2019 DEVELOPMENT CHARGES BACKGROUND STUDY



Version for Public Consultation

HEMSON Consulting Ltd.

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EXECUTIVE SUMMARY

A. PURPOSE OF 2019 DEVELOPMENT CHARGES BACKGROUND STUDY

1. Legislative Context

The District of Muskoka 2019 Development Charges (DC) Background Study is presented as part of the process to lead to the approval of a new DC by-law in compliance with the *Development Charges act, 1997* (DCA). The study is prepared in accordance with the *DCA* and associated Regulations, including the amendments that came into force on January 1, 2016.

2. Key Steps in Determining Future Development-Related Projects

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

3. DC Eligible and Ineligible Costs

Development charges are intended to pay for the initial round of capital costs needed to service new development over an identified planning period. This is based on the overlaying principle that "growth pays for growth". However, the *DCA* and associated regulation includes several statutory adjustments and deductions that prevent these costs from fully being recovered by growth. Such adjustments include, but are not limited to; ineligible costs, including operating and maintenance costs; ineligible services, including, tourism facilities, parkland acquisition, etc.; statutory ten per cent discount for "soft" or general services; deductions for costs that exceed historical service level caps; and statutory exemptions for specific uses (i.e. industrial expansions).

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

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

B. DEVELOPMENT FORECAST

1. Residential and Non-Residential

The table below provides a summary of the anticipated residential and non-residential growth over the 2019-2028 and 2019-2038 planning periods. The development forecast is further discussed in Appendix A.

Growth Forecast	2018	2019-2028		2019 - 2038	
		Growth	Total at 2028	Growth	Total at 2038
Residential					
Total Occupied Dwellings	49,106	4,285	53,391	7,850	56,956
Serviced	*28,139*			*4,848*	
Unserviced	*20,967*			*3,002*	
Total Population					
Census	144,890	10,316	155,206	19,018	163,908
Population In New Dwellings		*11,162*		*20,422*	
Serviced				*11,988*	
Unserviced				*8,435*	
Non-Residential					
Employment	26,247	1,394	27,641	2,826	29,073
Serviced				*2,199*	
Unserviced				*627*	
Non-Residential Building Space (sq.m.)		54,680		111,040	
Serviced				*86,397*	
Unserviced				*24,643*	

C. CALCULATED DEVELOPMENT CHARGES

The table below provides the District-wide development charges for residential and non-residential development based on the aforementioned forecasts.

	Residential Charge By Unit Type					Non-Residential Charge
			Apartments			
	Singles & Semis	Rows & Other Multiples	2 Sleeping Areas or Greater	Fewer than 2 Sleeping Areas	Per Occupant Charge	Charge per Square Metre
Total Serviced (1)	**$26,661**	**$22,064**	**$17,467**	**$11,951**	**$9,193**	**$221.86**
Total Un-serviced (2)	**$9,832**	**$8,136**	**$6,442**	**$4,407**	**$3,390**	**$74.30**

(1) Includes general servcies, Roads and Related, Wastewater and Water services.
(2) Includes general services, Roads and Related and Rural Area Septage services.

D. LONG-TERM CAPITAL AND OPERATING COSTS

On overview of the long-term capital and operating costs for the capital facilities and infrastructure to be included in the DC by-law is provided in the study. This

examination is required as one of the provisions of the *DCA*. Additional details on the long-term capital and operating impact analysis is found in Appendix E. By 2028 the District's net operating costs are estimated to increase by about $2.93 million. The services included in the analysis are Airport, Police, Social Housing, Long Term Care, Paramedic, Waste Management and Roads and Related. For the services not included in the analysis, the net operating costs are either funded from other revenue sources (i.e. wastewater and water rates) or the capital costs do not have a net operating cost impact.

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 2028, the District will need to fund an additional $219,000 per annum in order to properly fund the full life cycle costs of general services' new assets supported under the 2019 Development Charges By-Law. By 2038, the District will need to fund an additional $2.78 million for engineered services.

F. MODIFICATIONS TO THE DISTRICT'S DEVELOPMENT CHARGES BY-LAW ARE PROPOSED

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

I INTRODUCTION

The *Development Charges Act, 1997 (DCA)* and its associated *Ontario Regulation 82/98 (O. Reg. 82/98)* allow municipalities in Ontario to recover growth-related capital costs from new development. The District of Muskoka Development Charges Background Study is presented as part of a process to lead to the approval of a new development charge by-law in compliance with this legislation.

The anticipated residential and non-residential development in the District of Muskoka between 2019 and 2038 will increase demand on all District services. The District wishes to continue implementing DCs to fund a share of development-related capital projects so that development continues to be serviced in a fiscally responsible manner.

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

- A forecast of the amount, type and location of development anticipated in the District;
- The average level of service provided by the District over the ten-year period immediately preceding the preparation of the background study;
- A review of capital works in progress and anticipated future capital projects, including an analysis of gross expenditures, funding sources, and net expenditures incurred or to be incurred by the District or its local boards to provide for the expected development, including the determination of the development and non-development-related components of the capital projects;
- 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; and
- An asset management plan to deal with all assets whose capital costs are proposed to be funded under the DC by-law, demonstrating that all assets included in the capital program are financially sustainable over their full life cycle.

The study presents the analysis undertaken to determine the net capital costs attributable to new development that is forecast to occur in the District of Muskoka between 2019 and 2038. These development-related net capital costs are apportioned

to residential and non-residential development in a manner that reflects the increase in the need for each service.

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 stakeholders and members of the public about the calculated charges and methodology used. Following completion of this process, and in accordance with the *DCA* and Council's review of the study, it is intended that Council will pass new development charges for the District.

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

Section II designates the services for which the development charges are proposed and the areas within the District to which the development charges will apply. It also briefly reviews the methodology that has been used in the background study.

Section III presents a summary of the forecast of residential and non-residential development expected to occur within the District over two planning periods: from 2019 to 2028 and a longer-term planning period from 2019 to 2038.

Section IV summarizes the historical ten-year average capital service levels that have been attained in the District of Muskoka and form the basis for the development charge calculations.

Section V summarizes the development-related capital program that has been developed by various departments.

Section VI summarizes the calculation of applicable development charges and the resulting calculated development charges by class and type of development.

Section VII provides two comparisons; one of existing development charge rates in the District with the rates calculated in this study and another of the calculated 2014 development charge rates inflated to 2019 with the rates calculated in this study.

Section VIII provides an examination of the long-term capital and operating cost impacts for each service included in the development charge calculation.

Section IX highlights the findings of an asset management plan undertaken for all development-related components of capital projects included in the capital program.

Section X provides a discussion of other issues and considerations including by-law administration and local service policies.

II A DISTRICT-WIDE METHODOLOGY ALIGNS DEVELOPMENT-RELATED COSTS AND BENEFITS

Several key steps are required when calculating any development charge. However, specific circumstances arise in each municipality that must be reflected in the calculation. Therefore, the study has been tailored specifically for the District of Muskoka. The approach to the proposed development charges is focused on providing a reasonable alignment of development-related costs with the development that necessitates them. The study uses a District-wide approach for the general and roads and related services, which is consistent with past practice and is deemed the best approach to align development-related costs and benefits for Muskoka. Wastewater, Water and Rural Area Septage charges are calculated on serviced and unserviced development areas. The charges reflect the demands for services and are paid for by development in the areas which are going to use them. Wastewater and Water Services are calculated based on the development and the increased need for servicing arising from development in areas currently serviced by wastewater and water infrastructure. Rural Area Septage development charges are calculated based on development and the increased need for servicing arising from development not currently serviced by wastewater and water infrastructure, otherwise referred to as unserviced areas.

A. ALL SERVICES WITH DEVELOPMENT-RELATED COSTS INCLUDED IN THE ANALYSIS

The District of Muskoka provides a wide range of services to the community and has an extensive inventory of facilities, land, infrastructure, vehicles and equipment. The *DCA* provides municipalities with flexibility to define services that will be included in the development charge by-laws, provided that other provisions of the *Act* and its associated regulations are met. The *DCA* also requires the by-laws to designate the areas within which the DCs shall be imposed. Development charges may apply to all lands in the municipality or to other designated development areas as specified in the by-laws.

For all of the development charge eligible services that the District provides, excluding Wastewater, Water and Rural Area Septage, the full range of capital facilities, land, equipment and infrastructure is available throughout the District. A widely accepted method for recovering the development-related capital costs for such services is to apportion them over all new development anticipated in Muskoka.

The following services have been included in the District-wide development charge analysis:

- Airport Services
- Police Services
- Social Housing Services
- Long Term Care
- Social Services
- Paramedic Services
- Waste Management Services
- Administration
- Roads and Related

These services form a reasonable basis upon which to plan and administer the development charges. It is noted that the analysis of each of these services examines the individual capital facilities and equipment currently in place. The resulting development charge for all general and Roads and Related services is to be imposed against all development anywhere in the District.

Wastewater and Water services are calculated based on the development in areas currently serviced by wastewater and water infrastructure. The related capital programs are based on increased service needs in those defined areas. Rural Area Septage is only applicable to the areas not serviced by wastewater and water infrastructure, otherwise referred to as unserviced lands.

Two new services, Social Housing and Waste Management, are proposed to be introduced in the 2019 DC By-law. Social Housing services were not considered under previous DC Backgrounds Studies. Upon review of the capital program, it was determined that shares of the costs are related to the increased need for servicing arising from and related to residential development in the District. Elements of Waste Management, such as collection, diversion, recycling and organics processing are now eligible under the *DCA*.

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.

1. Development Forecast

The first step in the methodology requires a development forecast to be prepared for the ten-year period, 2019 to 2028, for general services and twenty-year period, 2019 to 2038, for engineered services. The forecast of the future residential and non-residential development used in this study is consistent with the *Growth Strategy: Forecast & Growth Allocation Report (Growth Strategy)* completed by Hemson Consulting on February 8, 2019.

For the residential portion of the forecast, net (or Census) population growth, population growth in new units and adjusted population growth (which includes Census growth and population growth in seasonal or non-permanent dwellings) are estimated. The adjusted population growth determines the need for additional facilities and provides the foundation for the development-related capital program.

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

The non-residential portion of the forecast estimates Gross Floor Area (GFA) of building space to be developed over the ten-year period, 2019 to 2028 and the twenty-year period, 2019 to 2038. The forecasts of GFA are based on the employment forecast for the District included in the *Growth Strategy*. Factors for floor space per worker are used to convert the employment forecast into gross floor area for the purposes of the Development Charges Background Study.

2. Service Categories and Historical Service Levels

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

> … must not include an increase that would result in the level of service exceeding the average level of that service provided in the municipality over the ten-year period immediately preceding the preparation of the background study…(s. 5. (1) 4.)

Historical ten-year average service levels thus form the basis for development charges. A review of the District's capital service levels for buildings, land, vehicles and so on, has therefore been prepared as a reference for the calculation, so that the portion of future capital projects that may be included in the development charge can be determined. The historical service levels used in this study have been calculated based on the period 2009 to 2018.

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

A development-related capital program has been prepared by the District's departments as part of the present 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 *Act* (*DCA*, s. 5. (2)). The capital program provides another cornerstone upon which development charges are based. The *DCA* requires that the increase in the need for service attributable to the anticipated development may include an increase:

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

In conjunction with *DCA*, s. 5. (1) 4. referenced above, these sections have the effect of requiring that the development charge be calculated on the lesser of the historical ten-year average service levels or the service levels embodied in future plans of the District. The development-related capital program 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, *Ontario Regulation 82/98*, s. 3 states that:

> For the purposes of paragraph 3 of subsection 5 (1) of the Act, the council of a 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 District from non-development charge sources. The amount of District funding for such shares is also identified as part of the preparation of the capital forecast.

There is also a requirement in the *DCA* to reduce the applicable development charge by the amount of any "uncommitted excess capacity" that is available for a service. Adjustments are made in the analysis to meet this requirement of the *Act*. This requirement has been addressed through the use of "net" population and employment in the determination of maximum permissible funding envelopes. Furthermore, the District's capital programs, and the need for increased capacity, reflects available and useable capacity within existing infrastructure and facilities.

Finally, the development-related net capital costs must be reduced by ten per cent for all general services except protection services such as Police Services (*DCA*, s. 5. (1) 8.). The ten per cent discount is applied to the other general services and the resulting amount is the District's funding responsibility from non-development charge sources.

Engineering services were examined on a longer horizon and analyses were completed to estimate the benefiting period of the capital programs. Details on the shares included in the development charges calculation are included in Appendix C. A ten per cent discount is not applicable to engineered services (*DCA,* s. 5 (1)8.).

4. Attribution to Types of Development

The next step in the determination of development charges is the allocation of development-related net capital costs between residential and non-residential sectors. This is done using apportionments for different services in accordance with the demands placed and the benefits derived.

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

Finally, the residential component of the development charge 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.

5. Final Adjustment

Cash flow analyses are undertaken to account for the timing of projects and receipt of development charges. Interest earnings or borrowing costs are accounted for in the calculation as allowed under the *DCA*.

III DEVELOPMENT FORECAST

This section provides the basis for the development forecasts used in calculating the development charges, as well as a summary of the forecast results. The forecast of future residential and non-residential development used in this study is consistent with the *Growth Strategy: Forecast & Growth Allocation Report* completed by Hemson Consulting on February 8, 2019.

A more detailed summary of the forecasts, including tables illustrating historical trends is provided in Appendix A.

A. RESIDENTIAL FORECAST

Development charges are levied on residential development as a charge per new unit. Therefore, for the residential forecast, a projection of both the *population growth*[1] as well as the *population in new units* is required.

- *Population growth* determines the need for additional facilities and provides the foundation for the development-related capital program.

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

The housing and population forecasts in this study include forecasts for both permanent or year-round occupied (Census) and total private dwellings; the difference being the inclusion of seasonal or non-permanent dwelling units. Population in non-permanent units has also been forecast, and has been added to the Census population to derive a total adjusted population figure.

Table 1 provides a summary of the residential forecast for two planning periods: a ten-year planning period, 2019 to 2028, and over the longer-term, 2019 to 2038. As noted in Section II, for development charge calculation purposes, the ten-year planning period is applicable to general services and the longer-term development forecast has been utilized in the calculation of engineered services development charges.

[1] Commonly referred to as "net population growth" in the context of development charges.

TABLE 1

DISTRICT OF MUSKOKA

SUMMARY OF RESIDENTIAL AND NON-RESIDENTIAL

DEVELOPMENT FORECAST

Growth Forecast	2018	2019-2028		2019 - 2038	
		Growth	Total at 2028	Growth	Total at 2038
Residential					
Total Occupied Dwellings	49,106	4,285	53,391	7,850	56,956
Serviced	*28,139*			*4,848*	
Unserviced	*20,967*			*3,002*	
Total Population					
Census	144,890	10,316	155,206	19,018	163,908
Population In New Dwellings		*11,162*		*20,422*	
Serviced				*11,988*	
Unserviced				*8,435*	
Non-Residential					
Employment	26,247	1,394	27,641	2,826	29,073
Serviced				*2,199*	
Unserviced				*627*	
Non-Residential Building Space (sq.m.)		54,680		111,040	
Serviced				*86,397*	
Unserviced				*24,643*	

As shown on Table 1, the District's combined Census and seasonal population is expected to increase by 10,316 people over the next ten years, reaching approximately 155,206 by 2028. The longer-term population is forecast to grow by more than 19,018 people to 163,908 in 2038.

Over the 2019 to 2028 planning period, the total number of new residential units will increase by approximately 4,285. This translates to a population growth in new units of 11,162. The population in new units was derived using data from Statistics Canada, analysing household sizes in recently constructed units and adjusted to account for the population in new seasonal units. The District-wide forecast has projected growth over the longer-term planning period of 7,850 additional dwelling units, of which approximately 4,848 will be in the serviced area and 3,002 will be in the unserviced area. The District-wide population residing in these new units is forecast at 20,422, of which approximately 11,988 will be in the serviced area and 8,435 will be in the unserviced area.

B. NON-RESIDENTIAL FORECAST

Development charges are levied on non-residential development as a charge per square metre of GFA. As with the residential forecast, the non-residential forecast requires both a projection of *employment* growth as well as a projection of the *employment growth associated with new floorspace* in the District.

As shown on Table 1, the non-residential forecast projects an increase of approximately 1,394 employees to 2028 and 2,826 to 2038, the majority of which is anticipated to be in the population-related or commercial sector. District-wide, these additional employees will be accommodated in almost 54,680 square metres of new non-residential building space to 2028 and 111,040 additional square metres to 2038. In the serviced area, there is anticipated to be 2,199 additional employees to be accommodated in 86,397 square metres and in the unserviced area, there is anticipated to be 627 employees in 24,643 square metres of new space.

IV SUMMARY OF HISTORICAL CAPITAL SERVICE LEVELS

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

For non-engineered services the legislative requirement is met by documenting historical service levels for the preceding ten years, in this case, for the period from 2009 to 2018. Typically, service levels for non-engineered services are measured as a ratio of inputs per capita, or per population plus employment.

O. Reg. 82/98 requires that when determining historical service levels, both quantity and quality of service be taken into consideration. In most cases, the service levels are initially established in quantitative terms. For example, service levels for buildings are presented in terms of square feet per capita. The qualitative aspect is introduced by the consideration of the monetary value of the facility or service. In the case of buildings, for example, the cost would be shown in terms of dollars per square foot to replace or construct a facility of the same quality. This approach helps to ensure that the development-related capital facilities that are to be charged to new development reflect not only the quantity (number and size) but also the quality (value or replacement cost) of service provided historically by the District. Both the quantitative and qualitative aspects of service levels used in the present analysis are provided by District staff, based on historical records and experience with costs to acquire or construct similar facilities, equipment and infrastructure as of 2018.

