

REPORT FOR PUBLIC CONSULTATION

PREPARED BY HEMSON FOR THE CITY OF BRANTFORD



AREA-SPECIFIC DEVELOPMENT CHARGES BACKGROUND STUDY

For the Northern Boundary Expansion Lands and
Tutela Heights

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CONTENTS

EXECUTIVE SUMMARY	1
1. INTRODUCTION	6
2. METHODOLOGY	7
A. Area-Specific Development Charges are Calculated	7
B. Key Steps in Determining Development Charges for Future Development-Related Projects	7
3. DEVELOPMENT FORECAST	10
A. Residential Development Forecasts	10
B. Non-Residential Development Forecasts	10
4. DEVELOPMENT-RELATED CAPITAL FORECAST	12
A. Development-Related Capital Forecasts are Provided for Council's Approval	12
B. The Development-Related Capital Program for the Northern Boundary Expansion Lands (2021-2051)	12
C. The Development-Related Capital Program for Tutela Heights (2021-2051)	13
5. ASDCs ARE CALCULATED IN ACCORDANCE WITH THE DCA	15
A. Development Charges Calculation	15
6. COST OF GROWTH ANALYSIS	22
A. Asset Management Plan	22
B. Long-Term Capital and Operating Costs	23
C. The Program is Deemed to be Financially Sustainable	23
7. DEVELOPMENT CHARGES POLICY AND ADMINISTRATION	24

LIST OF APPENDICES

A.	DEVELOPMENT FORECAST	25
B.	NORTHERN BOUNDARY EXPANSION LANDS TECHNICAL APPENDIX	34
B1	Roads and Related	37
B2	Water Services	43
B3	Waste Water Services	49
B4	Stormwater Services	55
C.	TUTELA HEIGHTS TECHNICAL APPENDIX	61
C1	Roads and Related	64
C2	Water Services	66
C3	Waste Water Services	73
C4	Stormwater Services	79
D.	ASSET MANAGEMENT PLAN	85
D1	Long-Term Capital and Operating Impacts	90
E.	PROPOSED DRAFT ASDC BY-LAW	92

EXECUTIVE SUMMARY

A. PURPOSE OF THE 2021 AREA-SPECIFIC DEVELOPMENT CHARGES BACKGROUND STUDY

The *Development Charges Act, 1997* (DCA), and its associated *Ontario Regulation 82/98* (O. Reg. 82/98), allow municipalities in Ontario to recover development-related capital costs from new development. This City of Brantford Area-Specific Development Charges (ASDC) Background Study is presented as part of a process to establish development charge by-laws that comply with this legislation. The study calculates ASDCs for the City of Brantford's Northern Boundary Expansion Lands and Tutela Heights.

i. Legislative Context

The City of Brantford's 2021 ASDC Background Study is presented as part of the process to lead to the approval of an ASDC by-law in compliance with the *Development Charges Act, 1997* (DCA). The study is prepared in accordance with the DCA and associated Regulation, including the amendments that came into force on January 1, 2016, June 6, 2019, January 1, 2020 and September 17, 2020.

ii. 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, 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 through a cash flow analysis.

iii. DC Eligible and Ineligible Costs

Development charges are intended to pay for the initial round of capital costs needed to service new development over an identified planning period. This is based on the overarching 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; and statutory exemptions for specific uses (i.e. industrial expansions).

iv. **The Development-Related Capital Program is Subject to Change**

It is recommended that Council adopt the development-related capital program developed for the purposes of the 2021 ASDC Background Study. However, it is recognized that the ASDC Background Study is a point-in-time analysis and there may be changes to project timing, scope and costs through the City’s normal annual budget process.

B. DEVELOPMENT FORECAST

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

For the purposes of this ASDC Background Study, two development forecasts were prepared based on geographic area: Northern Boundary Expansion Area (2021-2051) and Tutela Heights (2021-2051). The anticipated residential and non-residential growth in each area are summarized below. The development forecasts are further discussed in Appendix A.

v. **Northern Boundary Expansion Lands Forecast (2021-2051)**

An area-specific forecast for the Northern Boundary Expansion Lands, from 2021 to 2051, was prepared for the calculation of area-specific Roads and Related, Water, Waste Water, and Stormwater servicing development charges.

Northern Boundary Expansion Lands Development Forecast	Growth 2021-2051
Residential	
Dwelling Units	7,688
Population in New Dwellings	23,055
Non-Residential	
Employment in New Space	14,739
Non-Residential Building Space (sq.m.)	1,284,690

vi. Tutela Heights (2021-2051)

Similarly, an area-specific forecast for the Tutela Heights area, from 2021 to 2051, was prepared for the calculation of ASDC for the same four engineered services.

Tutela Heights Development Forecast	Growth 2021-2051
Residential	
Dwelling Units	1,230
Population in New Dwellings	3,733
Non-Residential	
Employment in New Space	90
Non-Residential Building Space (sq.m.)	4,950

C. CALCULATED AREA-SPECIFIC DEVELOPMENT CHARGES

The tables below provide the development charges calculated for the Northern Boundary Expansion Lands and Tutela Heights service areas for residential and non-residential development based on the aforementioned forecasts.

The rates calculated as part of this Background Study are the maximum permissible rates under the current legislation. Council may implement rates lower than those calculated and the revenue shortfall will need to be made up from other sources, namely property taxes, user fees and water and wastewater utility rates.

It is noted that the City-wide development charges, currently imposed through By-law 32-2019, will also remain in force for the Northern Boundary Expansion Lands and Tutela Heights service areas, in addition to the ASDCs. The current City-wide rates are also indicated in the tables below.

vii. Northern Boundary Expansion Lands ASDCs

Calculated ASDCs are provided in the table below. It is intended that development in the Northern Boundary Expansion Lands be subject to the ASDC rates for Roads and Related, Water, Waste Water, and Stormwater services. In addition to the area-specific rates, all City-wide general and engineered services charges would apply in the Northern Boundary Expansion Lands area.

Service	Residential Charge By Unit Type				Non-Residential Charge (per sq.m)
	Singles & Semis	Rows & Other Multiples	Large Apartment (> 70 sq.m)	Small Apartment (= / < 70sq.m)	
Roads And Related	\$2,964	\$2,091	\$1,555	\$1,295	\$10.34
Water Services	\$11,069	\$7,809	\$5,808	\$4,838	\$40.01
Waste Water Services	\$8,983	\$6,338	\$4,714	\$3,926	\$32.47
Stormwater	\$2,871	\$2,026	\$1,507	\$1,255	\$10.39
Total Area-Specific DCs	\$25,887	\$18,264	\$13,584	\$11,314	\$93.21
City-wide General Services (By-law 32-2019)	\$9,334	\$6,643	\$4,941	\$3,900	\$12.01
City-wide Engineered Services (By-law 32-2019)	\$14,745	\$10,492	\$7,805	\$6,157	\$67.82
Total Northern Boundary Expansion Lands DCs	\$49,966	\$35,399	\$26,330	\$21,371	\$173.04

viii. Tutela Heights ASDCs

Calculated ASDCs are provided in the table below. It is intended that development in Tutela Heights be subject to the ASDC rates for Water, Waste Water, and Stormwater services. In addition to the area-specific rates, all City-wide general and engineered services charges would apply in the Tutela Heights area.

Service	Residential Charge By Unit Type				Non-Residential Charge (per sq.m)
	Singles & Semis	Rows & Other Multiples	Large Apartment (> 70 sq.m)	Small Apartment (= / < 70sq.m)	
Roads And Related	\$0	\$0	\$0	\$0	\$0.00
Water Services	\$6,630	\$4,678	\$3,479	\$2,898	\$30.69
Waste Water Services	\$6,462	\$4,559	\$3,391	\$2,825	\$29.95
Stormwater	\$1,876	\$1,324	\$985	\$820	\$8.67
Total Area-Specific DCs	\$14,968	\$10,561	\$7,855	\$6,543	\$69.31
City-wide General Services (By-law 32-2019)	\$9,334	\$6,643	\$4,941	\$3,900	\$12.01
City-wide Engineered Services (By-law 32-2019)	\$14,745	\$10,492	\$7,805	\$6,157	\$67.82
Total Tutela Heights DCs	\$39,047	\$27,696	\$20,601	\$16,600	\$149.14

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 may be found in Appendix D. By 2051 the City's net operating costs are estimated to increase by about \$2.23 million per annum.

E. ASSET MANAGEMENT PLAN

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

By 2052, the City will need to fund an additional \$1.20 million per annum in order to fund the life cycle costs associated with the new area-specific assets in the Northern Boundary Expansion Lands and Tutela Heights. Additional details are provided in Appendix D.

F. DRAFT AREA-SPECIFIC DEVELOPMENT CHARGES BY-LAW AVAILABLE UNDER SEPARATE COVER

The proposed draft ASDC by-laws will be made available under separate cover a minimum of two weeks in advance of the statutory public meeting.

1. INTRODUCTION

The City of Brantford is growing as an attractive location for a variety of residential and non-residential development. The anticipated development in the Northern Boundary Expansion Lands and Tutela Heights will place new demand on municipal services. The City wishes to implement area-specific development charges (ASDCs) to fund capital projects related to development in these locations so that development may be serviced in a fiscally responsible manner.

The *Development Charges Act, 1997* (DCA), and its associated Ontario Regulation 82/98 (O. Reg. 82/98), allow municipalities in Ontario to recover development-related capital costs from new development. This City of Brantford 2021 ASDC Background Study is presented as part of a process to establish an ASDC by-law that complies with this legislation.

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

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

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

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

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

2. METHODOLOGY

Several key steps are required in calculating any development charge. However, specific circumstances arise in each municipality which must be reflected in the calculation. Therefore, this study has been tailored to the unique circumstances of the City of Brantford, the Northern Expansion Area Lands, and Tutela Heights. The approach to the proposed development charges is focused on providing a reasonable alignment of development-related costs with the development that necessitates them.

A. AREA-SPECIFIC DEVELOPMENT CHARGES ARE CALCULATED

The DCA provides legislation with respect to the services that may be included in the development charge by-laws. The DCA also requires that the by-law designates the areas within which the by-law shall be imposed. The development charges may apply to all lands in the municipality or to other designated development areas as specified in the by-laws.

The City of Brantford currently levies development charges on a City-wide basis. The development charges recover costs related to City-wide Fire, Police, Public Library, Parks and Recreation, Public Transit, Municipal Parking, Housing, Land Ambulance, Public Works, General Government, Roads and Related, Water, Waste Water, and Stormwater services.

This ASDC Background Study calculates area-specific development charges related to the provision of Roads and Related, Water, Waste Water, and Stormwater services within the Northern Boundary Expansion Lands and Tutela Heights. The servicing needs in these areas require differing, additional, identifiable, and independent projects in order to provide for the anticipated growth. The area-specific approach is applied to more closely align the capital costs for these services with the particular areas that are serviced by the required infrastructure.

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

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

i. Development Forecast

The first step in the methodology requires development forecasts to be prepared for the planning period, in this case from 2021 to 2051. The forecasts of future residential and non-residential development used in this study were prepared in conjunction with the City's planning staff.

When calculating the development charge, the development-related net capital costs are spread over the population that will occupy new housing units in the Northern Boundary Expansion Lands and Tutela Heights. This population in new units represents the population from which development charges will be collected.

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

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

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

The development-related capital forecast prepared for this study ensures that development charges are only imposed to help pay for projects that have been or are intended to be purchased or built in order to accommodate future anticipated development. It is not sufficient in the calculation of development charges merely to have had the service in the past. There must also be a demonstrated commitment to continue to emplace facilities or infrastructure in the future. In this regard, O. Reg 82/98, s. 3 states that:

For the purposes of paragraph 3 of subsection 5 (1) of the *Act*, the council of a municipality has indicated that it intends to ensure that an increase in the need for service will be met if the increase in service forms part of an Official Plan, capital forecast or similar expression of the intention of the council and the plan, forecast

or similar expression of the intention of the council has been approved by the council.

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

iii. 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. This is done by applying apportionments in accordance with the demands which the two sectors would be expected to place on the various services and the benefits derived from those services.

Where reasonable data exist, the apportionment is based on the expected demand for, and use of, the service by each sector (e.g. based on shares of population in new units and employment growth).

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

iv. Final Adjustment

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

3. DEVELOPMENT FORECAST

The following section provides a summary of the development forecasts that have been used as inputs to the ASDC calculations. The development forecasts were prepared in conjunction with the City's planning staff. A more detailed summary of the forecasts is provided in Appendix A.

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

A. RESIDENTIAL DEVELOPMENT FORECASTS

Development charges are levied on residential development as a charge per new unit. Therefore, for the residential forecast, a projection of the population in new housing units is required. The population in new units represents the population from which development charges will be collected.

Table 1A and Table 1B summarize the Northern Boundary Expansion Lands and Tutela Heights area-specific forecasts, respectively, for the planning period from 2021 to 2051. This forecasts are used for the calculation of area-specific Roads and Related, Water, Waste Waster, and Stormwater servicing development charges. The total 2021-2051 population in new units is forecast at approximately 23,100 in the Northern Boundary Expansion Lands, and 3,700 in Tutela Heights.

B. NON-RESIDENTIAL DEVELOPMENT FORECASTS

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

In the Northern Boundary Expansion Lands over the 2021 to 2051 planning period, 14,700 jobs and 1.28 million square metres of non-residential building space are forecasted (Table 1A). In Tutela Heights, 90 jobs and nearly 5,000 square metres are forecasted over the same period (Table 1B).

TABLE 1A

CITY OF BRANTFORD
 NORTHERN BOUNDARY EXPANSION LANDS
 SUMMARY OF RESIDENTIAL AND NON-RESIDENTIAL
 DEVELOPMENT FORECAST

Northern Boundary Expansion Lands Development Forecast	Growth 2021-2051
Residential	
Dwelling Units	7,688
Population in New Dwellings	23,055
Non-Residential	
Employment in New Space	14,739
Non-Residential Building Space (sq.m.)	1,284,690

TABLE 1B

CITY OF BRANTFORD
 TUTELA HEIGHTS
 SUMMARY OF RESIDENTIAL AND NON-RESIDENTIAL
 DEVELOPMENT FORECAST

Tutela Heights Development Forecast	Growth 2021-2051
Residential	
Dwelling Units	1,230
Population in New Dwellings	3,733
Non-Residential	
Employment in New Space	90
Non-Residential Building Space (sq.m.)	4,950

4. DEVELOPMENT-RELATED CAPITAL FORECAST

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

For the purposes of paragraph 3 of subsection 5 (1) of the Act, the council of a municipality has indicated that it intends to ensure that an increase in the need for service will be met if the increase in service forms part of an official plan, capital forecast or similar expression of the intention of the council and the plan, forecast or similar expression of the intention of the council has been approved by the council.

A. DEVELOPMENT-RELATED CAPITAL FORECASTS ARE PROVIDED FOR COUNCIL'S APPROVAL

Based on the development forecasts summarized in Section 3 and detailed in Appendix A, City staff, in collaboration with the consultants developed development-related capital forecasts setting out those projects that are required to service anticipated development in the two service areas. The capital forecasts cover the planning period from 2021 to 2051.

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

B. THE DEVELOPMENT-RELATED CAPITAL PROGRAM FOR THE NORTHERN BOUNDARY EXPANSION LANDS (2021-2051)

A summary of the development-related capital program for the Northern Boundary Expansion Lands area-specific engineered services is shown in Table 2A. Further details on the capital plans for each individual service category are available in Appendix B.

The development-related capital program for the area-specific engineered services is estimated at a total gross cost of \$334.95 million. Direct developer contributions are

anticipated to cover \$524,000 of this amount. Further, portions of the capital forecast relate to replacement of existing capital facilities (\$84.46 million), as well as for development anticipated to occur beyond 2051 (\$21.11 million). The remaining \$228.86 million is brought forward to the ASDC calculation.

C. THE DEVELOPMENT-RELATED CAPITAL PROGRAM FOR TUTELA HEIGHTS (2021-2051)

A summary of the development-related capital program for the Tutela Heights area-specific engineered services is shown in Table 2B. Further details on the capital plans for each individual service category are available in Appendix C.

The development-related capital program for the area-specific engineered services is estimated at a total gross cost of \$18.54 million. Portions of the capital forecast relate to replacement of existing capital facilities (\$2.73 million), as well as for development anticipated to occur beyond 2051 (\$1.16 million). The remaining \$14.65 million is brought forward to the ASDC calculation.

TABLE 2A

CITY OF BRANTFORD
SUMMARY OF DEVELOPMENT-RELATED CAPITAL PROGRAM
NORTHERN BOUNDARY EXPANSION LANDS 2021 - 2051
(in \$000)

Service	Development-Related Capital Program (2021 - 2051)				
	Gross Cost	Grants / Subsidies / Contributions	Replacement & Benefit to Existing	Post-2051 Benefit	Net Development Related Costs
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
1.0 ROADS AND RELATED	\$31,594.1	\$0.0	\$0.0	\$0.0	\$31,594.1
2.0 WATER SERVICE	\$125,570.1	\$524.0	\$27,698.5	\$5,373.0	\$91,974.5
3.0 WASTE WATER	\$123,371.5	\$0.0	\$24,386.9	\$15,737.2	\$83,247.4
4.0 STORM WATER	\$54,416.0	\$0.0	\$32,372.6	\$0.0	\$22,043.4
TOTAL	\$334,951.6	\$524.0	\$84,458.0	\$21,110.2	\$228,859.4

TABLE 2B

CITY OF BRANTFORD
SUMMARY OF DEVELOPMENT-RELATED CAPITAL PROGRAM
TUTELA HEIGHTS 2021 - 2051
(in \$000)

Service	Development-Related Capital Program (2021 - 2051)				
	Gross Cost	Grants / Subsidies / Contributions	Replacement & Benefit to Existing	Post-2051 Benefit	Net Development Related Costs
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
1.0 ROADS AND RELATED	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2.0 WATER SERVICE	\$9,420.0	\$0.0	\$2,485.3	\$535.9	\$6,398.8
3.0 WASTE WATER	\$7,329.0	\$0.0	\$243.2	\$626.6	\$6,459.2
4.0 STORM WATER	\$1,796.0	\$0.0	\$0.0	\$0.0	\$1,796.0
TOTAL	\$18,545.0	\$0.0	\$2,728.5	\$1,162.5	\$14,654.0

5. ASDCs ARE CALCULATED IN ACCORDANCE WITH THE DCA

This section summarizes the calculation of area-specific development charges for each service category and the resulting total ASDCs by type of development, within each of the two service areas. 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 takes interest earnings and borrowing costs into account are also discussed.

For residential development, the adjusted total per capita amount is then converted to a variable charge by housing unit type using various unit occupancy factors. For non-residential development, the charges 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, such as the exemption for enlargements of up to 50 per cent on existing industrial buildings. Such legislated exemptions, or other exemptions that Council may choose to provide, will result in loss of development charge revenue for the affected types of development. However, any such revenue loss may not be made up by offsetting increases in other portions of the calculated charge.

A. DEVELOPMENT CHARGES CALCULATION

i. Unadjusted Residential and Non-Residential ASDC Rates

Table 3A and Table 3B display the calculation of the unadjusted rates for the Northern Boundary Expansion Lands and Tutela Heights, respectively, for the services of Roads and Related, Water, Waste Water, and Stormwater.

In the Northern Boundary Expansion Lands, the \$228.86 million in net development-related costs is carried forward to the ASDC calculation. This amount is then allocated to 61% to residential development (\$139.60 million) and 39% non-residential development (\$89.26 million) based on shares of population and employment growth. The allocation of area-specific costs yields unadjusted charges for each service expressed as a per capita charge for residential development and a charge per square metre for new non-residential development. The total unadjusted ASDC is calculated at \$6,055.27 per capita and \$69.47 per square metres of non-residential development.

In Tutela Heights, the \$14.65 million in net development-related costs is allocated 98% to residential development (\$14.36 million) and 2% to non-residential development (\$293,100) based on shares of population and employment growth. The allocation of area-specific costs yields unadjusted charges for each service expressed as a per capita charge for residential development and a charge per square metre for new non-residential development. The total unadjusted ASDC is calculated at \$3,847.01 per capita and \$59.21 per square metres of non-residential development.

TABLE 3A

CITY OF BRANTFORD
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL AREA-SPECIFIC DEVELOPMENT CHARGES
NORTHERN BOUNDARY EXPANSION LANDS 2021 - 2051
(in \$000)

Growth in Population in New Units 2021-2051	23,055
Growth in New Building Space (Sq.m.) 2021-2051	1,284,690

Service	Development-Related Capital Program (2021 - 2051)					Residential Share		Non-Residential Share	
	Gross Cost	Grants / Subsidies / Contributions	Replacement & Benefit to Existing	Post-2051 Benefit	Net Development Related Costs	%	(\$000)	%	(\$000)
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)				
1.0 ROADS AND RELATED	\$31,594.1	\$0.0	\$0.0	\$0.0	\$31,594.1	61%	\$ 19,272.4	39%	\$ 12,321.7
Unadjusted Development Charge Per Capita							\$835.93		
Unadjusted Development Charge Per Sq.M									\$9.59
2.0 WATER SERVICE	\$125,570.1	\$524.0	\$27,698.5	\$5,373.0	\$91,974.5	61%	\$ 56,104.5	39%	\$ 35,870.1
Unadjusted Development Charge Per Capita							\$2,433.51		
Unadjusted Development Charge Per Sq.M									\$27.92
3.0 WASTE WATER	\$123,371.5	\$0.0	\$24,386.9	\$15,737.2	\$83,247.4	61%	\$ 50,780.9	39%	\$ 32,466.5
Unadjusted Development Charge Per Capita							\$2,202.60		
Unadjusted Development Charge Per Sq.M									\$25.27
4.0 STORM WATER	\$54,416.0	\$0.0	\$32,372.6	\$0.0	\$22,043.4	61%	\$ 13,446.5	39%	\$ 8,596.9
Unadjusted Development Charge Per Capita							\$583.23		
Unadjusted Development Charge Per Sq.M									\$6.69
TOTAL	\$334,951.6	\$524.0	\$84,458.0	\$21,110.2	\$228,859.4		\$139,604.2		\$89,255.2
Unadjusted Development Charge Per Capita							\$6,055.27		
Unadjusted Development Charge Per Sq.M									\$69.47

TABLE 3B

CITY OF BRANTFORD
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL AREA-SPECIFIC DEVELOPMENT CHARGES
TUTELA HEIGHTS 2021 - 2051
(in \$000)

Growth in Population in New Units 2021-2051	3,733
Growth in New Building Space (Sq.m.) 2021-2051	4,950

Service	Development-Related Capital Program (2021 - 2051)					Residential Share		Non-Residential Share	
	Gross Cost	Grants / Subsidies / Contributions	Replacement & Benefit to Existing	Post-2051 Benefit	Net Development Related Costs	%	(\$000)	%	(\$000)
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)				
1.0 ROADS AND RELATED	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	98%	\$0.00	2%	\$0.00
Unadjusted Development Charge Per Capita							\$0.00		
Unadjusted Development Charge Per Sq.M									\$0.00
2.0 WATER SERVICE	\$9,420.0	\$0.0	\$2,485.3	\$535.9	\$6,398.8	98%	\$ 6,270.8	2%	\$ 128.0
Unadjusted Development Charge Per Capita							\$1,679.84		
Unadjusted Development Charge Per Sq.M									\$25.85
3.0 WASTE WATER	\$7,329.0	\$0.0	\$243.2	\$626.6	\$6,459.2	98%	\$ 6,330.0	2%	\$ 129.2
Unadjusted Development Charge Per Capita							\$1,695.68		
Unadjusted Development Charge Per Sq.M									\$26.10
4.0 STORM WATER	\$1,796.0	\$0.0	\$0.0	\$0.0	\$1,796.0	98%	\$ 1,760.1	2%	\$ 35.9
Unadjusted Development Charge Per Capita							\$471.49		
Unadjusted Development Charge Per Sq.M									\$7.26
TOTAL	\$18,545.0	\$0.0	\$2,728.5	\$1,162.5	\$14,654.0		\$14,360.9		\$293.1
Unadjusted Development Charge Per Capita							\$3,847.01		
Unadjusted Development Charge Per Sq.M									\$59.21

ii. **Adjusted Residential and Non-Residential ASDC Rates**

Final adjustments to the “unadjusted” ASDC rates are made through a cash flow analysis. The analysis, details of which are included in Appendices B and C, considers the borrowing cost and interest earnings associated with the timing of expenditures and development charge receipts for each service category.

