehabilitating and maintaining the City's parking to meet the needs of the community.

TABLE 1 2010-2019 HISTORICAL SERVICE LEVELS

The ten-year historical inventory of capital assets for parking includes 1,801 parking spaces with a replacement value of \$17.1 million. The 6.21 hectares of land associated with the parking service are valued at \$66.9 million and other infrastructure add another \$83,200 to the value of the inventory.

The total value of the Parking capital infrastructure is estimated to be \$84.0 million. The ten-year historical average service level is \$435.30 per capita and employee, and multiplied by the ten-year forecast net population and employment growth (21,424), results in a ten-year maximum allowable of \$9.3 million.

Parking is a service for which development-related capital costs must be reduced by ten per cent under the *DCA*. The resulting net maximum allowable funding envelope brought forward to the development charges calculation is reduced to \$8.4 million.

TABLE 2 2020 – 2029 DEVELOPMENT-RELATED CAPITAL PROGRAM AND CALCULATION OF THE UNADJUSTED DEVELOPMENT CHARGES

The 2020 to 2029 development-related capital program consists of the expansion of the uptown parking facility. This project is anticipated to take place over 3 years (2020-2022) at a cost of \$16.3 million. No benefit to existing shares have been identified for the project. An amount of \$1.6 million has been removed from the gross cost in accordance with the 10 per cent capital cost deduction under the *DCA*. A portion of \$4.9 million will be funded through the City's Parking DC reserve balance and \$1.4 million is considered to benefit development post 2029.

The 2020–2029 DC costs eligible for recovery amount to \$8.4 million. As shown in Table 2, this amount is allocated 72 percent, or \$6.0 million, to the residential sector and 28 per cent, or \$2.4 million, to the non-residential sector. This yields an unadjusted charge of \$296.96 per capita and \$0.71 per square foot.

TABLE 3 CASH FLOW ANALYSIS

The cash flow analysis is displayed in Table 3. It considers the timing of the projects against the timing of the development charge revenues to determine adjusted calculated rates. After cash flow analysis, the residential charge increases to \$337 per capita and the non-residential charge increases to \$0.81 per square foot.

The following table summarizes the calculation of the Parking development charge.

PARKING SUMMARY						
10-year Hist.	2020 - 2029		Unadjusted		Adjusted	
Service Level	Development-Related Capital Program		Development Charge		Development Charge	
per pop & emp	Total	Net DC Recoverable	\$/capita	\$/sq.ft	\$/capita	\$/sq.ft
\$435.30	\$16,285,283	\$8,393,280	\$296.96	\$0.71	\$337	\$0.81

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APPENDIX B.5
TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PARKING

PARKING SPACES Lot Name	# of Parking Spaces										UNIT COST (\$/space)	
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019		
Alexandra	16	16	16	16	16	16	16	16	16	16	16	\$6,000
Caroline	204	204	204	204	204	204	204	204	204	204	204	\$6,000
Dupont	118	118	118	118	118	118	118	118	118	118	118	\$8,400
Herbert	12	12	12	12	12	12	12	12	12	12	12	\$6,000
Library Lot	30	30	30	30	29	29	29	29	29	29	29	\$6,000
Museum	81	81	81	81	81	81	81	81	81	81	81	\$6,000
Regina	118	118	118	118	118	118	118	118	118	118	118	\$6,000
Station	92	92	92	92	92	92	92	92	92	92	92	\$6,000
Town Square	594	594	594	594	490	490	490	490	490	490	490	\$6,000
William	30	30	30	30	30	30	30	30	30	30	30	\$6,000
Willow	14	14	14	14	14	9	9	9	9	9	9	\$4,300
Uptown Parkade	145	145	145	140	140	140	140	140	140	140	140	\$50,000
Bauer	90	90	90	90	90	90	90	90	90	90	90	\$4,300
City Centre	134	151	151	151	151	151	161	161	161	161	161	\$6,000
Perimeter	100	78	78	78	78	78	78	78	78	78	78	\$6,000
Temporary Lot A	-	-	-	-	-	80	80	80	80	80	80	\$6,000
Temporary Lot B	-	-	-	-	-	12	12	12	53	53	53	\$6,000
Total (#)	1,778	1,773	1,773	1,768	1,663	1,750	1,760	1,760	1,801	1,801		
Total (\$000)	17,154.40	\$17,124.4	\$17,124.4	\$16,874.4	\$16,244.4	\$16,774.9	\$16,834.9	\$16,834.9	\$17,080.9	\$17,080.9		

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APPENDIX B.5
TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PARKING

LAND Lot Name	# of Hectares										UNIT COST (\$/ha)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Alexandra	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	\$7,696,000
Caroline South Lot 71 Caroline Street	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	\$11,648,000
Caroline North 41 Caroline Street South	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	\$11,648,000
Dupont - pay and display	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	\$9,152,000
Dupont - permit	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	\$9,152,000
Herbert	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	\$7,696,000
Library	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	\$7,696,000
Museum	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	\$9,152,000
Regina	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	\$11,648,000
Station	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	\$11,648,000
Waterloo Town Square North	0.96	0.96	0.96	0.95	0.95	0.95	0.95	0.95	0.95	0.95	\$9,152,000
Waterloo Town Square South	0.98	0.98	0.98	0.86	0.86	0.86	0.86	0.86	0.86	0.86	\$12,792,000
William	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	\$7,696,000
Willow	0.74	0.74	0.74	0.05	0.05	0.05	0.05	0.05	0.05	0.05	\$7,696,000
Uptown Parkade	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	\$11,648,000
Bauer	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	\$11,648,000
City Centre	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	\$11,648,000
Perimeter	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	\$9,152,000
Temporary Lot A	-	-	-	-	-	0.19	0.19	0.19	0.19	0.19	\$11,648,000
Temporary Lot B	-	-	-	-	-	0.21	0.21	0.21	0.21	0.21	\$11,648,000
Total (#)	6.63	6.63	6.63	5.81	5.81	6.21	6.21	6.21	6.21	6.21	
Total (\$000)	\$69,107.6	\$69,107.6	\$69,107.6	\$62,225.3	\$62,225.3	\$66,884.5	\$66,884.5	\$66,884.5	\$66,884.5	\$66,884.5	

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APPENDIX B.5
TABLE 1

CITY OF WATERLOO
CALCULATION OF SERVICE LEVELS
PARKING

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Historical Population	118,438	119,671	121,130	122,607	124,102	125,614	127,145	128,824	131,221	133,482
Historical Employment	<u>63,998</u>	<u>64,282</u>	<u>65,092</u>	<u>65,912</u>	<u>66,742</u>	<u>67,583</u>	<u>68,433</u>	<u>69,156</u>	<u>69,887</u>	<u>70,625</u>
Total Historical Population & Employment	182,436	183,953	186,222	188,519	190,844	193,197	195,578	197,980	201,108	204,107

INVENTORY SUMMARY (\$000)

Parking Spaces	\$17,154.4	\$17,124.4	\$17,124.4	\$16,874.4	\$16,244.4	\$16,774.9	\$16,834.9	\$16,834.9	\$17,080.9	\$17,080.9
Land for Parking Spaces	\$69,107.6	\$69,107.6	\$69,107.6	\$62,225.3	\$62,225.3	\$66,884.5	\$66,884.5	\$66,884.5	\$66,884.5	\$66,884.5
Other Infrastructure	\$158.1	\$83.2	\$83.2	\$83.2	\$83.2	\$83.2	\$83.2	\$83.2	\$83.2	\$83.2
Total (\$000)	\$86,420.1	\$86,315.2	\$86,315.2	\$79,182.9	\$78,552.9	\$83,742.6	\$83,802.6	\$83,802.6	\$84,048.6	\$84,048.6

Average
Service
Level

SERVICE LEVEL (\$/pop & emp)

Parking Spaces	\$94.03	\$93.09	\$91.96	\$89.51	\$85.12	\$86.83	\$86.08	\$85.03	\$84.93	\$83.69	\$88.03
Land for Parking Spaces	\$378.80	\$375.68	\$371.10	\$330.07	\$326.05	\$346.20	\$341.98	\$337.83	\$332.58	\$327.69	\$346.80
Other Infrastructure	\$0.87	\$0.45	\$0.45	\$0.44	\$0.44	\$0.43	\$0.43	\$0.42	\$0.41	\$0.41	\$0.47
Total (\$/pop & emp)	\$473.70	\$469.22	\$463.51	\$420.03	\$411.61	\$433.46	\$428.49	\$423.29	\$417.93	\$411.79	\$435.30

CITY OF WATERLOO
CALCULATION OF MAXIMUM ALLOWABLE
PARKING

10-Year Funding Envelope Calculation	
10 Year Average Service Level 2010 - 2019	\$435.30
Net Population & Employment Growth 2020 - 2029	21,424
Maximum Allowable Funding Envelope	\$9,325,867
Less: 10% Legislated Reduction	\$932,587
Discounted Maximum Allowable Funding Envelope	\$8,393,280

CITY OF WATERLOO
DEVELOPMENT-RELATED CAPITAL PROGRAM
PARKING

DC Project Number	Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs		Total Development Related Costs	Development Related Costs		
						Replacement & BTE Shares	10% Reduction		DC Reserve Commitments	2020-2029	Post 2029
	5.0 PARKING										
	5.1 Facilities										
119	5.1.1 Uptown Parking Expansion General (Structure & Surface Spaces)	2020 - 2022	\$ 16,285,283	\$ -	\$ 16,285,283	\$ -	\$ 1,628,528	\$ 14,656,755	\$ 4,899,118	\$ 8,393,280	\$ 1,364,356
	Subtotal Facilities		\$ 16,285,283	\$ -	\$ 16,285,283	\$ -	\$ 1,628,528	\$ 14,656,755	\$ 4,899,118	\$ 8,393,280	\$ 1,364,356
	TOTAL PARKING		\$ 16,285,283	\$ -	\$ 16,285,283	\$ -	\$ 1,628,528	\$ 14,656,755	\$ 4,899,118	\$ 8,393,280	\$ 1,364,356

Residential Development Charge Calculation			
Residential Share of 2020 - 2029 DC Eligible Costs	72%	\$6,043,162	
10-Year Growth in Population in New Units		20,350	
Unadjusted Development Charge Per Capita		\$296.96	
Non-Residential Development Charge Calculation			
Non-Residential Share of 2020 - 2029 DC Eligible Costs	28%	\$2,350,119	
10-Year Growth in Square Feet		3,287,340	
Unadjusted Development Charge Per Square Foot		\$0.71	

2020 - 2029 Net Funding Envelope	\$8,393,280
Reserve Fund Balance	
Balance as at September 30, 2019	\$4,899,118
2019 Capital Budget Draws	\$0
Total Uncommitted Reserve Funds	\$4,899,118

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APPENDIX B.5
TABLE 3

CITY OF WATERLOO
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
PARKING
RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

PARKING	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	TOTAL
OPENING CASH BALANCE	\$0.00	(\$1,398.93)	(\$2,902.73)	(\$4,500.03)	(\$4,024.49)	(\$3,508.36)	(\$2,949.08)	(\$2,343.98)	(\$1,614.13)	(\$826.94)	
2020 - 2029 RESIDENTIAL FUNDING REQUIREMENTS											
- Parking: Non Inflated	\$2,014.4	\$2,014.4	\$2,014.4	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$6,043.2
- Parking: Inflated	\$2,014.4	\$2,054.7	\$2,095.8	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$6,164.8
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,938	1,938	1,987	1,987	1,987	1,987	1,987	2,180	2,180	2,180	20,350
REVENUE											
- DC Receipts: Inflated	\$652.9	\$666.0	\$696.6	\$710.6	\$724.8	\$739.3	\$754.1	\$844.0	\$860.9	\$878.1	\$7,527.3
INTEREST											
- Interest on Opening Balance	\$0.0	(\$76.9)	(\$159.7)	(\$247.5)	(\$221.3)	(\$193.0)	(\$162.2)	(\$128.9)	(\$88.8)	(\$45.5)	(\$1,323.8)
- Interest on In-year Transactions	(\$37.4)	(\$38.2)	(\$38.5)	\$12.4	\$12.7	\$12.9	\$13.2	\$14.8	\$15.1	\$15.4	(\$17.7)
TOTAL REVENUE	\$615.5	\$550.9	\$498.5	\$475.5	\$516.1	\$559.3	\$605.1	\$729.9	\$787.2	\$848.0	\$6,185.9
CLOSING CASH BALANCE	(\$1,398.9)	(\$2,902.7)	(\$4,500.0)	(\$4,024.5)	(\$3,508.4)	(\$2,949.1)	(\$2,344.0)	(\$1,614.1)	(\$826.9)	\$21.0	

2020 Adjusted Charge Per Capita

\$337

Allocation of Capital Program

Residential Sector	72.0%
Non-Residential Sector	28.0%

Rates for 2020

Inflation Rate:	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

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APPENDIX B.5
TABLE 3

**CITY OF WATERLOO
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
PARKING
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)**

PARKING	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	TOTAL
OPENING CASH BALANCE	\$0.00	(\$544.14)	(\$1,126.28)	(\$1,748.55)	(\$1,561.85)	(\$1,356.24)	(\$1,130.06)	(\$882.28)	(\$611.52)	(\$315.79)	
2020 - 2029 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Parking: Non Inflated	\$783.4	\$783.4	\$783.4	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$2,350.1
- Parking: Inflated	\$783.4	\$799.0	\$815.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$2,397.4
NON-RESIDENTIAL SPACE GROWTH											
- Growth in Square Feet	313,320	316,680	320,040	323,400	326,760	330,540	333,900	337,260	341,040	344,400	3,287,340
REVENUE											
- DC Receipts: Inflated	\$253.8	\$261.6	\$269.7	\$278.0	\$286.5	\$295.6	\$304.6	\$313.8	\$323.7	\$333.4	\$2,920.7
INTEREST											
- Interest on Opening Balance	\$0.0	(\$29.9)	(\$61.9)	(\$96.2)	(\$85.9)	(\$74.6)	(\$62.2)	(\$48.5)	(\$33.6)	(\$17.4)	(\$510.2)
- Interest on In-year Transactions	(\$14.6)	(\$14.8)	(\$15.0)	\$4.9	\$5.0	\$5.2	\$5.3	\$5.5	\$5.7	\$5.8	(\$7.0)
TOTAL REVENUE	\$239.2	\$216.9	\$192.8	\$186.7	\$205.6	\$226.2	\$247.8	\$270.8	\$295.7	\$321.9	\$2,403.5
CLOSING CASH BALANCE	(\$544.1)	(\$1,126.3)	(\$1,748.5)	(\$1,561.9)	(\$1,356.2)	(\$1,130.1)	(\$882.3)	(\$611.5)	(\$315.8)	\$6.1	

2020 Adjusted Charge Per Square Foot	\$0.81
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Allocation of Capital Program	
Residential Sector	72.0%
Non-Residential Sector	28.0%
Rates for 2020	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX B.6

PUBLIC WORKS AND FLEET

APPENDIX B.6

PUBLIC WORKS

The City's Integrated Planning and Public Works department is responsible for planning, managing, rehabilitating and maintaining the City's municipal transportation, parks, fleet, sanitary & storm system, water distribution, open space, wood lots and urban forest to meet the needs of the community. The capital costs associated with Public Works and Fleet functions "related to a highway" are accounted for in this section. Note that the capital costs associated with roads and related infrastructure, water, wastewater and storm drainage control services are dealt with in Appendix C.

TABLE 1 2010-2019 HISTORICAL SERVICE LEVELS

The ten-year historical inventory of capital assets for public works includes 121,200 square feet of building space with a replacement value of \$29.4 million. The 7.00 hectares of land associated with the public works buildings are valued at \$15.3 million and furniture and equipment add another \$3.7 million to the value of the inventory. The public works fleet adds an additional \$18.0 million to the value of the capital assets.

The total value of the Public Works and Fleet capital infrastructure is estimated to be \$66.4 million. The ten-year historical average service level is \$310.59 per capita and employee, and multiplied by the ten-year forecast net population and employment growth (21,424), results in a ten-year maximum allowable of \$6.7 million. This amount, being exempt from the mandatory ten per cent capital cost reduction, can be considered for recovery through development charges.

TABLE 2 2020 – 2029 DEVELOPMENT-RELATED CAPITAL PROGRAM AND CALCULATION OF THE UNADJUSTED DEVELOPMENT CHARGES

The 2020 to 2029 development-related capital program consists of the addition of a Mini Operation Centre on the West Side and an additional Material Storage Implementation valued at \$5.4 million. A share of \$268,887 is considered to be a benefit to the existing community. Of the remaining amount, \$2.0 million will benefit development post 2029 and the DC eligible amount included in the rate calculation is \$3.1 million. Expansions to the City's Public Works fleet and equipment are also included in the capital program at a total of \$2.9 million over the course of the

planning period. The acquisitions are all new and the full cost is included in the DC rate calculation.

Finally, the reserve fund for Public Works and Fleet is in a negative position as of September 30, 2019 and the amount of \$704,462 is entirely included in the DC eligible cost.

Altogether, the ten-year capital program for Public Works and Fleet amounts to \$9.0 million. A replacement/benefit to existing share related to the new buildings totals to \$268,887 has been identified. This amount will not be recovered through development charges. There is no legislated ten per cent discount, leaving \$8.7 million as the total DC eligible costs. Of the eligible cost, \$2.0 million is to be recovered in the post 2029 period.

The 2020–2029 DC costs eligible for recovery amount to \$6.7 million. As shown in Table 2, this amount is allocated 72 percent, or \$4.8 million, to the residential sector and 28 per cent, or \$1.9 million, to the non-residential sector. This yields an unadjusted charge of \$235.42 per capita and \$0.57 per square foot.

TABLE 3 CASH FLOW ANALYSIS

The cash flow analysis is displayed in Table 3. It considers the timing of the projects against the timing of the development charge revenues to determine adjusted calculated rates. After cash flow analysis, the residential charge increases to \$241 per capita and the non-residential charge increases to \$0.58 per square foot.

The following table summarizes the calculation of the Public Works and Fleet development charge.

10-year Hist. Service Level per pop & emp	PUBLIC WORKS AND FLEET SUMMARY					
	2020 - 2029		Unadjusted		Adjusted	
	Development-Related Total	Capital Program Net DC Recoverable	Development Charge \$/capita	Development Charge \$/sq.ft	Development Charge \$/capita	Development Charge \$/sq.ft
\$745.42	\$8,957,991	\$6,654,080	\$235.42	\$0.57	\$241	\$0.58

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APPENDIX B.6
TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PUBLIC WORKS AND FLEET

BUILDINGS Facility Name	# of Square Feet										UNIT COST (\$/sq.ft.)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Service Centre - Operations Building	57,610	57,610	57,610	57,610	57,610	57,610	71,650	71,650	71,650	71,650	\$310
Service Centre - Vehicle Storage & Maintenance	16,630	16,630	16,630	16,630	16,630	16,630	16,630	16,630	16,630	16,630	\$100
Service Centre - Truck Wash	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	\$230
Service Centre - Green House	7,320	7,320	7,320	7,320	7,320	7,320	7,320	7,320	7,320	7,320	\$60
Service Centre - Oktoberfest/Storage	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	\$110
Service Centre - Parks Portable	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	\$90
Service Centre - Salt Storage	5,800	5,800	5,800	5,800	5,800	5,800	17,100	17,100	17,100	17,100	\$230
Service Centre - Asphalt Shed	500	500	500	500	500	500	500	500	500	500	\$50
Total (sq.ft)	95,860	95,860	95,860	95,860	95,860	95,860	121,200	121,200	121,200	121,200	
Total (\$000)	\$22,420.3	\$22,420.3	\$22,420.3	\$22,420.3	\$22,420.3	\$22,420.3	\$29,371.7	\$29,371.7	\$29,371.7	\$29,371.7	

LAND Facility Name	# of Hectares										UNIT COST (\$/ha)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Service Centre - Total Land parcel for entire site	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	\$2,184,000
Total (ha)	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	
Total (\$000)	\$15,288.0	\$15,288.0	\$15,288.0	\$15,288.0	\$15,288.0	\$15,288.0	\$15,288.0	\$15,288.0	\$15,288.0	\$15,288.0	

FURNITURE & EQUIPMENT Facility Name	Total Value of Furniture & Equipment (\$)									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Service Centre - Operations Building	\$1,786,000	\$1,786,000	\$1,786,000	\$1,786,000	\$1,786,000	\$1,786,000	\$2,221,000	\$2,221,000	\$2,221,000	\$2,221,000
Service Centre - Vehicle Storage & Maintenance	\$166,300	\$166,300	\$166,300	\$166,300	\$166,300	\$166,300	\$166,300	\$166,300	\$166,300	\$166,300
Service Centre - Truck Wash	\$46,000	\$46,000	\$46,000	\$46,000	\$46,000	\$46,000	\$46,000	\$46,000	\$46,000	\$46,000
Service Centre - Green House	\$44,000	\$44,000	\$44,000	\$44,000	\$44,000	\$44,000	\$44,000	\$44,000	\$44,000	\$44,000
Service Centre - Oktoberfest/Storage	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000
Service Centre - Parks Portable	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000
Service Centre - Salt Storage	\$133,000	\$133,000	\$133,000	\$133,000	\$133,000	\$133,000	\$393,000	\$393,000	\$393,000	\$393,000
Service Centre - Asphalt Shed	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500
Shop Lift/Cranes/Hoists & Other equipment	\$748,000	\$748,000	\$748,000	\$748,000	\$748,000	\$748,000	\$748,000	\$748,000	\$748,000	\$748,000
Total (\$000)	\$2,989.8	\$2,989.8	\$2,989.8	\$2,989.8	\$2,989.8	\$2,989.8	\$3,684.8	\$3,684.8	\$3,684.8	\$3,684.8

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APPENDIX B.6
TABLE 1

CITY OF WATERLOO
INVENTORY OF CAPITAL ASSETS
PUBLIC WORKS AND FLEET

FLEET & EQUIPMENT Description	# of Fleet and Small Equipment										UNIT COST (\$/vehicle)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Flusher Truck	1	1	1	1	1	1	2	1	1	1	\$624,000
Leased	2	2	1	-	-	-	-	-	-	-	\$0
Loader/Backhoe	6	6	6	6	6	7	6	6	8	8	\$303,160
Small Equipment	12	12	12	12	12	13	13	13	13	14	\$10,400
Specialty Equip. (Large)	3	3	4	3	4	4	3	4	4	4	\$245,960
Specialty Equip. (Med)	9	9	8	9	10	10	10	11	13	13	\$90,660
Specialty Equip. (Sweeper)	2	2	2	2	2	2	2	2	2	2	\$457,600
Trackless	5	5	5	5	6	6	6	6	7	7	\$209,660
Tractor	1	1	1	1	1	1	1	1	1	1	\$58,600
Trailer	9	9	10	10	11	11	12	13	13	13	\$8,840
Truck - Heavy Duty	17	17	20	18	18	18	17	18	19	20	\$343,200
Truck - Light duty	19	19	22	21	22	22	24	26	26	26	\$53,410
Truck - Med Duty	14	14	15	17	18	18	20	20	19	19	\$81,620
Turf Equipment	1	1	1	1	1	1	1	1	1	1	\$41,180
Van-SUV	6	6	6	7	7	8	7	8	7	7	\$38,950
Total (#)	107	107	114	113	119	122	124	130	134	136	
Total (\$000)	\$14,490.0	\$14,490.0	\$15,925.6	\$15,232.7	\$15,922.8	\$16,275.3	\$16,247.0	\$16,457.4	\$17,677.3	\$18,030.9	

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APPENDIX B.6
TABLE 1

CITY OF WATERLOO
CALCULATION OF SERVICE LEVELS
PUBLIC WORKS AND FLEET

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Historical Population	118,438	119,671	121,130	122,607	124,102	125,614	127,145	128,824	131,221	133,482
Historical Employment	<u>63,998</u>	<u>64,282</u>	<u>65,092</u>	<u>65,912</u>	<u>66,742</u>	<u>67,583</u>	<u>68,433</u>	<u>69,156</u>	<u>69,887</u>	<u>70,625</u>
Total Historical Population & Employment	182,436	183,953	186,222	188,519	190,844	193,197	195,578	197,980	201,108	204,107

INVENTORY SUMMARY (\$000)

Buildings	\$22,420.3	\$22,420.3	\$22,420.3	\$22,420.3	\$22,420.3	\$22,420.3	\$29,371.7	\$29,371.7	\$29,371.7	\$29,371.7
Land	\$15,288.0	\$15,288.0	\$15,288.0	\$15,288.0	\$15,288.0	\$15,288.0	\$15,288.0	\$15,288.0	\$15,288.0	\$15,288.0
Furniture & Equipment	\$2,989.8	\$2,989.8	\$2,989.8	\$2,989.8	\$2,989.8	\$2,989.8	\$3,684.8	\$3,684.8	\$3,684.8	\$3,684.8
Fleet & Equipment	\$14,490.0	\$14,490.0	\$15,925.6	\$15,232.7	\$15,922.8	\$16,275.3	\$16,247.0	\$16,457.4	\$17,677.3	\$18,030.9
Total (\$000)	\$55,188.1	\$55,188.1	\$56,623.7	\$55,930.8	\$56,620.9	\$56,973.4	\$64,591.5	\$64,801.9	\$66,021.8	\$66,375.4

SERVICE LEVEL (\$/pop & emp)

											Average Service Level
Buildings	\$122.89	\$121.88	\$120.40	\$118.93	\$117.48	\$116.05	\$150.18	\$148.36	\$146.05	\$143.90	\$130.61
Land	\$83.80	\$83.11	\$82.10	\$81.10	\$80.11	\$79.13	\$78.17	\$77.22	\$76.02	\$74.90	\$79.56
Furniture & Equipment	\$16.39	\$16.25	\$16.06	\$15.86	\$15.67	\$15.48	\$18.84	\$18.61	\$18.32	\$18.05	\$16.95
Fleet & Equipment	\$79.43	\$78.77	\$85.52	\$80.80	\$83.43	\$84.24	\$83.07	\$83.13	\$87.90	\$88.34	\$83.46
Total (\$/pop & emp)	\$302.51	\$300.01	\$304.07	\$296.69	\$296.69	\$294.90	\$330.26	\$327.32	\$328.29	\$325.20	\$310.59

CITY OF WATERLOO
CALCULATION OF MAXIMUM ALLOWABLE
PUBLIC WORKS AND FLEET

10-Year Funding Envelope Calculation	
10 Year Average Service Level 2010 - 2019	\$310.59
Net Population & Employment Growth 2020 - 2029	21,424
Maximum Allowable Funding Envelope	\$6,654,080

CITY OF WATERLOO
DEVELOPMENT-RELATED CAPITAL PROGRAM
PUBLIC WORKS AND FLEET

DC Project Number	Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs		Total Development Related Costs	Development Related Costs			
						Replacement & BTE Shares	0% Reduction		DC Reserve Commitments	2020-2029	Post 2029	
	6.0 PUBLIC WORKS AND FLEET											
	6.1 Buildings, Land & Equipment											
274	6.1.1 Mini Operation Centre on the West Side	2023 - 2025	\$ 3,798,567	\$ -	\$ 3,798,567	\$ 189,928	\$ -	\$ 3,608,638	\$ -	\$ 1,573,615	\$ 2,035,023	
273	6.1.2 Material Storage Implementation	2021 - 2029	\$ 1,579,178	\$ -	\$ 1,579,178	\$ 78,959	\$ -	\$ 1,500,219	\$ -	\$ 1,500,219	\$ -	
	Subtotal 6.1.3		\$ 5,377,745	\$ -	\$ 5,377,745	\$ 268,887	\$ -	\$ 5,108,858	\$ -	\$ 3,073,835	\$ 2,035,023	
	6.2 Fleet											
420	6.2.1 Fleet Equipment Expansion	2020 - 2029	\$ 2,875,783	\$ -	\$ 2,875,783	\$ -	\$ -	\$ 2,875,783	\$ -	\$ 2,875,783	\$ -	
	Subtotal Fleet		\$ 2,875,783	\$ -	\$ 2,875,783	\$ -	\$ -	\$ 2,875,783	\$ -	\$ 2,875,783	\$ -	
	6.3 Recovery of Negative Reserve Fund Balance											
	6.3.1 Balance as at September 30, 2019	2020 - 2020	\$ 704,462	\$ -	\$ 704,462	\$ -	\$ -	\$ 704,462	\$ -	\$ 704,462	\$ -	
	Subtotal Recovery of Negative Reserve Fund Balance		\$ 704,462	\$ -	\$ 704,462	\$ -	\$ -	\$ 704,462	\$ -	\$ 704,462	\$ -	
	TOTAL PUBLIC WORKS AND FLEET		\$8,957,991	\$ -	\$ 8,957,991	\$ 268,887	\$ -	\$ 8,689,103	\$ -	\$ 6,654,080	\$ 2,035,023	

