

DEVELOPMENT CHARGES BACKGROUND STUDY



Version for Public Consultation

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Executive Summary

A. Purpose of 2018 Development Charges (DC) Background Study

1. Legislative Context

The City of Niagara Falls 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 Development Charges Act, 1997 (DCA). The study is prepared in accordance with the DCA and associated Regulations, including the amendments that came into force on January 1, 2016.

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, attribution to development types (i.e. residential and non-residential) and the final adjustment to the calculated rate of a cash flow analysis.

3. DC Eligible and In-Eligible Costs

Development charges are intended to be 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 includes 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.; statutory ten per cent discount for “soft” or general services; deductions for costs that exceed historical service level caps; and statutory exemptions for specific uses (i.e. 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

1. Residential and Non-Residential

The table below provides a summary of the anticipated residential and non-residential growth over the 2019-2028 planning period. The development forecast is further discussed in Appendix A.

Residential Forecast	2018 Estimate	DC Study Planning Horizon 2019 - 2028	
		Growth	Total at 2028
Residential			
Total Occupied Dwellings	37,105	6,316	43,421
Total Population			
Census	90,696	13,765	104,461
<i>Population In New Dwellings</i>		17,479	
Non-Residential			
Employment	41,457	5,602	47,059
<i>Core Tourist Area</i>		2,978	
<i>Outside Core Tourist Area</i>		2,501	
Non-Residential Building Space (sq.m.)		383,530	
<i>Core Tourist Area</i>		208,460	
<i>Outside Core Tourist Area</i>		175,070	

C. Calculated Development Charges

The table below provides a summary of the City-wide and area-specific development charges for residential and non-residential development based on the aforementioned forecasts.

Service	Residential Charge by Unit Type			Non-Residential Charge per M ²	
	Singles & Semis	Rows & Other Multiples	Apartments	Outside Core Tourist Area	Core Tourist Area
Municipal-wide Services (1)	\$7,473	\$4,687	\$3,553	\$19.84	\$19.84
Urban Area Services (2)	\$5,317	\$3,335	\$2,528	\$23.31	\$6.57
Total Charge	\$12,790	\$8,022	\$6,081	\$43.15	\$26.41

D. Long-Term Capital and Operating Costs

An overview of the long-term capital and operating costs for the capital facilities and infrastructure to be included in the DC by-law is provided in the study. This examination is required as one of the provisions of the DCA. Additional details on the long-term capital and operating impact analysis is found in Appendix E. By 2028 the City's net operating costs are estimated to increase by about \$8.23 million.

E. Asset Management Plan

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

By 2028, the City will need to fund an additional \$878,000 per annum in order to properly fund the life cycle costs of the new general and engineered services assets supported under the 2019 Development Charges By-law.

F. Development Charges Administration & Policy Considerations

1. City-wide vs Area-Specific DCs

As required by the Development Charges Act (DCA), consideration was given to the use of area rating. Consistent with the City's historical practice, the infrastructure identified for the general services has been calculated on a City-wide basis. Non-residential development charges for engineered services including Sidewalks, Water, Sanitary Sewer and Storm Water Management is calculated on an area-specific basis: outside the core tourist area (OCTA) and core tourist area (CTA).

2. 2019 Draft DC By-law Available Under Separate Cover

The City is proposing to modify the current development charges by-law. The proposed draft by-law will be made available, under separate cover, a minimum of two weeks in advance of the statutory public meeting.

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. The City of Niagara Falls Development Charges Background Study is presented as part of a process to establish a development charges by-law that complies with this legislation.

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

When a development charges by-law is proposed, the DCA and O. Reg. 82/98 require that a development charges background study be prepared in support of the proposed changes 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 expected development, including the determination of the growth and non-development-related components of the 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 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 the 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 calculated 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 new development charges for the City.

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 and Area-Specific 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. In this study, the approach has been tailored to accommodate the City of Niagara Falls. The approach to the calculated development charges is focused on providing a reasonable alignment of development-related costs with the development that necessitates them. This study uses both a City-wide and area-specific approach for various services provided by the City of Niagara Falls. The Background Study provides an update to the historical service levels and the cost of providing future development-related capital infrastructure.

A. City-Wide Development 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 Niagara Falls 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.

All municipal services form a reasonable basis in which to plan and administer the City-wide residential development charges. It is noted that the analysis of each of these services examines the individual capital facilities and equipment that constitute it. The resulting development charges for these services would be imposed against all development anywhere in the City.

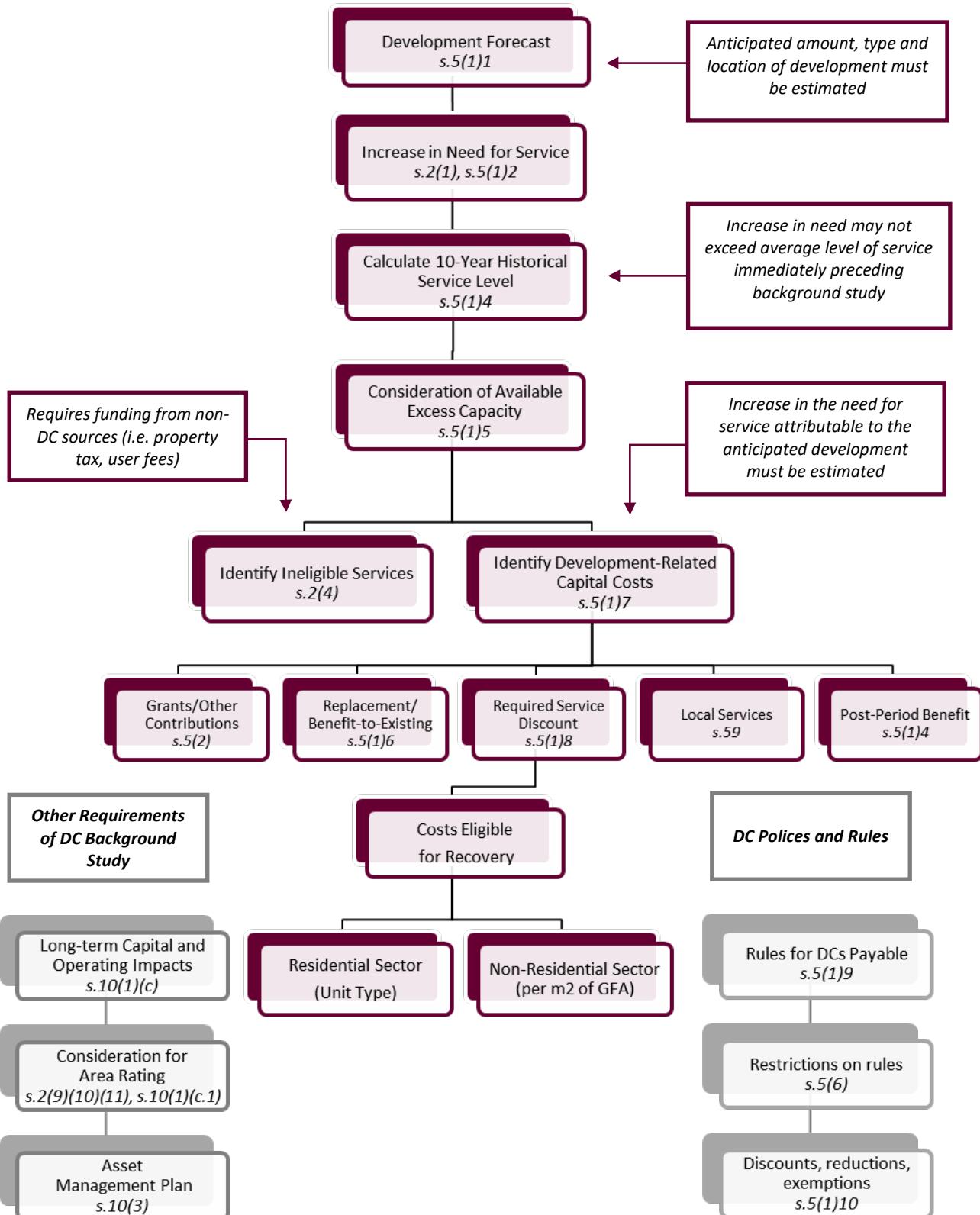
B. Area-Specific Development Charges Are Proposed

Non-residential development charges in the City of Niagara Falls have been calculated on an area-specific basis, differentiating development anticipated both within and outside of the Core Tourist area. Full details of the non-residential area specific charges can be found in Appendix C.

C. 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 in Figure 1 below and discussed further in the following sections.

Figure 1: Overview of DC Background Study Process



The first step in the methodology requires that a development forecast be prepared for the ten-year study period from 2019 to 2028. The forecast of the future residential and non-residential development used in this study is based on the population and employment targets identified for the City as part of the Region of Niagara's ongoing Municipal Comprehensive Review (MCR).

For the residential portion of the forecast, the total Census change in population determines the need for additional facilities and provides the foundation for the development-related capital forecast.

The non-residential portion of the forecast estimates the amount of building space to be developed in the City over the planning periods. The forecast is based on the projected increase in employment levels and the anticipated amount of new building space required to accommodate it.

1. 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 City 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 charges calculation. A review of the City's capital service levels for buildings, land, vehicles, equipment and others has therefore been prepared as a reference for the calculation so that the portion of future capital projects that may be included in the development charges can be determined. The historical service levels used in this study have been calculated based on the period from 2009 to 2018.

For the engineered services of Water, Sidewalks, Sanitary Sewer, and Storm Water Management Services, historical service levels are less applicable and reference is made to the City's engineering standards as well as Provincial health or environmental requirements.

2. 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 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 City has indicated that it intends to ensure that such an increase in need will be met. (s. 5. (1) 3.)

S. 5. (1) 4. and s. 5. (2). require that the development charges be calculated on the lesser of the historical ten-year average service levels or the service levels embodied in the 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 charges sources. The amount of financing 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 charges by the amount of any “uncommitted excess capacity” that is available for a service. Such capacity is available to partially meet 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 transit services and engineered services, such as roads and related (DCA, s. 5. (1)

8). The ten per cent discount is applied to the other services, e.g. Library and Recreation, and the resulting financing responsibility from non-development charges sources is identified.

3. 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 Niagara Falls, the allocation is based on the projected changes in population and employment over the planning periods.

The residential component of the development charges 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.

4. Final Adjustment

The final determination of the development charges 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 therefore accounted for in the calculation as allowed under the DCA.

III Development Forecast

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.

The forecast is primarily based upon the Region of Niagara’s Municipal Comprehensive Review (MCR). The growth forecast targets identified in the MCR are used for the purposes of the City’s 2019 DC Study. Phase 3 of the MCR was completed in December 2016, which involved the development of a Strategic Growth Option (SGO) including local allocations forecast population, housing and employment growth to 2041, based on the Regional forecasts under Schedule 3 of the Growth Plan. The MCR Phase 3 final report was presented to Regional Council in December 2016.

The Region initiated Phase 4 of the MCR and other related Official Plan update work in July 2018. Given the passage of time since Phase 3 was completed, an update to the MCR forecasts and local growth allocations was completed to reflect the results of the 2016 Census, policy changes and other information that has become available since the forecasts were prepared. The updated forecasts and local growth allocations completed as part of Phase 4 are used for the purposes of the City’s 2019 DC Background Study. It is also anticipated that the Phase 4 targets will provide a basis for work being carried out by the Region, as input to updating the Regional Official Plan to bring the Region into conformity with the *Growth Plan, 2017*.

A ten year development forecast, from mid-year 2019 to mid-year 2028, has been used for all the development charge eligible services in the City. In the ten year planning horizon, it is anticipated that the City will add an average of 630 new residential units per year, for a total of 6,320, which can accommodate a population of approximately 17,480 in these new dwelling units. In the same planning horizon, it is anticipated that the City will see a total GFA growth of 383,530 square metres of new non-residential building space with an accompanying employment growth of 5,600 from 2019-2028.

Table 1 provides a summary of the residential and non-residential development forecast used in this analysis. The table presents the City-wide residential and non-residential forecast as well as the area-specific non-residential forecast for the core tourist area (CTA) and outside the core tourist area (OCTA).

TABLE 1

CITY OF NIAGARA FALLS
SUMMARY OF RESIDENTIAL AND NON-RESIDENTIAL
DEVELOPMENT FORECAST

Residential Forecast	2018 Estimate	DC Study Planning Horizon	
		Growth	Total at 2028
Residential			
Total Occupied Dwellings	37,105	6,316	43,421
Total Population			
Census	90,696	13,765	104,461
<i>Population In New Dwellings</i>		17,479	
Non-Residential			
Employment	41,457	5,602	47,059
<i>Core Tourist Area</i>		2,978	
<i>Outside Core Tourist Area</i>		2,501	
Non-Residential Building Space (sq.m.)		383,530	
<i>Core Tourist Area</i>		208,460	
<i>Outside Core Tourist Area</i>		175,070	

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 Services, Parks and Recreation, etc.) the legislative requirement is met by documenting service levels for the preceding ten years: in this case, for the period from 2009 to 2018. Typically, service levels are measured as a ratio of inputs per capita or inputs per population and employment. With engineered services such as Water, Sanitary Sewer and Storm Water Management, engineering 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 considering the monetary value of a 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 growth reflect not only the quantity (number and size) but also the quality (value or cost) of services 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 charges calculations. Appendix B provides detailed historical inventory data upon which the calculation of service levels is based for all general services.

TABLE 2

CITY OF NIAGARA FALLS
SUMMARY OF AVERAGE HISTORICAL SERVICE LEVELS 2009 - 2018

Service	2009 - 2018 Service Level Indicator
1.0 LIBRARY Buildings Land Materials Furniture And Equipment Library Van	\$522.31 per capita \$272.08 per capita \$6.89 per capita \$189.94 per capita \$52.99 per capita \$0.41 per capita
2.0 FIRE PROTECTION Fire Halls Other Buildings/Structures Land Personal Firefighter Equipment Equipment Vehicles	\$330.12 per pop & emp \$151.64 per pop & emp \$14.46 per pop & emp \$22.66 per pop & emp \$22.66 per pop & emp \$17.48 per pop & emp \$101.22 per pop & emp
3.0 PARKS & RECREATION Major Facilities & Land Parkland	\$2,539.30 per capita \$1,628.44 per capita \$910.86 per capita
4.0 PUBLIC WORKS & FLEET Buildings Land Fleet & Equipment	\$286.63 per pop & emp \$90.73 per pop & emp \$62.95 per pop & emp \$132.95 per pop & emp
5.0 TRANSIT SERVICES Buildings Land Shelters Equipment Vehicles	\$325.92 per pop & emp \$126.98 per pop & emp \$11.80 per pop & emp \$5.70 per pop & emp \$10.37 per pop & emp \$171.07 per pop & emp
6.0 ROADS & RELATED Roads Bridges & Culverts Traffic Signals Sidewalks Traffic Hardware	\$7,731.03 per pop & emp \$5,730.03 per pop & emp \$947.20 per pop & emp \$90.61 per pop & emp \$962.81 per pop & emp \$0.38 per pop & emp

V Development-Related Capital Forecast

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

For the purposes of paragraph 3 of subsection 5 (1) of the Act, the council of a City 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. 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 has developed a development-related capital forecast which sets out projects that are required to service anticipated growth. For all services, the capital plan covers the ten-year period from 2019 to 2028.

One of the recommendations contained in this background study is for Council to 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 growth in the City. However, it is acknowledged that changes to the forecast presented here may occur through the City's normal capital budget process.

B. The Development-Related Capital Forecast for General Services

A summary of the development-related capital forecast 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 \$71.09 million. In total, approximately \$2.20 million in Public Transit Infrastructure Fund (PTIF) monies has been identified for the Transit capital program and is removed from the total DC eligible costs.

Therefore, the total municipal cost brought forward for the development charges calculation amounts to \$68.89 million.

Of the \$68.89 million in net capital cost, 52 per cent, or \$35.79 million is related to Public Works & Fleet projects. The most significant project in the capital program is the expansion and replacement of the Municipal Servicing centre for \$35.36 million. The remainder of the capital program provides provisions for fleet and equipment.

The second largest capital program is for Parks and Recreation, which represented 20 per cent of the total. A significant project in the capital program recovers for the municipal debt incurred in relation to the Gale Centre. The remainder of the capital program fund various parkland and park facilities development.

The capital program for Fire Protection is recovering for the land, construction costs, and an additional vehicle for a new Station 7 in 2019 and 2020. The program amounts to \$8.63 million.

The next largest capital program belongs to Transit Services. This capital program totals \$5.96 million and recovers for an expansion to the existing facility, various transit infrastructure, as well as seven additional buses to serve new development in the City.

The Library capital program includes a provision for additional collection material acquisitions to preserve the historical level of service in Niagara Falls from the previous ten years going forward, as well as a provision for new library space and a Book Mobile. The program amounts to \$3.42 million.

The capital program associated with General Government relates to the provision of development-related studies and amounts to \$1.29 million over the next ten years. These studies include additional development charges studies, a Fire Master Plan, a Recreation and Culture Master Plan, Development Charges Studies and a provision For Vulnerable Population Strategies.

The capital forecast 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). Portions of the capital forecast may be

related to the replacement of existing facilities, shares of projects that benefit the existing population, or growth anticipated to occur beyond the 2019-2028 planning period. In addition to these reductions, the amounts shown in Table 3 have not been reduced by ten per cent for various general services as required by s. 5 (1) of the DCA.

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

TABLE 3
CITY OF NIAGARA FALLS
SUMMARY OF DEVELOPMENT-RELATED CAPITAL PROGRAM
FOR GENERAL SERVICES 2019 - 2028
(in \$000)

Service	Gross Cost	Grants/ Subsidies	Municipal Cost	Total Net Capital Program									
				2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
1.0 LIBRARY	\$3,421.5	\$0.0	\$3,421.5	\$342.2	\$342.2	\$342.2	\$342.2	\$342.2	\$342.2	\$342.2	\$342.2	\$342.2	\$342.2
1.1 Buildings, Land & Equipment	\$2,302.5	\$0.0	\$2,302.5	\$230.3	\$230.3	\$230.3	\$230.3	\$230.3	\$230.3	\$230.3	\$230.3	\$230.3	\$230.3
1.2 Collection Material Acquisitions	\$919.0	\$0.0	\$919.0	\$91.9	\$91.9	\$91.9	\$91.9	\$91.9	\$91.9	\$91.9	\$91.9	\$91.9	\$91.9
1.3 Equipment & Vehicles	\$200.0	\$0.0	\$200.0	\$20.0	\$20.0	\$20.0	\$20.0	\$20.0	\$20.0	\$20.0	\$20.0	\$20.0	\$20.0
2.0 FIRE PROTECTION	\$8,631.6	\$0.0	\$8,631.6	\$7,475.0	\$1,085.5	\$35.5	\$35.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2.1 Buildings, Land & Furnishings	\$7,475.0	\$0.0	\$7,475.0	\$7,475.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2.2 Vehicles	\$650.0	\$0.0	\$650.0	\$0.0	\$650.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2.3 Equipment & Other	\$506.6	\$0.0	\$506.6	\$0.0	\$435.5	\$35.5	\$35.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
3.0 PARKS & RECREATION	\$13,804.0	\$0.0	\$13,804.0	\$1,780.3	\$901.7	\$1,495.0	\$2,285.4	\$1,828.0	\$1,623.0	\$1,670.3	\$1,470.3	\$750.0	\$0.0
3.1 Indoor Recreation Facilities	\$6,499.0	\$0.0	\$6,499.0	\$670.3	\$706.7	\$745.0	\$785.4	\$828.0	\$873.0	\$920.3	\$970.3	\$0.0	\$0.0
3.2 Parkland Development & Park Facilities	\$7,165.0	\$0.0	\$7,165.0	\$970.0	\$195.0	\$750.0	\$1,500.0	\$1,000.0	\$750.0	\$750.0	\$500.0	\$750.0	\$0.0
3.3 Vehicles and Equipment	\$140.0	\$0.0	\$140.0	\$140.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
4.0 PUBLIC WORKS & FLEET	\$35,789.4	\$0.0	\$35,789.4	\$275.0	\$50.0	\$0.0	\$0.0	\$0.0	\$50.0	\$35,414.4	\$0.0	\$0.0	\$0.0
4.1 Buildings & Land	\$35,364.4	\$0.0	\$35,364.4	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$35,364.4	\$0.0	\$0.0	\$0.0
4.2 Fleet	\$375.0	\$0.0	\$375.0	\$250.0	\$50.0	\$0.0	\$0.0	\$0.0	\$25.0	\$50.0	\$0.0	\$0.0	\$0.0
4.3 Equipment	\$50.0	\$0.0	\$50.0	\$25.0	\$0.0	\$0.0	\$0.0	\$0.0	\$25.0	\$0.0	\$0.0	\$0.0	\$0.0
5.0 TRANSIT SERVICES	\$8,156.0	\$2,200.6	\$5,955.4	\$421.4	\$3,321.4	\$321.4	\$0.0	\$321.4	\$998.8	\$571.0	\$0.0	\$0.0	\$0.0
5.1 Facilities	\$3,000.0	\$0.0	\$3,000.0	\$0.0	\$3,000.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
5.2 Buses	\$4,356.0	\$1,971.6	\$2,384.4	\$421.4	\$321.4	\$321.4	\$0.0	\$321.4	\$998.8	\$0.0	\$0.0	\$0.0	\$0.0
5.3 Other Transit Infrastructure	\$800.0	\$229.0	\$571.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$571.0	\$0.0	\$0.0	\$0.0
6.0 GENERAL GOVERNMENT	\$1,290.0	\$0.0	\$1,290.0	\$1,095.0	\$5.0	\$95.0	\$5.0	\$5.0	\$65.0	\$5.0	\$5.0	\$5.0	\$5.0
6.1 Development-Related Studies	\$1,290.0	\$0.0	\$1,290.0	\$1,095.0	\$5.0	\$95.0	\$5.0	\$5.0	\$65.0	\$5.0	\$5.0	\$5.0	\$5.0
TOTAL - 10 YEAR GENERAL SERVICES	\$71,092.5	\$2,200.6	\$68,892.0	\$11,388.9	\$5,705.8	\$2,289.1	\$2,668.1	\$2,496.6	\$3,078.9	\$38,002.9	\$1,817.4	\$1,097.2	\$347.2

C. The Development-Related Capital Forecast For Engineered Services

Table 4 provides the development-related capital recoveries for the engineered services of Roads and Related, Sidewalks, Water, Sanitary Sewer and Storm Water Management. In Niagara Falls, the total engineered capital program from 2019-2028 is \$94.65 million. Roads projects account for 31 per cent, or \$29.45 million, of the total engineered capital program. Scheduled roads projects in the City include road works, widening, road upgrades, as well as several environmental assessment studies.

Storm Water Management projects account for 27 per cent of the total engineered services capital program. The total \$25.73 million provides for various road improvements, storm water management pond projects, construction, sewer separations in the Core Tourist Area, as well as a Thompson Creek Watershed Master Plan and an I/I Reduction Study.

The Sanitary Sewer projects total over \$23.43 million. This program provides for the continued debt recovery from the cost to upgrade and expand the Grassy Brook/Garner Southwest Pumping Station as well as various sanitary sewers, pumping stations, and development-related studies.

The Water services capital program totals \$13.92 million, or 15 per cent of the total program. Water-related projects include storage, supply, distribution, and a water related study.

Finally, Sidewalk related projects add another \$2.12 million to the forecast. These projects seek to make improvements to existing roads within the City of Niagara Falls.

Details of the engineered services capital program are included in Appendix C.

TABLE 4

CITY OF NIAGARA FALLS
SUMMARY OF DEVELOPMENT-RELATED CAPITAL PROGRAM
FOR ENGINEERED SERVICES 2019 - 2028
(in \$000)

Service	Gross Cost	Grants / Subsidies	Net Municipal Cost
1.0 ROADS & RELATED	\$29,454.4	\$0.0	\$29,454.4
1.1 Roads - City-Wide	\$29,454.4	\$0.0	\$29,454.4
2.0 SIDEWALKS	\$2,118.4	\$0.0	\$2,118.4
2.1 Sidewalks - Outside Core Tourist Area	\$1,534.4	\$0.0	\$1,534.4
2.2 Sidewalks - Core Tourist Area	\$584.0	\$0.0	\$584.0
3.0 WATER	\$13,916.6	\$0.0	\$13,916.6
3.1 Watermains - Outside Core Tourist Area	\$9,605.4	\$0.0	\$9,605.4
3.2 Watermains - Core Tourist Area	\$4,111.2	\$0.0	\$4,111.2
3.3 Water Studies	\$200.0	\$0.0	\$200.0
4.0 SANITARY SEWER SERVICES	\$23,432.9	\$0.0	\$23,432.9
4.1 Sanitary Sewers - Outside Core Tourist Area	\$19,444.0	\$0.0	\$19,444.0
4.2 Sanitary Sewers - Core Tourist Area	\$1,588.9	\$0.0	\$1,588.9
4.3 Sanitary Sewer Studies	\$2,400.0	\$0.0	\$2,400.0
5.0 STORM WATER MANAGEMENT SERVICES	\$25,726.1	\$0.0	\$25,726.1
5.1 Storm Water Management - Outside Core Tourist Area	\$23,663.4	\$0.0	\$23,663.4
5.2 Storm Water Management - Core Tourist Area	\$1,512.7	\$0.0	\$1,512.7
5.3 Storm Water Management Studies	\$550.0	\$0.0	\$550.0
TOTAL - ENGINEERED SERVICES CAPITAL PROGRAM	\$94,648.3	\$0.0	\$94,648.3

HEMSON

VI Development Charges Are Calculated In Accordance With The *Development Charges Act*

This section summarizes the calculation of development charges for each service category 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 cash flow 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 calculated development charges 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 50 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 charges revenue for the affected types of development. Any such revenue loss may not be offset by increasing other portions of the calculated charge.

A. Development Charges Calculation

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

1. General Services

The capital forecast for 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 \$8.27 million of the capital forecast relates to replacement of existing capital facilities or to shares of projects that provide benefit to the existing community. These portions of capital costs

would have to be funded from property taxes and other non-development charges revenue sources.

An additional share of \$2.86 million has been identified as available DC reserves and represents the revenues collected from previous DC by-laws. This portion has been netted out of the chargeable capital costs. Another share of the forecast, \$29.02 million, is either attributable to growth beyond the 2028 period (and can therefore only be recovered under future development charges studies) or represents a service level increase in the City.

The DCA, s. 5 (1) 8, requires that development-related net capital costs for “soft” services be reduced by ten per cent in calculating the applicable development charges for these services. The ten per cent share of development-related net capital costs not included in the development charges calculations must be funded from non-development charges sources. In total, about \$4.19 million is identified as the required ten per cent reduction.

The remaining \$24.56 million is carried forward to the development charges calculation as a development-related cost. Of the development-related cost, \$22.26 million has been allocated to new residential development, and \$2.30 million has been allocated to new non-residential development. This results in an unadjusted charge of \$1,273.76 per capita and \$5.99 per square metre for the provision of soft services.

2. Engineered Services

Table 6 displays the development-related capital forecast for Roads, Sidewalks, Water, and Sanitary Sewer and Storm Water Services from 2019 to 2028. The table also shows the differing unadjusted rates for development occurring both inside and outside the core tourist area. The net cost of the capital program amounts to \$94.65 million; however, \$11.57 million has been identified as funds available in the DC reserves and is removed from the development charges calculation. In addition, \$12.89 million of the works is deemed to benefit the existing population and, as such, is also removed from the development charges calculation. Another portion of the program that is not included in the DC calculation is the share of the works that is considered to provide benefit to development beyond the ten-year planning horizon. \$13.24 million is identified as the post-period benefit share.

TABLE 5
CITY OF NIAGARA FALLS
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
10-YEAR CAPITAL PROGRAM FOR GENERAL SERVICES

10 Year Growth in Population in New Units	17,479
10 Year Growth in Square Metres	383,530

Service	Development-Related Capital Program (2019 - 2028)							
	Net Municipal Cost (\$000)	Replacement & Benefit to Existing (\$000)	Required Service Discount (\$000)	Available DC Reserves (\$000)	Post-2028 Benefit (\$000)	Total DC Eligible Costs for Recovery (\$000)	Residential Share	Non-Residential Share
							%	(\$000)
1.0 LIBRARY	\$3,421.5	\$0.0	\$342.2	\$263.3	\$0.0	\$2,816.0	100%	\$2,816.0 0% \$0.00
Unadjusted Development Charge Per Capita								\$161.11
Unadjusted Development Charge Per m ²								\$0.00
2.0 FIRE PROTECTION	\$8,631.6	\$0.0	\$0.0	\$1,142.3	\$4,372.1	\$3,117.2	76%	\$2,360.6 24% \$756.59
Unadjusted Development Charge Per Capita								\$135.06
Unadjusted Development Charge Per m ²								\$1.97
3.0 PARKS & RECREATION	\$13,804.0	\$0.0	\$730.5	\$803.9	\$0.0	\$12,269.7	100%	\$12,269.7 0% \$0.00
Unadjusted Development Charge Per Capita								\$701.97
Unadjusted Development Charge Per m ²								\$0.00
4.0 PUBLIC WORKS & FLEET	\$35,789.4	\$5,760.5	\$3,002.9	\$251.6	\$24,643.5	\$2,130.9	76%	\$1,613.7 24% \$517.20
Unadjusted Development Charge Per Capita								\$92.32
Unadjusted Development Charge Per m ²								\$1.35
5.0 TRANSIT SERVICES	\$5,955.4	\$2,346.8	\$0.0	\$0.0	\$0.0	\$3,608.7	76%	\$2,732.8 24% \$875.86
Unadjusted Development Charge Per Capita								\$156.35
Unadjusted Development Charge Per m ²								\$2.28
6.0 GENERAL GOVERNMENT	\$1,290.0	\$160.0	\$113.0	\$395.0	\$0.0	\$622.0	76%	\$471.0 24% \$150.95
Unadjusted Development Charge Per Capita								\$26.95
Unadjusted Development Charge Per m ²								\$0.39
TOTAL 10 YEAR GENERAL SERVICES	\$68,892.0	\$8,267.3	\$4,188.5	\$2,856.1	\$29,015.6	\$24,564.5		\$22,263.9 \$2,300.6
Unadjusted Development Charge Per Capita								\$1,273.76
Unadjusted Development Charge Per m ²								\$5.99

CITY OF NIAGARA FALLS
SUMMARY OF RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
CAPITAL PROGRAM FOR ENGINEERED SERVICES

City-Wide					
10 Year Growth in Population in New Units		17,479			
10 Year Growth in Square Metres		383,530			
Inside Core Tourist Area					
10 Year Growth in Square Meters		208,460			
Outside Core Tourist Area					
10 Year Growth in Square Meters		175,070			

Service	Development-Related Capital Program (2019 - 2028)								
	Net Municipal Cost (\$000)	Replacement & Benefit to Existing (\$000)	Available DC Reserves (\$000)	Post-Period Benefit (\$000)	Total DC Eligible Costs for Recovery (\$000)				
1.0 ROADS	\$29,454.4	\$3,208.4	\$3,273.4	\$1,848.9	\$21,123.6	76%	\$15,996.6	24%	\$5,126.93
Development Charge Per Capita							\$915.20		
Development Charge Per m ²									\$13.37
2.0 SIDEWALKS									
2.1 Inside Core Tourist Area	\$584.0	\$292.0	\$116.8	\$46.2	\$129.1	0%	\$0.0	100%	\$129.09
Development Charge Per Capita							\$0.00		
Development Charge Per m ²									\$0.62
2.2 Outside Core Tourist Area	\$1,534.4	\$436.6	\$43.0	\$114.9	\$939.9	87%	\$822.3	13%	\$117.66
Development Charge Per Capita							\$47.04		
Development Charge Per m ²									\$0.67
3.0 WATER									
3.1 Inside Core Tourist Area	\$4,111.2	\$1,935.8	\$1,087.7	\$209.5	\$878.2	0%	\$0.0	100%	\$878.18
Development Charge Per Capita							\$0.00		
Development Charge Per m ²									\$4.21
3.2 Outside Core Tourist Area	\$9,805.4	\$2,266.9	\$1,444.2	\$1,609.8	\$4,484.5	87%	\$3,923.1	13%	\$561.35
Development Charge Per Capita							\$224.45		
Development Charge Per m ²									\$3.21
4.0 SEWER									
4.1 Inside Core Tourist Area	\$1,588.9	\$1,295.1	\$146.9	\$44.2	\$102.7	0%	\$0.0	100%	\$102.69
Development Charge Per Capita							\$0.00		
Development Charge Per m ²									\$0.49
4.2 Outside Core Tourist Area	\$21,844.0	\$397.6	\$1,001.3	\$4,816.6	\$15,628.5	87%	\$13,672.2	13%	\$1,956.31
Development Charge Per Capita							\$782.21		
Development Charge Per m ²									\$11.17
5.0 STORM WATER									
5.1 Inside Core Tourist Area	\$1,512.7	\$1,091.4	\$0.0	\$100.6	\$320.7	0%	\$0.0	100%	\$320.71
Development Charge Per Capita							\$0.00		
Development Charge Per m ²									\$1.54
5.2 Outside Core Tourist Area	\$24,213.4	\$1,968.4	\$4,453.5	\$4,451.0	\$13,340.4	87%	\$11,670.5	13%	\$1,669.90
Development Charge Per Capita							\$667.69		
Development Charge Per m ²									\$9.54
TOTAL ENGINEERED SERVICES	\$94,648.3	\$12,892.3	\$11,566.7	\$13,241.7	\$56,947.6		\$46,084.8		\$10,862.8
Development Charge Per Capita							\$2,636.59		
Development Charge Per m ²									\$20.23
<i>Inside Core Tourist Area</i>									
<i>Outside Core Tourist Area</i>									\$37.96

The net capital cost after the discounts is \$56.95 million, of which \$46.08 million is allocated to benefit the future residential population and \$10.86 million is allocated to non-residential development. The resulting residential development charge is \$2,636.59 per capita. The non-residential charges are calculated on an area-specific basis. The resulting unadjusted charge per square metre of new development in the core tourist area (CTA) is \$20.23. On all lands outside the core tourist area (OCTA), the unadjusted rate is \$37.96 per square metre.

3. Adjusted Residential and Non-Residential Development Charge Rates

Final adjustments to the “unadjusted” development charges rates are made through a cash flow analysis for general services. The analysis, details of which are included in Appendix B for general services and Appendix C for engineered services, considers the borrowing cost and interest earnings associated with the timing of expenditures and development charges receipts for each service category. Table 7 summarizes the results of the cash flow adjustments for the residential development charges rates. As shown, the adjusted per capita rate increases slightly by \$2.83, from \$3,910.35 per capita to \$3,913.18 per capita after the cash flow analysis. Table 7 also provides the calculated rates by residential unit with the total charge per unit ranging from a high of \$12,790 for a fully serviced single or semi-detached unit to a low of \$6,081 for an apartment unit. The charge for rows and other multiples is calculated at \$8,022.

The non-residential charges both inside and outside the core tourist area experience a decrease after cash flow considerations. The charge OCTA decreases from \$43.96 to \$43.15 per square metre, which is a two per cent decrease. The adjusted non-residential charge applied to development in the CTA of \$26.41 is \$0.18 less than the unadjusted rate of \$26.23. This is displayed on Tables 8 and 9.

B. Comparison of 2019 Newly Calculated Development Charges With Charges Currently in Force in Niagara Falls

Tables 10, 11 and 12 present a comparison of the newly calculated residential and non-residential development charges with currently imposed development charge rates. It demonstrates that the residential development

charge rate for a single or semi-detached unit increases by \$198 per unit, or two per cent.

The current development charges rate for non-residential development OCTA will increase by \$0.82 per square metre, from \$42.33 to \$43.15 per square metre, or two per cent. The calculated charge for non-residential development occurring within the CTA will increase by \$0.43, from \$25.98 to the calculated \$26.41, an increase of two per cent.