Table 2 summarizes service levels for all applicable services included in the development charge calculation. Appendix B provides the detailed historical inventory data upon which the calculation of service levels for the general services is based. Further details regarding the Roads and Related inventory of capital assets can be found in Appendix C.1.

TABLE 2

DISTRICT OF MUSKOKA
SUMMARY OF AVERAGE HISTORIC SERVICE LEVELS 2009 - 2018

Service	2009 - 2018 Service Level Indicator
1.0 AIRPORT SERVICES	**$523.84 per pop&empl**
Airport Facilities	$192.56 per pop&empl
Land	$323.72 per pop&empl
Vehicles	$7.56 per pop&empl
2.0 POLICE SERVICES	**$8.74 per pop&empl**
3.0 SOCIAL HOUSING SERVICES	**$697.20 per capita**
Buildings	$556.17 per capita
Affordable Houisng Units	$141.03 per capita
4.0 LONG TERM CARE	**$212.12 per capita**
Buildings	$194.51 per capita
Land	$3.01 per capita
Furniture & Equipment	$14.60 per capita
5.0 SOCIAL SERVICES	**$15.15 per pop&empl**
Buildings	$13.97 per pop&empl
Land	$1.17 per pop&empl
Furniture & Equipment	$0.01 per pop&empl
6.0 PARAMEDIC SERVICES	**$71.56 per pop&empl**
Buildings	$48.97 per pop&empl
Land	$6.08 per pop&empl
Vehicles	$16.51 per pop&empl
7.0 ROADS & RELATED	**$8,565.87 per pop&empl**
8.0 WASTE MANAGEMENT SERVICES	**$276.48 per capita**
Buildings	$5.31 per capita
Land	$41.76 per capita
Vehicles	$39.49 per capita
Equipment	$189.92 per capita

V THE DEVELOPMENT-RELATED CAPITAL PROGRAM

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

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

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

Based on the development forecasts summarized in Section III and detailed in Appendix A, District staff, in collaboration with the consultants have created a development-related capital program setting out those projects that are required to service anticipated development. For all general services, the capital plan covers the ten-year period from 2019 to 2028. As permitted by the *DCA,* s. 5 (1) 4., the development charges for engineering services are based on development anticipated in the District to 2038.

One of the recommendations contained in this Background Study is for Council to adopt the capital program created for the purposes of the development charges calculation. It is assumed that future capital budgets and forecasts will continue to bring forward the development-related projects contained herein, that are consistent with the development occurring in the District. It is acknowledged that changes to the forecast presented here may occur through the District's normal capital budget process.

B. THE DEVELOPMENT-RELATED CAPITAL FORECAST FOR GENERAL SERVICES

A summary of the development-related capital forecast for general services is presented in Table 3.

The table provides a total for all general services analysed over the ten-year planning period. Further details on the capital plans for each individual service category are available in Appendix B.

TABLE 3

DISTRICT OF MUSKOKA
SUMMARY OF DEVELOPMENT-RELATED CAPITAL PROGRAM
DISTRICT-WIDE SERVICES 2019-2028
(in $000)

Service	Gross Cost	Grants/ Subsidies	Municipal Cost	Total Net Capital Program 2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
1.0 AIRPORT SERVICES	**$815.6**	**$0.0**	**$815.6**	**$58.4**	**$689.6**	**$8.4**	**$8.4**	**$8.4**	**$8.4**	**$8.4**	**$8.4**	**$8.4**	**$8.4**
1.1 Buildings, Land & Furnishings	$731.2	$0.0	$731.2	$50.0	$681.2	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
1.2 Equipment and Materials	$84.4	$0.0	$84.4	$8.4	$8.4	$8.4	$8.4	$8.4	$8.4	$8.4	$8.4	$8.4	$8.4
2.0 POLICE SERVICES	**$109.7**	**$0.0**	**$109.7**	**$11.0**	**$11.0**	**$11.0**	**$11.0**	**$11.0**	**$11.0**	**$11.0**	**$11.0**	**$11.0**	**$11.0**
2.1 Vehicles and Equipment	$109.7	$0.0	$109.7	$11.0	$11.0	$11.0	$11.0	$11.0	$11.0	$11.0	$11.0	$11.0	$11.0
3.0 SOCIAL HOUSING SERVICES	**$2,000.0**	**$469.5**	**$1,530.5**	**$153.1**	**$153.1**	**$153.1**	**$153.1**	**$153.1**	**$153.1**	**$153.1**	**$153.1**	**$153.1**	**$153.1**
3.1 Buildings, Land & Furnishings	$2,000.0	$469.5	$1,530.5	$153.1	$153.1	$153.1	$153.1	$153.1	$153.1	$153.1	$153.1	$153.1	$153.1
4.0 LONG TERM CARE	**$69,590.0**	**$57,757.5**	**$11,832.5**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$5,916.3**	**$0.0**	**$0.0**	**$0.0**	**$5,916.3**
4.1 Buildings, Land & Furnishings	$69,590.0	$57,757.5	$11,832.5	$0.0	$0.0	$0.0	$0.0	$0.0	$5,916.3	$0.0	$0.0	$0.0	$5,916.3
6.0 PARAMEDIC SERVICES	**$4,935.6**	**$0.0**	**$4,935.6**	**$0.0**	**$0.0**	**$500.0**	**$1,410.0**	**$205.3**	**$0.0**	**$500.0**	**$2,115.0**	**$205.3**	**$0.0**
6.1 Buildings, Land & Furnishings	$4,525.0	$0.0	$4,525.0	$0.0	$0.0	$500.0	$1,410.0	$0.0	$0.0	$500.0	$2,115.0	$0.0	$0.0
6.2 Vehicles	$410.6	$0.0	$410.6	$0.0	$0.0	$0.0	$0.0	$205.3	$0.0	$0.0	$0.0	$205.3	$0.0
7.0 WASTE MANAGEMENT SERVICES	**$2,345.0**	**$0.0**	**$2,345.0**	**$1,025.0**	**$733.0**	**$250.0**	**$0.0**	**$0.0**	**$206.0**	**$0.0**	**$131.0**	**$0.0**	**$0.0**
7.1 Buildings, Land & Furnishings	$1,200.0	$0.0	$1,200.0	$700.0	$500.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
7.2 Vehicles & Equipment	$393.0	$0.0	$393.0	$0.0	$131.0	$0.0	$0.0	$0.0	$131.0	$0.0	$131.0	$0.0	$0.0
7.3 Compactors	$652.0	$0.0	$652.0	$300.0	$102.0	$250.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
7.4 Studies	$100.0	$0.0	$100.0	$25.0	$0.0	$0.0	$0.0	$0.0	$75.0	$0.0	$0.0	$0.0	$0.0
8.0 ADMINISTRATION	**$868.6**	**$0.0**	**$868.6**	**$260.0**	**$83.1**	**$31.7**	**$62.1**	**$102.4**	**$32.8**	**$89.3**	**$33.6**	**$69.1**	**$104.5**
8.1 Studies	$868.6	$0.0	$868.6	$260.0	$83.1	$31.7	$62.1	$102.4	$32.8	$89.3	$33.6	$69.1	$104.5
TOTAL	**$80,664.5**	**$58,227.0**	**$22,437.5**	**$1,507.5**	**$1,669.8**	**$954.2**	**$1,644.6**	**$480.2**	**$6,327.5**	**$761.8**	**$2,452.1**	**$446.9**	**$6,193.2**

The development-related capital forecast for general services estimates a total gross cost of $80.66 million. Provincial funding of $58.23 million has been identified for the services of Long Term Care and Social Housing Services. Therefore, the net municipal cost of the capital program is reduced to $22.44 million.

Of the $22.44 million ten-year net municipal capital costs, more than half, $11.83 million, is related to the Long Term Care capital program. The program provides for the construction of additional beds in Huntsville and South Muskoka, which will be constructed in 2024 and 2028, respectively.

The Paramedic Services development-related capital program totals $4.94 million in net municipal costs and accounts for 22.0 per cent of the overall net program costs. The program includes the replacement and expansion of two existing stations and their associated land costs as well as the vehicles required to equip the larger stations.

The Waste Management development-related capital program totals $2.34 million in net municipal costs and accounts for 10.5 per cent of the overall program. The program includes the construction costs associated with the development of new transfer station facilities, compost pad, as well as additional fleet, equipment, compactors and related studies.

The capital program associated with Social Housing Services amounts to $1.53 million, or 6.8 per cent, and provides for the provision for development-related social housing costs.

Administration represents approximately 3.9 per cent, or $868,600 of the total capital program and provides for development-related studies, including updates to the Official Plan, two future development charges studies and other various studies.

Airport Services represents just over 3.6 per cent ($815,600) of the total capital program and provides for a provisions for future development, equipment and a Long Term Plan.

The remainder of the capital forecast totals $109,700 and provides for additional development-related equipment for Police Services.

The capital forecast incorporates those projects identified to be related to development anticipated in the next ten years. It is not implied that all of these costs are to be

recovered from new development by way of development charges (see the following Section VI for the method and determination of net capital costs attributable to development). Portions of this capital forecast may relate to providing servicing for development which has occurred prior to 2019, for replacement of existing capital facilities (e.g. paramedic station replacements) or for development anticipated to occur beyond the 2019–2028 planning period. In addition, the amounts shown on Table 3 have not been reduced by ten per cent for various general services as mandated by s. 5 (1) 8. of the *DCA*.

C. THE DEVELOPMENT-RELATED CAPITAL FORECAST FOR ENGINEERING SERVICES

Table 4 summarizes the development-related capital recoveries for engineered services. The capital program totals $535.24 million and provides servicing for anticipated development over the longer-term planning period from 2019 to 2038. Further details on the inventory of capital assets for Roads and Related and capital programs for all engineered services are available in Appendix C.

No grants or alternative funding sources have been identified to offset the capital costs and, as such, the full $535.24 million remains the District's funding responsibility. The majority of the program (63.7 per cent) is associated with Roads and Related projects. This includes road construction, surfacing projects and other projects at a cost of $340.84 million.

Wastewater Services make up 18.7 per cent of the capital program or $99.89 million. The capital program includes the recovery of existing debt payments, wastewater system expansions, large and small pumping stations, treatment of wastewater, costs related to the relocation of capacity from Mountview Wastewater Treatment Plan (WWTP) to the Golden Pheasant WWTP, and other related projects.

Water Services make up 14.6 per cent of the engineering services capital program. The net municipal cost of $77.89 million is made up of existing debt payments, distribution of water, treatment of water, water reservoirs and other projects.

The remainder of the engineered capital program totals $16.63 million (3.1 per cent) and comprises hauled sewage projects in the Rural Area Septage Service.

TABLE 4

DISTRICT OF MUSKOKA
SUMMARY OF DEVELOPMENT-RELATED CAPITAL PROGRAM
FOR DISTRICT-WIDE ENGINEERED SERVICES 2019 - 2038
(in $000)

Service	Gross Cost	Grants / Subsidies	Net Municipal Cost
1.0 ROADS & RELATED	**$340,837.9**	**$0.0**	**$340,837.9**
1.1 Roads Construction	$225,319.3	$0.0	$225,319.3
1.2 Surfacing Projects	$115,418.6	$0.0	$115,418.6
1.3 Other Projects	$100.0	$0.0	$100.0
2.0 WASTEWATER SERVICES	**$99,888.0**	**$0.0**	**$99,888.0**
2.1 Existing Debt	$17,069.3	$0.0	$17,069.3
2.2 System Expansion Wastewater	$12,207.1	$0.0	$12,207.1
2.3 Pumping Station Large	$16,022.6	$0.0	$16,022.6
2.4 Pumping Station Small	$158.6	$0.0	$158.6
2.5 Treatment Wastewater	$31,141.9	$0.0	$31,141.9
2.6 Mountview/Golden Pheasant	$18,500.0	$0.0	$18,500.0
2.7 Other Projects	$4,788.5	$0.0	$4,788.5
3.0 WATER SERVICES	**$77,889.7**	**$0.0**	**$77,889.7**
3.1 Existing Debt	$10,272.8	$0.0	$10,272.8
3.2 Distribution Water	$2,646.8	$0.0	$2,646.8
3.3 Treatment Water	$60,295.4	$0.0	$60,295.4
3.4 Reservoir Water	$3,621.2	$0.0	$3,621.2
3.5 Other Projects	$1,053.5	$0.0	$1,053.5
4.0 RURAL AREA SEPTAGE	**$16,627.5**	**$0.0**	**$16,627.5**
4.1 Hauled Sewage Projects	$16,627.5	$0.0	$16,627.5
TOTAL - ENGINEERED SERVICES CAPITAL PROGRAM	**$535,243.0**	**$0.0**	**$535,243.0**

The capital forecast incorporates those projects identified to be related to development anticipated District-wide, and in serviced and unserviced areas over the next twenty years. It is not implied that all of these costs are to be recovered from new development by way of development charges (see the following Section VI for the method and determination of net capital costs attributable to development). Portions of this capital forecast may relate to providing servicing for development which has occurred prior to 2019, for replacement of existing capital facilities or for development anticipated to occur beyond the 2019–2038 planning period.

VI PROPOSED DEVELOPMENT CHARGES ARE CALCULATED IN ACCORDANCE WITH THE *DCA*

This section summarizes the calculation of development charges for each service category and the resulting total charges by sector. For all municipal services, the calculation of the "unadjusted" per capita (residential) and per square metre (non-residential) charges is reviewed. Adjustments to these amounts resulting from a cash flow analysis that takes interest earnings and borrowing costs into account are also discussed.

For residential development, the adjusted total per capita amount is converted to a variable charge by housing unit type using unit occupancy factors. For non-residential development, the charges are based on gross floor area 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 from the payment of DCs 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 DC 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. UNADJUSTED DEVELOPMENT CHARGES CALCULATION FOR GENERAL SERVICES

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

The net capital forecast for general services totals $22.44 million and incorporates those projects identified to be related to development anticipated in the next ten years. However, not all of the capital costs are to be recovered from new development by way of development charges. As shown on Table 5, $5.22 million (23 per cent) relates to replacement of existing capital facilities or for shares of projects that provide benefit to the existing community. The majority of these costs are in Long Term Care ($2.84 million) and Paramedic Services ($2.04 million) and reflect replacement of existing facilities. These portions of capital costs will have to be funded from non-development charge revenue sources, largely property taxes for this group of services.

TABLE 5

DISTRICT OF MUSKOKA
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
10-YEAR CAPITAL PROGRAM FOR TOWN-WIDE SERVICES

10 Year Growth in Population in New Units	11,162
10 Year Growth in Square Metres	54,680

Service	Development-Related Capital Program (2019 - 2028)						Residential Share		Non-Residential Share	
	Net Municipal Cost ($000)	Replacement & Benefit to Existing ($000)	Required Service Discount ($000)	Available DC Reserves ($000)	Post-2028 Benefit ($000)	Total DC Eligible Costs for Recovery ($000)	%	($000)	%	($000)
1.0 AIRPORT SERVICES	$815.6	$25.0	$79.1	$0.0	$0.0	$711.5	89%	$632.5	11%	$78.99
Unadjusted Development Charge Per Capita								$56.67		
Unadjusted Development Charge Per Sq.M										$1.44
2.0 POLICE SERVICES	$109.7	$0.0	$0.0	$0.0	$7.4	$102.3	89%	$91.0	11%	$11.36
Unadjusted Development Charge Per Capita								$8.15		
Unadjusted Development Charge Per Sq.M										$0.21
3.0 SOCIAL HOUSING SERVICES	$1,530.5	$0.0	$153.1	$0.0	$0.0	$1,377.5	100%	$1,377.5	0%	$0.00
Unadjusted Development Charge Per Capita								$123.40		
Unadjusted Development Charge Per Sq.M										$0.00
4.0 LONG TERM CARE	$11,832.5	$2,839.8	$899.3	$0.0	$6,124.0	$1,969.4	100%	$1,969.4	0%	$0.00
Unadjusted Development Charge Per Capita								$176.43		
Unadjusted Development Charge Per Sq.M										$0.00
5.0 PARAMEDIC SERVICES	$4,935.6	$2,037.6	$289.8	$0.0	$1,854.0	$754.2	89%	$670.4	11%	$83.73
Unadjusted Development Charge Per Capita								$60.06		
Unadjusted Development Charge Per Sq.M										$1.53
6.0 WASTE MANAGEMENT SERVICES	$2,345.0	$0.0	$234.5	$0.0	$0.0	$2,110.5	100%	$2,110.5	0%	$0.00
Unadjusted Development Charge Per Capita								$189.07		
Unadjusted Development Charge Per Sq.M										$0.00
7.0 ADMINISTRATION	$868.6	$314.3	$55.4	$0.0	$0.0	$498.9	89%	$443.5	11%	$55.38
Unadjusted Development Charge Per Capita								$39.73		
Unadjusted Development Charge Per Sq.M										$1.01
TOTAL	**$22,437.5**	**$5,216.7**	**$1,711.1**	**$0.0**	**$7,985.4**	**$7,524.3**		**$7,294.8**		**$229.5**
Unadjusted Development Charge Per Capita								**$653.51**		
Unadjusted Development Charge Per Sq.M										**$4.19**

The *DCA*, s. 5 (1) 8 requires that development-related net capital costs for general services be reduced by ten per cent in calculating the applicable development charges. The discount does not apply to protection services such as Police Services. The ten per cent share of development-related net capital costs not included in the development charge calculations must be funded from non-development charge sources. In total, about $1.71 million is identified as the required reduction.