Residential Development Charge Calculation		
Residential Share of 2020 - 2029 DC Eligible Costs	72%	\$4,790,938
10-Year Growth in Population in New Units		20,350
Unadjusted Development Charge Per Capita		\$235.42
Non-Residential Development Charge Calculation		
Non-Residential Share of 2020 - 2029 DC Eligible Costs	28%	\$1,863,142
10-Year Growth in Square Feet		3,287,340
Unadjusted Development Charge Per Square Foot		\$0.57

2020 - 2029 Net Funding Envelope	\$6,654,080
Reserve Fund Balance	
Balance as at September 30, 2019	(\$704,462)
2019 Capital Budget Draws	\$0
Total Uncommitted Reserve Funds	(\$704,462)

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APPENDIX B.6
TABLE 3

CITY OF WATERLOO
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
PUBLIC WORKS AND FLEET
RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

PUBLIC WORKS AND FLEET	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	TOTAL
OPENING CASH BALANCE	\$0.00	(\$254.17)	(\$122.97)	\$30.94	(\$214.35)	(\$477.39)	(\$759.90)	(\$627.84)	(\$430.49)	(\$217.62)	
2020 - 2029 RESIDENTIAL FUNDING REQUIREMENTS											
- Public Works And Fleet: Non Inflated	\$714.3	\$327.1	\$327.1	\$704.7	\$704.7	\$704.7	\$327.1	\$327.1	\$327.1	\$327.1	\$4,790.9
- Public Works And Fleet: Inflated	\$714.3	\$333.6	\$340.3	\$747.9	\$762.8	\$778.1	\$368.3	\$375.7	\$383.2	\$390.9	\$5,195.1
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,938	1,938	1,987	1,987	1,987	1,987	1,987	2,180	2,180	2,180	20,350
REVENUE											
- DC Receipts: Inflated	\$466.9	\$476.3	\$498.2	\$508.1	\$518.3	\$528.7	\$539.2	\$603.6	\$615.7	\$628.0	\$5,383.0
INTEREST											
- Interest on Opening Balance	\$0.0	(\$14.0)	(\$6.8)	\$1.1	(\$11.8)	(\$26.3)	(\$41.8)	(\$34.5)	(\$23.7)	(\$12.0)	(\$169.7)
- Interest on In-year Transactions	(\$6.8)	\$2.5	\$2.8	(\$6.6)	(\$6.7)	(\$6.9)	\$3.0	\$4.0	\$4.1	\$4.1	(\$6.5)
TOTAL REVENUE	\$460.1	\$464.8	\$494.2	\$502.6	\$499.8	\$495.6	\$500.4	\$573.1	\$596.1	\$620.2	\$5,206.8
CLOSING CASH BALANCE	(\$254.2)	(\$123.0)	\$30.9	(\$214.3)	(\$477.4)	(\$759.9)	(\$627.8)	(\$430.5)	(\$217.6)	\$11.7	

2020 Adjusted Charge Per Capita

\$241

Allocation of Capital Program

Residential Sector 72.0%
Non-Residential Sector 28.0%

Rates for 2020

Inflation Rate: 2.0%
Interest Rate on Positive Balances 3.5%
Interest Rate on Negative Balances 5.5%

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APPENDIX B.6
TABLE 3

CITY OF WATERLOO
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
PUBLIC WORKS AND FLEET
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

PUBLIC WORKS AND FLEET	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	TOTAL
OPENING CASH BALANCE	\$0.00	(\$98.71)	(\$45.57)	\$13.75	(\$80.03)	(\$178.51)	(\$281.72)	(\$221.05)	(\$153.24)	(\$77.45)	
2020 - 2029 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Public Works And Fleet: Non Inflated	\$277.8	\$127.2	\$127.2	\$274.1	\$274.1	\$274.1	\$127.2	\$127.2	\$127.2	\$127.2	\$1,863.1
- Public Works And Fleet: Inflated	\$277.8	\$129.7	\$132.3	\$290.8	\$296.7	\$302.6	\$143.2	\$146.1	\$149.0	\$152.0	\$2,020.3
NON-RESIDENTIAL SPACE GROWTH											
- Growth in Square Feet	313,320	316,680	320,040	323,400	326,760	330,540	333,900	337,260	341,040	344,400	3,287,340
REVENUE											
- DC Receipts: Inflated	\$181.7	\$187.3	\$193.1	\$199.1	\$205.1	\$211.7	\$218.1	\$224.7	\$231.8	\$238.7	\$2,091.3
INTEREST											
- Interest on Opening Balance	\$0.0	(\$5.4)	(\$2.5)	\$0.5	(\$4.4)	(\$9.8)	(\$15.5)	(\$12.2)	(\$8.4)	(\$4.3)	(\$62.0)
- Interest on In-year Transactions	(\$2.6)	\$1.0	\$1.1	(\$2.5)	(\$2.5)	(\$2.5)	\$1.3	\$1.4	\$1.4	\$1.5	(\$2.5)
TOTAL REVENUE	\$179.1	\$182.9	\$191.7	\$197.1	\$198.2	\$199.4	\$203.9	\$213.9	\$224.8	\$236.0	\$2,026.8
CLOSING CASH BALANCE	(\$98.7)	(\$45.6)	\$13.7	(\$80.0)	(\$178.5)	(\$281.7)	(\$221.0)	(\$153.2)	(\$77.4)	\$6.5	

2020 Adjusted Charge Per Square Foot	\$0.58
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Allocation of Capital Program	
Residential Sector	72.0%
Non-Residential Sector	28.0%
Rates for 2020	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX B.7

GROWTH STUDIES

APPENDIX B.7

GROWTH STUDIES

The *DCA* allows the cost of growth-related studies to be included in the calculation of the development charges as long as they are permitted under the legislation. Consistent with s.5 (1) 7 of the *DCA*, the eligible development-related capital costs for the provision of studies and permitted general government expenditures and are reduced by 10 per cent when calculating the development charges.

**TABLE 1 2020 – 2029 DEVELOPMENT-RELATED CAPITAL PROGRAM AND
CALCULATION OF THE UNADJUSTED DEVELOPMENT CHARGES**

As shown on Table 1, the 2020–2029 development-related gross cost for growth studies is \$4.3 million. The bulk of the capital program related to land use planning and development studies, while Library, Parks and Recreation, and Parking studies are also included. Planning and development studies costs included in this service relate only to the soft service components; the hard service components are included in Appendix C.4 Engineering Studies.

Recognizing that not all studies under this service are entirely a result of new growth in the City, a “benefit to existing” share has been netted off the total net costs. The benefit to existing share amounts to \$927,573 and this amount will not be recovered through development charges. The legislated ten per cent discount is then discounted, and amounts to \$336,462. The funds that are available in the DC reserves amount to \$25,459, and are used to help offset the cost of the program. No post-period benefit shares have been identified for this service.

The remaining amount of \$3.0 million is eligible for development charges funding in the ten-year planning period. This amount is included in the development charge calculation and is allocated 72 per cent, or \$2.2 million to the residential sector and 28 per cent, or \$840,756 to the non-residential sector based on shares of ten-year growth in population in new units and employment. The resulting unadjusted per capita residential charge is \$106.24 before cash flow adjustments. The non-residential unadjusted charge is \$0.26 per square foot.

TABLE 2 CASH FLOW ANALYSIS

After cash flow analysis, the residential charge increases to \$114 per capita and the non-residential charge increases to \$0.28 per square foot.

The following table summarizes the calculation of the Growth Studies development charge.

GROWTH STUDIES SUMMARY					
2020 - 2029		Unadjusted		Adjusted	
Development-Related Capital Program		Development Charge		Development Charge	
Total	Net DC Recoverable	\$/capita	\$/sq.ft	\$/capita	\$/sq.ft
\$4,292,195	\$3,002,700	\$106.24	\$0.26	\$114	\$0.28

CITY OF WATERLOO
DEVELOPMENT-RELATED CAPITAL PROGRAM
GROWTH STUDIES

DC Project Number	Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs		Total Development Related Costs	Development Related Costs		
						Replacement & BTE Shares	10% Reduction		DC Reserve Commitments	2020-2029	Post 2029
7.0 GROWTH STUDIES											
7.1 Planning and Development Studies (soft services component only)											
632	7.1.1 Census Trends	2023 - 2023	\$ 4,912	\$ -	\$ 4,912	\$ -	\$ 491	\$ 4,421	\$ -	\$ 4,421	\$ -
632	7.1.2 Census Trends	2028 - 2028	\$ 4,912	\$ -	\$ 4,912	\$ -	\$ 491	\$ 4,421	\$ -	\$ 4,421	\$ -
634	7.1.3 Community Visioning	2020 - 2020	\$ 80,000	\$ -	\$ 80,000	\$ 20,000	\$ 6,000	\$ 54,000	\$ 25,459	\$ 28,541	\$ -
635	7.1.4 Comprehensive Zoning By-law Review -Legislated Review	2022 - 2022	\$ 100,000	\$ -	\$ 100,000	\$ 25,000	\$ 7,500	\$ 67,500	\$ -	\$ 67,500	\$ -
636	7.1.5 Community Benefits Charge Implementation	2020 - 2020	\$ 152,375	\$ -	\$ 152,375	\$ -	\$ 15,238	\$ 137,138	\$ -	\$ 137,138	\$ -
637	7.1.6 Cultural Heritage Landscape Study and Plan	2020 - 2020	\$ 135,000	\$ -	\$ 135,000	\$ 44,550	\$ 9,045	\$ 81,405	\$ -	\$ 81,405	\$ -
638	7.1.7 Cultural Heritage Landscape Study and Plan II	2021 - 2021	\$ 216,000	\$ -	\$ 216,000	\$ 71,280	\$ 14,472	\$ 130,248	\$ -	\$ 130,248	\$ -
638	7.1.8 Cultural Heritage Landscape Study and Plan III	2025 - 2025	\$ 212,000	\$ -	\$ 212,000	\$ 69,960	\$ 14,204	\$ 127,836	\$ -	\$ 127,836	\$ -
639	7.1.9 DC Funded Growth Studies	2020 - 2029	\$ 294,676	\$ -	\$ 294,676	\$ -	\$ 29,468	\$ 265,208	\$ -	\$ 265,208	\$ -
640	7.1.10 DC Funded Growth (Development) Studies	2025 - 2025	\$ 50,000	\$ -	\$ 50,000	\$ -	\$ 5,000	\$ 45,000	\$ -	\$ 45,000	\$ -
641	7.1.11 DC Funded Growth (Height & Density) Studies	2022 - 2022	\$ 50,000	\$ -	\$ 50,000	\$ -	\$ 5,000	\$ 45,000	\$ -	\$ 45,000	\$ -
643	7.1.12 DC Funded Growth (Urban Design) Studies	2023 - 2023	\$ 50,000	\$ -	\$ 50,000	\$ -	\$ 5,000	\$ 45,000	\$ -	\$ 45,000	\$ -
645	7.1.13 Existing District Plan Updates	2020 - 2029	\$ 78,756	\$ -	\$ 78,756	\$ -	\$ 7,876	\$ 70,880	\$ -	\$ 70,880	\$ -
647	7.1.14 Growth Management Policy	2020 - 2020	\$ 100,000	\$ -	\$ 100,000	\$ -	\$ 10,000	\$ 90,000	\$ -	\$ 90,000	\$ -
649	7.1.15 Hydro Burial Study	2020 - 2020	\$ 30,475	\$ -	\$ 30,475	\$ 22,856	\$ 762	\$ 6,857	\$ -	\$ 6,857	\$ -
650	7.1.16 Natural System Inventory and Strategy	2020 - 2020	\$ 330,000	\$ -	\$ 330,000	\$ 247,500	\$ 8,250	\$ 74,250	\$ -	\$ 74,250	\$ -
651	7.1.17 New Central Residential District Plan	2021 - 2021	\$ 146,360	\$ -	\$ 146,360	\$ 36,590	\$ 10,977	\$ 98,793	\$ -	\$ 98,793	\$ -
652	7.1.18 Official Plan Review - Background Research	2021 - 2021	\$ 150,000	\$ -	\$ 150,000	\$ 37,500	\$ 11,250	\$ 101,250	\$ -	\$ 101,250	\$ -
652	7.1.19 Official Plan Review - Background Research	2025 - 2025	\$ 185,000	\$ -	\$ 185,000	\$ 46,250	\$ 13,875	\$ 124,875	\$ -	\$ 124,875	\$ -
653	7.1.20 Reurbanization Initiatives	2020 - 2020	\$ 80,750	\$ -	\$ 80,750	\$ 8,075	\$ 7,268	\$ 65,408	\$ -	\$ 65,408	\$ -
654	7.1.21 Revised Erbsville District Plan	2024 - 2024	\$ 90,800	\$ -	\$ 90,800	\$ -	\$ 9,080	\$ 81,720	\$ -	\$ 81,720	\$ -
657	7.1.22 Urban Design Model	2021 - 2022	\$ 100,000	\$ -	\$ 100,000	\$ -	\$ 10,000	\$ 90,000	\$ -	\$ 90,000	\$ -
Subtotal Planning and Development Studies			\$ 2,642,015	\$ -	\$ 2,642,015	\$ 629,561	\$ 201,245	\$ 1,811,208	\$ 25,459	\$ 1,785,749	\$ -
7.2 Library Studies											
807	7.2.1 Study - Library Technology Study	2021 - 2021	\$ 52,000	\$ -	\$ 52,000	\$ -	\$ 5,200	\$ 46,800	\$ -	\$ 46,800	\$ -
807	7.2.2 Study - Library Technology Study	2026 - 2026	\$ 54,000	\$ -	\$ 54,000	\$ -	\$ 5,400	\$ 48,600	\$ -	\$ 48,600	\$ -
Subtotal Library Studies			\$ 106,000	\$ -	\$ 106,000	\$ -	\$ 10,600	\$ 95,400	\$ -	\$ 95,400	\$ -

CITY OF WATERLOO
DEVELOPMENT-RELATED CAPITAL PROGRAM
GROWTH STUDIES

DC Project Number	Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs		Total Development Related Costs	Development Related Costs		
						Replacement & BTE Shares	10% Reduction		DC Reserve Commitments	2020-2029	Post 2029
7.3 Parks and Recreation Studies											
254	7.3.1 Park Strategy Study	2029 - 2029	\$ 89,040	\$ -	\$ 89,040	\$ 14,840	\$ 7,420	\$ 66,780	\$ -	\$ 66,780	\$ -
255	7.3.2 Urban Forest Strategy	2022 - 2022	\$ 125,000	\$ -	\$ 125,000	\$ 55,556	\$ 6,944	\$ 62,500	\$ -	\$ 62,500	\$ -
256	7.3.3 Waterloo Park Master Plan Update	2023 - 2023	\$ 175,000	\$ -	\$ 175,000	\$ 29,167	\$ 14,583	\$ 131,250	\$ -	\$ 131,250	\$ -
257	7.3.4 West Side Recreation Facility Needs Analysis and Feasibility Study	2022 - 2022	\$ 409,500	\$ -	\$ 409,500	\$ -	\$ 40,950	\$ 368,550	\$ -	\$ 368,550	\$ -
337	7.3.5 Master Plan and Recreational Trends Study	2020 - 2025	\$ 481,440	\$ -	\$ 481,440	\$ 80,239	\$ 40,120	\$ 361,081	\$ -	\$ 361,081	\$ -
Subtotal Parks and Recreation Studies			\$ 1,279,980	\$ -	\$ 1,279,980	\$ 179,801	\$ 110,018	\$ 990,161	\$ -	\$ 990,161	\$ -
7.4 Parking Studies											
137	7.4.1 Parking Utilization Study	2020 - 2029	\$ 214,200	\$ -	\$ 214,200	\$ 107,100	\$ 10,710	\$ 96,390	\$ -	\$ 96,390	\$ -
642	7.4.2 DC Funded Growth (Parking) Studies	2021 - 2021	\$ 50,000	\$ -	\$ 50,000	\$ 11,111	\$ 3,889	\$ 35,000	\$ -	\$ 35,000	\$ -
Subtotal Parking Studies			\$ 264,200	\$ -	\$ 264,200	\$ 118,211	\$ 14,599	\$ 131,390	\$ -	\$ 131,390	\$ -
TOTAL GROWTH STUDIES			\$ 4,292,195	\$ -	\$ 4,292,195	\$ 927,573	\$ 336,462	\$ 3,028,159	\$ 25,459	\$ 3,002,700	\$ -

Residential Development Charge Calculation		
Residential Share of 2020 - 2029 DC Eligible Costs	72%	\$2,161,944
10-Year Growth in Population in New Units		20,350
Unadjusted Development Charge Per Capita		\$106.24
Non-Residential Development Charge Calculation		
Non-Residential Share of 2020 - 2029 DC Eligible Costs	28%	\$840,756
10-Year Growth in Square Feet		3,287,340
Unadjusted Development Charge Per Square Foot		\$0.26

Reserve Fund Balance	
Balance as at September 30, 2019	\$25,459
2019 Capital Budget Draws	<u>\$0</u>
Total Uncommitted Reserve Funds	\$25,459

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TABLE 2

CITY OF WATERLOO
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
GROWTH STUDIES
RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

GROWTH STUDIES	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	TOTAL
OPENING CASH BALANCE	\$0.00	(\$207.31)	(\$410.18)	(\$723.16)	(\$739.20)	(\$677.19)	(\$785.10)	(\$644.50)	(\$425.84)	(\$193.88)	
2020 - 2029 RESIDENTIAL FUNDING REQUIREMENTS											
- Growth Studies: Non Inflated	\$422.7	\$403.6	\$498.2	\$204.6	\$133.3	\$288.8	\$66.1	\$31.1	\$34.3	\$79.2	\$2,161.9
- Growth Studies: Inflated	\$422.7	\$411.6	\$518.4	\$217.1	\$144.3	\$318.9	\$74.5	\$35.8	\$40.2	\$94.7	\$2,278.0
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,938	1,938	1,987	1,987	1,987	1,987	1,987	2,180	2,180	2,180	20,350
REVENUE											
- DC Receipts: Inflated	\$220.9	\$225.3	\$235.7	\$240.4	\$245.2	\$250.1	\$255.1	\$285.5	\$291.2	\$297.1	\$2,546.5
INTEREST											
- Interest on Opening Balance	\$0.0	(\$11.4)	(\$22.6)	(\$39.8)	(\$40.7)	(\$37.2)	(\$43.2)	(\$35.4)	(\$23.4)	(\$10.7)	(\$264.3)
- Interest on In-year Transactions	(\$5.5)	(\$5.1)	(\$7.8)	\$0.4	\$1.8	(\$1.9)	\$3.2	\$4.4	\$4.4	\$3.5	(\$2.7)
TOTAL REVENUE	\$215.4	\$208.8	\$205.4	\$201.0	\$206.3	\$211.0	\$215.1	\$254.4	\$272.2	\$290.0	\$2,279.5
CLOSING CASH BALANCE	(\$207.3)	(\$410.2)	(\$723.2)	(\$739.2)	(\$677.2)	(\$785.1)	(\$644.5)	(\$425.8)	(\$193.9)	\$1.4	

2020 Adjusted Charge Per Capita

\$114

Allocation of Capital Program

Residential Sector	72.0%
Non-Residential Sector	28.0%

Rates for 2020

Inflation Rate:	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

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APPENDIX B.7
TABLE 2

**CITY OF WATERLOO
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
GROWTH STUDIES
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)**

GROWTH STUDIES	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	TOTAL
OPENING CASH BALANCE	\$0.00	(\$78.78)	(\$154.71)	(\$274.58)	(\$277.79)	(\$249.44)	(\$285.56)	(\$223.60)	(\$139.65)	(\$49.38)	
2020 - 2029 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Growth Studies: Non Inflated	\$164.4	\$156.9	\$193.8	\$79.5	\$51.8	\$112.3	\$25.7	\$12.1	\$13.3	\$30.8	\$840.8
- Growth Studies: Inflated	\$164.4	\$160.1	\$201.6	\$84.4	\$56.1	\$124.0	\$29.0	\$13.9	\$15.6	\$36.8	\$885.9
NON-RESIDENTIAL SPACE GROWTH											
- Growth in Square Feet	313,320	316,680	320,040	323,400	326,760	330,540	333,900	337,260	341,040	344,400	3,287,340
REVENUE											
- DC Receipts: Inflated	\$87.7	\$90.4	\$93.2	\$96.1	\$99.0	\$102.2	\$105.3	\$108.5	\$111.9	\$115.2	\$1,009.5
INTEREST											
- Interest on Opening Balance	\$0.0	(\$4.3)	(\$8.5)	(\$15.1)	(\$15.3)	(\$13.7)	(\$15.7)	(\$12.3)	(\$7.7)	(\$2.7)	(\$95.3)
- Interest on In-year Transactions	(\$2.1)	(\$1.9)	(\$3.0)	\$0.2	\$0.8	(\$0.6)	\$1.3	\$1.7	\$1.7	\$1.4	(\$0.6)
TOTAL REVENUE	\$85.6	\$84.2	\$81.7	\$81.2	\$84.5	\$87.9	\$90.9	\$97.9	\$105.9	\$113.9	\$913.6
CLOSING CASH BALANCE	(\$78.8)	(\$154.7)	(\$274.6)	(\$277.8)	(\$249.4)	(\$285.6)	(\$223.6)	(\$139.6)	(\$49.4)	\$27.7	

2020 Adjusted Charge Per Square Foot	\$0.28
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Allocation of Capital Program	
Residential Sector	72.0%
Non-Residential Sector	28.0%
Rates for 2020	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX C

ENGINEERED SERVICES TECHNICAL APPENDIX

APPENDIX C

ENGINEERED SERVICES TECHNICAL APPENDIX INTRODUCTION AND OVERVIEW

This appendix provides the detailed analysis undertaken to establish the development charge rates for each of the engineered services in the City of Waterloo.

The appendix is divided into four sub-sections, with one section for each of the engineered services:

- C.1 Roads and Related
- C.2 Water Supply and Wastewater
- C.3 Storm Water Drainage and Control
- C.4 Engineering Studies

The sub-sections generally contain a set of three tables. The tables provide the background data and analysis undertaken to arrive at the calculated development charge rates for that particular service. An overview of the content and purpose of each of the tables is given below.

HISTORICAL SERVICE LEVELS

The *Development Charges Act* (DCA) and *O. Reg. 82/98* require that development charges be set at a level no higher than the average service level provided in the City over the ten-year period immediately preceding the preparation of the background study, on a service-by-service basis.

However, *O. Reg. 82/98*s. 4 (3) provides for the “standard level of service” to substitute for the average level of service where the standard level of service is required by another Act. The standard level of service applies to all engineered services except for the Roads and Related Service.

The method for determining the average level of service for the Roads and Related service is set out in subsection C.1 below.

TABLE 1 2020-2041 DEVELOPMENT-RELATED CAPITAL PROGRAM

The DCA requires that City Council express its intent to provide future capital facilities at the level incorporated in the development charges calculation. Based on the development forecasts presented in Appendix A, the City’s master servicing plans, and the Council approved 2020 ten-year capital program, City staff have compiled a development-related capital program for the engineered services. The capital program sets out those projects that are required to service the development for the period to 2041, and aligns with the population and employment forecasts defined within the various master servicing plans (for more, see Appendix A).

The development-related capital program for each engineered service is shown on Table 1 of each sub-section with the exception of Roads and Related services, where it appears as Table 2.

To determine the share of the program that is eligible for recovery through development charges, the net project costs are reduced by any “benefit to existing” shares. A benefit to existing share represents that portion of a capital project that will benefit existing development. It could, for example, represent a portion of a new facility that, at least in part, replaces a facility that is demolished, redeployed or will otherwise not be available to serve its former function (a “replacement” share). The benefit to existing share of the capital program is not deemed to be development-related and is therefore removed from the development charge calculation. The capital cost for benefit to existing shares will require funding from non-development charge sources, typically property taxes or user fees.

Consistent with s. 5 (1) 7 of the DCA, there is no legislated percentage reduction in the eligible growth-related capital cost for the provision of the engineered service infrastructure.

The net capital program less any benefit to existing shares yields the development-related costs. It is noted that as a long-range population and employment forecast has been used for engineered services, all capital projects have been deemed to be associated with development occurring prior to 2041. As such, no “post-period benefit” shares of the development-related costs have been identified.

TABLE 2 CALCULATION OF UNADJUSTED DEVELOPMENT CHARGE

Table 2 displays the calculation of the unadjusted development charge rates. The term “unadjusted” development charge is used to distinguish the charge that is calculated prior to cash flow financing consideration. The cash flow analysis is shown on Table 3.

The first step in the determination of the unadjusted development charges rate is the allocation of the development-related net capital costs between the residential and the non-residential sectors. For all engineered services, development-related costs have been allocated 71 per cent residential and 29 per cent non-residential based on the ratio of forecast changes in population in new housing units and employment in new non-residential floorspace over the planning period.

The residential development-related costs are then divided by the forecast population in new housing units. This gives the unadjusted residential development charge per capita. The non-residential development-related costs are divided by the forecast increase in non-residential gross floor area (GFA). This yields a charge per square metre of new non-residential GFA.

TABLE 3 CASH FLOW ANALYSIS

A cash flow analysis is also undertaken to account for the timing of projects and receipt of development charges. Interest earnings or borrowing costs are accounted for in the calculation as allowed under the DCA. Based on the development forecast, the analysis calculates the development charges rate that is required to finance the net development-related capital spending plan including provisions for any borrowing costs or interest earnings on the reserve funds. The cash flow analysis is designed so that the closing cash balance at the end of the planning period is as close to nil as possible.

In the cash flow analysis, an inflation rate of 2.0 per cent is used for the funding requirements and interest rates of 5.5 per cent (negative balance) and 3.5 per cent (positive balance) are used for borrowing/earnings on the funds.

Table 3 displays the results of the cash flow analysis and provides the adjusted or final per capita residential and per square foot (of GFA) non-residential development charges.

APPENDIX C.1

ROADS AND RELATED

APPENDIX C.1

ROADS AND RELATED

This appendix provides the analysis undertaken to establish the development charges rates for Roads and Related services. The service includes all new construction and reconstruction works including bridges and culverts, streetlights, intersection improvements, and traffic signalization, as well as active transportation projects such as sidewalks and cycling infrastructure. The capital planning and management of all roads infrastructure in the City is carried out by the Integrated Planning & Public Works department.

TABLE 1 2010-2019 HISTORICAL SERVICE LEVELS

The *DCA* and *Ontario Regulation 82/98* require that development charges be set at a level no higher than the average service level provided in the City over the 10-year period immediately preceding the preparation of the background study, on a service by service basis. For the purpose of this study, the historical inventory period has been defined as 2010 to 2019. *O. Reg. 82/98* requires that when defining and determining historical service levels both the quantity and quality of service be taken into consideration.

The method for establishing the historical service level for the Roads and Related service expresses the service level as a \$ per capita and employment based on a valuation of the inventory of capital assets used to provide the service. The quantum and value of the inventory is based on the City's historical records and experience with costs to acquire or construct similar infrastructure.

Table 1 demonstrates that the City's current road infrastructure comprises 263 lane km of roads with a current replacement value estimated at \$204.86 million. The City's 29 culverts add another \$17.69 million to the value of the inventory, and its retaining walls add \$8.68 million. Finally, the City's sidewalks, bike lanes and multi-use trails are valued at \$92.05 million.

The 2019 full replacement value of the inventory of capital assets for the Roads and Related service is \$323.27 million. The ten year historic average service level is calculated at \$1,659.33 per capita and employment.

The maximum allowable funding envelope is defined as the 10-year historical service level (\$1,659.33 per capita and employment) multiplied by the forecast increase in net population and employment over the planning period (45,076). The resulting maximum allowable funding envelope is calculated at \$74.80 million.

TABLE 2 2020 – 2041 DEVELOPMENT-RELATED CAPITAL PROGRAM

The basis of the development-related capital program for Roads and Related infrastructure is the City’s 2020 10-year capital forecast, the most recent Transportation Master Plan, and discussions with City staff. The projects identified in the capital program are required to service the demands of new development that is anticipated to occur to 2041, subject to annual capital budget reviews.

The Roads and Related development-related capital program includes a variety of planned road construction and reconstruction projects (\$63.45 million), as well as various active transportation projects (\$10.57 million). It also includes principal payments on outstanding debentures for recently completed development-related projects (\$4.15 million), as well as the recovery of the currently negative Roads and Related DC reserve fund balance (\$1.66 million). The total cost of the Roads and Related development-related capital program is about \$79.83 million.

Approximately \$20.96 million of the total cost is anticipated to be funded through grants, subsidies and/or other recoveries. Of the remaining \$58.86 million net (i.e. City) cost, \$21.39 million (36 per cent) has been identified as a non-development share based on the demands of new development on the particular project and need to improve the road network to accommodate the development-related impacts. The benefit to existing allocations are similar to those used in the City’s 2017 Development Charges Background Study, and have been reviewed with City staff. The remaining \$37.47 million is related to development in the City and is eligible for development charge recovery.

TABLE 3 CALCULATION OF UNADJUSTED DEVELOPMENT CHARGE

The first step in the determination of the development charge rate is the allocation of the development charge eligible capital cost of \$37.47 million between the residential and the non-residential sectors. For Roads and Related the development-related costs have been allocated 71 per cent residential (\$26.61 million) and 29 per cent non-residential (\$10.87 million). This ratio is based on forecast changes in population in new housing units and employment over the planning period.