CITY OF NIAGARA FALLS
2014 DEVELOPMENT CHARGES STUDY
RESIDENTIAL DEVELOPMENT CHARGES BY UNIT TYPE

Service	Unadjusted Charge Per Capita	Adjusted Charge Per Capita	Residential Charge By Unit Type (1)			Percentage of Charge
			Singles & Semis	Rows & Other Multiples	Apartments	
General Government	\$26.95	\$30.72	\$100	\$63	\$48	0.8%
Library	\$161.11	\$160.82	\$526	\$330	\$250	4.1%
Fire Protection	\$135.06	\$157.02	\$513	\$322	\$244	4.0%
Parks & Recreation	\$701.97	\$775.25	\$2,534	\$1,589	\$1,205	19.8%
Public Works & Fleet	\$92.32	\$91.90	\$300	\$188	\$143	2.3%
Transit Services	\$156.35	\$168.18	\$550	\$345	\$261	4.3%
Roads & Related	\$915.20	\$902.56	\$2,950	\$1,850	\$1,402	23.1%
Subtotal Municipal Wide Services	\$2,188.96	\$2,286.46	\$7,473	\$4,687	\$3,553	58.4%
Sidewalks	\$47.04	\$48.94	\$160	\$100	\$76	1.3%
Water	\$224.45	\$211.62	\$692	\$434	\$329	5.4%
Sanitary Sewer	\$782.21	\$736.16	\$2,406	\$1,509	\$1,144	18.8%
Storm Water Management	\$667.69	\$630.00	\$2,059	\$1,292	\$979	16.1%
Subtotal Urban Area Services	\$1,721.39	\$1,626.72	\$5,317	\$3,335	\$2,528	41.6%
TOTAL CHARGE PER UNIT	\$3,910.35	\$3,913.18	\$12,790	\$8,022	\$6,081	100.0%

(1) Based on Persons Per Unit Of:

3.27 2.05 1.55

CITY OF NIAGARA FALLS
2014 DEVELOPMENT CHARGES STUDY
NON-RESIDENTIAL DEVELOPMENT CHARGES PER SQUARE METRE
OUTSIDE CORE TOURIST AREA

Service	Non-Residential Charge Per Square Metre Outside Core Tourist Area		Percentage of Charge
	Unadjusted Charge	Adjusted Charge	
General Government	\$0.39	\$0.45	1.0%
Library	\$0.00	\$0.00	0.0%
Fire Protection	\$1.97	\$2.31	5.4%
Parks & Recreation	\$0.00	\$0.00	0.0%
Public Works & Fleet	\$1.35	\$1.35	3.1%
Transit Services	\$2.28	\$2.48	5.7%
Roads & Related	\$13.37	\$13.24	30.7%
Subtotal Municipal Wide Services	\$19.37	\$19.84	46.0%
Sidewalks	\$0.67	\$0.70	1.6%
Water	\$3.21	\$3.03	7.0%
Sanitary Sewer	\$11.17	\$10.55	24.4%
Storm Water Management	\$9.54	\$9.03	20.9%
Subtotal Urban Area Services	\$24.59	\$23.31	54.0%
TOTAL CHARGE PER SQUARE METRE	\$43.96	\$43.15	100.0%

CITY OF NIAGARA FALLS
2014 DEVELOPMENT CHARGES STUDY
NON-RESIDENTIAL DEVELOPMENT CHARGES PER SQUARE METRE
CORE TOURIST AREA

Service	Non-Residential Charge Per Square Metre Core Tourist Area		Percentage of Charge
	Unadjusted Charge	Adjusted Charge	
General Government	\$0.39	\$0.45	1.7%
Library	\$0.00	\$0.00	0.0%
Fire Protection	\$1.97	\$2.31	8.8%
Parks And Recreation	\$0.00	\$0.00	0.0%
Public Works & Fleet	\$1.35	\$1.35	5.1%
Transit Services	\$2.28	\$2.48	9.4%
Roads And Related	\$13.37	\$13.24	50.1%
Subtotal Municipal Wide Services	\$19.37	\$19.84	75.1%
Sidewalks	\$0.62	\$0.65	2.5%
Water	\$4.21	\$3.98	15.1%
Sanitary Sewer	\$0.49	\$0.46	1.8%
Storm Water Management	\$1.54	\$1.47	5.6%
Subtotal Urban Area Services	\$6.86	\$6.57	24.9%
TOTAL CHARGE PER SQUARE METRE	\$26.23	\$26.41	100.0%

TABLE 10

CITY OF NIAGARA FALLS
COMPARISON OF CURRENT AND CALCULATED
RESIDENTIAL DEVELOPMENT CHARGES

Service	Current Residential Charge / SDU	Calculated Residential Charge / SDU	Difference in Charge	
General Government	\$41	\$100	\$59	144%
Library	\$125	\$526	\$401	321%
Fire Protection	\$454	\$513	\$59	13%
Parks & Recreation	\$2,795	\$2,534	(\$261)	-9%
Public Works & Fleet	\$51	\$300	\$249	488%
Transit Services	\$387	\$550	\$163	42%
Roads & Related	\$2,823	\$2,950	\$127	4%
Subtotal Municipal Wide Services	\$6,676	\$7,473	\$797	12%
Sidewalks	\$273	\$160	(\$113)	-41%
Water	\$394	\$692	\$298	76%
Sanitary Sewer	\$3,341	\$2,406	(\$935)	-28%
Storm Water Management	\$1,908	\$2,059	\$151	8%
Subtotal Urban Area Services	\$5,916	\$5,317	(\$599)	-10%
TOTAL CHARGE PER UNIT	\$12,592	\$12,790	\$198	2%

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TABLE 11

CITY OF NIAGARA FALLS
COMPARISON OF CURRENT AND CALCULATED
NON-RESIDENTIAL DEVELOPMENT CHARGES - OUTSIDE CORE TOURIST AREA

Service	Outside Core Tourist Area (\$/Square Metre)			
	Current Non-Residential Charge	Calculated Non-Residential Charge	Difference in Charge	
General Government	\$0.21	\$0.45	\$0.24	116%
Library	\$0.00	\$0.00	\$0.00	N/A
Fire Protection	\$2.21	\$2.31	\$0.10	5%
Parks & Recreation	\$0.00	\$0.00	\$0.00	N/A
Public Works & Fleet	\$0.26	\$1.35	\$1.09	419%
Transit Services	\$1.88	\$2.48	\$0.60	32%
Roads & Related	\$13.68	\$13.24	(\$0.44)	-3%
Subtotal Municipal Wide Services	\$18.24	\$19.84	\$1.60	9%
Sidewalks	\$1.11	\$0.70	(\$0.41)	-37%
Water	\$1.61	\$3.03	\$1.42	88%
Sanitary Sewer	\$13.60	\$10.55	(\$3.05)	-22%
Storm Water Management	\$7.77	\$9.03	\$1.26	16%
Subtotal Urban Area Services	\$24.09	\$23.31	(\$0.78)	-3%
TOTAL CHARGE PER SQUARE METRE	\$42.33	\$43.15	\$0.82	2%

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TABLE 12

CITY OF NIAGARA FALLS
COMPARISON OF CURRENT AND CALCULATED
NON-RESIDENTIAL DEVELOPMENT CHARGES - CORE TOURIST AREA

Service	Core Tourist Area (\$/Square Metre)			
	Current Non-Residential Charge	Calculated Non-Residential Charge	Difference in Charge	
General Government	\$0.21	\$0.45	\$0.24	116%
Library	\$0.00	\$0.00	\$0.00	N/A
Fire Protection	\$2.21	\$2.31	\$0.10	5%
Parks & Recreation	\$0.00	\$0.00	\$0.00	N/A
Public Works & Fleet	\$0.26	\$1.35	\$1.09	419%
Transit Services	\$1.88	\$2.48	\$0.60	32%
Roads & Related	\$13.68	\$13.24	(\$0.44)	-3%
Subtotal Municipal Wide Services	\$18.24	\$19.84	\$1.60	9%
Sidewalks	\$1.52	\$0.65	(\$0.87)	-57%
Water	\$3.34	\$3.98	\$0.64	19%
Sanitary Sewer	\$0.75	\$0.46	(\$0.29)	-38%
Storm Water Management	\$2.13	\$1.47	(\$0.66)	-31%
Subtotal Urban Area Services	\$7.74	\$6.57	(\$1.17)	-15%
TOTAL CHARGE PER SQUARE METRE	\$25.98	\$26.41	\$0.43	2%

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 2019 DC By-law. This examination is required as one of the provisions of the Development Charges Act. Additional details on the cost of growth analysis, including asset management analysis, is included in Appendix E.

A. Asset Management Plan

The DCA now requires that municipalities complete an Asset Management Plan before the passing of a development charges by-law. 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.

1. Annual Capital Provisions Will Reach \$878,000 by 2028

Table 13 summarizes the annual capital provisions required to replace the development eligible and ineligible costs associated with the capital infrastructure identified in the DC Background Study. This estimate is based on information obtained through discussions with municipal staff regarding useful life assumptions and the capital cost of acquiring and/or emplacing each asset.

Table 13 illustrates that, by 2028, the City will need to fund an additional \$878,000 per annum in order to properly fund the full life cycle costs of the new City-wide general and engineered assets supported under the proposed 2019 Development Charges By-Law.

The calculated annual funding provision should be considered within the context of the City's projected growth. Over the next ten years (to 2028) the City is projected to increase by approximately 6,320 households, which represents a 17 per cent increase over the existing base. In addition, the City will also add roughly 5,600 new employees that will result in approximately 383,530 square metres of additional 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 proposed Development Charges By-law.

The calculated annual provisions identified are considered to be financially sustainable as it is expected that the increased capital asset management requirements can be absorbed by the tax and user base over the long-term.

2. Transit Asset Management in the City

The City provides Transit Services to its residents through the Niagara Falls Transit system (NFT). Transit ridership has grown at a steady rate historically – a trend that is anticipated to continue over the planning period. The capital plan for Transit Services (outlined in Appendix B.5) plans for additional buses, a transit facility expansion and new bus turn-around locations. The annual provision required for Transit by 2028 is \$148,000 in order to fund the full life cycle costs of the assets supported under the proposed 2019 Development Charges By-law. The City ensures that the transit system will be financially sustainably through annual capital and operating budget reviews.

3. Projects are Deemed to be Financially Sustainable

The calculated annual provision identified in Table 13 is considered to be financially sustainable as it is expected that the increased capital asset management requirements can be absorbed by the tax and user base over the long-term.

B. Long-Term Capital and Operating Impact Analysis of Tax Supported Assets

1. Net Operating Costs for the City's Services to Increase over the Forecast Period

Table 14 summarizes the estimated increase in net operating costs that the City will experience for additions associated with the planned capital program. The estimated changes in net operating costs are based on the financial information from the City (additional details are included in Appendix E).

As shown in Table 14, by 2028 the City's net operating costs are estimated to increase by about \$8.23 million. The most significant portion of this increase relates to the construction of a new fire station and the hiring of additional fire fighters. The construction of the new roads and additional bus routes are also projected to impact on the annual operating budget.

2. Long-Term Capital Financing from Non-Development Charges Sources Totals \$15.66 Million

Table 14 also summarizes the components of the development-related capital forecast that will require funding from non-development charges sources. Of the \$98.35 million net capital forecast, about \$15.66 million will need to be financed from non-development charges sources over the next ten years.

This includes about \$4.19 million in respect of the ten per cent discount required by the DCA for general services and about \$11.48 million for shares of projects related to capital replacement and for non-growth shares of projects that provide benefit to the existing community. In addition, \$32.29 million in interim financing may be required for projects related to general service level increases and to growth in the post-2028 period. It is likely that most of these monies could be recovered from future development charges as the by-laws are revisited at least every five years.

**CITY OF NIAGARA FALLS
CALCULATED ANNUAL PROVISION BY 2028**

Service	2019 - 2028 Capital Program		Calculated AMP Annual Provision by 2028		
	DC Recoverable	Non-DC Funded	DC Related	Non-DC Related	
General Government	\$ 1,130,000	\$ 160,000	\$ -	\$ -	
Library	\$ 3,422,000	\$ -	\$ 106,000	\$ -	
Fire Protection	\$ 4,260,000	\$ 4,372,000	\$ 85,000	\$ 165,000	
Parks & Recreation	\$ 13,804,000	\$ -	\$ 302,000	\$ -	
Public Works & Fleet	\$ 2,647,000	\$ 33,142,000	\$ 94,000	\$ 741,000	
Transit Services	\$ 3,609,000	\$ 4,547,000	\$ 148,000	\$ 242,000	
Roads & Related	\$ 22,973,000	\$ 6,482,000	\$ 110,000	\$ 27,000	
Sidewalks	\$ 1,230,000	\$ 888,000	\$ 13,000	\$ 10,000	
Water	\$ 7,182,000	\$ 6,735,000	\$ 5,000	\$ 7,000	
Sanitary Sewer	\$ 20,592,000	\$ 2,841,000	\$ 3,000	\$ 3,000	
Storm Water Management	\$ 18,213,000	\$ 7,513,000	\$ 12,000	\$ 8,000	
Total	\$ 99,062,000	\$ 66,680,000	\$ 878,000	\$ 1,203,000	

CITY OF NIAGARA FALLS
SUMMARY OF LONG TERM CAPITAL AND
OPERATING COST IMPACTS FOR TAX SUPPORTED SERVICES
(in thousands of constant dollars)

Cumulative Net Operating Impacts (1)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Service:										
Library	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$350.0	\$350.0	\$350.0	\$350.0	\$350.0
Fire Protection	\$0.0	\$0.0	\$3,531.0	\$3,531.0	\$3,531.0	\$3,531.0	\$3,531.0	\$3,531.0	\$3,531.0	\$3,531.0
Parks & Recreation	\$89.0	\$134.1	\$208.8	\$323.1	\$414.5	\$495.7	\$579.2	\$652.7	\$690.2	\$690.2
Public Works & Fleet	\$12.5	\$15.0	\$15.0	\$15.0	\$15.0	\$16.3	\$18.8	\$18.8	\$18.8	\$18.8
Transit	\$62.5	\$237.5	\$412.5	\$587.5	\$587.5	\$762.5	\$762.5	\$937.5	\$937.5	\$1,112.5
Roads and Related	\$274.0	\$552.8	\$837.0	\$1,072.4	\$1,311.2	\$1,553.6	\$1,799.6	\$2,049.0	\$2,286.0	\$2,526.4
CUMULATIVE NET OPERATING IMPACTS	\$438.0	\$939.4	\$5,004.3	\$5,529.0	\$5,859.2	\$6,709.0	\$7,041.0	\$7,539.0	\$7,813.5	\$8,228.9

Long-term Capital Impact (1)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
Capital Impact:											
Total Net Cost	\$11,908.9	\$6,225.8	\$2,809.1	\$8,199.6	\$10,606.2	\$6,266.1	\$40,865.0	\$4,679.6	\$3,959.3	\$2,826.8	\$98,346.3
Net Cost From Development Charges	\$4,917.0	\$3,814.0	\$2,493.1	\$7,099.1	\$8,087.6	\$5,139.5	\$6,548.7	\$3,982.6	\$3,237.3	\$2,218.1	\$47,537.0
Available DC Reserve Balances (2)	\$2,574.5	\$30.4	\$66.8	\$26.3	\$26.3	\$26.3	\$26.3	\$26.3	\$26.3	\$26.3	\$2,856.1
Portion for Post-2028 Development (3)	\$3,215.5	\$1,085.5	\$35.5	\$35.5	\$20.8	\$658.2	\$25,301.6	\$658.2	\$658.2	\$619.9	\$32,289.0
Funding From Non-DC Sources											
Discount Portion	\$273.0	\$59.0	\$114.0	\$184.5	\$134.5	\$120.5	\$3,074.8	\$84.5	\$109.5	\$34.5	\$4,188.5
Replacement	\$258.6	\$1,311.3	\$174.1	\$928.7	\$2,411.4	\$396.1	\$5,988.0	\$2.5	\$2.5	\$2.5	\$11,475.7
ANNUAL FUNDING FROM NON-DC SOURCES	\$531.5	\$1,370.3	\$288.1	\$1,113.2	\$2,545.9	\$516.5	\$9,062.9	\$87.0	\$112.0	\$37.0	\$15,664.3

Notes:

(1) See Appendix E

(2) Existing development charge reserve fund balances collected from growth prior to 2018 are applied to fund initial projects in development-related capital forecast

(3) Post 2028 development-related net capital costs may be eligible for development charge funding in future DC by-laws

VIII Development Charges Administration and Considerations

A. Development Charges Administration

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

- It is recommended that the present practices regarding collection of development charges and by-law administration continue to the extent possible;
- As required under the DCA, the City should 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; and
- It is recommended that Council adopt the development-related capital forecast included in this background study, subject to annual review through the City's normal capital budget process.

B. City-Wide vs. Area Specific Development Charges

1. Consideration for 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 stand alone green field developments.

2. Consistent with Historical Practices, City-wide Residential DCs and Area-Specific Non-Residential DCs are Proposed

Based on discussions with staff, and the analysis of the delivery of services, it is proposed that the City continue to calculate and collect residential DCs on a uniform, City-wide basis and collect non-residential DCs on an area-specific basis.

Non-residential development charges are differentiated between two areas: Outside the Core Tourist Area (OCTA) and the Core Tourist Area (CTA). The rationale for the differentiated rates is that development occurring within the CTA has specific servicing needs related to engineering infrastructure. Only development charges related to Sidewalks, Water, Sanitary Sewer and Storm Water Management are differentiated between the OCTA and CTA boundaries. A map of the CTA is provided in Figure 2.

Figure 1: Map of Core Tourist Area

Appendix A

Development Forecast

HEMSON

Appendix A

Development Forecast

This appendix provides the details of the development forecast used to prepare the 2019 Development Charges Background Study for the City of Niagara Falls. The forecast method and key assumptions are discussed. The results of the forecasts are presented in the following nine tables:

- Table 1 Historical Population, Occupied Dwellings and Employment Summary
- Table 2 Historical Annual Housing Completions
- Table 3 Historical Annual Residential Building Permits
- Table 4 Historical Households by Period of Construction Showing Household Size
- Table 5 Forecast Population, Household & Employment Summary
- Table 6 Forecast of Household Growth by Unit Type
- Table 7 Forecast Population Growth in New Households by Unit Type
- Table 8 Forecast Non-Residential Space

The forecasts were prepared by Hemson in consultation with City planning staff. The forecast is informed by a range of statistical data including Statistics Canada Census and National Household Survey data, and Canada Mortgage Housing Corporation (CMHC) housing market information. In addition, the forecast is based upon the ongoing Region of Niagara's Municipal Comprehensive Review.

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.

The forecast is based on Census years and is translated into the time periods required for DC purposes, generally pro-rating the census periods to the DC

time period. A ten-year development forecast, from 2019 to 2028, has been used for general and engineered services in the City.

Hemson Consulting is currently assisting the Region of Niagara with a Regional Municipal Comprehensive Review (MCR). The growth forecast targets identified in the MCR are used for the purposes of the City's 2019 DC Study. Phase 3 of the MCR was completed in December 2016, which involved the development of a Strategic Growth Option (SGO) including local allocations forecast population, housing and employment growth to 2041, based on the Regional forecasts under Schedule 3 of the *Growth Plan*. The MCR Phase 3 final report was presented to Regional Council in December 2016.

The Region initiated Phase 4 of the MCR and other related Official Plan update work in July 2018. Given the passage of time since Phase 3 was completed, an update to the MCR forecasts and local growth allocations was completed to reflect the results of the 2016 Census, policy changes and other information that has become available since the forecasts were prepared. The updated forecasts and local growth allocations completed as part of Phase 4 are used for the purposes of the City's 2019 DC Background Study. It is also anticipated that the Phase 4 targets will provide a basis for work being carried out by the Region, as input to updating the Regional Official Plan to bring the Region into conformity with the *Growth Plan, 2017*.

Employment figures used in DC studies utilize place of work employment values. Place of work employment considers where people work irrespective of their place of residence. The forecast is based on recent growth trends and input from City staff. Consideration has been given to tourism employment and its impact on forecast employment and non-residential space growth over the planning horizon. For DC forecast purposes, work at home employment is excluded from the calculations since the increased need for service is already captured in the residential forecast.

B. Historical Trends in the City

Growth in the City of Niagara Falls has largely been driven by the City's location and attractiveness for tourism development. The City is located on the United States of America border and is situated in the heart of Niagara Region, making it an attractive municipality to live and work.

Historical development numbers presented in this report are based on Statistics Canada Census data and Canada Mortgage and Housing Corporation housing market information. The ten year historical period used in the Development Charges Background Study is from 2009-2018. As 2016 was the date of the last Census, values for 2017 and 2018 are estimated.

Total employment numbers used in the historical tables are based on Statistics Canada Place of Work data. Place of Work employment numbers exclude work at home and are premised on where someone works rather than place of residence.

The City's housing growth has occurred at a modest pace, averaging an annual increase of 1.2 per cent from 2009 to 2018. In total, the City's housing stock has increased by 4,260 dwelling units since 2008, an increase of 13 per cent. In contrast the City's population has grown by 8,190 persons, which represents an increase of 10 per cent. As shown in the historical forecast tables, the majority of residential development has been characterized by ground-related units (e.g. single and semi-detached).

Consistent with the experience of many municipalities in Ontario, the City experienced a decline in its employment sector from 2006 to 2011. However, since 2008 the City has increased its overall employment base by 1,260 employees, an increase of 3 per cent.

C. Forecast Results

Development charges are levied on residential development as a charge per new unit and on non-residential development as a charge per unit of gross floor area (GFA).

1. Residential Development Forecast

The residential development forecast is based upon the targets contained in the Region's Municipal Comprehensive Review. The 2041 target for the City of Niagara Falls is 122,150, which excludes Census undercount (with undercount, this equates to a total population count of roughly 125,710). It should be noted that in development charges studies, Census population, exclusive of undercount is used to determine historical service levels and maximum allowable funding envelopes.

Development charges are levied and collected by the City based on the number of building permits issued for new residential dwelling units. The

housing forecast assumes that housing growth in the City will average roughly 660 units per annum over the initial five years of the planning period (2019-2023). Housing growth is expected to slow in the later five years (2024-2028) to 610 units a year.

In addition to the Censes population forecast, a forecast of “population in new units” that will result from the addition of new housing units has been made. Population growth in new units is estimated by applying the following PPUs to the housing unit forecast: 3.27 for single and semi-detached units; 2.05 for rows and other multiples; and 1.55 for apartments. The forecasted persons in newly constructed units are based upon the historical time series of population growth in housing in the last ten year census period (2006-2016) as released in the 2016 Census. In total, 17,480 is the forecasted population in new dwelling units over the ten-year planning period.

2. Non-Residential Development Forecast

The non-residential forecast is based upon the 2041 target contained in the Region’s Municipal Comprehensive Review of 57,720 employees.

Non-residential development charges are calculated on a per square metre 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, a ten year development forecast, from 2019 to 2028, has been used for all the development charge eligible services in the City.

An average employment density of 70 square metres per employee have been used to convert the employment forecast into building space estimates. The GFA forecasts are provided in Table 8. The total City-wide GFA growth is forecast at 383,500 square metres over the ten year period with an accompanying employment growth of 5,480. Within the Core Tourist Area (CTA), 208,500 square metres of GFA is forecast with an accompanying employment growth of 2,980. This figure includes consideration for commercial employment in the tourism sector of the City. Outside of the Core Tourist Area (OCTA), approximately 175,070 square metres in non-residential GFA is forecast with an accompanying employment growth of 2,500 from 2019-2028.

CITY OF NIAGARA FALLS
HISTORICAL POPULATION, OCCUPIED DWELLINGS & EMPLOYMENT SUMMARY

Mid-Year	Census Population	Annual Growth	Occupied Households	Annual Growth	Av. Household Size (PPU)	Place of Work Employment	Annual Growth	Activity Rate
2006	82,184	685	32,495	200	2.53	40,669	-551	49.5%
2007	82,346	162	32,670	175	2.52	40,435	-234	49.1%
2008	82,508	162	32,846	176	2.51	40,202	-233	48.7%
2009	82,671	163	33,023	177	2.50	39,971	-231	48.3%
2010	82,834	163	33,201	178	2.49	39,741	-230	48.0%
2011	82,997	163	33,382	181	2.49	39,512	-229	47.6%
2012	83,988	991	33,847	465	2.48	39,692	180	47.3%
2013	84,991	1,003	34,319	472	2.48	39,873	181	46.9%
2014	86,006	1,015	34,797	478	2.47	40,054	181	46.6%
2015	87,033	1,027	35,282	485	2.47	40,236	182	46.2%
2016	88,071	1,038	35,773	491	2.46	40,419	183	45.9%
2017	89,374	1,303	36,433	660	2.45	40,935	516	45.8%
2018	90,696	1,322	37,105	672	2.44	41,457	522	45.7%
Growth 2009 - 2018		8,188		4,259			1,255	

Source: Statistics Canada, Census of Canada

CITY OF NIAGARA FALLS
HISTORICAL ANNUAL HOUSING COMPLETIONS

Year	CMHC Annual Housing Completions				Shares by Unit Type			
	Singles/Semis	Rows	Apts.	Total	Singles/Semis	Rows	Apts.	Total
2009	161	9	0	170	95%	5%	0%	100%
2010	257	22	75	354	73%	6%	21%	100%
2011	189	55	2	246	77%	22%	1%	100%
2012	155	41	0	196	79%	21%	0%	100%
2013	226	60	123	409	55%	15%	30%	100%
2014	271	109	0	380	71%	29%	0%	100%
2015	290	28	0	318	91%	9%	0%	100%
2016	446	59	0	505	88%	12%	0%	100%
2017	644	273	9	926	70%	29%	1%	100%
2018	310	237	56	603	51%	39%	9%	100%
<i>Growth 2009 - 2018</i>	2,949	893	265	4,107	72%	22%	6%	100%
<i>5 Year Avg.</i>	392	141	13	508				

Source: Canada Mortgage and Housing Corporation (CMHC), Housing Market Information

CITY OF NIAGARA FALLS
HISTORICAL ANNUAL RESIDENTIAL BUILDING PERMITS

Year	Building Permits				Shares by Unit Type			
	Singles/Semis	Rows	Apts.	Total	Singles/Semis	Rows	Apts.	Total
2008	183	51	40	274	67%	19%	15%	100%
2009	215	4	67	286	75%	1%	23%	100%
2010	205	21	78	304	67%	7%	26%	100%
2011	187	96	99	382	49%	25%	26%	100%
2012	219	110	1	330	66%	33%	0%	100%
2013	295	96	0	391	75%	25%	0%	100%
2014	295	120	1	416	71%	29%	0%	100%
2015	483	192	118	793	61%	24%	15%	100%
2016	628	97	208	933	67%	10%	22%	100%
2017	326	208	15	549	59%	38%	3%	100%
2018	189	100	17	306	62%	33%	6%	100%
<i>Growth 2008 - 2017</i>	<i>3,036</i>	<i>995</i>	<i>627</i>	<i>4,658</i>	<i>65%</i>	<i>21%</i>	<i>13%</i>	<i>100%</i>
<i>Average (2008-2017)</i>	<i>304</i>	<i>100</i>	<i>63</i>	<i>466</i>				
<i>Average (2013-2017)</i>	<i>405</i>	<i>143</i>	<i>68</i>	<i>616</i>				

Source: Stats Can, Building Permit Data

CITY OF NIAGARA FALLS
HISTORICAL HOUSEHOLDS BY PERIOD OF CONSTRUCTION SHOWING HOUSEHOLD SIZE

	Period of Construction										Pre 2006	2006-2016	Total
	Pre 1945	1946-1960	1961-1970	1971-1980	1981-1990	1991-1995	1996-2000	2001-2005	2006-2010	2011-2016			
Singles/Semis													
Household Population	9,625	12,925	8,780	10,950	7,280	2,930	3,820	3,805	3,570	4,290	60,115	7,860	67,975
Households	4,055	5,580	3,535	4,225	2,645	995	1,300	1,195	1,065	1,340	23,530	2,405	25,935
Household Size	2.37	2.32	2.48	2.59	2.75	2.94	2.94	3.18	3.35	3.20	2.55	3.27	2.62
Row													
Household Population	60	130	685	990	990	350	425	425	405	1,030	4,055	1,435	5,490
Households	25	80	265	425	385	170	210	205	205	495	1,765	700	2,465
Household Size	2.40	1.63	2.58	2.33	2.57	2.06	2.02	2.07	1.98	2.08	2.30	2.05	2.23
Apartments (no duplex)													
Household Population	1,195	1,455	1,895	2,035	1,440	700	320	215	325	180	9,255	505	9,760
Households	790	920	1,285	1,280	885	440	175	85	210	115	5,860	325	6,185
Household Size	1.51	1.58	1.47	1.59	1.63	1.59	1.83	2.53	1.55	1.57	1.58	1.55	1.58
Duplex													
Household Population	845	555	380	320	155	95	110	60	0	0	2,520	0	2,520
Households	435	290	160	150	60	40	40	20	10	10	1,195	20	1,215
Household Size	1.94	1.91	2.38	2.13	2.58	2.38	2.75	3.00	0.00	0.00	2.11	0.00	2.07
All Units													
Household Population	11,725	15,065	11,740	14,295	9,865	4,075	4,675	4,505	4,300	5,500	75,945	9,800	85,745
Households	5,305	6,870	5,245	6,080	3,975	1,645	1,725	1,505	1,490	1,960	32,350	3,450	35,800
Household Size	2.21	2.19	2.24	2.35	2.48	2.48	2.71	2.99	2.89	2.81	2.35	2.84	2.40

Source: Statistics Canada

APPENDIX A - TABLE 5

CITY OF NIAGARA FALLS
FORECAST POPULATION, HOUSEHOLD & EMPLOYMENT SUMMARY

Mid-Year	Census Population	Census Pop'n Growth	Occupied Dwellings	Occupied Household Growth	Household Size	Employment by POW	Employment by POW Growth	Activity Rate	Work at Home	Annual Growth	Total w/ Work At Home	Annual Growth
2016	88,071		35,773		2.46	40,419		45.9%	1,905		42,324	
2017	89,374	1,303	36,433	660	2.45	40,935	516	45.8%	1,917	12	42,852	528
2018	90,696	1,322	37,105	672	2.44	41,457	522	45.7%	1,929	12	43,386	534
2019	92,038	1,342	37,790	685	2.44	41,986	529	45.6%	1,941	12	43,927	541
2020	93,400	1,362	38,487	697	2.43	42,522	536	45.5%	1,953	12	44,475	548
2021	94,782	1,382	39,197	710	2.42	43,064	542	45.4%	1,965	12	45,029	554
2022	96,094	1,312	39,786	589	2.42	43,613	549	45.4%	1,977	12	45,590	561
2023	97,424	1,330	40,383	597	2.41	44,169	556	45.3%	1,989	12	46,158	568
2024	98,772	1,348	40,989	606	2.41	44,732	563	45.3%	2,001	12	46,733	575
2025	100,139	1,367	41,604	615	2.41	45,303	571	45.2%	2,013	12	47,316	583
2026	101,526	1,387	42,228	624	2.40	45,881	578	45.2%	2,025	12	47,906	590
2027	102,983	1,457	42,820	592	2.41	46,466	585	45.1%	2,037	12	48,503	597
2028	104,461	1,478	43,421	601	2.41	47,059	593	45.0%	2,050	13	49,109	606
2019 - 2028		13,765		6,316			5,602			121		5,723

Source: Niagara Region MCR, Hemson Consulting Ltd. 2019

CITY OF NIAGARA FALLS
FORECAST OF HOUSEHOLD GROWTH BY UNIT TYPE

Mid-Year	Annual Growth in Total Occupied Households				Shares By Unit Type			
	Singles & Semis	Rows & Other Multiples	Apartments	Total New Households	Singles & Semis	Rows & Other Multiples	Apartments	Total
2016								
2017	459	195	6	660	70%	29%	1%	100%
2018	345	264	62	672	51%	39%	9%	100%
2019	445	137	103	685	65%	20%	15%	100%
2020	453	139	105	697	65%	20%	15%	100%
2021	462	142	107	710	65%	20%	15%	100%
2022	383	118	88	589	65%	20%	15%	100%
2023	388	119	90	597	65%	20%	15%	100%
2024	394	121	91	606	65%	20%	15%	100%
2025	400	123	92	615	65%	20%	15%	100%
2026	405	125	94	624	65%	20%	15%	100%
2027	385	118	89	592	65%	20%	15%	100%
2028	391	120	90	601	65%	20%	15%	100%
2019 - 2028	4,105	1,263	947	6,316	65%	20%	15%	100%

Source: Niagara Region MCR, Hemson Consulting Ltd. 2019

APPENDIX A - TABLE 7

CITY OF NIAGARA FALLS
FORECAST POPULATION GROWTH IN NEW HOUSEHOLDS BY UNIT TYPE*

Mid-Year	Singles & Semis	Rows & Other Multiples	Apartments	Total Population in New Households
2016				
2017	1,500	399	10	1,909
2018	1,129	541	97	1,767
2019	1,455	281	160	1,896
2020	1,481	286	162	1,929
2021	1,509	291	166	1,966
2022	1,250	241	137	1,629
2023	1,268	245	139	1,652
2024	1,287	248	141	1,677
2025	1,306	252	143	1,702
2026	1,325	256	145	1,726
2027	1,258	243	138	1,639
2028	1,277	246	140	1,663
2019 - 2028	13,417	2,590	1,472	17,479

*Based on PPUs

3.27

2.05

1.55

Source: Hemson Consulting Ltd. 2019

CITY OF NIAGARA FALLS
FORECAST NON-RESIDENTIAL SPACE
(SQUARE METRES OF GROSS FLOOR AREA)

Employment Density	70.0 m ² per employee
--------------------	----------------------------------

Mid-Year	City-wide			Core Tourist Area		Outside Core Tourist Area	
	Employment for DC Study	Annual Growth	Non-Residential Space	Annual Growth	Non-Residential Space	Annual Growth	Non-Residential Space
2016	40,055						
2017	40,556	501	35,070	269	18,830	232	16,240
2018	41,063	507	35,490	273	19,093	234	16,398
2019	41,578	515	36,050	277	19,408	238	16,643
2020	42,099	521	36,470	281	19,670	240	16,800
2021	42,626	527	36,890	285	19,933	242	16,958
2022	43,161	535	37,450	289	20,195	247	17,255
2023	43,704	543	38,010	294	20,580	249	17,430
2024	44,254	550	38,500	299	20,913	251	17,588
2025	44,812	558	39,060	304	21,298	254	17,763
2026	45,379	567	39,690	310	21,700	257	17,990
2027	45,956	577	40,390	317	22,155	261	18,235
2028	46,542	586	41,020	323	22,610	263	18,410
2019 - 2028	440,111	5,479	383,530	2,978	208,460	2,501	175,070

Source: Hemson Consulting Ltd. 2019

Appendix B

General Services Technical Appendix

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Appendix B

General Services Technical Appendix Introduction and Overview

The following appendix provides the detailed analysis undertaken to establish the development charge rates for each of the general services in the City of Niagara Falls. Six general services have been analysed as part of the development charges study:

Appendix B.1	Library
Appendix B.2	Fire Protection
Appendix B.3	Parks & Recreation
Appendix B.4	Public Works & Fleet
Appendix B.5	Transit Services
Appendix B.6	General Government

Every service, with the exception of Transit and General Government, 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.

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 2009-2018.

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 development 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 \$/population & 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 2019 – 2028 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 development. Based on the development forecasts presented in Appendix A, Hemson Consulting in collaboration with City staff, has developed a development-related capital program which sets out the projects required to service anticipated growth for the ten-year period from 2019-2028.

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

A replacement share occurs when a new facility will, at least in part, replace a facility that is demolished, redeployed or will otherwise not be available to serve its former function. The replacement 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 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 ten per cent for all services except protection services, transit services and services related to a highway (DCA s.5.(1)8.). The ten per cent discount is therefore applied to all general services considered in this appendix with the exception of Fire and Transit. As with replacement shares, the ten per cent mandatory reduction must be funded from non-development charge sources.

The capital program less any replacement or benefit to existing shares, ten 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 2019-2028. For some of the services, a portion of the capital program will service development that will not occur until after 2028. 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 2019- 2028.

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 development-related net capital cost between the residential and non-residential sectors. For all general services with the exception of Library and Parks & Recreation, the development-related costs have been apportioned as 76 per cent residential and 24 per cent non-residential. This apportionment 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 and Parks & Recreation have been allocated 100 per cent to the residential sector because the need for these services is generally driven by residential development.

The residential share of the 2019-2028 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 development-related net capital 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, 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 metre (of GFA) non-residential development charges.

Appendix B.1

Library

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Appendix B.1

Library

The Niagara Falls Library provides free and equitable access to information to the residents of the City. The Library also provides a wide range of resources in a variety of formats as well as a number of programs.

Table 1 2009-2018 Historical Service Levels

The Table 1 displays the Library ten-year historical inventory for buildings and the associated land, furniture, equipment in addition to the Library materials. The total space provided by the Library services totals approximately 66,680 square feet in 2018 and has a replacement value of \$23.34 million. The land associated with the space totals 2.57 acres of land worth \$591,300. The materials found at the four branches, which include all collections, are valued at \$17.27 million and the furniture and equipment is valued at \$4.34 million. Finally, the library owns one vehicle which has a replacement value of \$35,000.

The 2018 full replacement value of the inventory of capital assets for Library services amounts to \$45.57 million and the ten-year historical average service level is \$522.31 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 \$7.19 million.

Finally, Library 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 \$6.47.

Table 1 provides a summary of the level of service and the calculation of the ten-year historical service level. The calculation of the maximum allowable funding envelope is summarized as follows:

10-Year Funding Envelope Calculation	
10 Year Average Service Level 2009 - 2018	\$522.31
Net Population Growth 2019 - 2028	13,765
Maximum Allowable Funding Envelope	\$7,189,597
Less: 10% Legislated Reduction	\$718,960
Discounted Maximum Allowable Funding Envelope	\$6,470,637

The existing facilities have been examined and consideration has been given to whether or not “excess capacity” exists within the City’s infrastructure that may be available to partially meet the future servicing requirements. It has been determined that no “uncommitted excess capacity” exists within the City’s Library infrastructure, and as such, no adjustments have been made to the service level calculations.

Table 2 2019 – 2028 Development-Related Capital Program & Calculation of the Unadjusted Development Charge

The capital program includes a provision for new library space and an expansion of the Library portion of the MacBain Community Centre valued at \$2.30 million. The program also includes additional collection materials over the ten-year period which amounts to \$919,000. Finally, there is also a provision for a book mobile facility valued at \$200,000.

No replacement or benefit to existing shares have been deducted from the net municipal cost since the costs of this project are solely for additional materials required to service the growth and for the acquisition of new equipment and not for any rehabilitation or replacement existing library branch and materials.

Since the capital costs of Library services must be reduced by ten per cent as per the requirements of the DCA, approximately \$342,200 is deemed an ineligible cost and this amount must be paid by the City through revenues other than development charges.

Of the \$3.08 million DC eligible costs, an amount of \$263,320 is available in the Library DC reserve fund to offset the cost of the program. The 2019–2028 DC costs eligible for recovery amount to \$2.82 million which is allocated entirely against future residential development in the City of Niagara Falls. This results in an unadjusted development charge of \$161.11 per capita.

Table 3 Cash Flow and Reserve Fund Analysis

After cash flow and reserve fund consideration, the residential calculated charge decreases to \$160.82 per capita.