There are no available reserves for general services as development charges for these areas have not been collected in the past. Therefore no portion has been netted off the chargeable capital costs.

A share of $7.99 million is attributable to development beyond 2028. The majority of this cost, some $6.12 million, is in Long Term Care and reflects a capital program in excess of the ten-year historical service level. This development-related share has been removed from the calculation and may therefore be recovered under future development charge studies.

The costs eligible for recovery through development charges for general services total $7.52 million. This amount is allocated between the residential and non-residential sectors to derive the unadjusted development charges. Social Housing Services, Long Term Care and Waste Management Services are deemed to benefit residential development only, while the remaining services are allocated between both sectors based on shares of population in new units and employment growth in new space. The allocation to the residential sector for these services is calculated at 89 per cent, and 11 per cent to the non-residential sector.

Approximately $7.29 million of the general services development charges eligible capital program is deemed to benefit residential development. When this amount is divided by the ten-year growth in population in new dwelling units (11,162), an unadjusted charge of $653.51 per capita results. The non-residential totals $229,500, which yields an unadjusted charge of $4.19 per square metre when divided by the ten-year increase in non-residential building space (54,680 square metres).

B. UNADJUSTED DEVELOPMENT CHARGES CALCULATION FOR ENGINEERING SERVICES

Table 6 displays the calculation of the unadjusted rates for engineering services. The development-related infrastructure will be used to service development in the District

TABLE 6

DISTRICT OF MUSKOKA
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
CAPITAL PROGRAM FOR ENGINEERED SERVICES

2019 - 2038 Growth in Population in New Units (District-wide)	**20,422**
2019 - 2038 Growth in Population in New Units (Serviced)	11,988
2019 - 2038 Growth in Population in New Units (Unserviced)	8,435
2019 - 2038 Growth in Square Meters (District-wide)	**111,040**
2019 - 2038 Growth in Square Meters (Serviced)	86,397
2019 - 2038 Growth in Square Meters (Unserviced)	24,643

Service	Development-Related Capital Program (2019 - 2038)					Residential Share		Non-Residential Share	
	Net Municipal Cost ($000)	Replacement & Benefit to Existing ($000)	Available DC Reserves ($000)	Post-Period Benefit ($000)	Total DC Eligible Costs for Recovery ($000)	%	($000)	%	($000)
1.0 ROADS & RELATED	$340,837.9	$280,234.9	$0.0	$1,744.3	$58,858.6	88%	$51,703.9	12%	$7,154.73
Unadjusted Development Charge Per Capita							$2,531.75		
Unadjusted Non-Residential Charge Per Sq.M									$64.43
2.0 WASTEWATER SERVICES	$99,888.0	$18,497.7	$0.0	$29,116.1	$52,274.2	85%	$44,171.9	15%	$8,102.28
Unadjusted Development Charge Per Capita							$3,684.82		
Unadjusted Non-Residential Charge Per Sq.M									$93.78
3.0 WATER SERVICES	$77,889.7	$7,024.9	$0.0	$47,440.6	$23,424.1	85%	$19,793.5	15%	$3,630.64
Unadjusted Development Charge Per Capita							$1,651.17		
Unadjusted Non-Residential Charge Per Sq.M									$42.02
4.0 RURAL AREA SEPTAGE	$16,627.5	$14,632.2	$0.0	$0.0	$1,995.3	93%	$1,857.2	7%	$138.10
Unadjusted Development Charge Per Capita							$220.19		
Unadjusted Non-Residential Charge Per Sq.M									$5.60
TOTAL DISTRICT-WIDE ENGINEERED SERVICES	**$535,243.0**	**$320,389.8**	**$0.0**	**$78,301.0**	**$136,552.2**		**$117,526.5**		**$19,025.7**
Unadjusted Development Charge Per Capita									
Serviced							**$7,867.74**		
Unserviced							**$2,751.94**		
Unadjusted Non-Residential Charge Per Sq.M									
Serviced									**$200.23**
Unserviced									**$70.03**

between 2019 and 2038. Costs are broken out to reflect the areas serviced by the infrastructure.

Of the total engineering capital program ($535.24 million), not all costs are to be recovered from new development by way of DCs. Table 6 shows that $320.39 million (60 per cent) of the capital program relates to replacement of existing capital works or for shares of projects that provide benefit to the existing community. A large share of this cost, $280.23 million, is for roads and related infrastructure. This amount has been netted off the chargeable capital costs. The replacement shares included in the engineered capital programs are allocated on a project-by-project basis and the methodology is examined in detail in Appendix C. Post-period shares in the amount of $78.30 million have also been netted out. The post-period allocated costs are largely related to wastewater and water plant expansion that are not required until after 2038.

The remaining $136.55 million is related to development in the 2019-2038 planning period and has been included in the development charge calculation.

Roads and Related eligible costs are calculated District-wide and costs are allocated residentially and non-residentially based on share of population and employment growth yielding an 88 percent and 12 percent allocation, respectively. The share attributed to residential development of 20,422 people, is $51.70 million, amounts to the unadjusted charge of $2,531.75 per capita. Non-residential development of 111,040 square metres of new non-residential space is attributed $7.15 million, of the DC eligible cost amounts to the unadjusted charge of $64.43 per square metre.

Wastewater Services are divided over the development occurring in the serviced area over the twenty-year period. Growth in the serviced areas are 11,988 population in new units and 86,397 square metres. The total DC eligible cost is attributed 85 per cent ($44.17 million) to residential development and 15 per cent ($8.10 million) to non-residential development, which amounts to an unadjusted charges of $3,684.82 per capita and $93.78 per square metre.

Water Service capital costs are divided over the twenty-year development in the serviced area at the same shares as Wastewater. The total DC eligible cost of $23.42 million yield unadjusted charges of $1,651.17 per capita and $42.02 per square metre.

Lastly, the Rural Area Septage service DC eligible cost is $2.00 million and distributed between residential and non-residential development in the unserviced area. The residential share is 93 per cent or $1.86 million which amounts to a charge of $220.19

per capita and the non-residential share is 7 per cent or $138,100, which amounts to a charge of $5.60 per square metre.

The unadjusted total residential charge related to engineered services in the serviced area is $7,867.74 per capita which includes the Roads and Related, Wastewater and Water services. The unadjusted residential charge in the unserviced area is $2,751.94 per capita which includes the Roads and Related and Rural Area Septage services. The unadjusted non-residential charges are $200.23 per square metre in the serviced area and $70.03 per square metre in the unserviced area. Services included in the non-residential serviced and unserviced charges are the same as the residential charges.

C. AJDUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES

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

Table 7 summarizes the results of the cash flow adjustments for the residential development charges rates. The adjusted per capita rate for the serviced area increases by $672 from $8,521 per capita to $9,193 per capita after the cash flow analysis. The unserviced area adjusted per capita rate decreases by $15 from $3,405 per capita to $3,390 per capita after cash flow analysis.

Both the serviced and unserviced residential DCs are proposed to vary by unit type to reflect their different occupancy factors and resulting demand for services. As shown on Table 7, the calculated charges in the serviced area for a single or semi-detached unit is $26,661, $22,064 for a row or other multiple, $17,467 per large apartment (two sleeping areas or greater), $11,951 per small apartment (fewer than two sleeping areas) and $9,193 per occupant charge. The charges in the unserviced area for a single or semi-detached unit are $9,832, $8,136 for a row or other type of multiple, $6,422 per large apartment, $4,407 per small apartment and $3,390 per occupant charge.

The non-residential development charges increase after cash flow considerations as show on Table 8. In a serviced area, the adjusted rate of $221.86 per square meter of new building space is an increase of $17.43 over the unadjusted charge of $204.43 per square metre. In an unserviced area, the adjusted rate of $74.30 per square metre of new building space is an increase of $0.07 over the unadjusted charge of $74.23 per square metre.

TABLE 7

DISTRICT OF MUSKOKA
TOWN-WIDE DEVELOPMENT CHARGES
RESIDENTIAL DEVELOPMENT CHARGES BY UNIT TYPE

Service	Unadjusted Charge Per Capita	Adjusted Charge Per Capita	Residential Charge By Unit Type (1)					Percentage of Charge	Percentage of Charge
			Singles & Semis	Rows & Other Multiples	Apartments		Per Occupant Charge		
					2 Sleeping Areas or Greater	Fewer than 2 Sleeping Areas			
Airport Services	$57	$63	$183	$151	$120	$82	$63	0.7%	1.9%
Police Services	$8	$8	$24	$20	$15	$11	$8	0.1%	0.2%
Social Housing Services	$123	$123	$357	$295	$234	$160	$123	1.3%	3.6%
Long Term Care	$176	$179	$519	$430	$340	$233	$179	1.9%	5.3%
Social Services	$0	$0	$0	$0	$0	$0	$0	0.0%	0.0%
Paramedic Services	$60	$65	$187	$155	$123	$84	$65	0.7%	1.9%
Waste Management Services	$189	$210	$608	$503	$398	$272	$210	2.3%	6.2%
Administration	$40	$40	$117	$97	$77	$52	$40	0.4%	1.2%
Roads & Related	$2,532	$2,487	$7,212	$5,968	$4,725	$3,233	$2,487	27.1%	73.4%
Subtotal District-wide Services	**$3,185**	**$3,175**	**$9,207**	**$7,619**	**$6,032**	**$4,127**	**$3,175**	**34.5%**	**93.6%**
Wastewater Services	$3,685	$4,154	$12,046	$9,969	$7,892	$5,400	$4,154	45.2%	
Water Services	$1,651	$1,865	$5,408	$4,476	$3,543	$2,424	$1,865	20.3%	
Rural Area Septage	$220	$216	$625	$517	$410	$280	$216		6.4%
Total Serviced (1)	**$8,521**	**$9,193**	**$26,661**	**$22,064**	**$17,467**	**$11,951**	**$9,193**	**100.0%**	
Total Unserviced (2)	**$3,405**	**$3,390**	**$9,832**	**$8,136**	**$6,442**	**$4,407**	**$3,390**		**100.0%**
(1) Based on Persons Per Unit Of:			2.90	2.40	1.90	1.30	1.00		

(1) Includes District-wide, Wastewater, and Water charges

(2) Includes District-wide and Rural Area Septage charges

TABLE 8

DISTRICT OF MUSKOKA
TOWN-WIDE DEVELOPMENT CHARGES
NON-RESIDENTIAL DEVELOPMENT CHARGES PER SQUARE METRE

Service	Non-Residential Charge		Percentage of Charge Serviced	Percentage of Charge Unserviced
	Unadjusted Charge per Square Metre	Adjusted Charge per Square Metre		
Airport Services	$1.44	$1.63	0.7%	2.2%
Police Services	$0.21	$0.22	0.1%	0.3%
Social Housing Services	$0.00	$0.00	0.0%	0.0%
Long Term Care	$0.00	$0.00	0.0%	0.0%
Social Services	$0.00	$0.00	0.0%	0.0%
Paramedic Services	$1.53	$1.66	0.7%	2.2%
Waste Management Services	$0.00	$0.00	0.0%	0.0%
Administration	$1.01	$1.05	0.5%	1.4%
Roads & Related	$64.43	$64.07	28.9%	86.2%
Subtotal District-wide Services	**$68.63**	**$68.63**	**30.9%**	**92.4%**
Wastewater Services	$93.78	$105.75	47.7%	
Water Services	$42.02	$47.48	21.4%	
Rural Area Septage	$5.60	$5.67		7.6%
Total Serviced (1)	**$204.43**	**$221.86**	**100.0%**	
Total Unserviced (2)	**$74.23**	**$74.30**		**100.0%**

(1) Includes District-wide, Wastewater, and Water charges

(2) Includes District-wide and Rural Area Septage charges

VII COMPARISON OF CURRENT CHARGES, CHARGES CALCULATED AS PART OF 2014 DC BACKGROUND STUDY AND CURRENT DEVELOPMENT CHARGES

Tables 9 and 10 present a comparison of the newly calculated development charges with calculated DCs as contained in the 2014 DC Background Study (indexed) and current charges in place (as of January 1, 2019). In 2014, at the direction of Council the residential rates were not to include any of the general services and the calculated engineered services development charges were reduced by approximately fifty per cent from the in-force rates. Non-residential rates were first reduced in 2009 to approximately twenty-five per cent of the calculated rates and then reduced a further fifty per cent in 2014. Therefore a comparison with the calculated 2014 development charge rates (indexed), which include the general services and the full engineering capital program, has been included in the review.

Table 9 shows that the calculated residential development charge for a serviced single or semi-detached unit is $3,662 (16 per cent) per unit higher compared to the charge calculated in 2014 (indexed) and $16,730 (168 per cent) per unit higher compared to the current charge. An unserviced single or semi-detached unit increases from $9,832 by $913 (10 per cent) per unit compared to the charge calculated in 2014 (indexed) and $6,228 (173 per cent) per unit compared to the current charge.

It should be noted that Social Services will no longer be considered in the 2019 DC Background Study, however this may be revisited in future DC Studies. Conversely, Solid Waste Management and Social Housing Services are proposed to be introduced to the District's DC regime following recent amendments to the *DCA* enabling the inclusion of some waste management functions.

As seen in Table 10, the calculated development charge rate for a serviced non-residential development is $221.86 per square meter, which is $78.16 (54 per cent) more than the calculated 2014 charge (indexed) and $204.43 (1172 per cent) higher than the current charge. The calculated unserviced development charge is $74.30 per square meter, which is $39.90 (116 per cent) higher than the calculated 2014 charge (indexed) and $70.54 (1872 per cent) higher than the current charge.

TABLE 9

DISTRICT OF MUSKOKA
COMPARISON OF CURRENT AND CALCULATED
RESIDENTIAL DEVELOPMENT CHARGES

Service	Residential ($/Single Detached Unit)						
	2014 Calculated Residential Charge	Current Residential Charge	Calculated Residential Charge	Difference in Charge (2014 Calculated to 2019 Calculated)		Difference in Charge (Current to 2019 Calculated)	
Airport Services	$320		$183	($137)	-43%	N/A	N/A
Police Services	$8		$24	$16	196%	N/A	N/A
Social Housing Services	$0		$357	$357	N/A	N/A	N/A
Long Term Care	$87		$519	$432	498%	N/A	N/A
Social Services	$15		$0	($15)	-100%	N/A	N/A
Paramedic Services	$57		$187	$130	230%	N/A	N/A
Waste Management Services	$0		$608	$608	N/A	N/A	N/A
Administration	$132		$117	($15)	-11%	N/A	N/A
Provincial Offences Act	$35		$0	($35)	-100%	N/A	N/A
Roads & Related	$6,283	$2,888	$7,212	$929	15%	$4,324	150%
Subtotal District-wide Services	**$6,936**	**$2,888**	**$9,207**	**$2,271**	**33%**	**$6,319**	**219%**
Wastewater Services	$10,223	$4,360	$12,046	$1,823	18%	$7,686	176%
Water Services	$5,840	$2,683	$5,408	($432)	-7%	$2,725	102%
Rural Area Septage	$1,983	$716	$625	($1,358)	-68%	($91)	-13%
Total Serviced (1)	**$22,999**	**$9,931**	**$26,661**	**$3,662**	**16%**	**$16,730**	**168%**
Total Unserviced (2)	**$8,919**	**$3,604**	**$9,832**	**$913**	**10%**	**$6,228**	**173%**

(1) Includes District-wide, Wastewater, and Water charges

(2) Includes District-wide and Rural Area Septage charges

TABLE 10

DISTRICT OF MUSKOKA
COMPARISON OF CURRENT AND CALCULATED
NON-RESIDENTIAL DEVELOPMENT CHARGES

Service	2014 Calculated Non-Residential Charge	Non-Residential ($/Square Metre)					
		Current Non-Residential Charge	Calculated Non-Residential Charge	Difference in Charge (2014 Calculated to 2019 Calculated)		Difference in Charge (Current to 2019 Calculated)	
Airport Services	$2.37		$1.63	($0.74)	-31%	N/A	N/A
Police Services	$0.00		$0.22	$0.22	N/A	N/A	N/A
Social Housing Services	$0.00		$0.00	$0.00	N/A	N/A	N/A
Long Term Care	$0.00		$0.00	$0.00	N/A	N/A	N/A
Social Services	$0.00		$0.00	$0.00	N/A	N/A	N/A
Paramedic Services	$0.37		$1.66	$1.29	344%	N/A	N/A
Waste Management Services	$0.00		$0.00	$0.00	N/A	N/A	N/A
Administration	$1.00		$1.05	$0.05	5%	N/A	N/A
Provincial Offences Act	$0.12		$0.00	($0.12)	-100%	N/A	N/A
Roads & Related	$14.08	$1.94	$64.07	$49.99	355%	$62.13	3207%
Subtotal District-wide Services	**$17.95**	**$1.94**	**$68.63**	**$50.68**	**282%**	**$66.69**	**3442%**
Wastewater Services	$80.02	$7.86	$105.75	$25.74	32%	$97.89	1246%
Water Services	$45.74	$7.64	$47.48	$1.74	4%	$39.84	521%
Rural Area Septage	$16.45	$1.83	$5.67	($10.78)	-66%	$3.84	210%
Total Serviced (1)	**$143.71**	**$17.44**	**$221.86**	**$78.16**	**54%**	**$204.43**	**1172%**
Total Unserviced (2)	**$34.40**	**$3.77**	**$74.30**	**$39.90**	**116%**	**$70.54**	**1872%**

(1) Includes District-wide, Wastewater, and Water charges

(2) Includes District-wide and Rural Area Septage charges

VIII LONG-TERM CAPITAL AND OPERATING COSTS

This section provides a brief examination of the long-term capital and operating costs for the capital facilities and infrastructure to be included in the Development Charges Study. This examination is required as one of the features of the *Development Charges Act, 1997.*

A. NET OPERATING COSTS FOR THE DISTRICT'S SERVICES ESTIMATED TO INCREASE OVER THE FORECAST PERIOD

Table 11 summarizes the estimated increase in net operating costs that the District will experience for additions associated with the planned capital program. This estimate is based on a high-level analysis of operating cost impacts to the District.