The residential and non-residential costs are divided by the anticipated 2020 to 2041 growth in population in new units and square feet of non-residential GFA respectively. This yields an unadjusted development charge of \$600.42 per capita and \$1.41 per square foot.

TABLE 4 CASH FLOW ANALYSIS & CALCULATION OF ADJUSTED DEVELOPMENT CHARGE

The cash flow analysis result in Roads and Related development charges of \$791 per capita for new residential development and of \$1.89 per square foot for new non-residential development.

The following table summarizes the calculation of the Road and Related development charge:

ROADS AND RELATED SERVICES SUMMARY						
10-year Hist. Service Level per pop & emp	2020 - 2041 Development-Related Capital Program		Unadjusted Development Charge		Adjusted Development Charge	
	Total	Net DC Recoverable	\$/capita	\$/sq.ft	\$/capita	\$/sq.ft
\$1,659.33	\$79,828,824	\$37,472,198	\$600.42	\$1.41	\$791	\$1.89

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APPENDIX C.1
TABLE 1

CITY OF WATERLOO
ROADS & RELATED
INVENTORY OF CAPITAL ASSETS

ROADS Type of Road	# of Road Lane Kilometres										UNIT COST (\$/km)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Arterial Roads Lane-KM	61	60	60	58	58	56	53	56	56	56	\$ 700,000
Collector Roads Lane KM	160	161	161	164	164	176	178	178	178	178	\$ 830,000
Rural Roads Lane-KM	49	47	47	45	43	34	34	34	29	29	\$ 620,000
Total (km)	269	269	269	266	265	267	265	268	263	263	
Total (\$000)	205,363	205,151	205,151	204,124	202,946	206,686	205,650	208,082	204,858	204,858	

BRIDGES & CULVERTS Description	# of Bridges & Culverts										UNIT COST (\$/unit)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Culverts	35	35	35	35	35	35	35	29	29	29	\$610,000
Total (#)	35	35	35	35	35	35	35	29	29	29	
Total (\$000)	\$21,350.0	\$21,350.0	\$21,350.0	\$21,350.0	\$21,350.0	\$21,350.0	\$21,350.0	\$17,690.0	\$17,690.0	\$17,690.0	

RETAINING WALLS IN RIGHT OF WAY Description	# of Retaining Walls										UNIT COST (\$/unit)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Retaining Walls	273	273	273	273	273	273	273	273	273	273	\$31,800
Total (#)	273	273	273	273	273	273	273	273	273	273	
Total (\$000)	\$8,681.4	\$8,681.4	\$8,681.4	\$8,681.4	\$8,681.4	\$8,681.4	\$8,681.4	\$8,681.4	\$8,681.4	\$8,681.4	

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APPENDIX C.1
TABLE 1

CITY OF WATERLOO
ROADS & RELATED
INVENTORY OF CAPITAL ASSETS

SIDEWALKS & BIKE LANES Description	# of Kilometres										UNIT COST (\$/km)
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
City Bike Lanes	51	51	51	60	60	62	71	75	78	79	\$136,000
Sidewalks (Total KM)											
On Rural	1	1	1	1	1	1	1	2	1	1	\$131,000
On Collector Residential	125	125	125	125	125	125	125	125	125	126	\$131,000
On Collector Commercial	10	10	10	10	10	10	10	11	11	11	\$131,000
On Local Residential	262	262	262	262	262	262	262	270	278	278	\$131,000
On Local Commercial	9	9	9	9	9	9	9	13	14	17	\$131,000
On Arterial	29	29	29	29	29	29	29	29	29	29	\$131,000
On Regional Roads	80	80	80	80	80	80	80	85	81	81	\$131,000
Multi-Use Trails (Total KM)											
On City Roads	12	12	12	12	12	12	12	17	17	19	\$311,000
On Private Roads	1	1	1	1	1	1	1	1	1	1	\$311,000
On Regional Roads	8	8	8	8	8	8	8	12	13	13	\$311,000
Total (#)	588	588	588	597	597	599	608	641	650	655	
Total (\$000)	\$81,063.0	\$81,063.0	\$81,063.0	\$82,287.0	\$82,287.0	\$82,559.0	\$83,783.0	\$89,858.4	\$91,108.4	\$92,045.7	

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APPENDIX C.1
TABLE 1

CITY OF WATERLOO
CALCULATION OF SERVICE LEVELS
INVENTORY OF CAPITAL ASSETS

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Historical Population	118,438	119,671	121,130	122,607	124,102	125,614	127,145	128,824	131,221	133,482
Historical Employment	<u>63,998</u>	<u>64,282</u>	<u>65,092</u>	<u>65,912</u>	<u>66,742</u>	<u>67,583</u>	<u>68,433</u>	<u>69,156</u>	<u>69,887</u>	<u>70,625</u>
Total Historical Population & Employment	182,436	183,953	186,222	188,519	190,844	193,197	195,578	197,980	201,108	204,107

INVENTORY SUMMARY (\$000)

Roads	\$205,363.0	\$205,151.0	\$205,151.0	\$204,124.0	\$202,946.0	\$206,686.0	\$205,650.0	\$208,082.0	\$204,858.0	\$204,858.0
Bridges & Culverts	\$21,350.0	\$21,350.0	\$21,350.0	\$21,350.0	\$21,350.0	\$21,350.0	\$21,350.0	\$17,690.0	\$17,690.0	\$17,690.0
Retaining Walls In Right Of Way	\$8,681.4	\$8,681.4	\$8,681.4	\$8,681.4	\$8,681.4	\$8,681.4	\$8,681.4	\$8,681.4	\$8,681.4	\$8,681.4
Sidewalks & Bike Lanes	\$81,063.0	\$81,063.0	\$81,063.0	\$82,287.0	\$82,287.0	\$82,559.0	\$83,783.0	\$89,858.4	\$91,108.4	\$92,045.7
Total (\$000)	\$316,457.4	\$316,245.4	\$316,245.4	\$316,442.4	\$315,264.4	\$319,276.4	\$319,464.4	\$324,311.8	\$322,337.8	\$323,275.1

SERVICE LEVEL (\$/pop & emp)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Average Service Level
Roads	\$1,125.67	\$1,115.23	\$1,101.65	\$1,082.78	\$1,063.41	\$1,069.82	\$1,051.50	\$1,051.03	\$1,018.65	\$1,003.68	\$1,068.34
Bridges & Culverts	\$117.03	\$116.06	\$114.65	\$113.25	\$111.87	\$110.51	\$109.16	\$89.35	\$87.96	\$86.67	\$105.65
Retaining Walls In Right Of Way	\$47.59	\$47.19	\$46.62	\$46.05	\$45.49	\$44.94	\$44.39	\$43.85	\$43.17	\$42.53	\$45.18
Sidewalks & Bike Lanes	\$444.34	\$440.67	\$435.30	\$436.49	\$431.17	\$427.33	\$428.39	\$453.88	\$453.03	\$450.97	\$440.16
Total (\$/pop & emp)	\$1,734.62	\$1,719.16	\$1,698.22	\$1,678.57	\$1,651.95	\$1,652.60	\$1,633.43	\$1,638.10	\$1,602.81	\$1,583.85	\$1,659.33

CITY OF WATERLOO
CALCULATION OF MAXIMUM ALLOWABLE
ROADS & RELATED

10-Year Funding Envelope Calculation

10 Year Average Service Level 2010 - 2019	\$1,659.33
Net Population & Employment Growth 2020 - 2041	45,076
Maximum Allowable Funding Envelope	\$74,795,694

CITY OF WATERLOO
DEVELOPMENT-RELATED CAPITAL PROGRAM
ROADS AND RELATED

DC Project Number	Roads and Related Projects	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs		Total Development Related Costs	Development Related Costs			
						Benefit to Existing Cost	0% Reduction		DC Reserve Commitments	2020-2041	Post 2041	
1.0 ROADS AND RELATED												
1.1 New Construction and Reconstruction Projects												
123	1.1.1 West Side Employment Lands Servicing	2020 - 2020	\$ 15,857,464	\$ 12,514,177	\$ 3,343,287	\$ -	\$ -	\$ 3,343,287	\$ -	\$ 3,343,287	\$ -	
123	1.1.2 West Side Employment Lands Servicing	2025 - 2025	\$ 2,445,839	\$ 1,698,855	\$ 746,984	\$ -	\$ -	\$ 746,984	\$ -	\$ 746,984	\$ -	
570	1.1.3 Northdale Community Master Plan Implementation	2020 - 2022	\$ 927,000	\$ -	\$ 927,000	\$ 463,500	\$ -	\$ 463,500	\$ -	\$ 463,500	\$ -	
591	1.1.4 Bisch Street - Erbsville Road to City Limit - Reconstruction	2028 - 2029	\$ 622,002	\$ 279,275	\$ 342,727	\$ 97,165	\$ -	\$ 245,562	\$ -	\$ 245,562	\$ -	
592	1.1.5 Country Squire Rd. - Glasgow St (township) to 500m East	2026 - 2026	\$ 895,013	\$ 589,625	\$ 305,388	\$ 294,812	\$ -	\$ 10,576	\$ -	\$ 10,576	\$ -	
590	1.1.6 Beaver Creek Road & Conservation Drive Reconstruction	2020 - 2021	\$ 12,293,061	\$ 3,476,544	\$ 8,816,517	\$ 187,780	\$ -	\$ 8,628,737	\$ -	\$ 8,628,737	\$ -	
593	1.1.7 Ira Needles Boulevard - By-pass	2020 - 2020	\$ 4,145,395	\$ 2,072,698	\$ 2,072,698	\$ -	\$ -	\$ 2,072,698	\$ -	\$ 2,072,698	\$ -	
631	1.1.8 Station Area Planning Implementation	2020 - 2022	\$ 1,780,160	\$ -	\$ 1,780,160	\$ 607,160	\$ -	\$ 1,173,000	\$ -	\$ 1,173,000	\$ -	
663	1.1.9 Columbia St - King St to Marsland Dr	2025 - 2028	\$ 3,875,718	\$ -	\$ 3,875,718	\$ 1,937,859	\$ -	\$ 1,937,859	\$ -	\$ 1,937,859	\$ -	
664	1.1.10 Left Turn Lane Regina St @ Bridgeport Road	2024 - 2024	\$ 100,000	\$ -	\$ 100,000	\$ -	\$ -	\$ 100,000	\$ -	\$ 100,000	\$ -	
665	1.1.11 Albert Street - Columbia St to University Ave - Reconstruction	2026 - 2027	\$ 2,375,977	\$ -	\$ 2,375,977	\$ 1,582,634	\$ -	\$ 793,344	\$ -	\$ 793,344	\$ -	
667	1.1.12 Batavia Place - Columbia St to Cul-de-Sac	2026 - 2027	\$ 467,136	\$ -	\$ 467,136	\$ 242,920	\$ -	\$ 224,216	\$ -	\$ 224,216	\$ -	
672	1.1.13 Hazel Street - University Ave to Columbia St & Beech St	2028 - 2029	\$ 2,194,443	\$ -	\$ 2,194,443	\$ 1,377,825	\$ -	\$ 816,617	\$ -	\$ 816,617	\$ -	
673	1.1.14 Hickory St W - Albert to Hazel St - Reconstruction	2024 - 2025	\$ 876,714	\$ -	\$ 876,714	\$ 440,825	\$ -	\$ 435,889	\$ -	\$ 435,889	\$ -	
674	1.1.15 Hickory St E - Hazel St to Spruce St - Reconstruction	2023 - 2024	\$ 671,822	\$ -	\$ 671,822	\$ 293,427	\$ -	\$ 378,395	\$ -	\$ 378,395	\$ -	
675	1.1.16 Hickory Street East - Lester to Albert -Reconstruction	2028 - 2029	\$ 662,464	\$ -	\$ 662,464	\$ 384,347	\$ -	\$ 278,118	\$ -	\$ 278,118	\$ -	
676	1.1.17 King St. - Central St to University Ave	2020 - 2020	\$ 1,082,268	\$ -	\$ 1,082,268	\$ 340,705	\$ -	\$ 741,563	\$ -	\$ 741,563	\$ -	
677	1.1.18 Larch Street - Balsam to Hickory	2020 - 2020	\$ 855,572	\$ -	\$ 855,572	\$ 702,534	\$ -	\$ 153,038	\$ -	\$ 153,038	\$ -	
685	1.1.19 Sunview Street - University Ave to Hickory St - Reconstruction	2028 - 2029	\$ 1,281,564	\$ -	\$ 1,281,564	\$ 684,515	\$ -	\$ 597,050	\$ -	\$ 597,050	\$ -	
687	1.1.20 Union St - King St to Moore Ave	2020 - 2021	\$ 2,768,572	\$ -	\$ 2,768,572	\$ 1,484,878	\$ -	\$ 1,283,694	\$ -	\$ 1,283,694	\$ -	
690	1.1.21 Weber St - Blythwood to Northfield Drive	2021 - 2021	\$ 81,251	\$ -	\$ 81,251	\$ 1,751	\$ -	\$ 79,500	\$ -	\$ 79,500	\$ -	
692	1.1.22 Westmount Rd - Northfield Dr to Benjamin Rd	2024 - 2025	\$ 4,282,985	\$ -	\$ 4,282,985	\$ 3,925,235	\$ -	\$ 357,750	\$ -	\$ 357,750	\$ -	
695	1.1.23 Core Area Development Driven Upgrades-Roads	2020 - 2022	\$ 113,050	\$ -	\$ 113,050	\$ 11,412	\$ -	\$ 101,638	\$ -	\$ 101,638	\$ -	
695	1.1.24 Core Area Development Driven Upgrades-Roads	2023 - 2029	\$ 83,215	\$ -	\$ 83,215	\$ 8,323	\$ -	\$ 74,892	\$ -	\$ 74,892	\$ -	
698	1.1.25 Road Widening & Intersection Improvements - City Wide	2020 - 2029	\$ 200,000	\$ -	\$ 200,000	\$ -	\$ -	\$ 200,000	\$ -	\$ 200,000	\$ -	
713	1.1.26 Refuge Islands - City Wide -TMP	2020 - 2029	\$ 490,741	\$ -	\$ 490,741	\$ 392,593	\$ -	\$ 98,148	\$ -	\$ 98,148	\$ -	
718	1.1.27 Traffic Calming Implementation - City Wide	2020 - 2029	\$ 1,236,111	\$ -	\$ 1,236,111	\$ 988,889	\$ -	\$ 247,222	\$ -	\$ 247,222	\$ -	
722	1.1.28 Caroline St Decorative Street Lighting	2020 - 2020	\$ 786,255	\$ 332,787	\$ 453,468	\$ 340,101	\$ -	\$ 113,367	\$ -	\$ 113,367	\$ -	
Subtotal New Construction and Reconstruction Projects			\$ 63,451,791	\$ 20,963,960	\$ 42,487,831	\$ 16,791,190	\$ -	\$ 25,696,641	\$ -	\$ 25,696,641	\$ -	

CITY OF WATERLOO
DEVELOPMENT-RELATED CAPITAL PROGRAM
ROADS AND RELATED

DC Project Number	Roads and Related Projects	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs ¹		Total Development Related Costs	Development Related Costs		
						Benefit to Existing Cost	0% Reduction		DC Reserve Commitments	2020-2041	Post 2041
1.2 Active Transportation Projects											
706	1.2.1 Bicycle Parking	2020 - 2029	\$ 299,805	\$ -	\$ 299,805	\$ 240,000	\$ -	\$ 59,805	\$ -	\$ 59,805	\$ -
707	1.2.2 Installation of Trail Counters	2020 - 2029	\$ 50,000	\$ -	\$ 50,000	\$ 40,000	\$ -	\$ 10,000	\$ -	\$ 10,000	\$ -
710	1.2.3 Municipal Trail - Former Waterloo Inn Lands	2020 - 2020	\$ 1,534,748	\$ -	\$ 1,534,748	\$ -	\$ -	\$ 1,534,748	\$ -	\$ 1,534,748	\$ -
711	1.2.4 Northfield Dr Multi-use Trail - Bridge St to University Ave	2022 - 2022	\$ 268,932	\$ -	\$ 268,932	\$ -	\$ -	\$ 268,932	\$ -	\$ 268,932	\$ -
712	1.2.5 Pedestrian Crossing Facilities - Level 2	2020 - 2027	\$ 137,407	\$ -	\$ 137,407	\$ 109,925	\$ -	\$ 27,482	\$ -	\$ 27,482	\$ -
715	1.2.6 Sidewalks and Trails associated with LRT	2023 - 2029	\$ 1,330,811	\$ -	\$ 1,330,811	\$ 1,055,996	\$ -	\$ 274,815	\$ -	\$ 274,815	\$ -
716	1.2.7 Sidewalks - New Construction - City Wide	2020 - 2029	\$ 2,944,444	\$ -	\$ 2,944,444	\$ 2,355,555	\$ -	\$ 588,889	\$ -	\$ 588,889	\$ -
719	1.2.8 Trails and Bikeways Master Plan Implementation - City Wide	2020 - 2029	\$ 4,000,000	\$ -	\$ 4,000,000	\$ 800,000	\$ -	\$ 3,200,000	\$ -	\$ 3,200,000	\$ -
Subtotal Active Transportation Projects			\$ 10,566,146	\$ -	\$ 10,566,146	\$ 4,601,476	\$ -	\$ 5,964,670	\$ -	\$ 5,964,670	\$ -
1.3 Road Debentures (Principal Payments)											
1.3.1	Beaver Creek Road & Conservation Drive Reconstruction	2020 - 2020	\$ 2,615,000	\$ -	\$ 2,615,000	\$ -	\$ -	\$ 2,615,000	\$ -	\$ 2,615,000	\$ -
1.3.2	Columbia Street Extension to Wilmot Line	2020 - 2023	\$ 306,659	\$ -	\$ 306,659	\$ -	\$ -	\$ 306,659	\$ -	\$ 306,659	\$ -
1.3.3	Woolwich St - Kiwanis Park Dr. to Univeristy	2020 - 2023	\$ 1,225,763	\$ -	\$ 1,225,763	\$ -	\$ -	\$ 1,225,763	\$ -	\$ 1,225,763	\$ -
Subtotal Road Debentures			\$ 4,147,422	\$ -	\$ 4,147,422	\$ -	\$ -	\$ 4,147,422	\$ -	\$ 4,147,422	\$ -
1.4 Recovery of Negative Reserve Fund Balance											
1.4.1	Balance as at September 30, 2019	2020 - 2020	\$ 1,663,465	\$ -	\$ 1,663,465	\$ -	\$ -	\$ 1,663,465	\$ -	\$ 1,663,465	\$ -
Subtotal Recovery of Negative Reserve Fund Balance			\$ 1,663,465	\$ -	\$ 1,663,465	\$ -	\$ -	\$ 1,663,465	\$ -	\$ 1,663,465	\$ -
TOTAL ROADS AND RELATED			\$ 79,828,824	\$ 20,963,960	\$ 58,864,864	\$ 21,392,666	\$ -	\$ 37,472,198	\$ -	\$ 37,472,198	\$ -

Residential Development Charge Calculation			
Residential Share of 2020 - 2041 DC Eligible Costs	71.0%	\$26,605,261	
2020-2041 Growth in Population in New Units		44,311	
Unadjusted Development Charge Per Capita		\$600.42	
Non-Residential Development Charge Calculation			
Non-Residential Share of 2020 - 2041 DC Eligible Costs	29.0%	\$10,866,937	
2020-2041 Growth in Square Feet		7,717,500	
Unadjusted Development Charge Per Square Foot		\$1.41	

Reserve Fund Balance	
Balance as at September 30, 2019	(\$1,663,465)
2019 Capital Budget Draws	\$0
Total Uncommitted Reserve Funds	(\$1,663,465)

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APPENDIX C.1
TABLE 3

**CITY OF WATERLOO
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
ROADS AND RELATED SERVICES - CITY WIDE
2020 - 2041**

2020-2041 Growth in Population in New Units	44,311
2020-2041 Growth in Non-Residential Floorspace in Square Feet	7,717,500

	Development-Related Capital Program (in \$000s)						Residential Share		Non-Residential Share	
	Total Gross Cost	Grants/ Subsidies/ Other Contributions	Benefit to Existing Share	DC Reserve Commitments	Post 2041	Total Cost Eligible For DC Recovery	%	\$	%	\$
ROADS AND RELATED										
New Construction and Reconstruction Projects	\$63,451.79	\$20,963.96	\$16,791.19	\$0.00	\$0.00	\$25,696.64	71.0%	\$18,244.62	29.0%	\$7,452.03
Active Transportation Projects	\$10,566.15	\$0.00	\$4,601.48	\$0.00	\$0.00	\$5,964.67	71.0%	\$4,234.92	29.0%	\$1,729.75
Road Debentures (Principal Payments)	\$4,147.42	\$0.00	\$0.00	\$0.00	\$0.00	\$4,147.42	71.0%	\$2,944.67	29.0%	\$1,202.75
Recovery of Negative Reserve Fund Balance	\$1,663.46	\$0.00	\$0.00	\$0.00	\$0.00	\$1,663.46	71.0%	\$1,181.06	29.0%	\$482.40
TOTAL ROADS AND RELATED	\$79,828.82	\$20,963.96	\$21,392.67	\$0.00	\$0.00	\$37,472.20		\$26,605.26		\$10,866.94
Residential Unadjusted Development Charge Per Capita								\$600.42		
Non-Residential Unadjusted Development Charge Per Square Foot										\$1.41

**CITY OF WATERLOO
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
ROADS AND RELATED
RESIDENTIAL DEVELOPMENT CHARGE - CITY-WIDE
(in \$000)**

ROADS AND RELATED SERVICES	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
OPENING CASH BALANCE	\$0.0	(\$12,035.2)	(\$15,911.1)	(\$16,392.8)	(\$16,409.3)	(\$16,503.4)	(\$17,338.1)	(\$17,709.3)	(\$17,901.5)	(\$18,475.1)	(\$18,653.7)	(\$17,540.6)
2020 - 2041 RESIDENTIAL FUNDING REQUIREMENTS												
- Roads and Related (New Projects): Non Inflated	\$11,077.14	\$4,301.8	\$917.4	\$484.9	\$837.7	\$1,506.7	\$1,063.3	\$1,055.8	\$1,379.9	\$1,035.9	\$0.0	\$0.0
- Debenture Principal Payment	\$2,128.7	\$272.0	\$272.0	\$272.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
- Roads And Related Services: Inflated	\$13,205.8	\$4,659.9	\$1,226.5	\$786.6	\$906.7	\$1,663.5	\$1,197.5	\$1,212.8	\$1,616.8	\$1,238.0	\$0.0	\$0.0
NEW RESIDENTIAL DEVELOPMENT												
- Population Growth in New Units	1,938	1,938	1,987	1,987	1,987	1,987	1,987	2,180	2,180	2,180	2,180	2,180
REVENUE												
- DC Receipts: Inflated	\$1,532.6	\$1,563.2	\$1,635.1	\$1,667.8	\$1,701.2	\$1,735.2	\$1,769.9	\$1,981.1	\$2,020.7	\$2,061.1	\$2,102.3	\$2,144.4
INTEREST												
- Interest on Opening Balance	\$0.0	(\$661.9)	(\$875.1)	(\$901.6)	(\$902.5)	(\$907.7)	(\$953.6)	(\$974.0)	(\$984.6)	(\$1,016.1)	(\$1,026.0)	(\$964.7)
- Interest on In-year Transactions	(\$321.0)	(\$85.2)	\$7.2	\$15.4	\$13.9	\$1.3	\$10.0	\$13.4	\$7.1	\$14.4	\$36.8	\$37.5
- Interest Payments on Debentures	(\$41.0)	(\$32.1)	(\$22.3)	(\$11.5)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
TOTAL REVENUE	\$1,170.6	\$784.0	\$744.9	\$770.1	\$812.6	\$828.8	\$826.3	\$1,020.5	\$1,043.2	\$1,059.4	\$1,113.1	\$1,217.2
CLOSING CASH BALANCE	(\$12,035.2)	(\$15,911.1)	(\$16,392.8)	(\$16,409.3)	(\$16,503.4)	(\$17,338.1)	(\$17,709.3)	(\$17,901.5)	(\$18,475.1)	(\$18,653.7)	(\$17,540.6)	(\$16,323.4)

ROADS AND RELATED SERVICES	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	TOTAL
OPENING CASH BALANCE	(\$16,323.4)	(\$15,234.1)	(\$14,045.1)	(\$12,750.3)	(\$11,342.9)	(\$9,815.8)	(\$8,131.9)	(\$6,310.8)	(\$4,344.2)	(\$2,223.2)	
2020 - 2041 RESIDENTIAL FUNDING REQUIREMENTS											
- Roads and Related (New Projects): Non Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$23,660.6
- Debenture Principal Payment	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$2,944.7
- Roads And Related Services: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$27,714.0
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,947	1,947	1,947	1,947	1,947	1,973	1,973	1,973	1,973	1,973	44,311
REVENUE											
- DC Receipts: Inflated	\$1,952.9	\$1,992.0	\$2,031.8	\$2,072.4	\$2,113.9	\$2,185.6	\$2,229.3	\$2,273.9	\$2,319.3	\$2,365.7	\$43,451.4
INTEREST											
- Interest on Opening Balance	(\$897.8)	(\$837.9)	(\$772.5)	(\$701.3)	(\$623.9)	(\$539.9)	(\$447.3)	(\$347.1)	(\$238.9)	(\$122.3)	(\$15,696.6)
- Interest on In-year Transactions	\$34.2	\$34.9	\$35.6	\$36.3	\$37.0	\$38.2	\$39.0	\$39.8	\$40.6	\$41.4	\$127.7
- Interest Payments on Debentures	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	(\$107.0)
TOTAL REVENUE	\$1,089.3	\$1,189.0	\$1,294.9	\$1,407.4	\$1,527.0	\$1,684.0	\$1,821.1	\$1,966.6	\$2,121.0	\$2,284.8	\$27,775.6
CLOSING CASH BALANCE	(\$15,234.1)	(\$14,045.1)	(\$12,750.3)	(\$11,342.9)	(\$9,815.8)	(\$8,131.9)	(\$6,310.8)	(\$4,344.2)	(\$2,223.2)	\$61.6	

2020 Adjusted Charge Per Capita

\$791

Allocation of Capital Program

Residential Sector	71.0%
Non-Residential Sector	29.0%

Rates for 2020

Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX C.1
TABLE 4CITY OF WATERLOO
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
ROADS AND RELATED
NON-RESIDENTIAL DEVELOPMENT CHARGE - CITY-WIDE
(in \$000)

ROADS AND RELATED SERVICES	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
OPENING CASH BALANCE	\$0.0	(\$4,956.8)	(\$6,575.9)	(\$6,819.5)	(\$6,868.1)	(\$6,942.5)	(\$7,313.9)	(\$7,490.6)	(\$7,661.7)	(\$7,986.5)	(\$8,148.8)	(\$7,780.8)
2020 - 2041 NON-RESIDENTIAL FUNDING REQUIREMENTS												
- Roads And Related Services: Non Inflated	\$4,524.46	\$1,757.09	\$374.72	\$198.07	\$342.15	\$615.40	\$434.31	\$431.24	\$563.62	\$423.12	\$0.00	\$0.00
- Debenture Principal Payment	\$869.5	\$111.1	\$111.1	\$111.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
- Roads And Related Services: Inflated	\$5,393.9	\$1,903.3	\$501.0	\$321.3	\$370.4	\$679.5	\$489.1	\$495.4	\$660.4	\$505.7	\$0.0	\$0.0
NON-RESIDENTIAL SPACE GROWTH												
- Non-Residential Growth in Square Feet	313,320	316,680	320,040	323,400	326,760	330,540	333,900	337,260	341,040	344,400	348,180	351,960
REVENUE												
- DC Receipts: Inflated	\$592.2	\$610.5	\$629.3	\$648.6	\$668.5	\$689.7	\$710.7	\$732.2	\$755.2	\$777.9	\$802.2	\$827.1
INTEREST												
- Interest on Opening Balance	\$0.0	(\$272.6)	(\$361.7)	(\$375.1)	(\$377.7)	(\$381.8)	(\$402.3)	(\$412.0)	(\$421.4)	(\$439.3)	(\$448.2)	(\$427.9)
- Interest on In-year Transactions	(\$132.0)	(\$35.6)	\$2.2	\$5.7	\$5.2	\$0.2	\$3.9	\$4.1	\$1.7	\$4.8	\$14.0	\$14.5
- Interest Payments on Debentures	(\$23.1)	(\$18.1)	(\$12.5)	(\$6.5)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
TOTAL REVENUE	\$437.1	\$284.2	\$257.3	\$272.8	\$296.0	\$308.0	\$312.3	\$324.4	\$335.5	\$343.4	\$368.1	\$413.6
CLOSING CASH BALANCE	(\$4,956.8)	(\$6,575.9)	(\$6,819.5)	(\$6,868.1)	(\$6,942.5)	(\$7,313.9)	(\$7,490.6)	(\$7,661.7)	(\$7,986.5)	(\$8,148.8)	(\$7,780.8)	(\$7,367.1)

ROADS AND RELATED SERVICES	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	TOTAL
OPENING CASH BALANCE	(\$7,367.1)	(\$6,904.7)	(\$6,390.1)	(\$5,819.7)	(\$5,189.7)	(\$4,496.1)	(\$3,734.5)	(\$2,899.5)	(\$1,987.0)	(\$990.9)	
2020 - 2041 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Roads And Related Services: Non Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$9,664.2
- Debenture Principal Payment	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$1,202.8
- Roads And Related Services: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$11,319.8
NON-RE h m m m m											
- Non-Residential Growth in Square Feet	355,740	359,520	363,300	367,080	370,860	374,640	378,840	382,620	386,820	390,600	7,717,500
REVENUE											
- DC Receipts: Inflated	\$852.7	\$879.0	\$906.0	\$933.7	\$962.2	\$991.5	\$1,022.6	\$1,053.5	\$1,086.4	\$1,118.9	\$18,250.6
INTEREST											
- Interest on Opening Balance	(\$405.2)	(\$379.8)	(\$351.5)	(\$320.1)	(\$285.4)	(\$247.3)	(\$205.4)	(\$159.5)	(\$109.3)	(\$54.5)	(\$6,837.8)
- Interest on In-year Transactions	\$14.9	\$15.4	\$15.9	\$16.3	\$16.8	\$17.4	\$17.9	\$18.4	\$19.0	\$19.6	\$60.3
- Interest Payments on Debentures	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	(\$60.2)
TOTAL REVENUE	\$462.4	\$514.6	\$570.4	\$630.0	\$693.6	\$761.6	\$835.1	\$912.5	\$996.1	\$1,084.0	\$11,412.9
CLOSING CASH BALANCE	(\$6,904.7)	(\$6,390.1)	(\$5,819.7)	(\$5,189.7)	(\$4,496.1)	(\$3,734.5)	(\$2,899.5)	(\$1,987.0)	(\$990.9)	\$93.1	

2020 Adjusted Charge Per Square Foot

\$1.89

Allocation of Capital Program

Residential Sector	71.0%
Non-Residential Sector	29.0%

Rates for 2020

Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX C.2

WATER SUPPLY AND WASTEWATER

APPENDIX C.2

WATER SUPPLY AND WASTEWATER

This appendix provides the analysis undertaken to establish the development charge rates for the Water Supply and Wastewater service in the City. The capital planning and management of all water and wastewater infrastructure in the City is carried out by the Integrated Planning & Public Works department.