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

LIBRARY SUMMARY						
10-year Hist.	2019 - 2028		Unadjusted		Adjusted	
Service Level per capita	Development-Related Capital Program Total	Net DC Recoverable	Development Charge \$/capita	Development Charge \$/sq.m	Development Charge \$/capita	Development Charge \$/sq.m
\$522.31	\$3,421,500	\$2,816,034	\$161.11	\$0.00	\$160.82	\$0.00

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APPENDIX B.1
TABLE 1

CITY OF NIAGARA FALLS
INVENTORY OF CAPITAL ASSETS
LIBRARY

BUILDINGS Branch Name	# of Square Feet										UNIT COST (\$/sq.ft.)
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Victoria Avenue Branch	47,365	47,365	47,365	47,365	47,365	47,365	47,365	47,365	47,365	47,365	\$350
Chippawa Branch	5,487	5,487	5,487	5,487	5,487	5,487	5,487	5,487	5,487	5,487	\$350
Stamford Centre Branch	5,967	5,967	5,967	5,967	5,967	5,967	5,967	5,967	5,967	5,967	\$350
Community Centre Branch	7,865	7,865	7,865	7,865	7,865	7,865	7,865	7,865	7,865	7,865	\$350
Total (sq.ft.)	66,684										
Total (\$000)	\$23,339.4										

LAND Branch Name	# of Acres										UNIT COST (\$/acre)
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Victoria Avenue Branch	2.14	2.14	2.14	2.14	2.14	2.14	2.14	2.14	2.14	2.14	\$230,000
Chippawa Branch	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	\$230,000
Stamford Centre Branch	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	\$230,000
Community Centre Branch	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	\$230,000
Total (acre)	2.57										
Total (\$000)	\$591.3										

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APPENDIX B.1
TABLE 1

CITY OF NIAGARA FALLS
INVENTORY OF CAPITAL ASSETS
LIBRARY

MATERIALS Type of Collection	# of Collection Materials										UNIT COST (\$/item)
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Books	286,796	291,207	288,037	273,220	273,220	269,805	255,758	239,641	166,929	166,929	\$40
Periodicals	14,405	14,433	14,462	14,634	14,809	14,986	11,102	11,617	5,502	5,502	\$6
Microfilms	2,215	2,230	2,245	2,260	2,260	2,084	1,305	1,322	1,337	1,337	\$265
CD-ROMS	710	549	537	314	314	125	123	28	23	23	\$66
Video Tapes	6,622	5,469	4,033	3,385	3,385	1,532	1,520	73	58	58	\$6
Compact Discs	6,472	6,814	6,703	6,671	6,671	6,682	6,003	5,770	4,831	4,831	\$25
Talking Books/CD Books	3,748	3,685	4,312	3,553	3,553	3,886	4,110	4,034	3,097	3,097	\$58
Records & Other Audio Cassettes	224	790	87	42	42	78	78	71	47	47	\$0
DVDs	11,487	13,928	16,157	18,903	18,903	25,687	25,836	26,469	22,305	22,305	\$34
Video Games	109	309	440	593	593	699	773	839	1,037	1,037	\$63
E-Periodicals	-	42,387	39,462	21,388	21,388	51,992	49,234	10,433	10,237	10,237	\$2
E-Books/Audiobooks (downloadable)	650	4,562	15,475	39,801	39,801	74,848	79,503	125,517	127,641	127,641	\$70
Playaways	-	146	320	605	605	886	921	1,011	812	812	\$81
Electronic Database Subscription	41	43	46	31	31	18	38	19	19	19	\$1,670
Streamable content	-	-	-	-	-	-	-	-	-	3	\$9,642
Total (#)	333,479	386,552	392,316	385,400	385,575	453,308	436,304	426,844	343,875	343,878	
Total (\$000)	\$13,122.4	\$13,759.7	\$14,522.5	\$15,639.1	\$15,640.1	\$18,206.8	\$17,777.3	\$20,259.7	\$17,243.3	\$17,272.2	

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APPENDIX B.1
TABLE 1

CITY OF NIAGARA FALLS
INVENTORY OF CAPITAL ASSETS
LIBRARY

FURNITURE AND EQUIPMENT	Total Value of Furniture and Equipment (\$)									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
All Branches	\$4,531,171	\$4,575,281	\$4,635,388	\$4,995,741	\$4,995,741	\$4,334,460	\$4,334,460	\$4,334,460	\$4,334,460	\$4,334,460
Total (\$000)	\$4,531.2	\$4,575.3	\$4,635.4	\$4,995.7	\$4,995.7	\$4,334.5	\$4,334.5	\$4,334.5	\$4,334.5	\$4,334.5

VEHICLES	# of Vehicles										UNIT COST (\$/vehicle)
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Library Van	1	1	1	1	1	1	1	1	1	1	\$35,000
Total (#)	1	1	1	1	1	1	1	1	1	1	
Total (\$000)	\$35.0	\$35.0	\$35.0	\$35.0	\$35.0	\$35.0	\$35.0	\$35.0	\$35.0	\$35.0	

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APPENDIX B.1
TABLE 1

CITY OF NIAGARA FALLS
CALCULATION OF SERVICE LEVELS
LIBRARY

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Historical Population	82,671	82,834	82,997	83,988	84,991	86,006	87,033	88,071	89,374	90,696

INVENTORY SUMMARY (\$000)

Buildings	\$23,339.4	\$23,339.4	\$23,339.4	\$23,339.4	\$23,339.4	\$23,339.4	\$23,339.4	\$23,339.4	\$23,339.4	\$23,339.4
Land	\$591.3	\$591.3	\$591.3	\$591.3	\$591.3	\$591.3	\$591.3	\$591.3	\$591.3	\$591.3
Materials	\$13,122.4	\$13,759.7	\$14,522.5	\$15,639.1	\$15,640.1	\$18,206.8	\$17,777.3	\$20,259.7	\$17,243.3	\$17,272.2
Furniture And Equipment	\$4,531.2	\$4,575.3	\$4,635.4	\$4,995.7	\$4,995.7	\$4,334.5	\$4,334.5	\$4,334.5	\$4,334.5	\$4,334.5
Library Van	\$35.0	\$35.0	\$35.0	\$35.0	\$35.0	\$35.0	\$35.0	\$35.0	\$35.0	\$35.0
Total (\$000)	\$41,619.3	\$42,300.7	\$43,123.6	\$44,600.5	\$44,601.6	\$46,507.0	\$46,077.5	\$48,559.9	\$45,543.5	\$45,572.4

SERVICE LEVEL (\$/capita)

Buildings	\$282.32	\$281.76	\$281.21	\$277.89	\$274.61	\$271.37	\$268.17	\$265.01	\$261.14	\$257.34	\$272.08
Land	\$7.15	\$7.14	\$7.12	\$7.04	\$6.96	\$6.88	\$6.79	\$6.71	\$6.62	\$6.52	\$6.89
Materials	\$158.73	\$166.11	\$174.98	\$186.21	\$184.02	\$211.69	\$204.26	\$230.04	\$192.93	\$190.44	\$189.94
Furniture And Equipment	\$54.81	\$55.23	\$55.85	\$59.48	\$58.78	\$50.40	\$49.80	\$49.22	\$48.50	\$47.79	\$52.99
Library Van	\$0.42	\$0.42	\$0.42	\$0.42	\$0.41	\$0.41	\$0.40	\$0.40	\$0.39	\$0.39	\$0.41
Total (\$/capita)	\$503.43	\$510.67	\$519.58	\$531.03	\$524.78	\$540.74	\$529.43	\$551.37	\$509.58	\$502.47	\$522.31

CITY OF NIAGARA FALLS
CALCULATION OF MAXIMUM ALLOWABLE
LIBRARY

10-Year Funding Envelope Calculation	
10 Year Average Service Level 2009 - 2018	\$522.31
Net Population Growth 2019 - 2028	13,765
Maximum Allowable Funding Envelope	\$7,189,597
Less: 10% Legislated Reduction	\$718,960
Discounted Maximum Allowable Funding Envelope	\$6,470,637

CITY OF NIAGARA FALLS
DEVELOPMENT-RELATED CAPITAL PROGRAM
LIBRARY

Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs			Total DC Eligible Costs	DC Eligible Costs		
					BTE (%)	Replacement & BTE Shares	10% Reduction		Available DC Reserves	2019-2028	Post 2028
1.0 LIBRARY											
1.1 Buildings, Land & Equipment											
1.1.1 Provision for Net New Library Space (5,000 sq. ft.)	Various	\$ 1,750,000	\$ -	\$ 1,750,000	0%	\$ -	\$ 175,000	\$ 1,575,000	\$ 263,316	\$ 1,311,684	\$ -
1.1.2 Provision for Equipment for New Library Space (\$65 per sq.ft.)	Various	\$ 325,000	\$ -	\$ 325,000	0%	\$ -	\$ 32,500	\$ 292,500	\$ -	\$ 292,500	\$ -
1.1.3 Expansion of Community Centre (Library Portion) (650 sq. ft.)	Various	\$ 227,500	\$ -	\$ 227,500	0%	\$ -	\$ 22,750	\$ 204,750	\$ -	\$ 204,750	\$ -
Subtotal Buildings, Land & Equipment		\$ 2,302,500	\$ -	\$ 2,302,500		\$ -	\$ 230,250	\$ 2,072,250	\$ 263,316	\$ 1,808,934	\$ -
1.2 Collection Material Acquisitions											
1.2.1 Provision for Additional Collection Materials	Various	\$ 919,000	\$ -	\$ 919,000	0%	\$ -	\$ 91,900	\$ 827,100	\$ -	\$ 827,100	\$ -
Subtotal Collection Material Acquisitions		\$ 919,000	\$ -	\$ 919,000		\$ -	\$ 91,900	\$ 827,100	\$ -	\$ 827,100	\$ -
1.3 Equipment & Vehicles											
1.3.1 Book Mobile	Various	\$ 200,000	\$ -	\$ 200,000	0%	\$ -	\$ 20,000	\$ 180,000	\$ -	\$ 180,000	\$ -
Subtotal Equipment & Vehicles		\$ 200,000	\$ -	\$ 200,000		\$ -	\$ 20,000	\$ 180,000	\$ -	\$ 180,000	\$ -
TOTAL LIBRARY		\$ 3,421,500	\$ -	\$ 3,421,500		\$ -	\$ 342,150	\$ 3,079,350	\$ 263,316	\$ 2,816,034	\$ -

Residential Development Charge Calculation		
Residential Share of 2019 - 2028 DC Eligible Costs	100%	\$2,816,034
10-Year Growth in Population in New Units		17,479
Unadjusted Development Charge Per Capita		\$161.11
Non-Residential Development Charge Calculation		
Non-Residential Share of 2019 - 2028 DC Eligible Costs	0%	\$0
10-Year Growth in Square Metres		383,530
Unadjusted Development Charge Per Square Metre		\$0.00

2019 - 2028 Net Funding Envelope	\$6,470,637
Uncommitted Reserve Fund Balance	
Balance as at December 31, 2018	\$263,316

CITY OF NIAGARA FALLS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
LIBRARY
RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

LIBRARY	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	\$0.0	\$23.7	\$54.2	\$92.7	\$74.5	\$59.4	\$47.9	\$40.5	\$37.1	\$16.8	
2019 - 2028 RESIDENTIAL FUNDING REQUIREMENTS											
- Library Services: Non Inflated	\$281.6	\$281.6	\$281.6	\$281.6	\$281.6	\$281.6	\$281.6	\$281.6	\$281.6	\$281.6	\$2,816.0
- Library Services: Inflated	\$281.6	\$287.2	\$293.0	\$298.8	\$304.8	\$310.9	\$317.1	\$323.5	\$329.9	\$336.5	\$3,083.5
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,896	1,929	1,966	1,629	1,652	1,677	1,702	1,726	1,639	1,663	17,479
REVENUE											
- DC Receipts: Inflated	\$304.9	\$316.4	\$328.9	\$278.0	\$287.6	\$297.8	\$308.2	\$318.8	\$308.9	\$319.7	\$3,069.1
INTEREST											
- Interest on Opening Balance	\$0.0	\$0.8	\$1.9	\$3.2	\$2.6	\$2.1	\$1.7	\$1.4	\$1.3	\$0.6	\$15.6
- Interest on In-year Transactions	\$0.4	\$0.5	\$0.6	(\$0.6)	(\$0.5)	(\$0.4)	(\$0.2)	(\$0.1)	(\$0.6)	(\$0.5)	(\$1.3)
TOTAL REVENUE	\$305.3	\$317.7	\$331.5	\$280.6	\$289.7	\$299.5	\$309.7	\$320.1	\$309.6	\$319.8	\$3,083.5
CLOSING CASH BALANCE	\$23.7	\$54.2	\$92.7	\$74.5	\$59.4	\$47.9	\$40.5	\$37.1	\$16.8	\$0.0	

2019 Adjusted Charge Per Capita **\$160.82**

Allocation of Capital Program	
Residential Sector	100.0%
Non-Residential Sector	0.0%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

Appendix B.2

Fire Protection

HEMSON

Appendix B.2

Fire Protection

The Niagara Falls Fire Department provides for fire suppression, emergency response, fire prevention and public education through six fire stations throughout the City.

Table 1 2009-2018 Historical Service Levels

The Fire Department inventory of capital assets includes stations, other buildings/ structures and land. The total space provided at the fire stations is approximately 55,940 square feet and is valued at approximately \$19.58 million. The value of the other related fire buildings adds an additional \$1.82 million to the inventory. The land used for the stations and structures occupy roughly 12.41 acres of land which is valued at \$2.85 million. Personal firefighting equipment amounts to \$3.29 million and station equipment adds another \$2.50 to the inventory. The department owns 36 vehicles with a total replacement value that amounts to \$13.25 million.

The current value of the capital infrastructure including fire halls, other buildings/structures, land, personal fighter fighting equipment, furniture and equipment and vehicles is approximately \$43.30 million and provides the City with a ten-year average historical service level of \$330.11 per capita and employee. The historical service level multiplied by the ten-year forecast of net population and employment growth results in a calculated maximum allowable funding envelope of \$3.12 million.

No legislated ten per cent reduction is required for Fire Protection services. As such, the discounted maximum allowable funding envelope of \$3.12 million is brought forward to the development charges calculation.

Table 1 provides a summary of the level of service and the calculation of the ten-year historical service level. The calculation of the maximum allowable funding envelope is summarized as follows:

10-Year Funding Envelope Calculation	
10 Year Average Service Level 2009 - 2018	\$330.11
Net Population & Employment Growth 2019 - 2028	9,443
Maximum Allowable Funding Envelope	\$3,117,229
Discounted Maximum Allowable Funding Envelope	\$3,117,229

The existing facilities have been examined and consideration has been given to whether or not “excess capacity” exists within the City’s infrastructure that may be available to partially meet the future servicing requirements. It has been determined that no “uncommitted excess capacity” exists within the City’s Fire Protection infrastructure, and as such, no adjustments have been made to the service level calculations.

Table 2 2019 – 2028 Development-Related Capital Program & Calculation of the Unadjusted Development Charge

The 2019-2028 development-related capital program consists of the construction of a new fire station with a value of \$7.48 million. The remainder of the capital program is related to a new truck for Fire Station 7 for \$650,000 and various communication, station and firefighting equipment valued at \$506,600.

Altogether, the ten-year capital forecast for Fire Protection amounts to \$8.63 million. There are no grants or subsidies, replacement shares or benefit to existing shares identified and therefore the entire program is considered eligible for DC funding. As per the DCA, no statutory ten per cent deduction is required for this service, and as such no adjustment is made. In total, \$1.14 million is available in the Fire Protection DC reserve fund and is removed from the DC eligible costs. A portion of the capital program, \$4.37 million, exceeds the maximum permissible funding envelope and is deemed a post-period benefit which will be considered for recovery in subsequent development charge by-laws. After these adjustments, the remaining \$3.12 million is deemed to be related to development between 2019 -2028 planning period.

The development-related cost is allocated 76 per cent, or \$2.36 million, against new residential development, and 24 per cent, or \$756,600, 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

\$135.06 per capita and \$1.97 per square metre of non-residential gross floor area.

Table 3 Cash Flow Analysis

After cash flow consideration, the calculated residential charge increases to \$157.02 per capita and the non-residential charge also increases to \$2.31 per square metre. This is a reflection of the timing of the capital program and development charges revenues.

The following table summarizes the calculation of the Fire Protection development charge.

FIRE PROTECTION SUMMARY							
10-year Hist.	2019 - 2028		Unadjusted	Adjusted			
Service Level per pop & emp	Development-Related Capital Program	Development Charge	Development Charge	\$/capita	\$/sq.m	\$/capita	\$/sq.m
\$330.11	Total \$8,631,620	Net DC Recoverable \$3,117,229	\$135.06	\$1.97	\$157.02	\$2.31	

CITY OF NIAGARA FALLS
INVENTORY OF CAPITAL ASSETS
FIRE PROTECTION

FIRE HALLS Station Name	# of Square Feet										UNIT COST (\$/sq. ft.)
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Station 1 - 5815 Morrison St.	18,919	18,919	18,919	18,919	18,919	18,919	18,919	18,919	18,919	18,919	\$350
Station 2 - 7036 McLeod Rd.	5,613	5,613	5,613	5,613	5,613	5,613	5,613	5,613	5,613	5,613	\$350
Station 3 - 3401 Dorchester Rd.	5,366	5,366	5,366	5,366	5,366	5,366	5,366	5,366	5,366	6,866	\$350
Station 4 - 8696 Banting Ave.	7,279	7,279	7,279	7,279	7,279	7,279	7,279	7,279	7,279	7,279	\$350
Station 5 - 11208 Sodom Rd.	8,388	8,388	8,388	8,388	8,388	8,388	8,388	8,388	8,388	8,388	\$350
Station 6 - 8037 Schisler Rd.	8,870	8,870	8,870	8,870	8,870	8,870	8,870	8,870	8,870	8,870	\$350
Total (sq.ft.)	54,435	55,935									
Total (\$000)	\$19,052.3	\$19,577.3									

OTHER BUILDINGS/STRUCTURES Description	Total Value of Buildings (\$)									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
5815 Morrison Street										
Training Tower #1	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000
Training Tower #2	\$63,000	\$63,000	\$63,000	\$63,000	\$63,000	\$63,000	\$63,000	\$63,000	\$63,000	\$63,000
Storage	\$28,500	\$28,500	\$28,500	\$28,500	\$28,500	\$28,500	\$28,500	\$28,500	\$28,500	\$28,500
Administration Office	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000
Communication Tower	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000
Firefighters Survival Building	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000
Total (\$000)	\$1,821.5	\$1,821.5	\$1,821.5	\$1,821.5	\$1,821.5	\$1,821.5	\$1,821.5	\$1,821.5	\$1,821.5	\$1,821.5

LAND Station Name	# of Acres										UNIT COST (\$/acre)
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Station 1 - 5815 Morrison St.	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	\$230,000
Station 2 - 7036 McLeod Rd.	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	\$230,000
Station 3 - 3401 Dorchester Rd.	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	\$230,000
Station 4 - 8696 Banting Ave.	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	\$230,000
Station 5 - 11208 Sodom Rd.	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.66	\$230,000
Station 6 - 8037 Schisler Rd.	3.95	3.95	3.95	3.95	3.95	3.95	3.95	3.95	3.95	3.95	\$230,000
Total (acres)	12.41										
Total (\$000)	\$2,854.3										

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APPENDIX B.2
TABLE 1

CITY OF NIAGARA FALLS
INVENTORY OF CAPITAL ASSETS
FIRE PROTECTION

PERSONAL FIREFIGHTER EQUIPMENT	Total Value of Furniture & Equipment (\$)										UNIT COST (\$/outfit)
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Cost to Outfit a Firefighter	295	295	295	295	295	315	335	355	370	370	\$8,885
Total (#)	295	295	295	295	295	315	335	355	370	370	
Total (\$000)	\$2,621.1	\$2,621.1	\$2,621.1	\$2,621.1	\$2,621.1	\$2,798.8	\$2,976.5	\$3,154.2	\$3,287.5	\$3,287.5	

EQUIPMENT	Total Value of Equipment (\$)									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
SCBA	\$715,000	\$715,000	\$715,000	\$715,000	\$715,000	\$750,000	\$787,500	\$826,875	\$868,218	\$900,000
Air Compressor	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$44,000	\$48,400	\$53,240	\$58,564	\$64,420
Cylinders	\$311,100	\$311,100	\$311,100	\$311,100	\$311,100	\$326,655	\$342,987	\$360,136	\$378,142	\$397,049
Terminal	\$0	\$85,000	\$85,000	\$85,000	\$85,000	\$90,000	\$95,000	\$100,000	\$105,000	\$110,000
Pagers, Radios, Mobiles	\$492,000	\$504,000	\$516,000	\$528,000	\$540,000	\$552,000	\$564,000	\$576,000	\$588,000	\$600,000
Defibrillators	\$214,000	\$214,000	\$214,000	\$214,000	\$214,000	\$130,000	\$130,000	\$130,000	\$130,000	\$130,000
Hazardous Materials Equipment	\$36,000	\$36,000	\$36,000	\$36,000	\$36,000	\$37,000	\$38,000	\$39,000	\$40,000	\$41,000
Water Rescue Equipment	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$32,500	\$35,000	\$37,500	\$40,000	\$42,500
Technical Rope Rescue Equipment	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$105,000	\$110,000	\$115,000	\$120,000	\$125,000
Forcible Entry Training Props	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,500	\$13,000	\$13,500	\$14,000	\$14,500
Sea Containers	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
Washers	\$29,000	\$29,000	\$29,000	\$29,000	\$29,000	\$35,000	\$41,000	\$47,000	\$53,000	\$60,000
Total (\$000)	\$1,999.1	\$2,096.1	\$2,108.1	\$2,120.1	\$2,132.1	\$2,134.7	\$2,224.9	\$2,318.3	\$2,414.9	\$2,504.5

CITY OF NIAGARA FALLS
INVENTORY OF CAPITAL ASSETS
FIRE PROTECTION

VEHICLES	# of Vehicles										UNIT COST (\$/vehicle)
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Cars	10	10	10	10	10	10	10	10	10	10	\$60,000
Pickups	2	2	2	2	2	2	2	2	2	3	\$60,000
Vans	1	1	1	1	1	1	1	1	0	0	\$50,000
Trailers	2	2	2	2	2	2	2	2	2	2	\$10,000
Station 1 - 5815 Morrison St.											
Pumper 1	1	1	1	1	1	1	1	1	1	1	\$650,000
Rescue 1	1	1	1	1	1	1	1	1	1	1	\$600,000
Aerial 1	1	1	1	1	1	1	1	1	1	1	\$1,500,000
Reserve Pumper 1	1	1	1	1	1	1	1	1	1	1	\$650,000
Station 2 - 7036 McLeod Rd.											
Pumper 2 (Aerial 2)	1	1	1	1	1	1	1	1	1	1	\$1,000,000
Rescue 2	1	1	1	1	1	1	1	1	1	1	\$600,000
Reserve Pumper 2	1	1	1	1	1	1	1	1	1	1	\$650,000
Station 3 - 3401 Dorchester Rd.											
Pumper 3	1	1	1	1	1	1	1	1	1	1	\$650,000
Reserve Pumper 3	1	1	1	1	1	1	1	1	1	1	\$650,000
Rescue 3									1	1	\$600,000
Station 4 - 8696 Banting Ave.											
Pumper 4	1	1	1	1	1	1	1	1	1	1	\$650,000
Engine 4	1	1	1	1	1	1	1	1	1	1	\$450,000
Rescue 4	1	1	1	1	1	1	1	1	1	1	
Marine 1	1	1	1	1	1	1	1	1	1	1	\$150,000
Marine 2	1	1	1	1	1	1	1	1	1	1	\$150,000
Station 5 - 11208 Sodom Rd.											
Pumper 5	1	1	1	1	1	1	1	1	1	1	\$650,000
Tanker 5	1	1	1	1	1	1	1	1	1	1	\$500,000
Rescue 5	1	1	1	1	1	1	1	1	1	1	\$600,000
Station 6 - 8037 Schisler Rd.											
Pumper 6	1	1	1	1	1	1	1	1	1	1	\$650,000
Tanker 6	1	1	1	1	1	1	1	1	1	1	\$500,000
Rescue 6	1	1	1	1	1	1	1	1	1	1	\$600,000
Total (#)	35	35	35	35	35	35	35	35	35	36	
Total (\$000)	\$12,640.0	\$12,640.0	\$12,640.0	\$12,640.0	\$12,640.0	\$12,640.0	\$12,640.0	\$12,640.0	\$12,640.0	\$13,190.0	\$13,250.0

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APPENDIX B.2
TABLE 1

CITY OF NIAGARA FALLS
CALCULATION OF SERVICE LEVELS
FIRE PROTECTION

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Historical Population	82,671	82,834	82,997	83,988	84,991	86,006	87,033	88,071	89,374	90,696
Historical Employment	<u>39,971</u>	<u>39,741</u>	<u>39,512</u>	<u>39,692</u>	<u>39,873</u>	<u>40,054</u>	<u>40,236</u>	<u>40,419</u>	<u>40,935</u>	<u>41,457</u>
Total Historical Population & Employment	122,642	122,575	122,509	123,680	124,864	126,060	127,269	128,490	130,309	132,153

INVENTORY SUMMARY (\$000)

Fire Halls	\$19,052.3	\$19,052.3	\$19,052.3	\$19,052.3	\$19,052.3	\$19,052.3	\$19,052.3	\$19,052.3	\$19,052.3	\$19,577.3
Other Buildings/Structures	\$1,821.5	\$1,821.5	\$1,821.5	\$1,821.5	\$1,821.5	\$1,821.5	\$1,821.5	\$1,821.5	\$1,821.5	\$1,821.5
Land	\$2,854.3	\$2,854.3	\$2,854.3	\$2,854.3	\$2,854.3	\$2,854.3	\$2,854.3	\$2,854.3	\$2,854.3	\$2,854.3
Personal Firefighter Equipment	\$2,621.1	\$2,621.1	\$2,621.1	\$2,621.1	\$2,621.1	\$2,798.8	\$2,976.5	\$3,154.2	\$3,287.5	\$3,287.5
Equipment	\$1,999.1	\$2,096.1	\$2,108.1	\$2,120.1	\$2,132.1	\$2,134.7	\$2,224.9	\$2,318.3	\$2,414.9	\$2,504.5
Vehicles	\$12,640.0	\$12,640.0	\$12,640.0	\$12,640.0	\$12,640.0	\$12,640.0	\$12,640.0	\$12,640.0	\$13,190.0	\$13,250.0
Total (\$000)	\$40,988.2	\$41,085.2	\$41,097.2	\$41,109.2	\$41,121.2	\$41,301.5	\$41,569.4	\$41,840.5	\$42,620.4	\$43,295.0

SERVICE LEVEL (\$/pop & emp)

Average
Service
Level

Fire Halls	\$155.35	\$155.43	\$155.52	\$154.04	\$152.58	\$151.14	\$149.70	\$148.28	\$146.21	\$148.14	\$151.64
Other Buildings/Structures	\$14.85	\$14.86	\$14.87	\$14.73	\$14.59	\$14.45	\$14.31	\$14.18	\$13.98	\$13.78	\$14.46
Land	\$23.27	\$23.29	\$23.30	\$23.08	\$22.86	\$22.64	\$22.43	\$22.21	\$21.90	\$21.60	\$22.66
Personal Firefighter Equipment	\$21.37	\$21.38	\$21.39	\$21.19	\$20.99	\$22.20	\$23.39	\$24.55	\$25.23	\$24.88	\$22.66
Equipment	\$16.30	\$17.10	\$17.21	\$17.14	\$17.08	\$16.93	\$17.48	\$18.04	\$18.53	\$18.95	\$17.48
Vehicles	\$103.06	\$103.12	\$103.18	\$102.20	\$101.23	\$100.27	\$99.32	\$98.37	\$101.22	\$100.26	\$101.22
Total (\$/pop & emp)	\$334.21	\$335.18	\$335.46	\$332.38	\$329.33	\$327.63	\$326.63	\$325.63	\$327.07	\$327.61	\$330.11

CITY OF NIAGARA FALLS
CALCULATION OF MAXIMUM ALLOWABLE
FIRE PROTECTION

10-Year Funding Envelope Calculation	
10 Year Average Service Level 2009 - 2018	\$330.11
Net Population & Employment Growth 2019 - 2028	9,443
Maximum Allowable Funding Envelope	\$3,117,229
Discounted Maximum Allowable Funding Envelope	\$3,117,229

HEMSON

CITY OF NIAGARA FALLS
DEVELOPMENT-RELATED CAPITAL PROGRAM
FIRE PROTECTION

Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs			Total DC Eligible Costs	DC Eligible Costs		
					BTE (%)	Replacement & BTE Shares	0% Reduction		Available DC Reserves	2019-2028	Post 2028
2.0 FIRE PROTECTION											
2.1 Buildings, Land & Furnishings											
2.1.1 Construction of New Station 7	2019	\$ 7,475,000	\$ -	\$ 7,475,000	0%	\$ -	\$ -	\$ 7,475,000	\$ 1,142,282	\$ 3,117,229	\$ 3,215,490
Subtotal Buildings, Land & Furnishings		\$ 7,475,000	\$ -	\$ 7,475,000		\$ -	\$ -	\$ 7,475,000	\$ 1,142,282	\$ 3,117,229	\$ 3,215,490
2.2 Vehicles											
2.2.1 Truck for Station 7	2020	\$ 650,000	\$ -	\$ 650,000	0%	\$ -	\$ -	\$ 650,000	\$ -	\$ -	\$ 650,000
Subtotal Vehicles		\$ 650,000	\$ -	\$ 650,000		\$ -	\$ -	\$ 650,000	\$ -	\$ -	\$ 650,000
2.3 Equipment & Other											
2.3.1 Communication Equipment	2020	\$ 300,000	\$ -	\$ 300,000	0%	\$ -	\$ -	\$ 300,000	\$ -	\$ -	\$ 300,000
2.3.2 Station 7 Equipment	2020	\$ 100,000	\$ -	\$ 100,000	0%	\$ -	\$ -	\$ 100,000	\$ -	\$ -	\$ 100,000
2.3.3 Outfitting of Firefighters (Station 7)	2020	\$ 35,540	\$ -	\$ 35,540	0%	\$ -	\$ -	\$ 35,540	\$ -	\$ -	\$ 35,540
2.3.4 Outfitting of Firefighters (Station 7)	2021	\$ 35,540	\$ -	\$ 35,540	0%	\$ -	\$ -	\$ 35,540	\$ -	\$ -	\$ 35,540
2.3.5 Outfitting of Firefighters (Station 7)	2022	\$ 35,540	\$ -	\$ 35,540	0%	\$ -	\$ -	\$ 35,540	\$ -	\$ -	\$ 35,540
Subtotal Vehicles		\$ 506,620	\$ -	\$ 506,620		\$ -	\$ -	\$ 506,620	\$ -	\$ -	\$ 506,620
TOTAL FIRE PROTECTION		\$ 8,631,620	\$ -	\$ 8,631,620		\$ -	\$ -	\$ 8,631,620	\$ 1,142,282	\$ 3,117,229	\$ 4,372,110

Residential Development Charge Calculation		
Residential Share of 2019 - 2028 DC Eligible Costs	76%	\$2,360,642
10-Year Growth in Population in New Units		17,479
Unadjusted Development Charge Per Capita		\$135.06
Non-Residential Development Charge Calculation		
Non-Residential Share of 2019 - 2028 DC Eligible Costs	24%	\$756,587
10-Year Growth in Square Metres		383,530
Unadjusted Development Charge Per Square Metre		\$1.97

2019 - 2028 Net Funding Envelope	\$3,117,229
Uncommitted Reserve Fund Balance Balance as at December 31, 2018	\$1,142,282

CITY OF NIAGARA FALLS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
FIRE PROTECTION
RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

FIRE PROTECTION	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	\$0.0	(\$2,119.7)	(\$1,921.9)	(\$1,700.8)	(\$1,518.2)	(\$1,316.0)	(\$1,092.5)	(\$846.4)	(\$576.2)	(\$301.0)	
2019 - 2028 RESIDENTIAL FUNDING REQUIREMENTS											
- Fire Protection: Non Inflated	\$2,360.6	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$2,360.6
- Fire Protection: Inflated	\$2,360.6	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$2,360.6
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,896	1,929	1,966	1,629	1,652	1,677	1,702	1,726	1,639	1,663	17,479
REVENUE											
- DC Receipts: Inflated	\$297.7	\$308.9	\$321.2	\$271.4	\$280.8	\$290.7	\$301.0	\$311.3	\$301.6	\$312.1	\$2,996.7
INTEREST											
- Interest on Opening Balance	\$0.0	(\$116.6)	(\$105.7)	(\$93.5)	(\$83.5)	(\$72.4)	(\$60.1)	(\$46.6)	(\$31.7)	(\$16.6)	(\$626.6)
- Interest on In-year Transactions	(\$56.7)	\$5.4	\$5.6	\$4.7	\$4.9	\$5.1	\$5.3	\$5.4	\$5.3	\$5.5	(\$9.5)
TOTAL REVENUE	\$240.9	\$197.8	\$221.1	\$182.6	\$202.2	\$223.5	\$246.1	\$270.2	\$275.2	\$301.0	\$2,360.6
CLOSING CASH BALANCE	(\$2,119.7)	(\$1,921.9)	(\$1,700.8)	(\$1,518.2)	(\$1,316.0)	(\$1,092.5)	(\$846.4)	(\$576.2)	(\$301.0)	\$0.0	

2019 Adjusted Charge Per Capita **\$157.02**

Allocation of Capital Program	
Residential Sector	75.7%
Non-Residential Sector	24.3%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

CITY OF NIAGARA FALLS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
FIRE PROTECTION
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

FIRE PROTECTION	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	\$0.0	(\$691.7)	(\$642.1)	(\$587.0)	(\$525.7)	(\$457.7)	(\$382.8)	(\$300.2)	(\$209.4)	(\$109.4)	
2019 - 2028 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Fire Protection: Non Inflated	\$756.6	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$756.6
- Fire Protection: Inflated	\$756.6	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$756.6
NEW NON-RESIDENTIAL DEVELOPMENT											
- Growth in Square Metres	36,050	36,470	36,890	37,450	38,010	38,500	39,060	39,690	40,390	41,020	383,530
REVENUE											
- DC Receipts: Inflated	\$83.4	\$86.1	\$88.8	\$92.0	\$95.2	\$98.4	\$101.8	\$105.5	\$109.5	\$113.5	\$974.3
INTEREST											
- Interest on Opening Balance	\$0.0	(\$38.0)	(\$35.3)	(\$32.3)	(\$28.9)	(\$25.2)	(\$21.1)	(\$16.5)	(\$11.5)	(\$6.0)	(\$214.8)
- Interest on In-year Transactions	(\$18.5)	\$1.5	\$1.6	\$1.6	\$1.7	\$1.7	\$1.8	\$1.8	\$1.9	\$2.0	(\$2.9)
TOTAL REVENUE	\$64.9	\$49.6	\$55.1	\$61.3	\$68.0	\$74.9	\$82.5	\$90.9	\$99.9	\$109.4	\$756.6
CLOSING CASH BALANCE	(\$691.7)	(\$642.1)	(\$587.0)	(\$525.7)	(\$457.7)	(\$382.8)	(\$300.2)	(\$209.4)	(\$109.4)	(\$0.0)	

2019 Adjusted Charge Per Square Metre	\$2.31
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Allocation of Capital Program	
Residential Sector	75.7%
Non-Residential Sector	24.3%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

Appendix B.3

Parks & Recreation

HEMSON

Appendix B.3

Parks & Recreation

The City of Niagara Falls Recreation and Culture Department is responsible for the operations and maintenance of parkland, park facilities and indoor recreation facilities, and providing recreational programming to the residents of Niagara Falls. There are seven indoor recreation facilities, five pools and various neighbourhood, community, City-wide and nature, and trail parkland found throughout the City.

Table 1 2009-2018 Historical Service Levels

The ten-year historical inventory of capital assets for indoor recreation facilities includes 334,030 square feet of indoor recreation building space, the largest facility being the Gale Centre at 203,000 square feet. As discussed below, a share of the gross floor area, 16,250 square feet has been removed as excess capacity. The current replacement value for the buildings is \$119.76 million. The land associated with the buildings amount to 27.38 acres, and is valued at \$6.30 million. The City also owns and operates five pools valued at \$6.80 million with an associated land valued of \$333,500. The 19 vehicles and equipment associated with the arena facilities have a total value of \$1.10 million. In addition, the City has roughly 1,020 acres of parkland, which consists of neighbourhood, community, city-wide and nature, and trails parkland. The total value amounts to \$101.80 million.

The value of capital assets for Parks & Recreation totals \$236.09 million. The ten-year historical average service level is \$2,471.39 per capita, and multiplied by the ten-year forecast growth in net population, results in a maximum allowable funding envelope of \$34.02 million.

Finally, Parks & Recreation 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 \$30.62 million.

Table 1 provides a summary of the level of service and the calculation of the ten-year historical service level. The calculation of the maximum allowable funding envelope is summarized as follows:

10-Year Funding Envelope Calculation	
10 Year Average Service Level 2009 - 2018	\$2,471.39
Net Population Growth 2019 - 2028	13,765
Maximum Allowable Funding Envelope	\$34,018,683
Less: 10% Legislated Reduction	\$3,401,868
Discounted Maximum Allowable Funding Envelope	\$30,616,815

The existing facilities have been examined and consideration has been given to whether or not “excess capacity” exists within the City’s infrastructure that may be available to partially meet the future servicing requirements. It has been determined that recent facility construction related to the Gale Centre has resulted in an excess capacity of service. As a portion of the Gale Centre has been included for recovery in the capital program, this portion of the facility has been removed from the historical inventory calculation.

Following this adjustment, it has been determined that no additional “uncommitted excess capacity” exists within the City’s Parks & Recreation Services infrastructure, and as such, no further adjustments have been made to the service level calculations.

Table 2 2019 – 2028 Development-Related Capital Program & Calculation of the Unadjusted Development Charge

The 2019–2028 development-related capital program for Parks & Recreation is comprised of the remaining debenture payments related to the construction of the Gale Centre, the creation of new parkland and park facilities and a new vehicle for a total amount of \$13.80 million. The development-related portion of the remaining debenture payments for the Gale Centre amounts to \$6.50 million.

There are no replacement shares or benefit to existing shares identified and therefore no adjustments have been made. The ten per cent reduction has not been applied to the Gale Centre debenture recovery as this reduction was made in previous by-laws. However, a ten per cent reduction has been applied to the other projects in the capital works program and amounts to \$730,500. This amount will be funded from non-DC sources. The DC eligible portion of the capital program, \$13.07 million, will be partly paid for using available DC reserve funds (\$803,900). The remaining portion, \$12.27 million, is brought forward to the development charges calculation.