Table 4 summarizes the results of the adjustment for the residential component of the Northern Boundary Expansion Lands ASDC rates. As shown, the adjusted per capita rate is increased to \$7,547 per capita after the cash flow analysis. The calculated rates by residential unit with the total charge per unit, including the applicable City-wide DCs, are \$49,966 per single detached unit, \$35,399 per row or multiple unit, \$26,330 per large apartment and \$21,371 per small apartment unit.

The calculated unadjusted and adjusted Northern Boundary Expansion Lands area-specific non-residential development charge rates are presented in Table 5. The total adjusted rates, including the applicable calculated City-wide DCs, are \$173.04 per square metre. Once again, the cash flow analyses for the area-specific non-residential rates results in an increase from the unadjusted rates.

Tutela Heights residential rates are shown in Table 6. The adjusted per capita rate is \$4,364 after the cash flow analysis. The calculated rates by residential unit with the total charge per unit, including the applicable City-wide DCs, are \$39,047 per single detached unit, \$27,696 per row or multiple unit, \$20,601 per large apartment and \$16,600 per small apartment unit.

The calculated unadjusted and adjusted Tutela Heights non-residential rates are presented in Table 7. The total adjusted rates, including the applicable calculated City-wide DCs, are \$149.14 per square metre.

TABLE 4

CITY OF BRANTFORD
NORTHERN BOUNDARY EXPANSION LANDS
RESIDENTIAL DEVELOPMENT CHARGES BY UNIT TYPE

Service	Unadjusted Charge Per Capita	Adjusted Charge Per Capita	Residential Charge By Unit Type (1)			
			Singles & Semis	Rows & Other Multiples	Large Apartment (> 70 sq.m)	Small Apartment (= or <70 sq.m)
Roads And Related	\$836	\$864	\$2,964	\$2,091	\$1,555	\$1,295
Water Services	\$2,434	\$3,227	\$11,069	\$7,809	\$5,808	\$4,838
Waste Water Services	\$2,203	\$2,619	\$8,983	\$6,338	\$4,714	\$3,926
Stormwater	\$583	\$837	\$2,871	\$2,026	\$1,507	\$1,255
Total Area-Specific DCs	\$6,055	\$7,547	\$25,887	\$18,264	\$13,584	\$11,314
City-wide General Services (By-law 32-2019)			\$9,334	\$6,643	\$4,941	\$3,900
City-wide Engineered Services (By-law 32-2019)			\$14,745	\$10,492	\$7,805	\$6,157
Total Northern Boundary Expansion Lands DCs			\$49,966	\$35,399	\$26,330	\$21,371
(1) Based on Persons Per Unit Of:			3.43	2.42	1.80	1.50

TABLE 5

CITY OF BRANTFORD
NORTHERN BOUNDARY EXPANSION LANDS
NON-RESIDENTIAL DEVELOPMENT CHARGES PER SQUARE METRE

Service	Non-Residential Charge	
	Unadjusted Charge per Square Metre	Adjusted Charge per Square Metre
Roads And Related	\$9.59	\$10.34
Water Services	\$27.92	\$40.01
Waste Water Services	\$25.27	\$32.47
Stormwater	\$6.69	\$10.39
Total Area-Specific DCs	\$69.48	\$93.21
City-wide General Services (By-law 32-2019)		\$12.01
City-wide Engineered Services (By-law 32-2019)		\$67.82
Total Northern Boundary Expansion Lands DCs		\$173.04

TABLE 6

CITY OF BRANTFORD
TUTELA HEIGHTS
RESIDENTIAL DEVELOPMENT CHARGES BY UNIT TYPE

Service	Unadjusted Charge Per Capita	Adjusted Charge Per Capita	Residential Charge By Unit Type (1)			
			Singles & Semis	Rows & Other Multiples	Large Apartment (> 70 sq.m)	Small Apartment (= or <70 sq.m)
Roads And Related	\$0	\$0	\$0	\$0	\$0	\$0
Water Services	\$1,680	\$1,933	\$6,630	\$4,678	\$3,479	\$2,898
Waste Water Services	\$1,696	\$1,884	\$6,462	\$4,559	\$3,391	\$2,825
Stormwater	\$471	\$547	\$1,876	\$1,324	\$985	\$820
Total Area-Specific DCs	\$3,847	\$4,364	\$14,968	\$10,561	\$7,855	\$6,543
City-wide General Services (By-law 32-2019)			\$9,334	\$6,643	\$4,941	\$3,900
City-wide Engineered Services (By-law 32-2019)			\$14,745	\$10,492	\$7,805	\$6,157
Total Tutela Heights DCs			\$39,047	\$27,696	\$20,601	\$16,600
(1) Based on Persons Per Unit Of:			3.43	2.42	1.80	1.50

TABLE 7

CITY OF BRANTFORD
TUTELA HEIGHTS
NON-RESIDENTIAL DEVELOPMENT CHARGES PER SQUARE METRE

Service	Non-Residential Charge	
	Unadjusted Charge per Square Metre	Adjusted Charge per Square Metre
Roads And Related	\$0.00	\$0.00
Water Services	\$25.85	\$30.69
Waste Water Services	\$26.10	\$29.95
Stormwater	\$7.26	\$8.67
Total Area-Specific DCs	\$59.21	\$69.31
City-wide General Services (By-law 32-2019)		\$12.01
City-wide Engineered Services (By-law 32-2019)		\$67.82
Total Tutela Heights DCs		\$149.14

6. 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 ASDC by-law. This examination is required as one of the provisions of the DCA. Additional details on the cost of growth analysis, including asset management analysis is included in Appendix D.

A. ASSET MANAGEMENT PLAN

Table 8 provides the calculated annual asset management contribution for both the gross capital expenditures and the share related to the ASDC-recoverable portions over the 2021-2051 planning period. The year 2052 has been included to calculate the annual contribution for these periods as the expenditures in 2051 will not trigger asset management contributions until 2052.

As shown in Table 8, by 2052 the City should fund an additional \$1.20 million per annum in order to fund the full life cycle costs of the new assets related to the area-specific engineered services supported under the ASDC by-law.

TABLE 8
CITY OF BRANTFORD
CALCULATED ANNUAL PRVISION BY 2052 - ENGINEERED SERVICES

Service	2021 - 2051 Capital Program		Calculated AMP Annual Provision by 2052	
	DC Recoverable	Non-DC Funded	DC Related	Non-DC Related
Roads And Related - Northern Boundary Expansion Lands	\$ 31,594,050	\$ -	\$ 230,817	\$ -
Roads And Related - Tutela Heights	\$ -	\$ -	\$ -	\$ -
Water Services - Northern Boundary Expansion Lands	\$ 91,974,535	\$ 33,595,515	\$ 392,688	\$ 157,522
Water Services - Tutela Heights	\$ 6,398,825	\$ 3,021,175	\$ 28,405	\$ 11,091
Waste Water Services - Northern Boundary Expansion Lands	\$ 83,247,412	\$ 40,124,088	\$ 423,627	\$ 196,274
Waste Water Services - Tutela Heights	\$ 6,459,160	\$ 869,840	\$ 35,130	\$ 3,417
Stormwater - Northern Boundary Expansion Lands	\$ 22,043,398	\$ 32,372,602	\$ 84,833	\$ 122,165
Stormwater - Tutela Heights	\$ 1,796,000	\$ -	\$ 8,065	\$ -
Total 2052 Annual Provision	\$ 243,513,380	\$ 109,983,220	\$ 1,203,566	\$ 490,469

B. LONG-TERM CAPITAL AND OPERATING COSTS

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

By 2051, the City's net operating costs are estimated to increase by \$2.23 million. These operating costs are fully related to the roads projects proposed for the Northern Boundary Expansion Lands, as no Roads and Related projects are included in the Tutela Heights capital forecasts, and the remaining services of Water, Waste Water, and Stormwater are rate-supported.

It is important that the City also consider any tax-supported components of the development-related capital program that will require funding from non-development charge sources. However, as no replacement or non-growth shares have been identified for the roads projects within the capital forecast, no non-DC funding is required.

C. THE PROGRAM IS DEEMED TO BE FINANCIALLY SUSTAINABLE

In summary, the asset management plan and long-term capital and operating analysis contained in Appendix D demonstrates that the City can afford to invest and operate the identified engineered services infrastructure over the 2021-2051 planning period.

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

7. DEVELOPMENT CHARGES POLICY AND ADMINISTRATION

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

- It is recommended that the City-wide development charges for all services continue to apply to the Northern Boundary Expansion Lands and Tutela Heights, in addition to the ASDCs.
- It is recommended that current practices regarding collection of development charges and by-law administration continue to the extent possible. It is noted that the City has recently reviewed its collection and administration practices to align with changes enacted through Bill 108, the *More Homes, More Choices Act* on January 1, 2020.
- As required under the DCA, the City should continue codify any rules regarding application of the by-laws and any exemptions within the development charges by-laws proposed for adoption.
- It is recommended that the City continue to report policies consistent with the requirements of the DCA.
- It is recommended that Council adopt the development-related capital forecasts included in this background study, subject to annual review through the City's normal capital budget process.

A copy of the by-law will be made two weeks prior to the Public Meeting as required by the legislation.

APPENDIX A: DEVELOPMENT FORECAST

DEVELOPMENT FORECAST

This appendix provides details of the development forecasts used to prepare the 2021 Area Specific Development Charges Background Study for the Northern Boundary Expansion Lands and Tutela Heights.

The forecasts of population, households, employment, and non-residential building space were prepared by Hemson through consultation with City staff. The forecasts are based on the City’s recent Official Plan update. Details of the forecasts are discussed herein and the provided in the following tables:

Forecasted Development: Northern Boundary Expansion Lands

Table 1	Forecast of Total Housing by Type
Table 2	Forecast Population Growth in New Households by Unit Type
Table 3	Employment Growth in New Non-Residential Space by Category

Forecasted Development: Tutela Heights

Table 4	Forecast of Total Housing by Type
Table 5	Forecast Population Growth in New Households by Unit Type
Table 6	Employment Growth in New Non-Residential Space by Category

A. FORECAST APPROACH AND KEY ASSUMPTIONS

The *Development Charges Act* (DCA) requires an estimate of “the anticipated amount, type and location of development” for which development charges may be imposed. The forecast must cover both residential and non-residential development and be specific enough with regards to the quantum, type, location and timing of such development to assist in the preparation of a reasonable development-related capital program.

Forecasts of population, households and employment were prepared by Hemson with City staff, and are consistent with the City’s new Official Plan. The development forecasts represent development that is anticipated to occur within the Northern Boundary Expansion Lands and the Tutela Heights area.

It is noted that assumptions related to persons per unit and employment density are largely consistent with the 2019 City-wide DC Background Study. This ensures consistency in the calculation of the rates per dwelling unit and gross floor area, as development in the

Northern Boundary Expansion Lands and Tutela Heights will be subject to the City-wide DC rates as well as the rates calculated through this Area Specific DC Background Study. In the case of single and semi-detached residential units, the persons per unit has increased marginally from 3.40 to 3.43 based on recent Statistics Canada Census data.

B. FORECAST METHOD AND RESULTS

This section describes the method used to establish the development charges forecast for the Northern Boundary Expansion Lands and Tutela Heights throughout the 2021 to 2051 planning period.

Development charges are levied on residential development as a charge per new unit. Therefore, for the residential forecast, a projection of the *population in new housing units* is required. The population in new units represents the population from which development charges will be collected.

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

i. Residential Forecast

The residential development forecasts incorporate anticipated growth in population and occupied dwelling units by type. The residential development charges calculations are based on a forecast of population growth in new housing units in the Northern Boundary Expansion Lands and Tutela Heights. The population in new units considers overall occupancy assumptions based on the most recent (2016) Statistics Canada Census data for recently constructed units.

A breakdown of the housing unit forecast by residential development unit for the Northern Boundary Expansion Lands and Tutela Heights is shown in Tables 1 and 4, respectively. These shares are calculated based on the breakdown of single and semi-detached units, rows and other multiples, and apartments.

As detailed in Table 1, the Northern Boundary Expansion Lands anticipates approximately 7,700 new housing units over the planning period. The forecast assumes an increasing rate of development over the first several years of the planning period, following adoption of the

new Official Plan, before stabilizing to 250 units annually over the remainder of the 2021-2051 period.

Overall, 61 per cent of housing growth in the Northern Boundary Expansion Lands is forecast to be in the form of single and semi-detached units. Apartments will comprise 6 per cent, while rows and other multiples will comprise 33 per cent.

Population growth in new units is estimated by applying the following “persons per unit” (PPU) occupancy assumptions to the housing unit forecast: 3.43 for single and semi-detached units; 2.42 for rows and other multiples; and 1.65 for apartments. Applying these assumptions, the population in the Northern Boundary Expansion Lands is anticipated to grow by 23,100 by 2051 (Table 2).

As depicted in Table 4, the Tutela Heights area anticipates approximately 1,200 new housing units between 2021 and 2051. The forecast, again, assumes more rapid growth over the initial years before stabilizing to an annual increase of 39 dwelling units per year. In Tutela Heights, 65 per cent of housing growth is forecast to be in the form of single and semi-detached units, while 30 per cent are expected to be rows and other multiples; the remaining 5 per cent are expected to be new apartment constructions. Applying the same PPU assumptions, population growth is estimated at 3,700 over the planning period (Table 5).

ii. Non-Residential Forecast

Tables 3 and 6 illustrate the employment growth in new non-residential space for the Northern Boundary Expansion Lands and Tutela Heights.

As depicted in Table 3, the Northern Boundary Expansion Lands is anticipated to accommodate 14,700 new jobs within new non-residential space over the 2021 to 2051 planning period. This includes 6,100 population-related jobs (e.g. commercial, institutional) as well as 8,600 employment land, or industrial sector, jobs.

Non-residential development charges are calculated on a per unit of gross floor area (GFA) basis. Therefore, as per the DCA, a forecast of future non-residential building space has been developed for the 2021-2051 planning period. An assumed floor space per worker (FSW) is applied to the employment forecast by category in order to project growth in new non-residential space in the City. The FSW assumptions used herein are 55 square metres per employee for population-related space, and 110 square metres per employee in employment land-related space. These assumptions were developed through consultation with staff and are consistent with the previous 2019 City-wide DC Background Study. The

result is approximately 1.28 million square metres of new non-residential building space anticipated within the Northern Boundary Expansion Lands over the 2021 to 2051 period.

Table 6 shows that the Tutela Heights area is anticipated to accommodate approximately 90 jobs within new non-residential space over the planning period, all of which are anticipated to be population-related, or in the commercial or institutional sectors. Applying the FSW assumption of 55 square metres per employee, this translates to nearly 5,000 square metres of new non-residential building space.

APPENDIX A
TABLE 1

CITY OF BRANTFORD
NORTHERN BOUNDARY EXPANSION LANDS
FORECAST OF TOTAL HOUSING BY TYPE

Mid-Year	Singles & Semis	Rows	Apartments	Total New HH
2021	0	0	0	0
2022	30	15	3	48
2023	124	63	10	197
2024	186	95	16	297
2025	217	111	20	348
2026	249	128	22	399
2027	218	112	19	349
2028	187	96	17	300
2029	153	83	14	250
2030	153	83	14	250
2031	153	83	14	250
2032	153	83	14	250
2033	153	83	14	250
2034	153	83	14	250
2035	153	83	14	250
2036	153	83	14	250
2037	153	83	14	250
2038	153	83	14	250
2039	153	83	14	250
2040	153	83	14	250
2041	153	83	14	250
2042	153	83	14	250
2043	153	83	14	250
2044	153	83	14	250
2045	153	83	14	250
2046	153	83	14	250
2047	153	83	14	250
2048	153	83	14	250
2049	153	83	14	250
2050	153	83	14	250
2051	153	83	14	250
2021 - 2051	4,723	2,530	435	7,688

Source: Hemson Consulting, 2021

APPENDIX A
TABLE 2

CITY OF BRANTFORD
NORTHERN BOUNDARY EXPANSION LANDS
FORECAST POPULATION GROWTH IN NEW HOUSEHOLDS BY UNIT TYPE*

Mid-Year	Singles & Semis	Rows	Apartments	Total Population in New HH
2021	0	0	0	0
2022	103	36	5	144
2023	425	152	16	593
2024	638	230	26	894
2025	744	269	33	1,046
2026	854	310	36	1,200
2027	748	271	31	1,050
2028	641	232	28	901
2029	525	201	23	749
2030	525	201	23	749
2031	525	201	23	749
2032	525	201	23	749
2033	525	201	23	749
2034	525	201	23	749
2035	525	201	23	749
2036	525	201	23	749
2037	525	201	23	749
2038	525	201	23	749
2039	525	201	23	749
2040	525	201	23	749
2041	525	201	23	749
2042	525	201	23	749
2043	525	201	23	749
2044	525	201	23	749
2045	525	201	23	749
2046	525	201	23	749
2047	525	201	23	749
2048	525	201	23	749
2049	525	201	23	749
2050	525	201	23	749
2051	525	201	23	749
2021 - 2051	16,228	6,123	704	23,055

*Based on PPU's 3.43 2.42 1.65

Source: Hemson Consulting, 2021

APPENDIX A

TABLE 3

CITY OF BRANTFORD
NORTHERN BOUNDARY EXPANSION LANDS
EMPLOYMENT GROWTH IN NEW NON-RESIDENTIAL SPACE BY CATEGORY

Employment Density

Population-Related Employment 55.0 m² per employee
 Employment Land Employment 110.0 m² per employee
 Major Office 27.0 m² per employee

Mid-Year	Population-Related		Employment Land		Major Office		Total Emp in New Space	
	Emp Growth	Growth in New Space (m ²)	Emp Growth	Growth in New Space (m ²)	Emp Growth	Space (m ²)	Emp Growth	Space (m ²)
2021	0	0	0	0	0	0	0	0
2022	0	0	39	4,290	0	0	39	4,290
2023	50	2,750	39	4,290	0	0	89	7,040
2024	100	5,500	39	4,290	0	0	139	9,790
2025	175	9,625	39	4,290	0	0	214	13,915
2026	225	12,375	38	4,180	0	0	263	16,555
2027	260	14,300	337	37,070	0	0	597	51,370
2028	250	13,750	337	37,070	0	0	587	50,820
2029	220	12,100	337	37,070	0	0	557	49,170
2030	220	12,100	337	37,070	0	0	557	49,170
2031	220	12,100	337	37,070	0	0	557	49,170
2032	220	12,100	337	37,070	0	0	557	49,170
2033	220	12,100	337	37,070	0	0	557	49,170
2034	220	12,100	337	37,070	0	0	557	49,170
2035	220	12,100	337	37,070	0	0	557	49,170
2036	220	12,100	337	37,070	0	0	557	49,170
2037	220	12,100	337	37,070	0	0	557	49,170
2038	220	12,100	337	37,070	0	0	557	49,170
2039	220	12,100	337	37,070	0	0	557	49,170
2040	220	12,100	337	37,070	0	0	557	49,170
2041	220	12,100	337	37,070	0	0	557	49,170
2042	220	12,100	337	37,070	0	0	557	49,170
2043	220	12,100	337	37,070	0	0	557	49,170
2044	220	12,100	337	37,070	0	0	557	49,170
2045	220	12,100	337	37,070	0	0	557	49,170
2046	220	12,100	337	37,070	0	0	557	49,170
2047	220	12,100	337	37,070	0	0	557	49,170
2048	220	12,100	337	37,070	0	0	557	49,170
2049	220	12,100	337	37,070	0	0	557	49,170
2050	220	12,100	337	37,070	0	0	557	49,170
2051	220	12,100	337	37,070	0	0	557	49,170
2021 - 2051	6,127	336,600	8,609	948,090	0	0	14,739	1,284,690

Source: Hemson Consulting, 2021



APPENDIX A
TABLE 4

CITY OF BRANTFORD
TUTELA HEIGHTS BOUNDARY EXPANSION LANDS
FORECAST OF TOTAL HOUSING BY TYPE

Mid-Year	Singles & Semis	Rows	Apartments	Total New HH
2021	0	0	0	0
2022	16	5	0	21
2023	20	10	0	30
2024	30	10	0	40
2025	40	15	0	55
2026	50	20	10	80
2027	40	15	4	59
2028	30	15	3	48
2029	25	12	2	39
2030	25	12	2	39
2031	25	12	2	39
2032	25	12	2	39
2033	25	12	2	39
2034	25	12	2	39
2035	25	12	2	39
2036	25	12	2	39
2037	25	12	2	39
2038	25	12	2	39
2039	25	12	2	39
2040	25	12	2	39
2041	25	12	2	39
2042	25	12	2	39
2043	25	12	2	39
2044	25	12	2	39
2045	25	12	2	39
2046	25	12	2	39
2047	25	12	2	39
2048	25	12	2	39
2049	25	12	2	39
2050	25	12	2	39
2051	25	12	2	39
2021 - 2051	801	366	63	1,230

Source: Hemson Consulting, 2021

APPENDIX A
TABLE 5

CITY OF BRANTFORD
TUTELA HEIGHTS BOUNDARY EXPANSION LANDS
FORECAST POPULATION GROWTH IN NEW HOUSEHOLDS BY UNIT TYPE*

Mid-Year	Singles & Semis	Rows	Apartments	Total Population in New HH
2021	0	0	0	0
2022	55	12	0	67
2023	69	24	0	93
2024	103	24	0	127
2025	137	36	0	173
2026	171	48	16	235
2027	137	36	7	180
2028	103	36	5	144
2029	86	29	3	118
2030	86	29	3	118
2031	86	29	3	118
2032	86	29	3	118
2033	86	29	3	118
2034	86	29	3	118
2035	86	29	3	118
2036	86	29	3	118
2037	86	29	3	118
2038	86	29	3	118
2039	86	29	3	118
2040	86	29	3	118
2041	86	29	3	118
2042	86	29	3	118
2043	86	29	3	118
2044	86	29	3	118
2045	86	29	3	118
2046	86	29	3	118
2047	86	29	3	118
2048	86	29	3	118
2049	86	29	3	118
2050	86	29	3	118
2051	86	29	3	118
2021 - 2051	2,753	883	97	3,733

*Based on PPU's 3.43 2.42 1.65

Source: Hemson Consulting, 2021

APPENDIX A
TABLE 6

CITY OF BRANTFORD
TUTELA HEIGHTS BOUNDARY EXPANSION LANDS
EMPLOYMENT GROWTH IN NEW NON-RESIDENTIAL SPACE BY CATEGORY

Employment Density

Population-Related Employment 55.0 m² per employee
 Employment Land Employment 110.0 m² per employee
 Major Office 27.0 m² per employee

Mid-Year	Population-Related		Employment Land		Major Office		Total Emp in New Space	
	Emp Growth	Growth in New Space (m ²)	Emp Growth	Growth in New Space (m ²)	Emp Growth	Space (m ²)	Emp Growth	Space (m ²)
2021	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0
2025	5	275	0	0	0	0	5	275
2026	8	440	0	0	0	0	8	440
2027	5	275	0	0	0	0	5	275
2028	3	165	0	0	0	0	3	165
2029	3	165	0	0	0	0	3	165
2030	3	165	0	0	0	0	3	165
2031	3	165	0	0	0	0	3	165
2032	3	165	0	0	0	0	3	165
2033	3	165	0	0	0	0	3	165
2034	3	165	0	0	0	0	3	165
2035	3	165	0	0	0	0	3	165
2036	3	165	0	0	0	0	3	165
2037	3	165	0	0	0	0	3	165
2038	3	165	0	0	0	0	3	165
2039	3	165	0	0	0	0	3	165
2040	3	165	0	0	0	0	3	165
2041	3	165	0	0	0	0	3	165
2042	3	165	0	0	0	0	3	165
2043	3	165	0	0	0	0	3	165
2044	3	165	0	0	0	0	3	165
2045	3	165	0	0	0	0	3	165
2046	3	165	0	0	0	0	3	165
2047	3	165	0	0	0	0	3	165
2048	3	165	0	0	0	0	3	165
2049	3	165	0	0	0	0	3	165
2050	3	165	0	0	0	0	3	165
2051	3	165	0	0	0	0	3	165
2021 - 2051	90	4,950	0	0	0	0	90	4,950

Source: Hemson Consulting, 2021

APPENDIX B

NORTHERN BOUNDARY EXPANSION LANDS

TECHNICAL APPENDIX

NORTHERN BOUNDARY EXPANSION LANDS

TECHNICAL APPENDIX

This appendix provides the detailed analysis undertaken to establish the area-specific development charge rates for the Northern Boundary Expansion Lands service area. These engineered services include area-specific Roads and Related, Water, Waste Water, and Stormwater Services.