As shown in Table 11, by 2028 the District's net operating costs are estimated to increase by $2.93 million. The most significant portions of this increase relates to police services, waste management services, and additional paramedics expenditures.

B. LONG-TERM CAPITAL FINANCING FROM NON-DEVELOPMENT CHARGE SOURCES TOTALS $6.70 MILLION

Table 11 also summarizes the components of the development-related capital program that will require funding from non-development charge sources as discussed in Section VI. In total $6.70 million will need to be financed from non-development charge sources over the next ten years. This includes about $1.48 million in respect of the mandatory ten per cent discount required by the *DCA* for eligible general services and about $5.23 million for shares of projects related to capital replacement and for non-development shares of projects that provide benefit to the existing community. In addition, $7.98 million in interim financing may be required for projects related to development in the post-2028 period. It is likely that most of these monies could be recovered from future development charges as the by-laws are revisited at least every five years.

TABLE 11

DISTRICT OF MUSKOKA
SUMMARY OF LONG TERM CAPITAL AND
OPERATING COST IMPACTS
(in thousands of constant dollars)

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
Net Operating Impacts (1)											
Airport Services	$0.5	$10.5	$10.6	$10.7	$10.8	$11.0	$11.1	$11.2	$11.3	$11.4	
Police Services	$93.6	$188.2	$283.6	$379.6	$476.8	$574.8	$673.9	$774.2	$856.2	$938.9	
Social Housing Services	$8.3	$16.8	$25.3	$33.8	$42.5	$51.2	$60.1	$69.0	$76.3	$83.7	
Long Term Care	$11.7	$23.5	$35.5	$47.5	$59.7	$71.9	$84.3	$96.9	$107.1	$117.5	
Paramedic Services	$59.2	$118.9	$179.2	$239.9	$301.3	$363.3	$425.9	$489.2	$541.1	$593.3	
Waste Management Services	$86.0	$172.9	$260.5	$348.8	$438.1	$528.1	$619.2	$711.3	$786.7	$862.6	
Administration	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	
Roads & Related	$32.3	$64.9	$97.8	$130.9	$164.4	$198.2	$232.4	$267.0	$295.3	$323.8	
NET OPERATING IMPACTS	**$291.7**	**$595.7**	**$892.5**	**$1,191.3**	**$1,493.6**	**$1,798.6**	**$2,107.0**	**$2,418.8**	**$2,674.0**	**$2,931.2**	**n/a**
Long-term Capital Impact (1)											
Total Net Cost	$482.5	$936.8	$704.2	$1,644.6	$480.2	$6,121.5	$761.8	$2,321.1	$446.9	$6,217.7	$20,117.0
Net Cost From Development Charges	$299.6	$810.5	$624.3	$472.8	$237.7	$2,144.2	$219.7	$175.2	$191.2	$249.6	$5,424.8
Portion for Post-2028 Development (2)	$0.7	$0.7	$0.7	$0.7	$185.5	$800.1	$431.3	$1,054.6	$185.5	$5,325.4	$7,985.4
Funding From Non-DC Sources											
Discount Portion	$32.1	$88.9	$68.2	$51.4	$45.8	$325.9	$71.1	$135.4	$40.6	$617.0	$1,476.6
Replacement	$150.0	$36.6	$10.9	$1,119.7	$11.2	$2,851.2	$39.7	$955.8	$29.6	$24.5	$5,229.0
FUNDING FROM NON-DC SOURCES	**$182.1**	**$125.5**	**$79.1**	**$1,171.0**	**$57.0**	**$3,177.1**	**$110.8**	**$1,091.2**	**$70.2**	**$641.5**	**$6,705.6**
TOTAL NET OPERATING & CAPITAL IMPACTS	**$473.9**	**$721.1**	**$971.5**	**$2,362.4**	**$1,550.6**	**$4,975.7**	**$2,217.7**	**$3,510.0**	**$2,744.2**	**$3,572.7**	**n/a**

Notes:
(1) See Appendix E.
(2) Post 2028 development-related net capital costs may be eligible for development charge funding in future DC by-laws.

IX ASSET MANAGEMENT PLAN

The *Development Charges Act* was amended in late 2015 and, effective January 1st 2016, municipalities are required to complete an Asset Management Plan before the passing of a development charges by-law. A key function of the Asset Management Plan is to demonstrate that all assets proposed to be funded under the development charges by-law are financially sustainable over their full life cycle.

A. ANNUAL CAPITAL PROVISIONS WILL REACH $219,000 BY 2028 AND $2.78 MILLION BY 2038

Tables 12 and 13 summarize the annual capital provisions required to replace the capital infrastructure proposed to be funded under the development charges by-law. This estimates are based on information obtained through discussions with District staff regarding useful life assumptions and the capital cost of acquiring and/or emplacing each asset.

Table 12 illustrates that, by 2028, the District will need to fund an additional $219,000 per annum in order to properly fund the full life-cycle costs of the new assets related to general services supported under this Development Charges By-Law. The calculated annual funding provision should be considered within the context of the District's projected growth; over the next ten years (to 2028) the District is projecting an increase of 4,285 total private dwellings units, which represents a 8 per cent increase over the existing base as well as approximately 1,394 new employees. Over the next twenty years (to 2038) the District is projecting an increase of 7,850 total private dwelling units, which represents a 14 per cent increase over the existing base as well as approximately 2,826 new employees. This growth over the ten and twenty-year periods will have the effect of increasing the overall assessment base and additional user fee and charges revenues to offset the capital asset provisions required to replace the infrastructure proposed to be funded under the development charges by-law.

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

TABLE 12

DISTRICT OF MUSKOKA

GENERAL SERVICES CALCULATED ANNUAL PROVISION BY 2028

Service	2019-2028 Capital Program		Calculated AMP Annual Provision by 2028	
	DC Recoverable	Non DC Funded	DC Related	Non DC Related
Airport Services	$ 791,000	$ 25,000	$ 19,000	$ -
Police Services	$ 102,000	$ 7,000	$ 7,000	$ 496
Social Housing Services	$ 1,531,000	$ 470,000	$ 30,000	$ 9,321
Long Term Care	$ 2,188,000	$ 67,402,000	$ 48,000	$ 714,681
Paramedic Services	$ 838,000	$ 4,098,000	$ 7,000	$ 117,728
Waste Management Services	$ 2,345,000	$ -	$ 108,000	$ -
Administration	$ 554,000	$ 314,000	$ -	$ -
Total 2028 Provision			**$ 219,000**	**$ 842,226**

TABLE 13

DISTRICT OF MUSKOKA

ENGINEERED SERVICES CALCULATED ANNUAL PROVISION BY 2038

Service	2019-2038 Capital Program		Calculated AMP Annual Provision by 2038	
	DC Recoverable	Non DC Funded	DC Related	Non DC Related
Roads & Related	$ 58,859,000	$ 281,979,000	$ 2,376,000	$ 11,870,000
Wastewater Services	$ 52,274,000	$ 47,614,000	$ 236,000	$ 276,000
Water Services	$ 23,424,000	$ 54,466,000	$ 108,000	$ 498,000
Rural Area Septage	$ 1,995,000	$ 14,632,000	$ 56,000	$ 408,000
Total 2038 Provision			**$ 2,776,000**	**$ 13,052,000**

X OTHER ISSUES AND CONSIDERATIONS

A. DEVELOPMENT CHARGES ADMINSTRATION

A review of the District's current policies and practices is under way. The results of the review will be included in the DC by-law, presented at the public meeting and included in the final consolidated version of the DC Background Study. In this regard:

- It is recommended that practices regarding collection of development charges and by-law administration continue to the extent possible.
- As required under the *DCA*, the District should codify any rules regarding application of the by-laws and exemptions within the development charges by-laws proposed for adoption.
- It is recommended that Council adopt the development-related capital program included in this background study, subject to annual review through the District's normal capital budget process.
- It is recommended that limited exemptions, other than those required in the *DCA*, be formally adopted in the by-laws.

B. LOCAL SERVICE POLICY

Local Service Policies set out guidelines which are general principles by which staff will be guided in considering development applications. Details are included in Appendix G.

APPENDIX A

DEVELOPMENT FORECAST

APPENDIX A

DEVELOPMENT FORECAST

This appendix summarizes the development forecasts used to prepare the 2019 Development Charges Background Study for the District of Muskoka.

The *Development Charges Act* (*DCA*) requires the District to estimate "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 allow the District to prepare a reasonable development-related capital program.

The development forecasts are based on the District of Muskoka's 2019 *Growth Strategy: Forecast & Growth Allocation Report* completed by Hemson Consulting on February 8, 2019. The *Growth Strategy Report* provides details on the forecast methodology and key assumptions.

The forecast results are presented below in the following tables:

Historical Development

Table 1.A Historical Population Summary
Table 1.B Historical Occupied Dwellings Summary
Table 1.C Historical Employment Summary
Table 2 Historical Households by Period of Construction Showing Household Size
Table 3 Historical Place of Work Employment by Type

Forecast Development

Table 4 Forecast Population & Household Development Details
Table 5 Forecast Population, Household & Employment Growth Summary
Table 6 Forecast Occupied Households by Unit Type
Table 7.A Growth in Households by Unit Type Serviced Area
Table 7.B Growth in Households by Unit Type Unserviced Area
Table 7.C Growth in Households by Unit Type District-wide
Table 8.A Forecast Population in New Household by Unit Type Serviced Area
Table 8.B Forecast Population in New Household by Unit Type Unserviced Area

Table 8.C Forecast Population in New Household by Unit Type District-wide
Table 9 Forecast Place of Work Employment
Table 10 Forecast Place of Work Employment Serviced and Unserviced Areas
Table 11 Forecast Non-Residential Space (Square Metres of Gross Floor Area)

A. KEY ASSUMPTIONS, DEFINITIONS, AND HISTORICAL TRENDS

Historical population and employment set out in this appendix are used to determine the average service levels attained in the District over the last ten years (2009-2018).

Population figures shown in the development forecast represent mid-year estimates. Population figures account for:

- population recorded in the Census ("Census population"). This definition does not include the Census net under-coverage (4.99 per cent of the Census population in Muskoka) which represents those who were missed or double-counted by the Census;
- seasonal residents who typically maintain a primary place of residence outside the District.

Similarly, the forecasts of households and housing units account for both permanently occupied households and households that are occupied only part of the year, usually the summer months.

Historical data indicates that the District's population increased from 138,105 in 2009 to 144,890 in 2018—an increase of 8,107 people of which the half (50 per cent) were seasonal residents. Total private dwellings increased from 45,282 to 49,017 over the same period, of which 41 per cent were seasonal dwellings (see Tables 1.A and 1.B).

"Place of Work Employment" figures in the forecasts record where people work rather than their place of residence. It includes all employment with a regular or no fixed place of work. However, work-at-home employment is excluded from the figures as, for development charge purposes, this type of employment is considered not to require building floorspace for its activities.

Employment is divided into three land-use based categories:

- Commercial / Population-related employment is employment that primarily serves a resident population and includes retail, education, healthcare, and local government. This generally grows in line with population growth but is

also influenced by tourism. Jobs under this category typically locate in land zoned for commercial and institutional uses, but may also be located in resorts and mixed-use areas.

- Employment-land employment refers to traditional industrial-type employment primarily accommodated in low-rise industrial buildings in business parks and employment areas. Given the spatial and operational needs of these types of jobs, they are almost exclusively located in lands zoned for industrial employment uses.

- Other / Rural-based employment refers to jobs scattered throughout the rural area, primarily related to agricultural, recreational and primary industries.

Historical employment figures are shown in Tables 1.C and 3. There are currently about 26,247 jobs in the District. Overall employment has recovered from the 2008 financial crisis and subsequent recession and job growth remains steady, and almost at pre-recessionary levels. However, the District's activity rate (the ratio of employment to population) has fallen from 45.9 per cent to 42.6 per cent over the last ten years as job growth has not kept pace with population growth.

While overall employment growth has been steady there have been some shifts within categories. Employment in industrial uses on employment land as well as rural-based employment saw sharp declines prior to 2011 before returning to modest growth in the last few years. By contrast, commercial and institutional activities which are largely influenced by population growth, have grown steadily over the last decade.

Table 2 provides details on historical occupancy patterns for permanently occupied dwelling units in Muskoka. The overall average occupancy level in the District for single and semi-detached units is 2.38 persons per housing unit (PPU). Occupancy levels for recently constructed units, between 2006 and 2016, are higher than the overall average and are used in the development charges calculation since they better reflect the number of people that are likely to reside in new development. The average PPU of permanent single and semi-detached units built in the District in the period 2006 to 2016 is 2.52. Average PPUs for recently constructed row housing, as well as large and small apartments (excluding duplexes), are 1.76, 1.32, and 1.05 respectively.

It is noted that the PPUs of seasonal dwellings in Muskoka are considerably higher than those of permanently occupied dwellings (see Table 1.B). This is based on the *Growth Strategy Report* and the *2017 Muskoka District Second Home Study*.

B. FORECAST METHOD AND RESULTS

A ten-year development forecast, from 2019 to 2028, has been used for all the development charge eligible general services in the District. For engineering services, a long-term forecast from 2019 to 2038 has been prepared.

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

- The *population growth*[1] determines the need for additional facilities and provides the foundation for the development-related capital program.

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

Development charges are levied on non-residential development as a charge per m^2 of Gross Floor Area (GFA). As with the residential forecast, the non-residential forecast requires both a projection of *employment growth* as well as a projection of the *employment growth associated with new floorspace* in the District.

1. Residential Forecast

The residential development forecast incorporates anticipated growth in population and private dwellings (permanent and seasonal) by type. As shown in Table 5, the District's total population is forecast to grow from 144,890 in 2018 to 155,206 in 2028 and 163,908 in 2038, with the majority of growth over the long-term (57 per cent) being permanent residents. Private dwelling are forecast to increase by 4,281 units over the next ten years and by 7,894 over the long term planning horizon. Of the forecast dwelling growth, 71 per cent are anticipated to be units occupied by permanent residents.

In keeping with historical trends, the vast majority of new housing (81 per cent over the next ten years), including seasonal housing, is anticipated to be single detached dwelling units (see Table 6). Just over half of all units, including the vast majority of rows and apartments, are forecast to be developed in serviced areas of the District that receive municipal water and wastewater services (see Tables 7.A, 7.B and 7.C).

[1] Commonly referred to as "net population growth" in the context of development charges.

Population growth in the new units is estimated by applying the following PPUs to the housing unit forecast: 2.90 for single and semi-detached units; 2.40 for rows; 1.70 for apartments. The assumptions are informed by the historical occupancy patterns for permanently occupied units set out in Table 3 and are weighted based on the anticipated mix of seasonal and permanent units and the higher PPUs associated with seasonal units. Assumptions for apartments are predicated on a 2:1 ratio of new large to small apartments in the District.

The total forecast population in new housing units over the 2019 to 2028 period is 11,162, of which 5,894 (53 per cent) will be in housing in serviced areas (see Table 8.C). The equivalent population in new units over the long-term is 20,422, of which 11,988 (59 per cent) will be in housing in serviced areas.

2. Non-Residential Forecast

Employment in the District is forecast to increase steadily over the twenty-year period 2019 to 2038, at about 140 jobs per year and just below the rate of population growth (these figures exclude work at home employment) (see Table 9). About 65 per cent of new jobs over the long-term will be commercial / population-related, mostly retail, education, healthcare, local government and other jobs that primarily serve the local population. The distribution of employment growth between categories is similar over the ten-year planning horizon.

About 1,085 employees or 78 per cent is forecast to be located in serviced areas (see Table 10).

An assumed floor space per worker (FSW) is applied to the employment forecast in order to project growth in new non-residential space in the District. The FSWs used are:

- 40 m^2 per employee for commercial / population-related employment
- 80 m^2 per employee for employment land employment

No additional building space is required to accommodate growth in rural-based employment.

The overall growth in new non-residential building space across the District between 2019 and 2028 is 54,680 m^2, of which 42,545 m^2 is forecast for the serviced areas (Table 11). The equivalent space forecast for the District over the twenty-year planning horizon is 111,040 m^2, of which 86,397 m^2 is in the serviced areas.