The 2019–2028 DC costs eligible for recovery amounts to \$12.27 million which is allocated entirely against future residential development in the City of Niagara Falls. This results in an unadjusted development charge of \$701.97 per capita.

Table 3 Cash Flow Analysis

After cash flow and reserve fund consideration, the residential calculated charge increases to \$775.25 per capita. This is a reflection of the timing of the debenture payments and development charges revenues and the recovery of interest associated with the debenture.

The following table summarizes the calculation of the indoor recreation development charge:

PARKS & RECREATION SUMMARY						
10-year Hist.	2019 - 2028		Unadjusted		Adjusted	
Service Level	Development-Related Capital Program		Development Charge		Development Charge	
per capita	Total	Net DC Recoverable	\$/capita	\$/sq.m	\$/capita	\$/sq.m
\$2,471.39	\$13,804,047	\$12,269,687	\$701.97	\$0.00	\$775.25	\$0.00

CITY OF NIAGARA FALLS
INVENTORY OF CAPITAL ASSETS
PARKS & RECREATION
INDOOR RECREATION FACILITIES

BUILDINGS Facility Name	# of Square Feet										UNIT COST (\$/sq. ft.)
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Jack Bell Arena	27,000	27,000	-	-	-	-	-	-	-	-	\$325
Niagara Falls Memorial Arena	51,000	51,000	-	-	-	-	-	-	-	-	\$325
Chippawa/Willoughby Memorial Arena	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	\$325
Stamford Memorial Arena	30,000	30,000	-	-	-	-	-	-	-	-	\$325
Coronation Centre for Seniors	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	\$300
MacBain Community Centre	94,280	94,280	94,280	94,280	94,280	94,280	94,280	94,280	94,280	94,280	\$300
Gale Centre	-	203,000	203,000	203,000	203,000	203,000	203,000	203,000	203,000	203,000	\$400
<i>Gale Centre (excess)</i>	-	(16,248)	(16,248)	(16,248)	(16,248)	(16,248)	(16,248)	(16,248)	(16,248)	(16,248)	\$400
Total (sq.ft.)	255,280	442,032	334,032								
Total (\$000)	\$80,159.0	\$154,860.0	\$119,760.0								

BULDINGS LAND Facility Name	# of Acres										UNIT COST (\$/acre)
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Jack Bell Arena	4.09	4.09	-	-	-	-	-	-	-	-	\$230,000
Niagara Falls Memorial Arena	3.53	3.53	-	-	-	-	-	-	-	-	\$230,000
Chippawa/Willoughby Memorial Arena	2.40	2.40	-	-	-	-	-	-	-	-	\$230,000
Coronation Centre for Seniors	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	\$230,000
MacBain Community Centre	8.45	8.45	8.45	8.45	8.45	8.45	8.45	8.45	8.45	8.45	\$230,000
Gale Centre	-	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	\$230,000
Total (acres)	20.90	37.40	27.38								
Total (\$000)	\$4,807.0	\$8,602.0	\$6,297.4								

CITY OF NIAGARA FALLS
INVENTORY OF CAPITAL ASSETS
PARKS & RECREATION
INDOOR RECREATION FACILITIES

OUTDOOR POOLS	# of Pools										UNIT COST (\$/unit)
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
FH Leslie Outdoor Pool	1	1	1	1	1	1	1	1	1	1	\$1,500,000
Prince Charles Outdoor Pool	1	1	1	1	1	1	1	1	1	1	\$1,400,000
EE Mitchelson Pool	1	1	1	1	1	1	1	1	1	1	\$1,400,000
Niagara Falls Lions Pool	1	1	1	1	1	1	1	1	1	1	\$1,400,000
Buck Hinsberger Pool	1	1	1	1	1	1	1	1	1	1	\$1,100,000
Total (#)	5										
Total (\$000)	\$6,800.0										

OUTDOOR POOLS LAND	# of Acres										UNIT COST (\$/acre)
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
FH Leslie Outdoor Pool	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	\$230,000
Prince Charles Outdoor Pool	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	\$230,000
EE Mitchelson Pool	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	\$230,000
Niagara Falls Lions Pool	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	\$230,000
Buck Hinsberger Pool	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	\$230,000
Total (acres)	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	
Total (\$000)	333.50	\$333.5									

RECREATION AND CULTURE EQUIPMENT	# of Vehicles and Equipment										UNIT COST (\$/unit)
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Pickups	3	3	3	3	3	3	3	3	3	2	\$60,000
Zambonis	5	5	5	7	7	7	7	7	7	7	\$116,000
Cargo Van	1	1	1	1	1	1	1	1	1	1	\$50,000
Articulating Lift	1	1	1	1	1	1	1	1	1	1	\$38,700
Fork Lift	1	1	1	1	1	1	1	1	1	1	\$16,600
Riding Floor Machine	1	1	1	1	1	1	1	1	1	2	\$13,300
Walking Floor Machine	4	4	4	4	4	5	5	5	5	5	\$6,600
Total (#)	16	16	16	18	18	19	19	19	19	19	
Total (\$000)	\$905.0	\$905.0	\$905.0	\$1,137.0	\$1,137.0	\$1,143.6	\$1,143.6	\$1,143.6	\$1,143.6	\$1,143.6	\$1,096.9

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APPENDIX B.3
TABLE 1

CITY OF NIAGARA FALLS
INVENTORY OF CAPITAL ASSETS
PARKS & RECREATION
PARKLAND DEVELOPMENT

PARKLAND Park Type	# of Acres of Developed Area										UNIT COST (\$/acre)
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Neighbourhood	139	139	139	139	139	183	199	203	203	203	\$101,000
Community	113	113	113	113	113	220	220	262	262	262	\$108,900
City-wide and Nature	259	259	259	260	260	409	409	409	409	409	\$110,520
Trails Parkland	66	74	84	84	84	92	120	120	147	147	\$51,473
Total (acre)	577	585	595	596	596	904	948	994	1,021	1,021	
Total (\$000)	\$58,366.6	\$58,778.4	\$59,293.1	\$59,403.6	\$59,403.6	\$92,379.2	\$95,436.4	\$100,414.2	\$101,804.0	\$101,804.0	

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APPENDIX B.3
TABLE 1

CITY OF NIAGARA FALLS
CALCULATION OF SERVICE LEVELS
PARKS & RECREATION

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Historical Population	82,671	82,834	82,997	83,988	84,991	86,006	87,033	88,071	89,374	90,696

INVENTORY SUMMARY (\$000)

Major Facilities & Land	\$93,004.5	\$171,500.5	\$134,095.9	\$134,327.9	\$134,327.9	\$134,334.5	\$134,334.5	\$134,334.5	\$134,334.5	\$134,287.8
Parkland	\$58,366.6	\$58,778.4	\$59,293.1	\$59,403.6	\$59,403.6	\$92,379.2	\$95,436.4	\$100,414.2	\$101,804.0	\$101,804.0
Total (\$000)	\$151,371.1	\$230,278.8	\$193,389.0	\$193,731.5	\$193,731.5	\$226,713.6	\$229,770.9	\$234,748.7	\$236,138.5	\$236,091.8

SERVICE LEVEL (\$/capita)

Average
Service
Level

Major Facilities & Land	\$1,125.00	\$2,070.41	\$1,615.67	\$1,599.37	\$1,580.50	\$1,561.92	\$1,543.49	\$1,525.30	\$1,503.06	\$1,480.64	\$1,560.53
Parkland	\$706.01	\$709.59	\$714.40	\$707.29	\$698.94	\$1,074.10	\$1,096.55	\$1,140.15	\$1,139.08	\$1,122.48	\$910.86
Total (\$/capita)	\$1,831.01	\$2,780.00	\$2,330.07	\$2,306.66	\$2,279.44	\$2,636.02	\$2,640.04	\$2,665.45	\$2,642.14	\$2,603.11	\$2,471.39

CITY OF NIAGARA FALLS
CALCULATION OF MAXIMUM ALLOWABLE
PARKS & RECREATION

10-Year Funding Envelope Calculation	
10 Year Average Service Level 2009 - 2018	\$2,471.39
Net Population Growth 2019 - 2028	13,765
Maximum Allowable Funding Envelope	\$34,018,683
Less: 10% Legislated Reduction	\$3,401,868
Discounted Maximum Allowable Funding Envelope	\$30,616,815

CITY OF NIAGARA FALLS
DEVELOPMENT-RELATED CAPITAL PROGRAM
PARKS & RECREATION

Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs			Total DC Eligible Costs	DC Eligible Costs		
					BTE (%)	Replacement & BTE Shares	10% Reduction		Available DC Reserves	2019-2028	Post 2028
3.0 PARKS & RECREATION											
3.1 Indoor Recreation Facilities											
3.1.1 Gale Centre Debt Recovery (Growth-related portion) Principle	2019	\$ 670,301	\$ -	\$ 670,301	0%	\$ -	\$ -	\$ 670,301	\$ -	\$ 670,301	\$ -
3.1.2 Gale Centre Debt Recovery (Growth-related portion) Principle	2020	\$ 706,669	\$ -	\$ 706,669	0%	\$ -	\$ -	\$ 706,669	\$ -	\$ 706,669	\$ -
3.1.3 Gale Centre Debt Recovery (Growth-related portion) Principle	2021	\$ 745,011	\$ -	\$ 745,011	0%	\$ -	\$ -	\$ 745,011	\$ -	\$ 745,011	\$ -
3.1.4 Gale Centre Debt Recovery (Growth-related portion) Principle	2022	\$ 785,432	\$ -	\$ 785,432	0%	\$ -	\$ -	\$ 785,432	\$ -	\$ 785,432	\$ -
3.1.5 Gale Centre Debt Recovery (Growth-related portion) Principle	2023	\$ 828,047	\$ -	\$ 828,047	0%	\$ -	\$ -	\$ 828,047	\$ -	\$ 828,047	\$ -
3.1.6 Gale Centre Debt Recovery (Growth-related portion) Principle	2024	\$ 872,974	\$ -	\$ 872,974	0%	\$ -	\$ -	\$ 872,974	\$ -	\$ 872,974	\$ -
3.1.7 Gale Centre Debt Recovery (Growth-related portion) Principle	2025	\$ 920,339	\$ -	\$ 920,339	0%	\$ -	\$ -	\$ 920,339	\$ -	\$ 920,339	\$ -
3.1.8 Gale Centre Debt Recovery (Growth-related portion) Principle	2026	\$ 970,273	\$ -	\$ 970,273	0%	\$ -	\$ -	\$ 970,273	\$ -	\$ 970,273	\$ -
Subtotal Indoor Recreation Facilities		\$ 6,499,047	\$ -	\$ 6,499,047		\$ -	\$ -	\$ 6,499,047	\$ -	\$ 6,499,047	\$ -
3.2 Parkland Development & Park Facilities											
3.2.1 Fern Park Trail (connect Oldfield and Fern Park)	2019	\$ 120,000	\$ -	\$ 120,000	0%	\$ -	\$ 12,000	\$ 108,000	\$ 108,000	\$ -	\$ -
3.2.2 Chippawa West SWM Trail	2019	\$ 100,000	\$ -	\$ 100,000	0%	\$ -	\$ 10,000	\$ 90,000	\$ 90,000	\$ -	\$ -
3.2.3 Warren Woods Development (Trail Materplan)	2019	\$ 100,000	\$ -	\$ 100,000	0%	\$ -	\$ 10,000	\$ 90,000	\$ 90,000	\$ -	\$ -
3.2.4 Warren Woods East Park Development (PH 4)	2019	\$ 650,000	\$ -	\$ 650,000	0%	\$ -	\$ 65,000	\$ 585,000	\$ 515,860	\$ 69,140	\$ -
3.2.5 Willick Road Woodlot Management	2020	\$ 120,000	\$ -	\$ 120,000	0%	\$ -	\$ 12,000	\$ 108,000	\$ -	\$ 108,000	\$ -
3.2.6 Warren Woods Woodlot Management	2020	\$ 75,000	\$ -	\$ 75,000	0%	\$ -	\$ 7,500	\$ 67,500	\$ -	\$ 67,500	\$ -
3.2.7 Warren Woods Woodlot Management	2022	\$ 150,000	\$ -	\$ 150,000	0%	\$ -	\$ 15,000	\$ 135,000	\$ -	\$ 135,000	\$ -
3.2.8 Warren Woods/Niagara Square Trail Development	2021	\$ 750,000	\$ -	\$ 750,000	0%	\$ -	\$ 75,000	\$ 675,000	\$ -	\$ 675,000	\$ -
3.2.9 Patrick Cummings Memorial Sports Complex- South Development	2022	\$ 100,000	\$ -	\$ 100,000	0%	\$ -	\$ 10,000	\$ 90,000	\$ -	\$ 90,000	\$ -
3.2.10 Warren Woods Phase 5 Park and Trail Development	2022	\$ 850,000	\$ -	\$ 850,000	0%	\$ -	\$ 85,000	\$ 765,000	\$ -	\$ 765,000	\$ -
3.2.11 Riverfront Community (Thundering Waters) Trail Development	2022	\$ 400,000	\$ -	\$ 400,000	0%	\$ -	\$ 40,000	\$ 360,000	\$ -	\$ 360,000	\$ -
3.2.12 Chippawa East Woodlot Management	2023	\$ 250,000	\$ -	\$ 250,000	0%	\$ -	\$ 25,000	\$ 225,000	\$ -	\$ 225,000	\$ -
3.2.13 Oaklands Park Development	2023	\$ 750,000	\$ -	\$ 750,000	0%	\$ -	\$ 75,000	\$ 675,000	\$ -	\$ 675,000	\$ -
3.2.14 Warren Woods North Park Development	2024	\$ 750,000	\$ -	\$ 750,000	0%	\$ -	\$ 75,000	\$ 675,000	\$ -	\$ 675,000	\$ -
3.2.15 Riverfront Community (Thundering Waters) Park A Development	2025	\$ 750,000	\$ -	\$ 750,000	0%	\$ -	\$ 75,000	\$ 675,000	\$ -	\$ 675,000	\$ -
3.2.16 Jolly Cut Improvements	2026	\$ 500,000	\$ -	\$ 500,000	0%	\$ -	\$ 50,000	\$ 450,000	\$ -	\$ 450,000	\$ -
3.2.17 Riverfront Community (Thundering Waters) Park B Development	2027	\$ 750,000	\$ -	\$ 750,000	0%	\$ -	\$ 75,000	\$ 675,000	\$ -	\$ 675,000	\$ -
Subtotal Parkland Development & Park Facilities		\$ 7,165,000	\$ -	\$ 7,165,000		\$ -	\$ 716,500	\$ 6,448,500	\$ 803,860	\$ 5,644,640	\$ -

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APPENDIX B.3
TABLE 2

CITY OF NIAGARA FALLS
DEVELOPMENT-RELATED CAPITAL PROGRAM
PARKS & RECREATION

Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs			Total DC Eligible Costs	DC Eligible Costs		
					BTE (%)	Replacement & BTE Shares	10% Reduction		Available DC Reserves	2019-2028	Post 2028
3.3 Vehicles and Equipment											
3.3.1 Haul-All Ford Vehicle	2019	\$ 140,000	\$ -	\$ 140,000	0%	\$ -	\$ 14,000	\$ 126,000	\$ -	\$ 126,000	\$ -
Subtotal Vehicles and Equipment		\$ 140,000	\$ -	\$ 140,000		\$ -	\$ 14,000	\$ 126,000	\$ -	\$ 126,000	\$ -
TOTAL PARKS & RECREATION		\$ 13,804,047	\$ -	\$ 13,804,047		\$ -	\$ 730,500	\$ 13,073,547	\$ 803,860	\$ 12,269,687	\$ -

Note 1: Principal payments need not be reduced by 10% as reduction has been made in prior DC By-laws.

Residential Development Charge Calculation

Residential Share of 2019 - 2028 DC Eligible Costs	100%	\$12,269,687
10-Year Growth in Population in New Units		17,479
Unadjusted Development Charge Per Capita		\$701.97

2019 - 2028 Net Funding Envelope \$30,616,815

Uncommitted Reserve Fund Balance
Balance as at December 31, 2018 \$803,860

Non-Residential Development Charge Calculation

Non-Residential Share of 2019 - 2028 DC Eligible Costs	0%	\$0
10-Year Growth in Square Metres		383,530
Unadjusted Development Charge Per Square Metre		\$0.00

CITY OF NIAGARA FALLS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
PARKS & RECREATION
RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

PARKS & RECREATION	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	\$0.0	\$275.6	\$633.3	\$532.0	(\$575.5)	(\$1,215.8)	(\$1,607.0)	(\$1,984.4)	(\$2,082.1)	(\$1,486.2)	
2019 - 2028 RESIDENTIAL FUNDING REQUIREMENTS											
- Parks And Recreation: Non Inflated	\$195.1	\$175.5	\$675.0	\$1,350.0	\$900.0	\$675.0	\$675.0	\$450.0	\$675.0	\$0.0	\$5,770.6
- Gale Centre Debt Recovery (Principle)	\$670.3	\$706.7	\$745.0	\$785.4	\$828.0	\$873.0	\$920.3	\$970.3	\$0.0	\$0.0	\$6,499.0
- Parks & Recreation: Inflated	\$865.4	\$885.7	\$1,447.3	\$2,218.1	\$1,802.2	\$1,618.2	\$1,680.5	\$1,487.2	\$790.9	\$0.0	\$12,795.5
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,896	1,929	1,966	1,629	1,652	1,677	1,702	1,726	1,639	1,663	17,479
REVENUE											
- DC Receipts: Inflated	\$1,469.6	\$1,525.3	\$1,585.7	\$1,340.0	\$1,386.4	\$1,435.4	\$1,485.9	\$1,536.9	\$1,489.1	\$1,541.0	\$14,795.3
INTEREST											
- Interest on Opening Balance	\$0.0	\$9.6	\$22.2	\$18.6	(\$31.7)	(\$66.9)	(\$88.4)	(\$109.1)	(\$114.5)	(\$81.7)	(\$441.9)
- Interest on In-year Transactions	\$10.6	\$11.2	\$2.4	(\$24.1)	(\$11.4)	(\$5.0)	(\$5.4)	\$0.9	\$12.2	\$27.0	\$18.3
- Gale Centre Debt Recovery (Interest)	(\$339.1)	(\$302.7)	(\$264.4)	(\$224.0)	(\$181.4)	(\$136.4)	(\$89.1)	(\$39.1)	\$0.0	\$0.0	(\$1,576.2)
TOTAL REVENUE	\$1,141.1	\$1,243.4	\$1,345.9	\$1,110.5	\$1,161.9	\$1,227.1	\$1,303.1	\$1,389.5	\$1,386.8	\$1,486.2	\$12,795.5
CLOSING CASH BALANCE	\$275.6	\$633.3	\$532.0	(\$575.5)	(\$1,215.8)	(\$1,607.0)	(\$1,984.4)	(\$2,082.1)	(\$1,486.2)	\$0.0	

Note 1: Borrowed funds are not inflated.

2019 Adjusted Charge Per Capita	\$775.25
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Allocation of Capital Program	
Residential Sector	100.0%
Non-Residential Sector	0.0%
Rates for 2019	
Inflation Rate:	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

Appendix B.4

Public Works & Fleet

HEMSON

Appendix B.4

Public Works & Fleet

The City of Niagara Falls Municipal Works Department is responsible for the design, operation, maintenance and ongoing rehabilitation of City infrastructure including roads and related infrastructure, and utilities infrastructure. The department also maintains Parks and Recreation related fleet.

Table 1 2009-2018 Historical Service Levels

The ten-year historical inventory of capital assets for Public Works and Fleet includes 52,800 square feet of building space with a replacement value of \$11.43 million. The 34.48 acres of land associated with the Public Works buildings are valued at \$7.93 million. Finally, the 237 public works vehicles add an additional \$18.50 million to the value of the capital assets.

The total value of the Public Works and Fleet capital inventory is estimated to be \$37.86 million. The ten-year historical average service level is \$286.63 per capita and employee and this, multiplied by the ten-year forecast net population and employment growth, results in a ten-year maximum allowable funding envelope of \$5.55 million. This service is reduced by ten per cent, therefore the resulting net maximum allowable funding envelope brought forward to the development charges calculation is reduced to \$5.00 million.

Table 1 provides a summary of the level of service and the calculation of the ten-year historical service level. The calculation of the maximum allowable funding envelope is summarized as follows:

10-Year Funding Envelope Calculation	
10 Year Average Service Level 2009 - 2018	\$286.63
Net Population & Employment Growth 2019 - 2028	19,367
Maximum Allowable Funding Envelope	\$5,551,163
Less: 10% Legislated Reduction	\$555,116
Discounted Maximum Allowable Funding Envelope	\$4,996,047

The existing facilities have been examined and consideration has been given to whether or not “excess capacity” exists within the City’s infrastructure that may be available to partially meet the future servicing requirements. It has been determined that no “uncommitted excess capacity” exists within the City’s Public Works and Fleet infrastructure, and as such, no adjustments have been made to the service level calculations.

Table 2 2019 – 2028 Development-Related Capital Program and Calculation of the Unadjusted Development Charges

The ten-year development-related capital plan for Public Works and Fleet includes the expansion of the Municipal Servicing Centre and the acquisition of new fleet and equipment at a cost of \$35.80 million. In total, \$5.76 million has been identified as benefitting existing development and has been netted off the calculation.

This service is required to be discounted by the statutory ten per cent discount as required by the DCA, which amounts to \$3.00 million. After this adjustment the total DC eligible cost is reduced to \$27.03 million.

Of the total DC eligible amount of \$27.03 million, approximately \$251,600 will be funded from existing reserve funds. A further \$24.64 million is deemed to provide a post-period benefit and will be considered for recovery in subsequent development charge by-laws. The remaining \$2.13 million is considered to be the 2019-2028 development-related DC eligible costs. This amount is allocated 76 per cent, or \$1.61 million, to the residential sector and 24 per cent, or \$517,200, to the non-residential sector. This yields an unadjusted charge of \$92.32 per capita and \$1.35 per square metre, respectively.

Table 3 Cash Flow Analysis

After cash flow analysis, the residential charge decreases to \$91.90 per capita and the non-residential charge remains at \$1.35 per square metre. The following table summarizes the calculation of the Public Works and Fleet development charge.

PUBLIC WORKS & FLEET SUMMARY							
10-year Hist.	2019 - 2028		Unadjusted		Adjusted		
Service Level per pop & emp	Development-Related Capital Program	Development Charge	\$/capita	\$/sq.m	\$/capita	\$/sq.m	
	Total	Net DC Recoverable					
\$286.63	\$35,789,359	\$2,130,930	\$92.32	\$1.35	\$91.90	\$1.35	

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TABLE 1

CITY OF NIAGARA FALLS
INVENTORY OF CAPITAL ASSETS
PUBLIC WORKS & FLEET

BUILDINGS Facility Name	# of Square Feet										UNIT COST (\$/sq.ft.)
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Municipal Works Service Centre	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	\$231
Storage Buildings	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	\$231
Wash Bay	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	\$231
Traffic/Sign Shop	900	900	900	900	900	900	900	900	900	900	\$231
Salt Storage Building	5,800	5,800	5,800	5,800	5,800	5,800	5,800	5,800	5,800	5,800	\$100
Small Engine Repair Shop	900	900	900	900	900	900	900	900	900	900	\$231
Total (sq.ft.)	52,800										
Total (\$000)	\$11,429.5										

LAND Facility Name	# of Acres										UNIT COST (\$/acre)
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Land for all Public Works Buildings	34.48	34.48	34.48	34.48	34.48	34.48	34.48	34.48	34.48	34.48	\$230,000
Total (acre)	34.48										
Total (\$000)	\$7,930.4										

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APPENDIX B.4
TABLE 1

CITY OF NIAGARA FALLS
INVENTORY OF CAPITAL ASSETS
PUBLIC WORKS & FLEET

FLEET & EQUIPMENT	# of Fleet										UNIT COST (\$/unit)
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Aerial Tree Unit	2	2	2	2	2	2	2	1	2	2	\$268,000
Asphalt Recycler	-	-	-	2	2	2	2	2	2	2	\$26,000
Backhoes/Loaders	4	4	4	6	6	6	5	6	6	6	\$132,000
Cargo Vans	22	23	22	28	28	25	25	25	26	26	\$28,000
Cars	17	20	18	16	16	14	15	15	17	17	\$23,833
Chippers	2	2	2	2	2	2	2	2	2	2	\$48,743
Compressors	3	3	3	2	2	2	2	1	1	1	\$16,246
Crew Cab Dumps	17	18	18	20	20	19	20	19	21	21	\$47,623
Crew Cab Utility	5	5	5	5	5	5	5	3	5	9	\$95,400
Cube Vans	3	3	4	4	4	4	4	4	4	4	\$37,400
Dump Plows	9	9	9	8	8	5	5	4	7	7	\$238,167
Dump Sanders	12	14	14	19	19	19	19	19	19	19	\$211,400
Front-end Loader	2	2	2	2	2	2	2	2	3	3	\$260,000
Gorman Pumps	3	3	3	3	3	3	3	3	3	3	\$65,000
Graders	2	2	2	2	2	2	2	1	2	2	\$262,000
Haul-All	1	1	1	1	1	1	-	1	1	1	\$139,000
Kubota/Trac Loader	4	4	4	4	4	4	3	3	3	3	\$66,400
Mini-Vans	9	8	7	3	3	2	2	2	1	1	\$23,000
Pickups	37	38	39	40	40	34	36	36	38	39	\$23,180
Rollers	2	2	2	1	1	1	1	1	2	2	\$19,000

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APPENDIX B.4
TABLE 1

CITY OF NIAGARA FALLS
INVENTORY OF CAPITAL ASSETS
PUBLIC WORKS & FLEET

FLEET & EQUIPMENT	# of Fleet										UNIT COST (\$/unit)
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Service Trucks	2	2	2	2	2	2	2	2	3	3	\$130,000
Sewer Cleaners	-	-	-	1	1	1	1	1	1	1	\$335,155
Sidewalk Plows	8	8	10	10	10	9	10	12	12	12	\$142,268
Sidewalk Sweepers	3	3	3	3	3	3	3	3	3	3	\$46,434
Snow Blower	1	1	1	1	1	1	1	1	1	1	\$140,000
Street Mowers	2	4	3	3	3	3	3	3	3	3	\$16,407
Sweepers	3	3	3	2	2	-	2	2	2	2	\$286,000
Tandem Dumps	5	7	7	2	2	2	2	1	1	2	\$230,934
Tractors	8	8	9	10	10	8	9	12	14	14	\$71,400
Trailers	19	19	20	19	19	19	17	17	17	17	\$6,180
Utility Cranes/Boom	3	2	2	2	2	2	2	1	1	1	\$81,400
Valve Turner	1	1	1	2	2	2	2	2	1	1	\$54,267
Welder	1	1	1	1	1	1	1	1	1	1	\$12,360
Wheel Dumper	-	-	-	-	-	-	-	1	1	1	\$75,000
Leaf Vacuum (Trailer Unit)	-	-	-	-	-	-	-	1	1	1	\$10,000
Pavement Grinder	-	-	-	-	-	-	-	1	1	1	\$24,000
Triaxle	-	-	-	-	-	-	-	-	1	1	\$199,000
Gators	-	-	-	-	-	-	-	-	2	2	\$10,000
Total (#)	212	222	223	228	228	207	212	211	231	237	
Total (\$000)	\$15,779.1	\$16,762.5	\$17,070.1	\$17,330.4	\$17,330.4	\$15,417.5	\$16,005.2	\$15,514.8	\$17,860.9	\$18,496.6	

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TABLE 1

CITY OF NIAGARA FALLS
CALCULATION OF SERVICE LEVELS
PUBLIC WORKS & FLEET

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Historical Population	82,671	82,834	82,997	83,988	84,991	86,006	87,033	88,071	89,374	90,696
Historical Employment	<u>39,971</u>	<u>39,741</u>	<u>39,512</u>	<u>39,692</u>	<u>39,873</u>	<u>40,054</u>	<u>40,236</u>	<u>40,419</u>	<u>40,935</u>	<u>41,457</u>
Total Historical Population & Employment	122,642	122,575	122,509	123,680	124,864	126,060	127,269	128,490	130,309	132,153

INVENTORY SUMMARY (\$000)

Buildings	\$11,429.5	\$11,429.5	\$11,429.5	\$11,429.5	\$11,429.5	\$11,429.5	\$11,429.5	\$11,429.5	\$11,429.5	\$11,429.5
Land	\$7,930.4	\$7,930.4	\$7,930.4	\$7,930.4	\$7,930.4	\$7,930.4	\$7,930.4	\$7,930.4	\$7,930.4	\$7,930.4
Fleet & Equipment	\$15,779.1	\$16,762.5	\$17,070.1	\$17,330.4	\$17,330.4	\$15,417.5	\$16,005.2	\$15,514.8	\$17,860.9	\$18,496.6
Total (\$000)	\$35,139.0	\$36,122.4	\$36,430.0	\$36,690.3	\$36,690.3	\$34,777.4	\$35,365.1	\$34,874.7	\$37,220.8	\$37,856.5

SERVICE LEVEL (\$/pop & emp)

**Average
Service
Level**

Buildings	\$93.19	\$93.24	\$93.30	\$92.41	\$91.54	\$90.67	\$89.81	\$88.95	\$87.71	\$86.49	\$90.73
Land	\$64.66	\$64.70	\$64.73	\$64.12	\$63.51	\$62.91	\$62.31	\$61.72	\$60.86	\$60.01	\$62.95
Fleet & Equipment	\$128.66	\$136.75	\$139.34	\$140.12	\$138.79	\$122.30	\$125.76	\$120.75	\$137.07	\$139.96	\$132.95
Total (\$/pop & emp)	\$286.52	\$294.70	\$297.37	\$296.66	\$293.84	\$275.88	\$277.88	\$271.42	\$285.63	\$286.46	\$286.63

CITY OF NIAGARA FALLS
CALCULATION OF MAXIMUM ALLOWABLE
PUBLIC WORKS & FLEET

10-Year Funding Envelope Calculation	
10 Year Average Service Level 2009 - 2018	\$286.63
Net Population & Employment Growth 2019 - 2028	19,367
Maximum Allowable Funding Envelope	\$5,551,163
Less: 10% Legislated Reduction	\$555,116
Discounted Maximum Allowable Funding Envelope	\$4,996,047

HEMSON

CITY OF NIAGARA FALLS
DEVELOPMENT-RELATED CAPITAL PROGRAM
PUBLIC WORKS & FLEET

Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs			Total DC Eligible Costs	DC Eligible Costs		
					BTE (%)	Replacement & BTE Shares	10% Reduction		Available DC Reserves	2019-2028	Post 2028
4.0 PUBLIC WORKS & FLEET											
4.1 Buildings & Land											
4.1.1 Expansion and Replacement of Municipal Servicing Centre	2025	\$ 35,364,359	\$ -	\$ 35,364,359	16%	\$ 5,760,520	\$ 2,960,384	\$ 26,643,455	\$ -	\$ 2,000,000	\$ 24,643,455
Subtotal Buildings & Land		\$ 35,364,359	\$ -	\$ 35,364,359		\$ 5,760,520	\$ 2,960,384	\$ 26,643,455	\$ -	\$ 2,000,000	\$ 24,643,455
4.2 Fleet											
4.2.1 Provision for Large Sized Fleet (i.e. Truck Plow and Sander)	2019	\$ 250,000	\$ -	\$ 250,000	0%	\$ -	\$ 25,000	\$ 225,000	\$ 225,000	\$ -	\$ -
4.2.2 Provision for Medium Sized Fleet (e.g. Trucks)	2020	\$ 50,000	\$ -	\$ 50,000	0%	\$ -	\$ 5,000	\$ 45,000	\$ 4,070	\$ 40,930	\$ -
4.2.3 Provision for Large Sized Fleet (i.e. Truck Plow and Sander)	2024	\$ 25,000	\$ -	\$ 25,000	0%	\$ -	\$ 2,500	\$ 22,500	\$ -	\$ 22,500	\$ -
4.2.4 Provision for Medium Sized Fleet (e.g. Trucks)	2025	\$ 50,000	\$ -	\$ 50,000	0%	\$ -	\$ 5,000	\$ 45,000	\$ -	\$ 45,000	\$ -
Subtotal Fleet		\$ 375,000	\$ -	\$ 375,000		\$ -	\$ 37,500	\$ 337,500	\$ 229,070	\$ 108,430	\$ -
4.3 Equipment											
4.3.1 Provision for Miscellaneous Equipment	2019	\$ 25,000	\$ -	\$ 25,000	0%	\$ -	\$ 2,500	\$ 22,500	\$ 22,500	\$ -	\$ -
4.3.2 Provision for Miscellaneous Equipment	2024	\$ 25,000	\$ -	\$ 25,000	0%	\$ -	\$ 2,500	\$ 22,500	\$ -	\$ 22,500	\$ -
Subtotal Equipment		\$ 50,000	\$ -	\$ 50,000		\$ -	\$ 5,000	\$ 45,000	\$ 22,500	\$ 22,500	\$ -
TOTAL PUBLIC WORKS & FLEET		\$ 35,789,359	\$ -	\$ 35,789,359		\$ 5,760,520	\$ 3,002,884	\$ 27,025,955	\$ 251,570	\$ 2,130,930	\$ 24,643,455

Residential Development Charge Calculation		
Residential Share of 2019 - 2028 DC Eligible Costs	76%	\$1,613,729
10-Year Growth in Population in New Units		17,479
Unadjusted Development Charge Per Capita		\$92.32
Non-Residential Development Charge Calculation		
Non-Residential Share of 2019 - 2028 DC Eligible Costs	24%	\$517,201
10-Year Growth in Square Metres		383,530
Unadjusted Development Charge Per Square Metre		\$1.35

2019 - 2028 Net Funding Envelope	\$4,996,047
Uncommitted Reserve Fund Balance Balance as at December 31, 2018	\$251,570

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

PUBLIC WORKS & FLEET	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	\$0.0	\$177.3	\$335.3	\$538.3	\$718.8	\$911.2	\$1,077.9	(\$495.4)	(\$337.2)	(\$176.2)	
2019 - 2028 RESIDENTIAL FUNDING REQUIREMENTS											
- Public Works & Fleet: Non Inflated	\$0.0	\$31.0	\$0.0	\$0.0	\$0.0	\$34.1	\$1,548.7	\$0.0	\$0.0	\$0.0	\$1,613.7
- Public Works & Fleet: Inflated	\$0.0	\$31.6	\$0.0	\$0.0	\$0.0	\$37.6	\$1,744.0	\$0.0	\$0.0	\$0.0	\$1,813.3
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,896	1,929	1,966	1,629	1,652	1,677	1,702	1,726	1,639	1,663	17,479
REVENUE											
- DC Receipts: Inflated	\$174.2	\$180.8	\$188.0	\$158.9	\$164.4	\$170.2	\$176.1	\$182.2	\$176.5	\$182.7	\$1,753.9
INTEREST											
- Interest on Opening Balance	\$0.0	\$6.2	\$11.7	\$18.8	\$25.2	\$31.9	\$37.7	(\$27.2)	(\$18.5)	(\$9.7)	\$76.1
- Interest on In-year Transactions	\$3.0	\$2.6	\$3.3	\$2.8	\$2.9	\$2.3	(\$43.1)	\$3.2	\$3.1	\$3.2	(\$16.7)
TOTAL REVENUE	\$177.3	\$189.6	\$203.0	\$180.5	\$192.4	\$204.4	\$170.8	\$158.1	\$161.1	\$176.2	\$1,813.3
CLOSING CASH BALANCE	\$177.3	\$335.3	\$538.3	\$718.8	\$911.2	\$1,077.9	(\$495.4)	(\$337.2)	(\$176.2)	\$0.0	

2019 Adjusted Charge Per Capita **\$91.90**

Allocation of Capital Program	
Residential Sector	75.7%
Non-Residential Sector	24.3%
Rates for 2019	
Inflation Rate:	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

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

PUBLIC WORKS & FLEET	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	\$0.0	\$49.5	\$92.0	\$147.9	\$207.6	\$271.3	\$326.9	(\$175.0)	(\$122.0)	(\$63.8)	
2019 - 2028 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Public Works: Non Inflated	\$0.0	\$9.9	\$0.0	\$0.0	\$0.0	\$10.9	\$496.3	\$0.0	\$0.0	\$0.0	\$517.2
- Public Works: Inflated	\$0.0	\$10.1	\$0.0	\$0.0	\$0.0	\$12.1	\$559.0	\$0.0	\$0.0	\$0.0	\$581.2
NON-RESIDENTIAL SPACE GROWTH											
- Growth in Square Metres	36,050	36,470	36,890	37,450	38,010	38,500	39,060	39,690	40,390	41,020	383,530
REVENUE											
- DC Receipts: Inflated	\$48.6	\$50.2	\$51.8	\$53.6	\$55.5	\$57.3	\$59.3	\$61.5	\$63.8	\$66.1	\$567.9
INTEREST											
- Interest on Opening Balance	\$0.0	\$1.7	\$3.2	\$5.2	\$7.3	\$9.5	\$11.4	(\$9.6)	(\$6.7)	(\$3.5)	\$18.5
- Interest on In-year Transactions	\$0.9	\$0.7	\$0.9	\$0.9	\$1.0	\$0.8	(\$13.7)	\$1.1	\$1.1	\$1.2	(\$5.2)
TOTAL REVENUE	\$49.5	\$52.6	\$55.9	\$59.7	\$63.7	\$67.6	\$57.0	\$53.0	\$58.2	\$63.8	\$581.2
CLOSING CASH BALANCE	\$49.5	\$92.0	\$147.9	\$207.6	\$271.3	\$326.9	(\$175.0)	(\$122.0)	(\$63.8)	\$0.0	

2019 Adjusted Charge Per Square Metre	\$1.35
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Allocation of Capital Program	
Residential Sector	75.7%
Non-Residential Sector	24.3%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

Appendix B.5

Transit Services

Appendix B.5

Transit Services

This appendix provides details of the Transit Services ridership forecast and capital program used in the 2019 DC Background Study for the City of Niagara Falls. The forecast method and key assumptions are discussed and the results of the forecasts are presented in the following sections.