The basis of the development-related capital program is the City’s Master Servicing Plan and Transportation Master Plan as well as discussions with City staff. The projects identified in the capital program are required to service the demands of the anticipated development in the Northern Boundary Expansion Lands to occur over the planning period of 2021 to 2051.

The following tables provide details of the projects included in the area-specific engineered infrastructure development charge calculations for the Northern Boundary Expansion Lands. The content of the tables is as follows:

- Table 1: Development Related Capital Program
- Table 2: Calculation of Unadjusted Development Charges
- Table 3: Residential & Non-Residential Cash Flow Analysis

ALLOCATION OF CAPITAL COSTS

The projects and costs have been identified and allocated through discussions with City staff. All costs are represented in current (2021) dollars.

The following table summarizes the allocation of the Northern Boundary Expansion Lands engineered services capital costs (in thousands of dollars):

Service	Gross Cost	Grants / Subsidies / Other	Replacement / Benefit to Existing	Post-2051 Benefit	Net Development Related	Allocation	
						Residential (61%)	Non-Residential (39%)
Roads & Related	\$31,594.05	\$0.00	\$0.00	\$0.00	\$31,594.05	\$19,272.37	\$12,321.68
Water	\$125,570.05	\$524.00	\$27,698.47	\$5,373.05	\$91,974.54	\$56,104.47	\$35,870.07
Waste Water	\$123,371.50	\$0.00	\$24,386.93	\$15,737.16	\$83,247.41	\$50,780.92	\$32,466.49
Stormwater	\$54,416.00	\$0.00	\$32,372.60	\$0.00	\$22,043.40	\$13,446.47	\$8,596.93
Total	\$334,951.60	\$524.00	\$84,458.00	\$21,110.21	\$228,859.40	\$139,604.23	\$89,255.16

The area-specific engineered services capital program totals \$334.95 million, which is reduced by \$524,000 in direct developer contributions. The remaining net cost to the municipality is \$334.43 million. Of this amount:

- \$84.46 million (25%) is identified as replacement share, or benefit to the existing community and has thus been excluded from the development charge calculation; and
- \$21.11 million (6%) is attributable to development occurring beyond 2051. Through discussions with City engineering staff, a share of the capital projects has been identified to serve development within the Northern Boundary Expansion Lands beyond the 2051 planning horizon. This share is allocated to post-period development and has also been removed from the development charges calculation.

After accounting for these deductions, the remaining \$228.86 million (68% of the net municipal cost) is to be funded through the area-specific DCs over the 2021-2051 planning period.

APPENDIX B.1

NORTHERN BOUNDARY EXPANSION LANDS

ROADS AND RELATED

NORTHERN BOUNDARY EXPANSION LANDS

ROADS AND RELATED

The City of Brantford maintains a network of road surfaces, sidewalks, bridges, culverts, and traffic signals. The capital program contained herein, assembled by the City’s engineering staff, represents Roads and Related projects that are designed to serve the anticipated population and employment growth within the Northern Boundary Expansion Lands between 2021 and 2051.

The 2021-2051 Roads and Related capital program totals \$31.59 million and includes two segments of a two-lane new east/west road within the Northern Boundary Expansion Lands. The details, timing, and cost breakdown of these road projects are shown in Table 1. No grants, subsidies, or other contributions are anticipated, and the projects are anticipated to be 100% related to new development in the Northern Boundary Expansion Lands. As such, the full amount of \$31.59 million is carried forward to the development charges calculation.

Table 2 summarizes the Roads and Related program and calculation of the unadjusted residential and non-residential development charges. The DC eligible share of \$31.59 million has been allocated 61 per cent to new residential development and 39 per cent to non-residential development. The allocation of costs is based on the future shares of population in new units and employment growth in new space in the Northern Boundary Expansion Lands to 2051. The residential share of the capital program totals \$19.27 million and, when divided by the forecast growth in population in new units (23,055), an unadjusted charge of \$835.93 per capita results. The non-residential share, \$12.32 million is applied against the forecasted 1,284,690 square metres of non-residential floor space and yields an unadjusted charge of \$9.59 per square metre.

The residential and non-residential cash flow analysis is shown in Table 3. The analysis takes into consideration expenditure timing and DC revenue projections. After cash flow considerations, the residential and non-residential charges increase to \$864 per capita and \$10.34 per square metre, respectively.

NORTHERN BOUNDARY EXPANSION LANDS ROADS AND RELATED SUMMARY					
2021 - 2051		Unadjusted		Adjusted	
Development-Related Capital Program		Development Charge		Development Charge	
Total	Net DC Recoverable	\$/capita	\$/sq.m	\$/capita	\$/sq.m
\$31,594	\$31,594	\$835.93	\$9.59	\$864	\$10.34

APPENDIX B.1

TABLE 1

CITY OF BRANTFORD
 NORTHERN BOUNDARY EXPANSION LANDS
 ROADS & RELATED DEVELOPMENT-RELATED CAPITAL PROGRAM

ROADS AND RELATED GROWTH-RELATED CAPITAL PROGRAM 2021-2051		Anticipated Timing	Gross Cost	Grants / Subsidies / Other	Benefit to Existing / Other Recoveries	Prior Growth / Available DC Shares	Net Development-Related	Post Period Benefit	Net DC Recoverable 2021-2051	
Proj #	Road	Length (m)								
1.1 Road Projects										
1.1.1	New East/West Road (2 lanes) – Paris Rd at West City Limit to King George Rd)	4,200	2032 - 2041	\$ 15,252,300	\$ -	0%	\$ -	\$ 15,252,300	\$ -	\$ 15,252,300
1.1.2	New East/West Road (2 lanes – King George Road to East City Boundary)	4,500	2032 - 2041	\$ 16,341,750	\$ -	0%	\$ -	\$ 16,341,750	\$ -	\$ 16,341,750
	Subtotal Road Projects			\$ 31,594,050	\$ -		\$ -	\$ 31,594,050	\$ -	\$ 31,594,050
TOTAL ROADS AND RELATED GROWTH-RELATED CAPITAL PROGRAM 2021-2051				\$31,594,050	\$ -		\$0	\$ -	\$ -	\$31,594,050

APPENDIX B.1
TABLE 2

CITY OF BRANTFORD
NORTHERN BOUNDARY EXPANSION LANDS
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
ROADS & RELATED

Growth in Population in New Units 2021-2051	23,055
Employment Growth in New Space 2021-2051	14,739
Growth in New Building Space (Square Metres) 2021-2051	1,284,690

	Growth-Related Capital Forecast							Residential Share		Non-Residential Share	
	Gross Cost	Grants / Subsidies / Other	Benefit to Existing / Other Recoveries	Prior Growth / Available DC Shares	Post Period Benefit	Net Development-Related	%	\$000	%	\$000	
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)					
ROADS & RELATED											
Road Projects	\$ 31,594.05	\$ -	\$ -	\$ -	\$ -	\$ 31,594.05	61%	\$ 19,272.37	39%	\$ 12,321.68	
TOTAL ROADS & RELATED	\$ 31,594.05	\$ -	\$ -	\$ -	\$ -	\$ 31,594.05		\$ 19,272.37		\$ 12,321.68	
Unadjusted Development Charge Per Capita (\$)								\$ 835.93			
Unadjusted Development Charge Per Square Metre (\$)									\$ 9.59		

Residential Development Charge Calculation			
Residential Share of 2021-2051 DC Eligible Costs	61%	\$	19,272,371
10-year Growth in Population in New Units			23,055
Development Charge Per Capita (Unadjusted)		\$	835.93
Development Charge Per Capita after Cash Flow		\$	864
Charge per Single Detached Unit	3.43	\$	2,964

Non-Residential Development Charge Calculation			
Non-Residential Share of 2021-2051 DC Eligible Costs	39%	\$	12,321,680
2021-2051 Growth in Non-Residential Building Space (Sq.M.)			1,284,690
Development Charge Per Square Metre (Unadjusted)		\$	9.59
Development Charge Per Square Metre After Cash Flow		\$	10.34

APPENDIX B.1
TABLE 3 - PAGE 1

CITY OF BRANTFORD
NORTHERN BOUNDARY EXPANSION LANDS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE

ROADS & RELATED
RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

ROADS & RELATED	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
OPENING CASH BALANCE	\$0.0	\$0.0	\$129.1	\$676.1	\$1,533.8	\$2,582.8	\$3,837.9	\$5,011.8	\$6,097.1	\$7,081.9	\$8,116.7	\$9,203.5	\$7,890.2	\$6,498.2	\$5,024.1	\$3,464.5
2021 - 2051 RESIDENTIAL FUNDING REQUIREMENTS																
- Roads and Related: Non Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$1,927.2	\$1,927.2	\$1,927.2	\$1,927.2	\$1,927.2
- Roads and Related: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$2,396.3	\$2,444.2	\$2,493.1	\$2,542.9	\$2,593.8
NEW RESIDENTIAL DEVELOPMENT																
- Population Growth in New Units	-	144	593	894	1,046	1,200	1,050	901	749	749	749	749	749	749	749	749
REVENUE																
- DC Receipts: Inflated	\$0.0	\$126.9	\$533.1	\$819.7	\$978.2	\$1,144.7	\$1,021.7	\$894.2	\$758.2	\$773.4	\$788.9	\$804.6	\$820.7	\$837.1	\$853.9	\$871.0
INTEREST																
- Interest on Opening Balance	\$0.0	\$0.0	\$4.5	\$23.7	\$53.7	\$90.4	\$134.3	\$175.4	\$213.4	\$247.9	\$284.1	\$322.1	\$276.2	\$227.4	\$175.8	\$121.3
- Interest on In-year Transactions	\$0.0	\$2.2	\$9.3	\$14.3	\$17.1	\$20.0	\$17.9	\$15.6	\$13.3	\$13.5	\$13.8	(\$43.8)	(\$44.6)	(\$45.5)	(\$46.4)	(\$47.4)
TOTAL REVENUE	\$0.0	\$129.1	\$546.9	\$857.7	\$1,049.0	\$1,255.1	\$1,173.9	\$1,085.3	\$984.9	\$1,034.8	\$1,086.8	\$1,083.0	\$1,052.2	\$1,019.0	\$983.3	\$944.9
CLOSING CASH BALANCE	\$0.0	\$129.1	\$676.1	\$1,533.8	\$2,582.8	\$3,837.9	\$5,011.8	\$6,097.1	\$7,081.9	\$8,116.7	\$9,203.5	\$7,890.2	\$6,498.2	\$5,024.1	\$3,464.5	\$1,815.6

ROADS & RELATED	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	TOTAL
OPENING CASH BALANCE	\$1,815.6	\$73.5	(\$1,765.7)	(\$3,741.4)	(\$5,863.3)	(\$8,140.2)	(\$7,590.0)	(\$6,989.4)	(\$6,335.5)	(\$5,624.8)	(\$4,853.9)	(\$4,019.0)	(\$3,116.1)	(\$2,141.1)	(\$1,089.6)	-
2021 - 2051 RESIDENTIAL FUNDING REQUIREMENTS																
- Roads and Related: Non Inflated	\$1,927.2	\$1,927.2	\$1,927.2	\$1,927.2	\$1,927.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$19,272.4
- Roads and Related: Inflated	\$2,645.7	\$2,698.6	\$2,752.6	\$2,807.6	\$2,863.8	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$26,238.6
NEW RESIDENTIAL DEVELOPMENT																
- Population Growth in New Units	749	749	749	749	749	749	749	749	749	749	749	749	749	749	749	23,055
REVENUE																
- DC Receipts: Inflated	\$888.4	\$906.1	\$924.3	\$942.8	\$961.6	\$980.8	\$1,000.5	\$1,020.5	\$1,040.9	\$1,061.7	\$1,082.9	\$1,104.6	\$1,126.7	\$1,149.2	\$1,172.2	\$27,389.5
INTEREST																
- Interest on Opening Balance	\$63.5	\$2.6	(\$97.1)	(\$205.8)	(\$322.5)	(\$447.7)	(\$417.4)	(\$384.4)	(\$348.5)	(\$309.4)	(\$267.0)	(\$221.0)	(\$171.4)	(\$117.8)	(\$59.9)	(\$953.6)
- Interest on In-year Transactions	(\$48.3)	(\$49.3)	(\$50.3)	(\$51.3)	(\$52.3)	\$17.2	\$17.5	\$17.9	\$18.2	\$18.6	\$19.0	\$19.3	\$19.7	\$20.1	\$20.5	(\$154.1)
TOTAL REVENUE	\$903.6	\$859.4	\$776.9	\$685.7	\$586.8	\$550.3	\$600.6	\$653.9	\$710.7	\$770.9	\$834.9	\$902.9	\$975.0	\$1,051.6	\$1,132.8	\$26,281.8
CLOSING CASH BALANCE	\$73.5	(\$1,765.7)	(\$3,741.4)	(\$5,863.3)	(\$8,140.2)	(\$7,590.0)	(\$6,989.4)	(\$6,335.5)	(\$5,624.8)	(\$4,853.9)	(\$4,019.0)	(\$3,116.1)	(\$2,141.1)	(\$1,089.6)	\$43.2	-

2021 Adjusted Charge Per Capita	\$864
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Allocation of Capital Program	
Residential Sector	61%
Non-Residential Sector	39%
Rates for 2021	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%



APPENDIX B.1
TABLE 3 - PAGE 2

CITY OF BRANTFORD
NORTHERN BOUNDARY EXPANSION LANDS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE

ROADS & RELATED
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

ROADS & RELATED	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
OPENING CASH BALANCE	\$0.0	\$0.0	\$46.0	\$124.6	\$238.3	\$405.0	\$611.5	\$1,241.6	\$1,899.2	\$2,571.8	\$3,280.0	\$4,025.5	\$3,241.8	\$2,412.1	\$1,534.6	\$607.0
2021 - 2051 NON-RESIDENTIAL FUNDING REQUIREMENTS																
- Roads and Related: Non Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$1,232.2	\$1,232.2	\$1,232.2	\$1,232.2	\$1,232.2
- Roads and Related: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$1,532.0	\$1,562.7	\$1,593.9	\$1,625.8	\$1,658.3
NEW NON-RESIDENTIAL DEVELOPMENT																
- New Gross Floor Area (sq. m)	-	4,290	7,040	9,790	13,915	16,555	51,370	50,820	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170
REVENUE																
- DC Receipts: Inflated	\$0.0	\$45.2	\$75.7	\$107.4	\$155.7	\$189.0	\$598.2	\$603.6	\$595.7	\$607.6	\$619.8	\$632.2	\$644.8	\$657.7	\$670.8	\$684.3
INTEREST																
- Interest on Opening Balance	\$0.0	\$0.0	\$1.6	\$4.4	\$8.3	\$14.2	\$21.4	\$43.5	\$66.5	\$90.0	\$114.8	\$140.9	\$113.5	\$84.4	\$53.7	\$21.2
- Interest on In-year Transactions	\$0.0	\$0.8	\$1.3	\$1.9	\$2.7	\$3.3	\$10.5	\$10.6	\$10.4	\$10.6	\$10.8	(\$24.7)	(\$25.2)	(\$25.7)	(\$26.3)	(\$26.8)
TOTAL REVENUE	\$0.0	\$46.0	\$78.6	\$113.6	\$166.8	\$206.5	\$630.1	\$657.6	\$672.6	\$708.2	\$745.4	\$748.3	\$733.0	\$716.4	\$698.2	\$678.8
CLOSING CASH BALANCE	\$0.0	\$46.0	\$124.6	\$238.3	\$405.0	\$611.5	\$1,241.6	\$1,899.2	\$2,571.8	\$3,280.0	\$4,025.5	\$3,241.8	\$2,412.1	\$1,534.6	\$607.0	(\$372.6)

ROADS & RELATED	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	TOTAL
OPENING CASH BALANCE	(\$372.6)	(\$1,414.0)	(\$2,533.1)	(\$3,734.6)	(\$5,023.3)	(\$6,404.6)	(\$5,972.7)	(\$5,501.5)	(\$4,988.3)	(\$4,430.6)	(\$3,825.6)	(\$3,170.3)	(\$2,461.7)	(\$1,696.4)	(\$871.0)	-
2021 - 2051 NON-RESIDENTIAL FUNDING REQUIREMENTS																
- Roads and Related: Non Inflated	\$1,232.2	\$1,232.2	\$1,232.2	\$1,232.2	\$1,232.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$12,321.7
- Roads and Related: Inflated	\$1,691.5	\$1,725.3	\$1,759.8	\$1,795.0	\$1,830.9	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$16,775.5
NEW NON-RESIDENTIAL DEVELOPMENT																
- New Gross Floor Area (sq. m)	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	1,284,690
REVENUE																
- DC Receipts: Inflated	\$697.9	\$711.9	\$726.1	\$740.7	\$755.5	\$770.6	\$786.0	\$801.7	\$817.8	\$834.1	\$850.8	\$867.8	\$885.2	\$902.9	\$920.9	\$18,957.6
INTEREST																
- Interest on Opening Balance	(\$20.5)	(\$77.8)	(\$139.3)	(\$205.4)	(\$276.3)	(\$352.3)	(\$328.5)	(\$302.6)	(\$274.4)	(\$243.7)	(\$210.4)	(\$174.4)	(\$135.4)	(\$93.3)	(\$47.9)	(\$2,103.6)
- Interest on In-year Transactions	(\$27.3)	(\$27.9)	(\$28.4)	(\$29.0)	(\$29.6)	\$13.5	\$13.8	\$14.0	\$14.3	\$14.6	\$14.9	\$15.2	\$15.5	\$15.8	\$16.1	(\$60.3)
TOTAL REVENUE	\$650.1	\$606.3	\$558.4	\$506.3	\$449.6	\$431.8	\$471.3	\$513.1	\$557.8	\$605.0	\$655.3	\$708.6	\$765.3	\$825.4	\$889.1	\$16,793.6
CLOSING CASH BALANCE	(\$1,414.0)	(\$2,533.1)	(\$3,734.6)	(\$5,023.3)	(\$6,404.6)	(\$5,972.7)	(\$5,501.5)	(\$4,988.3)	(\$4,430.6)	(\$3,825.6)	(\$3,170.3)	(\$2,461.7)	(\$1,696.4)	(\$871.0)	\$18.1	-

2021 Adjusted Charge Per Sq. m **\$10.34**

Allocation of Capital Program

Residential Sector 61%
Non-Residential Sector 39%

Rates for 2021

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



APPENDIX B.2
NORTHERN BOUNDARY EXPANSION LANDS
WATER SERVICES

NORTHERN BOUNDARY EXPANSION LANDS

WATER SERVICES

The following section sets out the 2021-2051 development-related capital forecast and the calculation of the area-specific development charge for Water Services in the Northern Boundary Expansion Lands.

The 2021-2051 Water Services capital program includes distribution, storage and treatment infrastructure necessary to service development in the Northern Boundary Expansion Lands.

The total cost of the capital program is approximately \$125.57 million. Not all of these costs contribute to the development charges calculation: \$524,000 in anticipated direct developer contributions is deducted, while benefit-to-existing shares account for a total of \$27.70 million. Of the remaining \$97.35 million, \$5.37 million is considered to benefit development beyond the 2051 planning horizon; this share of project costs is to be paid for largely by future development and will be considered under future development charges.

As shown in Table 2, the development-related share has been allocated 61 per cent, or \$56.10 million, to new residential development and 39 per cent, or \$35.87 million, to new non-residential development. The residential share is divided by the anticipated growth in population in new units between 2021 and 2051 in the Northern Boundary Expansion Lands (23,055), which yields an unadjusted development charge of \$2,433.51 per capita. The non-residential share of \$35.87 million, when divided by the anticipated increase in square metres of new non-residential space (1,284,690) yields an unadjusted DC of \$27.92 per square metre.

In Table 3, the residential and non-residential cash flow analysis is shown. After cash flow analysis, the residential calculated charge increases to \$3,227 per capita. The adjusted non-residential development charge increases to \$40.01 per square metre.