APPENDIX A - TABLE 1.A
DISTRICT OF MUSKOKA
HISTORICAL POPULATION SUMMARY

Mid-Year	Year-Round Population	Annual Growth	Seasonal Population	Annual Growth	Total Population	Annual Growth
2006	**56,554**		**77,624**		**134,178**	
2007	57,077	523	78,397	773	135,474	1,296
2008	57,605	528	79,178	781	136,783	1,309
2009	58,138	533	79,967	789	138,105	1,322
2010	58,676	538	80,763	796	139,439	1,334
2011	**59,220**	**544**	**81,567**	**804**	**140,787**	**1,348**
2012	59,493	273	82,379	812	141,872	1,085
2013	59,768	275	83,200	821	142,968	1,096
2014	60,044	276	82,873	-327	142,917	-51
2015	60,321	277	82,547	-326	142,868	-49
2016	**60,599**	**278**	**82,223**	**-324**	**142,822**	**-46**
2017	61,137	538	82,715	492	143,852	1,030
2018	61,680	543	83,210	495	144,890	1,038
Growth 2009-2018		4,075		4,032		8,107

Source: Statistics Canada, Census of Canada
Note: Excludes Census undercoverage, estimated at 4.99%

APPENDIX A - TABLE 1.B
DISTRICT OF MUSKOKA
HISTORICAL OCCUPIED DWELLINGS SUMMARY

Mid-Year	Regularly Occupied Units	Annual Growth	Av. Household Size (PPU)	Seasonal Dwellings	Annual Growth	Av. Household Size (PPU)	Total Private Dwellings	Annual Growth	Av. Household Size (PPU)
2006	**23,140**		**2.44**	**20,953**		**3.70**	**44,093**		**3.04**
2007	23,339	199	2.45	21,147	194	3.71	44,486	393	3.05
2008	23,539	200	2.45	21,343	196	3.71	44,882	396	3.05
2009	23,741	202	2.45	21,541	198	3.71	45,282	400	3.05
2010	23,945	204	2.45	21,741	200	3.71	45,686	404	3.05
2011	**24,150**	**205**	**2.45**	**21,942**	**201**	**3.72**	**46,092**	**406**	**3.05**
2012	24,401	251	2.44	22,145	203	3.72	46,546	454	3.05
2013	24,654	253	2.42	22,350	205	3.72	47,004	458	3.04
2014	24,910	256	2.41	22,481	131	3.69	47,391	387	3.02
2015	25,169	259	2.40	22,613	132	3.65	47,782	391	2.99
2016	**25,430**	**261**	**2.38**	**22,746**	**133**	**3.61**	**48,176**	**394**	**2.96**
2017	25,712	282	2.38	22,880	134	3.62	48,592	416	2.96
2018	25,998	286	2.37	23,019	139	3.61	49,017	425	2.96
Growth 2009-2018		2,459			1,676			4,135	

Source: Statistics Canada, Census of Canada

APPENDIX A - TABLE 1.C
DISTRICT OF MUSKOKA
HISTORICAL EMPLOYMENT SUMMARY

Mid-Year	Place of Work Employment (1)	Annual Growth	Activity Rate (2)	Work at Home	Annual Growth	Total w/ Work At Home	Annual Growth
2006	**28,030**		**49.6%**	**2,390**		**30,420**	
2007	27,573	-457	48.3%	2,414	24	29,987	-433
2008	27,124	-449	47.1%	2,438	24	29,562	-425
2009	26,682	-442	45.9%	2,462	24	29,144	-418
2010	26,247	-435	44.7%	2,486	24	28,733	-411
2011	**25,820**	**-427**	**43.6%**	**2,510**	**24**	**28,330**	**-403**
2012	25,852	32	43.5%	2,560	50	28,412	82
2013	25,884	32	43.3%	2,611	51	28,495	83
2014	25,916	32	43.2%	2,663	52	28,579	84
2015	25,948	32	43.0%	2,716	53	28,664	85
2016	**25,980**	**32**	**42.9%**	**2,770**	**54**	**28,750**	**86**
2017	26,111	131	42.7%	2,801	31	28,912	162
2018	26,247	136	42.6%	2,832	31	29,079	167
Growth 2009-2018		-877			394		-483

Source: Statistics Canada, Census of Canada
(1) Includes no fixed place of work employment, but excludes work at home
(2) Based on permenant "census population"

APPENDIX A - TABLE 2
DISTRICT OF MUSKOKA
HISTORICAL HOUSEHOLDS BY PERIOD OF CONSTRUCTION SHOWING HOUSEHOLD SIZE

	Period of Construction										Period of Construction Summaries		
Dwelling Unit Type	**Pre 1945**	**1946-1960**	**1961-1970**	**1971-1980**	**1981-1990**	**1991-1995**	**1996-2000**	**2001-2005**	**2006-2010**	**2011-2016**	**Pre 2006**	**2006-2016**	**Total**
Singles and Semis													
Household Population	5,725	5,745	5,570	8,840	9,030	3,695	2,765	3,715	3,695	2,280	45,085	5,975	51,060
Households	2,530	2,615	2,480	3,730	3,495	1,460	1,170	1,585	1,475	900	19,065	2,375	21,440
Household Size	2.26	2.20	2.25	2.37	2.58	2.53	2.36	2.34	2.51	2.53	2.36	2.52	2.38
Rows													
Household Population	60	0	55	325	245	240	100	75	45	255	1,100	300	1,400
Households	35	10	20	125	120	120	50	45	35	135	525	170	695
Household Size	1.71	n/a	2.75	2.60	2.04	2.00	2.00	1.67	1.29	1.89	2.10	1.76	2.01
Apartments (excl. Duplexes): Less than 2 Sleeping Areas													
Household Population	195	135	175	205	240	80	30	50	150	75	1,110	225	1,335
Households	160	120	165	195	210	75	25	45	130	85	995	215	1,210
Household Size	1.22	1.13	1.06	1.05	1.14	1.07	1.20	1.11	1.15	0.88	1.12	1.05	1.10
Apartments (excl. Duplexes): 2 Sleeping Areas or More													
Household Population	265	250	215	395	390	165	150	190	220	110	2,020	330	2,350
Households	145	160	155	240	240	95	75	130	165	85	1,240	250	1,490
Household Size	1.83	1.56	1.39	1.65	1.63	1.74	2.00	1.46	1.33	1.29	1.63	1.32	1.58
Apartments (excl. Duplexes) - Total													
Household Population	500	500	445	685	670	290	185	305	410	255	3,580	665	4,245
Households	305	290	305	420	440	185	95	160	285	170	2,200	455	2,655
Household Size	1.64	1.72	1.46	1.63	1.52	1.57	1.95	1.91	1.44	1.50	1.63	1.46	1.60
All Units													
Household Population	6,285	6,245	6,070	9,850	9,945	4,225	3,050	4,095	4,150	2,790	49,765	6,940	56,705
Households	2,870	2,915	2,805	4,275	4,055	1,765	1,315	1,790	1,795	1,205	21,790	3,000	24,790
Household Size	2.19	2.14	2.16	2.30	2.45	2.39	2.32	2.29	2.31	2.32	2.28	2.31	2.29

Source: Statistics Canada, Census Special Run

APPENDIX A - TABLE 3
DISTRICT OF MUSKOKA
HISTORICAL PLACE OF WORK EMPLOYMENT BY TYPE

Mid-Year	Population-Related	Annual Growth	Other Rural	Annual Growth	Emp. Land (Industrial)	Annual Growth	Total For DC Study	Annual Growth	Work at Home	Annual Growth	Total w/ Work At Home	Annual Growth
2006	**13,937**		**4,435**		**9,539**		**27,910**		**2,510**		**30,420**	
2007	14,001	64	4,319	(116)	9,239	(300)	27,559	(351)	2,409	(101)	29,968	(452)
2008	14,065	64	4,207	(112)	8,949	(290)	27,221	(338)	2,312	(97)	29,533	(435)
2009	14,130	65	4,097	(110)	8,668	(281)	26,895	(326)	2,219	(93)	29,114	(419)
2010	14,195	65	3,990	(107)	8,396	(272)	26,581	(314)	2,130	(89)	28,711	(403)
2011	**14,260**	**65**	**3,887**	**(103)**	**8,133**	**(263)**	**26,280**	**(301)**	**2,045**	**(85)**	**28,325**	**(386)**
2012	14,112	(148)	3,951	64	8,151	18	26,214	(66)	2,173	128	28,387	62
2013	13,966	(146)	4,016	65	8,169	18	26,151	(63)	2,309	136	28,460	73
2014	13,821	(145)	4,082	66	8,187	18	26,090	(61)	2,453	144	28,543	83
2015	13,678	(143)	4,149	67	8,205	18	26,032	(58)	2,606	153	28,638	95
2016	**13,535**	**(143)**	**4,218**	**69**	**8,223**	**18**	**25,976**	**(56)**	**2,770**	**164**	**28,746**	**108**
2017	13,623	88	4,242	24	8,246	23	26,111	135	2,801	31	28,912	166
2018	13,712	89	4,266	24	8,269	23	26,247	136	2,832	31	29,079	167
Growth 2009-2018		(353)		59		(680)		(974)		520		(454)

Source: Statistics Canada, Census of Canada
Note: Employment Values Include No Fixed Place of Work Employment

APPENDIX A - TABLE 4
DISTRICT OF MUSKOKA
FORECAST POPULATION & HOUSEHOLD DEVELOPMENT DETAILS

Mid-Year	Year-Round Population(1)	Annual Growth	Seasonal Population	Annual Growth	Total Population	Annual Growth	Regularly Occupied Units	Annual Growth	Av. Household Size (PPU)	Seasonal Dwellings	Annual Growth	Av. Household Size (PPU)	Total Private Dwellings	Annual Growth	Av. Household Size (PPU)
2016	**60,599**		**82,223**		**142,822**		**25,430**		**2.38**	**22,746**		**3.61**	**48,176**		**2.96**
2017	61,137	538	82,715	492	143,852	1,030	25,712	282	2.38	22,882	136	3.61	48,594	418	2.96
2018	61,680	543	83,210	495	144,890	1,038	25,998	286	2.37	23,019	137	3.61	49,017	423	2.96
2019	62,228	548	83,708	498	145,936	1,046	26,287	289	2.37	23,157	138	3.61	49,444	427	2.95
2020	62,781	553	84,209	501	146,990	1,054	26,579	292	2.36	23,296	139	3.61	49,875	431	2.95
2021	**63,338**	**557**	**84,713**	**504**	**148,051**	**1,061**	**26,874**	**295**	**2.36**	**23,436**	**140**	**3.61**	**50,310**	**435**	**2.94**
2022	63,900	562	85,220	507	149,120	1,069	27,172	298	2.35	23,576	140	3.61	50,748	438	2.94
2023	64,467	567	85,730	510	150,197	1,077	27,474	302	2.35	23,717	141	3.61	51,191	443	2.93
2024	65,039	572	86,243	513	151,282	1,085	27,779	305	2.34	23,859	142	3.61	51,638	447	2.93
2025	65,617	578	86,759	516	152,376	1,094	28,088	309	2.34	24,002	143	3.61	52,090	452	2.93
2026	**66,200**	**583**	**87,278**	**519**	**153,478**	**1,102**	**28,400**	**312**	**2.33**	**24,147**	**145**	**3.61**	**52,547**	**457**	**2.92**
2027	66,730	530	87,604	326	154,334	856	28,668	268	2.33	24,253	106	3.61	52,921	374	2.92
2028	67,265	535	87,941	337	155,206	872	28,939	271	2.32	24,359	106	3.61	53,298	377	2.91
2029	67,804	539	88,319	378	156,123	917	29,212	273	2.32	24,446	87	3.61	53,658	360	2.91
2030	68,347	543	88,698	379	157,045	922	29,488	276	2.32	24,533	87	3.62	54,021	363	2.91
2031	**68,895**	**548**	**89,079**	**381**	**157,974**	**929**	**29,767**	**279**	**2.31**	**24,641**	**108**	**3.62**	**54,408**	**387**	**2.90**
2032	69,447	552	89,411	332	158,858	884	30,048	281	2.31	24,728	87	3.62	54,776	368	2.90
2033	70,003	556	89,744	333	159,747	889	30,332	284	2.31	24,816	88	3.62	55,148	372	2.90
2034	70,564	561	90,088	344	160,652	905	30,619	287	2.30	24,905	89	3.62	55,524	376	2.89
2035	71,129	565	90,424	336	161,553	901	30,908	289	2.30	25,009	104	3.62	55,917	393	2.89
2036	**71,700**	**571**	**90,761**	**337**	**162,461**	**908**	**31,200**	**292**	**2.30**	**25,119**	**110**	**3.61**	**56,319**	**402**	**2.88**
2037	72,081	381	91,104	343	163,185	724	31,385	185	2.30	25,229	110	3.61	56,614	295	2.88
2038	72,464	383	91,444	340	163,908	723	31,571	186	2.30	25,340	111	3.61	56,911	297	2.88
Growth 2019-2028		5,585		4,731		10,316		2,941			1,340			4,281	
Growth 2019-2038		10,784		8,234		19,018		5,573			2,321			7,894	

Source: Hemson Consulting 2018
(1) Excludes Census undercoverage, estimated at 4.99%

APPENDIX A - TABLE 5
DISTRICT OF MUSKOKA
FORECAST POPULATION, HOUSEHOLD & EMPLOYMENT GROWTH SUMMARY

Mid-Year	Total Population	Annual Growth	Total Private Dwellings	Annual Growth	Av. Household Size (PPU)	Place of Work Employment	Annual Growth	Activity Rate
2016	**142,822**		**48,176**		**2.96**	**25,976**		**42.9%**
2017	143,852	1,030	48,594	418	2.96	26,111	135	42.7%
2018	144,890	1,038	49,017	423	2.96	26,247	136	42.6%
2019	145,936	1,046	49,444	427	2.95	26,384	137	42.4%
2020	146,990	1,054	49,875	431	2.95	26,522	138	42.2%
2021	**148,051**	**1,061**	**50,310**	**435**	**2.94**	**26,660**	**138**	**42.1%**
2022	149,120	1,069	50,748	438	2.94	26,799	139	41.9%
2023	150,197	1,077	51,191	443	2.93	26,939	140	41.8%
2024	151,282	1,085	51,638	447	2.93	27,079	140	41.6%
2025	152,376	1,094	52,090	452	2.93	27,220	141	41.5%
2026	**153,478**	**1,102**	**52,547**	**457**	**2.92**	**27,363**	**143**	**41.3%**
2027	154,334	856	52,921	374	2.92	27,502	139	41.2%
2028	155,206	872	53,298	377	2.91	27,641	139	41.1%
2029	156,123	917	53,658	360	2.91	27,781	140	41.0%
2030	157,045	922	54,021	363	2.91	27,922	141	40.9%
2031	**157,974**	**929**	**54,408**	**387**	**2.90**	**28,063**	**141**	**40.7%**
2032	158,858	884	54,776	368	2.90	28,205	142	40.6%
2033	159,747	889	55,148	372	2.90	28,347	142	40.5%
2034	160,652	905	55,524	376	2.89	28,491	144	40.4%
2035	161,553	901	55,917	393	2.89	28,635	144	40.3%
2036	**162,461**	**908**	**56,319**	**402**	**2.88**	**28,780**	**145**	**40.1%**
2037	163,185	724	56,614	295	2.88	28,926	146	40.1%
2038	163,908	723	56,911	297	2.88	29,073	147	40.1%
Growth 2019-2028		10,316		4,281			1,394	
Growth 2019-2038		19,018		7,894			3,273	

Source: Hemson Consulting, 2018

APPENDIX A - TABLE 6
DISTRICT OF MUSKOKA
FORECAST OF OCCUPIED HOUSEHOLDS BY UNIT TYPE

	Total Occupied Households				Shares By Unit Type			
Mid-Year	Singles/Semis	Rows	Apartments	Total	Singles/Semis	Rows	Apartments	Total
2016	**39,319**	**1,325**	**7,532**	**48,176**	**82%**	**3%**	**16%**	**100%**
2017	39,669	1,360	7,612	48,641	82%	3%	16%	100%
2018	40,019	1,395	7,691	49,106	81%	3%	16%	100%
2019	40,369	1,431	7,771	49,571	81%	3%	16%	100%
2020	40,719	1,466	7,851	50,036	81%	3%	16%	100%
2021	**41,069**	**1,501**	**7,931**	**50,501**	**81%**	**3%**	**16%**	**100%**
2022	41,356	1,534	8,027	50,917	81%	3%	16%	100%
2023	41,642	1,567	8,124	51,333	81%	3%	16%	100%
2024	41,929	1,600	8,220	51,749	81%	3%	16%	100%
2025	42,216	1,633	8,317	52,165	81%	3%	16%	100%
2026	**42,502**	**1,665**	**8,414**	**52,581**	**81%**	**3%**	**16%**	**100%**
2027	42,778	1,702	8,506	52,986	81%	3%	16%	100%
2028	43,054	1,738	8,599	53,391	81%	3%	16%	100%
2029	43,330	1,774	8,692	53,796	81%	3%	16%	100%
2030	43,606	1,810	8,785	54,201	80%	3%	16%	100%
2031	**43,882**	**1,846**	**8,878**	**54,606**	**80%**	**3%**	**16%**	**100%**
2032	44,129	1,885	8,947	54,962	80%	3%	16%	100%
2033	44,377	1,924	9,017	55,318	80%	3%	16%	100%
2034	44,625	1,963	9,086	55,674	80%	4%	16%	100%
2035	44,873	2,002	9,155	56,030	80%	4%	16%	100%
2036	**45,121**	**2,041**	**9,225**	**56,386**	**80%**	**4%**	**16%**	**100%**
2037	45,318	2,067	9,286	56,671	80%	4%	16%	100%
2038	45,516	2,092	9,348	56,956	80%	4%	16%	100%