A. Overview of Transit Service Delivery

The City provides Transit Services to its residents through the Niagara Falls Transit (NFT) system. Transit ridership has been growing and is anticipated to continue in the future. The anticipated ridership of the system and the related capital program requirements are discussed further in the following sections.

B. Transit Ridership

Requirements of the *Development Charges Act*

In accordance with the *Development Charges Act*, Transit services must be based on a “planned level of service” rather than the “10-year historical average level of service.” For the purposes of determining the “planned level of service” for transit, the City’s transit service development-related capital program has been informed based on existing and proposed capital budget documents and discussions with staff.

In addition, any background study that incorporates Transit services into the calculation must now include the following:

- An assessment of ridership forecast for **all modes** of transit and whether ridership is generated from existing or planned development (O.Reg. 82/98 s.8(2)4).
- An assessment of ridership capacity for **all modes** of transit over the 10-year forecast period (O. Reg. 82/98 s.8(2)4).

The results of the forecast are discussed in the following section.

Transit Ridership Forecast

The ridership forecast used for the purposes of the 2019 DC Background Study was prepared based on historical ridership data and discussions with City staff.

As shown in the table below, from 2014 to 2018, the City had an average increase in ridership of 9.77 per cent.

Year	Annual Transit Ridership	% Increase
2014	1,151,800	1.30%
2015	1,279,832	11.12%
2016	1,345,375	5.12%
2017	1,646,945	22.42%
2018	1,793,634	8.91%
Average		9.77%

As the City does not have an identified transit mode share, no formal ridership forecast exists. However, through discussions with City staff, it was determined that the historical average ridership increase of 9.77 per cent per annum would be a reasonable estimate of anticipated future ridership over the future planning period. In particular, this estimate reflects the planned expansion of transit infrastructure as identified in the capital program. Using an assumption of 9.77 per cent per annum over the future ten year planning period, the City's annual transit ridership is anticipated to increase from 1,793,634 in 2018 to 4,551,713 in 2028 an increase of 2,758,079 ridership over the 2019-2028 period.

C. Transit Development Charges Capital Program Allocations

The following table provides a summary of the allocations used to arrive at the benefit to existing and in-period share calculations for the Transit projects identified in the capital program.

Using the ridership forecast shown in the previous table, the benefit to existing share is calculated based on the 2018 annual ridership (1,793,634) plus the growth in 2019-2028 ridership (2,758,079). This results in total ridership of 4,551,713 over the 2018-2028 period. Of the total trips, 39 per cent is attributed to the existing population in the City and the remaining 61 per cent is attributed to new development occurring over the planning period.

Transit Ridership Analysis			
Timing	Annual Ridership	%	DC Allocation
2018	1,793,634	39%	BTE
2019-2028	2,758,079	61%	In-Period
Total		4,551,713	100%

Table 1 2019 – 2028 Development-Related Capital Program and Calculation of the Unadjusted Development Charges

Planned Level of Service

The DCA (s.5.2 (3)) requires that in estimating the increase in need for Transit services the increased need “shall not exceed the planned level of service over the 10-year period immediately following the preparation of the background study”. For the purposes of the development charge calculations, the “planned level of service” is considered the ten-year development-related capital program (2019-2028) in the Development Charges Background Study, as informed by the City’s current and proposed capital budgets, and discussions with City staff. Through its approval of the DC Background Study and the related underlying capital program, Council has indicated that it intends to ensure that the increase in need in Transit service will be met.

2019-2028 Development-Related Capital Program

The projects in Transit Services’ development-related capital program include a transit facility expansion in 2020 for \$3.00 million. There are additional provisions for seven new buses with a total value of \$4.36 million. The remaining projects provides for two bus turn-around/HUBs in 2025 at \$400,000 each. The Transit Services capital program totals to \$8.16 million.

The City has identified approximately \$2.20 million in Public Transit Infrastructure Fund (PTIF) monies related to the purchase of six buses and the construction of a bus turnaround facility which have been reduced from the total gross capital program costs. Approximately \$2.35 million in replacement/benefit to existing shares have been identified for projects included in the capital program. The benefit to existing share has been calculated based on shares of ridership as discussed above.

There is no longer a legislated ten per cent reduction for this service under the recent changes to the DCA. For the purposes of the Transit DC calculations, the existing reserve funds are assumed to be paying for space, and/or servicing capacity, which is in addition to this requirement and relates to development that occurred prior to the passage of the 2019 DC by-law (“prior growth”), which has paid DCs but has yet to receive new facilities. This includes a share of the monies in the existing City DC reserve funds related to applications that have been approved and permits issued but for which construction has yet to be completed, or, in some cases, started. After these

adjustments, the remaining \$3.61 million is considered to be related to development over the 2019-2028 planning period and will be recovered through the City's 2019 DC by-law.

As shown in Table 1, 76 per cent of the cost or \$2.73 million is attributed to residential development, and 24 per cent of the cost or \$875,900 is attributed to non-residential development. This yields unadjusted development charges of \$156.35 per capita and \$2.28 per square metre of non-residential GFA.

Table 2 Cash Flow Analysis

The cash flow analysis is displayed in Table 2. It considers the timing of the projects against the timing of the development charge revenues to determine adjusted calculated rates. After cash flow consideration, the residential development charge for Transit Services is increased to \$168.18 per capita and the non-residential charge also increase to \$2.48 per square metre.

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

TRANSIT SERVICES SUMMARY						
10-year Hist.	2019 - 2028		Unadjusted		Adjusted	
Service Level per pop & emp	Development-Related Capital Program Total	Net DC Recoverable	Development Charge \$/capita	\$/sq.m	Development Charge \$/capita	\$/sq.m
\$325.92	\$8,156,000	\$3,608,658	\$156.35	\$2.28	\$168.18	\$2.48

CITY OF NIAGARA FALLS
DEVELOPMENT-RELATED CAPITAL PROGRAM
TRANSIT SERVICES

Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs			Total DC Eligible Costs	DC Eligible Costs		
					BTE (%)	Replacement & BTE Shares	0% Reduction		Available DC Reserves(1)	2019-2028	Post 2028
5.0 TRANSIT SERVICES											
5.1 Facilities											
5.1.1 Transit Facility Expansion	2020	\$ 3,000,000	\$ -	\$ 3,000,000	39%	\$ 1,182,171	\$ -	\$ 1,817,829	\$ -	\$ 1,817,829	\$ -
Subtotal Facilities		\$ 3,000,000	\$ -	\$ 3,000,000		\$ 1,182,171	\$ -	\$ 1,817,829	\$ -	\$ 1,817,829	\$ -
5.2 Buses											
5.2.1 Additional Specialized Bus	2019	\$ 100,000	\$ -	\$ 100,000	39%	\$ 39,406	\$ -	\$ 60,594	\$ -	\$ 60,594	\$ -
5.2.2 Additional Bus - Warren Woods / Garner Estates Subdivision	2019	\$ 650,000	\$ 328,600	\$ 321,400	39%	\$ 126,650	\$ -	\$ 194,750	\$ -	\$ 194,750	\$ -
5.2.3 Additional Bus - Chippawa West Subdivision	2020	\$ 650,000	\$ 328,600	\$ 321,400	39%	\$ 126,650	\$ -	\$ 194,750	\$ -	\$ 194,750	\$ -
5.2.4 Additional Bus - Riverfront/ Oldfield & Thundering Waters	2021	\$ 650,000	\$ 328,600	\$ 321,400	39%	\$ 126,650	\$ -	\$ 194,750	\$ -	\$ 194,750	\$ -
5.2.5 Additional Bus - Riverfront/ Oldfield & Thundering Waters	2023	\$ 650,000	\$ 328,600	\$ 321,400	39%	\$ 126,650	\$ -	\$ 194,750	\$ -	\$ 194,750	\$ -
5.2.6 Additional Bus - Niagara Health System - Future Hospital Site	2024	\$ 650,000	\$ 328,600	\$ 321,400	39%	\$ 126,650	\$ -	\$ 194,750	\$ -	\$ 194,750	\$ -
5.2.7 Additional Bus - Chippawa East Subdivision	2024	\$ 1,006,000	\$ 328,600	\$ 677,400	39%	\$ 266,934	\$ -	\$ 410,466	\$ -	\$ 410,466	\$ -
Subtotal Buses		\$ 4,356,000	\$ 1,971,600	\$ 2,384,400		\$ 939,589	\$ -	\$ 1,444,811	\$ -	\$ 1,444,811	\$ -
5.3 Other Transit Infrastructure											
5.3.1 Bus Turn-Around/ HUB - Chippawa	2025	\$ 400,000	\$ 228,960	\$ 171,040	39%	\$ 67,399	\$ -	\$ 103,641	\$ -	\$ 103,641	\$ -
5.3.2 Bus Turn-Around/ HUB - NHS Future Hospital Site	2025	\$ 400,000	\$ -	\$ 400,000	39%	\$ 157,623	\$ -	\$ 242,377	\$ -	\$ 242,377	\$ -
Subtotal Other Transit Infrastructure		\$ 800,000	\$ 228,960	\$ 571,040		\$ 225,022	\$ -	\$ 346,018	\$ -	\$ 346,018	\$ -
TOTAL TRANSIT SERVICES		\$ 8,156,000	\$ 2,200,560	\$ 5,955,440		\$ 2,346,782	\$ -	\$ 3,608,658	\$ -	\$ 3,608,658	\$ -

(1) Attributed to prior growth

Residential Development Charge Calculation			
Residential Share of 2019 - 2028 DC Eligible Costs	76%	\$2,732,795	
10-Year Growth in Population in New Units		17,479	
Unadjusted Development Charge Per Capita		\$156.35	
Non-Residential Development Charge Calculation			
Non-Residential Share of 2019 - 2028 DC Eligible Costs	24%	\$875,863	
10-Year Growth in Square Metres		383,530	
Unadjusted Development Charge Per Square Metre		\$2.28	

Transit Ridership Analysis			
Timing	Annual Ridership	%	DC Allocation
2018	1,793,634	39%	BTE
2019-2028	2,758,079	61%	In-Period
Total		4,551,713	100%

**CITY OF NIAGARA FALLS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
TRANSIT SERVICES
RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)**

TRANSIT SERVICES	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	\$0.0	\$127.6	(\$1,125.2)	(\$993.2)	(\$752.1)	(\$649.8)	(\$885.6)	(\$906.5)	(\$617.2)	(\$322.4)	
2019 - 2028 RESIDENTIAL FUNDING REQUIREMENTS											
- Transit Services: Non Inflated	\$193.4	\$1,524.1	\$147.5	\$0.0	\$147.5	\$458.3	\$262.0	\$0.0	\$0.0	\$0.0	\$2,732.8
- Transit Services: Inflated	\$193.4	\$1,554.6	\$153.4	\$0.0	\$159.6	\$506.0	\$295.1	\$0.0	\$0.0	\$0.0	\$2,862.2
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,896	1,929	1,966	1,629	1,652	1,677	1,702	1,726	1,639	1,663	17,479
REVENUE											
- DC Receipts: Inflated	\$318.8	\$330.9	\$344.0	\$290.7	\$300.8	\$311.4	\$322.3	\$333.4	\$323.0	\$334.3	\$3,209.6
INTEREST											
- Interest on Opening Balance	\$0.0	\$4.5	(\$61.9)	(\$54.6)	(\$41.4)	(\$35.7)	(\$48.7)	(\$49.9)	(\$33.9)	(\$17.7)	(\$339.4)
- Interest on In-year Transactions	\$2.2	(\$33.7)	\$3.3	\$5.1	\$2.5	(\$5.4)	\$0.5	\$5.8	\$5.7	\$5.9	(\$8.1)
TOTAL REVENUE											
CLOSING CASH BALANCE	\$127.6	(\$1,125.2)	(\$993.2)	(\$752.1)	(\$649.8)	(\$885.6)	(\$906.5)	(\$617.2)	(\$322.4)	\$0.0	

2019 Adjusted Charge Per Capita \$168.18

Allocation of Capital Program	
Residential Sector	75.7%
Non-Residential Sector	24.3%
Rates for 2019	
Inflation Rate:	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

CITY OF NIAGARA FALLS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
TRANSIT SERVICES
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

TRANSIT SERVICES	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	\$0.0	\$27.8	(\$388.4)	(\$363.0)	(\$282.8)	(\$246.6)	(\$318.6)	(\$321.5)	(\$224.2)	(\$117.2)	
2019 - 2028 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Transit Services: Non Inflated	\$62.0	\$488.5	\$47.3	\$0.0	\$47.3	\$146.9	\$84.0	\$0.0	\$0.0	\$0.0	\$875.9
- Transit Services: Inflated	\$62.0	\$498.2	\$49.2	\$0.0	\$51.2	\$162.2	\$94.6	\$0.0	\$0.0	\$0.0	\$917.3
NON-RESIDENTIAL SPACE GROWTH											
- Growth in Square Metres	36,050	36,470	36,890	37,450	38,010	38,500	39,060	39,690	40,390	41,020	383,530
REVENUE											
- DC Receipts: Inflated	\$89.3	\$92.2	\$95.1	\$98.5	\$102.0	\$105.3	\$109.0	\$113.0	\$117.3	\$121.5	\$1,043.2
INTEREST											
- Interest on Opening Balance	\$0.0	\$1.0	(\$21.4)	(\$20.0)	(\$15.6)	(\$13.6)	(\$17.5)	(\$17.7)	(\$12.3)	(\$6.4)	(\$123.5)
- Interest on In-year Transactions	\$0.5	(\$11.2)	\$0.8	\$1.7	\$0.9	(\$1.6)	\$0.3	\$2.0	\$2.1	\$2.1	(\$2.4)
TOTAL REVENUE	\$89.8	\$82.0	\$74.6	\$80.2	\$87.3	\$90.2	\$91.7	\$97.3	\$107.0	\$117.2	\$917.3
CLOSING CASH BALANCE	\$27.8	(\$388.4)	(\$363.0)	(\$282.8)	(\$246.6)	(\$318.6)	(\$321.5)	(\$224.2)	(\$117.2)	(\$0.0)	

2019 Adjusted Charge Per Square Metre	\$2.48
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Allocation of Capital Program	
Residential Sector	75.7%
Non-Residential Sector	24.3%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

Appendix B.6

General Government

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Appendix B.6

General Government

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. 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 are reduced by ten per cent when calculating the development charges.

Table 1 2019 – 2028 Development-Related Capital Program and Calculation of the Unadjusted Development Charges

As shown on Table 1, the 2019–2028 development-related gross cost for general government is \$1.29 million. The studies include a Recreation and Culture Master Plan, an Official Plan Update, a Fire Master Plan, Development Charges Studies and others.

Of the total gross capital program, an amount of \$160,000 has been identified as benefit to existing shares and are removed from the total DC eligible costs. Benefit to existing shares have been reduced from the identified Recreation and Culture Master Plan, Development Permit System for Transit Secondary Plan, Fire Master Plan, Library Organizational Structure and Future Needs Study and Provision for Vulnerable Population Strategies. The legislated ten per cent discount amounts to \$113,000 and is removed from the total eligible costs. Approximately, \$395,100 is available in the DC reserve fund and is applied to projects occurring in the initial years of the capital program. The remaining amount of \$622,000 is eligible for development charges funding over the 2019-2028 planning period. This amount is included in the development charge calculation.

The total costs eligible for DC recovery amounts to \$622,000 and is allocated 76 per cent, or \$471,000 to the residential sector and 24 per cent, or \$150,900 to the non-residential sector based on shares of ten-year growth in population in new units and employment, and growth in square metres, respectively. The resulting unadjusted per capita residential charge is \$26.95 before cash flow adjustments. The non-residential unadjusted charge is \$0.39 per square metre.

Table 2 Cash Flow Analysis

After cash flow analysis, the residential charge increases to \$30.72 per capita and the non-residential charge increases to \$0.45 per square metre. This is a reflection of the timing of the capital program and development charges revenues.

The following table summarizes the calculation of the general government development charge.

GENERAL GOVERNMENT SUMMARY					
2019 - 2028		Unadjusted		Adjusted	
Development-Related Capital Program		Development Charge		Development Charge	
Total	Net DC Recoverable	\$/capita	\$/sq.m	\$/capita	\$/sq.m
\$1,290,000	\$621,950	\$26.95	\$0.39	\$30.72	\$0.45

CITY OF NIAGARA FALLS
DEVELOPMENT-RELATED CAPITAL PROGRAM
GENERAL GOVERNMENT

Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs			Total DC Eligible Costs	DC Eligible Costs		
					BTE (%)	Replacement & BTE Shares	10% Reduction		Available DC Reserves	2019-2028	Post 2028
6.0 GENERAL GOVERNMENT											
6.1 Development-Related Studies											
6.1.2 Recreation and Culture Master Plan	2019	\$ 150,000	\$ -	\$ 150,000	25%	\$ 37,500	\$ 11,250	\$ 101,250	\$ 101,250	\$ -	\$ -
6.1.3 Development Permit System for Transit Secondary Area	2019	\$ 75,000	\$ -	\$ 75,000	50%	\$ 37,500	\$ 3,750	\$ 33,750	\$ 33,750	\$ -	\$ -
6.1.4 Fire Master Plan	2021	\$ 90,000	\$ -	\$ 90,000	50%	\$ 45,000	\$ 4,500	\$ 40,500	\$ 40,500	\$ -	\$ -
6.1.5 Development Charges Study	2019	\$ 50,000	\$ -	\$ 50,000	0%	\$ -	\$ 5,000	\$ 45,000	\$ 45,000	\$ -	\$ -
6.1.6 Secondary Plan for the Grassy Brook Area	2019	\$ 325,000	\$ -	\$ 325,000	0%	\$ -	\$ 32,500	\$ 292,500	\$ 174,550	\$ 117,950	\$ -
6.1.7 Official Plan Update	2019	\$ 400,000	\$ -	\$ 400,000	0%	\$ -	\$ 40,000	\$ 360,000	\$ -	\$ 360,000	\$ -
6.1.8 Development Charges Study	2024	\$ 60,000	\$ -	\$ 60,000	0%	\$ -	\$ 6,000	\$ 54,000	\$ -	\$ 54,000	\$ -
6.1.9 Library Organizational Structure and Future Needs Study	2019	\$ 60,000	\$ -	\$ 60,000	25%	\$ 15,000	\$ 4,500	\$ 40,500	\$ -	\$ 40,500	\$ -
6.1.10 Library Facility and Conditions Study	2019	\$ 30,000	\$ -	\$ 30,000	0%	\$ -	\$ 3,000	\$ 27,000	\$ -	\$ 27,000	\$ -
6.1.11 Provision for Vulnerable Population Strategies	Various	\$ 50,000	\$ -	\$ 50,000	50%	\$ 25,000	\$ 2,500	\$ 22,500	\$ -	\$ 22,500	\$ -
Subtotal Development-Related Studies		\$ 1,290,000	\$ -	\$ 1,290,000		\$ 160,000	\$ 113,000	\$ 1,017,000	\$ 395,050	\$ 621,950	\$ -
TOTAL GENERAL GOVERNMENT		\$ 1,290,000	\$ -	\$ 1,290,000		\$ 160,000	\$ 113,000	\$ 1,017,000	\$ 395,050	\$ 621,950	\$ -

Residential Development Charge Calculation	
Residential Share of 2019 - 2028 DC Eligible Costs	76% \$470,996
10-Year Growth in Population in New Units	17,479
Unadjusted Development Charge Per Capita	\$26.95
Non-Residential Development Charge Calculation	
Non-Residential Share of 2019 - 2028 DC Eligible Costs	24% \$150,954
10-Year Growth in Square Metres	383,530
Unadjusted Development Charge Per Square Metre	\$0.39

Uncommitted Reserve Fund Balance
Balance as at December 31, 2018 \$395,050

CITY OF NIAGARA FALLS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
GENERAL GOVERNMENT
RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

GENERAL GOVERNMENT	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	\$0.0	(\$366.3)	(\$326.7)	(\$282.6)	(\$245.9)	(\$205.4)	(\$206.7)	(\$160.1)	(\$108.9)	(\$56.9)	
2019 - 2028 RESIDENTIAL FUNDING REQUIREMENTS											
- General Government: Non Inflated	\$414.8	\$1.7	\$1.7	\$1.7	\$1.7	\$42.6	\$1.7	\$1.7	\$1.7	\$1.7	\$471.0
- General Government: Inflated	\$414.8	\$1.7	\$1.8	\$1.8	\$1.8	\$47.0	\$1.9	\$2.0	\$2.0	\$2.0	\$476.9
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,896	1,929	1,966	1,629	1,652	1,677	1,702	1,726	1,639	1,663	17,479
REVENUE											
- DC Receipts: Inflated	\$58.2	\$60.4	\$62.8	\$53.1	\$54.9	\$56.9	\$58.9	\$60.9	\$59.0	\$61.1	\$586.3
INTEREST											
- Interest on Opening Balance	\$0.0	(\$20.1)	(\$18.0)	(\$15.5)	(\$13.5)	(\$11.3)	(\$11.4)	(\$8.8)	(\$6.0)	(\$3.1)	(\$107.8)
- Interest on In-year Transactions	(\$9.8)	\$1.0	\$1.1	\$0.9	\$0.9	\$0.2	\$1.0	\$1.0	\$1.0	\$1.0	(\$1.7)
TOTAL REVENUE	\$48.4	\$41.3	\$45.9	\$38.5	\$42.3	\$45.8	\$48.5	\$53.1	\$54.0	\$59.0	\$476.9
CLOSING CASH BALANCE	(\$366.3)	(\$326.7)	(\$282.6)	(\$245.9)	(\$205.4)	(\$206.7)	(\$160.1)	(\$108.9)	(\$56.9)	\$0.0	

2019 Adjusted Charge Per Capita **\$30.72**

Allocation of Capital Program	
Residential Sector	75.7%
Non-Residential Sector	24.3%
Rates for 2019	
Inflation Rate:	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

CITY OF NIAGARA FALLS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
GENERAL GOVERNMENT
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

GENERAL GOVERNMENT	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	\$0.0	(\$119.8)	(\$109.8)	(\$98.8)	(\$86.5)	(\$72.9)	(\$72.6)	(\$57.0)	(\$39.7)	(\$20.8)	
2019 - 2028 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- General Government: Non Inflated	\$132.9	\$0.5	\$0.5	\$0.5	\$0.5	\$13.7	\$0.5	\$0.5	\$0.5	\$0.5	\$151.0
- General Government: Inflated	\$132.9	\$0.6	\$0.6	\$0.6	\$0.6	\$15.1	\$0.6	\$0.6	\$0.6	\$0.7	\$152.8
NON-RESIDENTIAL SPACE GROWTH											
- Growth in Square Metres	36,050	36,470	36,890	37,450	38,010	38,500	39,060	39,690	40,390	41,020	383,530
REVENUE											
- DC Receipts: Inflated	\$16.3	\$16.8	\$17.4	\$18.0	\$18.6	\$19.2	\$19.9	\$20.6	\$21.4	\$22.2	\$190.6
INTEREST											
- Interest on Opening Balance	\$0.0	(\$6.6)	(\$6.0)	(\$5.4)	(\$4.8)	(\$4.0)	(\$4.0)	(\$3.1)	(\$2.2)	(\$1.1)	(\$37.3)
- Interest on In-year Transactions	(\$3.2)	\$0.3	\$0.3	\$0.3	\$0.3	\$0.1	\$0.3	\$0.4	\$0.4	\$0.4	(\$0.5)
TOTAL REVENUE	\$13.1	\$10.5	\$11.6	\$12.9	\$14.2	\$15.3	\$16.3	\$17.9	\$19.6	\$21.4	\$152.8
CLOSING CASH BALANCE	(\$119.8)	(\$109.8)	(\$98.8)	(\$86.5)	(\$72.9)	(\$72.6)	(\$57.0)	(\$39.7)	(\$20.8)	(\$0.0)	

2019 Adjusted Charge Per Square Metre	\$0.45
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Allocation of Capital Program	
Residential Sector	75.7%
Non-Residential Sector	24.3%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

Appendix C

Engineering Infrastructure Technical Appendix

HEMSON

Appendix C

Engineered Services Technical Appendix

The City's Municipal Works department is responsible for a multitude of public services in Niagara Falls including the design, construction maintenance and rehabilitation of our local infrastructure. The department also provides review and inspection of services to facilitate new development and to maintain service standards to sustain the existing infrastructure.

This appendix provides a brief outline of the engineered services that are included in the 2019 Development Charges Study; Roads and Related, Sidewalks, Water, Sanitary Sewer and Storm Water Management services. The following tables set out the capital forecast and the calculation of the development charge for engineered services. The cost, quantum and description of the projects included in the forecast are based upon previous Development Charge Background Studies and servicing plans from the City's Municipal Works staff. This appendix includes all engineering projects that will meet the servicing demands within the City, including those projects deemed to benefit the Core Tourist Area (CTA). A non-residential forecast has been developed for the CTA and a corresponding list of works required to service the development in the CTA has also been developed.

The planning horizon utilized for all engineering services is from 2019 to 2028.

Appendix C.1

Roads & Related

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Appendix C.1

Roads & Related

Table 1 2009-2018 Historic Service Levels

Table 1 demonstrates that the City's current road infrastructure comprises of 340 kilometres of collector roads and approximately 210 kilometres of arterial roads. The service level also includes 64 bridges, 69 culverts, 60 traffic signals and 605 kilometres of sidewalks. Finally, traffic hardware such as traffic counters and radar speed boards have also been included in the historical inventory.

The total inventory of capital assets has a full replacement value of \$959.05 million. This produces a ten-year historical service level of \$7,731.03 per capita and employment. The resulting maximum allowable funding envelope is \$149.73 million.

Table 1 provides a summary of the level of service and the calculation of the ten-year historical service level. The calculation of the maximum allowable funding envelope is summarized as follows:

10-Year Funding Envelope Calculation	
10 Year Average Service Level 2009 - 2018	\$7,731.03
Net Population & Employment Growth 2019 - 2028	19,367
Maximum Allowable Funding Envelope	\$149,726,858
Less: Uncommitted Excess Capacity	\$0
Discounted Maximum Allowable Funding Envelope	\$149,726,858

The existing facilities have been examined and consideration has been given to whether or not "excess capacity" exists within the City's infrastructure that may be available to partially meet the future servicing requirements. It has been determined that no "uncommitted excess capacity" exists within the City's Roads and Related infrastructure, and as such, no adjustments have been made to the service level calculations.

Table 2 2019 – 2028 Development-Related Capital Program

Table 2 provides a summary of the City-wide development-related capital program for Roads and Related services.

As shown in Table 2, the capital program totals \$29.45 million gross. The capital program includes studies, road widenings, road rehabilitations, new roads, additional lanes, new traffic signals, and other capital improvements.

No grants or subsidies have been identified to help offset the cost of the program. However, more than ten per cent of the program is deemed to be the benefit to existing (BTE) share. In total, \$3.21 million has been identified as the BTE share and this amount is not recoverable through DCs and must be funded through non-DC revenue sources.

Another share of the program is deemed to benefit development beyond the ten-year planning horizon. The post-2028 share amounts to \$3.27 million. However, this share will be considered for development charge recovery through subsequent DC by-law reviews.

After these adjustments, the development-related share of the Roads and Related program is reduced to \$22.97 million and this amount is brought forward to the DC calculation.

Table 3 Calculation of the Unadjusted Development Charges

Table 3 displays the shares of the roads program that are to be recovered through development charges. The development-related net capital cost for Roads and Related services is netted down by the portion of the program deemed to benefit existing development, and the shares of the program deemed to benefit development beyond the planning horizon of 2028. In addition, the current Roads and Related reserves fund balance is in a positive position of \$1.85 million and these monies are utilized to fund roads projects that first occur in the program. Therefore, about \$21.12 million is included in the development charges calculation.

Tables 3 also displays the DC recoverable costs apportioned to the residential and non-residential sectors; 76 per cent, or \$16.00 million to residential and 24 per cent, or \$5.13 million to the non-residential, based on shares of anticipated shares of population and employment growth.

The residential sector's share of \$16.00 million in development-related net capital costs yields an "unadjusted" development charge of \$915.20 per capita. The non-residential sector's share of \$5.13 million in development-related net capital costs results in an unadjusted charge of \$13.37 per square metre of GFA for the non-residential sector.

Table 4 Cash Flow Analysis

After cash flow and reserve fund analysis, the residential and non-residential calculated charges both decrease to \$902.56 per capita and \$13.24 per square metre, respectively. This is a reflection of the timing of the capital program and development charges revenues.

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

ROADS & RELATED SUMMARY						
10-year Hist.	2019 - 2028	Unadjusted		Adjusted		
Service Level per pop & emp	Development-Related Capital Program	Development Charge \$/capita	Development Charge \$/sq.m	Development Charge \$/capita	Development Charge \$/sq.m	
\$7,731.03	Total \$29,454,351	Net DC Recoverable \$21,123,573	\$915.20	\$13.37	\$902.56	\$13.24

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APPENDIX C.1
TABLE 1

CITY OF NIAGARA FALLS
INVENTORY OF CAPITAL ASSETS
ROADS & RELATED

ROADS	# of Kilometres										UNIT COST (\$/km)
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Collector Roads	359.7	365.7	369.4	386.8	386.8	338.0	338.2	340.4	340.4	340.4	\$1,216,000
Arterial Roads	195.3	198.5	200.6	210.0	210.0	209.6	211.6	212.6	212.6	212.6	\$1,389,000
Total (km)	554.9	564.2	570.0	596.8	596.8	547.6	549.8	553.0	553.0	553.0	
Total (\$000)	\$708,575.3	\$720,448.7	\$727,827.6	\$762,038.8	\$762,038.8	\$702,142.4	\$705,163.6	\$709,227.8	\$709,227.8	\$709,227.8	

BRIDGES & CULVERTS	# of Bridges & Culverts										UNIT COST (\$/unit)
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Bridges	74	72	71	71	71	64	64	64	64	64	\$1,447,000
Culverts	75	75	75	75	75	71	71	69	69	69	\$289,000
Total (#)	149	147	146	146	146	135	135	133	133	133	
Total (\$000)	\$128,753.0	\$125,859.0	\$124,412.0	\$124,412.0	\$124,412.0	\$113,127.0	\$113,127.0	\$112,549.0	\$112,549.0	\$112,549.0	

TRAFFIC SIGNALS	# of Traffic Signals										UNIT COST (\$/unit)
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Signalized Intersections	48	48	49	50	50	48	48	48	48	48	\$232,000
Flashing Beacons	7	7	7	7	7	12	12	12	12	12	\$17,000
Total (#)	55	55	56	57	57	60	60	60	60	60	
Total (\$000)	\$11,255.0	\$11,255.0	\$11,487.0	\$11,719.0	\$11,719.0	\$11,340.0	\$11,340.0	\$11,340.0	\$11,340.0	\$11,340.0	

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APPENDIX C.1
TABLE 1

**CITY OF NIAGARA FALLS
INVENTORY OF CAPITAL ASSETS
ROADS & RELATED**

SIDEWALKS	# of Kilometres										UNIT COST (\$/km)
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Sidewalks	561.4	561.5	561.7	561.9	561.9	607.8	607.8	604.6	602.2	605.1	\$208,000
Total (km)	561.4	561.5	561.7	561.9	561.9	607.8	607.8	604.6	602.2	605.1	
Total (\$000)	\$116,771.2	\$116,792.0	\$116,833.6	\$116,875.2	\$116,875.2	\$126,422.4	\$126,422.4	\$125,756.8	\$125,257.6	\$125,850.4	

TRAFFIC HARDWARE	# of Traffic Hardware										UNIT COST (\$/unit)
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Traffic Counters	6	6	6	6	6	6	6	7	7	8	\$3,000
Radar Speed Boards	2	2	2	2	2	3	4	4	5	6	\$9,000
Total (#)	8	8	8	8	8	9	10	11	12	14	
Total (\$000)	\$36.0	\$36.0	\$36.0	\$36.0	\$36.0	\$45.0	\$54.0	\$57.0	\$66.0	\$78.0	

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APPENDIX C.1
TABLE 1

CITY OF NIAGARA FALLS
CALCULATION OF SERVICE LEVELS
ROADS & RELATED

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Historical Population	82,671	82,834	82,997	83,988	84,991	86,006	87,033	88,071	89,374	90,696
Historical Employment	<u>39,971</u>	<u>39,741</u>	<u>39,512</u>	<u>39,692</u>	<u>39,873</u>	<u>40,054</u>	<u>40,236</u>	<u>40,419</u>	<u>40,935</u>	<u>41,457</u>
Total Historical Population & Employment	122,642	122,575	122,509	123,680	124,864	126,060	127,269	128,490	130,309	132,153

INVENTORY SUMMARY (\$000)

Roads	\$708,575.3	\$720,448.7	\$727,827.6	\$762,038.8	\$762,038.8	\$702,142.4	\$705,163.6	\$709,227.8	\$709,227.8	\$709,227.8
Bridges & Culverts	\$128,753.0	\$125,859.0	\$124,412.0	\$124,412.0	\$124,412.0	\$113,127.0	\$113,127.0	\$112,549.0	\$112,549.0	\$112,549.0
Traffic Signals	\$11,255.0	\$11,255.0	\$11,487.0	\$11,719.0	\$11,719.0	\$11,340.0	\$11,340.0	\$11,340.0	\$11,340.0	\$11,340.0
Sidewalks	\$116,771.2	\$116,792.0	\$116,833.6	\$116,875.2	\$116,875.2	\$126,422.4	\$126,422.4	\$125,756.8	\$125,257.6	\$125,850.4
Traffic Hardware	\$36.0	\$36.0	\$36.0	\$36.0	\$36.0	\$45.0	\$54.0	\$57.0	\$66.0	\$78.0
Total (\$000)	\$965,390.5	\$974,390.7	\$980,596.2	\$1,015,081.0	\$1,015,081.0	\$953,076.8	\$956,107.0	\$958,930.6	\$958,440.4	\$959,045.2

SERVICE LEVEL (\$/pop & emp)

Average
Service
Level

Roads	\$5,777.59	\$5,877.61	\$5,941.01	\$6,161.37	\$6,102.95	\$5,569.91	\$5,540.73	\$5,519.71	\$5,442.66	\$5,366.72	\$5,730.03
Bridges & Culverts	\$1,049.83	\$1,026.79	\$1,015.53	\$1,005.92	\$996.38	\$897.41	\$888.88	\$875.94	\$863.71	\$851.66	\$947.20
Traffic Signals	\$91.77	\$91.82	\$93.76	\$94.75	\$93.85	\$89.96	\$89.10	\$88.26	\$87.02	\$85.81	\$90.61
Sidewalks	\$952.13	\$952.82	\$953.67	\$944.98	\$936.02	\$1,002.87	\$993.35	\$978.73	\$961.24	\$952.31	\$962.81
Traffic Hardware	\$0.29	\$0.29	\$0.29	\$0.29	\$0.29	\$0.36	\$0.42	\$0.44	\$0.51	\$0.59	\$0.38
Total (\$/pop & emp)	\$7,871.61	\$7,949.34	\$8,004.28	\$8,207.32	\$8,129.49	\$7,560.50	\$7,512.49	\$7,463.08	\$7,355.14	\$7,257.08	\$7,731.03

CITY OF NIAGARA FALLS
CALCULATION OF MAXIMUM ALLOWABLE
ROADS & RELATED

10-Year Funding Envelope Calculation	
10 Year Average Service Level 2009 - 2018	\$7,731.03
Net Population & Employment Growth 2019 - 2028	19,367
Maximum Allowable Funding Envelope	\$149,726,858
Less: Uncommitted Excess Capacity	\$0
Discounted Maximum Allowable Funding Envelope	\$149,726,858