TABLE 1 2020 – 2041 DEVELOPMENT-RELATED CAPITAL PROGRAM

The basis of the development-related capital program for Water Supply and Wastewater infrastructure is the City's 2020 10-year capital program, the Water Distribution Master Plan and Sanitary Master Plan, and discussions with City staff. All of the identified projects are required to service the demands of new development anticipated to occur between 2020 and 2041, subject to annual capital budget reviews.

The capital program includes \$17.36 million in future Water projects and \$43.20 million in future Wastewater projects. In addition to the future capital expenditures, the development-related capital program includes \$3.66 million in remaining principal payments on outstanding debentures for past development-related projects which will benefit future development to 2041.

The total cost of the Water Supply and Wastewater development-related capital program is \$64.23 million. Approximately \$7.10 million of the total cost is anticipated to be funded through grants, subsidies and/or other recoveries. Of the remaining \$57.13 million net cost, \$18.46 million (32 per cent) has been identified as a non-development share. The remaining \$38.67 million is related to development in the City and is eligible for development charge recovery.

Of this \$38.67 million, \$4.91 million can be funded from existing development charge reserve funds. The development-related capital cost to be recovered through development charges is \$33.76 million.

TABLE 2 CALCULATION OF UNADJUSTED DEVELOPMENT CHARGE

The development-related costs of \$33.76 million have been allocated 71 per cent residential (\$23.97 million) and 29 per cent non-residential (\$9.79 million). This ratio

is based on forecast changes in population in new housing units and employment over the planning period.

The residential and non-residential costs are divided by the anticipated growth in population in new units and square feet of non-residential GFA respectively. This yields an unadjusted development charge of \$540.95 per capita and \$1.27 per square foot.

TABLE 3 CASH FLOW ANALYSIS & CALCULATION OF ADJUSTED DEVELOPMENT CHARGE

The cash flow analysis results in Water Supply and Wastewater development charges of \$717 per capita for new residential development and of \$1.71 per square foot for new non-residential development.

The following table summarizes the calculation of the Water Supply and Wastewater development charge:

WATER SUPPLY AND WASTEWATER SUMMARY					
2020 - 2041		Unadjusted		Adjusted	
Development-Related Capital Program		Development Charge		Development Charge	
Total	Net DC Recoverable	\$/capita	\$/sq.ft	\$/capita	\$/sq.ft
\$64,228,972	\$33,760,925	\$540.95	\$1.27	\$717	\$1.71

CITY OF WATERLOO
DEVELOPMENT-RELATED CAPITAL PROGRAM
WATER SUPPLY AND WASTEWATER

DC Project Number	Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs		Total Development Related Costs	Development Related Costs			
						Replacement & BTE Shares	0% Reduction		Available DC Reserves	2020-2041	Post 2041	
2.0 WATER SUPPLY AND WASTEWATER												
2.1 Outstanding Debenture (Principal Payments)												
	2.1.1	Beaver Creek Road & Conservation Drive Reconstruction	2020 - 2020	\$ 1,985,000	\$ -	\$ 1,985,000	\$ -	\$ -	\$ 1,985,000	\$ 1,985,000	\$ -	\$ -
	2.1.2	Beaver Creek Pumping Station Upgrades-Phase 3A	2020 - 2023	\$ 1,676,578	\$ -	\$ 1,676,578	\$ -	\$ -	\$ 1,676,578	\$ 1,676,578	\$ -	\$ -
	Subtotal Outstanding Debenture (Principal Payments)			\$ 3,661,578	\$ -	\$ 3,661,578	\$ -	\$ -	\$ 3,661,578	\$ 3,661,578	\$ -	\$ -
2.2 Water Projects												
555	2.2.1	City Wide Development Driven Upgrades - Water	2020 - 2022	\$ 585,813	\$ -	\$ 585,813	\$ 60,480	\$ -	\$ 525,333	\$ -	\$ 525,333	\$ -
555	2.2.2	City Wide Development Driven Upgrades - Water	2023 - 2029	\$ 516,994	\$ -	\$ 516,994	\$ 51,700	\$ -	\$ 465,294	\$ -	\$ 465,294	\$ -
556	2.2.3	Core Area Development Driven Upgrades - Water	2020 - 2022	\$ 2,082,289	\$ -	\$ 2,082,289	\$ 210,773	\$ -	\$ 1,871,516	\$ -	\$ 1,871,516	\$ -
556	2.2.4	Core Area Development Driven Upgrades - Water	2023 - 2029	\$ 2,926,778	\$ -	\$ 2,926,778	\$ 292,677	\$ -	\$ 2,634,101	\$ -	\$ 2,634,101	\$ -
559	2.2.5	Water Distribution System Study Implementation	2022 - 2022	\$ 1,000,000	\$ -	\$ 1,000,000	\$ 800,000	\$ -	\$ 200,000	\$ -	\$ 200,000	\$ -
612	2.2.6	Erbville Road - Ira Needles to Columbia St - Watermain	2022 - 2024	\$ 1,513,044	\$ -	\$ 1,513,044	\$ -	\$ -	\$ 1,513,044	\$ -	\$ 1,513,044	\$ -
590	2.2.7	Beaver Creek Road & Conservation Drive Reconstruction	2020 - 2021	\$ 1,735,359	\$ 490,769	\$ 1,244,590	\$ 26,508	\$ -	\$ 1,218,082	\$ 424,770	\$ 793,312	\$ -
593	2.2.8	Ira Needles Boulevard - By-pass	2020 - 2020	\$ 198,750	\$ 99,375	\$ 99,375	\$ -	\$ -	\$ 99,375	\$ 99,375	\$ -	\$ -
665	2.2.9	Albert Street - Columbia St to University Ave - Reconstruction	2027 - 2027	\$ 1,174,643	\$ -	\$ 1,174,643	\$ 1,084,392	\$ -	\$ 90,251	\$ -	\$ 90,251	\$ -
667	2.2.10	Batavia Place - Columbia St to Cul-de-Sac	2027 - 2027	\$ 258,217	\$ -	\$ 258,217	\$ 217,672	\$ -	\$ 40,545	\$ -	\$ 40,545	\$ -
672	2.2.11	Hazel Street - University Ave to Columbia St & Beech St	2029 - 2029	\$ 409,844	\$ -	\$ 409,844	\$ 376,193	\$ -	\$ 33,650	\$ -	\$ 33,650	\$ -
673	2.2.12	Hickory St W - Albert to Hazel St - Reconstruction	2025 - 2025	\$ 325,103	\$ -	\$ 325,103	\$ 287,265	\$ -	\$ 37,838	\$ -	\$ 37,838	\$ -
674	2.2.13	Hickory St E - Hazel St to Spruce St - Reconstruction	2024 - 2024	\$ 263,313	\$ -	\$ 263,313	\$ 240,260	\$ -	\$ 23,053	\$ -	\$ 23,053	\$ -
675	2.2.14	Hickory Street East - Lester to Albert -Reconstruction	2029 - 2029	\$ 223,371	\$ -	\$ 223,371	\$ 198,567	\$ -	\$ 24,804	\$ -	\$ 24,804	\$ -
676	2.2.15	King St - Central St to University Ave	2020 - 2020	\$ 1,187,690	\$ -	\$ 1,187,690	\$ 874,545	\$ -	\$ 313,146	\$ 313,146	\$ -	\$ -
677	2.2.16	Larch Street - Balsam to Hickory	2020 - 2020	\$ 265,529	\$ -	\$ 265,529	\$ 235,208	\$ -	\$ 30,321	\$ 30,321	\$ -	\$ -
685	2.2.17	Sunview Street - University Ave to Hickory St - Reconstruction	2029 - 2029	\$ 362,968	\$ -	\$ 362,968	\$ 315,846	\$ -	\$ 47,123	\$ -	\$ 47,123	\$ -
687	2.2.18	Union St - King St to Moore Ave	2020 - 2021	\$ 837,509	\$ -	\$ 837,509	\$ 633,314	\$ -	\$ 204,195	\$ -	\$ 204,195	\$ -
690	2.2.19	Weber St - Blythwood to Northfield Drive	2021 - 2021	\$ 1,276,735	\$ -	\$ 1,276,735	\$ 879,235	\$ -	\$ 397,500	\$ -	\$ 397,500	\$ -
694	2.2.20	Young Street East - King Street to Pepler	2020 - 2020	\$ 220,170	\$ -	\$ 220,170	\$ 201,951	\$ -	\$ 18,219	\$ 18,219	\$ -	\$ -
	Subtotal Water Projects			\$ 17,364,119	\$ 590,144	\$ 16,773,975	\$ 6,986,585	\$ -	\$ 9,787,389	\$ 885,830	\$ 8,901,559	\$ -
2.3 Wastewater Projects												
511	2.3.1	City Wide - Development Driven Sanitary Sewer Upgrades	2020 - 2022	\$ 1,128,693	\$ -	\$ 1,128,693	\$ 100,783	\$ -	\$ 1,027,910	\$ -	\$ 1,027,910	\$ -
511	2.3.2	City Wide - Development Driven Sanitary Sewer Upgrades	2023 - 2029	\$ 736,847	\$ -	\$ 736,847	\$ 73,682	\$ -	\$ 663,165	\$ -	\$ 663,165	\$ -
512	2.3.3	Core Area Development Driven Upgrades-Sanitary	2020 - 2022	\$ 931,305	\$ -	\$ 931,305	\$ 95,463	\$ -	\$ 835,842	\$ -	\$ 835,842	\$ -
512	2.3.4	Core Area Development Driven Upgrades-Sanitary	2023 - 2029	\$ 1,064,906	\$ -	\$ 1,064,906	\$ 106,491	\$ -	\$ 958,415	\$ -	\$ 958,415	\$ -
513	2.3.5	Extend Sanitary Mains to Service Private Properties	2021 - 2029	\$ 3,686,150	\$ -	\$ 3,686,150	\$ 2,948,920	\$ -	\$ 737,230	\$ -	\$ 737,230	\$ -
514	2.3.6	Frobisher Trunk Sewer - Upsizing	2024 - 2024	\$ 160,963	\$ -	\$ 160,963	\$ -	\$ -	\$ 160,963	\$ -	\$ 160,963	\$ -

CITY OF WATERLOO
DEVELOPMENT-RELATED CAPITAL PROGRAM
WATER SUPPLY AND WASTEWATER

DC Project Number	Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs		Total Development Related Costs	DC Eligible Costs			
						Replacement & BTE Shares	0% Reduction		Available DC Reserves	2020-2041	Post 2041	
2.0 WATER SUPPLY AND WASTEWATER (CONTINUED)												
2.3 Wastewater Projects (Continued)												
520	2.3.7 Sanitary Optimization and Rehabilitation Program	2021 - 2029	\$ 2,989,200	\$ -	\$ 2,989,200	\$ 1,494,600	\$ -	\$ 1,494,600	\$ -	\$ 1,494,600	\$ -	
521	2.3.8 Sanitary Sewer Master Plan - Implementation	2022 - 2022	\$ 1,500,000	\$ -	\$ 1,500,000	\$ 1,200,000	\$ -	\$ 300,000	\$ -	\$ 300,000	\$ -	
600	2.3.9 Northlands Sanitary Pumping Station Upgrade	2020 - 2021	\$ 2,239,250	\$ -	\$ 2,239,250	\$ -	\$ -	\$ 2,239,250	\$ -	\$ 2,239,250	\$ -	
590	2.3.10 Beaver Creek Road & Conservation Drive Reconstruction	2020 - 2021	\$ 22,608,708	\$ 6,393,865	\$ 16,214,843	\$ 345,355	\$ -	\$ 15,869,488	\$ -	\$ 15,869,488	\$ -	
593	2.3.11 Ira Needles Boulevard - By-pass	2020 - 2020	\$ 238,500	\$ 119,250	\$ 119,250	\$ -	\$ -	\$ 119,250	\$ 119,250	\$ -	\$ -	
667	2.3.12 Batavia Place - Columbia St to Cul-de-Sac	2027 - 2027	\$ 388,248	\$ -	\$ 388,248	\$ 365,790	\$ -	\$ 22,459	\$ -	\$ 22,459	\$ -	
672	2.3.13 Hazel Street - University Ave to Columbia St & Beech St	2029 - 2029	\$ 143,805	\$ -	\$ 143,805	\$ 99,204	\$ -	\$ 44,601	\$ -	\$ 44,601	\$ -	
673	2.3.14 Hickory St W - Albert to Hazel St - Reconstruction	2025 - 2025	\$ 531,598	\$ -	\$ 531,598	\$ 436,730	\$ -	\$ 94,868	\$ -	\$ 94,868	\$ -	
674	2.3.15 Hickory St E - Hazel St to Spruce St - Reconstruction	2024 - 2024	\$ 295,275	\$ -	\$ 295,275	\$ 287,201	\$ -	\$ 8,074	\$ -	\$ 8,074	\$ -	
675	2.3.16 Hickory Street East - Lester to Albert -Reconstruction	2029 - 2029	\$ 405,201	\$ -	\$ 405,201	\$ 354,843	\$ -	\$ 50,358	\$ -	\$ 50,358	\$ -	
676	2.3.17 King St. – Central St to University Ave	2020 - 2020	\$ 1,102,121	\$ -	\$ 1,102,121	\$ 947,461	\$ -	\$ 154,660	\$ 154,660	\$ -	\$ -	
677	2.3.18 Larch Street - Balsam to Hickory	2020 - 2020	\$ 168,224	\$ -	\$ 168,224	\$ 154,528	\$ -	\$ 13,696	\$ 13,696	\$ -	\$ -	
685	2.3.19 Sunview Street - University Ave to Hickory St - Reconstruction	2029 - 2029	\$ 561,179	\$ -	\$ 561,179	\$ 537,104	\$ -	\$ 24,075	\$ -	\$ 24,075	\$ -	
687	2.3.20 Union St - King St to Moore Ave	2020 - 2021	\$ 988,016	\$ -	\$ 988,016	\$ 747,096	\$ -	\$ 240,919	\$ -	\$ 240,919	\$ -	
690	2.3.21 Weber St - Blythwood to Northfield Drive	2021 - 2021	\$ 873,410	\$ -	\$ 873,410	\$ 786,261	\$ -	\$ 87,149	\$ -	\$ 87,149	\$ -	
694	2.3.22 Young Street East - King Street to Peppler	2020 - 2020	\$ 461,677	\$ -	\$ 461,677	\$ 391,298	\$ -	\$ 70,379	\$ 70,379	\$ -	\$ -	
Subtotal Wastewater Projects			\$ 43,203,275	\$ 6,513,115	\$ 36,690,160	\$ 11,472,810	\$ -	\$ 25,217,350	\$ 357,984	\$ 24,859,366	\$ -	
TOTAL WATER SUPPLY AND WASTEWATER			\$ 64,228,972	\$ 7,103,259	\$ 57,125,712	\$ 18,459,395	\$ -	\$ 38,666,318	\$ 4,905,392	\$ 33,760,925	\$ -	

Residential Development Charge Calculation		
Residential Share of 2020 - 2041 DC Eligible Costs	71.0%	\$23,970,257
2020-2041 Growth in Population in New Units		44,311
Unadjusted Development Charge Per Capita		\$540.95
Non-Residential Development Charge Calculation		
Non-Residential Share of 2020 - 2041 DC Eligible Costs	29.0%	\$9,790,668
2020-2041 Growth in Square Feet		7,717,500
Unadjusted Development Charge Per Square Foot		\$1.27

Reserve Fund Balance	
Balance as at September 30, 2019	\$4,905,392
2019 Capital Budget Draws	\$0
Total Uncommitted Reserve Funds	\$4,905,392

**APPENDIX C.2
TABLE 2**

**CITY OF WATERLOO
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
WATER AND WASTEWATER SUPPLY
2020 - 2041**

2020-2041 Growth in Population in New Units	44,311
2020-2041 Growth in Non-Residential Floorspace in Square Feet	7,717,500

	Development-Related Capital Program (in \$000s)						Residential Share		Non-Residential Share	
	Total Project Cost	Grants/ Subsidies/ Other Contributions	Benefit to Existing Share	DC Reserve Commitments	Post 2041	Total Cost Eligible For DC Recovery	%	\$	%	\$
WATER AND WASTEWATER SUPPLY										
Outstanding Debenture (Principal Payments)	\$3,661.58	\$0.00	\$0.00	\$3,661.58	\$0.00	\$0.00	71.0%	\$0.00	29.0%	\$0.00
Water Projects	\$17,364.12	\$590.14	\$6,986.59	\$885.83	\$0.00	\$8,901.56	71.0%	\$6,320.11	29.0%	\$2,581.45
Wastewater Projects	\$43,203.28	\$6,513.12	\$11,472.81	\$357.98	\$0.00	\$24,859.37	71.0%	\$17,650.15	29.0%	\$7,209.22
TOTAL WATER AND WASTEWATER SUPPLY	\$64,228.97	\$7,103.26	\$18,459.39	\$4,905.39	\$0.00	\$33,760.93		\$23,970.26		\$9,790.67
Residential										
Unadjusted Development Charge Per Capita								\$540.95		
Non-Residential										
Unadjusted Development Charge Per Square Foot										\$1.27

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APPENDIX C.2
TABLE 3

CITY OF WATERLOO
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
WATER SUPPLY AND WASTEWATER
RESIDENTIAL DEVELOPMENT CHARGE - CITY-WIDE
(in \$000)

WATER SUPPLY AND WASTEWATER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
OPENING CASH BALANCE	\$0.0	(\$6,707.2)	(\$14,452.9)	(\$15,775.9)	(\$16,210.8)	(\$16,799.3)	(\$16,964.5)	(\$17,015.6)	(\$17,016.9)	(\$16,869.9)	(\$16,887.0)	(\$15,876.7)
2020 - 2041 RESIDENTIAL FUNDING REQUIREMENTS												
- Water Supply and Wastewater (New Projects): Non Inflated	\$7,876.6	\$8,396.8	\$1,897.5	\$1,013.0	\$1,149.4	\$749.1	\$654.9	\$763.7	\$654.9	\$814.4	\$0.0	\$0.0
- Debenture Principal Payment	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
- Water Supply And Wastewater: Inflated	\$7,876.6	\$8,564.7	\$1,974.2	\$1,075.0	\$1,244.1	\$827.1	\$737.5	\$877.3	\$767.3	\$973.3	\$0.0	\$0.0
NEW RESIDENTIAL DEVELOPMENT												
- Population Growth in New Units	1,938	1,938	1,987	1,987	1,987	1,987	1,987	2,180	2,180	2,180	2,180	2,180
REVENUE												
- DC Receipts: Inflated	\$1,389.2	\$1,417.0	\$1,482.1	\$1,511.8	\$1,542.0	\$1,572.9	\$1,604.3	\$1,795.7	\$1,831.7	\$1,868.3	\$1,905.7	\$1,943.8
INTEREST												
- Interest on Opening Balance	\$0.0	(\$368.9)	(\$794.9)	(\$867.7)	(\$891.6)	(\$924.0)	(\$933.0)	(\$935.9)	(\$935.9)	(\$927.8)	(\$928.8)	(\$873.2)
- Interest on In-year Transactions	(\$178.4)	(\$196.6)	(\$13.5)	\$7.6	\$5.2	\$13.1	\$15.2	\$16.1	\$18.6	\$15.7	\$33.3	\$34.0
- Interest Payments on Debentures	(\$41.5)	(\$32.5)	(\$22.5)	(\$11.7)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
TOTAL REVENUE	\$1,169.3	\$819.0	\$651.1	\$640.1	\$655.6	\$662.0	\$686.4	\$875.9	\$914.4	\$956.1	\$1,010.3	\$1,104.6
CLOSING CASH BALANCE	(\$6,707.2)	(\$14,452.9)	(\$15,775.9)	(\$16,210.8)	(\$16,799.3)	(\$16,964.5)	(\$17,015.6)	(\$17,016.9)	(\$16,869.9)	(\$16,887.0)	(\$15,876.7)	(\$14,772.1)

WATER SUPPLY AND WASTEWATER	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	TOTAL
OPENING CASH BALANCE	(\$14,772.1)	(\$13,783.4)	(\$12,704.3)	(\$11,529.1)	(\$10,251.8)	(\$8,866.0)	(\$7,337.8)	(\$5,685.3)	(\$3,900.9)	(\$1,976.2)	
2020 - 2041 RESIDENTIAL FUNDING REQUIREMENTS											
- Water Supply and Wastewater (New Projects): Non Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$23,970.3
- Debenture Principal Payment	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
- Water Supply And Wastewater: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$24,917.1
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,947	1,947	1,947	1,947	1,947	1,973	1,973	1,973	1,973	1,973	44,311
REVENUE											
- DC Receipts: Inflated	\$1,770.2	\$1,805.6	\$1,841.7	\$1,878.6	\$1,916.1	\$1,981.1	\$2,020.7	\$2,061.1	\$2,102.4	\$2,144.4	\$39,386.4
INTEREST											
- Interest on Opening Balance	(\$812.5)	(\$758.1)	(\$698.7)	(\$634.1)	(\$563.8)	(\$487.6)	(\$403.6)	(\$312.7)	(\$214.5)	(\$108.7)	(\$14,376.1)
- Interest on In-year Transactions	\$31.0	\$31.6	\$32.2	\$32.9	\$33.5	\$34.7	\$35.4	\$36.1	\$36.8	\$37.5	\$111.9
- Interest Payments on Debentures	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	(\$108.2)
TOTAL REVENUE	\$988.7	\$1,079.1	\$1,175.2	\$1,277.4	\$1,385.8	\$1,528.1	\$1,652.5	\$1,784.5	\$1,924.6	\$2,073.2	\$25,014.1
CLOSING CASH BALANCE	(\$13,783.4)	(\$12,704.3)	(\$11,529.1)	(\$10,251.8)	(\$8,866.0)	(\$7,337.8)	(\$5,685.3)	(\$3,900.9)	(\$1,976.2)	\$97.0	

2020 Adjusted Charge Per Capita	\$717
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Allocation of Capital Program	
Residential Sector	71.0%
Non-Residential Sector	29.0%
Rates for 2020	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

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APPENDIX C.2
TABLE 3

CITY OF WATERLOO
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
WATER SUPPLY AND WASTEWATER
NON-RESIDENTIAL DEVELOPMENT CHARGE - CITY-WIDE
(in \$000)

WATER SUPPLY AND WASTEWATER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
OPENING CASH BALANCE	\$0.0	(\$2,772.1)	(\$5,964.7)	(\$6,545.4)	(\$6,759.8)	(\$7,033.2)	(\$7,128.8)	(\$7,173.1)	(\$7,258.1)	(\$7,281.0)	(\$7,369.8)	(\$7,036.6)
2020 - 2041 NON-RESIDENTIAL FUNDING REQUIREMENTS												
- Water Supply and Wastewater (New Projects): Non Inflated	\$3,217.2	\$3,429.7	\$775.0	\$413.8	\$469.5	\$306.0	\$267.5	\$311.9	\$267.5	\$332.6	\$0.0	\$0.0
- Debenture Principal Payment	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
- Water Supply And Wastewater: Inflated	\$3,217.2	\$3,498.3	\$806.3	\$439.1	\$508.2	\$337.8	\$301.2	\$358.3	\$313.4	\$397.5	\$0.0	\$0.0
NON-RESIDENTIAL SPACE GROWTH												
- Growth in Square Feet	313,320	316,680	320,040	323,400	326,760	330,540	333,900	337,260	341,040	344,400	348,180	351,960
REVENUE												
- DC Receipts: Inflated	\$535.8	\$552.4	\$569.4	\$586.9	\$604.8	\$624.1	\$643.0	\$662.5	\$683.3	\$703.8	\$725.8	\$748.3
INTEREST												
- Interest on Opening Balance	\$0.0	(\$152.5)	(\$328.1)	(\$360.0)	(\$371.8)	(\$386.8)	(\$392.1)	(\$394.5)	(\$399.2)	(\$400.5)	(\$405.3)	(\$387.0)
- Interest on In-year Transactions	(\$73.7)	(\$81.0)	(\$6.5)	\$2.6	\$1.7	\$5.0	\$6.0	\$5.3	\$6.5	\$5.4	\$12.7	\$13.1
- Interest Payments on Debentures	(\$16.9)	(\$13.3)	(\$9.2)	(\$4.8)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
TOTAL REVENUE	\$445.1	\$305.6	\$225.6	\$224.7	\$234.7	\$242.3	\$256.9	\$273.3	\$290.6	\$308.7	\$333.2	\$374.4
CLOSING CASH BALANCE	(\$2,772.1)	(\$5,964.7)	(\$6,545.4)	(\$6,759.8)	(\$7,033.2)	(\$7,128.8)	(\$7,173.1)	(\$7,258.1)	(\$7,281.0)	(\$7,369.8)	(\$7,036.6)	(\$6,662.3)

WATER SUPPLY AND WASTEWATER	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	TOTAL
OPENING CASH BALANCE	(\$6,662.3)	(\$6,243.7)	(\$5,777.9)	(\$5,261.6)	(\$4,691.4)	(\$4,063.6)	(\$3,374.4)	(\$2,618.6)	(\$1,792.7)	(\$891.2)	
2020 - 2041 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Water Supply and Wastewater (New Projects): Non Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$9,790.7
- Debenture Principal Payment	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
- Water Supply And Wastewater: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$10,177.4
NON-RESIDENTIAL SPACE GROWTH											
- Growth in Square Feet	355,740	359,520	363,300	367,080	370,860	374,640	378,840	382,620	386,820	390,600	7,717,500
REVENUE											
- DC Receipts: Inflated	\$771.5	\$795.3	\$819.7	\$844.8	\$870.6	\$897.0	\$925.2	\$953.2	\$982.9	\$1,012.4	\$16,512.7
INTEREST											
- Interest on Opening Balance	(\$366.4)	(\$343.4)	(\$317.8)	(\$289.4)	(\$258.0)	(\$223.5)	(\$185.6)	(\$144.0)	(\$98.6)	(\$49.0)	(\$6,253.5)
- Interest on In-year Transactions	\$13.5	\$13.9	\$14.3	\$14.8	\$15.2	\$15.7	\$16.2	\$16.7	\$17.2	\$17.7	\$52.2
- Interest Payments on Debentures	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
TOTAL REVENUE	\$418.6	\$466.8	\$516.3	\$570.2	\$627.8	\$689.2	\$755.8	\$825.9	\$901.5	\$981.1	\$10,267.3
CLOSING CASH BALANCE	(\$6,243.7)	(\$5,777.9)	(\$5,261.6)	(\$4,691.4)	(\$4,063.6)	(\$3,374.4)	(\$2,618.6)	(\$1,792.7)	(\$891.2)	\$89.9	

2020 Adjusted Charge Per Square Foot	\$1.71
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Allocation of Capital Program	
Residential Sector	71.0%
Non-Residential Sector	29.0%
Rates for 2020	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX C.3

STORM DRAINAGE AND CONTROL

APPENDIX C.3

STORM DRAINAGE AND CONTROL

This appendix provides the analysis undertaken to establish the development charge rates for the Storm Drainage and Control service in the City. The capital planning and management of all storm drainage and control infrastructure in the City is carried out by the Integrated Planning & Public Works department.