NORTHERN BOUNDARY EXPANSION LANDS					
WATER SERVICES SUMMARY					
2021 - 2051		Unadjusted		Adjusted	
Development-Related Capital Program		Development Charge		Development Charge	
Total	Net DC Recoverable	\$/capita	\$/sq.m	\$/capita	\$/sq.m
\$125,570	\$91,975	\$2,433.51	\$27.92	\$3,227	\$40.01

APPENDIX B.2
TABLE 1

CITY OF BRANTFORD
NORTHERN BOUNDARY EXPANSION LANDS
WATER SERVICES DEVELOPMENT-RELATED CAPITAL PROGRAM

WATER SERVICE GROWTH-RELATED CAPITAL PROGRAM 2021-2051	MSP Project #	Anticipated Timing	Gross Cost	Grants / Subsidies / Other	Benefit to Existing / Other Recoveries	Prior Growth / Available DC Shares	Net Development-Related	Post Period Benefit	Net DC Recoverable 2021-2051	
2.1 Distribution										
2.1.1 Oak Park Road Trunk Watermain	W-M-002	2021 - 2025	\$ 14,407,000	\$ -	0%	\$ -	\$ -	\$ 14,407,000	\$ -	\$ 14,407,000
2.1.2 Powerline Road Trunk Watermain	W-M-003	2021 - 2025	\$ 7,682,000	\$ -	0%	\$ -	\$ -	\$ 7,682,000	\$ -	\$ 7,682,000
2.1.3 King George Road Watermain	W-M-001	2021 - 2025	\$ 13,936,800	\$ -	40%	\$ 5,574,720	\$ -	\$ 8,362,080	\$ -	\$ 8,362,080
2.1.4 North-South Collector Road Trunk Watermain	W-M-004	2032 - 2041	\$ 1,088,000	\$ -	40%	\$ 435,200	\$ -	\$ 652,800	\$ -	\$ 652,800
2.1.5 North-South Collector Road Local Watermain	W-M-005	2026 - 2031	\$ 524,000	\$ 524,000	0%	\$ -	\$ -	\$ -	\$ -	\$ -
2.1.6 Paris Road Trunk Watermain	W-M-006	2026 - 2031	\$ 11,184,000	\$ -	40%	\$ 4,473,600	\$ -	\$ 6,710,400	\$ 2,348,640	\$ 4,361,760
2.1.7 Powerline Road Distribution Watermain	W-M-007	2021 - 2025	\$ 1,357,000	\$ -	0%	\$ -	\$ -	\$ 1,357,000	\$ -	\$ 1,357,000
2.1.8 Powerline Road Distribution Watermain	W-M-008	2021 - 2025	\$ 1,457,000	\$ -	0%	\$ -	\$ -	\$ 1,457,000	\$ -	\$ 1,457,000
2.1.9 Pressure District 4 East-West Collector Road Trunk Watermain	W-M-009	2032 - 2041	\$ 3,329,000	\$ -	0%	\$ -	\$ -	\$ 3,329,000	\$ -	\$ 3,329,000
2.1.10 Pressure District 2/3 East-West Collector Road Trunk Watermain	W-M-010	2032 - 2041	\$ 2,712,000	\$ -	0%	\$ -	\$ -	\$ 2,712,000	\$ -	\$ 2,712,000
2.1.11 Pressure District 2/3 East-West Collector Road Trunk Watermain	W-M-011	2032 - 2041	\$ 3,389,000	\$ -	0%	\$ -	\$ -	\$ 3,389,000	\$ -	\$ 3,389,000
2.1.12 Pressure District 2/3 East-West Collector Road Trunk Watermain	W-M-012	2032 - 2041	\$ 3,208,000	\$ -	0%	\$ -	\$ -	\$ 3,208,000	\$ -	\$ 3,208,000
2.1.13 Upsize Fairview Drive/Lynden Road Trunk Watermain	W-M-027	2032 - 2041	\$ 8,961,750	\$ -	20%	\$ 1,792,350	\$ -	\$ 7,169,400	\$ -	\$ 7,169,400
2.1.14 East-West Collector Road Trunk Watermain	W-M-013	2021 - 2025	\$ 1,070,000	\$ -	0%	\$ -	\$ -	\$ 1,070,000	\$ -	\$ 1,070,000
2.1.15 Brantwood Park Road Trunk Watermain	W-M-014	2021 - 2025	\$ 651,000	\$ -	0%	\$ -	\$ -	\$ 651,000	\$ -	\$ 651,000
2.1.16 Park Road Trunk Watermain	W-M-015	2021 - 2025	\$ 1,125,000	\$ -	0%	\$ -	\$ -	\$ 1,125,000	\$ -	\$ 1,125,000
2.1.17 Powerline Road Local Watermain	W-M-016	2021 - 2025	\$ 1,431,000	\$ -	0%	\$ -	\$ -	\$ 1,431,000	\$ -	\$ 1,431,000
2.1.18 East-West Collector Road Local Watermain	W-M-017	2021 - 2025	\$ 1,679,000	\$ -	0%	\$ -	\$ -	\$ 1,679,000	\$ -	\$ 1,679,000
2.1.19 Lynden Road Trunk Watermain Upgrades	W-M-018	2026 - 2031	\$ 1,184,000	\$ -	40%	\$ 473,600	\$ -	\$ 710,400	\$ -	\$ 710,400
2.1.20 Lynden Road Distribution Main Extension	W-M-019	2021 - 2025	\$ 2,998,000	\$ -	0%	\$ -	\$ -	\$ 2,998,000	\$ -	\$ 2,998,000
2.1.21 East Expansion Lands Residential Loop	W-M-020	2021 - 2025	\$ 1,535,000	\$ -	0%	\$ -	\$ -	\$ 1,535,000	\$ -	\$ 1,535,000
2.1.22 East Expansion Lands Employment Loop	W-M-021	2026 - 2031	\$ 2,502,000	\$ -	0%	\$ -	\$ -	\$ 2,502,000	\$ -	\$ 2,502,000
2.1.23 Garden Avenue Watermain Upgrade	W-M-029	2026 - 2031	\$ 1,574,000	\$ -	20%	\$ 314,800	\$ -	\$ 1,259,200	\$ -	\$ 1,259,200
2.1.24 Wayne Gretzky Pump Upgrades	W-M-032	2026 - 2031	\$ 6,497,000	\$ -	40%	\$ 2,598,800	\$ -	\$ 3,898,200	\$ -	\$ 3,898,200
2.1.25 Tollgate Pump Upgrades	W-M-033	2026 - 2031	\$ 7,425,000	\$ -	40%	\$ 2,970,000	\$ -	\$ 4,455,000	\$ -	\$ 4,455,000
Subtotal Distribution			\$ 102,906,550	\$ 524,000		\$ 18,633,070	\$ -	\$ 83,749,480	\$ 2,348,640	\$ 81,400,840
2.2 Storage and Treatment										
2.2.1 Pressure District 2/3 Elevated Tank	W-ET-001	2021 - 2025	\$ 16,411,500	\$ -	40%	\$ 6,564,600	\$ -	\$ 9,846,900	\$ 2,461,725	\$ 7,385,175
2.2.2 Pressure District 4 Elevated Tank	W-ET-002	2032 - 2041	\$ 6,252,000	\$ -	40%	\$ 2,500,800	\$ -	\$ 3,751,200	\$ 562,680	\$ 3,188,520
Subtotal Storage And Treatment			\$ 22,663,500	\$ -		\$ 9,065,400	\$ -	\$ 13,598,100	\$ 3,024,405	\$ 10,573,695
TOTAL WATER SERVICE GROWTH-RELATED CAPITAL PROGRAM 2021-2051			\$ 125,570,050	\$ 524,000		\$ 27,698,470	\$ -	\$ 97,347,580	\$ 5,373,045	\$ 91,974,535



APPENDIX B.2
TABLE 2

CITY OF BRANTFORD
NORTHERN BOUNDARY EXPANSION LANDS
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
WATER SERVICES

Growth in Population in New Units 2021-2051	23,055
Employment Growth in New Space 2021-2051	14,739
Growth in New Building Space (Square Metres) 2021-2051	1,284,690

	Growth-Related Capital Forecast							Residential Share		Non-Residential Share	
	Gross Cost	Grants / Subsidies / Other	Benefit to Existing / Other Recoveries	Prior Growth / Available DC Shares	Post Period Benefit	Net Development-Related	%	\$000	%	\$000	
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)					
WATER SERVICES											
Distribution	\$ 102,906.55	\$ 524.00	\$ 18,633.07	\$ -	\$ 2,348.64	\$ 81,400.84	61%	\$ 49,654.51	39%	\$ 31,746.33	
Storage and Treatment	\$ 22,663.50	\$ -	\$ 9,065.40	\$ -	\$ 3,024.41	\$ 10,573.70	61%	\$ 6,449.95	39%	\$ 4,123.74	
TOTAL WATER SERVICES	\$ 125,570.05	\$ 524.00	\$ 27,698.47	\$ -	\$ 5,373.05	\$ 91,974.54		\$ 56,104.47		\$ 35,870.07	
Unadjusted Development Charge Per Capita (\$)								\$ 2,433.51			
Unadjusted Development Charge Per Square Metre (\$)										\$ 27.92	

Residential Development Charge Calculation			
Residential Share of 2021-2051 DC Eligible Costs	61%	\$	56,104,466
30-year Growth in Population in New Units			23,055
Development Charge Per Capita (Unadjusted)		\$	2,433.51
Development Charge Per Capita after Cash Flow		\$	3,227
Charge per Single Detached Unit	3.43	\$	11,069

Non-Residential Development Charge Calculation			
Non-Residential Share of 2021-2051 DC Eligible Costs	39%	\$	35,870,069
2021-2051 Growth in Non-Residential Building Space (Sq.M.)			1,284,690
Development Charge Per Square Metre (Unadjusted)		\$	27.92
Development Charge Per Square Metre After Cash Flow		\$	40.01

APPENDIX B.2
TABLE 3 - PAGE 1

CITY OF BRANTFORD
NORTHERN BOUNDARY EXPANSION LANDS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE

WATER SERVICES
RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

WATER SERVICES	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
OPENING CASH BALANCE	\$0.0	(\$6,410.6)	(\$12,814.9)	(\$18,143.6)	(\$22,798.7)	(\$27,237.5)	(\$26,348.3)	(\$25,917.0)	(\$25,986.4)	(\$26,617.3)	(\$27,266.8)	(\$27,935.9)	(\$28,239.5)	(\$28,535.2)	(\$28,821.9)	(\$29,098.9)
2021 - 2051 RESIDENTIAL FUNDING REQUIREMENTS																
- Water Service: Non Inflated	\$6,239.0	\$6,239.0	\$6,239.0	\$6,239.0	\$6,239.0	\$1,747.3	\$1,747.3	\$1,747.3	\$1,747.3	\$1,747.3	\$1,747.3	\$1,442.6	\$1,442.6	\$1,442.6	\$1,442.6	\$1,442.6
- Water Service: Inflated	\$6,239.0	\$6,363.8	\$6,491.0	\$6,620.9	\$6,753.3	\$1,929.2	\$1,967.7	\$2,007.1	\$2,047.2	\$2,088.2	\$2,129.9	\$1,793.7	\$1,829.5	\$1,866.1	\$1,903.4	\$1,941.5
NEW RESIDENTIAL DEVELOPMENT																
- Population Growth in New Units	-	144	593	894	1,046	1,200	1,050	901	749	749	749	749	749	749	749	749
REVENUE																
- DC Receipts: Inflated	\$0.0	\$474.0	\$1,990.9	\$3,061.5	\$3,653.7	\$4,275.4	\$3,815.8	\$3,339.8	\$2,831.9	\$2,888.6	\$2,946.3	\$3,005.3	\$3,065.4	\$3,126.7	\$3,189.2	\$3,253.0
INTEREST																
- Interest on Opening Balance	\$0.0	(\$352.6)	(\$704.8)	(\$997.9)	(\$1,253.9)	(\$1,498.1)	(\$1,449.2)	(\$1,425.4)	(\$1,429.3)	(\$1,464.0)	(\$1,499.7)	(\$1,536.5)	(\$1,553.2)	(\$1,569.4)	(\$1,585.2)	(\$1,600.4)
- Interest on In-year Transactions	(\$171.6)	(\$162.0)	(\$123.8)	(\$97.9)	(\$85.2)	\$41.1	\$32.3	\$23.3	\$13.7	\$14.0	\$14.3	\$21.2	\$21.6	\$22.1	\$22.5	\$23.0
TOTAL REVENUE	(\$171.6)	(\$40.5)	\$1,162.3	\$1,965.7	\$2,314.5	\$2,818.4	\$2,399.0	\$1,937.7	\$1,416.4	\$1,438.7	\$1,460.9	\$1,490.0	\$1,533.9	\$1,579.3	\$1,626.5	\$1,675.5
CLOSING CASH BALANCE	(\$6,410.6)	(\$12,814.9)	(\$18,143.6)	(\$22,798.7)	(\$27,237.5)	(\$26,348.3)	(\$25,917.0)	(\$25,986.4)	(\$26,617.3)	(\$27,266.8)	(\$27,935.9)	(\$28,239.5)	(\$28,535.2)	(\$28,821.9)	(\$29,098.9)	(\$29,364.9)

WATER SERVICES	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	TOTAL
OPENING CASH BALANCE	(\$29,364.9)	(\$29,618.8)	(\$29,859.5)	(\$30,085.7)	(\$30,296.0)	(\$30,488.9)	(\$28,438.3)	(\$26,200.3)	(\$23,763.2)	(\$21,114.6)	(\$18,241.1)	(\$15,128.9)	(\$11,763.2)	(\$8,128.4)	(\$4,208.0)	-
2021 - 2051 RESIDENTIAL FUNDING REQUIREMENTS																
- Water Service: Non Inflated	\$1,442.6	\$1,442.6	\$1,442.6	\$1,442.6	\$1,442.6	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$56,104.5
- Water Service: Inflated	\$1,980.3	\$2,019.9	\$2,060.3	\$2,101.6	\$2,143.6	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$64,277.4
NEW RESIDENTIAL DEVELOPMENT																
- Population Growth in New Units	749	749	749	749	749	749	749	749	749	749	749	749	749	749	749	23,055
REVENUE																
- DC Receipts: Inflated	\$3,318.1	\$3,384.4	\$3,452.1	\$3,521.1	\$3,591.6	\$3,663.4	\$3,736.7	\$3,811.4	\$3,887.6	\$3,965.4	\$4,044.7	\$4,125.6	\$4,208.1	\$4,292.3	\$4,378.1	\$102,298.1
INTEREST																
- Interest on Opening Balance	(\$1,615.1)	(\$1,629.0)	(\$1,642.3)	(\$1,654.7)	(\$1,666.3)	(\$1,676.9)	(\$1,564.1)	(\$1,441.0)	(\$1,307.0)	(\$1,161.3)	(\$1,003.3)	(\$832.1)	(\$647.0)	(\$447.1)	(\$231.4)	(\$38,438.0)
- Interest on In-year Transactions	\$23.4	\$23.9	\$24.4	\$24.8	\$25.3	\$64.1	\$65.4	\$66.7	\$68.0	\$69.4	\$70.8	\$72.2	\$73.6	\$75.1	\$76.6	\$432.5
TOTAL REVENUE	\$1,726.4	\$1,779.2	\$1,834.2	\$1,891.2	\$1,950.7	\$2,050.6	\$2,238.0	\$2,437.1	\$2,648.7	\$2,873.5	\$3,112.2	\$3,365.7	\$3,634.8	\$3,920.4	\$4,223.3	\$64,292.6
CLOSING CASH BALANCE	(\$29,618.8)	(\$29,859.5)	(\$30,085.7)	(\$30,296.0)	(\$30,488.9)	(\$28,438.3)	(\$26,200.3)	(\$23,763.2)	(\$21,114.6)	(\$18,241.1)	(\$15,128.9)	(\$11,763.2)	(\$8,128.4)	(\$4,208.0)	\$15.2	-

2021 Adjusted Charge Per Capita	\$3,227
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Allocation of Capital Program	
Residential Sector	61%
Non-Residential Sector	39%
Rates for 2021	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%



APPENDIX B.2
TABLE 3 - PAGE 2

CITY OF BRANTFORD
NORTHERN BOUNDARY EXPANSION LANDS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE

WATER SERVICES
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

WATER SERVICES	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
OPENING CASH BALANCE	\$0.0	(\$4,098.6)	(\$8,324.6)	(\$12,745.5)	(\$17,368.8)	(\$22,141.3)	(\$23,875.0)	(\$24,113.1)	(\$24,368.5)	(\$24,695.3)	(\$25,019.7)	(\$25,341.3)	(\$25,413.0)	(\$25,462.2)	(\$25,487.2)	(\$25,486.0)
2021 - 2051 NON-RESIDENTIAL FUNDING REQUIREMENTS																
-Water Service: Non Inflated	\$3,988.9	\$3,988.9	\$3,988.9	\$3,988.9	\$3,988.9	\$1,117.1	\$1,117.1	\$1,117.1	\$1,117.1	\$1,117.1	\$1,117.1	\$922.3	\$922.3	\$922.3	\$922.3	\$922.3
- Water Service: Inflated	\$3,988.9	\$4,068.6	\$4,150.0	\$4,233.0	\$4,317.7	\$1,233.4	\$1,258.1	\$1,283.2	\$1,308.9	\$1,335.1	\$1,361.8	\$1,146.8	\$1,169.7	\$1,193.1	\$1,217.0	\$1,241.3
NEW NON-RESIDENTIAL DEVELOPMENT																
- New Gross Floor Area (sq. m)	-	4,290	7,040	9,790	13,915	16,555	51,370	50,820	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170
REVENUE																
- DC Receipts: Inflated	\$0.0	\$175.1	\$293.0	\$415.7	\$602.6	\$731.3	\$2,314.6	\$2,335.6	\$2,305.0	\$2,351.1	\$2,398.1	\$2,446.1	\$2,495.0	\$2,544.9	\$2,595.8	\$2,647.7
INTEREST																
- Interest on Opening Balance	\$0.0	(\$225.4)	(\$457.9)	(\$701.0)	(\$955.3)	(\$1,217.8)	(\$1,313.1)	(\$1,326.2)	(\$1,340.3)	(\$1,358.2)	(\$1,376.1)	(\$1,393.8)	(\$1,397.7)	(\$1,400.4)	(\$1,401.8)	(\$1,401.7)
- Interest on In-year Transactions	(\$109.7)	(\$107.1)	(\$106.1)	(\$105.0)	(\$102.2)	(\$13.8)	\$18.5	\$18.4	\$17.4	\$17.8	\$18.1	\$22.7	\$23.2	\$23.7	\$24.1	\$24.6
TOTAL REVENUE	(\$109.7)	(\$157.4)	(\$270.9)	(\$390.3)	(\$454.8)	(\$500.3)	\$1,020.0	\$1,027.8	\$982.2	\$1,010.6	\$1,040.2	\$1,075.1	\$1,120.5	\$1,168.1	\$1,218.1	\$1,270.6
CLOSING CASH BALANCE	(\$4,098.6)	(\$8,324.6)	(\$12,745.5)	(\$17,368.8)	(\$22,141.3)	(\$23,875.0)	(\$24,113.1)	(\$24,368.5)	(\$24,695.3)	(\$25,019.7)	(\$25,341.3)	(\$25,413.0)	(\$25,462.2)	(\$25,487.2)	(\$25,486.0)	(\$25,456.7)

WATER SERVICES	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	TOTAL
OPENING CASH BALANCE	(\$25,456.7)	(\$25,397.2)	(\$25,305.2)	(\$25,178.3)	(\$25,014.1)	(\$24,809.9)	(\$23,140.4)	(\$21,318.5)	(\$19,334.6)	(\$17,178.3)	(\$14,839.0)	(\$12,305.4)	(\$9,565.6)	(\$6,606.6)	(\$3,415.3)	-
2021 - 2051 NON-RESIDENTIAL FUNDING REQUIREMENTS																
-Water Service: Non Inflated	\$922.3	\$922.3	\$922.3	\$922.3	\$922.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$35,870.1
- Water Service: Inflated	\$1,266.1	\$1,291.4	\$1,317.3	\$1,343.6	\$1,370.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$41,095.4
NEW NON-RESIDENTIAL DEVELOPMENT																
- New Gross Floor Area (sq. m)	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	1,284,690
REVENUE																
- DC Receipts: Inflated	\$2,700.7	\$2,754.7	\$2,809.8	\$2,866.0	\$2,923.3	\$2,981.8	\$3,041.4	\$3,102.2	\$3,164.3	\$3,227.6	\$3,292.1	\$3,357.9	\$3,425.1	\$3,493.6	\$3,563.5	\$73,355.6
INTEREST																
- Interest on Opening Balance	(\$1,400.1)	(\$1,396.8)	(\$1,391.8)	(\$1,384.8)	(\$1,375.8)	(\$1,364.5)	(\$1,272.7)	(\$1,172.5)	(\$1,063.4)	(\$944.8)	(\$816.1)	(\$676.8)	(\$526.1)	(\$363.4)	(\$187.8)	(\$32,604.3)
- Interest on In-year Transactions	\$25.1	\$25.6	\$26.1	\$26.6	\$27.2	\$52.2	\$53.2	\$54.3	\$55.4	\$56.5	\$57.6	\$58.8	\$59.9	\$61.1	\$62.4	\$366.8
TOTAL REVENUE	\$1,325.7	\$1,383.5	\$1,444.1	\$1,507.8	\$1,574.7	\$1,669.4	\$1,821.9	\$1,984.0	\$2,156.3	\$2,339.3	\$2,533.6	\$2,739.9	\$2,958.9	\$3,191.4	\$3,438.0	\$41,118.1
CLOSING CASH BALANCE	(\$25,397.2)	(\$25,305.2)	(\$25,178.3)	(\$25,014.1)	(\$24,809.9)	(\$23,140.4)	(\$21,318.5)	(\$19,334.6)	(\$17,178.3)	(\$14,839.0)	(\$12,305.4)	(\$9,565.6)	(\$6,606.6)	(\$3,415.3)	\$22.8	-

2021 Adjusted Charge Per Sq. m	\$40.01
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Allocation of Capital Program	
Residential Sector	61%
Non-Residential Sector	39%
Rates for 2021	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%



APPENDIX B.3

NORTHERN BOUNDARY EXPANSION LANDS

WASTE WATER SERVICES

NORTHERN BOUNDARY EXPANSION LANDS WASTE WATER SERVICES

The 2021-2051 development-related capital forecast and area-specific development charge for Waste Water Services within the Northern Boundary Expansion Lands is set out in the following section. The details and timing of the 2021-2051 development-related Waste Water capital program are shown in Table 1. The gross costs included in the program total \$123.37 million, which includes various sewage collection and pumping station projects within the Northern Boundary Expansion Lands.

No grants, subsidies, or other contributions have been identified. Of the \$123.37 million, \$24.39 million has been identified as replacement or benefit to existing shares and \$15.74 million is deemed to benefit development occurring beyond the 2051 planning horizon. The resulting net- development share eligible for funding through development charges over the 2021-2051 planning period is \$83.25 million.

Table 2 summarizes the capital program and calculation of the unadjusted residential and non-residential development charges for waste water servicing. The DC eligible share of \$83.25 million has been allocated 61 per cent to new residential development and 39 per cent to non-residential development based on shares of population in new units and employment growth in new space to 2051.

The residential share of the capital program totals \$50.78 million and, when divided by the forecast growth in population in new units (23,055), results in an unadjusted charge of \$2,202.60 per capita.

The non-residential share, \$32.47 million is applied against the forecast increase in square metres of non-residential floor space by type of development (1,284,690 square metres). This yields an unadjusted charge of \$25.27 per square metre.

The residential and non-residential cash flow analysis is shown in Table 3. After cash flow considerations, the residential charge increases to \$2,619 per capita and the non-residential and non-residential charges increase to \$32.47 respectively.