HEMSON

CITY OF NIAGARA FALLS
DEVELOPMENT-RELATED CAPITAL PROGRAM
ROADS - CITY-WIDE

NO.	Infrastructure Requirement	Limits	Approximate Length (m)	Infrastructure	Type of Improvement	Timing	Gross Cost	Grants and Subsidies	Net Municipal Cost	Ineligible Costs		Total DC Eligible Costs	DC Eligible		
										BTE %	BTE \$		2019-2028	Post 2028 (%)	Post 2028
1	Allendale Avenue (Ferry Street - Robinson Street)	Ferry Street - Robinson Street	365	Road Upgrade	Rehabilitation	2023 - 2023	\$1,370,200	\$0	\$1,370,200	40%	\$548,080	\$822,120	\$822,120	0%	\$0
2	Brown Road (Kalar Road - Shadbush Lane)	Kalar Road - Shadbush Lane	430	Road Improvements	New Development	2024 - 2028	\$625,000	\$0	\$625,000	0%	\$0	\$625,000	\$468,750	25%	\$156,250
3	Brown Road (Kalar Road - 550m West)	Kalar Road - 550m West	550	Road Improvements	New Development	2024 - 2028	\$752,500	\$0	\$752,500	0%	\$0	\$752,500	\$564,375	25%	\$188,125
4	Biggar Road (Crowland Avenue - Montrose Road) - EA	Crowland Avenue - Montrose Road		New Hospital Development, Road/Intersection/Capacity Improvements	Study (Development)	2019 - 2022	\$150,000	\$0	\$150,000	0%	\$0	\$150,000	\$150,000	0%	\$0
5	Biggar Road @ Hospital Entrance			New Traffic Signal Install	Capital	2023 - 2028	\$250,000	\$0	\$250,000	0%	\$0	\$250,000	\$187,500	25%	\$62,500
6	Misc. Upgrades to Facilitate GO Service		N/A	Road/Infrastructure Improvements	Study	2024 - 2028	\$250,000	\$0	\$250,000	0%	\$0	\$250,000	\$187,500	25%	\$62,500
7	Canadian Drive (Pin Oak Drive - Montrose Road)	Pin Oak Drive - Montrose Road	452	Road Upgrade	New Development	2024 - 2028	\$1,435,000	\$0	\$1,435,000	0%	\$0	\$1,435,000	\$1,076,250	25%	\$358,750
8	Cropp Street (Pettit Avenue-Dorchester Road)	Pettit Avenue-Dorchester Road	450	Road Upgrade	New Development	2024 - 2028	\$665,000	\$0	\$665,000	0%	\$0	\$665,000	\$498,750	25%	\$166,250
9	Dorchester Road (Frederica Street - McLeod Road) - EA	Frederica Street - McLeod Road		TMP	Study	2019 - 2022	\$150,000	\$0	\$150,000	0%	\$0	\$150,000	\$150,000	0%	\$0
10	Dorchester Road (McLeod Road - Chippawa Parkway) and Chippawa Parkway (Dorchester Road - Stanley Avenue) - EA	McLeod Road - Stanley Avenue		Riverfront Development, Road/Capacity Improvements, & Roundabout at Oldfield Road	Study (Development)	2019 - 2022	\$180,000	\$0	\$180,000	0%	\$0	\$180,000	\$180,000	0%	\$0
11	Dorchester Road (Thorold Stone Road - Pinedale Drive) - EA	Thorold Stone Road - Pinedale Drive		TMP	Study	2023 - 2024	\$150,000	\$0	\$150,000	0%	\$0	\$150,000	\$150,000	0%	\$0
12	Drummond Road (McLeod Road - Hydro Corridor)	McLeod Road - Hydro Corridor		Road Upgrade	Rehabilitation	2022 - 2022	\$1,526,000	\$0	\$1,526,000	40%	\$610,400	\$915,600	\$915,600	0%	\$0
13	Fallsview Boulevard (Spring Street - Murray Street)	Spring Street - Murray Street	780	Widening & New Intersections	New Development	2024 - 2028	\$1,650,000	\$0	\$1,650,000	0%	\$0	\$1,650,000	\$1,237,500	25%	\$412,500
14	Ferry Street @ Fallsview Boulevard			New Traffic Signal Install	Capital	2019 - 2022	\$250,000	\$0	\$250,000	0%	\$0	\$250,000	\$250,000	0%	\$0
15	Garner Road (Brown Road - Warren Woods Avenue)	Brown Road - Warren Woods Avenue	436	Road Upgrade	New Development	2024 - 2028	\$490,000	\$0	\$490,000	0%	\$0	\$490,000	\$367,500	25%	\$122,500
16	Garner Road (Warren Woods Avenue - McLeod Road)	Warren Woods Avenue - McLeod Road	784	Road Upgrade	New Development	2024 - 2028	\$1,180,126	\$0	\$1,180,126	0%	\$0	\$1,180,126	\$885,095	25%	\$295,032
17	Heartland Forest Road (Brown Road - Chippawa Parkway) - EA	Brown Road - Chippawa Parkway			Study	2023 - 2028	\$100,000	\$0	\$100,000	0%	\$0	\$100,000	\$75,000	25%	\$25,000
18	Kalar Road (Beaverdams Road - Thorold Stone Road)	Beaverdams Road - Thorold Stone Road	2000	Road Upgrade	Rehabilitation	2022 - 2022	\$175,000	\$0	\$175,000	40%	\$70,000	\$105,000	\$105,000	0%	\$0
19	Kalar Road (Lundy's Lane - Beaverdams Road)	Lundy's Lane - Beaverdams Road	740	Road Upgrade	Additional Lanes	2022 - 2022	\$1,464,700	\$0	\$1,464,700	16%	\$234,352	\$1,230,348	\$1,230,348	0%	\$0

CITY OF NIAGARA FALLS
DEVELOPMENT-RELATED CAPITAL PROGRAM
ROADS - CITY-WIDE

NO.	Infrastructure Requirement	Limits	Approximate Length (m)	Infrastructure	Type of Improvement	Timing	Gross Cost	Grants and Subsidies	Net Municipal Cost	Ineligible Costs		Total DC Eligible Costs	DC Eligible			
										BTE %	BTE \$		2019-2028	Post 2028 (%)	Post 2028	
20	Kalar Road (Mcleod Road - Brown Road)	Mcleod Road - Brown Road	1220	Road Upgrade	Additional Lanes	2023 - 2023	\$2,737,525	\$0	\$2,737,525	16%	\$438,004	\$2,299,521	\$2,299,521	0%	\$0	
21	Kalar Road @ Beaverdams Road	Intersection		New Traffic Signal Install	Capital	2023 - 2024	\$250,000	\$0	\$250,000	0%	\$0	\$250,000	\$250,000	0%	\$0	
22	Lyon's Parkway (Easement)	Lyon's Parkway East Limit - Ort Road	180	New Road	New Development	2024 - 2028	\$150,000	\$0	\$150,000	0%	\$0	\$150,000	\$112,500	25%	\$37,500	
23	Mcleod Road (Kalar Road - Garner Road)	Kalar Road - Garner Road	1000		Land Purchase & Additional Lanes	2022 - 2022	\$1,727,400	\$0	\$1,727,400	0%	\$0	\$1,727,400	\$1,727,400	0%	\$0	
24	McLeod Road @ Garner Road			New Traffic Signal Install	Capital	2023 - 2024	\$250,000	\$0	\$250,000	0%	\$0	\$250,000	\$250,000	0%	\$0	
25	McLeod Road (Kalar Road - Garner Road) - EA	Kalar Road - Garner Road	1000	Planned Additional Lanes	Study	2019 - 2022	\$150,000	\$0	\$150,000	0%	\$0	\$150,000	\$150,000	0%	\$0	
26	Mewburn Road (Schofield Street - Mountain Road)	Schofield Street - Mountain Road	520	Road Upgrade	New Development	2023 - 2023	\$614,100	\$0	\$614,100	17%	\$104,397	\$509,703	\$509,703	0%	\$0	
27	Montrose Road (McLeod Road - Kinsmen Court)	McLeod Road - Charlwood Avenue	950	Road Upgrade	Additional Lanes	2022 - 2022	\$71,500	\$0	\$71,500	16%	\$11,440	\$60,060	\$60,060	0%	\$0	
28	Morrison Street (Dorchester Road - Drummond Road)	Dorchester Road - Drummond Road	1000	Road Upgrade	Additional Lanes	2024 - 2027	\$1,530,000	\$0	\$1,530,000	0%	\$0	\$1,530,000	\$1,377,000	10%	\$153,000	
29	Morrison Street (Dorchester Road - Drummond Road) - EA	Dorchester Road - Drummond Road			Study	2024 - 2028	\$150,000	\$0	\$150,000	0%	\$0	\$150,000	\$112,500	25%	\$37,500	
30	Morrison Street @ Zehrs Plaza Entrance			New Traffic Signal Install	Capital	2019 - 2022	\$250,000	\$0	\$250,000	0%	\$0	\$250,000	\$250,000	0%	\$0	
31	Ort Road	North Limit - Willick Road	255	Road Upgrade	New Development	2024 - 2028	\$220,000	\$0	\$220,000	0%	\$0	\$220,000	\$165,000	25%	\$55,000	
32	Pin Oak Drive (McLeod Road - Canadian Drive)	McLeod Road - Canadian Drive	650	Road Upgrade	New Development	2024 - 2028	\$1,075,000	\$0	\$1,075,000	0%	\$0	\$1,075,000	\$806,250	25%	\$268,750	
33	Portage Road (Norton Street - Macklem Street)	Norton Street - Macklem Street	480	Road Upgrade (Design & Construction)	Rehabilitation	2023 - 2023	\$1,291,500	\$0	\$1,291,500	40%	\$516,600	\$774,900	\$774,900	0%	\$0	
34	Portage Road (Main Street - Marineland Parkway) - EA	Main Street - Marineland Parkway		TMP	Study	2019 - 2022	\$150,000	\$0	\$150,000	0%	\$0	\$150,000	\$150,000	0%	\$0	
35	Portage Road (Marineland Parkway - Upper Rapids Road) - EA	Marineland Parkway - Upper Rapids Road		TMP	Study	2023 - 2028	\$150,000	\$0	\$150,000	0%	\$0	\$150,000	\$112,500	25%	\$37,500	
36	Robinson Street (Stanley Avenue - East Limit) - EA	Stanley Avenue - East Limit		New Hotel Developments	Study	2019 - 2022	\$150,000	\$0	\$150,000	0%	\$0	\$150,000	\$150,000	0%	\$0	
37	Robinson Street @ Fallsview Boulevard			New Traffic Signal Install	Capital	2019 - 2022	\$250,000	\$0	\$250,000	0%	\$0	\$250,000	\$250,000	0%	\$0	
38	Thundering Waters - Stanley Avenue Extension				Rehabilitation	2023 - 2023	\$1,687,900	\$0	\$1,687,900	40%	\$675,160	\$1,012,740	\$1,012,740	0%	\$0	
39	Transportation Master Plan Update				Study	2019 - 2022	\$400,000	\$0	\$400,000	0%	\$0	\$400,000	\$400,000	0%	\$0	
40	Warren Woods Avenue (Extension through Former Hydro Corridor)	East Limit - Garner Road	897	New Road	Development Agreement	2022 - 2022	\$46,900	\$0	\$46,900	0%	\$0	\$46,900	\$46,900	0%	\$0	
41	Weinbrenner Road (Willoughby Drive - East Limit)	Willoughby Drive - East Limit	350	Road Upgrade	New Development	2024 - 2028	\$799,000	\$0	\$799,000	0%	\$0	\$799,000	\$599,250	25%	\$199,750	
42	Willick Road (Sodom Road - Ort Road)	Sodom Road - Ort Road	1000	Road Upgrade	New Development	2024 - 2028	\$1,075,000	\$0	\$1,075,000	0%	\$0	\$1,075,000	\$806,250	25%	\$268,750	
43	Willick Road (Sodom Road - Ort Road)	Sodom Road - Ort Road	N/A	Box Culvert Crossing Replacement	New Development	2024 - 2028	\$450,000	\$0	\$450,000	0%	\$0	\$450,000	\$337,500	25%	\$112,500	
44	Willick Road (Sodom Road - Willoughby Drive)	Sodom Road - Willoughby Drive	1000	New Road	New Development	2024 - 2028	\$1,015,000	\$0	\$1,015,000	0%	\$0	\$1,015,000	\$761,250	25%	\$253,750	
TOTAL ROADS - CITY-WIDE							\$29,454,351	\$0	\$29,454,351			\$3,208,433	\$26,245,918	\$22,972,512		\$3,273,407

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APPENDIX C.1
TABLE 3

CITY OF NIAGARA FALLS
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
ROADS & RELATED - CITY-WIDE
CITY-WIDE UNIFORM CHARGE

10-Year Growth in Population in New Units	17,479
10-Year Employment Growth	5,602
10-Year Growth in Square Metres	383,530

	Growth-Related Capital Forecast					Residential Share		Non-Residential Share	
	Total (Net of Grants/ Subsidies) (\$000)	Benefit to Existing Share (\$000)	Reserve Fund Adjustment (\$000)	Post Period Allocation (\$000)	Total Net Capital Costs After Discount (\$000)				
	%	\$000	%	\$000					
ROADS & RELATED - CITY-WIDE									
TOTAL ROADS & RELATED - CITY-WIDE	\$29,454.35	\$3,208.43	\$1,848.94	\$3,273.41	\$21,123.57	75.7%	\$15,996.64	24.3%	\$5,126.93
TOTAL ROADS & RELATED - CITY-WIDE	\$29,454.35	\$3,208.43	\$1,848.94	\$3,273.41	\$21,123.57		\$15,996.64		\$5,126.93
Unadjusted Development Charge Per Capita (\$)							\$915.20		
Unadjusted Development Charge Per Sq. M. (\$)								\$13.37	

CITY OF NIAGARA FALLS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
ROADS & RELATED
RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

ROADS & RELATED	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	\$1,400.2	\$2,789.4	\$4,285.2	\$5,896.7	\$3,903.3	\$807.9	\$380.6	\$240.1	\$117.0	(\$106.9)	
2019 - 2028 RESIDENTIAL FUNDING REQUIREMENTS											
- Roads & Related: Non Inflated	\$393.8	\$393.8	\$393.8	\$3,487.5	\$4,397.2	\$1,915.2	\$1,669.1	\$1,669.1	\$1,669.1	\$1,408.4	\$17,396.8
- Roads & Related: Inflated	\$393.8	\$401.7	\$409.7	\$3,701.0	\$4,759.7	\$2,114.5	\$1,879.6	\$1,917.2	\$1,955.6	\$1,683.1	\$19,215.9
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,896	1,929	1,966	1,629	1,652	1,677	1,702	1,726	1,639	1,663	17,479
REVENUE											
- DC Receipts: Inflated	\$1,711.0	\$1,775.8	\$1,846.2	\$1,560.1	\$1,614.1	\$1,671.2	\$1,729.9	\$1,789.3	\$1,733.6	\$1,794.0	\$17,225.0
INTEREST											
- Interest on Opening Balance	\$49.0	\$97.6	\$150.0	\$206.4	\$136.6	\$28.3	\$13.3	\$8.4	\$4.1	(\$5.9)	\$687.8
- Interest on In-year Transactions	\$23.1	\$24.0	\$25.1	(\$58.9)	(\$86.5)	(\$12.2)	(\$4.1)	(\$3.5)	(\$6.1)	\$1.9	(\$97.1)
TOTAL REVENUE	\$1,783.0	\$1,897.4	\$2,021.3	\$1,707.6	\$1,664.2	\$1,687.3	\$1,739.1	\$1,794.1	\$1,731.6	\$1,790.1	\$17,815.7
CLOSING CASH BALANCE	\$2,789.4	\$4,285.2	\$5,896.7	\$3,903.3	\$807.9	\$380.6	\$240.1	\$117.0	(\$106.9)	(\$0.0)	

2019 Adjusted Charge Per Capita	\$902.56
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Allocation of Capital Program	
Residential Sector	75.7%
Non-Residential Sector	24.3%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

CITY OF NIAGARA FALLS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
ROADS & RELATED
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

ROADS & RELATED	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	\$448.8	\$821.8	\$1,220.8	\$1,647.1	\$1,026.8	\$55.1	(\$60.9)	(\$84.6)	(\$100.3)	(\$105.9)	
2019 - 2028 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Roads & Related: Non Inflated	\$126.2	\$126.2	\$126.2	\$1,117.8	\$1,409.3	\$613.8	\$534.9	\$534.9	\$534.9	\$451.4	\$5,575.7
- Roads & Related: Inflated	\$126.2	\$128.7	\$131.3	\$1,186.2	\$1,525.5	\$677.7	\$602.4	\$614.5	\$626.8	\$539.4	\$6,158.7
NEW NON-RESIDENTIAL DEVELOPMENT											
- Growth in Square Metres	36,050	36,470	36,890	37,450	38,010	38,500	39,060	39,690	40,390	41,020	383,530
REVENUE											
- DC Receipts: Inflated	\$477.4	\$492.6	\$508.3	\$526.3	\$544.9	\$562.9	\$582.5	\$603.8	\$626.7	\$649.2	\$5,574.6
INTEREST											
- Interest on Opening Balance	\$15.7	\$28.8	\$42.7	\$57.6	\$35.9	\$1.9	(\$3.3)	(\$4.7)	(\$5.5)	(\$5.8)	\$163.4
- Interest on In-year Transactions	\$6.1	\$6.4	\$6.6	(\$18.1)	(\$27.0)	(\$3.2)	(\$0.5)	(\$0.3)	(\$0.0)	\$1.9	(\$28.1)
TOTAL REVENUE	\$499.3	\$527.8	\$557.6	\$565.8	\$553.8	\$561.7	\$578.6	\$598.8	\$621.2	\$645.3	\$5,709.9
CLOSING CASH BALANCE	\$821.8	\$1,220.8	\$1,647.1	\$1,026.8	\$55.1	(\$60.9)	(\$84.6)	(\$100.3)	(\$105.9)	\$0.0	

2019 Adjusted Charge Per Square Metre **\$13.24**

Allocation of Capital Program	
Residential Sector	75.7%
Non-Residential Sector	24.3%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

Appendix C.2

Sidewalks

HEMSON

Appendix C.2

Sidewalks

Table 1 2019 – 2028 Development-Related Capital Program

Table 1 provides a summary of the development-related capital program for Sidewalks. A list of projects that will benefit development outside the core tourist area (OCTA) and within the CTA have been developed by City staff.

As shown in Table 1, the capital program for Sidewalks OCTA totals \$1.53 million gross. The capital program includes new improvements to existing roads and sidewalks in a new development area.

No grants or subsidies have been identified to help offset the cost of the program. However, roughly 28 per cent of the program is deemed to be the benefit to existing (BTE) share. In total, \$436,600 has been identified as the BTE share and this amount is not recoverable through DCs and must be funded through non-DC revenue sources.

Another share of the program is deemed to benefit development beyond the ten-year planning horizon. The post-2028 share amounts to \$42,970. This share, however, is deemed to be related to new development and can be recovered through DCs in subsequent by-law reviews. The development-related share of the OCTA sidewalks program is reduced to \$1.05 million; this amount is brought forward to the DC calculation.

There are six sidewalks projected anticipated to be required within the CTA in the ten-year planning horizon. The total cost of the sidewalks within the CTA amounts to \$584,000. Only \$175,250 is considered to be development-related as \$292,000 is considered to be the BTE share and \$116,750 is deemed to be the post-period benefit share.

Tables 2&3 Calculation of the Unadjusted Development Charges

Tables 2 and 3 display the shares of the Sidewalks program that are to be recovered through development charges. Table 2 displays the OCTA development-related net capital cost for sidewalks is netted down by the portion of the program deemed to benefit existing development, and the shares of the program deemed to benefit development beyond the planning horizon of 2028. In addition, the current OCTA Sidewalks reserves fund

balance is in a positive position of \$114,880 and these monies are utilized to fund OCTA sidewalk projects that first occur in the program. Therefore, about \$939,900 is included in the development charges calculation.

Tables 2 also displays the DC recoverable costs apportioned to the residential and non-residential sectors; 88 per cent, or \$822,300 to residential and 13 per cent, or \$117,700 to the non-residential, based on shares of anticipated shares of population and employment growth OCTA.

The residential sector's share of \$822,300 in development-related net capital costs yields an "unadjusted" development charge of \$47.04 per capita. The non-residential sector's share of \$117,700 in development-related net capital costs results in an unadjusted charge of \$0.67 per square metre of GFA for the non-residential sector.

Table 3 displays the CTA development-related net capital cost for Sidewalks is netted down by the portion of the program deemed to benefit existing development, and the shares of the program deemed to benefit development beyond the planning horizon of 2028. In addition, the current CTA sidewalks reserves fund balance is in a positive position of \$46,200 and these monies are utilized to fund CTA sidewalk projects that first occur in the program. Therefore, about \$129,100 is included in the development charges calculation.

Tables 3 also display the DC recoverable costs are solely apportioned to the non-residential sectors as it is anticipated that there will be no residential growth occurring in the CTA. As such, the entire DC eligible cost of \$129,100 is recovered against non-residential growth in the CTA.

The non-residential sector's share of \$129,100 in development-related net capital costs results in an unadjusted charge of \$0.62 per square metre of GFA for the non-residential sector.

Table 4 Cash Flow Analysis

After cash flow and reserve fund analysis, the residential and non-residential calculated charges result in \$48.94 per capita and \$0.70 per square metre for the OCTA charge and \$0.65 for the CTA charge. This is a reflection of the timing of the capital program and development charges revenues.

The following table summarizes the calculation of the Sidewalks development charge:

SIDEWALKS SUMMARY							
2019 - 2028		Unadjusted			Adjusted		
Development-Related Capital Program		Residential	OCTA	CTA	Residential	OCTA	CTA
Total	Net DC Recoverable	\$/capita	\$/sq.m	\$/sq.m	\$/capita	\$/sq.m	\$/sq.m
\$2,118,375	\$1,230,056	\$47.04	\$0.67	\$0.62	\$48.94	\$0.70	\$0.65

CITY OF NIAGARA FALLS
DEVELOPMENT-RELATED CAPITAL PROGRAM
SIDEWALKS

NO.	Infrastructure Requirement	Limits	Approximate Length (m)	Infrastructure	Type of Improvement	Timing	Gross Cost	Grants and Subsidies	Net Municipal Cost	Ineligible Costs		Total DC Eligible Costs	DC Eligible			
										BTE %	BTE \$		2019-2028	Post 2028 (%)	Post 2028	
Sidewalks - Outside Core Tourist Area																
1	Brown Road (Kalar Road - Shadbush Lane)		410	Sidewalk	New Development	2024 - 2028	\$112,750	\$0	\$112,750	0%	\$0	\$112,750	\$84,563	25%	\$28,188	
2	Dorchester Road (Oldfield Road - Hydro Corridor)	Oldfield Road - Hydro Corridor		Sidewalk	New Improvement to Existing Road	2022 - 2022	\$24,500	\$0	\$24,500	40%	\$9,800	\$14,700	\$14,700	0%	\$0	
3	Drummond Road (McLeod Road - Hydro Corridor)	McLeod Road - Hydro Corridor		Sidewalk	New Improvement to Existing Road	2022 - 2022	\$81,500	\$0	\$81,500	40%	\$32,600	\$48,900	\$48,900	0%	\$0	
4	Garner Road (McLeod Road - McGarry Drive)	McLeod Road - McGarry Drive		Sidewalk	New Improvement to Existing Road	2022 - 2022	\$39,000	\$0	\$39,000	40%	\$15,600	\$23,400	\$23,400	0%	\$0	
5	Heartland Forest Road (Brown Road - Chippawa Parkway)	Brown Road - Chippawa Parkway		Sidewalk	New Improvement to Existing Road	2022 - 2022	\$194,000	\$0	\$194,000	40%	\$77,600	\$116,400	\$116,400	0%	\$0	
6	Kalar Road (Lundy's Lane - Beaverdams Road)	Lundy's Lane - Beaverdams Road		Sidewalk	New Improvement to Existing Road	2022 - 2022	\$162,000	\$0	\$162,000	40%	\$64,800	\$97,200	\$97,200	0%	\$0	
7	Kalar Road (Brown Road - Buckeye Crescent) - East Side Only	Brown Road - Buckeye Crescent	215	Sidewalk	New Development	2024 - 2028	\$59,125	\$0	\$59,125	0%	\$0	\$59,125	\$44,344	25%	\$14,781	
8	McLeod Road (Kalar Road - Garner Road) - South Side	Kalar Road - Garner Road		Sidewalk	New Improvement to Existing Road	2022 - 2022	\$104,000	\$0	\$104,000	40%	\$41,600	\$62,400	\$62,400	0%	\$0	
9	Mewburn Road (Scholfield Street - Mountain Road)	Scholfield Street - Mountain Road	520	Sidewalk	New Improvement to Existing Road	2022 - 2022	\$100,000	\$0	\$100,000	40%	\$40,000	\$60,000	\$60,000	0%	\$0	
10	Montrose Road (McLeod Road - Canadian Drive)	McLeod Road - Canadian Drive		Sidewalk	New Improvement to Existing Road	2022 - 2022	\$84,500	\$0	\$84,500	40%	\$33,800	\$50,700	\$50,700	0%	\$0	
11	Montrose Road (McLeod Road - Charnwood Avenue)	McLeod Road - Charnwood Avenue	950	Sidewalk	New Development	2022 - 2022	\$200,000	\$0	\$200,000	0%	\$0	\$200,000	\$200,000	0%	\$0	
12	Thundering Waters - Stanley Avenue Extension (Marineland Parkway - Drummond Road)	Marineland Parkway - Drummond Road		Sidewalk	New Improvement to Existing Road	2022 - 2022	\$250,000	\$0	\$250,000	40%	\$100,000	\$150,000	\$150,000	0%	\$0	
13	Warren Woods Avenue (Extension through Former Hydro Corridor)	East Limit – Garner Road	897	Sidewalk	Development Agreement	2022 - 2022	\$8,000	\$0	\$8,000	0%	\$0	\$8,000	\$8,000	0%	\$0	
14	Weinbrenner Road (Willoughby Drive – East Limit)	Willoughby Drive – East Limit	350	Sidewalk	Rehabilitation	2020 - 2022	\$52,000	\$0	\$52,000	40%	\$20,800	\$31,200	\$31,200	0%	\$0	
15	Windermere Road (Dorchester Road - Camrose Street)	Dorchester Road - Camrose Street	380	Sidewalk	New Improvement to Existing Road	2020 - 2022	\$63,000	\$0	\$63,000	0%	\$0	\$63,000	\$63,000	0%	\$0	
Subtotal Sidewalks - Outside Core Tourist Area							\$1,534,375	\$0	\$1,534,375			\$436,600	\$1,097,775	\$1,054,806		\$42,969

Sidewalks - Core Tourist Area																
1	Fallsview District - Miscellaneous Locations				New Improvement to Existing Road	2022 - 2022	\$100,000	\$0	\$100,000	50%	\$50,000	\$50,000	\$37,500	25%	\$12,500	
2	Murray Street (Stanley Avenue - Main Street)	Stanley Avenue - Main Street	125		New Improvement to Existing Road	2022 - 2022	\$12,500	\$0	\$12,500	50%	\$6,250	\$6,250	\$4,688	25%	\$1,563	
3	Stanley Avenue (Murray Street - Main Street)	Murray Street - Main Street			New Improvement to Existing Road	2022 - 2022	\$21,500	\$0	\$21,500	50%	\$10,750	\$10,750	\$8,063	25%	\$2,688	
4	Falls Avenue (Stanley Avenue - Victoria Avenue) (1,000m x2)	Stanley Avenue - Victoria Avenue	2000		New Improvement to Existing Road	2022 - 2022	\$200,000	\$0	\$200,000	50%	\$100,000	\$100,000	\$50,000	50%	\$50,000	
5	Fallsview Boulevard (Main Street - Dunn Street) - West Side Only	Main Street - Dunn Street	100	Sidewalk		2020 - 2022	\$100,000	\$0	\$100,000	50%	\$50,000	\$50,000	\$37,500	25%	\$12,500	
6	Portage Road (Fallsview Boulevard - Marineland Parkway)	Fallsview Boulevard - Marineland Parkway			New Improvement to Existing Road	2022 - 2022	\$150,000	\$0	\$150,000	50%	\$75,000	\$75,000	\$37,500	50%	\$37,500	
Subtotal Sidewalks - Core Tourist Area							\$584,000	\$0	\$584,000			\$292,000	\$292,000	\$175,250		\$116,750

Total Sidewalk Projects							\$2,118,375	\$0	\$2,118,375			\$728,600	\$1,389,775	\$1,230,056		\$159,719
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APPENDIX C.2
TABLE 2

CITY OF NIAGARA FALLS
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
SIDEWALKS
OUTSIDE CORE TOURIST AREA

10-Year Growth in Population in New Units (City-wide)	17,479	70.00
10-Year Employment Growth (OCTA)	2,501	
10-Year Growth in Square Metres (OCTA)	175,070	

	Growth-Related Capital Forecast					Residential Share %	Non-Residential Share % \$000	
	Total (Net of Grants/ Subsidies) (\$000)	Benefit to Existing Share (\$000)	Reserve Fund Adjustment (\$000)	Post Period Allocation (\$000)	Total Net Capital Costs After Discount (\$000)			
SIDEWALKS								
Subtotal Sidewalks - Outside Core Tourist Area	\$1,534.38	\$436.60	\$114.88	\$42.97	\$939.92	87.5%	\$822.27	12.5% \$117.66
TOTAL SIDEWALKS	\$1,534.38	\$436.60	\$114.88	\$42.97	\$939.92		\$822.27	\$117.66
Unadjusted Development Charge Per Capita (\$)							\$47.04	
Unadjusted Development Charge Per Sq. M. (\$)								\$0.67

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APPENDIX C.2
TABLE 3

CITY OF NIAGARA FALLS
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
SIDEWALKS
CORE TOURIST AREA

10-Year Employment Growth (CTA)	2,978
10-Year Growth in Square Metres (CTA)	208,460

	Growth-Related Capital Forecast						
	Total (Net of Grants/ Subsidies) (\$000)	Benefit to Existing Share (\$000)	Reserve Fund Adjustment (\$000)	Post Period Allocation (\$000)	Total Net Capital Costs After Discount (\$000)	Residential Share %	Non-Residential Share \$000
SIDEWALKS							
Subtotal Sidewalks - Core Tourist Area	\$584.00	\$292.00	\$46.16	\$116.75	\$129.09	0.0%	\$0.00 100.0% \$129.09
TOTAL SIDEWALKS	\$584.00	\$292.00	\$46.16	\$116.75	\$129.09		\$0.00 \$129.09
Unadjusted Development Charge Per Sq. M. (\$)							\$0.62

CITY OF NIAGARA FALLS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
SIDEWALKS
RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

SIDEWALKS	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	\$100.5	\$198.4	\$274.8	\$357.2	(\$366.7)	(\$297.8)	(\$247.3)	(\$191.3)	(\$129.5)	(\$67.8)	
2019 - 2028 RESIDENTIAL FUNDING REQUIREMENTS											
- Sidewalks: Non Inflated	\$0.0	\$27.5	\$27.5	\$755.1	\$0.0	\$22.6	\$22.6	\$22.6	\$22.6	\$22.6	\$922.8
- Sidewalks: Inflated	\$0.0	\$28.0	\$28.6	\$801.3	\$0.0	\$24.9	\$25.4	\$25.9	\$26.4	\$27.0	\$987.5
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,896	1,929	1,966	1,629	1,652	1,677	1,702	1,726	1,639	1,663	17,479
REVENUE											
- DC Receipts: Inflated	\$92.8	\$96.3	\$100.1	\$84.6	\$87.5	\$90.6	\$93.8	\$97.0	\$94.0	\$97.3	\$934.0
INTEREST											
- Interest on Opening Balance	\$3.5	\$6.9	\$9.6	\$12.5	(\$20.2)	(\$16.4)	(\$13.6)	(\$10.5)	(\$7.1)	(\$3.7)	(\$38.9)
- Interest on In-year Transactions	\$1.6	\$1.2	\$1.3	(\$19.7)	\$1.5	\$1.2	\$1.2	\$1.2	\$1.2	\$1.2	(\$8.1)
TOTAL REVENUE	\$97.9	\$104.4	\$111.0	\$77.4	\$68.9	\$75.4	\$81.4	\$87.7	\$88.1	\$94.8	\$887.0
CLOSING CASH BALANCE	\$198.4	\$274.8	\$357.2	(\$366.7)	(\$297.8)	(\$247.3)	(\$191.3)	(\$129.5)	(\$67.8)	\$0.0	

2019 Adjusted Charge Per Capita	\$48.94
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Allocation of Capital Program	
Residential Sector	87.5%
Non-Residential Sector	12.5%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

CITY OF NIAGARA FALLS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
SIDEWALKS - OUTSIDE CORE TOURIST AREA
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

SIDEWALKS - OCTA	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	\$14.4	\$26.8	\$35.9	\$45.7	(\$57.3)	(\$47.0)	(\$39.3)	(\$30.8)	(\$21.5)	(\$11.2)	
2019 - 2028 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Sidewalks - Octa: Non Inflated	\$0.0	\$3.9	\$3.9	\$108.0	\$0.0	\$3.2	\$3.2	\$3.2	\$3.2	\$3.2	\$132.0
- Sidewalks - Octa: Inflated	\$0.0	\$4.0	\$4.1	\$114.7	\$0.0	\$3.6	\$3.6	\$3.7	\$3.8	\$3.9	\$141.3
NON-RESIDENTIAL SPACE GROWTH											
- Growth in Square Metres	16,643	16,800	16,958	17,255	17,430	17,588	17,763	17,990	18,235	18,410	175,070
REVENUE											
- DC Receipts: Inflated	\$11.7	\$12.1	\$12.4	\$12.9	\$13.3	\$13.7	\$14.1	\$14.5	\$15.0	\$15.5	\$135.1
INTEREST											
- Interest on Opening Balance	\$0.5	\$0.9	\$1.3	\$1.6	(\$3.2)	(\$2.6)	(\$2.2)	(\$1.7)	(\$1.2)	(\$0.6)	(\$7.1)
- Interest on In-year Transactions	\$0.2	\$0.1	\$0.1	(\$2.8)	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	(\$1.1)
TOTAL REVENUE	\$12.4	\$13.1	\$13.8	\$11.7	\$10.4	\$11.3	\$12.1	\$13.0	\$14.0	\$15.1	\$126.9
CLOSING CASH BALANCE	\$26.8	\$35.9	\$45.7	(\$57.3)	(\$47.0)	(\$39.3)	(\$30.8)	(\$21.5)	(\$11.2)	\$0.0	

2019 Adjusted Charge Per Square Metre	\$0.70
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Allocation of Capital Program	
Residential Sector	87.5%
Non-Residential Sector	12.5%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

CITY OF NIAGARA FALLS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
SIDEWALKS - CORE TOURST AREA
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

SIDEWALKS - CTA	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	\$46.2	\$60.7	\$63.2	\$66.0	(\$81.1)	(\$70.8)	(\$59.3)	(\$46.6)	(\$32.5)	(\$17.1)	
2019 - 2028 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Sidewalks - Cta: Non Inflated	\$0.0	\$12.5	\$12.5	\$150.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$175.3
- Sidewalks - Cta: Inflated	\$0.0	\$12.8	\$13.0	\$159.4	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$185.2
NON-RESIDENTIAL SPACE GROWTH											
- Growth in Square Metres	19,408	19,670	19,933	20,195	20,580	20,913	21,298	21,700	22,155	22,610	208,460
REVENUE											
- DC Receipts: Inflated	\$12.7	\$13.1	\$13.6	\$14.0	\$14.6	\$15.1	\$15.7	\$16.3	\$17.0	\$17.7	\$149.8
INTEREST											
- Interest on Opening Balance	\$1.6	\$2.1	\$2.2	\$2.3	(\$4.5)	(\$3.9)	(\$3.3)	(\$2.6)	(\$1.8)	(\$0.9)	(\$8.6)
- Interest on In-year Transactions	\$0.2	\$0.0	\$0.0	(\$4.0)	\$0.3	\$0.3	\$0.3	\$0.3	\$0.3	\$0.3	(\$2.1)
TOTAL REVENUE	\$14.5	\$15.3	\$15.8	\$12.3	\$10.4	\$11.5	\$12.7	\$14.0	\$15.5	\$17.1	\$139.0
CLOSING CASH BALANCE	\$60.7	\$63.2	\$66.0	(\$81.1)	(\$70.8)	(\$59.3)	(\$46.6)	(\$32.5)	(\$17.1)	\$0.0	

2019 Adjusted Charge Per Square Metre	\$0.65
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Allocation of Capital Program	
Residential Sector	0.0%
Non-Residential Sector	100.0%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

Appendix C.3

Water

HEMSON

Appendix C.3

Water

Table 1 2019 – 2028 Development-Related Capital Program

Table 1 provides a summary of the development-related capital program for Water services. A list of projects that will benefit development outside the core tourist area (OCTA) and within the core tourist area (CTA) have been informed from the City's passed DC Background Studies and developed by City staff.

As shown in Table 1, the capital program for OCTA watermains totals \$9.61 million gross. The capital program includes watermains in new development areas and oversizing of watermains as well as studies.

No grants or subsidies have been identified to help offset the cost of the program. However, roughly 23 per cent of the program is deemed to be the benefit to existing (BTE) share. In total, \$2.17 million has been identified as the BTE share and this amount is not recoverable through DCs and must be funded through non-DC revenue sources.

Another share of the program is deemed to benefit development beyond the ten-year planning horizon. The post-2028 share amounts to \$1.44 million. This share, however, is deemed to be related to new development and can be recovered through DCs in subsequent by-law reviews.

The net growth-related share of the OCTA water program is reduced to \$5.99 million and this amount is brought forward to the DC calculation. Also included in the OCTA capital program is a water-related study that amount to \$200,000, of which, \$100,000 is deemed to be growth-related.

There are seven watermain projects anticipated to be required within the CTA in the ten-year planning horizon. The total cost of the watermains within the CTA amounts to \$4.11 million. Only \$1.09 million is considered to be development-related as \$1.94 million is considered to be the BTE share and \$1.09 million is deemed to be the post-period benefit share.

Tables 2&3 Calculation of the Unadjusted Development Charges

Tables 2 and 3 display the shares of the Water program that are to be recovered through development charges. Table 2 displays the OCTA development-related net capital cost for water is netted down by the portion of the program deemed to benefit existing development, and the shares of the program deemed to benefit development beyond the planning horizon of 2028. In addition, the current OCTA water reserves fund balance is in a positive position of \$1.61 million and these monies are utilized to fund OCTA watermain projects that first occur in the program. Therefore, about \$4.48 million is included in the development charges calculation.

Tables 2 also displays the DC recoverable costs apportioned to the residential and non-residential sectors; 88 per cent, or \$3.92 million to residential and 13 per cent, or \$561,350 to the non-residential, based on shares of anticipated shares of population and employment growth OCTA.

The residential sector's share of \$3.92 million in development-related net capital costs yields an "unadjusted" development charge of \$224.45 per capita. The non-residential sector's share of \$561,350 in development-related net capital costs results in an unadjusted charge of \$3.21 per square metre of GFA for the non-residential sector.

Table 3 displays the CTA development-related net capital cost for Water is reduced by the portion of the program deemed to benefit existing development, and the shares of the program deemed to benefit development beyond the planning horizon of 2028. In addition, the current CTA water reserves fund balance is in a positive position of \$209,500 and these monies are utilized to fund CTA watermain projects that first occur in the program. Therefore, about \$878,200 is included in the development charges calculation.

Tables 3 also display the DC recoverable costs are solely apportioned to the non-residential sectors as it is anticipated that there will be no residential growth occurring in the core tourist area. As such, the entire DC eligible cost of \$878,200 is recovered against non-residential growth in the CTA.

The non-residential sector's share of \$878,200 in development-related net capital costs results in an unadjusted charge of \$4.21 per square metre of GFA for the non-residential sector.

Table 4 Cash Flow Analysis

After cash flow and reserve fund analysis, the residential and non-residential calculated charges result in \$211.62 per capita and \$3.03 per square metre for the OCTA charge and \$3.98 for the CTA charge. This is a reflection of the timing of the capital program and development charges revenues.