TABLE 1 2020-2041 DEVELOPMENT-RELATED CAPITAL PROGRAM

The basis of the development-related capital program for Storm Drainage and Control Services is the City's 2020 10-year capital program, the Stormwater Master Plan, and discussions with City staff. All of the identified projects are required to service the demands of new development anticipated to occur between 2020 and 2041, subject to annual capital budget reviews.

The total cost of the Storm Drainage and Control development-related capital program is \$41.10 million and is entirely related to future stormwater projects. Approximately \$2.45 million of the total cost is anticipated to be funded through grants, subsidies and/or other recoveries. Of the remaining \$38.65 million net cost, \$18.01 million (47 per cent) has been identified as a "benefit to existing" share. The remaining \$20.65 million is related to future development in the City and is eligible for development charge recovery.

Of this \$20.65 million, \$3.45 million can be funded from existing development charge reserve funds. The remaining development-related capital cost to be recovered through development charges is \$17.19 million.

TABLE 2 CALCULATION OF UNADJUSTED DEVELOPMENT CHARGE

The development-related costs of \$17.19 million have been allocated 71 per cent residential (\$12.21 million) and 29 per cent non-residential (\$4.99 million). This ratio is based on forecast changes in population in new housing units and employment over the planning period.

The residential and non-residential costs are divided by the anticipated growth in population in new units and square feet of non-residential GFA respectively. This

yields an unadjusted development charge of \$275.51 per capita and \$0.65 per square foot.

TABLE 3 CASH FLOW ANALYSIS & CALCULATION OF ADJUSTED DEVELOPMENT CHARGE

The cash flow analysis results in Storm Drainage and Control development charges of \$351 per capita for new residential development and \$0.84 per square foot for new non-residential development.

The following table summarizes the calculation of the Storm Drainage and Control development charge:

STORM WATER DRAINAGE AND CONTROL SERVICES SUMMARY					
2020 - 2041		Unadjusted		Adjusted	
Development-Related Capital Program		Development Charge		Development Charge	
Total	Net DC Recoverable	\$/capita	\$/sq.ft	\$/capita	\$/sq.ft
\$41,101,613	\$17,194,612	\$275.51	\$0.65	\$351	\$0.84

CITY OF WATERLOO
DEVELOPMENT-RELATED CAPITAL PROGRAM
STORM DRAINAGE AND CONTROL SERVICES

DC Project Number	Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs		Total Development Related Costs	Development Related Costs		
						Replacement & BTE Shares	0% Reduction		Available DC Reserves	2020-2041	Post 2041
3.0 STORMWATER DRAINAGE AND CONTROL PROJECTS											
3.1 Stormwater Projects											
123	3.1.1 West Side Employment Lands Servicing	2020 - 2020	\$ 1,952,447	\$ 1,540,806	\$ 411,642	\$ -	\$ -	\$ 411,642	\$ 411,642	\$ -	\$ -
530	3.1.2 Core Area Development Driven Upgrades-Stormwater	2020 - 2022	\$ 2,705,258	\$ -	\$ 2,705,258	\$ 544,963	\$ -	\$ 2,160,295	\$ -	\$ 2,160,295	\$ -
530	3.1.3 Core Area Development Driven Upgrades-Stormwater	2023 - 2029	\$ 2,733,722	\$ -	\$ 2,733,722	\$ 546,742	\$ -	\$ 2,186,980	\$ -	\$ 2,186,980	\$ -
531	3.1.4 Development Driven Storm Sewer Upgrades - City Wide	2020 - 2022	\$ 558,066	\$ -	\$ 558,066	\$ 279,563	\$ -	\$ 278,503	\$ -	\$ 278,503	\$ -
531	3.1.5 Development Driven Storm Sewer Upgrades - City Wide	2023 - 2029	\$ 601,156	\$ -	\$ 601,156	\$ 300,578	\$ -	\$ 300,578	\$ -	\$ 300,578	\$ -
536	3.1.6 Bechtel Park Woodlot - Creek Rehabilitation	2020 - 2020	\$ 344,500	\$ -	\$ 344,500	\$ 275,600	\$ -	\$ 68,900	\$ 68,900	\$ -	\$ -
538	3.1.7 Cedar Creek site CDR-E4	2027 - 2029	\$ 530,000	\$ -	\$ 530,000	\$ 26,500	\$ -	\$ 503,500	\$ -	\$ 503,500	\$ -
539	3.1.8 Clair Creek North Reach 1	2020 - 2021	\$ 3,408,563	\$ -	\$ 3,408,563	\$ 1,546,606	\$ -	\$ 1,861,956	\$ 1,861,956	\$ -	\$ -
540	3.1.9 Forwell Creek Industrial Lands	2022 - 2025	\$ 4,816,110	\$ -	\$ 4,816,110	\$ 3,852,888	\$ -	\$ 963,222	\$ -	\$ 963,222	\$ -
541	3.1.10 Keatsway Storm Bypass & Creek Bank Stabilization	2020 - 2021	\$ 2,146,500	\$ -	\$ 2,146,500	\$ 1,717,200	\$ -	\$ 429,300	\$ 153,778	\$ 275,522	\$ -
542	3.1.11 Laurel Crk Functional Study & Implementation - Regina to Weber	2020 - 2021	\$ 2,815,625	\$ -	\$ 2,815,625	\$ 563,125	\$ -	\$ 2,252,500	\$ -	\$ 2,252,500	\$ -
543	3.1.12 Laurel Crk Study Implementation - Hillside Park to HWY 85	2020 - 2021	\$ 728,750	\$ -	\$ 728,750	\$ 583,000	\$ -	\$ 145,750	\$ -	\$ 145,750	\$ -
545	3.1.13 Stormwater Management System Master Plan Implementation	2021 - 2029	\$ 6,625,000	\$ -	\$ 6,625,000	\$ 3,312,500	\$ -	\$ 3,312,500	\$ -	\$ 3,312,500	\$ -
590	3.1.14 Beaver Creek Road & Conservation Drive Reconstruction	2020 - 2021	\$ 812,700	\$ 229,836	\$ 582,864	\$ 12,414	\$ -	\$ 570,450	\$ -	\$ 570,450	\$ -
593	3.1.15 Ira Needles Boulevard - By-pass	2020 - 2020	\$ 1,358,125	\$ 679,063	\$ 679,063	\$ -	\$ -	\$ 679,063	\$ 679,063	\$ -	\$ -
665	3.1.16 Albert Street - Columbia St to University Ave - Reconstruction	2027 - 2027	\$ 306,040	\$ -	\$ 306,040	\$ 230,593	\$ -	\$ 75,447	\$ -	\$ 75,447	\$ -
667	3.1.17 Batavia Place - Columbia St to Cul-de-Sac	2027 - 2027	\$ 379,337	\$ -	\$ 379,337	\$ 259,093	\$ -	\$ 120,244	\$ -	\$ 120,244	\$ -
672	3.1.18 Hazel Street - University Ave to Columbia St & Beech St	2029 - 2029	\$ 197,211	\$ -	\$ 197,211	\$ 172,252	\$ -	\$ 24,959	\$ -	\$ 24,959	\$ -
673	3.1.19 Hickory St W - Albert to Hazel St - Reconstruction	2025 - 2025	\$ 766,327	\$ -	\$ 766,327	\$ 510,819	\$ -	\$ 255,509	\$ -	\$ 255,509	\$ -
674	3.1.20 Hickory St E - Hazel St to Spruce St - Reconstruction	2024 - 2024	\$ 1,169,926	\$ -	\$ 1,169,926	\$ 695,046	\$ -	\$ 474,880	\$ -	\$ 474,880	\$ -
675	3.1.21 Hickory Street East - Lester to Albert -Reconstruction	2029 - 2029	\$ 37,947	\$ -	\$ 37,947	\$ 33,235	\$ -	\$ 4,712	\$ -	\$ 4,712	\$ -
676	3.1.22 King St. - Central St to University Ave	2020 - 2020	\$ 443,994	\$ -	\$ 443,994	\$ 278,427	\$ -	\$ 165,567	\$ 165,567	\$ -	\$ -
677	3.1.23 Larch Street - Balsam to Hickory	2020 - 2020	\$ 181,226	\$ -	\$ 181,226	\$ 161,849	\$ -	\$ 19,377	\$ 19,377	\$ -	\$ -
685	3.1.24 Sunview Street - University Ave to Hickory St - Reconstruction	2029 - 2029	\$ 442,874	\$ -	\$ 442,874	\$ 385,634	\$ -	\$ 57,240	\$ -	\$ 57,240	\$ -
687	3.1.25 Union St - King St to Moore Ave	2020 - 2021	\$ 1,893,198	\$ -	\$ 1,893,198	\$ 1,105,263	\$ -	\$ 787,936	\$ -	\$ 787,936	\$ -
690	3.1.26 Weber St - Blythwood to Northfield Drive	2021 - 2021	\$ 2,769,253	\$ -	\$ 2,769,253	\$ 325,368	\$ -	\$ 2,443,886	\$ -	\$ 2,443,886	\$ -
694	3.1.27 Young Street East - King Street to Peppler	2020 - 2020	\$ 377,756	\$ -	\$ 377,756	\$ 287,126	\$ -	\$ 90,630	\$ 90,630	\$ -	\$ -
	Subtotal		\$ 41,101,613	\$ 2,449,704	\$ 38,651,908	\$ 18,006,384	\$ -	\$ 20,645,524	\$ 3,450,912	\$ 17,194,612	\$ -
	TOTAL STORMWATER DRAINAGE AND CONTROL PROJECTS		\$ 41,101,613	\$ 2,449,704	\$ 38,651,908	\$ 18,006,384	\$ -	\$ 20,645,524	\$ 3,450,912	\$ 17,194,612	\$ -

Residential Development Charge Calculation		
Residential Share of 2020 - 2041 DC Eligible Costs	71.0%	\$12,208,175
2020-2041 Growth in Population in New Units		44,311
Unadjusted Development Charge Per Capita		\$275.51
Non-Residential Development Charge Calculation		
Non-Residential Share of 2020 - 2041 DC Eligible Costs	29.0%	\$4,986,437
2020-2041 Growth in Square Feet		7,717,500
Unadjusted Development Charge Per Square Foot		\$0.65

Reserve Fund Balance	
Balance as at September 30, 2019	\$3,450,912
2019 Capital Budget Draws	\$0
Total Uncommitted Reserve Funds	\$3,450,912

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 APPENDIX C.3
 TABLE 2

CITY OF WATERLOO
 SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
 STORMWATER DRAINAGE AND CONTROL SERVICES
 2020 - 2041

2020-2041 Growth in Population in New Units	44,311
2020-2041 Growth in Non-Residential Floorspace in Square Feet	7,717,500

	Development-Related Capital Program (in \$000s)						Residential Share		Non-Residential Share	
	Total Project Cost	Grants/ Subsidies/ Other Contributions	Benefit to Existing Share	DC Reserve Commitments	Post 2041	Total Cost Eligible For DC Recovery	%	\$	%	\$
STORMWATER DRAINAGE AND CONTROL SERVICES										
Stormwater Projects	\$41,101.61	\$2,449.70	\$18,006.38	\$3,450.91	\$0.00	\$17,194.61	71.0%	\$12,208.17	29.0%	\$4,986.44
TOTAL STORMWATER DRAINAGE AND CONTROL SERVICES	\$41,101.61	\$2,449.70	\$18,006.38	\$3,450.91	\$0.00	\$17,194.61		\$12,208.17		\$4,986.44
Residential										
Unadjusted Development Charge Per Capita									\$275.51	
Non-Residential										
Unadjusted Development Charge Per Square Foot										\$0.65

APPENDIX C.3
TABLE 3CITY OF WATERLOO
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
STORM WATER DRAINAGE AND CONTROL SERVICES
RESIDENTIAL DEVELOPMENT CHARGE - CITY-WIDE
(in \$000)

STORM WATER DRAINAGE AND CONTROL SERVICES	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
OPENING CASH BALANCE	\$0.0	(\$1,365.0)	(\$4,924.9)	(\$5,529.3)	(\$5,819.6)	(\$6,500.4)	(\$7,049.2)	(\$7,226.3)	(\$7,631.3)	(\$7,893.1)	(\$8,241.1)	(\$7,745.1)
2020 - 2041 RESIDENTIAL FUNDING REQUIREMENTS												
- Stormwater Management: Non Inflated	\$2,008.6	\$4,005.1	\$1,009.5	\$684.6	\$1,021.8	\$866.0	\$513.6	\$771.7	\$632.8	\$694.5	\$0.0	\$0.0
- Storm Water Drainage And Control Services: Inflated	\$2,008.6	\$4,085.2	\$1,050.3	\$726.5	\$1,106.0	\$956.1	\$578.4	\$886.5	\$741.4	\$830.0	\$0.0	\$0.0
NEW RESIDENTIAL DEVELOPMENT												
- Population Growth in New Units	1,938	1,938	1,987	1,987	1,987	1,987	1,987	2,180	2,180	2,180	2,180	2,180
REVENUE												
- DC Receipts: Inflated	\$680.1	\$693.7	\$725.6	\$740.1	\$754.9	\$770.0	\$785.4	\$879.1	\$896.7	\$914.6	\$932.9	\$951.6
INTEREST												
- Interest on Opening Balance	\$0.0	(\$75.1)	(\$270.9)	(\$304.1)	(\$320.1)	(\$357.5)	(\$387.7)	(\$397.4)	(\$419.7)	(\$434.1)	(\$453.3)	(\$426.0)
- Interest on In-year Transactions	(\$36.5)	(\$93.3)	(\$8.9)	\$0.2	(\$9.7)	(\$5.1)	\$3.6	(\$0.2)	\$2.7	\$1.5	\$16.3	\$16.7
TOTAL REVENUE	\$643.6	\$525.4	\$445.8	\$436.2	\$425.2	\$407.4	\$401.3	\$481.5	\$479.7	\$482.0	\$496.0	\$542.3
CLOSING CASH BALANCE	(\$1,365.0)	(\$4,924.9)	(\$5,529.3)	(\$5,819.6)	(\$6,500.4)	(\$7,049.2)	(\$7,226.3)	(\$7,631.3)	(\$7,893.1)	(\$8,241.1)	(\$7,745.1)	(\$7,202.8)

STORM WATER DRAINAGE AND CONTROL SERVICES	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	TOTAL
OPENING CASH BALANCE	(\$7,202.8)	(\$6,717.2)	(\$6,187.3)	(\$5,610.2)	(\$4,983.1)	(\$4,302.8)	(\$3,552.6)	(\$2,741.5)	(\$1,865.7)	(\$921.1)	
2020 - 2041 RESIDENTIAL FUNDING REQUIREMENTS											
- Stormwater Management: Non Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$12,208.2
- Storm Water Drainage And Control Services: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$12,969.0
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,947	1,947	1,947	1,947	1,947	1,973	1,973	1,973	1,973	1,973	44,311
REVENUE											
- DC Receipts: Inflated	\$866.6	\$883.9	\$901.6	\$919.6	\$938.0	\$969.8	\$989.2	\$1,009.0	\$1,029.2	\$1,049.8	\$19,281.4
INTEREST											
- Interest on Opening Balance	(\$396.2)	(\$369.4)	(\$340.3)	(\$308.6)	(\$274.1)	(\$236.7)	(\$195.4)	(\$150.8)	(\$102.6)	(\$50.7)	(\$6,270.5)
- Interest on In-year Transactions	\$15.2	\$15.5	\$15.8	\$16.1	\$16.4	\$17.0	\$17.3	\$17.7	\$18.0	\$18.4	\$54.6
TOTAL REVENUE	\$485.6	\$529.9	\$577.1	\$627.1	\$680.3	\$750.1	\$811.1	\$875.9	\$944.6	\$1,017.5	\$13,065.4
CLOSING CASH BALANCE	(\$6,717.2)	(\$6,187.3)	(\$5,610.2)	(\$4,983.1)	(\$4,302.8)	(\$3,552.6)	(\$2,741.5)	(\$1,865.7)	(\$921.1)	\$96.5	

2020 Adjusted Charge Per Capita

\$351

Allocation of Capital Program

Residential Sector	71.0%
Non-Residential Sector	29.0%

Rates for 2020

Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

CITY OF WATERLOO
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
STORM WATER DRAINAGE AND CONTROL SERVICES
NON-RESIDENTIAL DEVELOPMENT CHARGE - CITY-WIDE
(in \$000)

STORM WATER DRAINAGE AND CONTROL SERVICES	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
OPENING CASH BALANCE	\$0.0	(\$572.5)	(\$2,039.7)	(\$2,305.3)	(\$2,440.8)	(\$2,733.9)	(\$2,970.5)	(\$3,052.9)	(\$3,258.5)	(\$3,404.4)	(\$3,584.8)	(\$3,419.2)
2020 - 2041 NON-RESIDENTIAL FUNDING REQUIREMENTS												
- Stormwater Management: Non Inflated	\$820.4	\$1,635.9	\$412.3	\$279.6	\$417.3	\$353.7	\$209.8	\$315.2	\$258.5	\$283.7	\$0.0	\$0.0
- Storm Water Drainage And Control Services: Inflated	\$820.4	\$1,668.6	\$429.0	\$296.7	\$451.7	\$390.5	\$236.3	\$362.1	\$302.8	\$339.0	\$0.0	\$0.0
NON-RESIDENTIAL SPACE GROWTH												
- Growth in Square Feet	313,320	316,680	320,040	323,400	326,760	330,540	333,900	337,260	341,040	344,400	348,180	351,960
REVENUE												
- DC Receipts: Inflated	\$263.2	\$271.3	\$279.7	\$288.3	\$297.1	\$306.6	\$315.9	\$325.4	\$335.6	\$345.7	\$356.5	\$367.6
INTEREST												
- Interest on Opening Balance	\$0.0	(\$31.5)	(\$112.2)	(\$126.8)	(\$134.2)	(\$150.4)	(\$163.4)	(\$167.9)	(\$179.2)	(\$187.2)	(\$197.2)	(\$188.1)
- Interest on In-year Transactions	(\$15.3)	(\$38.4)	(\$4.1)	(\$0.2)	(\$4.3)	(\$2.3)	\$1.4	(\$1.0)	\$0.6	\$0.1	\$6.2	\$6.4
TOTAL REVENUE	\$247.9	\$201.4	\$163.4	\$161.3	\$158.6	\$153.9	\$153.9	\$156.5	\$157.0	\$158.6	\$165.6	\$186.0
CLOSING CASH BALANCE	(\$572.5)	(\$2,039.7)	(\$2,305.3)	(\$2,440.8)	(\$2,733.9)	(\$2,970.5)	(\$3,052.9)	(\$3,258.5)	(\$3,404.4)	(\$3,584.8)	(\$3,419.2)	(\$3,233.2)

STORM WATER DRAINAGE AND CONTROL SERVICES	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	TOTAL
OPENING CASH BALANCE	(\$3,233.2)	(\$3,025.4)	(\$2,794.3)	(\$2,538.2)	(\$2,255.6)	(\$1,944.4)	(\$1,603.0)	(\$1,228.7)	(\$819.9)	(\$373.7)	
2020 - 2041 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Stormwater Management: Non Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$4,986.4
- Storm Water Drainage And Control Services: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$5,297.2
NON-RESIDENTIAL SPACE GROWTH											
- Growth in Square Feet	355,740	359,520	363,300	367,080	370,860	374,640	378,840	382,620	386,820	390,600	7,717,500
REVENUE											
- DC Receipts: Inflated	\$379.0	\$390.7	\$402.7	\$415.0	\$427.7	\$440.7	\$454.5	\$468.2	\$482.8	\$497.3	\$8,111.5
INTEREST											
- Interest on Opening Balance	(\$177.8)	(\$166.4)	(\$153.7)	(\$139.6)	(\$124.1)	(\$106.9)	(\$88.2)	(\$67.6)	(\$45.1)	(\$20.6)	(\$2,727.9)
- Interest on In-year Transactions	\$6.6	\$6.8	\$7.0	\$7.3	\$7.5	\$7.7	\$8.0	\$8.2	\$8.4	\$8.7	\$25.4
TOTAL REVENUE	\$207.8	\$231.1	\$256.1	\$282.7	\$311.1	\$341.5	\$374.3	\$408.8	\$446.2	\$485.4	\$5,408.9
CLOSING CASH BALANCE	(\$3,025.4)	(\$2,794.3)	(\$2,538.2)	(\$2,255.6)	(\$1,944.4)	(\$1,603.0)	(\$1,228.7)	(\$819.9)	(\$373.7)	\$111.7	

2020 Adjusted Charge Per Square Foot	\$0.84
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Allocation of Capital Program	
Residential Sector	71.0%
Non-Residential Sector	29.0%
Rates for 2020	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX C.4

ENGINEERING STUDIES

APPENDIX C.4
ENGINEERING STUDIES

The *DCA* allows the cost of development-related studies to be included in the calculation of the development charges as long as they are permitted under the legislation.

**TABLE 1 2020-2041 DEVELOPMENT-RELATED CAPITAL PROGRAM AND
CALCULATION OF THE UNADJUSTED DEVELOPMENT CHARGES**

The 2020-2041 development-related gross cost for engineering studies is \$7.03 million. The share of studies relate to roads and related services, water and wastewater supply, storm drainage and control services, and only the hard services component of infrastructure services and planning and development related studies. The capital program also accounts for a currently negative Engineering Studies DC reserve fund balance.

A developer contribution of \$194,000 has been netted off the Erbsville Scoped Subwatershed Study project. After accounting for this amount, a total City share of \$6.84 remains. Recognizing that not all studies under this service are entirely a result of new growth in the City, a “benefit to existing” shares have been netted off the total net costs. The benefit to existing shares amount to \$2.45 million and this amount will not be recovered through development charges.

The remaining amount of \$4.38 million is eligible for development charges funding over the planning period. This amount is included in the development charge calculation and is allocated 71 per cent, or \$3.11 million to the residential sector and 29 per cent, or \$1.27 million to the non-residential sector based on shares of forecasted population and employment growth. The resulting unadjusted per capita residential charge is \$70.26 before cash flow adjustments. The non-residential unadjusted charge is \$0.16 per square foot.

TABLE 2 CASH FLOW ANALYSIS

The cash flow analysis for the Engineering Studies service is shown in Table 2. After cash flow analysis, the residential charge increases to \$81 per capita and the non-residential charge increases to \$0.20 per square foot.

The following table summarizes the calculation of the Engineering Studies development charge.

ENGINEERING STUDIES SUMMARY					
2020 - 2041		Unadjusted		Adjusted	
Development-Related Capital Program		Development Charge		Development Charge	
Total	Net DC Recoverable	\$/capita	\$/sq.ft	\$/capita	\$/sq.ft
\$7,029,679	\$4,384,826	\$70.26	\$0.16	\$81	\$0.20

CITY OF WATERLOO
DEVELOPMENT-RELATED CAPITAL PROGRAM
ENGINEERING STUDIES

DC Project Number	Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs		Total Development Related Costs	Development Related Costs		
						Replacement & BTE Shares	0% Reduction		Available DC Reserves	2020-2041	Post 2041
4.0 ENGINEERING STUDIES											
4.1 Roads and Related											
656	4.1.1 Transportation Demand Management Guidelines	2021 - 2021	\$ 50,000	\$ -	\$ 50,000	\$ 26,000	\$ -	\$ 24,000	\$ -	\$ 24,000	\$ -
703	4.1.2 Active Transportation Crossing of Hwy. 85	2021 - 2021	\$ 200,000	\$ -	\$ 200,000	\$ 100,000	\$ -	\$ 100,000	\$ -	\$ 100,000	\$ -
725	4.1.3 Transportation Master Plan Update and Review	2025 - 2025	\$ 250,000	\$ -	\$ 250,000	\$ 62,500	\$ -	\$ 187,500	\$ -	\$ 187,500	\$ -
	4.1.4 Transportation Master Plan Update and Review	2030 - 2030	\$ 250,000	\$ -	\$ 250,000	\$ 62,500	\$ -	\$ 187,500	\$ -	\$ 187,500	\$ -
	4.1.5 Transportation Master Plan Update and Review	2035 - 2035	\$ 250,000	\$ -	\$ 250,000	\$ 62,500	\$ -	\$ 187,500	\$ -	\$ 187,500	\$ -
727	4.1.6 Traffic Calming Studies - TMP	2020 - 2029	\$ 981,481	\$ -	\$ 981,481	\$ 785,185	\$ -	\$ 196,296	\$ -	\$ 196,296	\$ -
	Subtotal Roads and Related		\$ 1,981,481	\$ -	\$ 1,981,481	\$ 1,098,685	\$ -	\$ 882,796	\$ -	\$ 882,796	\$ -
4.2 Water Supply and Wastewater											
510	4.2.1 Sanitary Master Plan Update	2020 - 2020	\$ 294,444	\$ -	\$ 294,444	\$ 73,611	\$ -	\$ 220,833	\$ -	\$ 220,833	\$ -
	4.2.2 Sanitary Master Plan Update	2030 - 2030	\$ 294,444	\$ -	\$ 294,444	\$ 73,611	\$ -	\$ 220,833	\$ -	\$ 220,833	\$ -
554	4.2.3 Water Master Plan Update	2026 - 2026	\$ 294,444	\$ -	\$ 294,444	\$ 73,611	\$ -	\$ 220,833	\$ -	\$ 220,833	\$ -
	4.2.4 Water Master Plan Update	2036 - 2036	\$ 294,444	\$ -	\$ 294,444	\$ 73,611	\$ -	\$ 220,833	\$ -	\$ 220,833	\$ -
	Subtotal Water and Wastewater Supply		\$ 1,177,777	\$ -	\$ 1,177,777	\$ 294,444	\$ -	\$ 883,333	\$ -	\$ 883,333	\$ -
4.3 Storm Drainage and Control Services											
546	4.3.1 Storm Water Master Plan Update	2027 - 2027	\$ 294,444	\$ -	\$ 294,444	\$ 73,611	\$ -	\$ 220,833	\$ -	\$ 220,833	\$ -
	4.3.2 Storm Water Master Plan Update	2037 - 2037	\$ 294,444	\$ -	\$ 294,444	\$ 73,611	\$ -	\$ 220,833	\$ -	\$ 220,833	\$ -
	Subtotal Stormdrainage and Control Services		\$ 588,889	\$ -	\$ 588,889	\$ 147,222	\$ -	\$ 441,667	\$ -	\$ 441,667	\$ -
4.4 Other Infrastructure Services (hard services component only)											
101	4.4.1 Comprehensive Asset Management Plan	2020 - 2029	\$ 1,264,570	\$ -	\$ 1,264,570	\$ 885,502	\$ -	\$ 379,068	\$ -	\$ 379,068	\$ -
412	4.4.2 DC Bylaw Review	2022 - 2022	\$ 130,000	\$ -	\$ 130,000	\$ -	\$ -	\$ 130,000	\$ -	\$ 130,000	\$ -
412	4.4.3 DC Bylaw Review	2026 - 2026	\$ 130,000	\$ -	\$ 130,000	\$ -	\$ -	\$ 130,000	\$ -	\$ 130,000	\$ -
	4.4.4 DC Bylaw Review	2030 - 2030	\$ 130,000	\$ -	\$ 130,000	\$ -	\$ -	\$ 130,000	\$ -	\$ 130,000	\$ -
	4.4.5 DC Bylaw Review	2034 - 2034	\$ 130,000	\$ -	\$ 130,000	\$ -	\$ -	\$ 130,000	\$ -	\$ 130,000	\$ -
	4.4.6 DC Bylaw Review	2038 - 2038	\$ 130,000	\$ -	\$ 130,000	\$ -	\$ -	\$ 130,000	\$ -	\$ 130,000	\$ -
632	4.4.7 Census Trends	2023 - 2023	\$ 4,903	\$ -	\$ 4,903	\$ -	\$ -	\$ 4,903	\$ -	\$ 4,903	\$ -
632	4.4.8 Census Trends	2028 - 2028	\$ 4,903	\$ -	\$ 4,903	\$ -	\$ -	\$ 4,903	\$ -	\$ 4,903	\$ -
	4.4.9 Census Trends	2033 - 2033	\$ 4,903	\$ -	\$ 4,903	\$ -	\$ -	\$ 4,903	\$ -	\$ 4,903	\$ -
	4.4.10 Census Trends	2038 - 2038	\$ 4,903	\$ -	\$ 4,903	\$ -	\$ -	\$ 4,903	\$ -	\$ 4,903	\$ -
644	4.4.11 Erbsville Scoped Subwatershed Study	2022 - 2022	\$ 382,000	\$ 194,000	\$ 188,000	\$ -	\$ -	\$ 188,000	\$ -	\$ 188,000	\$ -
723	4.4.12 Future Snow Dump Study	2021 - 2021	\$ 50,000	\$ -	\$ 50,000	\$ 25,000	\$ -	\$ 25,000	\$ -	\$ 25,000	\$ -
	Subtotal Other Infrastructure Services (hard services component)		\$ 2,366,182	\$ 194,000	\$ 2,172,182	\$ 910,502	\$ -	\$ 1,261,680	\$ -	\$ 1,261,680	\$ -