Source: Hemson Consulting, 2018

APPENDIX A - TABLE 7.A
DISTRICT OF MUSKOKA
GROWTH IN HOUSEHOLDS BY UNIT TYPE
SERVICED AREA

Mid-Year	Annual Growth in Total Households				Shares By Unit Type			
	Singles/Semis	Rows & Other Multiples	Apartments	Total	Singles/Semis	Rows & Other Multiples	Apartments	Total
2017	122	33	65	220	56%	50%	30%	100%
2018	122	33	65	220	56%	50%	30%	100%
2019	122	33	65	220	56%	50%	30%	100%
2020	122	33	65	220	56%	50%	30%	100%
2021	**122**	**33**	**65**	**220**	**56%**	**50%**	**30%**	**100%**
2022	128	31	81	240	54%	38%	34%	100%
2023	128	31	81	240	54%	38%	34%	100%
2024	128	31	81	240	54%	38%	34%	100%
2025	128	31	81	240	54%	38%	34%	100%
2026	**128**	**31**	**81**	**240**	**54%**	**38%**	**34%**	**100%**
2027	155	35	83	273	57%	42%	30%	100%
2028	155	35	83	273	57%	42%	30%	100%
2029	155	35	83	273	57%	42%	30%	100%
2030	155	35	83	273	57%	42%	30%	100%
2031	**155**	**35**	**83**	**273**	**57%**	**42%**	**30%**	**100%**
2032	143	38	64	245	58%	60%	26%	100%
2033	143	38	64	245	58%	60%	26%	100%
2034	143	38	64	245	58%	60%	26%	100%
2035	143	38	64	245	58%	60%	26%	100%
2036	**143**	**38**	**64**	**245**	**58%**	**60%**	**26%**	**100%**
2037	120	25	55	199	60%	45%	28%	100%
2038	120	25	55	199	60%	45%	28%	100%
Growth 2019-2028	1,319	321	766	2,406	55%	13%	32%	100%
Growth 2019-2038	2,738	666	1,444	4,848	56%	14%	30%	100%

Source: Hemson Consulting, 2018

APPENDIX A - TABLE 7.B

DISTRICT OF MUSKOKA

GROWTH IN HOUSEHOLDS BY UNIT TYPE

UNSERVICED AREA

Mid-Year	Annual Growth in Total Households				Shares By Unit Type			
	Singles/Semis	Rows & Other Multiples	Apartments	Total	Singles/Semis	Rows & Other Multiples	Apartments	Total
2017	228	3	15	245	93%	19%	6%	100%
2018	228	3	15	245	93%	19%	6%	100%
2019	228	3	15	245	93%	19%	6%	100%
2020	228	3	15	245	93%	19%	6%	100%
2021	**228**	**3**	**15**	**245**	**93%**	**19%**	**6%**	**100%**
2022	158	2	16	176	90%	13%	9%	100%
2023	158	2	16	176	90%	13%	9%	100%
2024	158	2	16	176	90%	13%	9%	100%
2025	158	2	16	176	90%	13%	9%	100%
2026	**158**	**2**	**16**	**176**	**90%**	**13%**	**9%**	**100%**
2027	121	1	10	132	92%	13%	8%	100%
2028	121	1	10	132	92%	13%	8%	100%
2029	121	1	10	132	92%	13%	8%	100%
2030	121	1	10	132	92%	13%	8%	100%
2031	**121**	**1**	**10**	**132**	**92%**	**13%**	**8%**	**100%**
2032	105	1	5	111	94%	15%	5%	100%
2033	105	1	5	111	94%	15%	5%	100%
2034	105	1	5	111	94%	15%	5%	100%
2035	105	1	5	111	94%	15%	5%	100%
2036	**105**	**1**	**5**	**111**	**94%**	**15%**	**5%**	**100%**
2037	78	1	7	86	91%	14%	8%	100%
2038	78	1	7	86	91%	14%	8%	100%
Growth 2019-2028	1,716	21	142	1,879	91%	1%	8%	100%
Growth 2019-2038	2,759	31	212	3,002	92%	1%	7%	100%

Source: Hemson Consulting, 2018

APPENDIX A - TABLE 7.C
DISTRICT OF MUSKOKA
GROWTH IN HOUSEHOLDS BY UNIT TYPE
DISTRICT-WIDE

Mid-Year	Annual Growth in Occupied Households				Shares By Unit Type			
	Singles/Semis	Rows & Other Multiples	Apartments	Total	Singles/Semis	Rows & Other Multiples	Apartments	Total
2017	350	35	80	465	75%	44%	17%	100%
2018	350	35	80	465	75%	8%	17%	100%
2019	350	35	80	465	75%	8%	17%	100%
2020	350	35	80	465	75%	8%	17%	100%
2021	**350**	**35**	**80**	**465**	**75%**	**8%**	**17%**	**100%**
2022	287	33	97	416	69%	8%	23%	100%
2023	287	33	97	416	69%	8%	23%	100%
2024	287	33	97	416	69%	8%	23%	100%
2025	287	33	97	416	69%	8%	23%	100%
2026	**287**	**33**	**97**	**416**	**69%**	**8%**	**23%**	**100%**
2027	276	36	93	405	68%	9%	23%	100%
2028	276	36	93	405	68%	9%	23%	100%
2029	276	36	93	405	68%	9%	23%	100%
2030	276	36	93	405	68%	9%	23%	100%
2031	**276**	**36**	**93**	**405**	**68%**	**9%**	**23%**	**100%**
2032	248	39	69	356	70%	11%	19%	100%
2033	248	39	69	356	70%	11%	19%	100%
2034	248	39	69	356	70%	11%	19%	100%
2035	248	39	69	356	70%	11%	19%	100%
2036	**248**	**39**	**69**	**356**	**70%**	**11%**	**19%**	**100%**
2037	198	26	62	285	69%	9%	22%	100%
2038	198	26	62	285	69%	9%	22%	100%
Growth 2019-2028	3,035	342	908	4,285	71%	8%	21%	100%
Growth 2019-2038	5,497	697	1,657	7,850	70%	9%	21%	100%

Source: Hemson Consulting, 2018

APPENDIX A - TABLE 8.A
DISTRICT OF MUSKOKA
FORECAST POPULATION IN NEW HOUSEHOLD BY UNIT TYPE
SERVICED AREA

Mid-Year	Singles/Semis	Rows & Other Multiples	Apartments	Total	Singles/Semis	Rows & Other Multiples	Apartments	Population in New Dwellings
2017	2.90	2.40	1.70	2.47	354	78	111	543
2018	2.90	2.40	1.70	2.47	354	78	111	543
2019	2.90	2.40	1.70	2.47	354	78	111	543
2020	2.90	2.40	1.70	2.47	354	78	111	543
2021	2.90	2.40	1.70	2.47	354	78	111	543
2022	2.90	2.40	1.70	**2.43**	**372**	**74**	**137**	**583**
2023	2.90	2.40	1.70	2.43	372	74	137	583
2024	2.90	2.40	1.70	2.43	372	74	137	583
2025	2.90	2.40	1.70	2.43	372	74	137	583
2026	2.90	2.40	1.70	2.43	372	74	137	583
2027	2.90	2.40	1.70	**2.47**	**450**	**84**	**141**	**674**
2028	2.90	2.40	1.70	2.47	450	84	141	674
2029	2.90	2.40	1.70	2.47	450	84	141	674
2030	2.90	2.40	1.70	2.47	450	84	141	674
2031	2.90	2.40	1.70	2.47	450	84	141	674
2032	2.90	2.40	1.70	**2.51**	**415**	**91**	**108**	**615**
2033	2.90	2.40	1.70	2.51	415	91	108	615
2034	2.90	2.40	1.70	2.51	415	91	108	615
2035	2.90	2.40	1.70	2.51	415	91	108	615
2036	2.90	2.40	1.70	2.51	415	91	108	615
2037	2.90	2.40	1.70	**2.51**	**347**	**59**	**93**	**499**
2038	2.90	2.40	1.70	2.51	347	59	93	499
Growth 2019-2028	2.90	2.40	1.70	2.45	3,825	771	1,299	5,894
Growth 2019-2038	2.90	2.40	1.70	2.47	7,940	1,598	2,449	11,988

APPENDIX A - TABLE 8.B

DISTRICT OF MUSKOKA

FORECAST POPULATION IN NEW HOUSEHOLD BY UNIT TYPE

UNSERVICED AREA

Mid-Year	Singles/Semis	Rows & Other Multiples	Apartments	Total	Singles/Semis	Rows & Other Multiples	Apartments	Population in New Dwellings
2017	2.90	2.40	1.70	2.82	661	6	25	692
2018	2.90	2.40	1.70	2.82	661	6	25	692
2019	2.90	2.40	1.70	2.82	661	6	25	692
2020	2.90	2.40	1.70	2.82	661	6	25	692
2021	2.90	2.40	1.70	2.82	661	6	25	692
2022	2.90	2.40	1.70	**2.79**	**459**	**5**	**27**	**490**
2023	2.90	2.40	1.70	2.79	459	5	27	490
2024	2.90	2.40	1.70	2.79	459	5	27	490
2025	2.90	2.40	1.70	2.79	459	5	27	490
2026	2.90	2.40	1.70	2.79	459	5	27	490
2027	2.90	2.40	1.70	**2.80**	**350**	**3**	**17**	**370**
2028	2.90	2.40	1.70	2.80	350	3	17	370
2029	2.90	2.40	1.70	2.80	350	3	17	370
2030	2.90	2.40	1.70	2.80	350	3	17	370
2031	2.90	2.40	1.70	2.80	350	3	17	370
2032	2.90	2.40	1.70	**2.84**	**304**	**2**	**9**	**315**
2033	2.90	2.40	1.70	2.84	304	2	9	315
2034	2.90	2.40	1.70	2.84	304	2	9	315
2035	2.90	2.40	1.70	2.84	304	2	9	315
2036	2.90	2.40	1.70	2.84	304	2	9	315
2037	2.90	2.40	1.70	**2.80**	**226**	**2**	**12**	**241**
2038	2.90	2.40	1.70	2.80	226	2	12	241
Growth 2019-2028	2.90	2.40	1.70	2.80	4,976	51	240	5,268
Growth 2019-2038	2.90	2.40	1.70	2.81	8,000	75	360	8,435

APPENDIX A - TABLE 8.C
DISTRICT OF MUSKOKA
FORECAST POPULATION IN NEW HOUSEHOLD BY UNIT TYPE
DISTRICT-WIDE

Mid-Year	Singles/Semis	Rows & Other Multiples	Apartments	Total	Singles/Semis	Rows & Other Multiples	Apartments	Population in New Dwellings
2107	2.90	2.40	1.70	2.66	1,015	85	135	1,235
2018	2.90	2.40	1.70	2.66	1,015	85	135	1,235
2019	2.90	2.40	1.70	2.66	1,015	85	135	1,235
2020	2.90	2.40	1.70	2.66	1,015	85	135	1,235
2021	2.90	2.40	1.70	2.66	1,015	85	135	1,235
2022	2.90	2.40	1.70	**2.58**	**831**	**79**	**164**	**1,074**
2023	2.90	2.40	1.70	2.58	831	79	164	1,074
2024	2.90	2.40	1.70	2.58	831	79	164	1,074
2025	2.90	2.40	1.70	2.58	831	79	164	1,074
2026	2.90	2.40	1.70	2.58	831	79	164	1,074
2027	2.90	2.40	1.70	**2.58**	**800**	**87**	**158**	**1,045**
2028	2.90	2.40	1.70	2.58	800	87	158	1,045
2029	2.90	2.40	1.70	2.58	800	87	158	1,045
2030	2.90	2.40	1.70	2.58	800	87	158	1,045
2031	2.90	2.40	1.70	2.58	800	87	158	1,045
2032	2.90	2.40	1.70	**2.61**	**719**	**93**	**118**	**930**
2033	2.90	2.40	1.70	2.61	719	93	118	930
2034	2.90	2.40	1.70	2.61	719	93	118	930
2035	2.90	2.40	1.70	2.61	719	93	118	930
2036	2.90	2.40	1.70	2.61	719	93	118	930
2037	2.90	2.40	1.70	**2.59**	**573**	**62**	**105**	**739**
2038	2.90	2.40	1.70	2.59	573	62	105	739
Growth 2019-2028	2.90	2.40	1.70	2.60	8,801	822	1,540	11,162
Growth 2019-2038	2.90	2.40	1.70	2.60	15,940	1,672	2,809	20,422

APPENDIX A - TABLE 9
DISTRICT OF MUSKOKA
FORECAST PLACE OF WORK EMPLOYMENT

	Non-Industrial						Industrial							
Mid-Year	Population Related	Annual Growth	Other Rural	Annual Growth	Total	Annual Growth	Emp. Land Industrial	Annual Growth	Total for DC Study	Annual Growth	Work at Home Total Emp	Annual Growth	Total with Work at Home	Annual Growth
2016	**13,535**		**4,218**		**17,753**		**8,223**		**25,976**		**2,770**		**28,746**	
2017	13,623	88	4,242	24	17,865	112	8,246	23	26,111	135	2,801	31	28,912	166
2018	13,712	89	4,266	24	17,978	113	8,269	23	26,247	136	2,832	31	29,079	167
2019	13,801	89	4,291	25	18,092	114	8,292	23	26,384	137	2,864	32	29,248	169
2020	13,891	90	4,316	25	18,207	115	8,315	23	26,522	138	2,896	32	29,418	170
2021	**13,981**	**90**	**4,341**	**25**	**18,322**	**115**	**8,338**	**23**	**26,660**	**138**	**2,929**	**33**	**29,589**	**171**
2022	14,072	91	4,366	25	18,438	116	8,361	23	26,799	139	2,962	33	29,761	172
2023	14,164	92	4,391	25	18,555	117	8,384	23	26,939	140	2,995	33	29,934	173
2024	14,256	92	4,416	25	18,672	117	8,407	23	27,079	140	3,029	34	30,108	174
2025	14,349	93	4,441	25	18,790	118	8,430	23	27,220	141	3,063	34	30,283	175
2026	**14,443**	**94**	**4,470**	**29**	**18,913**	**123**	**8,450**	**20**	**27,363**	**143**	**3,097**	**34**	**30,460**	**177**
2027	14,532	89	4,496	26	19,028	115	8,474	24	27,502	139	3,131	34	30,633	173
2028	14,621	89	4,522	26	19,143	115	8,498	24	27,641	139	3,165	34	30,806	173
2029	14,711	90	4,548	26	19,259	116	8,522	24	27,781	140	3,199	34	30,980	174
2030	14,802	91	4,574	26	19,376	117	8,546	24	27,922	141	3,234	35	31,156	176
2031	**14,893**	**91**	**4,600**	**26**	**19,493**	**117**	**8,570**	**24**	**28,063**	**141**	**3,269**	**35**	**31,332**	**176**
2032	14,985	92	4,626	26	19,611	118	8,594	24	28,205	142	3,304	35	31,509	177
2033	15,077	92	4,652	26	19,729	118	8,618	24	28,347	142	3,340	36	31,687	178
2034	15,170	93	4,679	27	19,849	120	8,642	24	28,491	144	3,376	36	31,867	180
2035	15,263	93	4,706	27	19,969	120	8,666	24	28,635	144	3,413	37	32,048	181
2036	**15,357**	**94**	**4,733**	**27**	**20,090**	**121**	**8,690**	**24**	**28,780**	**145**	**3,450**	**37**	**32,230**	**182**
2037	15,451	94	4,760	27	20,211	121	8,715	25	28,926	146	3,487	37	32,413	183
2038	15,546	95	4,787	27	20,333	122	8,740	25	29,073	147	3,525	38	32,598	185
Growth 2019-2028		909		256		1,165		229		1,394		333		1,727
Growth 2019-2038		1,834		521		2,355		471		2,826		693		3,519

APPENDIX A - TABLE 10
DISTRICT OF MUSKOKA
FORECAST PLACE OF WORK EMPLOYMENT
SERVICED AND UNSERVICED AREAS

Mid-Year	Serviced Area	Annual Growth	Unserviced Area	Annual Growth
2016	**20,211**		**5,765**	
2017	20,316	105	5,795	30
2018	20,422	106	5,825	30
2019	20,529	107	5,855	30
2020	20,636	107	5,886	31
2021	**20,743**	**107**	**5,917**	**31**
2022	20,852	108	5,947	31
2023	20,960	109	5,979	31
2024	21,069	109	6,010	31
2025	21,179	110	6,041	31
2026	**21,290**	**111**	**6,073**	**32**
2027	21,398	108	6,104	31
2028	21,507	108	6,134	31
2029	21,616	109	6,165	31
2030	21,725	110	6,197	31
2031	**21,835**	**110**	**6,228**	**31**
2032	21,945	110	6,260	32
2033	22,056	110	6,291	32
2034	22,168	112	6,323	32
2035	22,280	112	6,355	32
2036	**22,393**	**113**	**6,387**	**32**
2037	22,506	114	6,420	32
2038	22,621	114	6,452	33
Growth 2019-2028		1,085		309
Growth 2019-2038		2,199		627

Source: Hemson Consulting, 2018

APPENDIX A - TABLE 11
DISTRICT OF MUSKOKA
FORECAST NON-RESIDENTIAL SPACE (SQUARE METRES OF GROSS FLOOR AREA)

Employment Density	
Population Related	40.0 m^2 per employee
Other Rural Based	0.0 m^2 per employee
Employment Land Employment	80.0 m^2 per employee

Mid-Year	Non-Industrial			Industrial	Total for DC Study	Serviced Area	Unserviced Area
	Population-Related	Other Rural	Total				
2017	3,520	0	3,520	1,828	5,348	4,161	1,187
2018	3,560	0	3,560	1,840	5,400	4,202	1,198
2019	3,560	0	3,560	1,840	5,400	4,202	1,198
2020	3,600	0	3,600	1,840	5,440	4,233	1,207
2021	**3,600**	**0**	**3,600**	**1,840**	**5,440**	**4,233**	**1,207**
2022	3,640	0	3,640	1,840	5,480	4,264	1,216
2023	3,680	0	3,680	1,840	5,520	4,295	1,225
2024	3,680	0	3,680	1,840	5,520	4,295	1,225
2025	3,720	0	3,720	1,840	5,560	4,326	1,234
2026	**3,757**	**0**	**3,757**	**1,600**	**5,357**	**4,168**	**1,189**
2027	3,563	0	3,563	1,920	5,483	4,266	1,217
2028	3,560	0	3,560	1,920	5,480	4,264	1,216
2029	3,600	0	3,600	1,920	5,520	4,295	1,225
2030	3,640	0	3,640	1,920	5,560	4,326	1,234
2031	**3,640**	**0**	**3,640**	**1,920**	**5,560**	**4,326**	**1,234**
2032	3,680	0	3,680	1,920	5,600	4,357	1,243
2033	3,680	0	3,680	1,920	5,600	4,357	1,243
2034	3,720	0	3,720	1,920	5,640	4,388	1,252
2035	3,720	0	3,720	1,920	5,640	4,388	1,252
2036	**3,760**	**0**	**3,760**	**1,920**	**5,680**	**4,419**	**1,261**
2037	3,760	0	3,760	2,000	5,760	4,482	1,278
2038	3,800	0	3,800	2,000	5,800	4,513	1,287
Growth 2019-2028	36,360	0	36,360	18,320	54,680	42,545	12,135
Growth 2019-2038	73,360	0	73,360	37,680	111,040	86,397	24,643

Source: Hemson Consulting, 2018

APPENDIX B

GENERAL SERVICES TECHNICAL APPENDIX

APPENDIX B

GENERAL SERVICES TECHNICAL APPENDIX

This appendix provides the detailed analysis undertaken to establish the development charge rates for each of the eligible general services provided by the District of Muskoka. Eight services have been analysed as part of this Development Charges (DC) Background Study:

Appendix B.1 Airport Services

Appendix B.2 Police Services

Appendix B.3 Social Housing Services

Appendix B.4 Long Term Care

Appendix B.5 Social Services

Appendix B.6 Paramedic Services

Appendix B.7 Waste Management Services

Appendix B.8 Administration

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

TABLE 1 HISTORICAL SERVICE LEVELS

Table 1 presents the data used to determine the ten-year historical service level. The *DCA* and *Ontario Regulation 82/98* require that development charges be set at a level no higher than the average service level provided in a municipality over the ten-year period immediately preceding the preparation of the background study, on a service by service basis. For the purpose of this study, the historical inventory period is defined as 2009–2018.