The following table summarizes the calculation of the Water development charge:

WATER SUMMARY								
2019 - 2028		Development Charge			Adjusted Development Charge			
Development-Related Capital Program	Residential	OCTA	CTA	Residential	OCTA	CTA		
Total	Net DC Recoverable	\$/capita	\$/sq.m	\$/sq.m	\$/capita	\$/sq.m	\$/sq.m	\$/sq.m
\$13,916,625	\$7,182,043	\$224.45	\$3.21	\$4.21	\$211.62	\$3.03	\$3.98	

CITY OF NIAGARA FALLS
DEVELOPMENT-RELATED CAPITAL PROGRAM
WATER

NO.	Infrastructure Requirement	Limits	Approximate Length (m)	Infrastructure	Type of Improvement	Timing	Gross Cost	Grants and Subsidies	Net Municipal Cost	Ineligible Costs		Total DC Eligible Costs	DC Eligible		
										BTE %	BTE \$		2019-2028	Post 2028 (%)	Post 2028
Watermains - Outside Core Tourist Area															
1	Bigger Road (Montrose Road - Unopened Road Allowance (south side)) - Hospital	Montrose Road - Unopened Road Allowance (south side)	865	Watermain	New Development	2024 - 2028	\$1,167,750	\$0	\$1,167,750	0%	\$0	\$1,167,750	\$875,813	25%	\$291,938
2	Chippawa Parkway (Stanley Avenue - Bakator Park) - Loop	Stanley Avenue - Bakator Park	355	Watermain	New Development	2023 - 2023	\$150,000	\$0	\$150,000	50%	\$75,000	\$75,000	\$75,000	0%	\$0
3	Chippawa West Subdivision, Phase 2 Sodom Road W/M Oversizing	Weinbrenner Road - Mann Street	292	Watermain	Development Agreement	2023 - 2023	\$21,855	\$0	\$21,855	0%	\$0	\$21,855	\$21,855	0%	\$0
4	Cropp Street (Pettit Avenue-Dorchester Road)	Pettit Avenue-Dorchester Road	450	Watermain	New Development	2024 - 2028	\$607,500	\$0	\$607,500	0%	\$0	\$607,500	\$455,625	25%	\$151,875
5	Dorchester Road (Jill Drive - McLeod Road) Upsize 150mm dia. to 300mm dia.	Jill Drive - McLeod Road	380	Watermain	New Development	2023 - 2023	\$313,600	\$0	\$313,600	70%	\$219,520	\$94,080	\$94,080	0%	\$0
6	Gamer Road (Warren Woods Avenue - McLeod Road)	Warren Woods Avenue - McLeod Road	784	Watermain	New Development	2024 - 2028	\$160,750	\$0	\$160,750	0%	\$0	\$160,750	\$120,563	25%	\$40,188
7	Lyon's Parkway (Easement)	Lyon's Parkway East Limit - Ort Road	180	Watermain	New Development	2024 - 2028	\$243,000	\$0	\$243,000	0%	\$0	\$243,000	\$182,250	25%	\$60,750
8	Marineland Parkway (McLeod Road - Stanley Avenue Unopen Road Allowance). Loop	McLeod Road - Stanley Avenue Unopen Road Allowance	445	Watermain	New Development	2022 - 2022	\$381,200	\$0	\$381,200	50%	\$190,600	\$190,600	\$190,600	0%	\$0
9	Marineland Parkway (Stanley Avenue Unopen Road Allowance - Stanley Avenue South) Loop	Stanley Avenue Unopen Road Allowance - Stanley Avenue South	195	Watermain	New Development	2024 - 2028	\$263,250	\$0	\$263,250	0%	\$0	\$263,250	\$197,438	25%	\$65,813
10	Montrose Road (McLeod Road - Charmwood Avenue). Loop	McLeod Road - Charmwood Avenue	950	Watermain	New Development	2023 - 2023	\$710,100	\$0	\$710,100	50%	\$355,050	\$355,050	\$355,050	0%	\$0
11	Ort Road	North Limit - Willick Road	255	Watermain	New Development	2024 - 2028	\$344,250	\$0	\$344,250	0%	\$0	\$344,250	\$258,188	25%	\$86,063
12	Pettit Avenue (Cropp Street - North Limit)	Cropp Street - North Limit	215	Watermain	New Development	2024 - 2028	\$290,250	\$0	\$290,250	0%	\$0	\$290,250	\$217,688	25%	\$72,563
13	Portage Road (Norton Street - Macklem Street) Upsize 150mm dia. to 300mm dia.	Norton Street - Macklem Street	480	Watermain	New Development	2023 - 2023	\$730,400	\$0	\$730,400	70%	\$511,280	\$219,120	\$219,120	0%	\$0
14	Thorold Stone Road (Portage Road - CNR) Upsize 150mm dia. to 300mm dia.	Portage Road - CNR	555	Watermain	New Development	2023 - 2023	\$476,000	\$0	\$476,000	70%	\$333,200	\$142,800	\$142,800	0%	\$0
15	Thundering Waters Boulevard (Marineland Parkway - John Daly Way) - Loop (Only after Marineland Parkway Loop is Installed)	Marineland Parkway - John Daly Way	690	Watermain	New Development	2023 - 2023	\$964,500	\$0	\$964,500	50%	\$482,250	\$482,250	\$482,250	0%	\$0
16	Warren Woods Avenue (Extension through Former Hydro Corridor)	East Limit - Garner Road	897	Watermain	Development Agreement	2023 - 2023	\$81,000	\$0	\$81,000	0%	\$0	\$81,000	\$81,000	0%	\$0
17	Willick Road (Sodom Road - Ort Road)	Sodom Road - Ort Road	1000	Watermain	New Development	2024 - 2028	\$1,350,000	\$0	\$1,350,000	0%	\$0	\$1,350,000	\$1,012,500	25%	\$337,500
18	Willick Road (Sodom Road - Willoughby Drive)	Sodom Road - Willoughby Drive	1000	Watermain	New Development	2024 - 2028	\$1,350,000	\$0	\$1,350,000	0%	\$0	\$1,350,000	\$1,012,500	25%	\$337,500
Subtotal Watermains - Outside Core Tourist Area							\$9,605,405	\$0	\$9,605,405		\$2,166,900	\$7,438,505	\$5,994,318		\$1,444,188
City-wide Water Studies															
1	NF Water Distribution Master Plan				Study	2022 - 2022	\$200,000	\$0	\$200,000	50%	\$100,000	\$100,000	\$100,000	0%	\$0
Subtotal City-wide Water Studies							\$200,000	\$0	\$200,000		\$100,000	\$100,000	\$100,000		\$0
Watermains - Core Tourist Area															
1	Allendale Avenue (Ferry Street - Robinson Street) Upsize 150mm dia. to 300mm dia.	Ferry Street - Robinson Street	365	Watermain	Replacement with Enlargement	2024 - 2028	\$585,900	\$0	\$585,900	70%	\$410,130	\$175,770	\$87,885	50%	\$87,885
2	Clark Avenue (Ferry Street - Robinson Street) Upsize 150mm dia. to 300mm dia.	Ferry Street - Robinson Street	350	Watermain	Replacement with Enlargement	2024 - 2028	\$464,500	\$0	\$464,500	70%	\$325,150	\$139,350	\$69,675	50%	\$69,675
3	Fallsview Boulevard (Murray Street - Spring Street)	Murray Street - Spring Street	665	Watermain	Development	2024 - 2028	\$1,067,520	\$0	\$1,067,520	25%	\$266,880	\$800,640	\$400,320	50%	\$400,320
4	Robinson Street (Stanley Avenue to East Limit)	Stanley Avenue - East Limit	438	Watermain	Development	2024 - 2028	\$567,000	\$0	\$567,000	25%	\$164,250	\$402,750	\$246,375	50%	\$246,375
5	Main Street (Robinson Street - Stanley Avenue) Upsize 150mm dia. to 300mm dia.	Robinson Street - Stanley Avenue	780	Watermain	Replacement with Enlargement	2024 - 2028	\$609,300	\$0	\$609,300	70%	\$426,510	\$182,700	\$91,395	50%	\$91,395
6	Robinson Street (Stanley Avenue - East Limit) Upsize 150mm dia. to 300mm dia.	Stanley Avenue - East Limit	438	Watermain	Development	2024 - 2028	\$369,000	\$0	\$369,000	25%	\$92,250	\$276,750	\$138,375	50%	\$138,375
7	Stanley Avenue (North Street - Ferry Street) Upsize 150mm dia. to 300mm dia.	North Street - Ferry Street	413	Watermain	Replacement with Enlargement	2023 - 2023	\$358,000	\$0	\$358,000	70%	\$250,600	\$107,400	\$53,700	50%	\$53,700
Subtotal Watermains - Core Tourist Area							\$4,111,220	\$0	\$4,111,220		\$1,935,770	\$2,175,450	\$1,087,725		\$1,087,725
Total Watermain Projects							\$13,916,625	\$0	\$13,916,625		\$4,202,670	\$9,713,955	\$7,182,043		\$2,531,913

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TABLE 2

CITY OF NIAGARA FALLS
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
WATER
OUTSIDE CORE TOURIST AREA

10-Year Growth in Population in New Units (City-wide)	17,479
10-Year Employment Growth (OCTA)	2,501
10-Year Growth in Square Metres (OCTA)	175,070

	Growth-Related Capital Forecast								
	Total (Net of Grants/ Subsidies) (\$000)	Benefit to Existing Share (\$000)	Reserve Fund Adjustment (\$000)	Post Period Allocation (\$000)	Total Net Capital Costs After Discount (\$000)	Residential Share		Non-Residential Share	
						%	\$000	%	\$000
WATER									
Subtotal Watermains - Outside Core Tourist Area	\$9,605.41	\$2,166.90	\$1,609.83	\$1,444.19	\$4,384.49	87.5%	\$3,835.66	12.5%	\$548.83
Subtotal City-wide Water Studies	\$200.00	\$100.00	\$0.00	\$0.00	\$100.00	87.5%	\$87.48	12.5%	\$12.52
TOTAL WATER	\$9,805.41	\$2,266.90	\$1,609.83	\$1,444.19	\$4,484.49		\$3,923.14		\$561.35
Unadjusted Development Charge Per Capita (\$)							\$224.45		
Unadjusted Development Charge Per Sq. M. (\$)									\$3.21

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TABLE 3

CITY OF NIAGARA FALLS
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
WATER
CORE TOURIST AREA

10-Year Employment Growth	2,978
10-Year Growth in Square Metres	208,460

	Growth-Related Capital Forecast								
	Total (Net of Grants/ Subsidies) (\$000)	Benefit to Existing Share (\$000)	Reserve Fund Adjustment (\$000)	Post Period Allocation (\$000)	Total Net Capital Costs After Discount (\$000)	Residential Share	Non-Residential Share		
	%	\$000	%	\$000					
WATER									
Subtotal Watermains - Core Tourist Area	\$4,111.22	\$1,935.77	\$209.54	\$1,087.73	\$878.18	0.0%	\$0.00	100.0%	\$878.18
TOTAL WATER	\$4,111.22	\$1,935.77	\$209.54	\$1,087.73	\$878.18		\$0.00		\$878.18
Unadjusted Development Charge Per Sq. M. (\$)									\$4.21

CITY OF NIAGARA FALLS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
WATER
RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

WATER	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	\$1,408.3	\$1,865.8	\$2,354.7	\$2,877.6	\$3,076.0	\$2,141.1	\$1,758.6	\$1,359.8	\$943.7	\$481.8	
2019 - 2028 RESIDENTIAL FUNDING REQUIREMENTS											
- Water: Non Inflated	\$0.0	\$0.0	\$0.0	\$254.2	\$1,287.0	\$758.0	\$758.0	\$758.0	\$758.0	\$758.0	\$5,331.5
- Water: Inflated	\$0.0	\$0.0	\$0.0	\$269.8	\$1,393.1	\$836.9	\$853.7	\$870.8	\$888.2	\$905.9	\$6,018.4
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,896	1,929	1,966	1,629	1,652	1,677	1,702	1,726	1,639	1,663	17,479
REVENUE											
- DC Receipts: Inflated	\$401.2	\$416.3	\$432.9	\$365.8	\$378.4	\$391.8	\$405.6	\$419.5	\$406.5	\$420.6	\$4,038.6
INTEREST											
- Interest on Opening Balance	\$49.3	\$65.3	\$82.4	\$100.7	\$107.7	\$74.9	\$61.6	\$47.6	\$33.0	\$16.9	\$639.4
- Interest on In-year Transactions	\$7.0	\$7.3	\$7.6	\$1.7	(\$27.9)	(\$12.2)	(\$12.3)	(\$12.4)	(\$13.2)	(\$13.3)	(\$67.9)
TOTAL REVENUE	\$457.5	\$488.9	\$522.8	\$468.2	\$458.2	\$454.5	\$454.8	\$454.7	\$426.2	\$424.1	\$4,610.1
CLOSING CASH BALANCE	\$1,865.8	\$2,354.7	\$2,877.6	\$3,076.0	\$2,141.1	\$1,758.6	\$1,359.8	\$943.7	\$481.8	\$0.0	

2019 Adjusted Charge Per Capita	\$211.62
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Allocation of Capital Program	
Residential Sector	87.5%
Non-Residential Sector	12.5%
Rates for 2019	
Inflation Rate:	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

CITY OF NIAGARA FALLS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
WATER - OUTSIDE CORE TOURIST AREA
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

WATER - OCTA	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	\$201.51	\$259.92	\$321.89	\$387.59	\$418.38	\$287.00	\$234.50	\$179.53	\$122.18	\$62.45	
2019 - 2028 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Water - Octa: Non Inflated	\$0.0	\$0.0	\$0.0	\$36.4	\$184.2	\$108.5	\$108.5	\$108.5	\$108.5	\$108.5	\$762.9
- Water - Octa: Inflated	\$0.0	\$0.0	\$0.0	\$38.6	\$199.3	\$119.8	\$122.2	\$124.6	\$127.1	\$129.6	\$861.1
NON-RESIDENTIAL SPACE GROWTH											
- Growth in Square Metres	16,643	16,800	16,958	17,255	17,430	17,588	17,763	17,990	18,235	18,410	175,070
REVENUE											
- DC Receipts: Inflated	\$50.5	\$52.0	\$53.5	\$55.5	\$57.2	\$58.9	\$60.7	\$62.7	\$64.8	\$66.7	\$582.4
INTEREST											
- Interest on Opening Balance	\$7.1	\$9.1	\$11.3	\$13.6	\$14.6	\$10.0	\$8.2	\$6.3	\$4.3	\$2.2	\$86.6
- Interest on In-year Transactions	\$0.9	\$0.9	\$0.9	\$0.3	(\$3.9)	(\$1.7)	(\$1.7)	(\$1.7)	(\$1.7)	(\$1.7)	(\$9.4)
TOTAL REVENUE											
CLOSING CASH BALANCE	\$259.9	\$321.9	\$387.6	\$418.4	\$287.0	\$234.5	\$179.5	\$122.2	\$62.5	(\$0.0)	

2019 Adjusted Charge Per Square Metre \$3.03

Allocation of Capital Program	
Residential Sector	87.5%
Non-Residential Sector	12.5%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

CITY OF NIAGARA FALLS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
WATER - CORE TOURIST AREA
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

WATER - CTA	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	\$209.54	\$295.53	\$387.19	\$484.79	\$588.61	\$640.35	\$522.65	\$399.81	\$271.73	\$138.51	
2019 - 2028 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Water - Cta: Non Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$53.7	\$206.8	\$206.8	\$206.8	\$206.8	\$206.8	\$1,087.7
- Water - Cta: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$58.1	\$228.3	\$232.9	\$237.6	\$242.3	\$247.2	\$1,246.4
NON-RESIDENTIAL SPACE GROWTH											
- Growth in Square Metres	19,408	19,670	19,933	20,195	20,580	20,913	21,298	21,700	22,155	22,610	208,460
REVENUE											
- DC Receipts: Inflated	\$77.3	\$79.9	\$82.6	\$85.4	\$88.7	\$92.0	\$95.5	\$99.3	\$103.4	\$107.6	\$911.7
INTEREST											
- Interest on Opening Balance	\$7.3	\$10.3	\$13.6	\$17.0	\$20.6	\$22.4	\$18.3	\$14.0	\$9.5	\$4.8	\$137.9
- Interest on In-year Transactions	\$1.4	\$1.4	\$1.4	\$1.5	\$0.5	(\$3.7)	(\$3.8)	(\$3.8)	(\$3.8)	(\$3.8)	(\$12.8)
TOTAL REVENUE	\$86.0	\$91.7	\$97.6	\$103.8	\$109.9	\$110.6	\$110.0	\$109.5	\$109.1	\$108.6	\$1,036.8
CLOSING CASH BALANCE	\$295.5	\$387.2	\$484.8	\$588.6	\$640.4	\$522.7	\$399.8	\$271.7	\$138.5	\$0.0	

2019 Adjusted Charge Per Square Metre **\$3.98**

Allocation of Capital Program	
Residential Sector	0.0%
Non-Residential Sector	100.0%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

Appendix C.4

Sanitary Sewer

HEMSON

Appendix C.4

Sanitary Sewer

Table 1 2019 – 2028 Development-Related Capital Program

Table 1 provides a summary of the development-related capital program for sanitary sewers. A list of projects that will benefit development outside the core tourist area (OCTA) and within the core tourist area (CTA) has been developed by City staff.

As shown in Table 1, the capital program for OCTA Sanitary Sewers totals \$19.44 million gross. The largest recovery in the Sanitary Sewer capital program is for the debt related to the Grassy Brook / Garner Southwest pumping station. Ten years worth of debt payments have been included for recovery through this by-law review at a total amount of \$9.23 million. The new projects in the capital program include sanitary sewers in new development areas and oversizing of sanitary sewers.

No grants or subsidies have been identified to help offset the cost of the program. However, roughly two per cent of the program is deemed to be the benefit to existing (BTE) share. In total, \$397,600 has been identified as the BTE share and this amount is not recoverable through DCs and must be funded through non-DC revenue sources.

A share of the program is deemed to benefit development beyond the ten-year planning horizon. The post-2028 share amounts to \$1,300. This share, however, is deemed to be related to new development and can be recovered through DCs in subsequent by-law reviews.

The development-related share of the OCTA Sanitary Sewer program is reduced to \$19.05 million and this amount is brought forward to the DC calculation. Also included in the OCTA capital program are three sanitary sewer-related studies that amount to \$2.40 million, of which, \$1.40 million is deemed to be growth-related.

There are three sanitary sewer projects anticipated to be required within the core tourist area in the ten-year planning horizon. The total cost of the sanitary sewer within the CTA amounts to \$1.59 million. Only \$146,900 is considered to be development-related as \$1.30 million is considered to be the BTE share and \$146,900 is deemed to be the post-period benefit share.

Tables 2&3 Calculation of the Unadjusted Development Charges

Tables 2 and 3 display the shares of the Sanitary Sewer program that are to be recovered through development charges. Table 2 displays the OCTA development-related net capital cost for Sanitary Sewer is reduced by the portion of the program deemed to benefit existing development, and the shares of the program deemed to benefit development beyond the planning horizon of 2028. In addition, the current OCTA Sanitary Sewer reserve fund balance is in a positive position of \$4.82 million and these monies are utilized to fund OCTA sanitary sewer projects that first occur in the program. Therefore, about \$15.63 million is included in the development charges calculation.

Tables 2 also displays the DC recoverable costs apportioned to the residential and non-residential sectors; 88 per cent, or \$13.67 million to residential and 13 per cent, or \$1.96 million to the non-residential, based on shares of anticipated shares of population and employment growth outside the core tourist area.

The residential sector's share of \$13.67 million in development-related net capital costs yields an "unadjusted" development charge of \$782.21 per capita. The non-residential sector's share of \$1.96 million in development-related net capital costs results in an unadjusted charge of \$11.17 per square metre of GFA for the non-residential sector.

Table 3 displays the CTA development-related net capital cost for Sanitary Sewer is reduced by the portion of the program deemed to benefit existing development, and the shares of the program deemed to benefit development beyond the planning horizon of 2028. In addition, the current CTA Sanitary Sewer reserve fund balance is in a positive position of \$44,200 and these monies are utilized to fund CTA Sanitary Sewer projects that first occur in the program. Therefore, approximately \$102,700 is included in the development charges calculation.

Tables 3 also display the DC recoverable costs are solely apportioned to the non-residential sectors as it is anticipated that there will be no residential growth occurring in the core tourist area. As such, the entire DC eligible cost of \$102,700 is recovered against non-residential growth in the CTA.

The non-residential sector's share of \$102,700 in development-related net capital costs results in an unadjusted charge of \$0.49 per square metre of GFA for the non-residential sector.

Table 4 Cash Flow Analysis

After cash flow and reserve fund analysis, the residential and non-residential calculated charges result in \$736.16 per capita and \$10.55 per square metre for the OCTA charge and \$0.46 for the CTA charge. This is a reflection of the timing of the capital program and development charges revenues.

The following table summarizes the calculation of the Sanitary Sewer development charge:

SANITARY SEWER SUMMARY								
2019 - 2028		Unadjusted Development Charge			Adjusted Development Charge			
Development-Related Capital Program	Residential	OCTA	CTA	Residential	OCTA	CTA		
Total	Net DC Recoverable	\$/capita	\$/sq.m	\$/sq.m	\$/capita	\$/sq.m	\$/sq.m	
\$23,432,925	\$20,592,059	\$782.21	\$11.17	\$0.49	\$736.16	\$10.55	\$0.46	

CITY OF NIAGARA FALLS
DEVELOPMENT-RELATED CAPITAL PROGRAM
SANITARY SEWER

NO.	Infrastructure Requirement	Limits	Approximate Length (m)	Infrastructure	Type of Improvement	Timing	Gross Cost	Grants and Subsidies	Net Municipal Cost	Ineligible Costs		Total DC Eligible Costs	DC Eligible			
										BTE %	BTE \$		2019-2028	Post 2028 (%)	Post 2028	
Sanitary Sewers - Outside Core Tourist Area																
1	Biggar Road (Montrose Road - Unopened Road Allowance (south side)) - Hospital	Montrose Road - Unopened Road Allowance (south side)	865	Sanitary Sewer	New Development	2024 - 2028	\$1,297,500	\$0	\$1,297,500	0%	\$0	\$1,297,500	\$1,297,500	0%	\$0	
2	Cropp Street (Petit Avenue-Dorchester Road)	Petit Avenue-Dorchester Road	450	Sanitary Sewer	New Development	2024 - 2028	\$675,000	\$0	\$675,000	0%	\$0	\$675,000	\$675,000	0%	\$0	
3	Garner Road (Black Forest Crescent - Hydro Corridor)	Black Forest Crescent - Hydro Corridor	200	Sanitary Sewer	New Development	2024 - 2028	\$238,200	\$0	\$238,200	0%	\$0	\$238,200	\$238,200	0%	\$0	
4	Garner Road (Warren Woods Avenue - McLeod Road)	Warren Woods Avenue - McLeod Road	784	Sanitary Sewer	New Development	2024 - 2028	\$850,065	\$0	\$850,065	0%	\$0	\$850,065	\$850,065	0%	\$0	
5	Garner Road (Lundy's Lane - #6412 Garner Road)	Lundy's Lane - #6412 Garner Road	660	Sanitary Sewer	New Development	2024 - 2028	\$990,000	\$0	\$990,000	0%	\$0	\$990,000	\$990,000	0%	\$0	
6	Grassy Brook / Garner Southwest Pumping Station		N/A	SPS	Debt	2019 - 2028	\$9,230,960	\$0	\$9,230,960	0%	\$0	\$9,230,960	\$9,230,960	0%	\$0	
7	Lyon's Parkway (Easement)	Lyon's Parkway East Limit - Ort Road	180	Sanitary Sewer	New Development	2024 - 2028	\$270,000	\$0	\$270,000	0%	\$0	\$270,000	\$270,000	0%	\$0	
8	MarineLand Parkway (Allanthus Avenue - Thundering Waters Boulevard)	Allanthus Avenue - Thundering Waters Boulevard	400	Sanitary Sewer	New Development	2024 - 2028	\$303,000	\$0	\$303,000	0%	\$0	\$303,000	\$303,000	0%	\$0	
9	Montrose Road (McLeod Road - Charnwood Avenue)	McLeod Road - Charnwood Avenue	950	Sanitary Sewer	New Development	2024 - 2028	\$1,425,000	\$0	\$1,425,000	0%	\$0	\$1,425,000	\$1,425,000	0%	\$0	
10	Ort Road	North Limit - Willick Road	255	Sanitary Sewer	New Development	2024 - 2028	\$382,500	\$0	\$382,500	0%	\$0	\$382,500	\$382,500	0%	\$0	
11	Portage Road (Norton Street - Macklem Street)	Norton Street - Macklem Street	480	Sanitary Sewer	Rehabilitation	2024 - 2028	\$568,000	\$0	\$568,000	70%	\$397,600	\$170,400	\$170,400	0%	\$0	
12	Warren Woods Avenue (Extension through Former Hydro Corridor)	East Limit - Garner Road	897	Sanitary Sewer	Development Agreement	2024 - 2028	\$25,200	\$0	\$25,200	0%	\$0	\$25,200	\$23,940	5%	\$1,260	
13	Weinbrenner Road (Willoughby Drive - East Limit)	Willoughby Drive - East Limit	350	Sanitary Sewer	New Development	2024 - 2028	\$188,590	\$0	\$188,590	0%	\$0	\$188,590	\$188,590	0%	\$0	
13	Willick Road (Sodom Road - Ort Road)	Sodom Road - Ort Road	1000	Sanitary Sewer	New Development	2024 - 2028	\$1,500,000	\$0	\$1,500,000	0%	\$0	\$1,500,000	\$1,500,000	0%	\$0	
14	Willick Road (Sodom Road - Willoughby Drive)	Sodom Road - Willoughby Drive	1000	Sanitary Sewer	New Development	2024 - 2028	\$1,500,000	\$0	\$1,500,000	0%	\$0	\$1,500,000	\$1,500,000	0%	\$0	
Subtotal Sanitary Sewers - Outside Core Tourist Area							\$19,444,015	\$0	\$19,444,015			\$397,600	\$19,046,415	\$19,045,155		\$1,260

City-wide Sanitary Sewer Studies															
1	City-Wide Master Sanitary Sewer Servicing Plan				Study	2019 - 2028	\$200,000	\$0	\$200,000	0%	\$0	\$200,000	\$200,000	0%	\$0
2	South End Sanitary Servicing Study (Related to New WWTP)				Study	2019 - 2028	\$200,000	\$0	\$200,000	0%	\$0	\$200,000	\$200,000	0%	\$0
3	South End Sanitary Servicing Works (Related to New WWTP) - Provision				Provision for Works	2022 - 2024	\$2,000,000	\$0	\$2,000,000	0%	\$0	\$2,000,000	\$1,000,000	50%	\$1,000,000
Subtotal City-wide Sanitary Sewer Studies							\$2,400,000	\$0	\$2,400,000			\$2,400,000	\$1,400,000		\$1,000,000

Sanitary Sewers - Core Tourist Area																
1	Allendale Avenue (Ferry Street - Robinson Street)	Ferry Street - Robinson Street	365	Sanitary Replacement	Sewer Separation	2024 - 2028	\$609,550	\$0	\$609,550	100%	\$609,550	\$0	\$0	0%	\$0	
2	Clark Avenue (Ferry Street - Robinson Street) Upsize 250mm dia. to 300mm dia.	Ferry Street - Robinson Street	350	Sanitary Replacement	Replacement with Enlargement	2022 - 2022	\$247,900	\$0	\$247,900	70%	\$173,530	\$74,370	\$37,185	50%	\$37,185	
3	Robinson Street (Stanley Avenue to East Limit)	Stanley Avenue - East Limit	438	Sanitary Replacement	Development	2024 - 2028	\$731,460	\$0	\$731,460	70%	\$512,022	\$219,438	\$109,719	50%	\$109,719	
Subtotal Sanitary Sewers - Core Tourist Area							\$1,588,910	\$0	\$1,588,910			\$1,295,102	\$293,808	\$146,904		\$146,904

Total Sanitary Sewer Projects																
							\$23,432,925	\$0	\$23,432,925			\$1,692,702	\$21,740,223	\$20,592,059		\$1,148,164

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TABLE 2

CITY OF NIAGARA FALLS
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
SANITARY SEWER
OUTSIDE CORE TOURIST AREA

10-Year Growth in Population in New Units (City-wide)	17,479
10-Year Employment Growth (OCTA)	2,501
10-Year Growth in Square Metres (OCTA)	175,070

	Growth-Related Capital Forecast								
	Total (Net of Grants/ Subsidies) (\$000)	Benefit to Existing Share (\$000)	Reserve Fund Adjustment (\$000)	Post Period Allocation (\$000)	Total Net Capital Costs After Discount (\$000)	Residential Share		Non-Residential Share	
						%	\$000	%	\$000
SANITARY SEWER									
Subtotal Sanitary Sewers - Outside Core Tourist Area	\$19,444.02	\$397.60	\$4,816.61	\$1.26	\$14,228.54	87.5%	\$12,447.47	12.5%	\$1,781.07
Subtotal City-wide Sanitary Sewer Studies	\$2,400.00	\$0.00	\$0.00	\$1,000.00	\$1,400.00	87.5%	\$1,224.75	12.5%	\$175.25
TOTAL SANITARY SEWER	\$21,844.02	\$397.60	\$4,816.61	\$1,001.26	\$15,628.54		\$13,672.23		\$1,956.31
Unadjusted Development Charge Per Capita (\$)							\$782.21		
Unadjusted Development Charge Per Sq. M. (\$)									\$11.17

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TABLE 3

CITY OF NIAGARA FALLS
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
SANITARY SEWER
CORE TOURIST AREA

10-Year Employment Growth	2,978		
10-Year Growth in Square Metres	208,460	70.00	

	Growth-Related Capital Forecast								
	Total (Net of Grants/ Subsidies) (\$000)	Benefit to Existing Share (\$000)	Reserve Fund Adjustment (\$000)	Post Period Allocation (\$000)	Total Net Capital Costs After Discount (\$000)	Residential Share %	\$000	Non-Residential Share %	\$000
	SANITARY SEWER								
Subtotal Sanitary Sewers - Core Tourist Area	\$1,588.91	\$1,295.10	\$44.21	\$146.90	\$102.69	0.0%	\$0.00	100.0%	\$102.69
TOTAL SANITARY SEWER	\$1,588.91	\$1,295.10	\$44.21	\$146.90	\$102.69		\$0.00		\$102.69
Unadjusted Development Charge Per Sq. M. (\$)									\$0.49

CITY OF NIAGARA FALLS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
SANITARY SEWER
RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

SANITARY SEWER	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	\$4,213.7	\$4,941.6	\$5,732.0	\$6,591.4	\$6,911.1	\$7,262.7	\$5,702.7	\$4,410.4	\$3,063.8	\$1,563.5	
2019 - 2028 RESIDENTIAL FUNDING REQUIREMENTS											
- Sanitary Sewer: Non Inflated	\$825.0	\$825.0	\$825.0	\$1,116.7	\$1,116.7	\$2,833.8	\$2,542.2	\$2,542.2	\$2,542.2	\$2,542.2	\$17,711.0
- Sanitary Sewer: Inflated	\$825.0	\$841.5	\$858.4	\$1,185.0	\$1,208.7	\$3,128.7	\$2,862.9	\$2,920.2	\$2,978.6	\$3,038.1	\$19,847.2
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,896	1,929	1,966	1,629	1,652	1,677	1,702	1,726	1,639	1,663	17,479
REVENUE											
- DC Receipts: Inflated	\$1,395.5	\$1,448.4	\$1,505.8	\$1,272.5	\$1,316.5	\$1,363.1	\$1,411.0	\$1,459.4	\$1,414.0	\$1,463.3	\$14,049.4
INTEREST											
- Interest on Opening Balance	\$147.5	\$173.0	\$200.6	\$230.7	\$241.9	\$254.2	\$199.6	\$154.4	\$107.2	\$54.7	\$1,763.8
- Interest on In-year Transactions	\$10.0	\$10.6	\$11.3	\$1.5	\$1.9	(\$48.6)	(\$39.9)	(\$40.2)	(\$43.0)	(\$43.3)	(\$179.6)
TOTAL REVENUE	\$1,553.0	\$1,631.9	\$1,717.8	\$1,504.7	\$1,560.3	\$1,568.7	\$1,570.7	\$1,573.6	\$1,478.2	\$1,474.7	\$15,633.5
CLOSING CASH BALANCE	\$4,941.6	\$5,732.0	\$6,591.4	\$6,911.1	\$7,262.7	\$5,702.7	\$4,410.4	\$3,063.8	\$1,563.5	\$0.0	

2019 Adjusted Charge Per Capita	\$736.16
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Allocation of Capital Program	
Residential Sector	87.5%
Non-Residential Sector	12.5%
Rates for 2019	
Inflation Rate:	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

CITY OF NIAGARA FALLS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
SANITARY SEWER - OUTSIDE CORE TOURIST AREA
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

SANITARY SEWER - OCTA	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	\$602.92	\$682.56	\$767.88	\$859.17	\$913.28	\$971.80	\$756.32	\$578.72	\$393.66	\$201.13	
2019 - 2028 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Sanitary Sewer - Octa: Non Inflated	\$118.1	\$118.1	\$118.1	\$159.8	\$159.8	\$405.5	\$363.8	\$363.8	\$363.8	\$363.8	\$2,534.2
- Sanitary Sewer - Octa: Inflated	\$118.1	\$120.4	\$122.8	\$169.6	\$172.9	\$447.7	\$409.6	\$417.8	\$426.2	\$434.7	\$2,839.9
NON-RESIDENTIAL SPACE GROWTH											
- Growth in Square Metres	16,643	16,800	16,958	17,255	17,430	17,588	17,763	17,990	18,235	18,410	175,070
REVENUE											
- DC Receipts: Inflated	\$175.6	\$180.8	\$186.1	\$193.2	\$199.0	\$204.9	\$211.0	\$218.0	\$225.4	\$232.1	\$2,026.2
INTEREST											
- Interest on Opening Balance	\$21.1	\$23.9	\$26.9	\$30.1	\$32.0	\$34.0	\$26.5	\$20.3	\$13.8	\$7.0	\$235.5
- Interest on In-year Transactions	\$1.0	\$1.1	\$1.1	\$0.4	\$0.5	(\$6.7)	(\$5.5)	(\$5.5)	(\$5.5)	(\$5.6)	(\$24.7)
TOTAL REVENUE	\$197.7	\$205.7	\$214.1	\$223.7	\$231.5	\$232.2	\$232.0	\$232.8	\$233.7	\$233.6	\$2,236.9
CLOSING CASH BALANCE	\$682.6	\$767.9	\$859.2	\$913.3	\$971.8	\$756.3	\$578.7	\$393.7	\$201.1	\$0.0	

2019 Adjusted Charge Per Square Metre	\$10.55
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Allocation of Capital Program	
Residential Sector	87.5%
Non-Residential Sector	12.5%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

CITY OF NIAGARA FALLS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
SANITARY SEWER - CORE TOURIST AREA
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

SANITARY SEWER - CTA	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	\$44.21	\$54.93	\$66.32	\$78.44	\$50.86	\$63.15	\$51.48	\$39.33	\$26.69	\$13.59	
2019 - 2028 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Sanitary Sewer - Cta: Non Inflated	\$0.0	\$0.0	\$0.0	\$37.2	\$0.0	\$21.9	\$21.9	\$21.9	\$21.9	\$21.9	\$146.9
- Sanitary Sewer - Cta: Inflated	\$0.0	\$0.0	\$0.0	\$39.5	\$0.0	\$24.2	\$24.7	\$25.2	\$25.7	\$26.2	\$165.5
NON-RESIDENTIAL SPACE GROWTH											
- Growth in Square Metres	19,408	19,670	19,933	20,195	20,580	20,913	21,298	21,700	22,155	22,610	208,460
REVENUE											
- DC Receipts: Inflated	\$9.0	\$9.3	\$9.6	\$9.9	\$10.3	\$10.7	\$11.1	\$11.6	\$12.0	\$12.5	\$106.2
INTEREST											
- Interest on Opening Balance	\$1.5	\$1.9	\$2.3	\$2.7	\$1.8	\$2.2	\$1.8	\$1.4	\$0.9	\$0.5	\$17.1
- Interest on In-year Transactions	\$0.2	\$0.2	\$0.2	(\$0.8)	\$0.2	(\$0.4)	(\$0.4)	(\$0.4)	(\$0.4)	(\$0.4)	(\$2.0)
TOTAL REVENUE	\$10.7	\$11.4	\$12.1	\$11.9	\$12.3	\$12.6	\$12.6	\$12.6	\$12.6	\$12.6	\$121.3
CLOSING CASH BALANCE	\$54.9	\$66.3	\$78.4	\$50.9	\$63.2	\$51.5	\$39.3	\$26.7	\$13.6	(\$0.0)	

2019 Adjusted Charge Per Square Metre	\$0.46
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Allocation of Capital Program	
Residential Sector	0.0%
Non-Residential Sector	100.0%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

Appendix C.5

Storm Water Management

HEMSON

Appendix C.5

Storm Water Management

Table 1 2019 – 2028 Development-Related Capital Program

Table 1 provides a summary of the development-related capital program for Storm Water Management. A list of projects that will benefit development outside the core tourist area (OCTA) and within the core tourist area (CTA) has been developed based on previous DC Background Studies and by City staff.

As shown in Table 1, the capital program for OCTA Storm Water Management totals \$23.66 million gross. The capital program includes new improvements to existing roads, new storm sewers in new development areas, an EA study and sewer separations.

No grants or subsidies have been identified to help offset the cost of the program. However, roughly eight per cent of the program is deemed to be the benefit to existing (BTE) share. In total, \$1.97 million has been identified as the BTE share and this amount is not recoverable through DCs and must be funded through non-DC revenue sources.

Another share of the program is deemed to benefit development beyond the ten-year planning horizon. The post-2028 share amounts to \$4.35 million. This share, however, is deemed to be related to new development and can be recovered through DCs in subsequent by-law reviews.