NORTHERN BOUNDARY EXPANSION LANDS WASTE WATER SERVICES SUMMARY					
2021 - 2030		Unadjusted		Adjusted	
Development-Related Capital Program		Development Charge		Development Charge	
Total	Net DC Recoverable	\$/capita	\$/sq.m	\$/capita	\$/sq.m
\$123,372	\$83,247	\$2,202.60	\$25.27	\$2,619	\$32.47

APPENDIX B.3
TABLE 1

CITY OF BRANTFORD
NORTHERN BOUNDARY EXPANSION LANDS
WASTE WATER SERVICES DEVELOPMENT-RELATED CAPITAL PROGRAM

WASTE WATER GROWTH-RELATED CAPITAL PROGRAM 2021-2051	MSP Project #	Anticipated Timing	Gross Cost	Grants / Subsidies / Other	Benefit to Existing / Other Recoveries	Prior Growth / Available DC Shares	Net Development-Related	Post Period Benefit	Net DC Recoverable 2021-2051
3.1 Sewage Collection									
3.1.1 Northwest-1 WWPS Forcemain	WW-FM-001	2031 - 2041	\$ 831,000	\$ -	0%	\$ -	\$ 831,000	\$ -	\$ 831,000
3.1.2 Northwest-2 WWPS Forcemain	WW-FM-002	2026 - 2031	\$ 2,948,000	\$ -	0%	\$ -	\$ 2,948,000	\$ 294,800	\$ 2,653,200
3.1.3 North WWPS Forcemain	WW-FM-003	2031 - 2041	\$ 882,000	\$ -	0%	\$ -	\$ 882,000	\$ -	\$ 882,000
3.1.4 Northeast WWPS Forcemain	WW-FM-004	2021 - 2026	\$ 582,000	\$ -	0%	\$ -	\$ 582,000	\$ -	\$ 582,000
3.1.5 East WWPS Forcemain	WW-FM-005	2026 - 2031	\$ 3,974,000	\$ -	0%	\$ -	\$ 3,974,000	\$ 397,400	\$ 3,576,600
3.1.6 North-South Collector's Road Trunk Sewer	WW-SS-002	2021 - 2026	\$ 1,050,000	\$ -	0%	\$ -	\$ 1,050,000	\$ 157,500	\$ 892,500
3.1.7 North-South Collector's Road Trunk Sewer	WW-SS-003	2031 - 2041	\$ 577,000	\$ -	0%	\$ -	\$ 577,000	\$ 57,700	\$ 519,300
3.1.8 East-West Collector's Road Trunk Sewer (West of King George Road)	WW-SS-004	2031 - 2041	\$ 1,382,000	\$ -	0%	\$ -	\$ 1,382,000	\$ -	\$ 1,382,000
3.1.9 East-West Collector's Road Trunk Sewer (West of King George Road)	WW-SS-005	2026 - 2031	\$ 703,000	\$ -	0%	\$ -	\$ 703,000	\$ 140,600	\$ 562,400
3.1.10 East-West Collector's Road Trunk Sewer (East of King George Road)	WW-SS-006	2031 - 2041	\$ 660,000	\$ -	0%	\$ -	\$ 660,000	\$ -	\$ 660,000
3.1.11 East-West Collector's Road Trunk Sewer (East of King George Road)	WW-SS-007	2031 - 2041	\$ 1,758,000	\$ -	0%	\$ -	\$ 1,758,000	\$ 351,600	\$ 1,406,400
3.1.12 East-West Collector's Road Trunk Sewer (East of King George Road)	WW-SS-008	2031 - 2041	\$ 859,000	\$ -	0%	\$ -	\$ 859,000	\$ -	\$ 859,000
3.1.13 East-West Collector's Road Trunk Sewer (East of North WWPS)	WW-SS-009	2026 - 2031	\$ 1,841,000	\$ -	0%	\$ -	\$ 1,841,000	\$ 552,300	\$ 1,288,700
3.1.14 East-West Collector's Road Trunk Sewer (East of North WWPS)	WW-SS-010	2026 - 2031	\$ 1,611,000	\$ -	0%	\$ -	\$ 1,611,000	\$ 483,300	\$ 1,127,700
3.1.15 East-West Collector's Road Trunk Sewer (East of North WWPS)	WW-SS-011	2021 - 2026	\$ 6,104,000	\$ -	0%	\$ -	\$ 6,104,000	\$ 1,831,200	\$ 4,272,800
3.1.16 East Expansion Lands Trunk Sewer	WW-SS-012	2026 - 2031	\$ 4,231,000	\$ -	0%	\$ -	\$ 4,231,000	\$ 211,550	\$ 4,019,450
3.1.17 Lynden Road Trunk Sewer Upgrades	WW-SS-013	2026 - 2031	\$ 588,000	\$ -	0%	\$ -	\$ 588,000	\$ 29,400	\$ 558,600
3.1.18 Bodine Road Sewer Upgrades	WW-SS-017	2041 - 2051	\$ 22,997,000	\$ -	20%	\$ 4,599,400	\$ 18,397,600	\$ 6,439,160	\$ 11,958,440
3.1.19 Mohawk Sewer Upgrades	WW-SS-024	2041 - 2051	\$ 4,426,500	\$ -	20%	\$ 885,300	\$ 3,541,200	\$ 1,062,360	\$ 2,478,840
3.1.20 Oakhill Sewer Upgrades	WW-SS-022	2031 - 2041	\$ 4,963,000	\$ -	20%	\$ 992,600	\$ 3,970,400	\$ 1,389,640	\$ 2,580,760
3.1.21 Oak Park Road Trunk Sewer	WW-SS-001	2021 - 2026	\$ 25,985,000	\$ -	40%	\$ 10,394,000	\$ 15,591,000	\$ 2,338,650	\$ 13,252,350
Subtotal Sewage Collection			\$ 88,952,500	\$ -		\$ 16,871,300	\$ 72,081,200	\$ 15,737,160	\$ 56,344,040
3.2 Pumping Station									
3.2.1 Empey Street WWPS Storage Upgrades	WW-PS-007	2021 - 2026	\$ 12,835,000	\$ -	50%	\$ 6,417,500	\$ 6,417,500	\$ -	\$ 6,417,500
3.2.2 Empey Street WWPS Rehabilitation and Improvements	WW-PS-008	2021 - 2026	\$ 1,785,000	\$ -	62%	\$ 1,098,128	\$ 686,872	\$ -	\$ 686,872
3.2.3 Northwest-1 Wastewater Pumping Station	WW-PS-001	2031 - 2041	\$ 2,405,000	\$ -	0%	\$ -	\$ 2,405,000	\$ -	\$ 2,405,000
3.2.4 Northwest-2 Wastewater Pumping Station	WW-PS-002	2026 - 2031	\$ 5,529,000	\$ -	0%	\$ -	\$ 5,529,000	\$ -	\$ 5,529,000
3.2.5 North Wastewater Pumping Station	WW-PS-003	2031 - 2041	\$ 4,547,000	\$ -	0%	\$ -	\$ 4,547,000	\$ -	\$ 4,547,000
3.2.6 Northeast Wastewater Pumping Station	WW-PS-004	2021 - 2026	\$ 3,240,000	\$ -	0%	\$ -	\$ 3,240,000	\$ -	\$ 3,240,000
3.2.7 East Wastewater Pumping Station	WW-PS-005	2026 - 2031	\$ 4,078,000	\$ -	0%	\$ -	\$ 4,078,000	\$ -	\$ 4,078,000
Subtotal Pumping Station			\$ 34,419,000	\$ -		\$ 7,515,628	\$ 26,903,372	\$ -	\$ 26,903,372
TOTAL WASTE WATER GROWTH-RELATED CAPITAL PROGRAM 2021-2051			\$123,371,500	\$ -		\$24,386,928	\$ 98,984,571.62	\$ 15,737,160.00	\$ 83,247,411.62

APPENDIX B.3

TABLE 2

CITY OF BRANTFORD
 NORTHERN BOUNDARY EXPANSION LANDS
 SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
 WASTE WATER SERVICES

Growth in Population in New Units 2021-2051	23,055
Employment Growth in New Space 2021-2051	14,739
Growth in New Building Space (Square Metres) 2021-2051	1,284,690

	Growth-Related Capital Forecast						Residential Share		Non-Residential Share	
	Gross Cost (\$000)	Grants / Subsidies / Other (\$000)	Benefit to Existing / Other Recoveries (\$000)	Prior Growth / Available DC Shares (\$000)	Post Period Benefit (\$000)	Net Development- Related (\$000)	%	\$000	%	\$000
WASTE WATER SERVICES										
Sewage Collection	\$ 88,952.50	\$ -	\$ 16,871.30	\$ -	\$ 15,737.16	\$ 56,344.04	61%	\$ 34,369.86	39%	\$ 21,974.18
Pumping Station	\$ 34,419.00	\$ -	\$ 7,515.63	\$ -	\$ -	\$ 26,903.37	61%	\$ 16,411.06	39%	\$ 10,492.31
TOTAL WASTE WATER SERVICES	\$ 123,371.50	\$ -	\$ 24,386.93	\$ -	\$ 15,737.16	\$ 83,247.41		\$ 50,780.92		\$ 32,466.49
Unadjusted Development Charge Per Capita (\$)								\$ 2,202.60		
Unadjusted Development Charge Per Square Metre (\$)									\$ 25.27	

Residential Share of 2021-2051 DC Eligible Costs	61%	\$ 50,780,921
30-year Growth in Population in New Units		23,055
Development Charge Per Capita (Unadjusted)		\$ 2,202.60
Development Charge Per Capita after Cash Flow		\$ 2,619
Charge per Single Detached Unit	3.43	\$ 8,983

Non-Residential Share of 2021-2051 DC Eligible Costs	39%	\$ 32,466,491
2021-2051 Growth in Non-Residential Building Space (Sq.M.)		1,284,690
Development Charge Per Square Metre (Unadjusted)		\$ 25.27
Development Charge Per Square Metre After Cash Flow		\$ 32.47

APPENDIX B.3
TABLE 3 - PAGE 1

CITY OF BRANTFORD
NORTHERN BOUNDARY EXPANSION LANDS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE

WASTE WATER SERVICES
RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

WASTE WATER SERVICES	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
OPENING CASH BALANCE	\$0.0	(\$3,065.3)	(\$5,965.3)	(\$7,822.4)	(\$8,952.5)	(\$9,716.1)	(\$12,767.7)	(\$13,044.1)	(\$13,783.5)	(\$15,043.2)	(\$16,382.4)	(\$18,921.7)	(\$18,608.3)	(\$18,250.6)	(\$17,845.5)	(\$17,390.1)
2021 - 2051 RESIDENTIAL FUNDING REQUIREMENTS																
- Waste Water Services: Non Inflated	\$2,983.3	\$2,983.3	\$2,983.3	\$2,983.3	\$2,983.3	\$5,361.7	\$2,378.4	\$2,378.4	\$2,378.4	\$2,378.4	\$3,269.6	\$891.3	\$891.3	\$891.3	\$891.3	\$891.3
- Waste Water Services: Inflated	\$2,983.3	\$3,043.0	\$3,103.8	\$3,165.9	\$3,229.2	\$5,919.7	\$2,678.4	\$2,732.0	\$2,786.6	\$2,842.4	\$3,985.7	\$1,108.2	\$1,130.4	\$1,153.0	\$1,176.0	\$1,199.6
NEW RESIDENTIAL DEVELOPMENT																
- Population Growth in New Units	-	144	593	894	1,046	1,200	1,050	901	749	749	749	749	749	749	749	749
REVENUE																
- DC Receipts: Inflated	\$0.0	\$384.7	\$1,615.8	\$2,484.7	\$2,965.3	\$3,469.9	\$3,096.9	\$2,710.6	\$2,298.4	\$2,344.3	\$2,391.2	\$2,439.0	\$2,487.8	\$2,537.6	\$2,588.3	\$2,640.1
INTEREST																
- Interest on Opening Balance	\$0.0	(\$168.6)	(\$328.1)	(\$430.2)	(\$492.4)	(\$534.4)	(\$702.2)	(\$717.4)	(\$758.1)	(\$827.4)	(\$901.0)	(\$1,040.7)	(\$1,023.5)	(\$1,003.8)	(\$981.5)	(\$956.5)
- Interest on In-year Transactions	(\$82.0)	(\$73.1)	(\$40.9)	(\$18.7)	(\$7.3)	(\$67.4)	\$7.3	(\$0.6)	(\$13.4)	(\$13.7)	(\$43.8)	\$23.3	\$23.8	\$24.2	\$24.7	\$25.2
TOTAL REVENUE	(\$82.0)	\$143.0	\$1,246.8	\$2,035.7	\$2,465.7	\$2,868.1	\$2,402.0	\$1,992.6	\$1,526.9	\$1,503.2	\$1,446.3	\$1,421.6	\$1,488.1	\$1,558.0	\$1,631.5	\$1,708.9
CLOSING CASH BALANCE	(\$3,065.3)	(\$5,965.3)	(\$7,822.4)	(\$8,952.5)	(\$9,716.1)	(\$12,767.7)	(\$13,044.1)	(\$13,783.5)	(\$15,043.2)	(\$16,382.4)	(\$18,921.7)	(\$18,608.3)	(\$18,250.6)	(\$17,845.5)	(\$17,390.1)	(\$16,880.8)

WASTE WATER SERVICES	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	TOTAL
OPENING CASH BALANCE	(\$16,880.8)	(\$16,314.2)	(\$15,686.4)	(\$14,993.7)	(\$14,231.8)	(\$14,606.7)	(\$13,619.6)	(\$12,542.4)	(\$11,369.4)	(\$10,094.5)	(\$8,711.6)	(\$7,213.9)	(\$5,594.2)	(\$3,845.2)	(\$1,958.8)	-
2021 - 2051 RESIDENTIAL FUNDING REQUIREMENTS																
- Waste Water Services: Non Inflated	\$891.3	\$891.3	\$891.3	\$891.3	\$1,691.9	\$800.6	\$800.6	\$800.6	\$800.6	\$800.6	\$800.6	\$800.6	\$800.6	\$800.6	\$800.6	\$50,780.9
- Waste Water Services: Inflated	\$1,223.6	\$1,248.0	\$1,273.0	\$1,298.4	\$2,514.1	\$1,213.5	\$1,237.7	\$1,262.5	\$1,287.7	\$1,313.5	\$1,339.8	\$1,366.6	\$1,393.9	\$1,421.8	\$1,450.2	\$63,081.3
NEW RESIDENTIAL DEVELOPMENT																
- Population Growth in New Units	749	749	749	749	749	749	749	749	749	749	749	749	749	749	749	23,055
REVENUE																
- DC Receipts: Inflated	\$2,692.9	\$2,746.8	\$2,801.7	\$2,857.7	\$2,914.9	\$2,973.2	\$3,032.6	\$3,093.3	\$3,155.2	\$3,218.3	\$3,282.6	\$3,348.3	\$3,415.2	\$3,483.6	\$3,553.2	\$83,024.1
INTEREST																
- Interest on Opening Balance	(\$928.4)	(\$897.3)	(\$862.8)	(\$824.7)	(\$782.8)	(\$803.4)	(\$749.1)	(\$689.8)	(\$625.3)	(\$555.2)	(\$479.1)	(\$396.8)	(\$307.7)	(\$211.5)	(\$107.7)	(\$20,087.2)
- Interest on In-year Transactions	\$25.7	\$26.2	\$26.8	\$27.3	\$7.0	\$30.8	\$31.4	\$32.0	\$32.7	\$33.3	\$34.0	\$34.7	\$35.4	\$36.1	\$36.8	\$217.7
TOTAL REVENUE	\$1,790.2	\$1,875.7	\$1,965.7	\$2,060.3	\$2,139.2	\$2,200.6	\$2,314.9	\$2,435.5	\$2,562.6	\$2,696.4	\$2,837.5	\$2,986.2	\$3,142.9	\$3,308.2	\$3,482.3	\$63,154.6
CLOSING CASH BALANCE	(\$16,314.2)	(\$15,686.4)	(\$14,993.7)	(\$14,231.8)	(\$14,606.7)	(\$13,619.6)	(\$12,542.4)	(\$11,369.4)	(\$10,094.5)	(\$8,711.6)	(\$7,213.9)	(\$5,594.2)	(\$3,845.2)	(\$1,958.8)	\$73.3	-

2021 Adjusted Charge Per Capita	\$2,619
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Allocation of Capital Program	
Residential Sector	61%
Non-Residential Sector	39%
Rates for 2021	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%



APPENDIX B.3
TABLE 3 - PAGE 2

CITY OF BRANTFORD
NORTHERN BOUNDARY EXPANSION LANDS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE

WASTE WATER SERVICES
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

WASTE WATER SERVICES	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
OPENING CASH BALANCE	\$0.0	(\$1,959.8)	(\$3,920.6)	(\$5,930.9)	(\$7,990.3)	(\$10,048.6)	(\$13,880.2)	(\$14,474.8)	(\$15,119.4)	(\$15,860.5)	(\$16,640.4)	(\$18,174.3)	(\$17,874.9)	(\$17,533.2)	(\$17,146.1)	(\$16,710.7)
2021 - 2051 NON-RESIDENTIAL FUNDING REQUIREMENTS																
- Waste Water Services: Non Inflated	\$1,907.4	\$1,907.4	\$1,907.4	\$1,907.4	\$1,907.4	\$3,427.9	\$1,520.6	\$1,520.6	\$1,520.6	\$1,520.6	\$2,090.4	\$569.8	\$569.8	\$569.8	\$569.8	\$569.8
- Waste Water Services: Inflated	\$1,907.4	\$1,945.5	\$1,984.4	\$2,024.1	\$2,064.6	\$3,784.7	\$1,712.4	\$1,746.7	\$1,781.6	\$1,817.2	\$2,548.2	\$708.5	\$722.7	\$737.2	\$751.9	\$766.9
NEW NON-RESIDENTIAL DEVELOPMENT																
- New Gross Floor Area (sq. m)	-	4,290	7,040	9,790	13,915	16,555	51,370	50,820	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170
REVENUE																
- DC Receipts: Inflated	\$0.0	\$142.1	\$237.8	\$337.3	\$489.1	\$593.5	\$1,878.4	\$1,895.5	\$1,870.6	\$1,908.0	\$1,946.2	\$1,985.1	\$2,024.8	\$2,065.3	\$2,106.6	\$2,148.7
INTEREST																
- Interest on Opening Balance	\$0.0	(\$107.8)	(\$215.6)	(\$326.2)	(\$439.5)	(\$552.7)	(\$763.4)	(\$796.1)	(\$831.6)	(\$872.3)	(\$915.2)	(\$999.6)	(\$983.1)	(\$964.3)	(\$943.0)	(\$919.1)
- Interest on In-year Transactions	(\$52.5)	(\$49.6)	(\$48.0)	(\$46.4)	(\$43.3)	(\$87.8)	\$2.9	\$2.6	\$1.6	\$1.6	(\$16.6)	\$22.3	\$22.8	\$23.2	\$23.7	\$24.2
TOTAL REVENUE	(\$52.5)	(\$15.3)	(\$25.9)	(\$35.3)	\$6.3	(\$46.9)	\$1,117.9	\$1,102.0	\$1,040.6	\$1,037.3	\$1,014.4	\$1,007.9	\$1,064.5	\$1,124.2	\$1,187.3	\$1,253.8
CLOSING CASH BALANCE	(\$1,959.8)	(\$3,920.6)	(\$5,930.9)	(\$7,990.3)	(\$10,048.6)	(\$13,880.2)	(\$14,474.8)	(\$15,119.4)	(\$15,860.5)	(\$16,640.4)	(\$18,174.3)	(\$17,874.9)	(\$17,533.2)	(\$17,146.1)	(\$16,710.7)	(\$16,223.8)

WASTE WATER SERVICES	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	TOTAL
OPENING CASH BALANCE	(\$16,223.8)	(\$15,682.1)	(\$15,081.7)	(\$14,419.1)	(\$13,690.3)	(\$13,664.8)	(\$12,743.6)	(\$11,738.3)	(\$10,643.6)	(\$9,453.7)	(\$8,163.0)	(\$6,765.1)	(\$5,253.4)	(\$3,620.8)	(\$1,860.0)	-
2021 - 2051 NON-RESIDENTIAL FUNDING REQUIREMENTS																
- Waste Water Services: Non Inflated	\$569.8	\$569.8	\$569.8	\$569.8	\$1,081.7	\$511.9	\$511.9	\$511.9	\$511.9	\$511.9	\$511.9	\$511.9	\$511.9	\$511.9	\$511.9	\$32,466.5
- Waste Water Services: Inflated	\$782.3	\$797.9	\$813.9	\$830.2	\$1,607.4	\$775.8	\$791.3	\$807.2	\$823.3	\$839.8	\$856.6	\$873.7	\$891.2	\$909.0	\$927.2	\$40,330.7
NEW NON-RESIDENTIAL DEVELOPMENT																
- New Gross Floor Area (sq. m)	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	1,284,690
REVENUE																
- DC Receipts: Inflated	\$2,191.7	\$2,235.6	\$2,280.3	\$2,325.9	\$2,372.4	\$2,419.8	\$2,468.2	\$2,517.6	\$2,568.0	\$2,619.3	\$2,671.7	\$2,725.1	\$2,779.6	\$2,835.2	\$2,891.9	\$59,531.3
INTEREST																
- Interest on Opening Balance	(\$892.3)	(\$862.5)	(\$829.5)	(\$793.1)	(\$753.0)	(\$751.6)	(\$700.9)	(\$645.6)	(\$585.4)	(\$520.0)	(\$449.0)	(\$372.1)	(\$288.9)	(\$199.1)	(\$102.3)	(\$19,374.7)
- Interest on In-year Transactions	\$24.7	\$25.2	\$25.7	\$26.2	\$13.4	\$28.8	\$29.3	\$29.9	\$30.5	\$31.1	\$31.8	\$32.4	\$33.0	\$33.7	\$34.4	\$210.9
TOTAL REVENUE	\$1,324.1	\$1,398.2	\$1,476.5	\$1,559.0	\$1,632.8	\$1,697.0	\$1,796.6	\$1,901.9	\$2,013.1	\$2,130.5	\$2,254.5	\$2,385.4	\$2,523.7	\$2,669.8	\$2,824.0	\$40,367.4
CLOSING CASH BALANCE	(\$15,682.1)	(\$15,081.7)	(\$14,419.1)	(\$13,690.3)	(\$13,664.8)	(\$12,743.6)	(\$11,738.3)	(\$10,643.6)	(\$9,453.7)	(\$8,163.0)	(\$6,765.1)	(\$5,253.4)	(\$3,620.8)	(\$1,860.0)	\$36.8	-

2021 Adjusted Charge Per Sq. m	\$32.47
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Allocation of Capital Program	
Residential Sector	61%
Non-Residential Sector	39%
Rates for 2021	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%



APPENDIX B.4

NORTHERN BOUNDARY EXPANSION LANDS

STORMWATER SERVICES

NORTHERN BOUNDARY EXPANSION LANDS

STORMWATER SERVICES

The capital program contained herein represents stormwater projects that are designed to serve the anticipated population and employment growth within the Northern Boundary Expansion Lands between 2021 and 2051, as identified through the Master Servicing Plan and discussions with staff. The development-related capital programs include a number of ponds and other local upgrades. Inclusion of these projects within the Area-Specific Development Charge Background Study will, in part, help to facilitate funding arrangements as development of the Northern Boundary Expansion Lands moves forward.

The development-related capital program totals \$54.42 million. Not all of these costs are recoverable through development charges in the Northern Boundary Expansion Lands: replacement or benefit to existing shares account for a total of \$32.37 million, resulting in net-development related costs of \$22.04 million.

As shown in Table 2, the development-related share has been allocated 61 per cent, or \$13.45 million to new residential development and 39 per cent, or \$8.60 million to new non-residential development.

The residential share is divided by the anticipated growth in population in new units between 2021 and 2051 in the Northern Boundary Expansion Lands (23,055), which yields an unadjusted development charge of \$583.23 per capita. The non-residential share, when divided by the anticipated increase in square metres of new space (1,284,690), yields an unadjusted development charge of \$6.69 per square metre.

In Table 3, the residential and non-residential cash flow analysis is shown. After cash flow analysis, the residential and non-residential calculated charges increase to \$837 per capita and \$10.39 per square metre, respectively.