CITY OF WATERLOO
DEVELOPMENT-RELATED CAPITAL PROGRAM
ENGINEERING STUDIES

DC Project Number	Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs		Total DC Eligible Costs	DC Eligible Costs			
						Replacement & BTE Shares	0% Reduction		Available DC Reserves	2020-2041	Post 2041	
	4.0 ENGINEERING STUDIES (CONTINUED)											
	4.5 Planning and Development Studies (hard services component only)											
645	4.5.1 Existing District Plan Updates	2020 - 2029	\$ 71,250	\$ -	\$ 71,250	\$ -	\$ -	\$ 71,250	\$ -	\$ 71,250	\$ -	
654	4.5.2 Revised Erbsville District Plan	2024 - 2024	\$ 82,000	\$ -	\$ 82,000	\$ -	\$ -	\$ 82,000	\$ -	\$ 82,000	\$ -	
	Subtotal Planning and Development Studies (hard services component)		\$ 153,250	\$ -	\$ 153,250	\$ -	\$ -	\$ 153,250	\$ -	\$ 153,250	\$ -	
	4.6 Recovery of Negative Reserve Fund Balance											
	4.6.1 Balance as at September 30, 2019	2020 - 2020	\$ 762,100	\$ -	\$ 762,100	\$ -	\$ -	\$ 762,100	\$ -	\$ 762,100	\$ -	
	Subtotal Planning and Development Studies (hard services component)		\$ 762,100	\$ -	\$ 762,100	\$ -	\$ -	\$ 762,100	\$ -	\$ 762,100	\$ -	
	TOTAL ENGINEERING STUDIES		\$ 7,029,679	\$ 194,000	\$ 6,835,679	\$ 2,450,853	\$ -	\$ 4,384,826	\$ -	\$ 4,384,826	\$ -	

Residential Development Charge Calculation

Residential Share of 2020 - 2041 DC Eligible Costs	71.0%	\$3,113,226
2020-2041 Growth in Population in New Units		44,311
Unadjusted Development Charge Per Capita		\$70.26

Non-Residential Development Charge Calculation

Non-Residential Share of 2020 - 2041 DC Eligible Costs	29.0%	\$1,271,599
2020-2041 Growth in Square Feet		7,717,500
Unadjusted Development Charge Per Square Foot		\$0.16

Reserve Fund Balance	
Balance as at September 30, 2019	(\$725,100)
2019 Capital Budget Draws	\$37,000
Total Uncommitted Reserve Funds	(\$762,100)

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APPENDIX C.4
TABLE 2

CITY OF WATERLOO
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
ENGINEERING STUDIES
RESIDENTIAL DEVELOPMENT CHARGE - CITY-WIDE
(in \$000)

ENGINEERING STUDIES	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
OPENING CASH BALANCE	\$0.0	(\$603.0)	(\$630.7)	(\$783.9)	(\$706.5)	(\$682.8)	(\$740.9)	(\$936.8)	(\$1,019.1)	(\$923.5)	(\$815.3)	(\$1,117.7)
2020 - 2041 RESIDENTIAL FUNDING REQUIREMENTS												
- Engineering Studies: Non Inflated	\$743.8	\$151.7	\$271.7	\$49.4	\$104.1	\$179.0	\$295.0	\$202.7	\$49.4	\$45.9	\$382.2	\$0.0
- Engineering Studies: Inflated	\$743.8	\$154.7	\$282.7	\$52.4	\$112.7	\$197.7	\$332.2	\$232.8	\$57.9	\$54.9	\$465.9	\$0.0
NEW RESIDENTIAL DEVELOPMENT												
- Population Growth in New Units	1,938	1,938	1,987	1,987	1,987	1,987	1,987	2,180	2,180	2,180	2,180	2,180
REVENUE												
- DC Receipts: Inflated	\$156.9	\$160.1	\$167.4	\$170.8	\$174.2	\$177.7	\$181.2	\$202.9	\$206.9	\$211.1	\$215.3	\$219.6
INTEREST												
- Interest on Opening Balance	\$0.0	(\$33.2)	(\$34.7)	(\$43.1)	(\$38.9)	(\$37.6)	(\$40.7)	(\$51.5)	(\$56.1)	(\$50.8)	(\$44.8)	(\$61.5)
- Interest on In-year Transactions	(\$16.1)	\$0.1	(\$3.2)	\$2.1	\$1.1	(\$0.5)	(\$4.2)	(\$0.8)	\$2.6	\$2.7	(\$6.9)	\$3.8
TOTAL REVENUE	\$140.8	\$127.0	\$129.5	\$129.8	\$136.4	\$139.6	\$136.3	\$150.6	\$153.5	\$163.0	\$163.6	\$162.0
CLOSING CASH BALANCE	(\$603.0)	(\$630.7)	(\$783.9)	(\$706.5)	(\$682.8)	(\$740.9)	(\$936.8)	(\$1,019.1)	(\$923.5)	(\$815.3)	(\$1,117.7)	(\$955.7)

ENGINEERING STUDIES	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	TOTAL
OPENING CASH BALANCE	(\$955.7)	(\$804.8)	(\$646.1)	(\$593.8)	(\$592.8)	(\$624.1)	(\$654.1)	(\$597.0)	(\$393.0)	(\$172.9)	
2020 - 2041 RESIDENTIAL FUNDING REQUIREMENTS											
- Engineering Studies: Non Inflated	\$0.0	\$3.5	\$92.3	\$133.1	\$156.8	\$156.8	\$95.8	\$0.0	\$0.0	\$0.0	\$3,113.2
- Engineering Studies: Inflated	\$0.0	\$4.5	\$121.8	\$179.2	\$215.2	\$219.5	\$136.8	\$0.0	\$0.0	\$0.0	\$3,564.7
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,947	1,947	1,947	1,947	1,947	1,973	1,973	1,973	1,973	1,973	44,311
REVENUE											
- DC Receipts: Inflated	\$200.0	\$204.0	\$208.1	\$212.2	\$216.5	\$223.8	\$228.3	\$232.8	\$237.5	\$242.3	\$4,449.6
INTEREST											
- Interest on Opening Balance	(\$52.6)	(\$44.3)	(\$35.5)	(\$32.7)	(\$32.6)	(\$34.3)	(\$36.0)	(\$32.8)	(\$21.6)	(\$9.5)	(\$824.7)
- Interest on In-year Transactions	\$3.5	\$3.5	\$1.5	\$0.6	\$0.0	\$0.1	\$1.6	\$4.1	\$4.2	\$4.2	\$3.9
TOTAL REVENUE	\$150.9	\$163.2	\$174.1	\$180.1	\$183.9	\$189.5	\$193.9	\$204.0	\$220.0	\$237.0	\$3,628.8
CLOSING CASH BALANCE	(\$804.8)	(\$646.1)	(\$593.8)	(\$592.8)	(\$624.1)	(\$654.1)	(\$597.0)	(\$393.0)	(\$172.9)	\$64.1	

2020 Adjusted Charge Per Capita	\$81
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Allocation of Capital Program	
Residential Sector	71.0%
Non-Residential Sector	29.0%
Rates for 2020	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX C.4
TABLE 2CITY OF WATERLOO
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
ENGINEERING STUDIES
NON-RESIDENTIAL DEVELOPMENT CHARGE - CITY-WIDE
(in \$000)

ENGINEERING STUDIES	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
OPENING CASH BALANCE	\$0.0	(\$247.7)	(\$259.9)	(\$324.4)	(\$294.3)	(\$285.3)	(\$309.0)	(\$388.1)	(\$427.6)	(\$393.8)	(\$354.6)	(\$482.4)
2020 - 2041 NON-RESIDENTIAL FUNDING REQUIREMENTS												
- Engineering Studies (New Projects): Non Inflated	\$303.8	\$62.0	\$111.0	\$20.2	\$42.5	\$73.1	\$120.5	\$82.8	\$20.2	\$18.8	\$156.1	\$0.0
- Engineering Studies: Inflated	\$303.8	\$63.2	\$115.5	\$21.4	\$46.0	\$80.7	\$135.7	\$95.1	\$23.6	\$22.4	\$190.3	\$0.0
NON-RESIDENTIAL SPACE GROWTH												
- Growth in Square Feet	313,320	316,680	320,040	323,400	326,760	330,540	333,900	337,260	341,040	344,400	348,180	351,960
REVENUE												
- DC Receipts: Inflated	\$62.7	\$64.6	\$66.6	\$68.6	\$70.7	\$73.0	\$75.2	\$77.5	\$79.9	\$82.3	\$84.9	\$87.5
INTEREST												
- Interest on Opening Balance	\$0.0	(\$13.6)	(\$14.3)	(\$17.8)	(\$16.2)	(\$15.7)	(\$17.0)	(\$21.3)	(\$23.5)	(\$21.7)	(\$19.5)	(\$26.5)
- Interest on In-year Transactions	(\$6.6)	\$0.0	(\$1.3)	\$0.8	\$0.4	(\$0.2)	(\$1.7)	(\$0.5)	\$1.0	\$1.0	(\$2.9)	\$1.5
TOTAL REVENUE	\$56.1	\$51.0	\$51.0	\$51.6	\$54.9	\$57.1	\$56.5	\$55.7	\$57.4	\$61.7	\$62.5	\$62.5
CLOSING CASH BALANCE	(\$247.7)	(\$259.9)	(\$324.4)	(\$294.3)	(\$285.3)	(\$309.0)	(\$388.1)	(\$427.6)	(\$393.8)	(\$354.6)	(\$482.4)	(\$419.9)

ENGINEERING STUDIES	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	TOTAL
OPENING CASH BALANCE	(\$419.9)	(\$351.2)	(\$277.8)	(\$246.1)	(\$233.5)	(\$232.2)	(\$229.5)	(\$188.9)	(\$85.9)	\$26.4	
2020 - 2041 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Engineering Studies (New Projects): Non Inflated	\$0.0	\$1.4	\$37.7	\$54.4	\$64.0	\$64.0	\$39.1	\$0.0	\$0.0	\$0.0	\$1,271.6
- Engineering Studies: Inflated	\$0.0	\$1.8	\$49.7	\$73.2	\$87.9	\$89.7	\$55.9	\$0.0	\$0.0	\$0.0	\$1,456.0
NON-RESIDENTIAL SPACE GROWTH											
- Growth in Square Feet	355,740	359,520	363,300	367,080	370,860	374,640	378,840	382,620	386,820	390,600	7,717,500
REVENUE											
- DC Receipts: Inflated	\$90.2	\$93.0	\$95.9	\$98.8	\$101.8	\$104.9	\$108.2	\$111.5	\$115.0	\$118.4	\$1,931.2
INTEREST											
- Interest on Opening Balance	(\$23.1)	(\$19.3)	(\$15.3)	(\$13.5)	(\$12.8)	(\$12.8)	(\$12.6)	(\$10.4)	(\$4.7)	\$0.9	(\$330.8)
- Interest on In-year Transactions	\$1.6	\$1.6	\$0.8	\$0.4	\$0.2	\$0.3	\$0.9	\$2.0	\$2.0	\$2.1	\$3.5
TOTAL REVENUE	\$68.7	\$75.3	\$81.4	\$85.7	\$89.2	\$92.4	\$96.5	\$103.1	\$112.3	\$121.4	\$1,603.9
CLOSING CASH BALANCE	(\$351.2)	(\$277.8)	(\$246.1)	(\$233.5)	(\$232.2)	(\$229.5)	(\$188.9)	(\$85.9)	\$26.4	\$147.8	

2020 Adjusted Charge Per Square Foot

\$0.20

Allocation of Capital Program

Residential Sector	71.0%
Non-Residential Sector	29.0%

Rates for 2020

Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX D

RESERVE FUNDS

**APPENDIX D
TABLE 1**

**CITY OF WATERLOO
DEVELOPMENT CHARGE RESERVE FUND BALANCE BY ACCOUNT
FUNDS AS OF SEPTEMBER 30, 2019**

Service	Reserve Fund Balance as at Sept. 30, 2019	2019 Capital Commitments	Uncommitted Reserve Funds
Library Services	\$ 3,708,810	\$4,723,000	(\$1,014,190)
Protective Services	\$ 1,168,269	\$0	\$1,168,269
Parks And Major Indoor Recreation Facilities	\$ 15,490,788	\$13,416,000	\$2,074,788
Cemeteries	\$ 52,967	\$0	\$52,967
Parking	\$ 4,899,118	\$0	\$4,899,118
Public Works and Fleet	\$ (704,462)	\$0	(\$704,462)
Growth Studies	\$ 25,459	\$0	\$25,459
Roads And Related Services	\$ (1,663,465)	\$0	(\$1,663,465)
Water Supply And Wastewater	\$ 4,905,392	\$0	\$4,905,392
Storm Water Drainage And Control Services	\$ 3,450,912	\$0	\$3,450,912
Engineering Studies	\$ (725,100)	\$37,000	(\$762,100)
Total Development Charge Reserves	\$30,608,688	\$18,176,000	\$12,432,688

APPENDIX E

COST OF GROWTH ANALYSIS

APPENDIX E

COST OF GROWTH ANALYSIS

ASSET MANAGEMENT PLAN

The DCA now requires that municipalities complete an Asset Management Plan before passing a development charges by-law. A key function of the Asset Management Plan is to demonstrate that all assets funded under the development charges by-law are financially sustainable over their full life cycle.

Asset Types

A summary of the future municipally-owned assets and estimated useful life assumptions for eligible DC services considered as part of the study are outlined in Table 1 and Table 2. Although all capital assets considered in the study have been identified, not all assets necessitate future replacement or ongoing maintenance activities. The exception and the justification is as follows:

- Some of the works identified may represent one-time expenditures and may be temporary in nature. Therefore, the assets would not be required to be replaced and no ongoing operation and maintenance costs exist. Such assets are identified as “not a long-term asset” in the table.
- Some projects do not relate to the emplacement of a tangible capital asset—some examples include the acquisition of land or the undertaking of development-related studies. These projects/costs do not necessarily require future replacement or ongoing maintenance. Such projects are identified as “not infrastructure” in the table.
- For assets that have been constructed (i.e. recovery of past commitments) it is assumed that the related contribution is already included within the City’s annual provision. As such, these projects are identified as “not applicable” in the table.

It should be noted that the capital cost estimates prepared for each of the projects identified in this section include grouped costs of various individual elements, which, as a stand-alone item, may have its own useful life (ex. New buildings include: HVAC, structural elements, roof, etc.). Accordingly, the average useful life assumptions noted below are applicable to all project components.

Table 1 – Summary of Municipal Assets Considered City-wide General Services	
Service and Amenities	Estimated Useful Life
Library <ul style="list-style-type: none"> • Buildings • Strategic Plan Implementation • Materials 	35 years Not Infrastructure 7 years
Protective Services <ul style="list-style-type: none"> • Buildings • Vehicles • Equipment 	35 years 15 years 7 years
Parks and Major Indoor Recreation Facilities <ul style="list-style-type: none"> • Land • Recreation Facilities • Park Amenities • Fleet 	Not infrastructure 35 years 20 years 8 years
Cemeteries <ul style="list-style-type: none"> • Buildings 	35 years
Parking <ul style="list-style-type: none"> • Facilities 	35 years
Public Works and Fleet <ul style="list-style-type: none"> • Buildings • Fleet 	35 years 8 years
Growth-Related Studies <ul style="list-style-type: none"> • Development-related studies, etc. 	Not infrastructure

Table 2 – Summary of Municipal Assets Considered Engineered Services	
Capital Project Description	Estimated Useful Life
Roads and Related <ul style="list-style-type: none"> • Linear Roads Infrastructure • Active Transportation Projects 	35 years 45 years
Water Supply and Wastewater <ul style="list-style-type: none"> • Linear Infrastructure • Sanitary facilities and other structures 	75 years 33 years
Storm Drainage and Control Services <ul style="list-style-type: none"> • Linear Infrastructure • Ponds 	75 years 25 years
Engineering Studies <ul style="list-style-type: none"> • Development-related studies, etc. 	Not infrastructure

Annual Provision

When assets require rehabilitation or are due for replacement, the source of funds is limited to reserves or contributions from operating. Capital expenditures to carry out the rehabilitation and replacement of aging infrastructure are not growth-related and are therefore not eligible for funding through development charge revenues or other developer contributions.

Based on the information obtained from City staff regarding useful life assumptions and the capital cost of acquiring and/or emplacing each asset, a provision for infrastructure replacement has been calculated for both the general and engineered services. Provisions for infrastructure replacement are initially calculated for each asset based on their useful life and the anticipated cost of replacement. The aggregate of all individual provisions form the required annual capital provision. In calculating the annual provisions, a number of assumptions are made to account for inflation (2.0 per cent) and interest (3.5 per cent).

Consistent with the requirements of the DCA, assets that are proposed to be funded under the development charges by-law have been included in the analysis. As a result, the total calculated annual provision for development charge related infrastructure has been netted down to consider the replacement of existing infrastructure or benefit-to-existing development. However, for reference, the annual replacement provisions associated with the non-development charge funded costs, including costs related to the ten per cent statutory discount, benefit-to-existing and post-period benefit have also been calculated.

Table 3 and 4 provides the calculated annual asset management contribution for both the gross capital expenditures and the share related to the 2020-2029 and 2020-2041 DC recoverable portion. The year 2030 and 2042 have been included to calculate the annual contribution for the 2020-2029 and 2020-2041 periods as the expenditures in 2029 and 2041 will not trigger asset management contributions until 2030 and 2042, respectively. Should the City be replacing all the assets at the end of their lifecycle, by 2030, as shown in Table 3, the City will need to fund an additional \$3.12 million per annum in order to properly fund the full life cycle costs of the new assets related to general services supported under the development charges by-law.

Table 4 provides a separate analysis of the annual provisions required for the engineered services capital program as the program extends to 2041. As shown in Table 4, the annual provision in 2042 amounts to \$1.79 million.

General Services	2020-2029 Capital Program		Calculated AMP Annual Provision by 2030	
	DC Recoverable	Non-DC Funded	DC Related	Non-DC Related
Library Services	\$5,138,000	\$625,000	\$318,000	\$68,000
Protective Services	\$4,900,000	\$6,237,000	\$226,000	\$192,000
Parks And Major Indoor Recreation Facilities	\$35,783,000	\$20,234,000	\$1,700,000	\$912,000
Cemeteries	\$19,000	\$162,000	\$1,000	\$5,000
Parking	\$14,693,000	\$1,592,000	\$426,000	\$46,000
Public Works And Fleet	\$6,654,000	\$2,304,000	\$452,000	\$71,000
Growth Studies	\$3,365,000	\$928,000	\$0	\$0
Total	\$70,552,000	\$32,082,000	\$3,123,000	\$1,294,000

Engineered Services	2020-2041 Capital Program		Calculated AMP Annual Provision by 2042	
	DC Recoverable	Non-DC Funded	DC Related	Non-DC Related
Roads And Related Services	\$37,472,000	\$42,357,000	\$978,000	\$1,244,000
Water Supply And Wastewater	\$38,666,000	\$25,563,000	\$552,000	\$325,000
Storm Water Drainage And Control Services	\$20,646,000	\$20,456,000	\$259,000	\$258,000
Engineering Studies	\$4,385,000	\$2,645,000	\$0	\$0
Total	\$101,169,000	\$91,021,000	\$1,789,000	\$1,827,000

Financial Sustainability of the Program

Future Revenue Growth

The calculated annual funding provision should be considered within the context of the City's projected growth. Over the next ten years (to 2029) the City is projected to increase by approximately 7,327, households, which represents a 17 per cent increase over the existing base. In addition, the City will also add nearly 7,827 new employees that will result in approximately 3.29 million square feet of additional non-residential building space. By 2041, there will be an increase of nearly 15,778 new dwelling units and 7.72 million square feet of non-residential building space. This growth will have the effect of increasing the overall assessment base and additional user fee and charges revenues to offset the capital asset provisions required to replace the infrastructure proposed to be funded under the development charges by-law. A portion of the collection of these funds is intended to be allocated to the City's reserves for the future replacement of these assets. Addition information on the forecast can be found in Appendix A.

LONG-TERM CAPITAL AND OPERATING IMPACT ANALYSIS

As shown in Table 5, by 2029, the City's net operating costs are estimated to increase by \$4.1 million for property tax supported services. Increases in net operating costs will be experienced as new facilities such as libraries are opened. Operating and maintenance costs will also increase as additions to the City's road network are made. Growth Studies, Water Supply and Wastewater, Stormwater Drainage and Control Services and Engineering Studies capital expenditures are expected to be off-set by user fees and water/wastewater rates rather than property taxes and therefore no impact is reflected in the analysis. Capital costs related to studies are not expected to have an impact on property tax supported costs.

Table 6 summarizes the components of the development-related capital forecast that will require funding from non-DC sources. In total, \$23.1 million will need to be financed from non-DC sources over the 2020-2029 planning period and \$60.3 million over 2020-2041 planning period. In addition, \$10.1 million in interim DC financing related to post-period shares of projects may be required. However, because DC by-laws must be revisited at least every five years, it is difficult to determine the quantum of interim financing that may be necessary.

The share of the development-related capital forecast requiring funding from non-DC sources consists of two components. The most significant, at \$17.1 million in the 10-year period and \$60.3 million in the 21-year period are related to benefits to the existing community. An additional \$6.0 million is identified as the mandatory ten per cent discount for certain City-wide general services. Council is made aware of these factors so that they understand the operating and capital costs that will not be covered by DCs as it adopts the development-related capital forecast set out in the study.

THE PROGRAM IS DEEMED FINANCIALLY SUSTAINABLE

In summary, the asset management plan and long-term capital and operating analysis included in this appendix demonstrates that the City can afford to invest and operate the identified general and engineered services infrastructure over the ten-year and long-term planning periods.

Importantly, the City's budget process allows staff to continue to monitor and implement mitigating measures should the program become less sustainable.

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APPENDIX E
TABLE 5

CITY OF WATERLOO
ESTIMATED NET OPERATING COST OF THE PROPOSED
DEVELOPMENT-RELATED CAPITAL PROGRAM

Category	Cost Driver (in 2020 \$)		Additional Operating Costs \$ (000) at 2029
	\$ (000)	Operating Impact (%)	
LIBRARY SERVICES			\$129.2
East Side Library Branch	\$2,358	2.82%	\$66.5
Material Acquisitions	\$2,224	2.82%	\$62.7
PROTECTIVE SERVICES			\$691.6
Buildings, Land & Furnishings	\$9,601	6.21%	\$596.2
Vehicles & Equipment	\$1,536	6.21%	\$95.4
PARKS AND MAJOR INDOOR RECREATION FACILITIES			\$2,228.4
West Side Recreation Facility Development	\$7,934	2.82%	\$223.7
Outdoor Recreation & Park Trails	\$41,215	4.85%	\$1,998.9
Fleet	\$1,584	0.36%	\$5.7
CEMETERIES			\$38.4
Buildings, Land & Equipment	\$181	21.19%	\$38.4
PARKING			\$402.2
Uptown Parking Expansion General	\$16,285	2.47%	\$402.2
PUBLIC WORKS AND FLEET			\$162.0
Buildings, Land & Equipment	\$5,378	2.82%	\$151.7
Fleet	\$2,876	0.36%	\$10.4
GROWTH STUDIES	no new net tax levy expenditures		\$0.0
ROADS AND RELATED*	\$79,829	0.52%	\$415.1
WATER SUPPLY AND WASTEWATER	no new net tax levy expenditures		\$0.0
STORMWATER DRAINAGE AND CONTROL SERVICES	no new net tax levy expenditures		\$0.0
ENGINEERING STUDIES	no new net tax levy expenditures		\$0.0
TOTAL ESTIMATED OPERATING COSTS			\$4,066.9

**APPENDIX E
TABLE 6**

**CITY OF WATERLOO
SUMMARY OF DEVELOPMENT RELATED CAPITAL PROGRAM**

General Services	Development-Related Capital Program (2020 - 2029)					Total DC Eligible Costs for Recovery (\$000)
	Net Municipal Cost (\$000)	Replacement & Benefit to Existing (\$000)	Legislated Service Discount (\$000)	DC Reserves (\$000)	Post-2029 Benefit (\$000)	
1.0 LIBRARY SERVICES	\$5,763.8	\$134.4	\$461.5	\$0.0	\$441.8	\$4,726.0
2.0 PROTECTIVE SERVICES	\$11,136.9	\$0.0	\$0.0	\$1,168.3	\$6,236.7	\$3,731.8
3.0 PARKS AND MAJOR INDOOR RECREATION FACILITIES	\$51,380.2	\$15,597.3	\$3,578.3	\$2,074.8	\$0.0	\$30,129.8
4.0 CEMETERIES	\$181.2	\$162.0	\$1.9	\$17.2	\$0.0	\$0.0
5.0 PARKING	\$16,285.3	\$0.0	\$1,628.5	\$4,899.1	\$1,364.4	\$8,393.3
6.0 PUBLIC WORKS AND FLEET	\$8,958.0	\$268.9	\$0.0	\$0.0	\$2,035.0	\$6,654.1
7.0 GROWTH STUDIES	\$4,292.2	\$927.6	\$336.5	\$25.5	\$0.0	\$3,002.7
TOTAL 10 YEAR GENERAL SERVICES	\$97,997.5	\$17,090.2	\$6,006.7	\$8,184.8	\$10,078.0	\$56,637.8

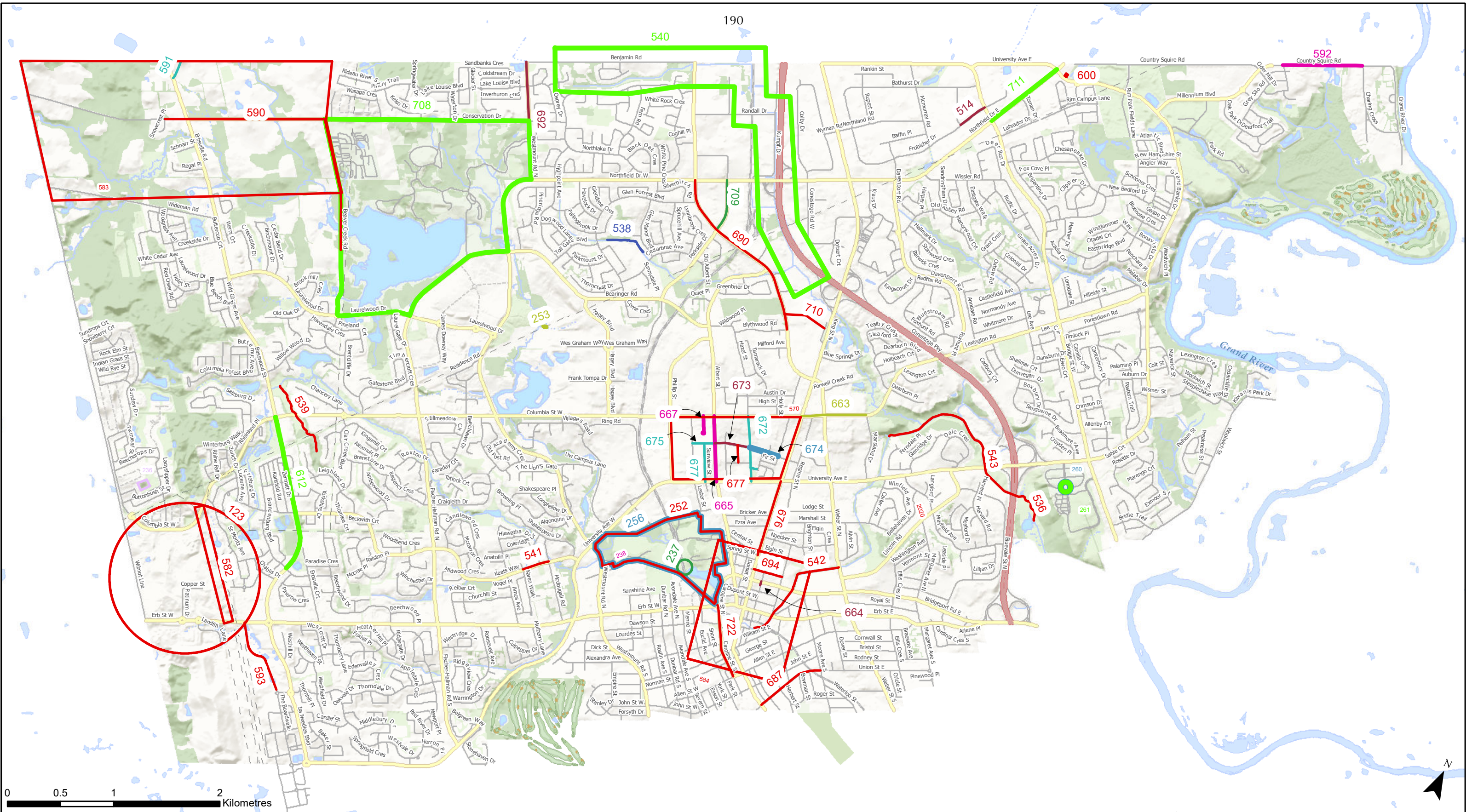
Engineered Services	Development-Related Capital Program (2020 - 2041)					Total DC Eligible Costs for Recovery (\$000)
	Net Municipal Cost (\$000)	Replacement & Benefit to Existing (\$000)	Legislated Service Discount (\$000)	Available DC Reserves (\$000)	Post-2041 Benefit (\$000)	
1.0 ROADS AND RELATED SERVICES	\$58,864.9	\$21,392.7	\$0.0	\$0.0	\$0.0	\$37,472.2
2.0 WATER SUPPLY AND WASTEWATER	\$57,125.7	\$18,459.4	\$0.0	\$4,905.4	\$0.0	\$33,760.9
3.0 STORM WATER DRAINAGE AND CONTROL SERVICES	\$38,651.9	\$18,006.4	\$0.0	\$3,450.9	\$0.0	\$17,194.6
4.0 ENGINEERING STUDIES	\$6,835.7	\$2,450.9	\$0.0	\$0.0	\$0.0	\$4,384.8
TOTAL ENGINEERED SERVICES TO 2041	\$161,478.2	\$60,309.3	\$0.0	\$8,356.3	\$0.0	\$92,812.6