O. Reg. 82/98 requires that when defining and determining historical service levels, both the quantity and quality of service be taken into consideration. In most cases, the service levels are initially established in quantitative terms. For example, service levels for buildings are presented in terms of square feet. The qualitative aspect is introduced

by considering the monetary value of the facility or service. In the case of buildings, for example, the cost would be shown in terms of cost per square foot to replace or construct a facility of the same quality. This approach helps to ensure that the development-related capital facilities that are to be funded by new growth reflect not only the quantity (number and size), but also the quality (replacement value or cost) of service provided by the municipality in the past. Both the quantitative and qualitative aspects of service levels used in the current analysis are based on information provided by District staff in consultation with Hemson Consulting Ltd. This information is generally based on historical records and experience with costs to acquire or construct similar facilities, equipment and infrastructure.

The cost per acre of land used in the inventory of capital assets for each service in this study has been estimated to be $318,000 per acre based on recent land sales. Properties with water and wastewater servicing were examined as those were the parcels most likely to be purchased by the District for the replacement of their facilities. Facilities typically located in non-residential employment uses have a lower cost per acre, therefore for Airport, Waste Management and Long Term Care Services the land cost of $108,100 has been used. It is based on the 2016 Tangible Capital Asset value for the Long Term Care property at 98 Pine Street, Bracebridge inflated to 2018 dollars.

The approach used to calculate service levels and maximum funding envelopes is described as follows: for those services with only a residential impact (Social Housing, Long Term Care, Social Services, and Waste Management), the service level measure of net population has been utilized. For the remaining services that levy both a residential and non-residential charge, the service level measure of net population plus employment has been utilized.

There is also a requirement in the *DCA* to consider "excess capacity" within the District's existing infrastructure that may be available to partially meet future servicing requirements. If Council has expressed its intent before or at the time the capacity was created to recoup the cost of providing the capacity from new development, it is considered "committed excess capacity" under the *DCA*, and the associated capital cost is eligible for recovery. This requirement has been addressed through the use of net population and employment in the determination of maximum permissible funding envelopes.

Table 1 also shows the calculation of the maximum allowable funding envelope and the legislated ten per cent reduction (for all applicable services). The maximum allowable funding envelope is defined as the ten-year historical service level (expressed

as $/capita or $/population and employment) multiplied by the forecast increase in net population or net population and employment over the future planning period. The resulting figure is the value of capital infrastructure that would have to be constructed for that particular service so that the ten-year historical service level is maintained.

TABLE 2 2019 – 2028 DEVELOPMENT-RELATED CAPITAL PROGRAM AND CALCULATION OF THE "UNADJUSTED" DEVELOPMENT CHARGES

The *DCA* requires that Council express its intent to provide capital facilities to support future development. Based on the development forecasts presented in Appendix A, District staff in collaboration with consultants have created a development-related capital forecast that sets out the projects required to service anticipated development for the ten-year period from 2019–2028.

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

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

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

The capital program less any replacement shares or benefit to existing shares and ten per cent discount shares yields the development-related costs. Although deemed development-related, not all of the net development-related capital program may be recoverable from development charges in the period from 2019 to 2028. There are no reserve fund balances available to fund the capital program as DCs have not been collected for any of the proposed services in the past. In addition, a portion of the

capital program may service growth occurring beyond 2028. This portion of the capital program is deemed "pre-built" service capacity and is considered as committed excess capacity to be recovered under future development charges, or is a service level increase.

The remaining portion of the net capital program represents the development-related cost that may be included in the DC calculation. In all cases, this amount is equal to or less than the maximum allowable capital amount as calculated at the end of Table 1. The result is the discounted development-related net capital costs eligible for recovery against growth over the forecast period from 2019 to 2028.

Calculation of the Unadjusted Development Charges Rates

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

The first step in determining the unadjusted development charge rate is to allocate the development-related net capital cost between the residential and non-residential sectors. For all general services with the exception of Social Housing, Long Term Care, Social Services, and Waste Management, the development-related costs have been apportioned as 89 per cent residential and 11 per cent non-residential. This apportionment is based on the anticipated shares of population growth in new units and employment growth in new space over the ten-year forecast period.

The development-related costs associated with Social Housing Services, Long Term Care, Social Services, and Waste Management Services have been allocated 100 per cent to the residential sector, as the need for these services is driven by residential development.

The residential share of the 2019–2028 DC eligible cost is then divided by the forecasted population growth in new dwelling units. This gives the unadjusted residential development charge per capita. The non-residential development-related net capital cost is divided by the forecasted increase in non-residential gross floor area (GFA) net of re-occupation of existing vacant non-residential space. This yields a charge per square metre of new non-residential development.

TABLE 3 CASH FLOW ANALYSIS

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

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

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

APPENDIX B.1

AIRPORT SERVICES

APPENDIX B.1

AIRPORT SERVICES

The Muskoka Airport is owned and operated by the District. With a paved runway, the airport offers aircraft parking and a pubic terminal building with a pilot lounge. The airport serves residents, businesses, and seasonal visitors to the District and will continue to expand as the District develops. The benefits of the Airport are considered to be District-wide for the purpose of calculating the development charge.

TABLE 1 HISTORICAL SERVICE LEVELS

Table 1 displays the ten-year historical inventory for buildings, land, vehicles, materials and furniture and equipment (excluding computer equipment) for Airport Services in the District of Muskoka. The building space is approximately 16,790 sq.ft. which includes the terminal, storage facilities and related infrastructure. The Muskoka Airport operates a 1.83 kilometre runway with an estimated value of $15.00 million including any stormwater infrastructure. Additional furniture and equipment within buildings is valued at $629,300 in 2018.

The total land area of the airport is approximately 503 acres, with a value of roughly $54.32 million. Nine vehicles and related equipment are utilized by the Muskoka Airport, and are valued at approximately $1.33 million.

The 2018 combined replacement value of the inventory of capital assets for Airport Services is $88.57 million, resulting in a ten-year historical average service level of $523.85 per population and employment. This historical service level, multiplied by the ten-year net population and employment growth (11,710), results in a ten-year maximum allowable funding envelope of $6.13 million. The legislated ten per cent discount amounts to $613,428 and the final discounted maximum allowable funding envelope is $5.52 million.

TABLE 2 2019–2028 DEVELOPMENT-RELATED CAPITAL PROGRAM & CALCULATION OF THE "UNADJUSTED" DEVELOPMENT CHARGES

A development-related capital program has been established for Airport Services and includes the ongoing acquisition of additional building space and equipment.

The capital program consists of a Long Term Plan, provision for future development and a provision for development-related equipment needs. The total gross cost of the

program is $815,600. A benefit to existing share of fifty per cent or $25,000 is assigned to the Long Term Plan. As required by the *DCA*, ten per cent has been netted off the municipal cost which amounts to $79,059 bringing the total recoverable cost in the 2019-2028 period to $711,528 well below the maximum funding envelope of $5.52 million.

The total DC eligible cost is allocated 89 per cent, or $632,500 to the residential sector and 11 per cent, or $79,000, to the non-residential sector. This yields an unadjusted charge of $56.67 per capita and $1.44 per square metre.

TABLE 3 CASH FLOW ANALYSIS

After cash flow consideration, the residential calculated charge increases to $63.01 per capita and the non-residential calculated charge increases to $1.63 per square metre. This is a reflection of the timing of the capital program and development charges revenues.

The following table summarizes the calculation of the Airport Services development charge:

AIRPORT SERVICES SUMMARY

10-year Hist. Service Level per pop & emp	2019 - 2028 Development-Related Capital Program		Unadjusted Development Charge		**Adjusted Development Charge**	
	Total	Net DC Recoverable	$/capita	$/sq.m	**$/capita**	**$/sq.m**
$523.85	$815,587	$711,528	$56.67	$1.44	**$63.01**	**$1.63**

APPENDIX B.1
TABLE 1

DISTRICT OF MUSKOKA
INVENTORY OF CAPITAL ASSETS
AIRPORT SERVICES

AIRPORT FACILITIES	# of Square Feet										UNIT COST
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	($/sq. ft.)
Buildings (sq.ft)	15,636	16,086	16,478	16,478	16,478	16,790	16,790	16,790	16,790	16,790	$1,960
Runways and Related ($000)	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	
Furniture and Equipment ($000)	$629.3	$629.3	$629.3	$629.3	$629.3	$629.3	$629.3	$629.3	$629.3	$629.3	
Total (sq.ft.)	**15,636**	**16,086**	**16,478**	**16,478**	**16,478**	**16,790**	**16,790**	**16,790**	**16,790**	**16,790**	
Total ($000)	**$30,662**	**$31,544**	**$32,313**	**$32,313**	**$32,313**	**$32,924**	**$32,924**	**$32,924**	**$32,924**	**$32,924**	

LAND	# of Acres										UNIT COST
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	($/acre)
Total Site Area	504.1	504.1	503.6	503.6	503.6	503.6	503.6	503.0	502.5	502.5	$108,100
Total (acres)	**504.08**	**504.08**	**503.56**	**503.56**	**503.56**	**503.56**	**503.56**	**503.04**	**502.51**	**502.51**	
Total ($000)	**$54,491**	**$54,491**	**$54,435**	**$54,435**	**$54,435**	**$54,435**	**$54,435**	**$54,379**	**$54,321**	**$54,321**	

APPENDIX B.1
TABLE 1

DISTRICT OF MUSKOKA
INVENTORY OF CAPITAL ASSETS
AIRPORT SERVICES

VEHICLES	# of Vehicles										UNIT COST
Vehicle Type	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	($/vehicle)
COMPACTOR AIRPORT	1	1	1	1	1	1	1	1	1	1	$208,900
COMPACTOR AIRPORT	1	1	1	1	1	1	1	1	1	1	$140,500
TRACTOR	1	-	-	-	-	-	-	-	-	-	$133,200
MOWER	1	-	-	-	-	-	-	-	-	-	$13,900
COMPACTOR AIRPORT	1	1	1	1	1	1	1	1	1	1	$347,400
TANDEM - AIRPORT	1	1	1	1	1	1	1	1	1	1	$173,500
TRACTOR-AIRPORT	1	1	1	1	1	1	1	1	1	1	$27,100
TRACTOR-AIRPORT	1	1	1	1	1	1	1	1	1	1	$21,700
TRACTOR-AIRPORT	1	1	1	1	1	1	1	1	1	1	$162,600
TANDEM - AIRPORT	-	-	-	1	1	1	1	1	1	1	$200,700
TRUCK	-	-	1	1	1	1	1	1	1	1	$44,100
Total (#)	**9**	**7**	**8**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	
Total ($000)	**$1,229**	**$1,082**	**$1,126**	**$1,327**	**$1,327**	**$1,327**	**$1,327**	**$1,327**	**$1,327**	**$1,327**	

APPENDIX B.1
TABLE 1

DISTRICT OF MUSKOKA
CALCULATION OF SERVICE LEVELS
AIRPORT SERVICES

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Historical Population	138,105	139,439	140,787	141,872	142,968	142,917	142,868	142,822	143,852	144,890
Historical Employment	26,682	26,247	25,820	25,852	25,884	25,916	25,948	25,980	26,111	26,247
Total Historical Population & Employment	164,787	165,686	166,607	167,724	168,852	168,833	168,816	168,802	169,963	171,137

INVENTORY SUMMARY ($000)

Airport Facilities	$30,662.2	$31,544.2	$32,312.5	$32,312.5	$32,312.5	$32,924.0	$32,924.0	$32,924.0	$32,924.0	$32,924.0
Land	$54,491.0	$54,491.0	$54,434.8	$54,434.8	$54,434.8	$54,434.8	$54,434.8	$54,378.6	$54,321.3	$54,321.3
Vehicles	$1,228.8	$1,081.7	$1,125.8	$1,326.5	$1,326.5	$1,326.5	$1,326.5	$1,326.5	$1,326.5	$1,326.5
Total ($000)	**$86,382.0**	**$87,116.9**	**$87,873.1**	**$88,073.8**	**$88,073.8**	**$88,685.4**	**$88,685.4**	**$88,629.2**	**$88,571.9**	**$88,571.9**

SERVICE LEVEL ($/pop & emp)

											Average Service Level
Airport Facilities	$186.07	$190.39	$193.94	$192.65	$191.37	$195.01	$195.03	$195.05	$193.71	$192.38	$192.56
Land	$330.68	$328.88	$326.73	$324.55	$322.38	$322.42	$322.45	$322.14	$319.61	$317.41	$323.72
Vehicles	$7.46	$6.53	$6.76	$7.91	$7.86	$7.86	$7.86	$7.86	$7.80	$7.75	$7.56
Total ($/pop & emp)	**$524.20**	**$525.80**	**$527.43**	**$525.11**	**$521.60**	**$525.28**	**$525.34**	**$525.05**	**$521.12**	**$517.55**	**$523.85**

DISTRICT OF MUSKOKA
CALCULATION OF MAXIMUM ALLOWABLE
AIRPORT SERVICES

10-Year Fuding Envelope Calculation	
10 Year Average Service Level (2009-2018)	$523.85
Net Population & Employment Growth 2019 - 2028	11,710
Maximum Allowable Funding Envelope	$6,134,284
Less: 10% Legislated Reduction	$613,428
Discounted Maximum Allowable Funding Envelope	$5,520,855

APPENDIX B.1
TABLE 2

DISTRICT OF MUSKOKA
DEVELOPMENT-RELATED CAPITAL PROGRAM
AIRPORT SERVICES

Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municpal Cost	Ineligible Costs			Total Development Related Costs	Development-Related Costs		
					BTE (%)	Replacement & BTE Shares	10% Reduction		Available DC Reserves	2019-2028	Post 2028
1.0 AIRPORT SERVICES											
1.1 Buildings, Land & Furnishings											
1.1.1 Long Term Plan	2019	$ 50,000	$ -	$ 50,000	50%	$ 25,000	$ 2,500	$ 22,500	$ -	$ 22,500	$ -
1.1.2 Provision for Future Development	2020	$ 681,200	$ -	$ 681,200	0%	$ -	$ 68,120	$ 613,080	$ -	$ 613,080	$ -
Subtotal Buildings, Land & Furnishings		$ 731,200	$ -	$ 731,200		$ 25,000	$ 70,620	$ 635,580	$ -	$ 635,580	$ -
1.2 Equipment and Materials											
1.2.1 Provision for Development-Related Equipment	Various	$ 84,387	$ -	$ 84,387	0%	$ -	$ 8,439	$ 75,948	$ -	$ 75,948	$ -
Subtotal Equipment and Materials		$ 84,387	$ -	$ 84,387		$ -	$ 8,439	$ 75,948	$ -	$ 75,948	$ -
TOTAL AIRPORT SERVICES		**$ 815,587**	**$ -**	**$ 815,587**	**3%**	**$ 25,000**	**$ 79,059**	**$ 711,528**	**$ -**	**$ 711,528**	**$ -**