NORTHERN BOUNDARY EXPANSION LANDS STORMWATER SUMMARY					
2021 - 2030		Unadjusted		Adjusted	
Development-Related Capital Program		Development Charge		Development Charge	
Total	Net DC Recoverable	\$/capita	\$/sq.m	\$/capita	\$/sq.m
\$54,416	\$22,043	\$583.23	\$6.69	\$837	\$10.39

APPENDIX B.4
TABLE 1

CITY OF BRANTFORD
NORTHERN BOUNDARY EXPANSION LANDS
STORMWATER SERVICING DEVELOPMENT-RELATED CAPITAL PROGRAM

STORMWATER GROWTH-RELATED CAPITAL PROGRAM 2021-2051	MSP Project #	Anticipated Timing	Gross Cost	Grants / Subsidies / Other	Benefit to Existing / Other Recoveries		Prior Growth / Available DC Shares	Net Development-Related	Post Period Benefit	Net DC Recoverable 2021-2051
4.1 Stormwater Projects										
4.1.1 Fairchild Creek Jones Catchment Local Upgrades	SW-LI-009	2031 - 2041	\$ 3,369,000	\$ -	62%	\$ 2,072,602	\$ -	\$ 1,296,398	\$ -	\$ 1,296,398
4.1.2 Grand River Northwest Catchment Local Upgrades	SW-LI-010	2021 - 2026	\$ 11,011,000	\$ -	0%	\$ -	\$ -	\$ 11,011,000	\$ -	\$ 11,011,000
4.1.3 Fairchild Creek Northeast Catchment Local Upgrades	SW-LI-011	2021 - 2026	\$ 30,300,000	\$ -	100%	\$ 30,300,000	\$ -	\$ -	\$ -	\$ -
4.1.4 Northwest Employment Area (Pond #1)	SW-PD-001	2021 - 2026	\$ 1,418,000	\$ -	0%	\$ -	\$ -	\$ 1,418,000	\$ -	\$ 1,418,000
4.1.5 Southwest Employment Area (Pond #2)	SW-PD-002	2021 - 2026	\$ 1,318,000	\$ -	0%	\$ -	\$ -	\$ 1,318,000	\$ -	\$ 1,318,000
4.1.6 Golf Road North Employment Area (Pond #3)	SW-PD-003	2021 - 2026	\$ 396,000	\$ -	0%	\$ -	\$ -	\$ 396,000	\$ -	\$ 396,000
4.1.7 Golf-Powerline Employment Area (Pond #4)	SW-PD-004	2021 - 2026	\$ 877,000	\$ -	0%	\$ -	\$ -	\$ 877,000	\$ -	\$ 877,000
4.1.8 Balmoral-Powerline Northwest Area (Pond #5)	SW-PD-005	2021 - 2026	\$ 576,000	\$ -	0%	\$ -	\$ -	\$ 576,000	\$ -	\$ 576,000
4.1.9 Balmoral-Powerline Southwest Area (Pond #6)	SW-PD-006	2021 - 2026	\$ 456,000	\$ -	0%	\$ -	\$ -	\$ 456,000	\$ -	\$ 456,000
4.1.10 Northridge North Area (Pond #7)	SW-PD-007	2021 - 2026	\$ 356,000	\$ -	0%	\$ -	\$ -	\$ 356,000	\$ -	\$ 356,000
4.1.11 King George Corridor (Pond #8)	SW-PD-008	2021 - 2031	\$ 396,000	\$ -	0%	\$ -	\$ -	\$ 396,000	\$ -	\$ 396,000
4.1.12 King George Corridor (Pond #9)	SW-PD-009	2021 - 2031	\$ 276,000	\$ -	0%	\$ -	\$ -	\$ 276,000	\$ -	\$ 276,000
4.1.13 King George Corridor (Pond #10)	SW-PD-010	2031 - 2041	\$ 195,000	\$ -	0%	\$ -	\$ -	\$ 195,000	\$ -	\$ 195,000
4.1.14 Powerline-Park (Pond #11)	SW-PD-011	2031 - 2041	\$ 216,000	\$ -	0%	\$ -	\$ -	\$ 216,000	\$ -	\$ 216,000
4.1.15 Powerline-Park (Pond #12)	SW-PD-012	2031 - 2041	\$ 335,000	\$ -	0%	\$ -	\$ -	\$ 335,000	\$ -	\$ 335,000
4.1.16 Northeast Residential Area (Pond #13)	SW-PD-013	2021 - 2026	\$ 335,000	\$ -	0%	\$ -	\$ -	\$ 335,000	\$ -	\$ 335,000
4.1.17 Northeast Residential Area (Pond #14)	SW-PD-014	2021 - 2026	\$ 516,000	\$ -	0%	\$ -	\$ -	\$ 516,000	\$ -	\$ 516,000
4.1.18 Northeast Residential Area (Pond #15)	SW-PD-015	2021 - 2026	\$ 175,000	\$ -	0%	\$ -	\$ -	\$ 175,000	\$ -	\$ 175,000
4.1.19 Lynden-Garden Residential Area (Pond #16)	SW-PD-016	2021 - 2026	\$ 376,000	\$ -	0%	\$ -	\$ -	\$ 376,000	\$ -	\$ 376,000
4.1.20 Garden-403 Employment Area (Pond #17)	SW-PD-017	2021 - 2031	\$ 1,519,000	\$ -	0%	\$ -	\$ -	\$ 1,519,000	\$ -	\$ 1,519,000
Subtotal Stormwater Projects			\$ 54,416,000	\$ -		\$ 32,372,602	\$ -	\$ 22,043,398	\$ -	\$ 22,043,398
INTENSIFICATION STORMWATER GROWTH-RELATED CAPITAL PROGRAM 2019-2028			\$54,416,000.00	\$ -		\$32,372,601.96	\$ -	\$22,043,398.04	\$ -	\$22,043,398.04

APPENDIX B.4

TABLE 2

CITY OF BRANTFORD
NORTHERN BOUNDARY EXPANSION LANDS
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
STORMWATER SERVICING

Growth in Population in New Units 2021-2051	23,055
Employment Growth in New Space 2021-2051	14,739
Growth in New Building Space (Square Metres) 2021-2051	1,284,690

	Growth-Related Capital Forecast						Residential Share		Non-Residential Share	
	Gross Cost	Grants / Subsidies / Other	Benefit to Existing / Other Recoveries	Prior Growth / Available DC Shares	Post Period Benefit	Net Development-Related	%	\$000	%	\$000
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)				
STORMWATER SERVICING										
Stormwater Projects	\$ 54,416.00	\$ -	\$ 32,372.60	\$ -	\$ -	\$ 22,043.40	61%	\$ 13,446.47	39%	\$ 8,596.93
TOTAL STORMWATER SERVICING	\$ 54,416.00	\$ -	\$ 32,372.60	\$ -	\$ -	\$ 22,043.40		\$ 13,446.47		\$ 8,596.93
Unadjusted Development Charge Per Capita (\$)								\$ 583.23		
Unadjusted Development Charge Per Square Metre (\$)									\$ 6.69	

Residential Development Charge Calculation		
Residential Share of 2021-2051 DC Eligible Costs	61%	\$ 13,446,473
30-year Growth in Population in New Units		23,055
Development Charge Per Capita (Unadjusted)		\$ 583.23
Development Charge Per Capita after Cash Flow		\$ 837
Charge per Single Detached Unit	3.43	\$ 2,871

Non-Residential Development Charge Calculation		
Non-Residential Share of 2021-2051 DC Eligible Costs	39%	\$ 8,596,925
2021-2051 Growth in Non-Residential Building Space (Sq.M.)		1,284,690
Development Charge Per Square Metre (Unadjusted)		\$ 6.69
Development Charge Per Square Metre After Cash Flow		\$ 10.39

APPENDIX B.4
TABLE 3 - PAGE 1

CITY OF BRANTFORD
NORTHERN BOUNDARY EXPANSION LANDS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE

STORMWATER SERVICING
RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

STORMWATER SERVICING	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
OPENING CASH BALANCE	\$0.00	\$0.00	\$125.05	\$654.86	\$1,485.78	\$2,502.07	\$3,717.95	\$4,855.09	\$5,906.48	\$6,860.56	\$7,862.99	\$8,915.77	\$10,020.97	\$11,180.71	\$12,397.23	\$13,672.81
2021 - 2051 RESIDENTIAL FUNDING REQUIREMENTS																
- Storm Water: Non Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
- Storm Water: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
NEW RESIDENTIAL DEVELOPMENT																
- Population Growth in New Units	-	144	593	894	1,046	1,200	1,050	901	749	749	749	749	749	749	749	749
REVENUE																
- DC Receipts: Inflated	\$0.0	\$122.9	\$516.4	\$794.1	\$947.7	\$1,108.9	\$989.7	\$866.3	\$734.5	\$749.2	\$764.2	\$779.5	\$795.1	\$811.0	\$827.2	\$843.7
INTEREST																
- Interest on Opening Balance	\$0.0	\$0.0	\$4.4	\$22.9	\$52.0	\$87.6	\$130.1	\$169.9	\$206.7	\$240.1	\$275.2	\$312.1	\$350.7	\$391.3	\$433.9	\$478.5
- Interest on In-year Transactions	\$0.0	\$2.2	\$9.0	\$13.9	\$16.6	\$19.4	\$17.3	\$15.2	\$12.9	\$13.1	\$13.4	\$13.6	\$13.9	\$14.2	\$14.5	\$14.8
TOTAL REVENUE	\$0.0	\$125.1	\$529.8	\$830.9	\$1,016.3	\$1,215.9	\$1,137.1	\$1,051.4	\$954.1	\$1,002.4	\$1,052.8	\$1,105.2	\$1,159.7	\$1,216.5	\$1,275.6	\$1,337.0
CLOSING CASH BALANCE	\$0.0	\$125.1	\$654.9	\$1,485.8	\$2,502.1	\$3,717.9	\$4,855.1	\$5,906.5	\$6,860.6	\$7,863.0	\$8,915.8	\$10,021.0	\$11,180.7	\$12,397.2	\$13,672.8	\$15,009.8

STORMWATER SERVICING	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	TOTAL
OPENING CASH BALANCE	\$15,009.8	\$16,410.8	\$17,878.4	\$19,415.2	\$21,024.0	\$22,707.7	\$24,469.3	\$26,295.9	\$28,205.7	\$30,202.3	\$32,288.8	\$34,469.0	\$36,746.5	\$39,143.2	\$41,627.6	-
2021 - 2051 RESIDENTIAL FUNDING REQUIREMENTS																
- Storm Water: Non Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$10.2	\$10.2	\$10.2	\$10.2	\$10.2	\$10.2	\$0.0	\$10.2	\$10.2	\$81.7
- Storm Water: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$15.8	\$16.1	\$16.4	\$16.8	\$17.1	\$17.4	\$0.0	\$18.1	\$18.5	\$136.2
NEW RESIDENTIAL DEVELOPMENT																
- Population Growth in New Units	749	749	749	749	749	749	749	749	749	749	749	749	749	749	749	23,055
REVENUE																
- DC Receipts: Inflated	\$860.6	\$877.8	\$895.4	\$913.3	\$931.6	\$950.2	\$969.2	\$988.6	\$1,008.4	\$1,028.5	\$1,049.1	\$1,070.1	\$1,091.5	\$1,113.3	\$1,135.6	\$26,533.6
INTEREST																
- Interest on Opening Balance	\$525.3	\$574.4	\$625.7	\$679.5	\$735.8	\$794.8	\$856.4	\$920.4	\$987.2	\$1,057.1	\$1,130.1	\$1,206.4	\$1,286.1	\$1,370.0	\$1,457.0	\$17,361.8
- Interest on In-year Transactions	\$15.1	\$15.4	\$15.7	\$16.0	\$16.3	\$16.6	\$16.7	\$17.0	\$17.4	\$17.7	\$18.1	\$18.4	\$19.1	\$19.2	\$19.5	\$462.0
TOTAL REVENUE	\$1,401.0	\$1,467.5	\$1,536.8	\$1,608.8	\$1,683.7	\$1,761.6	\$1,842.3	\$1,926.0	\$2,013.0	\$2,103.3	\$2,197.3	\$2,294.9	\$2,396.7	\$2,502.5	\$2,612.1	\$44,357.4
CLOSING CASH BALANCE	\$16,410.8	\$17,878.4	\$19,415.2	\$21,024.0	\$22,707.7	\$24,469.3	\$26,295.9	\$28,205.7	\$30,202.3	\$32,288.8	\$34,469.0	\$36,746.5	\$39,143.2	\$41,627.6	\$44,221.2	-

2021 Adjusted Charge Per Capita	\$837
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Allocation of Capital Program	
Residential Sector	61%
Non-Residential Sector	39%
Rates for 2021	
Inflation Rate:	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%



APPENDIX B.4
TABLE 3 - PAGE 2

CITY OF BRANTFORD
NORTHERN BOUNDARY EXPANSION LANDS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE

STORMWATER SERVICING
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

STORMWATER SERVICING	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
OPENING CASH BALANCE	\$0.00	\$0.00	\$46.30	\$125.35	\$239.52	\$407.15	\$614.62	\$1,247.75	\$1,908.54	\$2,584.41	\$3,296.05	\$4,045.11	\$4,833.00	\$5,661.40	\$6,532.01	\$7,446.53
2021 - 2051 NON-RESIDENTIAL FUNDING REQUIREMENTS																
- Storm Water: Non Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
- Storm Water: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
NEW NON-RESIDENTIAL DEVELOPMENT																
- New Gross Floor Area (sq. m)	-	4,290	7,040	9,790	13,915	16,555	51,370	50,820	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170
REVENUE																
- DC Receipts: Inflated	\$0.0	\$45.5	\$76.1	\$107.9	\$156.5	\$189.9	\$601.1	\$606.5	\$598.6	\$610.5	\$622.8	\$635.2	\$647.9	\$660.9	\$674.1	\$687.6
INTEREST																
- Interest on Opening Balance	\$0.0	\$0.0	\$1.6	\$4.4	\$8.4	\$14.3	\$21.5	\$43.7	\$66.8	\$90.5	\$115.4	\$141.6	\$169.2	\$198.1	\$228.6	\$260.6
- Interest on In-year Transactions	\$0.0	\$0.8	\$1.3	\$1.9	\$2.7	\$3.3	\$10.5	\$10.6	\$10.5	\$10.7	\$10.9	\$11.1	\$11.3	\$11.6	\$11.8	\$12.0
TOTAL REVENUE	\$0.0	\$46.3	\$79.1	\$114.2	\$167.6	\$207.5	\$633.1	\$660.8	\$675.9	\$711.6	\$749.1	\$787.9	\$828.4	\$870.6	\$914.5	\$960.3
CLOSING CASH BALANCE	\$0.0	\$46.3	\$125.3	\$239.5	\$407.1	\$614.6	\$1,247.8	\$1,908.5	\$2,584.4	\$3,296.0	\$4,045.1	\$4,833.0	\$5,661.4	\$6,532.0	\$7,446.5	\$8,406.8

STORMWATER SERVICING	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	TOTAL
OPENING CASH BALANCE	\$8,406.8	\$9,414.6	\$10,472.0	\$11,581.0	\$12,743.7	\$13,962.1	\$15,238.6	\$16,565.3	\$17,954.3	\$19,408.1	\$20,929.3	\$22,520.6	\$24,184.7	\$25,936.1	\$27,755.2	-
2021 - 2051 NON-RESIDENTIAL FUNDING REQUIREMENTS																
- Storm Water: Non Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$6.5	\$6.5	\$6.5	\$6.5	\$6.5	\$6.5	\$0.0	\$6.5	\$6.5	\$52.2
- Storm Water: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$10.1	\$10.3	\$10.5	\$10.7	\$10.9	\$11.1	\$0.0	\$11.6	\$11.8	\$87.1
NEW NON-RESIDENTIAL DEVELOPMENT																
- New Gross Floor Area (sq. m)	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	49,170	1,284,690
REVENUE																
- DC Receipts: Inflated	\$701.3	\$715.4	\$729.7	\$744.3	\$759.1	\$774.3	\$789.8	\$805.6	\$821.7	\$838.1	\$854.9	\$872.0	\$889.4	\$907.2	\$925.4	\$19,049.3
INTEREST																
- Interest on Opening Balance	\$294.2	\$329.5	\$366.5	\$405.3	\$446.0	\$488.7	\$533.4	\$579.8	\$628.4	\$679.3	\$732.5	\$788.2	\$846.5	\$907.8	\$971.4	\$10,362.1
- Interest on In-year Transactions	\$12.3	\$12.5	\$12.8	\$13.0	\$13.3	\$13.6	\$13.6	\$13.9	\$14.2	\$14.5	\$14.8	\$15.1	\$15.6	\$15.7	\$16.0	\$331.8
TOTAL REVENUE	\$1,007.8	\$1,057.4	\$1,109.0	\$1,162.7	\$1,218.4	\$1,276.5	\$1,336.8	\$1,399.3	\$1,464.3	\$1,531.9	\$1,602.2	\$1,675.3	\$1,751.4	\$1,830.6	\$1,912.8	\$29,743.2
CLOSING CASH BALANCE	\$9,414.6	\$10,472.0	\$11,581.0	\$12,743.7	\$13,962.1	\$15,238.6	\$16,565.3	\$17,954.3	\$19,408.1	\$20,929.3	\$22,520.6	\$24,184.7	\$25,936.1	\$27,755.2	\$29,656.2	-

2021 Adjusted Charge Per Sq. m **\$10.39**

Allocation of Capital Program
Residential Sector 61%
Non-Residential Sector 39%

Rates for 2021
Inflation Rate: 2.0%
Interest Rate on Positive Balances 3.5%
Interest Rate on Negative Balances 5.5%



APPENDIX C
TUTELA HEIGHTS
TECHNICAL APPENDIX

TUTELA HEIGHTS TECHNICAL APPENDIX

This appendix provides the detailed analysis undertaken to establish the area-specific development charge rates for the Tutela Heights service area. These engineered services include area-specific Water, Waste Water and Stormwater Services. While Roads and Related services were evaluated, it was determined that no roads projects with defined benefit within the Tutela Heights area are currently planned.

The basis of the development-related capital program is the City’s Master Servicing Plan and discussions with City staff. The projects identified in the capital program are required to service the demands of the anticipated development in the Tutela Heights area to occur over the planning period of 2021 to 2051.

The following tables provide details of the projects included in the area-specific engineered infrastructure development charge calculations for Tutela Heights. The content of the tables is as follows:

Table 1: Development Related Capital Program

Table 2: Calculation of Unadjusted Development Charges

Table 3: Residential & Non-Residential Cash Flow Analysis

ALLOCATION OF CAPITAL COSTS

The projects and costs have been identified and allocated through discussions with City staff. All costs are represented in current (2021) dollars.

The following table summarizes the allocation of the Tutela Heights engineered services capital costs (in thousands of dollars):

Service	Gross Cost	Grants / Subsidies / Other	Replacement / Benefit to Existing	Post-2051 Benefit	Net Development Related	Allocation	
						Residential (98%)	Non-Residential (2%)
Roads & Related	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Water	\$9,420.00	\$0.00	\$2,485.30	\$535.88	\$6,398.83	\$6,270.85	\$127.98
Waste Water	\$7,329.00	\$0.00	\$243.20	\$626.64	\$6,459.16	\$6,329.98	\$129.18
Stormwater	\$1,796.00	\$0.00	\$0.00	\$0.00	\$1,796.00	\$1,760.08	\$35.92
Total	\$18,454.00	\$0.00	\$2,728.50	\$1,162.52	\$14,653.99	\$14,360.91	\$293.08

The area-specific engineered services capital program totals \$18.45 million. Of this amount:

- \$2.73 million (15%) is attributable to benefit the existing community. As such, this figure has been excluded from the development charge calculation.
- \$1.16 million (6%) is attributable to development occurring beyond 2051. This share is allocated to post-period development and has also been removed from the development charges calculation.

After accounting for these deductions, the remaining \$14.65 million (79% of the total municipal cost) is to be funded through the area-specific development charges in the Tutela Heights area over the 2021-2051 planning period.

APPENDIX C.1

TUTELA HEIGHTS ROADS AND RELATED

TUTELA HEIGHTS ROADS AND RELATED

Through discussions with City engineering staff, no area-specific, development-related roads needs were identified for the Tutela Heights area. As such, no Roads and Related area-specific development charges have been calculated for Tutela Heights.

APPENDIX C.2

TUTELA HEIGHTS WATER SERVICES

TUTELA HEIGHTS WATER SERVICES

The capital program for Water Services was assembled by the City's engineering staff and is designed to serve the anticipated population and employment growth in Tutela Heights between 2021 and 2051.

The 2021-2051 Water capital program totals \$9.42 million and includes distribution infrastructure planned to serve development in the Tutela Heights area. The development-related costs included in the capital program are not to be entirely recovered through DCs. \$2.49 million has been identified as benefit to the existing community and has therefore been excluded from the development charges calculation.

Additionally, a share of approximately \$535,900 is deemed to benefit Tutela Heights post-2051. These shares have also been excluded from the development charge calculation, however, will be reconsidered through future development charges studies.

The remaining \$6.40 million is identified as the net development-related share eligible for funding through development charges over the 2021-2051 planning period.

Table 2 summarizes the capital program and calculation of the unadjusted residential and non-residential development charges. The DC eligible share has been allocated 98 per cent to new residential development and 2 per cent to non-residential development based on shares of population in new units and employment growth in new space to 2051. The residential share of the capital program totals \$6.27 million and, when divided by the forecast growth in population in new units (3,733), an unadjusted charge of \$1,679.84 per capita results.

The non-residential share, \$128,000 is applied against the forecast increase in square metres of non-residential floor space (4,950), yielding an unadjusted charge of \$25.85 per square metre.

The residential and non-residential cash flow analysis is shown on Table 3. The analysis takes into consideration expenditure timing and DC revenue projections. After cash flow considerations, the residential and non-residential charges increase to \$1,933 per capita and \$30.69 per square metre, respectively.

TUTELA HEIGHTS					
WATER SERVICES SUMMARY					
2021 - 2051		Unadjusted		Adjusted	
Development-Related Capital Program		Development Charge		Development Charge	
Total	Net DC Recoverable	\$/capita	\$/sq.m	\$/capita	\$/sq.m
\$9,420	\$6,399	\$1,679.84	\$25.85	\$1,933	\$30.69

APPENDIX C.2
TABLE 1

CITY OF BRANTFORD
TUTELA HEIGHTS
WATER SERVICES DEVELOPMENT-RELATED CAPITAL PROGRAM

WATER SERVICE GROWTH-RELATED CAPITAL PROGRAM 2021-2051	MSP Project #	Anticipated Timing	Gross Cost	Grants / Subsidies / Other	Benefit to Existing / Other Recoveries		Prior Growth / Available DC Shares	Net Development-Related	Post Period Benefit	Net DC Recoverable 2021-2051
2.1 Distribution										
2.1.1 Mount Pleasant Road Watermain Upgrades	W-M-022	2021 - 2025	\$ 3,417,000	\$ -	50%	\$ 1,708,500	\$ -	\$ 1,708,500	\$ 427,125	\$ 1,281,375
2.1.2 Conklin Road Watermain Upgrades	W-M-023	2021 - 2025	\$ 870,000	\$ -	50%	\$ 435,000	\$ -	\$ 435,000	\$ 108,750	\$ 326,250
2.1.3 Tutela Heights Road Upgrades	W-M-024	2026 - 2031	\$ 1,709,000	\$ -	20%	\$ 341,800	\$ -	\$ 1,367,200	\$ -	\$ 1,367,200
2.1.4 Tutela Heights Collector Road Distribution Watermain	W-M-025	2032 - 2041	\$ 2,316,000	\$ -	0%	\$ -	\$ -	\$ 2,316,000	\$ -	\$ 2,316,000
2.1.5 Davern Road Distribution Watermain	W-M-026	2032 - 2041	\$ 1,108,000	\$ -	0%	\$ -	\$ -	\$ 1,108,000	\$ -	\$ 1,108,000
Subtotal Distribution			\$ 9,420,000	\$ -		\$ 2,485,300	\$ -	\$ 6,934,700	\$ 535,875	\$ 6,398,825
TOTAL WATER SERVICE GROWTH-RELATED CAPITAL PROGRAM 2021-2051			\$ 9,420,000	\$ -		\$ 2,485,300	\$ -	\$ 6,934,700	\$ 535,875	\$ 6,398,825

APPENDIX C.2
TABLE 2

CITY OF BRANTFORD
TUTELA HEIGHTS
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
WATER SERVICES

Growth in Population in New Units 2021-2051	3,733
Employment Growth in New Space 2021-2051	90
Growth in New Building Space (Square Metres) 2021-2051	4,950

	Growth-Related Capital Forecast						Residential Share		Non-Residential Share	
	Gross Cost	Grants / Subsidies / Other	Benefit to Existing / Other Recoveries	Prior Growth / Available DC Shares	Post Period Benefit	Net Development-Related	%	\$000	%	\$000
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)				
WATER SERVICES										
Distribution	\$ 9,420.00	\$ -	\$ 2,485.30	\$ -	\$ 535.88	\$ 6,398.83	98%	\$ 6,270.85	2%	\$ 127.98
TOTAL WATER SERVICES	\$ 9,420.00	\$ -	\$ 2,485.30	\$ -	\$ 535.88	\$ 6,398.83		\$ 6,270.85		\$ 127.98
Unadjusted Development Charge Per Capita (\$)								\$ 1,679.84		
Unadjusted Development Charge Per Square Metre (\$)									\$ 25.85	

Residential Development Charge Calculation		
Residential Share of 2021-2051 DC Eligible Costs	98%	\$ 6,270,849
30-year Growth in Population in New Units		3,733
Development Charge Per Capita (Unadjusted)		\$ 1,679.84
Development Charge Per Capita after Cash Flow		\$ 1,933
Charge per Single Detached Unit	3.43	\$ 6,630

Non-Residential Development Charge Calculation		
Non-Residential Share of 2021-2051 DC Eligible Costs	2%	\$ 127,977
2021-2051 Growth in Non-Residential Building Space (Sq.M.)		4,950
Development Charge Per Square Metre (Unadjusted)		\$ 25.85
Development Charge Per Square Metre After Cash Flow		\$ 30.69