TOTAL GENERAL & ENGINEERED SERVICES	\$259,475.6	\$77,399.5	\$6,006.7	\$16,541.1	\$10,078.0	\$149,450.3
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APPENDIX F

MAP SHOWING

ENGINEERED SERVICES CAPITAL WORKS



City of Waterloo Development Charges Construction Projects 2020 - 2041

— 2020	— 2023	— 2026
— 2021	— 2024	— 2027
— 2022	— 2025	— 2028
		— 2029

Capital Project Listing

Cemeteries	260 Parkview Chapel Niche Wall Additions	Studies-Growth	101 Comprehensive Asset Management Plan
Cemeteries	261 Parkview Columbarium Features	Studies-Growth	137 Parking Utilization Study
Fire	304 Fire Rescue Expansion	Studies-Growth	254 Park Strategy Study
Fire	305 Personal Protective Equipment and Uniforms-New Personnel	Studies-Growth	255 Urban Forest Strategy
Fire	306 Storage Facility Space	Studies-Growth	256 Waterloo Park Master Plan Update
Fire	307 Fire Prevention Officer Equipment and Vehicle	Studies-Growth	257 West Side Recreation Facility Needs Analysis and Feasibility Study
Fire	308 New Fire Pumper-Rescue Quint	Studies-Growth	337 Master Plan and Recreational Trends Study
Fire	309 New Fire Pumper-Rescue Quint-Equipment	Studies-Growth	632 Census Trends
Indoor Rec.	222 West Side Recreation Facility Development	Studies-Growth	634 Community Visioning
Indoor Rec.	228 West Side Recreation Facility - Land Acquisition	Studies-Growth	635 Comprehensive Zoning By-law Review -Legislated Review
Library	803 Book Collection	Studies-Growth	636 Community Benefits Charge Implementation
Library	804 Library Growth - Non Book Collection	Studies-Growth	637 Cultural Heritage Landscape Study and Plan
Library	806 Strategic Plan Implementation	Studies-Growth	638 Cultural Heritage Landscape Study and Plan II & III
Parking	119 Uptown Parking Expansion General (Structure & Surface Spaces)	Studies-Growth	639 DC Funded Growth Studies
Parkland	223 Park Amenity Upgrades	Studies-Growth	640 DC Funded Growth (Development) Studies
Parkland	230 Leash Free Dog Park	Studies-Growth	641 DC Funded Growth (Height & Density) Studies
Parkland	231 Neighbourhood Action Sports Parks	Studies-Growth	642 DC Funded Growth (Parking) Studies
Parkland	232 Park Strategy Implementation	Studies-Growth	643 DC Funded Growth (Urban Design) Studies
Parkland	235 Splash Pads Construction	Studies-Growth	645 Existing District Plan Updates
Parkland	236 Vista Hills Programmable Soccer Field- Partnership with WRDSB	Studies-Growth	647 Growth Management Policy
Parkland	237 Waterloo Park - New East/West Park Crossing	Studies-Growth	649 Hydro Burial Study
Parkland	238 Waterloo Park - Public Open Space Improvements	Studies-Growth	650 Natural System Inventory and Strategy
Parkland	242 Outdoor Sports Field Strategy Implementation	Studies-Growth	651 New Central Residential District Plan
Parkland	246 Park Signage Replacement Program - City wide	Studies-Growth	652 Official Plan Review - Background Research
Parkland	248 Playground Upgrades/Expansion-City Wide	Studies-Growth	653 Reurbanization Initiatives
Parkland	249 Sportsfield Upgrades - City wide	Studies-Growth	654 Revised Erbsville District Plan
Parkland	252 Waterloo Park - Master Plan Implementation	Studies-Growth	657 Urban Design Model
Parkland	253 Westmount Sports Park Pedestrian Bridge	Studies-Growth	807 Study - Library Technology Study
Parkland	580 City Wide - Var. Neighborhood New Park Dev.	Public Works	273 Material Storage Implementation
Parkland	582 Hydro Corridor Trail - South of Columbia St.	Public Works	274 Mini Operation Centre on the West Side
Parkland	583 Trails in New Development Areas-NW Waterloo	Public Works	420 Fleet Equipment Expansion
Parkland	584 Uptown Neighbourhoods Public Space Additions	Roads	123 West Side Employment Lands Servicing
Parkland	631 Station Area Planning Implementation	Roads	570 Northdale Community Master Plan Implementation
Parkland	708 Laurel Creek Trail around Conservation Area	Roads	590 Beaver Creek Road & Conservation Drive Reconstruction
Parkland	709 Market Trail Stage 2 Construction	Roads	591 Bisch Street - Erbsville Road to City Limit - Reconstruction
Parkland	720 Trail Lighting Retrofit Program	Roads	592 Country Squire Rd. - Glasgow St (township) to 500m East
Storm	123 West Side Employment Lands Servicing	Roads	593 Ira Needles Boulevard - By-pass
Storm	530 Core Area Development Driven Upgrades-Stormwater	Roads	631 Station Area Planning Implementation
Storm	531 Development Driven Storm Sewer Upgrades - City Wide	Roads	663 Columbia St - King St to Marsland Dr
Storm	536 Bechtel Park Woodlot - Creek Rehabilitation	Roads	664 Left Turn Lane Regina St @ Bridgeport Road
Storm	538 Cedar Creek site CDR-E4	Roads	665 Albert Street - Columbia St to University Ave - Reconstruction
Storm	539 Clair Creek North Reach 1	Roads	667 Batavia Place - Columbia St to Cul-de-Sac
Storm	540 Forwell Creek Industrial Lands	Roads	672 Hazel Street - University Ave to Columbia St & Beech St
Storm	541 Keatsway Storm Bypass & Creek Bank Stabilization	Roads	673 Hickory St W - Albert to Hazel St - Reconstruction
Storm	542 Laurel Crk Functional Study & Implementation - Regina to Weber	Roads	674 Hickory St E - Hazel St to Spruce St - Reconstruction
Storm	543 Laurel Crk Study Implementation - Hillside Park to HWY 85	Roads	675 Hickory Street East - Lester to Albert -Reconstruction
Storm	545 Stormwater Management System Master Plan Implementation	Roads	676 King St. - Central St to University Ave
Storm	590 Beaver Creek Road & Conservation Drive Reconstruction	Roads	677 Larch Street - Balsam to Hickory
Storm	593 Ira Needles Boulevard - By-pass	Roads	685 Sunview Street - University Ave to Hickory St - Reconstruction
Storm	665 Albert Street - Columbia St to University Ave - Reconstruction	Roads	687 Union St - King St to Moore Ave
Storm	667 Batavia Place - Columbia St to Cul-de-Sac	Roads	690 Weber St - Blythwood to Northfield Drive
storm	672 Hazel Street - University Ave to Columbia St & Beech St	Roads	694 Young Street East - King Street to Peppler
Storm	673 Hickory St W - Albert to Hazel St - Reconstruction	Roads	
Storm	674 Hickory St E - Hazel St to Spruce St - Reconstruction	Roads	
Storm	675 Hickory Street East - Lester to Albert -Reconstruction	Roads	
storm	676 King St. - Central St to University Ave	Roads	
Storm	677 Larch Street - Balsam to Hickory	Roads	
Storm	685 Sunview Street - University Ave to Hickory St - Reconstruction	Roads	
Storm	687 Union St - King St to Moore Ave	Roads	
Storm	690 Weber St - Blythwood to Northfield Drive	Roads	
Storm	694 Young Street East - King Street to Peppler	Roads	
		Roads	123 West Side Employment Lands Servicing
		Roads	570 Northdale Community Master Plan Implementation
		Roads	590 Beaver Creek Road & Conservation Drive Reconstruction
		Roads	591 Bisch Street - Erbsville Road to City Limit - Reconstruction
		Roads	592 Country Squire Rd. - Glasgow St (township) to 500m East
		Roads	593 Ira Needles Boulevard - By-pass
		Roads	631 Station Area Planning Implementation
		Roads	663 Columbia St - King St to Marsland Dr
		Roads	664 Left Turn Lane Regina St @ Bridgeport Road
		Roads	665 Albert Street - Columbia St to University Ave - Reconstruction
		Roads	667 Batavia Place - Columbia St to Cul-de-Sac
		Roads	672 Hazel Street - University Ave to Columbia St & Beech St
		Roads	673 Hickory St W - Albert to Hazel St - Reconstruction
		Roads	674 Hickory St E - Hazel St to Spruce St - Reconstruction
		Roads	675 Hickory Street East - Lester to Albert -Reconstruction
		Roads	676 King St. - Central St to University Ave
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		Roads	685 Sunview Street - University Ave to Hickory St - Reconstruction
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		Roads	690 Weber St - Blythwood to Northfield Drive
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		Roads	591 Bisch Street - Erbsville Road to City Limit - Reconstruction
		Roads	592 Country Squire Rd. - Glasgow St (township) to 500m East
		Roads	593 Ira Needles Boulevard - By-pass
		Roads	631 Station Area Planning Implementation
		Roads	663 Columbia St - King St to Marsland Dr
		Roads	664 Left Turn Lane Regina St @ Bridgeport Road
		Roads	665 Albert Street - Columbia St to University Ave - Reconstruction
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		Roads	631 Station Area Planning Implementation
		Roads	663 Columbia St - King St to Marsland Dr
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		Roads	665 Albert Street - Columbia St to University Ave - Reconstruction
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		Roads	672 Hazel Street - University Ave to Columbia St & Beech St
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		Roads	685 Sunview Street - University Ave to Hickory St - Reconstruction
		Roads	687 Union St - King St to Moore Ave
		Roads	690 Weber St - Blythwood to Northfield Drive
		Roads	694 Young Street East - King Street to Peppler

Sanitary 511 City Wide - Development Driven Sanitary Sewer Upgrades
 Sanitary 512 Core Area Development Driven Upgrades-Sanitary
 Sanitary 513 Extend Sanitary Mains to Service Private Properties
 Sanitary 514 Frobisher Trunk Sewer - Upsizing
 Sanitary 520 Sanitary Optimization and Rehabilitation Program
 Sanitary 521 Sanitary Sewer Master Plan - Implementation
 Sanitary 590 Beaver Creek Road & Conservation Drive Reconstruction
 Sanitary 593 Ira Needles Boulevard - By-pass
 Sanitary 600 Northlands Sanitary Pumping Station Upgrade
 Sanitary 667 Batavia Place - Columbia St to Cul-de-Sac
 Sanitary 672 Hazel Street - University Ave to Columbia St & Beech St
 Sanitary 673 Hickory St W - Albert to Hazel St - Reconstruction
 Sanitary 674 Hickory St E - Hazel St to Spruce St - Reconstruction
 Sanitary 675 Hickory Street East - Lester to Albert -Reconstruction
 Sanitary 676 King St. – Central St to University Ave
 Sanitary 677 Larch Street - Balsam to Hickory
 Sanitary 685 Sunview Street - University Ave to Hickory St - Reconstruction
 Sanitary 687 Union St - King St to Moore Ave
 Sanitary 690 Weber St - Blythwood to Northfield Drive
 Sanitary 694 Young Street East - King Street to Peppler

Studies-Eng 412 DC Bylaw Review
 Studies-Eng 510 Sanitary Master Plan Update
 Studies-Eng 546 Storm Water Master Plan Update
 Studies-Eng 554 Water Master Plan Update
 Studies-Eng 632 Census Trends
 Studies-Eng 644 Erbsville Scoped Subwatershed Study
 Studies-Eng 645 Existing District Plan Updates
 Studies-Eng 654 Revised Erbsville District Plan
 Studies-Eng 656 Transportation Demand Management Guidelines
 Studies-Eng 703 Active Transportation Crossing of Hwy. 85
 Studies-Eng 723 Future Snow Dump Study
 Studies-Eng 725 Transportation Master Plan Update and Review
 Studies-Eng 727 Traffic Calming Studies - TMP

Water 555 City Wide Development Driven Upgrades - Water
 Water 556 Core Area Development Driven Upgrades - Water
 Water 559 Water Distribution System Study Implementation
 Water 590 Beaver Creek Road & Conservation Drive Reconstruction
 Water 593 Ira Needles Boulevard - By-pass
 Water 612 Erbsville Road - Ira Needles to Columbia St - Watermain
 Water 665 Albert Street - Columbia St to University Ave - Reconstruction
 Water 667 Batavia Place - Columbia St to Cul-de-Sac
 Water 672 Hazel Street - University Ave to Columbia St & Beech St
 Water 673 Hickory St W - Albert to Hazel St - Reconstruction
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412 DC Bylaw Review
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 546 Storm Water Master Plan Update
 554 Water Master Plan Update
 632 Census Trends
 644 Erbsville Scoped Subwatershed Study
 645 Existing District Plan Updates
 654 Revised Erbsville District Plan
 656 Transportation Demand Management Guidelines
 703 Active Transportation Crossing of Hwy. 85
 723 Future Snow Dump Study
 725 Transportation Master Plan Update and Review
 727 Traffic Calming Studies - TMP
 555 City Wide Development Driven Upgrades - Water
 556 Core Area Development Driven Upgrades - Water
 559 Water Distribution System Study Implementation
 590 Beaver Creek Road & Conservation Drive Reconstruction
 593 Ira Needles Boulevard - By-pass
 612 Erbsville Road - Ira Needles to Columbia St - Watermain
 665 Albert Street - Columbia St to University Ave - Reconstruction
 667 Batavia Place - Columbia St to Cul-de-Sac
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APPENDIX G

LOCAL SERVICE POLICY

APPENDIX G

LOCAL SERVICE POLICY

This document sets out the City of Waterloo’s general policy on Development Charges (DC) and funding for local services related to highways, stormwater management, parkland development and underground services. In general terms, this policy outlines the nature of engineered infrastructure that is included in the DC Background Study as a development charge project, versus infrastructure that is considered as a local service to be installed separately by landowners.

This policy does not supersede existing City by-laws or legal agreements but is meant to provide clarification and supporting information when interpreting the division of costs for development-related items.

Notwithstanding the contents of this policy, the City reserves the right to review any development application with respect to the type, location, nature and scope of engineered infrastructure that is required for development. Any new development in the City must first address the required planning approvals framework and stand on its own merit before consideration of what costs might be attributable to the municipality and its development charges reserve fund.

Subsection 59(2) of the 1997 *Development Charges Act* (herein referred to as the “*Act*”) sets forth the context for this policy to provide flexibility for both the City and developers. Interpretation of the policy will be determined jointly by the City’s Commissioner of Integrated Planning and Public Works (IPPW) and Director of Engineering Services.

This local service policy is subject to review and amendment by the City either in conjunction with or independent of any amendments or updates to the City’s DC by-laws.

A. SERVICES RELATED TO A HIGHWAY

A highway and services related to a highway are intended for the transportation of people and goods via many different modes including, but not limited to passenger automobiles, commercial vehicles, transit vehicles, bicycles and pedestrians. The highway shall consist of all land and associated infrastructure built to support (or service) this movement of people and goods regardless of the mode of transportation

employed, thereby achieving a complete street. A complete street is the concept whereby a highway is planned, designed, operated and maintained to enable pedestrians, cyclists, public transit users and motorists to move safely and efficiently. The highway (i.e. road types) discussed in this policy shall have the meanings of the road classifications contained in the City's most current Transportation Master Plan.

The associated infrastructure to achieve this concept shall include, but is not limited to: road pavement structure and curbs; grade separation/bridge structures (for any vehicles, railways and/or pedestrians); grading, drainage and retaining wall features; culvert structures; storm water drainage systems; utilities such as gas, hydro, cable; traffic control systems; signage; gateway features; street furniture; active transportation facilities (e.g. sidewalks, bike lanes, multi-use trails); transit lanes and lay-bys; roadway illumination systems; boulevard and median surfaces (e.g. sod and topsoil, paving, etc.); street trees and landscaping; parking lanes and lay-bys; and driveway entrances; noise attenuation systems; railings and safety barriers. The following road-related infrastructure is considered under this policy:

1. Local and Collector Roads (including land)

- a) Collector Roads Internal to Development. For such roads all land and construction costs are a direct developer responsibility under s.59 of the Act as a local service. Associated infrastructure to be split between DC and local service as determined and agreed to by the City and developers.
- b) Collector Roads External to Development. For such roads all land, construction costs and associated infrastructure as needed to support a specific development or required to link with the area to which the plan relates are a direct developer responsibility under s.59 of the Act; otherwise, such roads may be included in DC calculations with costs split between DC and local service. The cost splits to be determined and agreed to by the City and developers, based on local circumstances, to the extent permitted under s.5(1) of the Act.
- c) All Local Roads are considered to be the developer's sole responsibility, including those within a major site plan development or plan of condominium.

2. Arterial Roads

- a) New, widened, extended or upgraded arterial roads, inclusive of all associated infrastructure are to be included as part of road costing funded via provisions of the Act, s.5(1).

- b) Land acquisition for arterial roads on existing rights-of-way to achieve a complete street shall be via dedication or Community Benefits Charges (CBC) under *Planning Act* provisions (s. 37, 41, 51 and s. 53).
- c) Land acquisition for arterial roads on new rights-of-way to achieve a complete street: dedication, where possible, or CBCs under the *Planning Act* provisions (s. 37, 41, 51 and s. 53) through development lands up to the road right-of-way specified in the Official Plan.
- d) Land acquisition beyond normal dedication requirements to achieve transportation corridors as services related to highways including grade separation infrastructure for the movement of pedestrians, cyclists, public transit and/or railway vehicles to be included in DCs.

3. Traffic Control Systems, Signals and Intersection Improvements

- a) On new arterial roads and arterial road improvements unrelated to a specific development these improvements may be included as part of road costing funded through DCs.
- b) For any private site entrances or entrances to specific developments not fronting arterial or collector roads these improvements are a direct developer responsibility under s.59 of the *Act* as a local service.
- c) On arterial or collector road intersections with Regional roads these systems and improvements may be include in Regional DCs or in certain circumstances, may be a direct developer responsibility.
- d) Intersection improvements (including roundabouts and pedestrian islands), new or modified signalization, signal timing and optimization plans, area traffic studies for highways attributed to growth and unrelated to a specific development shall typically be included in DC calculation as permitted under s.5(1) of the *Act*.

4. Streetlights

- a) Streetlights on new arterial roads as arterial road improvements are considered part of a complete street and may be included as part of the road costing funded through DCs. Circumstances where the scale and nature of development is such that street lighting provides a direct net benefit to the development, street lighting may be direct developer responsibility through local service provisions (s.59 of the *Act*).
- b) Streetlights on non-arterial roads internal to development are considered part of a complete street and are included as a direct developer responsibility under s. 59 of the *Act* (as a local service).

- c) Streetlights on non-arterial roads external to development, needed to support a specific development or required to link with the area to which the plan relates are considered part of a complete street and included as a direct developer responsibility under s. 59 of the *Act* as a local service.

5. **Transportation Related Pedestrian and Cycling Facilities**

- a) Sidewalks, multi-use trails and bike lanes, inclusive of all required infrastructure, located within arterial roads, regional roads and provincial highway corridors are considered part of a complete street and included in DCs; unless, where the scale and nature of development is such that these facilities provide a direct net benefit to the development, these facilities, may be direct developer responsibility through local service provisions (s.59 of the *Act*).
- b) Sidewalks, multi-use trails and bike lanes, inclusive of all required infrastructure, located within or linking to non-arterial road corridors internal to development are considered part of the complete street and are included as a direct developer responsibility under s. 59 of the *Act*.
- c) Other sidewalks, multi-use trails and bike lanes, inclusive of all required infrastructure, located within non-arterial road corridors external to development and needed to support a specific development or required to link with the area to which the plan relates are a direct developer responsibility under s.59 of the *Act* as a local service.
- d) New multi-use trails (not associated with a road), inclusive of all land and required infrastructure, that go beyond the function of a recreational trail and form part of the municipality's active transportation network for cycling and/or walking shall be included in DC calculations.

6. **Noise Abatement Measures**

- a) Noise abatement measures external and internal to development where it is related to, or a requirement of a specific development, are a direct developer responsibility under s.59 of the *Act*.
- b) Noise abatement measures on new arterial roads and arterial road improvements abutting an existing community and unrelated to a specific development may be included as part of road costing funded through DCs.
- c) Noise abatement measures will typically be passive systems and in keeping with the policies of the City's Official Plan and may also include collector roads if supported by formal noise studies.

B. TRANSIT BUS STOPS AND AMENITIES

Transit bus stops and amenities are a regionally-managed service and may be addressed in the Regional DC by-law.

C. PARKLAND DEVELOPMENT

1. Recreational Trails

- a) Recreational trails and their associated infrastructure (landscaping, bridges, trail surface, etc.) may be cost-shared in the municipal parkland DCs or may be a direct developer responsibility under s. 59 of the *Act* as a local service.

2. Parkland

- a) Parkland development for community parks shall be included in the municipal parkland DCs.
- b) For district parks, neighbourhood parks and parkettes land dedication or funding is a direct developer responsibility in accordance with applicable City standards/by-laws (including CBC by-laws) and planning approvals. Municipal parkland DCs and direct developer contributions shall be apportioned as necessary to enable development local parks.
- c) Program facilities, amenities, and furniture, within parkland may be included in DCs unless internal to a site plan or subdivision development.

3. Landscape Buffer Blocks, Features, Cul-de-sac Islands, Berms, Grade Transition Areas, Walkway Connections To Adjacent Arterial Roads, Open Space

The cost of developing all landscape buffer blocks, landscape features, cul-de-sac islands, berms, grade transition areas, walkway connections to adjacent arterial roads, open space and other remnant pieces of land conveyed to the municipality shall be a direct developer responsibility as a local service. Such costs include but are not limited to:

- a) pre-grading, sodding or seeding, supply and installation of amended topsoil, landscape features, perimeter fencing and amenities and all planting; and,
- b) fencing on public lands as directed by the City.

4. Natural Heritage System (NHS)

Natural heritage system features include items such stream corridors, natural buffers for woodlots, forested areas and wetland remnants.

The following items, constructed to City requirements, are a direct developer responsibility as a local service provision, including but not limited, to:

- a) Riparian planting and landscaping requirements (as required by the City, the Grand River Conservation Authority or other authorities having jurisdiction) as a result of creation of, or construction near the NHS and associated buffers.
- b) Perimeter fencing of the NHS located on public property side of any adjacent land uses.

Development driven water feature or creek upgrades downstream of growth are typically included in the DC calculation as permitted under the *Act*.

D. UNDERGROUND SERVICES (STORMWATER, WATER, SANITARY SEWERS)

Underground services (typically linear infrastructure for stormwater, water, and sanitary services) within the road allowance are not included in the cost of road infrastructure and are treated separately. The funding responsibility for such services, as well as stormwater management ponds and pumping stations which are undertaken as part of new developments or redevelopments, will be determined by the following principles:

1. The costs of the following items shall be direct developer responsibilities as a local service:
 - a) providing all underground services internal to a development, including storm, water and sanitary services;
 - b) providing service connections from existing underground services to a development;
 - c) providing new underground services or upgrading existing underground services external to the development if the services are required to service the development, and if the pipe sizes do not exceed 200 mm for water mains. If external services are required by two or more developments, the developer for the first development will be solely responsible for the cost

of the external services and solely responsible for securing cost-sharing or reimbursement arrangements with others;

- d) providing stormwater management facilities required by the development including all associated features such as inlet and outlet structures, fore bays, valves, landscaping and fencing;
 - e) water booster pumping stations, reservoir pumping stations and/or sanitary pumping stations serving individual or multiple developments;
 - f) dedication of all lands required for stormwater management facilities and pumping stations, including any lands deemed necessary by the City to provide adequate buffering from such facilities and stations.
 - g) pipe diameter of any service (versus standard specified diameters) and be subject to negotiation for cost-sharing between the developer and the City.
2. The costs of infrastructure upsizing shall typically be paid through DCs unless there is a direct net benefit to a larger-scale development. Some examples include but are not limited to:
- a) external underground services involving trunk infrastructure and pipe sizes exceeding 300 mm for water and sanitary services and 900 mm for stormwater services.
 - b) low impact development (LID) features such as infiltration galleries, bioswales, stormceptors, oil and grit separators, rain gardens and permeable pavements.

E. STORMWATER MANAGEMENT

- a) Stormwater facilities for quality and/or quantity management, including downstream erosion works, inclusive of land and all associated infrastructure, such as landscaping and perimeter fencing are normally a direct developer responsibility under s.59 of the *Act* as a local service.
- b) Erosion control works, inclusive of all restoration requirements, related to a development application are direct developer responsibility under s. 59 of the *Act* as a local service.
- c) Post development flow control and water monitoring works are included in DCs consistent with s.5(1) of the *Act*.

F. SPECIAL SERVICING REQUESTS

On a case-by-case basis, the City will consider requests by developers to install, independently and at their own expense, municipal services that would be necessary to supply capacity for their urban intensification and development project, and not budgeted for in the City's DC by-law or forecast period. In such circumstances, the developer would need to make a written request to the City, with supporting engineering analysis to justify the extension or upgrading of municipal services. If accepted by the City, a special servicing arrangement may be formalized through a separate development agreement or special servicing agreement to accommodate the desired schedule for construction of new sewer, watermain and/or storm services, assuming that applicable planning approvals have been obtained in advance (e.g. zone change approved by Council). The purpose of such special servicing would be to allow a developer to advance works necessary to support his/her development where the City has no financial capacity or work program established to provide those same services.

G. FUTURE ASSETS CONSTRUCTED BY DEVELOPERS

All infrastructure assets constructed by developers must be designed in accordance with:

- a) the City's latest edition of the Development Engineering Manual and any revisions made to the standards and guidelines therein; and,
- b) any other applicable specifications and standards such as those published by the MOE, GRCA , OPS, MEA and Regional Municipality of Waterloo.

APPENDIX H

DC BY-LAW



THE CORPORATION OF THE CITY OF WATERLOO

BY-LAW NO. 2019 – 064

Being a by-law of The Corporation of the City of Waterloo with respect to Development Charges

WHEREAS section 2(1) of the Development Charges Act, 1997, as amended (the “Act”), enables the council of a municipality to pass by-laws imposing development charges against land to pay for increased capital costs required because of increased needs for services arising from development of the area of the municipality to which the by-law applies;

AND WHEREAS the Council of the Corporation of the City of Waterloo (“Council”), at its meeting of December 16, 2019, approved Report CORP2019-089, and in so doing adopted the "2019 Development Charges Background Study" dated October 17, 2019, prepared by City staff in association with Hemson Consulting Ltd. (the "Study");

AND WHEREAS Council provided notice of a public meeting on October 17 & 24, 2019, in accordance with section 12 of the Act, and held a public meeting on this same matter on November 18, 2019;

AND WHEREAS Council at that public meeting heard submissions of all persons who applied to be heard and, further, provided a sufficient period of time for the submission of written comments on the Study;

AND WHEREAS Council, having considered the use of area specific development charges, resolved on October 21, 2019, to continue its current practice of imposing development charges on a City-wide basis;

AND WHEREAS Council determined by resolution adopted on December, 16, 2019 that no further public meetings were required under section 12 of the Act;

AND WHEREAS Council, in considering all submissions on the Study and in adopting

the Study, directed that development charges be imposed on lands within the City subject to development or redevelopment which would have the effect of substantially increasing the usability of such lands, in accordance with the provisions of this by-law.