The net growth-related share of the OCTA Storm Water Management program is reduced to \$17.34 million and this amount is brought forward to the DC calculation. Also included in the OCTA capital program are two Storm Water Management related studies that amount to \$550,000, of which, \$450,000 is deemed to be growth-related.

There are three Storm Water Management projects anticipated to be required within the CTA in the ten-year planning horizon. The total cost of Storm Water Management within the CTA amounts to \$1.51 million. Only \$421,300 is considered to be development-related as the remaining \$1.09 million is considered to be the BTE share.

Tables 2&3 Calculation of the Unadjusted Development Charges

Tables 2 and 3 display the shares of the Storm Water Management program that are to be recovered through development charges. Table 2 displays the OCTA development-related net capital cost for storm water management is netted down by the portion of the program deemed to benefit existing development, and the shares of the program deemed to benefit development beyond the planning horizon of 2028. In addition, the current OCTA Storm Water Management reserves fund balance is in a positive position of \$4.45 million and these monies are utilized to fund OCTA Storm Water Management projects that first occur in the program. Therefore, about \$13.34 million is included in the development charges calculation.

Tables 2 also displays the DC recoverable costs apportioned to the residential and non-residential sectors; 88 per cent, or \$11.67 million to residential and 13 per cent, or \$1.67 million to the non-residential, based on shares of anticipated shares of population and employment growth outside the core tourist area.

The residential sector's share of \$11.67 million in development-related net capital costs yields an "unadjusted" development charge of \$667.69 per capita. The non-residential sector's share of \$1.67 million in development-related net capital costs results in an unadjusted charge of \$9.54 per square metre of GFA for the non-residential sector.

Table 3 displays the CTA development-related net capital cost for Storm Water Management is reduced by the portion of the program deemed to benefit existing development, and the shares of the program deemed to benefit development beyond the planning horizon of 2028. In addition, the current CTA Storm Water Management reserves fund balance is in a positive position of \$100,600 and these monies are utilized to fund CTA Storm Water Management projects that first occur in the program. Therefore, approximately \$320,700 is included in the development charges calculation.

Tables 3 also display the DC recoverable costs are solely apportioned to the non-residential sectors as it is anticipated that there will be no residential growth occurring in the core tourist area. As such, the entire DC eligible cost of \$320,700 is recovered against non-residential growth in the CTA.

The non-residential sector's share of \$320,700 in development-related net capital costs results in an unadjusted charge of \$1.54 per square metre of GFA for the non-residential sector.

Table 4 Cash Flow Analysis

After cash flow and reserve fund analysis, the residential and non-residential calculated charges result in \$630.00 per capita and \$9.03 per square metre for the OCTA charge and \$1.47 for the CTA charge. This is a reflection of the timing of the capital program and development charges revenues.

The following table summarizes the calculation of the Storm Water Management development charge:

STORM WATER MANAGEMENT SUMMARY								
2019 - 2028		Unadjusted Development Charge			Adjusted Development Charge			
Development-Related Capital Program	Residential	OCTA	CTA	Residential	OCTA	CTA		
Total	Net DC Recoverable	\$/capita	\$/sq.m	\$/sq.m	\$/capita	\$/sq.m	\$/sq.m	
\$25,726,058	\$18,212,686	\$667.69	\$9.54	\$1.54	\$630.00	\$9.03	\$1.47	

CITY OF NIAGARA FALLS
DEVELOPMENT-RELATED CAPITAL PROGRAM
STORM WATER MANAGEMENT

NO.	Infrastructure Requirement	Limits	Approximate Length (m)	Infrastructure	Type of Improvement	Timing	Gross Cost	Grants and Subsidies	Net Municipal Cost	Ineligible Costs		Total DC Eligible Costs	2019-2028	Post 2028 (%)	Post 2028
										BTE %	BTE \$				
Storm Water Management - Outside Core Tourist Area															
1	Biggar Road (Montrose Road – Unopened Road Allowance (south side) & Montrose Road (Biggar Road Reinxier Road) - Hospital	Montrose Road – Unopened Road Allowance (south side)	865	Sanitary Sewer	New Development	2024 - 2028	\$ 1,591,600	\$0	\$1,591,600	0%	\$0	\$1,591,600	\$1,193,700	25%	\$397,900
2	Beaverdams Road (Kalar Road to Lundy's Lane) - EA			Study		2023 - 2023	\$100,000	\$0	\$100,000	0%	\$0	\$100,000	\$100,000	0%	\$0
3	Beaverdams SWM Facility - Land Purchase, Design & Construction	N/A	N/A	Pond c/w Crossings	SWMP	2023 - 2023	\$2,000,000	\$0	\$2,000,000	0%	\$0	\$2,000,000	\$2,000,000	0%	\$0
4	Corwin Crescent	Erwin Avenue - OPG Canal	1000	Trunk Sewer & Outfall	Sewer Separation	2024 - 2028	\$7,500,000	\$0	\$7,500,000	0%	\$0	\$7,500,000	\$5,625,000	25%	\$1,875,000
5	Garner Road (Warren Woods Avenue - McLeod Road)	Warren Woods Avenue - McLeod Road	784	Storm Sewer	New Development	2024 - 2028	\$729,388	\$0	\$729,388	0%	\$0	\$729,388	\$547,041	25%	\$182,347
6	Kalar Road (Lundy's Lane - Beaverdams Road)	Lundy's Lane - Beaverdams Road	740	Storm Sewer	New Improvement to Existing Road	2023 - 2023	\$760,700	\$0	\$760,700	40%	\$304,280	\$456,420	\$456,420	0%	\$0
7	Kalar Road (McLeod Road - Brown Road)	McLeod Road - Brown Road	1220	Storm Sewer	New Improvement to Existing Road	2023 - 2023	\$1,039,300	\$0	\$1,039,300	40%	\$415,720	\$623,580	\$623,580	0%	\$0
8	Lyon's Parkway (Easement)	Lyon's Parkway East Limit - Ort Road	180	Storm Sewer	New Development	2024 - 2028	\$331,200	\$0	\$331,200	0%	\$0	\$331,200	\$248,400	25%	\$82,800
9	McLeod Road (Kalar Road - Garner Road)	Kalar Road - Garner Road	1000	Storm Sewer	New Improvement to Existing Road	2023 - 2023	\$854,700	\$0	\$854,700	40%	\$341,880	\$512,820	\$384,615	25%	\$128,205
10	Mewburn Road (Schofield Street - Mountain Road)	Schofield Street - Mountain Road	520	Stormwater Outlet	New Development	2023 - 2023	\$443,900	\$0	\$443,900	40%	\$177,560	\$266,340	\$266,340	0%	\$0
11	Miller Road	Crossing Niagara River Parkway to River	46	Stormwater Outlet	New Development	2024 - 2028	\$50,000	\$0	\$50,000	40%	\$20,000	\$30,000	\$22,500	25%	\$7,500
12	Montrose Road (McLeod Road - Charnwood Avenue)	McLeod Road - Charnwood Avenue	950	Storm Sewer	New Development	2023 - 2023	\$423,570	\$0	\$423,570	0%	\$0	\$423,570	\$423,570	0%	\$0
13	Orchard Grove Pond Expansion - Design & Construction	Orchard Grove Estates Subdivision		SWMP	New Improvement to Existing Road	2023 - 2023	\$250,000	\$0	\$250,000	40%	\$100,000	\$150,000	\$150,000	0%	\$0
14	Ort Road	North Limit - Willick Road	255	Storm Sewer	New Development	2024 - 2028	\$469,200	\$0	\$469,200	0%	\$0	\$469,200	\$351,900	25%	\$117,300
15	Portage Road (Norton Street - Macklem Street) Upzise Storm Outlet	Norton Street - Macklem Street	480	Storm Sewer	Replacement with Enlargement	2024 - 2024	\$870,000	\$0	\$870,000	70%	\$609,000	\$261,000	\$261,000	0%	\$0
16	Valley Way (Second Avenue to Drop Shaft/Tunnel @ Stanley Ave)		920	Trunk Sewer & Outfall	Sewer Separation	2024 - 2028	\$2,500,000	\$0	\$2,500,000	0%	\$0	\$2,500,000	\$1,875,000	25%	\$625,000
17	Weinbrenner Road (Willoughby Drive - East Limit)	Willoughby Drive - East Limit	350	Storm Sewer & Outlet	Rehabilitation	2024 - 2028	\$69,800	\$0	\$69,800	0%	\$0	\$69,800	\$52,350	25%	\$17,450
18	Willick Road (Sodom Road - Ort Road)	Sodom Road - Ort Road	1000	Storm Sewer	New Development	2024 - 2028	\$1,840,000	\$0	\$1,840,000	0%	\$0	\$1,840,000	\$1,380,000	25%	\$460,000
19	Willick Road (Sodom Road - Willoughby Drive)	Sodom Road - Willoughby Drive	1000	Storm Sewer	New Development	2024 - 2028	\$1,840,000	\$0	\$1,840,000	0%	\$0	\$1,840,000	\$1,380,000	25%	\$460,000
Subtotal Storm Water Management - Outside Core Tourist Area							\$ 23,663,358	\$0	\$23,663,358		\$1,968,440	\$21,694,918	\$17,341,416		\$4,353,502
City-wide Storm Water Management Studies															
1	Thompson Creek Watershed Master Plan			Study		2019 - 2028	\$150,000	\$0	\$150,000	0%	\$0	\$150,000	\$150,000	0%	\$0
2	I/I Reduction			Study		2024 - 2028	\$400,000	\$0	\$400,000	0%	\$0	\$400,000	\$300,000	25%	\$100,000
Subtotal City-wide Storm Water Management Studies							\$550,000	\$0	\$550,000		\$0	\$550,000	\$450,000		\$100,000
Storm Water Management - Core Tourist Area															
1	Allendale Avenue (Ferry Street - Robinson Street)	Ferry Street - Robinson Street	365	New Storm Sewer	Sewer Separation	2022 - 2022	\$821,800	\$0	\$821,800	90%	\$739,620	\$82,180	\$82,180	0%	\$0
2	Robinson Street (Stanley Avenue to East Limit)	Stanley Avenue - East Limit	438	New Storm Sewer	Development	2022 - 2022	\$390,900	\$0	\$390,900	90%	\$351,810	\$39,090	\$39,090	0%	\$0
3	New OPG Outlets	Misc.		Storm Outlets	Development	2024 - 2028	\$300,000	\$0	\$300,000	0%	\$0	\$300,000	\$300,000	0%	\$0
Subtotal Storm Water Management - Core Tourist Area							\$1,512,700	\$0	\$1,512,700		\$1,091,430	\$421,270	\$421,270		\$0
Total Storm Water Management Projects							\$25,726,058	\$0	\$25,726,058		\$3,059,870	\$22,666,188	\$18,212,686		\$4,453,502

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TABLE 2

CITY OF NIAGARA FALLS
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
STORM WATER MANAGEMENT
OUTSIDE CORE TOURIST AREA

10-Year Growth in Population in New Units (City-wide)	17,479
10-Year Employment Growth (OCTA)	2,501
10-Year Growth in Square Metres (OCTA)	175,070

	Growth-Related Capital Forecast								
	Total (Net of Grants/ Subsidies) (\$000)	Benefit to Existing Share (\$000)	Reserve Fund Adjustment (\$000)	Post Period Allocation (\$000)	Total Net Capital Costs After Discount (\$000)	Residential		Non-Residential	
						%	\$000	%	\$000
STORM WATER MANAGEMENT									
Subtotal Storm Water Management - Outside Core Tourist Area	\$23,663.36	\$1,968.44	\$4,451.00	\$4,353.50	\$12,890.42	87.5%	\$11,276.85	12.5%	\$1,613.57
Subtotal City-wide Storm Water Management Studies	\$550.00	\$0.00	\$0.00	\$100.00	\$450.00	87.5%	\$393.67	12.5%	\$56.33
TOTAL STORM WATER MANAGEMENT	\$24,213.36	\$1,968.44	\$4,451.00	\$4,453.50	\$13,340.42		\$11,670.52		\$1,669.90
Unadjusted Development Charge Per Capita (\$)							\$667.69		
Unadjusted Development Charge Per Sq. M. (\$)									\$9.54

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APPENDIX C.5
TABLE 3

CITY OF NIAGARA FALLS
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
STORM WATER MANAGEMENT
CORE TOURIST AREA

10-Year Employment Growth	2,978
10-Year Growth in Square Metres	208,460

	Growth-Related Capital Forecast								
	Total (Net of Grants/ Subsidies) (\$000)	Benefit to Existing Share (\$000)	Reserve Fund Adjustment (\$000)	Post Period Allocation (\$000)	Total Net Capital Costs After Discount (\$000)	Residential Share %	\$000	Non-Residential Share %	\$000
	%	\$000	%	\$000					
STORM WATER MANAGEMENT									
Subtotal Storm Water Management - Core Tourist Area	\$1,512.70	\$1,091.43	\$100.56	\$0.00	\$320.71	0.0%	\$0.00	100.0%	\$320.71
TOTAL STORM WATER MANAGEMENT	\$1,512.70	\$1,091.43	\$100.56	\$0.00	\$320.71		\$0.00		\$320.71
Unadjusted Development Charge Per Sq. M. (\$)									\$1.54

CITY OF NIAGARA FALLS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
STORM WATER MANAGEMENT
RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

STORM WATER MANAGEMENT	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	\$3,893.8	\$5,232.0	\$6,662.6	\$8,193.1	\$9,573.8	\$6,766.4	\$5,352.3	\$4,138.1	\$2,871.1	\$1,466.0	
2019 - 2028 RESIDENTIAL FUNDING REQUIREMENTS											
- Storm Water Management: Non Inflated	\$13.12	\$13.1	\$13.1	\$13.1	\$3,866.3	\$2,511.8	\$2,283.4	\$2,283.4	\$2,283.4	\$2,283.4	\$15,564.4
- Storm Water Management: Inflated	\$13.1	\$13.4	\$13.7	\$13.9	\$4,185.0	\$2,773.2	\$2,571.5	\$2,623.0	\$2,675.4	\$2,728.9	\$17,611.2
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,896	1,929	1,966	1,629	1,652	1,677	1,702	1,726	1,639	1,663	17,479
REVENUE											
- DC Receipts: Inflated	\$1,194.3	\$1,239.5	\$1,288.6	\$1,089.0	\$1,126.7	\$1,166.5	\$1,207.5	\$1,248.9	\$1,210.1	\$1,252.2	\$12,023.3
INTEREST											
- Interest on Opening Balance	\$136.3	\$183.1	\$233.2	\$286.8	\$335.1	\$236.8	\$187.3	\$144.8	\$100.5	\$51.3	\$1,895.2
- Interest on In-year Transactions	\$20.7	\$21.5	\$22.3	\$18.8	(\$84.1)	(\$44.2)	(\$37.5)	(\$37.8)	(\$40.3)	(\$40.6)	(\$201.2)
TOTAL REVENUE	\$1,351.2	\$1,444.1	\$1,544.2	\$1,394.5	\$1,377.6	\$1,359.1	\$1,357.3	\$1,356.0	\$1,270.3	\$1,262.9	\$13,717.3
CLOSING CASH BALANCE	\$5,232.0	\$6,662.6	\$8,193.1	\$9,573.8	\$6,766.4	\$5,352.3	\$4,138.1	\$2,871.1	\$1,466.0	\$0.0	

2019 Adjusted Charge Per Capita	\$630.00
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Allocation of Capital Program	
Residential Sector	87.5%
Non-Residential Sector	12.5%
Rates for 2019	
Inflation Rate:	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

CITY OF NIAGARA FALLS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
STORM WATER MANAGEMENT - OUTSIDE CORE TOURIST AREA
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

STORM WATER MANAGEMENT - OCTA	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	\$557.16	\$727.63	\$908.56	\$1,100.44	\$1,305.14	\$910.55	\$714.83	\$547.34	\$372.56	\$190.45	
2019 - 2028 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Storm Water Management - Octa: Non Inflated	\$1.9	\$1.9	\$1.9	\$1.9	\$553.2	\$359.4	\$326.7	\$326.7	\$326.7	\$326.7	\$2,227.1
- Storm Water Management - Octa: Inflated	\$1.9	\$1.9	\$2.0	\$2.0	\$598.8	\$396.8	\$368.0	\$375.3	\$382.8	\$390.5	\$2,519.9
NON-RESIDENTIAL SPACE GROWTH											
- Growth in Square Metres	16,643	16,800	16,958	17,255	17,430	17,588	17,763	17,990	18,235	18,410	175,070
REVENUE											
- DC Receipts: Inflated	\$150.3	\$154.7	\$159.3	\$165.3	\$170.3	\$175.3	\$180.6	\$186.6	\$192.9	\$198.6	\$1,733.9
INTEREST											
- Interest on Opening Balance	\$19.5	\$25.5	\$31.8	\$38.5	\$45.7	\$31.9	\$25.0	\$19.2	\$13.0	\$6.7	\$256.7
- Interest on In-year Transactions	\$2.6	\$2.7	\$2.8	\$2.9	(\$11.8)	(\$6.1)	(\$5.2)	(\$5.2)	(\$5.2)	(\$5.3)	(\$27.8)
TOTAL REVENUE	\$172.3	\$182.8	\$193.8	\$206.7	\$204.2	\$201.1	\$200.5	\$200.5	\$200.7	\$200.0	\$1,962.8
CLOSING CASH BALANCE	\$727.6	\$908.6	\$1,100.4	\$1,305.1	\$910.5	\$714.8	\$547.3	\$372.6	\$190.4	(\$0.0)	

2019 Adjusted Charge Per Square Metre	\$9.03
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Allocation of Capital Program	
Residential Sector	87.5%
Non-Residential Sector	12.5%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

CITY OF NIAGARA FALLS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
STORM WATER MANAGEMENT - CORE TOURIST AREA
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

STORM WATER MANAGEMENT - CTA	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	\$100.56	\$133.12	\$167.81	\$204.72	\$112.05	\$149.31	\$121.37	\$92.44	\$62.54	\$31.73	
2019 - 2028 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Storm Water Management - Cta: Non Inflated	\$0.0	\$0.0	\$0.0	\$121.3	\$0.0	\$60.0	\$60.0	\$60.0	\$60.0	\$60.0	\$421.3
- Storm Water Management - Cta: Inflated	\$0.0	\$0.0	\$0.0	\$128.7	\$0.0	\$66.2	\$67.6	\$68.9	\$70.3	\$71.7	\$473.4
NON-RESIDENTIAL SPACE GROWTH											
- Growth in Square Metres	19,408	19,670	19,933	20,195	20,580	20,913	21,298	21,700	22,155	22,610	208,460
REVENUE											
- DC Receipts: Inflated	\$28.5	\$29.5	\$30.5	\$31.5	\$32.8	\$34.0	\$35.3	\$36.7	\$38.2	\$39.7	\$336.7
INTEREST											
- Interest on Opening Balance	\$3.5	\$4.7	\$5.9	\$7.2	\$3.9	\$5.2	\$4.2	\$3.2	\$2.2	\$1.1	\$41.1
- Interest on In-year Transactions	\$0.5	\$0.5	\$0.5	(\$2.7)	\$0.6	(\$0.9)	(\$0.9)	(\$0.9)	(\$0.9)	(\$0.9)	(\$5.0)
TOTAL REVENUE	\$32.6	\$34.7	\$36.9	\$36.0	\$37.3	\$38.3	\$38.6	\$39.0	\$39.5	\$40.0	\$372.9
CLOSING CASH BALANCE	\$133.1	\$167.8	\$204.7	\$112.0	\$149.3	\$121.4	\$92.4	\$62.5	\$31.7	\$0.0	

2019 Adjusted Charge Per Square Metre	\$1.47
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Allocation of Capital Program	
Residential Sector	0.0%
Non-Residential Sector	100.0%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

Appendix D

Reserve Fund Balances

HEMSON

Appendix D

Development Charges Reserve Funds Uncommitted Balances

The DCA requires that a reserve fund be established for each service for which development charges are collected. Table 1 presents the uncommitted reserve fund balances that are available to help fund the development-related net capital costs identified in this study. The opening balances of the development charges reserve funds as at December 31, 2018. All of the available reserve fund balances are therefore accounted for in this study.

As shown on Table 1, the December 31, 2018 total reserve fund balance was in a positive position of \$16.64 million.

The application of each of the balances in each of the reserve funds is discussed in the appendix section related to each service. The reserve funds are assigned to projects in the initial years of the capital program for the services in which the reserves are a position balance. This has the effect of reducing and deferring capital costs brought forward to the development charge calculation and the cash flow analysis. Where there is a negative balance, the amount is brought forward to the DC capital forecast for recovery through future development charges.

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APPENDIX D
TABLE 1

CITY OF NIAGARA FALLS
DEVELOPMENT CHARGE RESERVE FUND BALANCE BY ACCOUNT
YEAR ENDING DECEMBER 31, 2018

Service	Reserve Fund Balance as at Dec. 31, 2018
General Government	\$395,050
Library	\$263,316
Fire Protection	\$1,142,282
Parks & Recreation	\$803,860
Public Works & Fleet	\$251,570
Transit Services	\$541,385
Roads & Related	\$1,848,938
Sidewalks	\$161,040
Water	\$1,819,368
Sanitary Sewer	\$4,860,826
Storm Water Management	\$4,551,553
Total Development Charge Reserves	\$16,639,187

Appendix E

Cost of Growth Analysis

HEMSON

Appendix E

Cost of Growth Analysis

Asset Management Plan Analysis

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

Asset Types

A summary of the future municipal-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.

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 General Services

Capital Project Description	Estimated Useful Life (Years)
Recovery of Negative DC Reserve Fund Balances	Not a Long-Term Asset
Land acquisition	Not Infrastructure
Studies	Not Infrastructure
Buildings & Facilities	50 years
Library Collection Materials	20 years
Vehicles	15 years
Equipment	10 years
Outfitting of Firefighters	7 years
Debt	Not infrastructure
Park Trails	15 years
Park Development	40 years
Public Works Fleet	7-10 years
Transit Fleet	15 years

Table 2
Summary of Municipal Assets Considered Engineered Services

Capital Project Description	Estimated Useful Life (Years)
Master Plans and Studies	Not Infrastructure
Roads	50 years
Traffic Signals	25 years
Sidewalks	40 years
Watertanks	75 years
Sanitary Sewers	80 years
Storm Water Infrastructure	80 years

No annual provisions have been identified for General Government as the development-related studies included in the General Government development charge category are not infrastructure and therefore have no long-term financial requirements.

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 City-

wide general and both City-wide and area-specific 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, 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 DC 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 provide an overview of the capital provisions required to replace the capital infrastructure proposed to be funded under the development charges by-law for both general and engineered services. As shown in Table 3, by 2028, the City will need to fund an additional \$587,000 per annum in order to properly fund the full life-cycle costs of the new assets related to the general services supported under the DC By-law.

Table 4 provides a separate analysis of the annual provisions required for the engineered services capital program. As shown in Table 4, the annual provision in 2028 amounts to \$143,000.

Table 3
Calculated Annual Provision by 2028 (General Services)

Service	2019 - 2028 Capital Program		Calculated AMP Annual Provision by 2028	
	DC Recoverable	Non-DC Funded	DC Related	Non-DC Related
General Government	\$ 1,130,000	\$ 160,000	\$ -	\$ -
Library	\$ 3,422,000	\$ -	\$ 106,000	\$ -
Fire Protection	\$ 4,260,000	\$ 4,372,000	\$ 85,000	\$ 165,000
Parks & Recreation	\$ 13,804,000	\$ -	\$ 302,000	\$ -
Public Works & Fleet	\$ 2,647,000	\$ 33,142,000	\$ 94,000	\$ 741,000
Total	\$ 25,263,000	\$ 37,674,000	\$ 587,000	\$ 906,000

Table 4
Calculated Annual Provision by 2028 (General Services)

Service	2019 - 2028 Capital Program		Calculated AMP Annual Provision by 2028	
	DC Recoverable	Non-DC Funded	DC Related	Non-DC Related
Roads & Related	\$ 22,973,000	\$ 6,482,000	\$ 110,000	\$ 27,000
Sidewalks	\$ 1,230,000	\$ 888,000	\$ 13,000	\$ 10,000
Water	\$ 7,182,000	\$ 6,735,000	\$ 5,000	\$ 7,000
Sanitary Sewer	\$ 20,592,000	\$ 2,841,000	\$ 3,000	\$ 3,000
Storm Water Management	\$ 18,213,000	\$ 7,513,000	\$ 12,000	\$ 8,000
Total	\$ 70,190,000	\$ 24,459,000	\$ 143,000	\$ 55,000

Transit Asset Management in the City

The City of Niagara Falls currently plans to add new buses and expand their transit facility as well as new bus turn-around locations to improve transit services. The full cost of the capital program for Transit is valued at \$8.16 million over the ten-year planning period. Details on the capital projects and anticipated ridership forecast is found in Appendix B.5.

As shown in Table 5, the annual provision for DC eligible costs required for Transit Services by 2028 is \$148,000. The City ensures that the transit system will be financially sustainable through strategic plans and yearly capital and operating budget reviews. For example, the City completed Transit Strategic Business Plan and Ridership Growth Strategy in March 2009. The report included a five-year financial plan that examined funding resources required to construct and operate the City's transit system. The City examines and updates funding requirements through its annual budgeting process.

Table 5
Calculated Annual Provision by 2028 (Transit Services)

Service	2019 - 2028 Capital Program		Calculated AMP Annual Provision by 2028	
	DC Recoverable	Non-DC Funded	DC Related	Non-DC Related
Transit Services	\$ 3,609,000	\$ 4,547,000	\$ 148,000	\$ 242,000
Total	\$ 3,609,000	\$ 4,547,000	\$ 148,000	\$ 242,000

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 2028) the City is projected to increase by approximately 6,300 households, which represents a 17 per cent increase over the existing base. In addition, the City will also add roughly 5,600 new employees that will result in approximately 383,500 square metres of additional 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. The collection of these funds is intended to be allocated to the City's reserves for the future replacement of these assets.

The Program is Deemed Financially Sustainable

The calculated annual provisions identified in Tables 3, 4 and 5 are considered to be financially sustainable as it is expected that the increased capital asset management requirements can be absorbed by the tax and user base over the long-term.

Long-Term Capital and Operating Impact Analysis

As shown in Table 5, by 2028, the City's net operating costs are estimated to increase by \$8.23 million for property tax supported services. As new facilities are open (e.g. future library and fire station) additional operating costs will be experienced by the City. Operating and maintenance costs will also increase as additions to the City's road network and parkland are made.

Table 6 summarizes the components of the development-related capital forecast that will require funding from non-DC sources. In total, \$50.81 million will need to be financed from non-DC sources over the 2019-2028 planning

period. In addition, \$32.29 million in interim DC financing related to post-period shares of projects may be required.

The share of the development-related capital forecast requiring funding from non-DC sources consists of two components. The most significant, at \$11.48 million is related to replacement of existing City facilities with newer and larger facilities that will benefit the existing community. An additional \$4.19 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.

CITY OF NIAGARA FALLS
ESTIMATED NET OPERATING COST OF THE PROPOSED
DEVELOPMENT-RELATED CAPITAL PROGRAM
(in constant 2019 dollars)

		Net Cost (in 2018\$)	Estimated Operating Costs (\$000)									
			2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Library			\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$350.0	\$350.0	\$350.0	\$350.0	\$350.0
- New Library space (5,000 sq.ft.)		\$70 per square foot	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$350.0	\$350.0	\$350.0	\$350.0	\$350.0
Fire Protection			\$0.0	\$0.0	\$3,531.0							
- New Station 7 (10,700 sq.ft.)		\$330 per square foot	\$0.0	\$0.0	\$3,531.0	\$3,531.0	\$3,531.0	\$3,531.0	\$3,531.0	\$3,531.0	\$3,531.0	\$3,531.0
Parks & Recreation			\$89.0	\$134.1	\$208.8	\$323.1	\$414.5	\$495.7	\$579.2	\$652.7	\$690.2	\$690.2
- Park Development and Amenities		\$0.05 per \$1.00 of new	\$89.0	\$134.1	\$208.8	\$323.1	\$414.5	\$495.7	\$579.2	\$652.7	\$690.2	\$690.2
		infrastructure										
Public Works & Fleet			\$12.5	\$15.0	\$15.0	\$15.0	\$15.0	\$16.3	\$18.8	\$18.8	\$18.8	\$18.8
- Additional Fleet		\$0.05 per \$1.00 of new	\$12.5	\$15.0	\$15.0	\$15.0	\$15.0	\$16.3	\$18.8	\$18.8	\$18.8	\$18.8
		infrastructure										
Transit Services			\$62.5	\$237.5	\$412.5	\$587.5	\$587.5	\$762.5	\$762.5	\$937.5	\$937.5	\$1,112.5
-Transit Facility Expansion		\$5 per square foot	\$62.5	\$62.5	\$62.5	\$62.5	\$62.5	\$62.5	\$62.5	\$62.5	\$62.5	\$62.5
- Additional Buses		\$175,000 per bus	\$0.0	\$175.0	\$350.0	\$525.0	\$525.0	\$700.0	\$700.0	\$875.0	\$875.0	\$1,050.0
Roads and Related			\$274.0	\$552.8	\$837.0	\$1,072.4	\$1,311.2	\$1,553.6	\$1,799.6	\$2,049.0	\$2,286.0	\$2,526.4
- Development-Related Roads Infrastructure		\$400 per household	\$274.0	\$552.8	\$837.0	\$1,072.4	\$1,311.2	\$1,553.6	\$1,799.6	\$2,049.0	\$2,286.0	\$2,526.4
TOTAL ESTIMATED OPERATING COSTS			\$438.0	\$939.4	\$5,004.3	\$5,529.0	\$5,859.2	\$6,709.0	\$7,041.0	\$7,539.0	\$7,813.5	\$8,228.9

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APPENDIX E
TABLE 6

**CITY OF NIAGARA FALLS
SUMMARY OF TAX SUPPORTED FUNDING REQUIREMENTS**

Net Capital Cost of Development-Related Projects	2019 (\$000)	2020 (\$000)	2021 (\$000)	2022 (\$000)	2023 (\$000)	2024 (\$000)	2025 (\$000)	2026 (\$000)	2027 (\$000)	2028 (\$000)	TOTAL (\$000)
LIBRARY											
Total Net Cost (1)	342.2	342.2	342.2	342.2	342.2	342.2	342.2	342.2	342.2	342.2	3,421.5
Net Cost From Development Charges (2)	281.6	281.6	281.6	281.6	281.6	281.6	281.6	281.6	281.6	281.6	2,816.0
Net Cost From Non-DC Sources	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5	605.5
- Discount Portion (3)	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	342.2
- Available DC Reserves (4)	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	263.3
- Replacement & Benefit to Existing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- For Post 2028 Development (5)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FIRE PROTECTION											
Total Net Cost (1)	7,475.0	1,085.5	35.5	35.5	0.0	0.0	0.0	0.0	0.0	0.0	8,631.6
Net Cost From Development Charges (2)	3,117.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3,117.2
Net Cost From Non-DC Sources	4,357.8	1,085.5	35.5	35.5	0.0	0.0	0.0	0.0	0.0	0.0	5,514.4
- Discount Portion (3)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- Available DC Reserves (4)	1,142.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,142.3
- Replacement & Benefit to Existing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- For Post 2028 Development (5)	3,215.5	1,085.5	35.5	35.5	0.0	0.0	0.0	0.0	0.0	0.0	4,372.1
PARKS & RECREATION											
Total Net Cost (1)	1,780.3	901.7	1,495.0	2,285.4	1,828.0	1,623.0	1,670.3	1,470.3	750.0	0.0	13,804.0
Net Cost From Development Charges (2)	195.1	956.6	1,494.5	2,209.9	1,802.5	1,622.5	1,669.8	1,494.8	749.5	74.5	12,269.7
Net Cost From Non-DC Sources	1,585.2	(55.0)	0.5	75.5	25.5	0.5	0.5	(24.5)	0.5	(74.5)	1,534.4
- Discount Portion (3)	111.0	19.5	75.0	150.0	100.0	75.0	75.0	50.0	75.0	0.0	730.5
- Available DC Reserves (4)	803.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	803.9
- Replacement & Benefit to Existing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- For Post 2028 Development (5)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PUBLIC WORKS & FLEET											
Total Net Cost (1)	275.0	50.0	0.0	0.0	0.0	50.0	35,414.4	0.0	0.0	0.0	35,789.4
Net Cost From Development Charges (2)	0.0	40.9	0.0	0.0	0.0	45.0	2,045.0	0.0	0.0	0.0	2,130.9
Net Cost From Non-DC Sources	275.0	9.1	0.0	0.0	0.0	5.0	33,369.4	0.0	0.0	0.0	33,658.4
- Discount Portion (3)	27.5	5.0	0.0	0.0	0.0	5.0	2,965.4	0.0	0.0	0.0	3,002.9
- Available DC Reserves (4)	247.5	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	251.6
- Replacement & Benefit to Existing	0.0	0.0	0.0	0.0	0.0	0.0	5,760.5	0.0	0.0	0.0	5,760.5
- For Post 2028 Development (5)	0.0	0.0	0.0	0.0	0.0	0.0	24,643.5	0.0	0.0	0.0	24,643.5

Notes: (1) For total development-related capital program see Appendix B.

(2) Share of capital program to be funded from development charges if calculated rates are fully implemented

(3) Mandatory 10% reduction for applicable services

(4) Portion of development-related capital program identified as available DC reserves (to be funded from present Development Charge reserve fund balances).

(5) Post 2028 development-related net capital costs may be eligible for development charges in future DC by-laws, but interim financing of this share may be required

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APPENDIX E
TABLE 6

**CITY OF NIAGARA FALLS
SUMMARY OF TAX SUPPORTED FUNDING REQUIREMENTS**

Net Capital Cost of Development-Related Projects	2019 (\$000)	2020 (\$000)	2021 (\$000)	2022 (\$000)	2023 (\$000)	2024 (\$000)	2025 (\$000)	2026 (\$000)	2027 (\$000)	2028 (\$000)	TOTAL (\$000)
TRANSIT SERVICES											
Total Net Cost (1)	421.4	3,321.4	321.4	0.0	321.4	998.8	571.0	0.0	0.0	0.0	5,955.4
Net Cost From Development Charges (2)	255.3	2,012.6	194.8	0.0	194.8	605.2	346.0	0.0	0.0	0.0	3,608.7
Net Cost From Non-DC Sources	166.1	1,308.8	126.6	0.0	126.6	393.6	225.0	0.0	0.0	0.0	2,346.8
- Discount Portion (3)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- Available DC Reserves (4)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- Replacement & Benefit to Existing	166.1	1,308.8	126.6	0.0	126.6	393.6	225.0	0.0	0.0	0.0	2,346.8
- For Post 2028 Development (5)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GENERAL GOVERNMENT											
Total Net Cost (1)	1,095.0	5.0	95.0	5.0	5.0	65.0	5.0	5.0	5.0	5.0	1,290.0
Net Cost From Development Charges (2)	547.7	2.3	2.3	2.3	2.3	56.3	2.3	2.3	2.3	2.3	622.0
Net Cost From Non-DC Sources	547.3	2.8	92.8	2.8	2.8	8.8	2.8	2.8	2.8	2.8	668.0
- Discount Portion (3)	100.3	0.3	4.8	0.3	0.3	6.3	0.3	0.3	0.3	0.3	113.0
- Available DC Reserves (4)	354.5	0.0	40.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	395.0
- Replacement & Benefit to Existing	92.5	2.5	47.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	160.0
- For Post 2028 Development (5)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ROADS AND RELATED											
Total Net Cost (1)	520.0	520.0	520.0	5,531.5	8,109.6	3,187.2	2,862.2	2,862.2	2,862.2	2,479.7	29,454.4
Net Cost From Development Charges (2)	520.0	520.0	520.0	4,605.3	5,806.5	2,529.0	2,204.0	2,204.0	2,204.0	1,859.7	22,972.5
Net Cost From Non-DC Sources	0.0	0.0	0.0	926.2	2,303.1	658.2	658.2	658.2	658.2	619.9	6,481.8
- Discount Portion (3)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- Available DC Reserves (4)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- Replacement & Benefit to Existing	0.0	0.0	0.0	926.2	2,282.2	0.0	0.0	0.0	0.0	0.0	3,208.4
- For Post 2028 Development (5)	0.0	0.0	0.0	0.0	20.8	658.2	658.2	658.2	658.2	619.9	3,273.4
TOTAL MUNICIPAL SERVICES											
Total Net Cost (1)	11,908.9	6,225.8	2,809.1	8,199.6	10,606.2	6,266.1	40,865.0	4,679.6	3,959.3	2,826.8	98,346.3
Net Cost From Development Charges (2)	4,917.0	3,814.0	2,493.1	7,099.1	8,087.6	5,139.5	6,548.7	3,982.6	3,237.3	2,218.1	47,537.0
Net Cost From Non-DC Sources	6,991.8	2,411.7	316.0	1,100.6	2,518.5	1,126.6	34,316.4	697.0	722.0	608.7	50,809.3
- Discount Portion (3)	273.0	59.0	114.0	184.5	134.5	120.5	3,074.8	84.5	109.5	34.5	4,188.5
- Available DC Reserves (4)	2,574.5	30.4	66.8	26.3	26.3	26.3	26.3	26.3	26.3	26.3	2,856.1
- Replacement & Benefit to Existing	258.6	1,311.3	174.1	928.7	2,411.4	396.1	5,988.0	2.5	2.5	2.5	11,475.7
- For Post 2028 Development (5)	3,215.5	1,085.5	35.5	35.5	20.8	658.2	25,301.6	658.2	658.2	619.9	32,289.0

Notes: (1) For total development-related capital program see Appendix B.

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(4) Portion of development-related capital program identified as available DC reserves (to be funded from present Development Charge reserve fund balances).

(5) Post 2028 development-related net capital costs may be eligible for development charges in future DC by-laws, but interim financing of this share may be required

Appendix F

**Proposed Draft 2019 DC By-Law
(Available Under Separate Cover)**

HEMSON