APPENDIX C.2
TABLE 3 - PAGE 1

CITY OF BRANTFORD
TUTELA HEIGHTS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE

WATER SERVICES
RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

WATER SERVICES	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
OPENING CASH BALANCE	\$0.0	(\$323.8)	(\$536.1)	(\$710.2)	(\$825.2)	(\$849.3)	(\$636.6)	(\$528.9)	(\$493.7)	(\$515.1)	(\$537.7)	(\$561.3)	(\$729.5)	(\$909.6)	(\$1,102.5)	(\$1,308.7)
2021 - 2051 RESIDENTIAL FUNDING REQUIREMENTS																
- Water Service: Non Inflated	\$315.1	\$315.1	\$315.1	\$315.1	\$315.1	\$223.3	\$223.3	\$223.3	\$223.3	\$223.3	\$223.3	\$335.6	\$335.6	\$335.6	\$335.6	\$335.6
- Water Service: Inflated	\$315.1	\$321.4	\$327.8	\$334.4	\$341.1	\$246.6	\$251.5	\$256.5	\$261.6	\$266.9	\$272.2	\$417.2	\$425.6	\$434.1	\$442.8	\$451.6
NEW RESIDENTIAL DEVELOPMENT																
- Population Growth in New Units	-	67	93	127	173	235	180	144	118	118	118	118	118	118	118	118
REVENUE																
- DC Receipts: Inflated	\$0.0	\$132.1	\$187.0	\$260.5	\$362.0	\$501.5	\$391.8	\$319.7	\$267.2	\$272.6	\$278.0	\$283.6	\$289.3	\$295.1	\$301.0	\$307.0
INTEREST																
- Interest on Opening Balance	\$0.0	(\$17.8)	(\$29.5)	(\$39.1)	(\$45.4)	(\$46.7)	(\$35.0)	(\$29.1)	(\$27.2)	(\$28.3)	(\$29.6)	(\$30.9)	(\$40.1)	(\$50.0)	(\$60.6)	(\$72.0)
- Interest on In-year Transactions	(\$8.7)	(\$5.2)	(\$3.9)	(\$2.0)	\$0.4	\$4.5	\$2.5	\$1.1	\$0.1	\$0.1	\$0.1	(\$3.7)	(\$3.7)	(\$3.8)	(\$3.9)	(\$4.0)
TOTAL REVENUE	(\$8.7)	\$109.1	\$153.6	\$219.4	\$317.0	\$459.2	\$359.2	\$291.7	\$240.1	\$244.4	\$248.5	\$249.1	\$245.4	\$241.2	\$236.5	\$231.0
CLOSING CASH BALANCE	(\$323.8)	(\$536.1)	(\$710.2)	(\$825.2)	(\$849.3)	(\$636.6)	(\$528.9)	(\$493.7)	(\$515.1)	(\$537.7)	(\$561.3)	(\$729.5)	(\$909.6)	(\$1,102.5)	(\$1,308.7)	(\$1,529.3)

WATER SERVICES	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	TOTAL
OPENING CASH BALANCE	(\$1,529.3)	(\$1,765.0)	(\$2,016.7)	(\$2,285.3)	(\$2,571.8)	(\$2,877.4)	(\$2,683.9)	(\$2,472.7)	(\$2,242.7)	(\$1,992.7)	(\$1,721.6)	(\$1,427.9)	(\$1,110.3)	(\$767.3)	(\$397.4)	-
2021 - 2051 RESIDENTIAL FUNDING REQUIREMENTS																
- Water Service: Non Inflated	\$335.6	\$335.6	\$335.6	\$335.6	\$335.6	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$6,270.8
- Water Service: Inflated	\$460.6	\$469.9	\$479.3	\$488.8	\$498.6	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$7,763.4
NEW RESIDENTIAL DEVELOPMENT																
- Population Growth in New Units	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	3,733
REVENUE																
- DC Receipts: Inflated	\$313.1	\$319.4	\$325.8	\$332.3	\$338.9	\$345.7	\$352.6	\$359.7	\$366.9	\$374.2	\$381.7	\$389.3	\$397.1	\$405.1	\$413.2	\$9,863.4
INTEREST																
- Interest on Opening Balance	(\$84.1)	(\$97.1)	(\$110.9)	(\$125.7)	(\$141.4)	(\$158.3)	(\$147.6)	(\$136.0)	(\$123.3)	(\$109.6)	(\$94.7)	(\$78.5)	(\$61.1)	(\$42.2)	(\$21.9)	(\$2,113.7)
- Interest on In-year Transactions	(\$4.1)	(\$4.1)	(\$4.2)	(\$4.3)	(\$4.4)	\$6.0	\$6.2	\$6.3	\$6.4	\$6.5	\$6.7	\$6.8	\$6.9	\$7.1	\$7.2	\$14.9
TOTAL REVENUE	\$224.9	\$218.2	\$210.7	\$202.3	\$193.1	\$193.5	\$211.2	\$230.0	\$250.0	\$271.1	\$293.7	\$317.6	\$343.0	\$370.0	\$398.6	\$7,764.7
CLOSING CASH BALANCE	(\$1,765.0)	(\$2,016.7)	(\$2,285.3)	(\$2,571.8)	(\$2,877.4)	(\$2,683.9)	(\$2,472.7)	(\$2,242.7)	(\$1,992.7)	(\$1,721.6)	(\$1,427.9)	(\$1,110.3)	(\$767.3)	(\$397.4)	\$1.2	-

2021 Adjusted Charge Per Capita	\$1,933
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Allocation of Capital Program	
Residential Sector	98%
Non-Residential Sector	2%
Rates for 2021	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%



APPENDIX C.2
TABLE 3 - PAGE 2

CITY OF BRANTFORD
TUTELA HEIGHTS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE

WATER SERVICES
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

WATER SERVICES	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
OPENING CASH BALANCE	\$0.0	(\$6.6)	(\$13.7)	(\$21.3)	(\$29.5)	(\$29.0)	(\$20.5)	(\$17.2)	(\$17.6)	(\$18.0)	(\$18.3)	(\$18.7)	(\$22.0)	(\$25.5)	(\$29.2)	(\$33.2)
2021 - 2051 NON-RESIDENTIAL FUNDING REQUIREMENTS																
- Water Service: Non Inflated	\$6.4	\$6.4	\$6.4	\$6.4	\$6.4	\$4.6	\$4.6	\$4.6	\$4.6	\$4.6	\$4.6	\$6.8	\$6.8	\$6.8	\$6.8	\$6.8
- Water Service: Inflated	\$6.4	\$6.6	\$6.7	\$6.8	\$7.0	\$5.0	\$5.1	\$5.2	\$5.3	\$5.4	\$5.6	\$8.5	\$8.7	\$8.9	\$9.0	\$9.2
NEW NON-RESIDENTIAL DEVELOPMENT																
- New Gross Floor Area (sq. m)	-	-	-	-	275	440	275	165	165	165	165	165	165	165	165	165
REVENUE																
- DC Receipts: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$9.1	\$14.9	\$9.5	\$5.8	\$5.9	\$6.1	\$6.2	\$6.3	\$6.4	\$6.6	\$6.7	\$6.8
INTEREST																
- Interest on Opening Balance	\$0.0	(\$0.4)	(\$0.8)	(\$1.2)	(\$1.6)	(\$1.6)	(\$1.1)	(\$0.9)	(\$1.0)	(\$1.0)	(\$1.0)	(\$1.0)	(\$1.2)	(\$1.4)	(\$1.6)	(\$1.8)
- Interest on In-year Transactions	(\$0.2)	(\$0.2)	(\$0.2)	(\$0.2)	\$0.0	\$0.2	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.1)	(\$0.1)	(\$0.1)	(\$0.1)	(\$0.1)
TOTAL REVENUE	(\$0.2)	(\$0.5)	(\$0.9)	(\$1.4)	\$7.5	\$13.5	\$8.4	\$4.9	\$4.9	\$5.1	\$5.2	\$5.2	\$5.1	\$5.1	\$5.0	\$4.9
CLOSING CASH BALANCE	(\$6.6)	(\$13.7)	(\$21.3)	(\$29.5)	(\$29.0)	(\$20.5)	(\$17.2)	(\$17.6)	(\$18.0)	(\$18.3)	(\$18.7)	(\$22.0)	(\$25.5)	(\$29.2)	(\$33.2)	(\$37.5)

WATER SERVICES	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	TOTAL
OPENING CASH BALANCE	(\$37.5)	(\$42.1)	(\$47.0)	(\$52.2)	(\$57.7)	(\$63.6)	(\$59.3)	(\$54.6)	(\$49.5)	(\$44.0)	(\$37.9)	(\$31.4)	(\$24.3)	(\$16.7)	(\$8.5)	-
2021 - 2051 NON-RESIDENTIAL FUNDING REQUIREMENTS																
- Water Service: Non Inflated	\$6.8	\$6.8	\$6.8	\$6.8	\$6.8	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$128.0
- Water Service: Inflated	\$9.4	\$9.6	\$9.8	\$10.0	\$10.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$158.4
NEW NON-RESIDENTIAL DEVELOPMENT																
- New Gross Floor Area (sq. m)	165	165	165	165	165	165	165	165	165	165	165	165	165	165	165	4,950
REVENUE																
- DC Receipts: Inflated	\$7.0	\$7.1	\$7.2	\$7.4	\$7.5	\$7.7	\$7.8	\$8.0	\$8.1	\$8.3	\$8.5	\$8.6	\$8.8	\$9.0	\$9.2	\$210.5
INTEREST																
- Interest on Opening Balance	(\$2.1)	(\$2.3)	(\$2.6)	(\$2.9)	(\$3.2)	(\$3.5)	(\$3.3)	(\$3.0)	(\$2.7)	(\$2.4)	(\$2.1)	(\$1.7)	(\$1.3)	(\$0.9)	(\$0.5)	(\$52.1)
- Interest on In-year Transactions	(\$0.1)	(\$0.1)	(\$0.1)	(\$0.1)	(\$0.1)	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.2	\$0.2	\$0.2	\$0.2	\$0.4
TOTAL REVENUE	\$4.9	\$4.7	\$4.5	\$4.5	\$4.3	\$4.3	\$4.7	\$5.1	\$5.5	\$6.0	\$6.6	\$7.0	\$7.6	\$8.2	\$8.9	\$158.8
CLOSING CASH BALANCE	(\$42.1)	(\$47.0)	(\$52.2)	(\$57.7)	(\$63.6)	(\$59.3)	(\$54.6)	(\$49.5)	(\$44.0)	(\$37.9)	(\$31.4)	(\$24.3)	(\$16.7)	(\$8.5)	\$0.4	-

2021 Adjusted Charge Per Sq. m	\$30.69
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Allocation of Capital Program	
Residential Sector	98%
Non-Residential Sector	2%
Rates for 2021	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%



APPENDIX C.3

TUTELA HEIGHTS WASTE WATER SERVICES

TUTELA HEIGHTS WASTE WATER SERVICES

The following section sets out the 2021-2051 development-related capital forecast and calculation of the area-specific development charge for Waste Water Services in the Tutela Heights area.

The details and timing of the 2021-2051 development-related Waste Water capital program are shown in Table 1. The gross costs included in the program total \$7.33 million, which includes sewage collection and pumping station projects. Of this total, \$243,200 and \$626,640 have respectively been identified as benefit to the existing community and benefit to Tutela Heights development beyond the 2051 planning horizon. As such, these costs have been excluded from the development charge calculation.

The remaining \$6.46 million is identified as the net development-related share eligible for funding through development charges over the planning period from 2021 to 2051.

Table 2 summarizes the capital program and calculation of the unadjusted residential and non-residential development charges for waste water servicing. The DC eligible share of \$6.46 million has been allocated 98 per cent to new residential development and 2 per cent to non-residential development based on shares of population in new units and employment growth in new space to 2051.

The residential share of the capital program totals \$6.33 million and, when divided by the forecast growth in population in new units (3,733), results in an unadjusted charge of \$1,695.68 per capita.

The non-residential share, approximately \$129,200, is applied against the forecast increase in square metres of non-residential floor space (4,950). This results in an unadjusted charge of \$26.10 per square metre.

The residential and non-residential cash flow analysis is shown in Table 3. After cash flow considerations, the residential and non-residential charge increase to \$1,884 per capita \$29.95 per square metre, respectively.

TUTELA HEIGHTS WASTE WATER SERVICES SUMMARY					
2021 - 2030		Unadjusted		Adjusted	
Development-Related Capital Program		Development Charge		Development Charge	
Total	Net DC Recoverable	\$/capita	\$/sq.m	\$/capita	\$/sq.m
\$7,329	\$6,459	\$1,695.68	\$26.10	\$1,884	\$29.95

APPENDIX C.3
TABLE 1

CITY OF BRANTFORD
TUTELA HEIGHTS
WASTE WATER SERVICES DEVELOPMENT-RELATED CAPITAL PROGRAM

WASTE WATER GROWTH-RELATED CAPITAL PROGRAM 2021-2051	MSP Project #	Anticipated Timing	Gross Cost	Grants / Subsidies / Other	Benefit to Existing / Other Recoveries	Prior Growth / Available DC Shares	Net Development-Related	Post Period Benefit	Net DC Recoverable 2021-2051	
3.1 Sewage Collection										
3.1.1 Tutela Heights WWPS Forcemain	WW-FM-006	2031 - 2041	\$ 1,491,000	\$ -	0%	\$ -	\$ -	\$ 1,491,000	\$ -	\$ 1,491,000
3.1.2 Mount Pleasant Road Trunk Sewer	WW-SS-015	2021 - 2026	\$ 1,116,000	\$ -	0%	\$ -	\$ -	\$ 1,116,000	\$ 334,800	\$ 781,200
3.1.3 Tutela Heights Road Trunk Sewer	WW-SS-016	2026 - 2031	\$ 1,100,000	\$ -	0%	\$ -	\$ -	\$ 1,100,000	\$ -	\$ 1,100,000
3.1.4 Mount Pleasant Road Trunk Sewer Upgrades	WW-SS-014	2026 - 2031	\$ 1,216,000	\$ -	20%	\$ 243,200	\$ -	\$ 972,800	\$ 291,840	\$ 680,960
Subtotal Sewage Collection			\$ 4,923,000	\$ -		\$ 243,200	\$ -	\$ 4,679,800	\$ 626,640	\$ 4,053,160
3.2 Pumping Station										
3.2.1 Tutela Heights Wastewater Pumping Station	WW-PS-006	2031 - 2041	\$ 2,406,000	\$ -	0%	\$ -	\$ -	\$ 2,406,000	\$ -	\$ 2,406,000
Subtotal Pumping Station			\$ 2,406,000	\$ -		\$ -	\$ -	\$ 2,406,000	\$ -	\$ 2,406,000
TOTAL WASTE WATER GROWTH-RELATED CAPITAL PROGRAM 2021-2051			\$ 7,329,000.00	\$ -		\$ 243,200.00	\$ -	\$ 7,085,800.00	\$ 626,640.00	\$ 6,459,160.00

APPENDIX C.3
TABLE 2

CITY OF BRANTFORD
TUTELA HEIGHTS
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
WASTE WATER SERVICES

Growth in Population in New Units 2021-2051	3,733
Employment Growth in New Space 2021-2051	90
Growth in New Building Space (Square Metres) 2021-2051	4,950

	Growth-Related Capital Forecast						Residential Share		Non-Residential Share	
	Gross Cost	Grants / Subsidies / Other	Benefit to Existing / Other Recoveries	Prior Growth / Available DC Shares	Post Period Benefit	Net Development-Related	%	\$000	%	\$000
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)				
WASTE WATER SERVICES										
Sewage Collection	\$ 4,923.00	\$ -	\$ 243.20	\$ -	\$ 626.64	\$ 4,053.16	98%	\$ 3,972.10	2%	\$ 81.06
Pumping Station	\$ 2,406.00	\$ -	\$ -	\$ -	\$ -	\$ 2,406.00	98%	\$ 2,357.88	2%	\$ 48.12
TOTAL WASTE WATER SERVICES	\$ 7,329.00	\$ -	\$ 243.20	\$ -	\$ 626.64	\$ 6,459.16		\$ 6,329.98		\$ 129.18
Unadjusted Development Charge Per Capita (\$)								\$ 1,695.68		
Unadjusted Development Charge Per Square Metre (\$)										\$ 26.10

Residential Development Charge Calculation		
Residential Share of 2021-2051 DC Eligible Costs	98%	\$ 6,329,977
30-year Growth in Population in New Units		3,733
Development Charge Per Capita (Unadjusted)		\$ 1,695.68
Development Charge Per Capita after Cash Flow		\$ 1,884
Charge per Single Detached Unit	3.43	\$ 6,462

Non-Residential Development Charge Calculation		
Non-Residential Share of 2021-2051 DC Eligible Costs	2%	\$ 129,183
2021-2051 Growth in Non-Residential Building Space (Sq.M.)		4,950
Development Charge Per Square Metre (Unadjusted)		\$ 26.10
Development Charge Per Square Metre After Cash Flow		\$ 29.95

APPENDIX C.3
TABLE 3 - PAGE 1

CITY OF BRANTFORD
TUTELA HEIGHTS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE

WASTE WATER SERVICES
RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

WASTE WATER SERVICES	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
OPENING CASH BALANCE	\$0.0	(\$131.1)	(\$139.7)	(\$97.0)	\$18.3	\$237.3	\$272.9	\$337.7	\$326.4	\$255.2	\$180.0	(\$334.5)	(\$512.4)	(\$703.4)	(\$908.0)	(\$1,127.3)
2021 - 2051 RESIDENTIAL FUNDING REQUIREMENTS																
- Waste Water Services: Non Inflated	\$127.6	\$127.6	\$127.6	\$127.6	\$127.6	\$418.5	\$290.9	\$290.9	\$290.9	\$290.9	\$638.1	\$347.2	\$347.2	\$347.2	\$347.2	\$347.2
- Waste Water Services: Inflated	\$127.6	\$130.1	\$132.8	\$135.4	\$138.1	\$462.0	\$327.6	\$334.1	\$340.8	\$347.6	\$777.8	\$431.7	\$440.3	\$449.1	\$458.1	\$467.3
NEW RESIDENTIAL DEVELOPMENT																
- Population Growth in New Units	-	67	93	127	173	235	180	144	118	118	118	118	118	118	118	118
REVENUE																
- DC Receipts: Inflated	\$0.0	\$128.8	\$182.3	\$253.9	\$352.8	\$488.8	\$381.9	\$311.6	\$260.5	\$265.7	\$271.0	\$276.4	\$281.9	\$287.6	\$293.3	\$299.2
INTEREST																
- Interest on Opening Balance	\$0.0	(\$7.2)	(\$7.7)	(\$5.3)	\$0.6	\$8.3	\$9.6	\$11.8	\$11.4	\$8.9	\$6.3	(\$18.4)	(\$28.2)	(\$38.7)	(\$49.9)	(\$62.0)
- Interest on In-year Transactions	(\$3.5)	(\$0.0)	\$0.9	\$2.1	\$3.8	\$0.5	\$1.0	(\$0.6)	(\$2.2)	(\$2.3)	(\$13.9)	(\$4.3)	(\$4.4)	(\$4.4)	(\$4.5)	(\$4.6)
TOTAL REVENUE	(\$3.5)	\$121.6	\$175.5	\$250.6	\$357.2	\$497.6	\$392.4	\$322.8	\$269.7	\$272.4	\$263.4	\$253.7	\$249.4	\$244.5	\$238.8	\$232.6
CLOSING CASH BALANCE	(\$131.1)	(\$139.7)	(\$97.0)	\$18.3	\$237.3	\$272.9	\$337.7	\$326.4	\$255.2	\$180.0	(\$334.5)	(\$512.4)	(\$703.4)	(\$908.0)	(\$1,127.3)	(\$1,362.0)

WASTE WATER SERVICES	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	TOTAL
OPENING CASH BALANCE	(\$1,362.0)	(\$1,613.0)	(\$1,881.4)	(\$2,168.2)	(\$2,474.3)	(\$2,801.1)	(\$2,612.3)	(\$2,406.2)	(\$2,181.8)	(\$1,938.0)	(\$1,673.5)	(\$1,387.0)	(\$1,077.1)	(\$742.5)	(\$381.6)	-
2021 - 2051 RESIDENTIAL FUNDING REQUIREMENTS																
- Waste Water Services: Non Inflated	\$347.2	\$347.2	\$347.2	\$347.2	\$347.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$6,330.0
- Waste Water Services: Inflated	\$476.6	\$486.1	\$495.9	\$505.8	\$515.9	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$7,980.9
NEW RESIDENTIAL DEVELOPMENT																
- Population Growth in New Units	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	3,733
REVENUE																
- DC Receipts: Inflated	\$305.2	\$311.3	\$317.5	\$323.9	\$330.3	\$337.0	\$343.7	\$350.6	\$357.6	\$364.7	\$372.0	\$379.5	\$387.1	\$394.8	\$402.7	\$9,613.6
INTEREST																
- Interest on Opening Balance	(\$74.9)	(\$88.7)	(\$103.5)	(\$119.2)	(\$136.1)	(\$154.1)	(\$143.7)	(\$132.3)	(\$120.0)	(\$106.6)	(\$92.0)	(\$76.3)	(\$59.2)	(\$40.8)	(\$21.0)	(\$1,629.0)
- Interest on In-year Transactions	(\$4.7)	(\$4.8)	(\$4.9)	(\$5.0)	(\$5.1)	\$5.9	\$6.0	\$6.1	\$6.3	\$6.4	\$6.5	\$6.6	\$6.8	\$6.9	\$7.0	\$3.4
TOTAL REVENUE	\$225.6	\$217.8	\$209.1	\$199.6	\$189.1	\$188.8	\$206.0	\$224.4	\$243.9	\$264.5	\$286.5	\$309.9	\$334.6	\$360.9	\$388.8	\$7,988.0
CLOSING CASH BALANCE	(\$1,613.0)	(\$1,881.4)	(\$2,168.2)	(\$2,474.3)	(\$2,801.1)	(\$2,612.3)	(\$2,406.2)	(\$2,181.8)	(\$1,938.0)	(\$1,673.5)	(\$1,387.0)	(\$1,077.1)	(\$742.5)	(\$381.6)	\$7.1	-

2021 Adjusted Charge Per Capita	\$1,884
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Allocation of Capital Program	
Residential Sector	98%
Non-Residential Sector	2%
Rates for 2021	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%



APPENDIX C.3
TABLE 3 - PAGE 2

CITY OF BRANTFORD
TUTELA HEIGHTS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE

WASTE WATER SERVICES
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

WASTE WATER SERVICES	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
OPENING CASH BALANCE	\$0.0	(\$2.7)	(\$5.6)	(\$8.6)	(\$12.0)	(\$6.4)	(\$1.6)	\$1.0	(\$0.2)	(\$1.4)	(\$2.7)	(\$13.0)	(\$16.5)	(\$20.1)	(\$24.1)	(\$28.3)
2021 - 2051 NON-RESIDENTIAL FUNDING REQUIREMENTS																
- Waste Water Services: Non Inflated	\$2.6	\$2.6	\$2.6	\$2.6	\$2.6	\$8.5	\$5.9	\$5.9	\$5.9	\$5.9	\$13.0	\$7.1	\$7.1	\$7.1	\$7.1	\$7.1
- Waste Water Services: Inflated	\$2.6	\$2.7	\$2.7	\$2.8	\$2.8	\$9.4	\$6.7	\$6.8	\$7.0	\$7.1	\$15.9	\$8.8	\$9.0	\$9.2	\$9.3	\$9.5
NEW NON-RESIDENTIAL DEVELOPMENT																
- New Gross Floor Area (sq. m)	-	-	-	-	275	440	275	165	165	165	165	165	165	165	165	165
REVENUE																
- DC Receipts: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$8.9	\$14.5	\$9.3	\$5.7	\$5.8	\$5.9	\$6.0	\$6.1	\$6.3	\$6.4	\$6.5	\$6.7
INTEREST																
- Interest on Opening Balance	\$0.0	(\$0.1)	(\$0.3)	(\$0.5)	(\$0.7)	(\$0.4)	(\$0.1)	\$0.0	(\$0.0)	(\$0.1)	(\$0.1)	(\$0.7)	(\$0.9)	(\$1.1)	(\$1.3)	(\$1.6)
- Interest on In-year Transactions	(\$0.1)	(\$0.1)	(\$0.1)	(\$0.1)	\$0.1	\$0.1	\$0.0	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.3)	(\$0.1)	(\$0.1)	(\$0.1)	(\$0.1)	(\$0.1)
TOTAL REVENUE	(\$0.1)	(\$0.2)	(\$0.4)	(\$0.6)	\$8.3	\$14.2	\$9.3	\$5.7	\$5.8	\$5.8	\$5.6	\$5.3	\$5.3	\$5.2	\$5.1	\$5.1
CLOSING CASH BALANCE	(\$2.7)	(\$5.6)	(\$8.6)	(\$12.0)	(\$6.4)	(\$1.6)	\$1.0	(\$0.2)	(\$1.4)	(\$2.7)	(\$13.0)	(\$16.5)	(\$20.1)	(\$24.1)	(\$28.3)	(\$32.8)