THEREFORE THE MUNICIPAL COUNCIL OF THE CORPORATION OF THE CITY OF WATERLOO ENACTS AS FOLLOWS:

1. IN THIS BY-LAW,

DEFINITIONS

- (1) “accessory” when used to describe a use, building or structure, means a use, building or structure incidental, subordinate and exclusively devoted to the principal use, building or structure situated on the same lot. An accessory building or structure shall not be used for human habitation unless specifically permitted to do so by this By-law nor shall the accessory use share the same gross floor area of the principal use or occupy more than the percentage of gross floor area of the Site permitted as an accessory use by the applicable zoning by-laws ;
- (2) “accessory apartment dwelling” means a separate self-contained dwelling unit which lawfully and actually existed on November 16, 1995 and the dwelling has continued to exist from Nov 16 1995 to present within a residential building that was originally designed as either:
 - (a) a single detached dwelling,
 - (b) a semi-detached dwelling,
 - (c) a townhouse dwelling,
 - (d) a freehold townhouse dwelling;
- (3) “Act” means the Development Charges Act, 1997, c.27, as amended and all regulations thereto;
- (4) “apartment building” means a residential building containing four (4) or more dwelling units, where each dwelling unit has access to an interior common corridor system with shared exit and entrance at grade. Excludes maisonette building, stacked townhouse building and Back-to-Back Townhouse Building;
- (5) “Assessment Act” means the Assessment Act, 1990, c.A.31, as amended and all regulations thereto;
- (6) “back-to-back townhouse dwelling” means a building containing more than two dwelling units separated vertically by a common wall, including a rear common wall, that do not have rear yards;

- (7) “bed & breakfast establishment” means a single detached building where guest rooms are rented for the purposes of providing temporary overnight accommodation with one or more meals to the travelling or vacationing public as per the City’s zoning by-law. Excludes hotel, group home, restaurant;
- (8) “bedroom” means a habitable room within a dwelling unit that is not:
- (a) a living room open to all occupants of the unit, and a dining room open to all occupants of the unit (the “Common Areas”);
 - (b) areas used for sanitary purposes, such as but not restricted to a washroom;
 - (c) areas used for cooking purposes, such as but not restricted to a kitchen;
 - (d) areas occupied by mechanical equipment, such as but not limited to furnaces, hot water heaters, and laundry equipment;
 - (e) stairways or hallways;
 - (f) rooms less than six (6) square metres in area where there are built-in cabinets and or closets;
 - (g) rooms less than seven (7) square metres in area where there are no built- in cabinets and or closets;
 - (h) a room without a window or alternative source of natural light; and
 - (i) a bachelor or studio unit shall be calculated to contain one (1) bedroom;
- (9) “board of education” means a board defined in s.s.1(1) of the Education Act R.S.O. 1990, c.E.2, as amended;
- (10) “building” means any structure used or intended to be used for the shelter, accommodation, or enclosure of persons, animals, or chattels. Any tent, awning, bin, metal container, platform, vessel, or vehicle used for the shelter, accommodation, or enclosure of persons, animals, or chattels shall be deemed a building for the purposes of this By-Law. Excludes a boundary wall or fence;
- (11) “Building Code Act” means the Building Code Act, S.O. 1992 c. 23, as amended and all regulations thereto;
- (12) “by-law” means this D.C. by-law and any amendments thereto;
- (13) “capital cost” means costs incurred or proposed to be incurred by the municipality or a local board thereof directly or under an agreement,
- (a) to acquire land or an interest in land, including a leasehold interest;
 - (b) to improve land;
 - (c) to acquire, lease, construct or improve buildings and structures;
 - (d) to acquire, lease, construct or improve facilities including,

- (i) rolling stock, with an estimated life of seven years or more;
 - (ii) furniture and equipment, other than computer equipment;
 - (iii) materials acquired for circulation, reference or information purposes by a library board as defined in the Public Libraries Act, R.S.O. 1990, c.34, as amended; and
 - (e) to undertake studies in connection with any of the matters referred to in clauses (a) to (d);
 - (f) to complete the development charge background study required under section 10 of the Act;
 - (g) interest on money borrowed to pay for costs in (a) to (d); required for the provision of services designated in this by-law within or outside the municipality;
- (14) “Chief Building Official” means the City's Chief Building Official or his or her designate;
- (15) “City” means The Corporation of the City of Waterloo;
- (16) “City Treasurer” means the City's Treasurer and Chief Financial Officer;
- (17) “Condominium Act” means the Condominium Act, 1998 c. 19, as amended and all regulations thereto;
- (18) “Council” means City’s Council;
- (19) “development” means the construction, erection or placing of one or more buildings or structures on land or the making of an addition or alteration to a building or structure that has the effect of increasing the size or usability thereof according to one or more of the actions referred to in subsection 2(2) of the Act, and includes redevelopment;
- (20) “development charge” means a charge imposed pursuant to this by-law;
- (21) “duplex building” means a residential building divided into two (2) dwelling units by a horizontal continuous common wall;
- (22) “dwelling unit” means two (2) or more rooms designed or intended to be occupied by and for the use of an individual or household as a residence with cooking and sanitary facilities exclusive to and within the unit;
- (23) “existing industrial building” means a building or buildings existing on a site on August 1, 2014 or the first building or buildings constructed on a vacant site pursuant to site plan approval under section 41 of the Planning Act, subsequent to August 1, 2014 for which full development charges were paid, used for or in connection with,
- (a) manufacturing, producing, assembly, processing, storing,

warehousing or distributing something provided that such activities occupy not less than 75% of the gross floor area of the building(s) on the site;

- (b) research or development in connection with manufacturing, producing or processing something which does not constitute more than 25% of the gross floor area of the building(s) on the site;
- (c) retail sales by a manufacturer, producer or processor of something they manufactured, produced or processed, provided that the retail sales are at, and do not constitute more than 25% of the gross floor area of the building(s) on the site where the manufacturing, production or processing takes; or
- (d) office or administrative purposes, if they are,
 - (i) carried out with respect to manufacturing, producing, assembly, processing, storage, warehousing or distributing of something; and
 - (ii) in or attached to the building(s) or structure(s) used for that manufacturing, producing, assembly, processing, storage, warehousing or distribution;

(24) “farm building” means that part of a bona fide farming operation encompassing barns, silos and other ancillary development to an agricultural use, but excluding a residential use;

(25) “freehold townhouse building” means a residential building containing three (3) to six (6) dwelling units which:

- (a) are separated vertically by a continuous common wall without opening from basement to roof;
- (b) are under a connected roof;
- (c) have a separate entrance at grade;
- (d) have connected exterior walls; and
- (e) are located on separate lots;

(26) “garden suite” means a separate self-contained dwelling unit that is designed to be portable and located on the same lot as the principal dwelling unit;

(27) “grade” means the finished ground level of the land, and when used in reference to a building or structure shall mean the finished ground level of the land adjacent to the exterior walls of the building or structure;

(28) “gross floor area” means the total floor area of a building or structure or part thereof, measured between the outside surfaces of exterior walls or between the outside surfaces of exterior walls and the centre line of any partition walls dividing the building or structure from another building or structure, of all floors, except for:

- (a) a room or enclosed area within the building or structure above or

below grade that is used exclusively for the accommodation of heating, cooling, ventilating, electrical, mechanical or telecommunications equipment that service the building;

- (b) loading facilities above or below grade;
- (c) in the case of a residential building, a part of the building or structure that is used for:
 - (i) residential amenity space,
 - (ii) the parking of motor vehicles; and
 - (iii) storage or other accessory use; and
- (d) in the case of a non-residential building, a part of the building or structure that is specifically designated and used for the parking of passenger motor vehicles;

The gross floor area shall include any area which is being used for the repair or for the public sale of vehicles.

- (29) “group home” means a residential dwelling where a household ranging from three (3) to eight (8) residents (excluding staff and the receiving family) live under supervision, and who by reason of their emotional, mental, social, physical condition, or legal status require a group living arrangement for their well-being. Group homes shall be licensed or approved for funding under an Act of the Parliament of Canada or the Province of Ontario;
- (30) “home occupation” means a vocational use, which is not a Farm Occupation, carried on in conjunction with a Dwelling Unit on the same property as permitted by the applicable municipal zoning by-law;
- (31) “hotel” means a building or part thereof with no less than six (6) rooms used or designed to be used for temporary overnight accommodation of the travelling or vacationing public, and may include an ancillary restaurant and conference facilities. Excludes bed & breakfast establishment, group home, long term care facility, and assisted living facility;
- (32) “household” means one (1) or more persons living together as a single non-profit, independent housekeeping unit, sharing all areas of the dwelling unit;
- (33) “institution” means a not-for-profit organization or foundation devoted to a public, educational, health, social welfare, or charitable cause or program. Includes a public hospital, library, university, college, public school, community centre, and government operations. Excludes spiritual uses, medical clinics, dwelling units, and residences;
- (34) “live/work unit” means a unit which contains separate residential and non-residential areas intended for both residential and non-residential uses concurrently, and shares a common wall or floor with or without direct access between the residential and non-residential areas;

- (35) “local board” has the same meaning as defined in section 1 of the Act;
- (36) “local services” means those facilities, works or matters which may be required by the City as a condition of approval under sections 51 or 53 of the Planning Act or Section 34(5) under the Condominium Act;
- (37) “lodging house” means a building or part thereof where the residents share access to common areas of the building, other than the Lodging room, used for residential occupancy where a proprietor offers lodging rooms to five (5) or more persons, with or without meals, in return for remuneration or the provision of a service, or for both. Excludes hotel, bed & breakfast establishment, long term care facility, assisted living facility, group home;
- (38) “lodging room” means a bedroom within a lodging unit designed to be occupied for human habitation by one resident which is exclusively used by the resident of the bedroom, and is not normally accessible to persons other than the resident of the bedroom;
- (39) “lodging unit” means a living accommodation which does not include the exclusive use of both a kitchen and a bathroom;
- (40) “long term care facility” means a building or part thereof:
- (a) that is regulated by the Ontario Ministry of Health & Long-Term Care;
 - (b) that is the residence of a person;
 - (c) where residents are provided with twenty four (24) hour nursing care and supervision; and
 - (d) where residents are furnished with meals;
- (41) “maisonette building” means a residential building containing four (4) or more dwelling units, where each dwelling unit has at least two separate means of egress. One of the means of egress shall lead to a common corridor, and the other means of egress shall lead directly outside from the dwelling unit;
- (42) “mixed-use building” means a building containing one or more dwelling units and one or more non-residential uses other than:
- (a) home occupations;
 - (b) parking spaces;
- (43) “Municipal Act” means the Municipal Act, 2001, S.O. 2001 c.25, as amended and all regulations thereto;
- (44) “multi-unit residential building” means a residential building containing four (4) or more dwelling units;
- (45) “multiple dwelling” means all residential dwellings other than a single detached

dwelling, semi-detached dwelling, apartment dwelling or a lodging house/room; including, but not limited to, townhouse dwelling, multi-unit dwelling, back-to-back townhouse dwelling, stacked townhouse dwelling;

- (46) “non-residential use” means any commercial, industrial, institutional or other use not included in the definition of a residential use and “non-residential” has a corresponding meaning;
- (47) “Official Plan” means the City's Official Plan, and any amendments thereto;
- (48) “owner” means the owner of land or a person who has made application for an approval for the development of land upon which a development charge is imposed;
- (49) “place of worship” means that part of a building or structure that is exempt from taxation as a place of worship under section 3 of the Assessment Act;
- (50) “Planning Act” means the Planning Act, 1990, c.P.13, as amended and all regulations thereto;
- (51) "Public Hospitals Act" means the Public Hospitals Act, c.P. 40, as amended and all regulations thereto;
- (52) “redevelopment” means the removal of a building or structure from land, the further development of the land, or the substantial renovation of a building or structure and a change in the use or density of the use in connection therewith;
- (53) “Region” means The Regional Municipality of Waterloo;
- (54) “regulation” means Ontario Regulation 82/98, as amended;
- (55) “residential amenity space” means indoor or outdoor space on a lot that is:
- (a) ancillary to a residential use; and
 - (b) communal and available for use by the residents of the residential building or residential portion of the building on the lot and their invitees for recreational or social activities;
- (56) "residential use" means land, buildings or structures of any kind whatsoever or a part thereof used, designed or intended to be used as living accommodations for one or more individuals, but does not include hospitals, hotels, group homes, or long-term care facilities and assisted living facilities, and "residential" has a corresponding meaning;
- (57) “semi-detached building” means a residential building divided into two (2) dwelling units by a vertical continuous common wall without opening from

basement to roof;

- (58) “services” (or “service”) means those services set out in Schedule “A” to this by-law;
- (59) “services in lieu” means those services specified in an agreement made under section 7 of this by-law;
- (60) “servicing agreement” means an agreement between a landowner and the municipality relative to the provision of municipal services to specified lands within the municipality;
- (61) “single detached dwelling” means any building containing only one dwelling unit;
- (62) “spiritual use” see “place of worship”;
- (63) “stacked townhouse building” means a residential building containing four (4) or more dwelling units which are horizontally and vertically separated in a split level or stacked manner, where each dwelling unit egresses directly outside to grade (no egress to a common corridor);
- (64) “triplex building” means a residential building containing three (3) dwelling units with a maximum of two (2) of the three (3) dwelling units being vertically separated;
- (65) “townhouse building” means a residential building containing three (3) to six (6) dwelling units which:
- (a) are separated vertically by a continuous common wall without opening from basement to roof;
 - (b) are under a connected roof;
 - (c) have a separate entrance at grade;
 - (d) have connected exterior walls; and
 - (e) are located on the same lot.

2. SCHEDULE AND CALCULATION OF DEVELOPMENT CHARGES

- (1) Council hereby determines that the development of land, within the City, unless otherwise specified in this by-law, will increase the need for the services referenced in Schedule "A".
- (2) Subject to section 4 and the other provisions of this by-law, development charges against land shall be calculated and collected in accordance with the base rates set out in Schedule "B" and Schedule "C" to this by-law, which relate to the services set out in Schedule "A".

(3) The development charge with respect to the use of any land, buildings or structures or portions thereof shall be calculated as the aggregate of the following:

- (a) 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, including the residential component of a live/work unit, according to the number and type of dwelling units on the lands as set out in Schedule "B" and Schedule "C"; and
- (b) For development for non-residential purposes, development charges shall be imposed on all non-residential development and, in the case of a mixed-used building, on the non-residential component of the mixed-use building, including the non-residential component of a live/work unit, according to the type and gross floor area of the non-residential component as set out in Schedule "B" and Schedule "C".

3. APPLICABLE LANDS

(1) Subject to subsections (2), (3), (4) and (5), this by-law applies to all lands in the City of Waterloo, whether or not the lands or use is exempt from taxation under section 3 of the Assessment Act.

(2) This by-law shall not apply to land that is owned by and used for the purposes of:

- (a) any educational use by a board of education;
- (b) any municipality or any local board of such municipality;
- (c) the Crown in right of Ontario or the Crown in right of Canada;
- (d) universities or colleges except:
 - (i) development beyond lands designated "Academic " in the Official Plan;
 - (ii) industrial/research uses on university or college lands where the industrial/research use is the main use; or
 - (iii) commercial uses.

(3) This by-law shall not apply to:

- (a) a temporary use permitted under a zoning by-law amendment enacted under section 39 of the Planning Act;
- (b) the temporary use of a construction trailer in connection with the construction of the development; or
- (c) the erection of a building without foundation as defined in the Building Code Act for a period not exceeding six (6) consecutive months, provided that:
 - (i) the status of the building or structure as a temporary building or structure is maintained in accordance with the provisions of this

subsection; and

- (ii) upon application being made for the issuance of a permit under the Building Code Act, in relation to a temporary building or structure on land to which a development charge applies, the City may require that the owner submit security satisfactory to the City's Commissioner of Integrated Planning and Public Works (IPPW), to be realized upon and in the event that the building or structure is present on the subject land for a continuous period exceeding six (6) months, and development charges thereby become payable.
- (d) an Accessory Building, provided that the total Gross Floor Area of the Accessory Building or Buildings does not exceed the total Gross Floor Area of the applicable main use, buildings, Dwelling Units or Lodging Units; and as permitted by the applicable zoning by-laws.

(4) This by-law shall not apply to the development of land that constitutes, in accordance with, and subject to the restrictions contained in, section 2(3) of the Act and section 2 of the regulation:

- (a) the enlargement of an existing dwelling unit;
- (b) the creation of one or two additional dwelling units in an existing single detached dwelling; or
- (c) The creation of a second dwelling unit in prescribed classes of proposed new residential buildings, including structures ancillary to dwellings, subject to the prescribed restrictions;
- (d) the creation of one additional dwelling unit in any other existing residential building.

For clarity, existing refers to the unit, dwelling or building prior to the first enlargement.

(5) This by-law shall not apply to the enlargement of an existing industrial building up to a maximum of fifty percent (50%) of the existing gross floor area prior to the first enlargement, in accordance with section 4 of the Act and section 1 of the regulation.

(6) Despite one or more lots being created from an original lot which result in an existing industrial building being separated on a lot from its previous enlargement(s) for which an exemption was granted under section 3(5) of this by-law, further exemptions, if any, shall be calculated on the basis of the gross floor area of the existing industrial building prior to the first enlargement and the lot prior to its division.

(7) Where a conflict exists between the provisions of this by-law and any other agreement between the City and the owner, with respect to land to be charged under this policy, the provisions of such agreement prevail to the extent of the conflict.

4. APPLICATION OF CHARGES

(1) Per section 2(2) of the Act, development charges shall apply to, and shall be calculated and collected in accordance with the provisions of this by-law on land to be developed for residential and non-residential use for development that requires:

- (a) the passing of a zoning by-law or 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; or
- (g) the issuing of a permit under the Building Code Act, in relation to a building or structure.

(2) Subsection (1) shall not apply in respect of the provision of local services or the installation of local connections to local services.

5. REQUIREMENT TO PROVIDE LOCAL SERVICES

Nothing in this by-law prevents Council from requiring the provision of local services with respect to any lands subject to development charges under this by-law.

6. MULTIPLE CHARGES

(1) Where two or more of the approvals described in section 4(1) are required at the same time for the development of land to which a development charge applies, only one development charge shall be calculated and collected in accordance with the provisions of this by-law.

(2) Notwithstanding subsection (1), if two or more of the approvals described in section 4(1) occur at different times, and if the subsequent approval has the effect of increasing the need for municipal services as set out in Schedule A, an additional development charge on the additional residential units and/or non-residential floor area, shall be calculated and collected in accordance with the provisions of this by-law.

7. SERVICES IN LIEU

(1) Council may authorize an owner, through an agreement under section 38 of the Act, to substitute such part of the development charge applicable to the owner's development as may be specified in the agreement, by the provision at the sole expense of the owner, of services in lieu. Such agreement shall further specify that where the owner provides services in lieu in accordance with the agreement, Council shall give to the owner a credit, without interest, against the development charge in accordance with the agreement provisions and the provisions of section 39 of

the Act, equal to the reasonable cost to the owner of providing the services in lieu, as determined by the City's Commissioner of IPPW. In no case shall the agreement provide for a credit which exceeds the total development charge payable by an owner to the municipality in respect of the development to which the agreement relates.

(2) In any agreement under section 7(1), Council may also give a further credit to the owner equal to the reasonable cost of providing services in addition to, or of a greater size or capacity, than would be required under this by-law.

(3) The credit provided for in subsection (2) shall not be charged to the reserve funds prescribed under section 12 of this by-law.

(4) Any unused credit may be applied upon proof satisfactory to the City's Chief Building Official, to any subsequent development charge payable in respect to the same land and may be transferable to subsequent owners thereof.

8. DEVELOPMENT CHARGE REDEVELOPMENT CREDITS

(1) Subject to the provisions of this section, where any redevelopment of land replaces or changes a former or existing development, and, in the case of demolition, a building permit has been issued within:

- (a) five (5) years from the date of demolition permit issuance for a former development that was for residential use, or within five (5) years of the actual demolition for a building or structure which is lawfully non-conforming and involuntarily destroyed or damaged, in whole or in part, by fire or natural disaster, the development charge applicable to the redevelopment shall be reduced by a redevelopment allowance, without interest, not to exceed an amount equal to the total of the number and types of legally established dwelling units and lodging units in the former or existing development.
- (b) ten (10) years from the date of demolition permit issuance for a former development that was for non-residential use or was a mixed-use development, or within ten (10) years of the actual demolition for a building or structure which is lawfully non-conforming and involuntarily destroyed or damaged, in whole or in part, by fire or natural disaster, the development charge applicable to the redevelopment shall be reduced by a redevelopment allowance, without interest, not to exceed an amount equal to the total of:
 - I. for residential development, the number and types of legally established dwelling units and lodging units in the former or existing development; and
 - II. for non-residential development, the legally established gross floor area of all non-residential use components in the former or existing development,

as determined by the City's Commissioner of IPPW and the Chief Building Official at current applicable rates for such units or gross floor area.

(2) No redevelopment allowance shall be made in excess of the development charge payable for a redevelopment; however, where any redevelopment of land replaces or changes a former or existing development and in the case of demolition, a building permit has been issued within five (5) years from the date of demolition permit issuance for a former development that was for residential use, or within five (5) years of the actual demolition for a building or structure which is lawfully non-conforming and involuntarily destroyed or damaged, in whole or in part, by fire or natural disaster, or ten (10) years from the date of demolition permit issuance for a former development that was for non-residential use or was a mixed-use development, or within ten (10) years of the actual demolition for a building or structure which is lawfully non-conforming and involuntarily destroyed or damaged, in whole or in part, by fire or natural disaster, the redevelopment allowance may be carried forward and applied, upon proof satisfactory to the City's Commissioner of IPPW and the Chief Building Official, to any subsequent development charge payable in respect to the same land as referred to in subsection (a) and (b).

9. TIMING OF CALCULATION AND PAYMENT

(1) Development charges shall be calculated and payable in full in money or by provision of services as may be agreed upon, or by credit granted by the Act, on the date that the first building permit is issued in relation to a building or structure on land to which a development charge applies, or in a manner or at a time otherwise lawfully agreed upon.

(2) Where development charges apply to land in relation to which a building permit is required, the building permit shall not be issued until the development charge has been paid in full.

(3) Notwithstanding subsections (1) and (2), Council may agree to enter into an agreement with an owner under section 27 of the Act to provide for the payment in full of a development charge before the first building permit issuance or later than the issuing of the first building permit.

(4) Where any development charge, or part thereof, remains unpaid after the date provided for payment in an agreement entered into pursuant to subsection 3, the amount unpaid shall be added to the tax roll and shall be collected as taxes under section 446 of the Municipal Act.

(5) Where any unpaid development charges are collected as taxes under subsection (4), the monies so collected shall be credited to the development charge reserve fund or funds referred to in subsection 12(1).

10. REFUNDS

Where development charges have been paid on the issuance of a building permit and that building permit is subsequently cancelled or revoked by the Chief Building

Official under the Building Code Act for the building or structure within seven (7) years of the issuance of the building permit without development having been commenced, for the purposes of this by-law the building permit shall be deemed never to have been issued, and the amount of the development charges paid shall be refunded to the payor without interest.

11. BY-LAW REGISTRATION

This By-law or a certified copy of this by-law may be registered against the title to any land to which this by-law applies.

12. RESERVE FUNDS

(1) Monies received from payment of development charges shall be maintained in a separate reserve fund for each service designated in Schedule "A," plus interest earned thereon.

(2) Monies received for the payment of development charges shall be used only in accordance with the provisions of section 35 of the Act.

(3) The City Treasurer shall, on or before June 1 of each year, furnish to Council a financial statement in respect of the reserve funds established hereunder for the prior year, containing information in accordance with the provisions of the Act.

13. BY-LAW AMENDMENT OR REPEAL

(1) Where this by-law or any development charge prescribed thereunder is amended or repealed by order of the Local Planning Appeal Tribunal or by resolution of Council, the City Treasurer shall calculate forthwith the amount of any overpayment to be refunded as a result of said amendment or repeal.

(2) Refunds that are required to be paid under subsection (1) shall be paid to the registered owner of the land on the date on which the refund is paid.

(3) Refunds that are required to be paid under subsection (1) shall be paid with interest to be calculated as follows:

- (a) interest shall be calculated from the date on which the overpayment was collected to the day on which the refund is paid;
- (b) the refund shall include the interest owed under this section; and
- (c) interest shall be paid at the Bank of Canada rate in effect on the date of enactment of this by-law, updated on the first business day of every January, April, July and October thereafter for the life of this by-law.

14. DEVELOPMENT CHARGE SCHEDULE INDEXING

The development charges referred to in Schedule "B" and Schedule "C" shall be adjusted without amendment to this by-law on December 1 of each year, commencing December 1, 2020, in accordance with section 7 of the Regulation.

15. BY-LAW ADMINISTRATION

This by-law shall be administered by the City Treasurer.

16. SCHEDULES TO THE BY-LAW

The following schedules to this by-law form an integral part of this by-law:

Schedule A - Designated Municipal Services

Schedule B - Schedule of Development Charges for Discounted Services

Schedule C - Schedule of Development Charges for Non-Discounted Services

17. DATE BY-LAW EFFECTIVE

This by-law shall come into force and effect on December 31, 2019. For greater clarity, the development charges set out in this by-law shall apply to any building permit issued on or after December 31, 2019.

18. EXISTING DEVELOPMENT CHARGE BY-LAW REPEAL

By-law 2017-075 is repealed effective the date that this by-law comes into force and effect.

19. SEVERABILITY

- (1) If, for any reason, any provision, section, subsection or paragraph of this by-law is held to be invalid, it is hereby declared to be the intention of Council that all of 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.
- (2) If any provisions of this By-law conflicts with the Act and its regulations as a result of amendments pursuant to the More Homes, More Choice Act, 2019, then the Act and its regulations shall prevail as necessary.
- (3) For greater certainty, a conflict shall not apply pursuant to subsection (2) where a provision in this By-law is allowed to remain in effect for a prescribed period of time pursuant to the Act or its regulations as amended by the More Homes, More Choice Act, 2019.

20. SHORT TITLE

This by-law may be cited as the "Waterloo Development Charge By-law #2019-064"

21. NON-BINDING NATURE

Nothing in this by-law shall be construed so as to commit or require the City or its Council to authorize or proceed with any specific capital project at any specific time.

Read a FIRST, SECOND and THIRD time and
 FINALLY PASSED this 16th day of December, 2019.

Approval	Date	Print Name	Initials
Legislative Services			
Legal			
Finance			

Mayor

City Clerk

SCHEDULE A

to By-law Number 2019-064

DESIGNATED MUNICIPAL SERVICES UNDER THIS BY-LAW

A-1: DISCOUNTED SERVICES

1. Parks and Major Indoor Recreation Facilities
2. Parking
3. Cemeteries
4. Library Services
5. Growth Studies

A-2: NON-DISCOUNTED SERVICES

1. Roads and Related Works
2. Public Works and Fleet
3. Water Supply and Wastewater Services
4. Stormwater Drainage and Control Services
5. Protective Services
6. Engineering Studies

SCHEDULE B

to By-law Number 2019-064

City of Waterloo

Schedule of Development Charges for Discounted Services

Service	Residential Charge By Dwelling Unit Type				Lodging House Per Bedroom	Non-Residential Charge per Square Foot	Non-Residential Charge per Square Metre
	Singles & Semis	Apartments		Multiples			
		3 Bedrooms or Less	4+ Bedrooms				
Library Services	\$908	\$500	\$1,120	\$597	\$260	\$0.00	\$0.00
Parks and Major Indoor Recreation Facilities	\$5,187	\$2,855	\$6,395	\$3,412	\$1,485	\$0.00	\$0.00
Cemeteries	\$0	\$0	\$0	\$0	\$0	\$0.00	\$0.00
Parking	\$1,177	\$648	\$1,451	\$774	\$337	\$0.81	\$8.72
Growth Studies	\$398	\$219	\$491	\$262	\$114	\$0.28	\$3.01
TOTAL CHARGE PER DWELLING UNIT	\$7,670	\$4,222	\$9,457	\$5,045	\$2,196	\$1.09	\$11.73

SCHEDULE C

to By-law Number 2019-064

City of Waterloo

Schedule of Development Charges for Non-Discounted Services

Service	Residential Charge By Dwelling Unit Type				Lodging House Per Bedroom	Non- Residential Charge per Square Foot	Non-Residential Charge per Square Metre
	Singles & Semis	Apartments		Multiples			
		3 Bedrooms or Less	4+ Bedrooms				
Protective Services	\$489	\$269	\$603	\$322	\$140	\$0.34	\$3.66
Public Works and Fleet	\$842	\$463	\$1,038	\$554	\$241	\$0.58	\$6.24
Roads and Related Services	\$2,763	\$1,521	\$3,406	\$1,817	\$791	\$1.89	\$20.34
Water Supply and Wastewater	\$2,504	\$1,378	\$3,088	\$1,647	\$717	\$1.71	\$18.41
Stormwater Drainage and Control Services	\$1,226	\$675	\$1,512	\$806	\$351	\$0.84	\$9.04
Engineering Studies	\$283	\$156	\$349	\$186	\$81	\$0.20	\$2.15
TOTAL CHARGE PER DWELLING UNIT	\$8,107	\$4,462	\$9,996	\$5,332	\$2,321	\$5.56	\$59.85