WASTE WATER SERVICES	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	TOTAL
OPENING CASH BALANCE	(\$32.8)	(\$37.6)	(\$42.8)	(\$48.2)	(\$54.1)	(\$60.4)	(\$56.1)	(\$51.4)	(\$46.3)	(\$40.8)	(\$34.8)	(\$28.3)	(\$21.3)	(\$13.7)	(\$5.5)	-
2021 - 2051 NON-RESIDENTIAL FUNDING REQUIREMENTS																
- Waste Water Services: Non Inflated	\$7.1	\$7.1	\$7.1	\$7.1	\$7.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$129.2
- Waste Water Services: Inflated	\$9.7	\$9.9	\$10.1	\$10.3	\$10.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$162.9
NEW NON-RESIDENTIAL DEVELOPMENT																
- New Gross Floor Area (sq. m)	165	165	165	165	165	165	165	165	165	165	165	165	165	165	165	4,950
REVENUE																
- DC Receipts: Inflated	\$6.8	\$6.9	\$7.1	\$7.2	\$7.3	\$7.5	\$7.6	\$7.8	\$7.9	\$8.1	\$8.3	\$8.4	\$8.6	\$8.8	\$9.0	\$205.4
INTEREST																
- Interest on Opening Balance	(\$1.8)	(\$2.1)	(\$2.4)	(\$2.7)	(\$3.0)	(\$3.3)	(\$3.1)	(\$2.8)	(\$2.5)	(\$2.2)	(\$1.9)	(\$1.6)	(\$1.2)	(\$0.8)	(\$0.3)	(\$39.4)
- Interest on In-year Transactions	(\$0.1)	(\$0.1)	(\$0.1)	(\$0.1)	(\$0.1)	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.2	\$0.2	\$0.2	\$0.2
TOTAL REVENUE	\$4.9	\$4.7	\$4.7	\$4.5	\$4.2	\$4.3	\$4.6	\$5.1	\$5.5	\$6.0	\$6.5	\$7.0	\$7.6	\$8.2	\$8.9	\$166.2
CLOSING CASH BALANCE	(\$37.6)	(\$42.8)	(\$48.2)	(\$54.1)	(\$60.4)	(\$56.1)	(\$51.4)	(\$46.3)	(\$40.8)	(\$34.8)	(\$28.3)	(\$21.3)	(\$13.7)	(\$5.5)	\$3.3	-

2021 Adjusted Charge Per Sq. m	\$29.95
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Allocation of Capital Program	
Residential Sector	98%
Non-Residential Sector	2%
Rates for 2021	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%



APPENDIX C.4

TUTELA HEIGHTS STORMWATER SERVICES

TUTELA HEIGHTS STORMWATER SERVICES

The development-related capital program for stormwater servicing was provided by the City’s engineering staff and totals \$1.80 million in capital costs. The details, timing, and cost breakdown of these stormwater projects are shown in Table 1.

No grants, subsidies, or other project contributions are anticipated, and no benefit to existing or post-2051 shares have been identified. As such, 100% of the projects are considered to be related to new development within the Tutela Heights area. The full amount of \$1.80 million has therefore been carried forward to the development charges calculation.

As shown in Table 2, the development-related share has been allocated 98 per cent, or \$1.76 million to new residential development and 2 per cent, or \$35,900 to new non-residential development.

The residential share is divided by the anticipated growth in population in new units between 2021 and 2051 in the Tutela Heights area (3,733), which yields an unadjusted development charge of \$471.49 per capita. The non-residential share is divided by the 4,950 square metres in forecasted new non-residential space, resulting in an unadjusted DC of \$7.26 per square metre.

In Table 3, the residential and non-residential cash flow analysis is shown. After cash flow analysis, the residential calculated charge increases to \$547 per capita and the adjusted non-residential development charge increases to \$8.67 per square metre.

TUTELA HEIGHTS STORMWATER SUMMARY					
2021 - 2030		Unadjusted		Adjusted	
Development-Related Capital Program		Development Charge		Development Charge	
Total	Net DC Recoverable	\$/capita	\$/sq.m	\$/capita	\$/sq.m
\$1,796	\$1,796	\$471.49	\$7.26	\$547	\$8.67

APPENDIX C.4
TABLE 1

CITY OF BRANTFORD
TUTELA HEIGHTS
STORMWATER SERVICING DEVELOPMENT-RELATED CAPITAL PROGRAM

STORMWATER GROWTH-RELATED CAPITAL PROGRAM 2021-2051	MSP Project #	Anticipated Timing	Gross Cost	Grants / Subsidies / Other	Benefit to Existing / Other Recoveries		Prior Growth / Available DC Shares	Net Development-Related	Post Period Benefit	Net DC Recoverable 2021-2051
4.1 Stormwater Projects										
4.1.1 Tutela Heights North Area (Pond #18)	SW-PD-018	2021 - 2026	\$ 417,000	\$ -	0%	\$ -	\$ -	\$ 417,000	\$ -	\$ 417,000
4.1.2 Tutela Heights North Area (Pond #19)	SW-PD-019	2021 - 2026	\$ 256,000	\$ -	0%	\$ -	\$ -	\$ 256,000	\$ -	\$ 256,000
4.1.3 Phelps Creek Area (Pond #20)	SW-PD-020	2031 - 2041	\$ 156,000	\$ -	0%	\$ -	\$ -	\$ 156,000	\$ -	\$ 156,000
4.1.4 Phelps Creek Area (Pond #21)	SW-PD-021	2031 - 2041	\$ 316,000	\$ -	0%	\$ -	\$ -	\$ 316,000	\$ -	\$ 316,000
4.1.5 Phelps Creek Area (Pond #22)	SW-PD-022	2031 - 2041	\$ 456,000	\$ -	0%	\$ -	\$ -	\$ 456,000	\$ -	\$ 456,000
4.1.6 Phelps Creek Area (Pond #23)	SW-PD-023	2031 - 2041	\$ 195,000	\$ -	0%	\$ -	\$ -	\$ 195,000	\$ -	\$ 195,000
Subtotal Stormwater Projects			\$ 1,796,000	\$ -		\$ -	\$ -	\$ 1,796,000	\$ -	\$ 1,796,000
INTENSIFICATION STORMWATER GROWTH-RELATED CAPITAL PROGRAM 2019-2028			\$ 1,796,000.00	\$ -		\$ -	\$ -	\$ 1,796,000.00	\$ -	\$ 1,796,000.00

APPENDIX C.4
TABLE 2

CITY OF BRANTFORD
TUTELA HEIGHTS
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
STORMWATER SERVICING

Growth in Population in New Units 2021-2051	3,733
Employment Growth in New Space 2021-2051	90
Growth in New Building Space (Square Metres) 2021-2051	4,950

	Growth-Related Capital Forecast						Residential Share		Non-Residential Share	
	Gross Cost	Grants / Subsidies / Other	Benefit to Existing / Other Recoveries	Prior Growth / Available DC Shares	Post Period Benefit	Net Development-Related	%	\$000	%	\$000
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)				
STORMWATER SERVICING										
Stormwater Projects	\$ 1,796.00	\$ -	\$ -	\$ -	\$ -	\$ 1,796.00	98%	\$ 1,760.08	2%	\$ 35.92
TOTAL STORMWATER SERVICING	\$ 1,796.00	\$ -	\$ -	\$ -	\$ -	\$ 1,796.00		\$ 1,760.08		\$ 35.92
Unadjusted Development Charge Per Capita (\$)							\$ 471.49			
Unadjusted Development Charge Per Square Metre (\$)									\$ 7.26	

Residential Development Charge Calculation			
Residential Share of 2021-2051 DC Eligible Costs	98%	\$	1,760,080
30-year Growth in Population in New Units			3,733
Development Charge Per Capita (Unadjusted)		\$	471.49
Development Charge Per Capita after Cash Flow		\$	547
Charge per Single Detached Unit	3.43	\$	1,876

Non-Residential Development Charge Calculation			
Non-Residential Share of 2021-2051 DC Eligible Costs	2%	\$	35,920
2021-2051 Growth in Non-Residential Building Space (Sq.M.)			4,950
Development Charge Per Square Metre (Unadjusted)		\$	7.26
Development Charge Per Square Metre After Cash Flow		\$	8.67

APPENDIX C.4
TABLE 3 - PAGE 1

CITY OF BRANTFORD
TUTELA HEIGHTS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE

STORMWATER SERVICING
RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

STORMWATER SERVICING	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
OPENING CASH BALANCE	\$0.00	\$0.00	\$38.05	\$93.21	\$171.46	\$281.66	\$435.90	\$564.00	\$675.82	\$776.40	\$882.02	\$992.97	\$1,109.43	\$1,231.59	\$1,359.66	\$1,493.94
2021 - 2030 RESIDENTIAL FUNDING REQUIREMENTS																
- Storm Water: Non Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
- Storm Water: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
NEW RESIDENTIAL DEVELOPMENT																
- Population Growth in New Units	-	67	93	127	173	235	180	144	118	118	118	118	118	118	118	118
REVENUE																
- DC Receipts: Inflated	\$0.0	\$37.4	\$52.9	\$73.7	\$102.4	\$141.9	\$110.9	\$90.5	\$75.6	\$77.1	\$78.7	\$80.3	\$81.9	\$83.5	\$85.2	\$86.9
INTEREST																
- Interest on Opening Balance	\$0.0	\$0.0	\$1.3	\$3.3	\$6.0	\$9.9	\$15.3	\$19.7	\$23.7	\$27.2	\$30.9	\$34.8	\$38.8	\$43.1	\$47.6	\$52.3
- Interest on In-year Transactions	\$0.0	\$0.7	\$0.9	\$1.3	\$1.8	\$2.5	\$1.9	\$1.6	\$1.3	\$1.3	\$1.4	\$1.4	\$1.4	\$1.5	\$1.5	\$1.5
TOTAL REVENUE	\$0.0	\$38.1	\$55.2	\$78.3	\$110.2	\$154.2	\$128.1	\$111.8	\$100.6	\$105.6	\$110.9	\$116.5	\$122.2	\$128.1	\$134.3	\$140.7
CLOSING CASH BALANCE	\$0.0	\$38.1	\$93.2	\$171.5	\$281.7	\$435.9	\$564.0	\$675.8	\$776.4	\$882.0	\$993.0	\$1,109.4	\$1,231.6	\$1,359.7	\$1,493.9	\$1,634.6

STORMWATER SERVICING	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	TOTAL
OPENING CASH BALANCE	\$1,634.6	\$1,782.0	\$1,936.4	\$2,097.9	\$2,267.0	\$2,443.9	\$2,629.0	\$2,822.6	\$3,024.9	\$3,236.4	\$3,457.4	\$3,688.3	\$3,929.6	\$4,181.5	\$4,444.4	-
2021 - 2030 RESIDENTIAL FUNDING REQUIREMENTS																
- Storm Water: Non Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
- Storm Water: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
NEW RESIDENTIAL DEVELOPMENT																
- Population Growth in New Units	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	3,733
REVENUE																
- DC Receipts: Inflated	\$88.6	\$90.4	\$92.2	\$94.0	\$95.9	\$97.8	\$99.8	\$101.8	\$103.8	\$105.9	\$108.0	\$110.2	\$112.4	\$114.6	\$116.9	\$2,791.2
INTEREST																
- Interest on Opening Balance	\$57.2	\$62.4	\$67.8	\$73.4	\$79.3	\$85.5	\$92.0	\$98.8	\$105.9	\$113.3	\$121.0	\$129.1	\$137.5	\$146.4	\$155.6	\$1,878.9
- Interest on In-year Transactions	\$1.6	\$1.6	\$1.6	\$1.6	\$1.7	\$1.7	\$1.7	\$1.8	\$1.8	\$1.9	\$1.9	\$1.9	\$2.0	\$2.0	\$2.0	\$48.8
TOTAL REVENUE	\$147.4	\$154.4	\$161.6	\$169.1	\$176.9	\$185.0	\$193.6	\$202.4	\$211.5	\$221.0	\$230.9	\$241.2	\$251.9	\$263.0	\$274.5	\$4,718.9
CLOSING CASH BALANCE	\$1,782.0	\$1,936.4	\$2,097.9	\$2,267.0	\$2,443.9	\$2,629.0	\$2,822.6	\$3,024.9	\$3,236.4	\$3,457.4	\$3,688.3	\$3,929.6	\$4,181.5	\$4,444.4	\$4,718.9	-

2021 Adjusted Charge Per Capita	\$547
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Allocation of Capital Program	
Residential Sector	98%
Non-Residential Sector	2%
Rates for 2021	
Inflation Rate:	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%



APPENDIX C.4
TABLE 3 - PAGE 2

CITY OF BRANTFORD
TUTELA HEIGHTS
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE

STORMWATER SERVICING
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)

STORMWATER SERVICING	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
OPENING CASH BALANCE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$2.65	\$7.01	\$10.00	\$11.98	\$14.13	\$16.36	\$18.66	\$21.14	\$23.71	\$26.48	\$29.34
2021 - 2051 NON-RESIDENTIAL FUNDING REQUIREMENTS																
- Storm Water: Non Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
- Storm Water: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
NEW NON-RESIDENTIAL DEVELOPMENT																
- New Gross Floor Area (sq. m)	-	-	-	-	275	440	275	165	165	165	165	165	165	165	165	165
REVENUE																
- DC Receipts: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$2.6	\$4.2	\$2.7	\$1.6	\$1.7	\$1.7	\$1.7	\$1.8	\$1.8	\$1.9	\$1.9	\$1.9
INTEREST																
- Interest on Opening Balance	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	\$0.2	\$0.4	\$0.4	\$0.5	\$0.6	\$0.7	\$0.7	\$0.8	\$0.9	\$1.0
- Interest on In-year Transactions	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
TOTAL REVENUE	\$0.0	\$0.0	\$0.0	\$0.0	\$2.6	\$4.4	\$3.0	\$2.0	\$2.1	\$2.2	\$2.3	\$2.5	\$2.6	\$2.8	\$2.9	\$3.0
CLOSING CASH BALANCE	\$0.0	\$0.0	\$0.0	\$0.0	\$2.6	\$7.0	\$10.0	\$12.0	\$14.1	\$16.4	\$18.7	\$21.1	\$23.7	\$26.5	\$29.3	\$32.3

STORMWATER SERVICING	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	TOTAL
OPENING CASH BALANCE	\$32.3	\$35.5	\$38.7	\$42.1	\$45.7	\$49.5	\$53.4	\$57.6	\$61.9	\$66.4	\$71.1	\$76.0	\$81.1	\$86.5	\$92.1	-
2021 - 2051 NON-RESIDENTIAL FUNDING REQUIREMENTS																
- Storm Water: Non Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
- Storm Water: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
NEW NON-RESIDENTIAL DEVELOPMENT																
- New Gross Floor Area (sq. m)	165	165	165	165	165	165	165	165	165	165	165	165	165	165	165	4,950
REVENUE																
- DC Receipts: Inflated	\$2.0	\$2.0	\$2.0	\$2.1	\$2.1	\$2.2	\$2.2	\$2.3	\$2.3	\$2.3	\$2.4	\$2.4	\$2.5	\$2.5	\$2.6	\$59.4
INTEREST																
- Interest on Opening Balance	\$1.1	\$1.2	\$1.4	\$1.5	\$1.6	\$1.7	\$1.9	\$2.0	\$2.2	\$2.3	\$2.5	\$2.7	\$2.8	\$3.0	\$3.2	\$37.5
- Interest on In-year Transactions	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$1.0
TOTAL REVENUE	\$3.2	\$3.3	\$3.4	\$3.6	\$3.7	\$4.0	\$4.1	\$4.4	\$4.5	\$4.7	\$4.9	\$5.1	\$5.4	\$5.6	\$5.9	\$97.9
CLOSING CASH BALANCE	\$35.5	\$38.7	\$42.1	\$45.7	\$49.5	\$53.4	\$57.6	\$61.9	\$66.4	\$71.1	\$76.0	\$81.1	\$86.5	\$92.1	\$97.9	-

2021 Adjusted Charge Per Sq. m	\$8.67
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Allocation of Capital Program	
Residential Sector	98%
Non-Residential Sector	2%
Rates for 2021	
Inflation Rate:	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%



APPENDIX D

ASSET MANAGEMENT PLAN

ASSET MANAGEMENT PLAN

The *Development Charges Act (DCA)* requires that municipalities complete an Asset Management Plan before passing a development charges by-law. The general purpose of the Asset Management Plan is to demonstrate that all assets proposed to be funded under the by-law are financially sustainable over their full life cycle.

A. ASSET TYPES

A summary of the future municipal-owned assets and estimated useful life assumptions for the DC services considered as part of this study are set out in Table 1. 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. Accordingly, the average useful life assumptions noted below are applicable to all project components.

Table 1 Summary of Municipal Assets Considered Area-Specific Engineered Services	
Service and Amenities	Estimated Useful Life
Roads & Related <ul style="list-style-type: none"> ▪ New Road Construction 	<ul style="list-style-type: none"> ▪ 60 years
Water Services <ul style="list-style-type: none"> ▪ Watermains / Distribution ▪ Elevated Tank 	<ul style="list-style-type: none"> ▪ 70 years ▪ 60 years
Waste Water Services <ul style="list-style-type: none"> ▪ Sewer / Collection ▪ Pumping Station 	<ul style="list-style-type: none"> ▪ 70 years ▪ 60 years
Stormwater Services <ul style="list-style-type: none"> ▪ Pond ▪ Local Upgrade 	<ul style="list-style-type: none"> ▪ 70 years ▪ 70 years

B. 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 development-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 replacing each asset, a provision for infrastructure replacement has been calculated for the 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, a number of assumptions are made to account for inflation (2.0 per cent) and interest (3.5 per cent).

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

Table 2 provides the calculated annual asset management contribution for both the DC and non-DC recoverable shares related to the 2021-2051 engineered services for both the Northern Boundary Expansion Lands and Tutela Heights. The year 2052 has been used to calculate the annual contribution for the 2021-2051 periods as the expenditures in 2051 will not trigger asset management contributions until 2052. By this time, the City will need to fund an additional \$1.20 million per year in order to properly fund the full life cycle costs of the new assets related to all engineered services under the area-specific development charges by-law.

TABLE 2

CITY OF BRANTFORD
CALCULATED ANNUAL PRVISION BY 2052 - ENGINEERED SERVICES

Service	2021 - 2051 Capital Program		Calculated AMP Annual Provision by 2052	
	DC Recoverable	Non-DC Funded	DC Related	Non-DC Related
Roads And Related - Northern Boundary Expansion Lands	\$ 31,594,050	\$ -	\$ 230,817	\$ -
Roads And Related - Tutela Heights	\$ -	\$ -	\$ -	\$ -
Water Services - Northern Boundary Expansion Lands	\$ 91,974,535	\$ 33,595,515	\$ 392,688	\$ 157,522
Water Services - Tutela Heights	\$ 6,398,825	\$ 3,021,175	\$ 28,405	\$ 11,091
Waste Water Services - Northern Boundary Expansion Lands	\$ 83,247,412	\$ 40,124,088	\$ 423,627	\$ 196,274
Waste Water Services - Tutela Heights	\$ 6,459,160	\$ 869,840	\$ 35,130	\$ 3,417
Stormwater - Northern Boundary Expansion Lands	\$ 22,043,398	\$ 32,372,602	\$ 84,833	\$ 122,165
Stormwater - Tutela Heights	\$ 1,796,000	\$ -	\$ 8,065	\$ -
Total 2052 Annual Provision	\$ 243,513,380	\$ 109,983,220	\$ 1,203,566	\$ 490,469

C. FINANCIAL SUSTAINABILITY OF THE PROGRAM

A key purpose 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.

Future Revenue Growth

The calculated annual funding provision should be considered within the context of the projected growth within the Northern Boundary Expansion Lands and Tutela Heights. Over the 2021-2051 period, these areas are projected to grow by 26,800 people. In addition, 14,800 employees will be added, associated with 1.29 million square metres of additional non-residential building space.

This growth will have the effect of increasing the overall assessment base. This leads to additional user fee and charge 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 future replacement of these assets.

Annual Budgetary Reviews

Through this annual exercise, staff identify the required funding and propose mitigating measures in order to ensure there are sufficient funds in reserves over the long term. Life cycle funding methodologies are also reviewed in order to ensure that the City is continuing to implement financially sustainable practices for funding the eventual replacement of assets.

Program is Deemed Financially Sustainable

The calculated annual provisions identified in Table 2 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. The City's annual operating budget review will allow staff to continue to monitor and implement mitigating measures should the program become less sustainable.

APPENDIX D.1

LONG-TERM CAPITAL AND OPERATING IMPACTS

APPENDIX D.1

TABLE 1

CITY OF BRANTFORD
 ESTIMATED NET OPERATING COST OF THE PROPOSED
 AREA-SPECIFIC DEVELOPMENT-RELATED CAPITAL PROGRAMS
 (in constant 2021 dollars)

	Net Cost (in 2021\$)	Estimated Operating Costs (\$000)															
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
ROADS AND RELATED																	
Development-Related Roads Infrastructure	\$250 per household	\$0.0	\$17.25	\$74.0	\$158.3	\$259.0	\$378.8	\$480.8	\$567.8	\$640.0	\$712.3	\$784.5	\$856.8	\$929.0	\$1,001.3	\$1,073.5	\$1,145.8
WATER, WASTE WATER, STORMWATER																	
Rate supported service - no additional op costs		\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
TOTAL ESTIMATED OPERATING COSTS		\$0.0	\$17.3	\$74.0	\$158.3	\$259.0	\$378.8	\$480.8	\$567.8	\$640.0	\$712.3	\$784.5	\$856.8	\$929.0	\$1,001.3	\$1,073.5	\$1,145.8

	Net Cost (in 2021\$)	Estimated Operating Costs (\$000)														
		2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051
ROADS AND RELATED																
Development-Related Roads Infrastructure	\$250 per household	\$1,218.00	\$1,290.25	\$1,362.5	\$1,434.8	\$1,507.0	\$1,579.3	\$1,651.5	\$1,723.8	\$1,796.0	\$1,868.3	\$1,940.5	\$2,012.8	\$2,085.0	\$2,157.3	\$2,229.5
WATER, WASTE WATER, STORMWATER																
Rate supported service - no additional op costs		\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	
TOTAL ESTIMATED OPERATING COSTS		\$1,218.0	\$1,290.3	\$1,362.5	\$1,434.8	\$1,507.0	\$1,579.3	\$1,651.5	\$1,723.8	\$1,796.0	\$1,868.3	\$1,940.5	\$2,012.8	\$2,085.0	\$2,157.3	\$2,229.5

APPENDIX E
PROPOSED DRAFT ASDC BY-LAW
(UNDER SEPARATE COVER)