Residential Development Charge Calculation		
Residential Share of 2019-2028 Discounted Growth-Related Capital Program	89%	$632,534
10 Year Growth in Population in New Units		11,162
Unadjusted Development Charge Per Capita ($)		**$56.67**
Non-Residential Development Charge Calculation		
Non-Residential Share of 2019-2028 Discounted Growth-Related Capital Program	11%	$78,994
10 Year Growth in Square Metres		54,680
Unadjusted Development Charge Per sq. m ($)		**$1.44**

2019 - 2028 Net Funding Envelope	$5,520,855
Reserve Fund Balance	
Balance as at December 31, 2013	$0

APPENDIX B.1
TABLE 3

DISTRICT OF MUSKOKA
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
AIRPORT SERVICES
RESIDENTIAL DEVELOPMENT CHARGE
(in $000)

AIRPORT SERVICES	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**TOTAL**
OPENING CASH BALANCE	$0.0	$52.0	($443.0)	($392.1)	($347.9)	($300.0)	($248.0)	($191.9)	($131.3)	($68.1)	
2019 - 2028 RESIDENTIAL FUNDING REQUIREMENTS											
- Airport Services: Non Inflated	$26.8	$551.8	$6.8	$6.8	$6.8	$6.8	$6.8	$6.8	$6.8	$6.8	**$632.5**
- Airport Services: Inflated	$26.8	$562.8	$7.0	$7.2	$7.3	$7.5	$7.6	$7.8	$7.9	$8.1	**$649.8**
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,235	1,235	1,235	1,074	1,074	1,074	1,074	1,074	1,045	1,045	**11,162**
REVENUE											
- DC Receipts: Inflated	$77.8	$79.4	$81.0	$71.8	$73.2	$74.7	$76.2	$77.7	$77.1	$78.7	**$767.5**
INTEREST											
- Interest on Opening Balance	$0.0	$1.8	($24.4)	($21.6)	($19.1)	($16.5)	($13.6)	($10.6)	($7.2)	($3.7)	**($114.9)**
- Interest on In-year Transactions	$0.9	($13.3)	$1.3	$1.1	$1.2	$1.2	$1.2	$1.2	$1.2	$1.2	**($2.8)**
TOTAL REVENUE	$78.7	$67.9	$57.9	$51.4	$55.2	$59.4	$63.7	$68.4	$71.1	$76.1	**$649.8**
CLOSING CASH BALANCE	$52.0	($443.0)	($392.1)	($347.9)	($300.0)	($248.0)	($191.9)	($131.3)	($68.1)	($0.0)	

2019 Adjusted Charge Per Capita	**$63.01**

Allocation of Capital Program	
Residential Sector	88.9%
Non-Residential Sector	11.1%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX B.1
TABLE 3

DISTRICT OF MUSKOKA
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
AIRPORT SERVICES
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in $000)

AIRPORT SERVICES	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	$0.00	$5.56	($57.17)	($51.82)	($45.94)	($39.49)	($32.50)	($24.87)	($17.01)	($8.30)	
2019 - 2028 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Airport Services: Non Inflated	$3.3	$68.9	$0.8	$0.8	$0.8	$0.8	$0.8	$0.8	$0.8	$0.8	**$79.0**
- Airport Services: Inflated	$3.3	$70.3	$0.9	$0.9	$0.9	$0.9	$0.9	$1.0	$1.0	$1.0	**$81.2**
NEW NON-RESIDENTIAL DEVELOPMENT											
- Growth in Square Metres	5,400	5,440	5,440	5,480	5,520	5,520	5,560	5,357	5,483	5,480	**54,680**
REVENUE											
- DC Receipts: Inflated	$8.8	$9.0	$9.2	$9.5	$9.7	$9.9	$10.2	$10.0	$10.5	$10.7	**$97.6**
INTEREST											
- Interest on Opening Balance	$0.0	$0.2	($3.1)	($2.9)	($2.5)	($2.2)	($1.8)	($1.4)	($0.9)	($0.5)	**($15.0)**
- Interest on In-year Transactions	$0.1	($1.7)	$0.1	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	**($0.3)**
TOTAL REVENUE	$8.9	$7.6	$6.2	$6.8	$7.4	$7.9	$8.6	$8.8	$9.7	$10.4	**$82.2**
CLOSING CASH BALANCE	$5.6	($57.2)	($51.8)	($45.9)	($39.5)	($32.5)	($24.9)	($17.0)	($8.3)	$1.1	

2019 Adjusted Charge Per Square Metre	**$1.63**

Allocation of Capital Program	
Residential Sector	88.9%
Non-Residential Sector	11.1%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX B.2

POLICE SERVICES

APPENDIX B.2

POLICE SERVICES

Policing in the District of Muskoka is provided by the Ontario Provincial Police (OPP) through a contract for the residents of the District. The service level calculations, development-related capital program and development charge rates have been calculated based on the total growth requirements of the District. Only capital costs associated with contracted services have been included in the analysis. The benefits of the Police Services are considered to be District-wide for the purpose of calculating the development charge.

TABLE 1 HISTORICAL SERVICE LEVELS

Table 1 displays the ten-year historical inventory for vehicle related equipment and personal equipment for police officers. Personal equipment is based on the 2014 DC Background Study with an increase related to the population and employment growth between 2014 and 2018. One vehicle was assigned for every two officers for the ten-year historical period. The total value of vehicle equipment and officer equipment in 2018 was $1.49 million, resulting in a ten-year historical average service level of $8.74 per population and employment. The historical service level, multiplied by the ten-year net population and employment growth (11,710), results in a ten-year maximum allowable funding envelope of $102,345.

TABLE 2 2019–2028 DEVELOPMENT-RELATED CAPITAL PROGRAM & CALCULATION OF THE "UNADJUSTED" DEVELOPMENT CHARGES

The 2019 to 2028 development-related capital program totals $109,700 and includes a provision for development-related equipment acquisitions throughout the ten-year planning period. The development-related cost was established based on the average historical service level continuing at the same level in the period from 2019-2028. There are no available reserves or replacement shares; however, $7,355 is considered to be benefitting growth beyond 2028. As a result $102,345 is brought forward to the rate calculation.

The development-related net capital cost is allocated 89 per cent to residential development ($90,983) and 11 per cent ($11,362) to non-residential development. The residential share of the net development-related capital cost is divided by the ten-year growth in population in new dwelling units (11,162) to derive an unadjusted

charge of $8.15 per capita. The non-residential share of the net growth related capital cost is divided by the ten-year forecast growth in floor space (54,680 square metres), resulting in an unadjusted charge of $0.21 per square metre.

TABLE 3 CASH FLOW ANALYSIS

After cash flow consideration, the residential charge decreases to $8.14 per capita while the non-residential development charge increases to $0.22 per square metre.

POLICE SERVICES SUMMARY

10-year Hist. Service Level per pop & emp	2019 - 2028 Development-Related Capital Program		Unadjusted Development Charge		**Adjusted Development Charge**	
	Total	Net DC Recoverable	$/capita	$/sq.m	**$/capita**	**$/sq.m**
$8.74	$109,700	$102,345	$8.15	$0.21	**$8.14**	**$0.22**

APPENDIX B.2
TABLE 1

DISTRICT OF MUSKOKA
INVENTORY OF CAPITAL ASSETS
POLICE SERVICES

EQUIPMENT	# of Items										UNIT COST
Equipment Type	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	($/item)
Vehicle Related Equipment	40	40	40	40	40	40	40	40	40	41	$ 20,270
Personal Equipment	80	80	80	80	80	80	80	80	81	81	$ 8,200
Total (#)	**120**	**120**	**120**	**120**	**120**	**120**	**120**	**120**	**121**	**122**	
Total ($000)	**$1,466.8**	**$1,466.8**	**$1,466.8**	**$1,466.8**	**$1,466.8**	**$1,466.6**	**$1,466.6**	**$1,466.4**	**$1,476.5**	**$1,486.6**	

APPENDIX B.2
TABLE 1

DISTRICT OF MUSKOKA
CALCULATION OF SERVICE LEVELS
POLICE SERVICES

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Historical Population	138,105	139,439	140,787	141,872	142,968	142,917	142,868	142,822	143,852	144,890
Historical Employment	26,682	26,247	25,820	25,852	25,884	25,916	25,948	25,980	26,111	26,247
Total Historical Population & Employment	164,787	165,686	166,607	167,724	168,852	168,833	168,816	168,802	169,963	171,137

INVENTORY SUMMARY ($000)

Equipment	$1,466.8	$1,466.8	$1,466.8	$1,466.8	$1,466.8	$1,466.6	$1,466.6	$1,466.4	$1,476.5	$1,486.6
Total ($000)	**$1,466.8**	**$1,466.8**	**$1,466.8**	**$1,466.8**	**$1,466.8**	**$1,466.6**	**$1,466.6**	**$1,466.4**	**$1,476.5**	**$1,486.6**

SERVICE LEVEL ($/pop & emp)

											Average Service Level
Equipment	$8.90	$8.85	$8.80	$8.75	$8.69	$8.69	$8.69	$8.69	$8.69	$8.69	$8.74
Total ($/pop & emp)	**$8.90**	**$8.85**	**$8.80**	**$8.75**	**$8.69**	**$8.69**	**$8.69**	**$8.69**	**$8.69**	**$8.69**	**$8.74**

DISTRICT OF MUSKOKA
CALCULATION OF MAXIMUM ALLOWABLE
POLICE SERVICES

10-Year Funding Envelope Calculation	
10 Year Average Service Level 2009 - 2018	$8.74
Net Population & Employment Growth 2019 - 2028	11,710
Maximum Allowable Funding Envelope	**$102,345**

APPENDIX B.2
TABLE 2

DISTRICT OF MUSKOKA
DEVELOPMENT-RELATED CAPITAL PROGRAM
POLICE SERVICES

Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs			Total Development Related Costs	Development-Related Costs		
					BTE (%)	Replacement & BTE Shares	0% Reduction		Available DC Reserves	2019-2028	Post 2028
2.0 POLICE SERVICES											
2.1 Vehicles and Equipment											
2.1.1 Provision for Development-Related Equipment	Various	$ 109,700	$ -	$ 109,700	0%	$ -	$ -	$ 109,700	$ -	$ 102,345	$ 7,355
Subtotal Vehicles and Equipment		$ 109,700	$ -	$ 109,700		$ -	$ -	$ 109,700	$ -	$ 102,345	$ 7,355
TOTAL POLICE SERVICES		**$ 109,700**	**$ -**	**$ 109,700**		**$ -**	**$ -**	**$ 109,700**	**$ -**	**$ 102,345**	**$ 7,355**

Residential Development Charge Calculation		
Residential Share of 2019-2028 Discounted Growth-Related Capital Program	89%	$90,983
10 Year Growth in Population in New Units		11,162
Unadjusted Development Charge Per Capita ($)		**$8.15**
Non-Residential Development Charge Calculation		
Non-Residential Share of 2019-2028 Discounted Growth-Related Capital Program	11%	$11,362
10 Year Growth in Square Metres		54,680
Unadjusted Development Charge Per sq. m ($)		**$0.21**

2019 - 2028 Net Funding Envelope	$102,345
Reserve Fund Balance	
Balance as at December 31, 2013	$0

APPENDIX B.2
TABLE 3

DISTRICT OF MUSKOKA
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
POLICE SERVICES
RESIDENTIAL DEVELOPMENT CHARGE
(in $000)

POLICE SERVICES	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	$0.0	$1.0	$2.0	$3.1	$2.8	$2.5	$2.2	$1.8	$1.5	$0.8	
2019 - 2028 RESIDENTIAL FUNDING REQUIREMENTS											
- Police Services: Non Inflated	$9.1	$9.1	$9.1	$9.1	$9.1	$9.1	$9.1	$9.1	$9.1	$9.1	**$91.0**
- Police Services: Inflated	$9.1	$9.3	$9.5	$9.7	$9.8	$10.0	$10.2	$10.5	$10.7	$10.9	**$99.6**
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,235	1,235	1,235	1,074	1,074	1,074	1,074	1,074	1,045	1,045	**11,162**
REVENUE											
- DC Receipts: Inflated	$10.1	$10.3	$10.5	$9.3	$9.5	$9.6	$9.8	$10.0	$10.0	$10.2	**$99.2**
INTEREST											
- Interest on Opening Balance	$0.0	$0.0	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.0	**$0.6**
- 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)**
TOTAL REVENUE	$10.1	$10.3	$10.5	$9.4	$9.5	$9.7	$9.9	$10.1	$10.0	$10.2	**$99.7**
CLOSING CASH BALANCE	$1.0	$2.0	$3.1	$2.8	$2.5	$2.2	$1.8	$1.5	$0.8	$0.1	

2019 Adjusted Charge Per Capita	**$8.14**

Allocation of Capital Program	
Residential Sector	88.9%
Non-Residential Sector	11.1%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX B.2
TABLE 3

DISTRICT OF MUSKOKA
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
POLICE SERVICES
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in $000)

POLICE SERVICES	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	$0.00	$0.05	$0.12	$0.19	$0.27	$0.36	$0.46	$0.58	$0.65	$0.75	
2019 - 2028 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Police Services: Non Inflated	$1.1	$1.1	$1.1	$1.1	$1.1	$1.1	$1.1	$1.1	$1.1	$1.1	**$11.4**
- Police Services: Inflated	$1.1	$1.2	$1.2	$1.2	$1.2	$1.3	$1.3	$1.3	$1.3	$1.4	**$12.4**
NEW NON-RESIDENTIAL DEVELOPMENT											
- Growth in Square Metres	5,400	5,440	5,440	5,480	5,520	5,520	5,560	5,357	5,483	5,480	**54,680**
REVENUE											
- DC Receipts: Inflated	$1.2	$1.2	$1.2	$1.3	$1.3	$1.3	$1.4	$1.4	$1.4	$1.4	**$13.2**
INTEREST											
- Interest on Opening Balance	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	**$0.1**
- 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**
TOTAL REVENUE	$1.2	$1.2	$1.3	$1.3	$1.3	$1.4	$1.4	$1.4	$1.4	$1.5	**$13.3**
CLOSING CASH BALANCE	$0.1	$0.1	$0.2	$0.3	$0.4	$0.5	$0.6	$0.6	$0.8	$0.9	

2019 Adjusted Charge Per Square Metre	**$0.22**

Allocation of Capital Program	
Residential Sector	88.9%
Non-Residential Sector	11.1%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX B.3

SOCIAL HOUSING SERVICES

APPENDIX B.3

SOCIAL HOUSING SERVICES

The Community and Planning Services Department of the District of Muskoka is responsible for improving the quality of life of the residents of Muskoka. This includes the provision of social housing and supporting the delivery of affordable and attainable housing options. The inventory stock and capital costs include social housing units, rent supplement units and rent supplement units in retirement homes. This service was not considered in the 2014 DC Background Study, however, development-related costs associated with this service have been identified in the 2019 DC Background Study. The benefits of Social Housing Services are considered to be District-wide for the purpose of calculating the development charge.

TABLE 1 HISTORICAL SERVICE LEVELS

Table 1 displays the ten-year historical inventory for the units used to deliver Social Housing Services. Three types of buildings are used for the delivery of the service. Social Housing Units are developed under various government programs by the District, private non-profits and co-operatives. Rent supplements are rental subsidies which are provided to a landlord under agreement with the District and distributed by the landlord to tenants in the building. Rent supplements in retirement homes are rental subsidies that are provided under agreement with the District to a retirement home operator and distributed by them to tenants in retirement homes. There are a total of 951 units with a total cost of $79.68 million.

In addition, the District also provides affordable rental units that are supported by federal, provincial and District capital funding programs. The units are at or below Average Market Rent for the areas in which they are located in. The District provides 230 of these units, at a total cost of $31.51 million.

The 2018 combined replacement value of the District's inventory of capital assets for Social Housing Services was $111.19 million. This results in a ten-year historical average service level of $697.21 per capita. The historical service level, multiplied by the ten-year net population growth (10,316), results in a ten-year maximum allowable funding envelope of $7.19 million. Finally, the required ten per cent discount totals $719,200 and is netted off. The remaining discounted funding envelope eligible for DC recovery totals $6.47 million.

TABLE 2 2019–2028 DEVELOPMENT-RELATED CAPITAL PROGRAM & CALCULATION OF THE "UNADJUSTED" DEVELOPMENT CHARGES

The 2019 to 2028 development-related capital program consists of a provision for future development-related affordable housing to be provided later in the ten-year planning period.

In total, the Social Housing Services capital program amounts to $2.00 million, with a grant/subsidy share of $469,500. No replacement shares providing a benefit to the existing community have been identified. The ten per cent discount amounts to $153,100. There are no available DC reserves, and the capital program will not be benefitting a population beyond the 2019-2028 time period, so the remaining $1.38 million is eligible for DC recovery.

The $1.38 million is attributed entirely to residential development, and is divided by the ten-year growth of population in new units to result in an unadjusted per capita charge of $123.40.

TABLE 3 CASH FLOW ANALYSIS

After cash flow consideration, the residential calculated charge decreases slightly to $123.12 per capita. The following table summarizes the calculation of the Social Housing Services development charge:

SOCIAL HOUSING SERVICES SUMMARY

10-year Hist. Service Level	2019 - 2028 Development-Related Capital Program		Unadjusted Development Charge		**Adjusted Development Charge**	
per capita	Total	Net DC Recoverable	$/capita	$/sq.m	**$/capita**	**$/sq.m**
$697.21	$2,000,000	$1,377,450	$123.40	$0.00	**$123.12**	**$0.00**

APPENDIX B.3
TABLE 1

DISTRICT OF MUSKOKA
INVENTORY OF CAPITAL ASSETS
SOCIAL HOUSING SERVICES

BUILDINGS	# of Units										UNIT COST
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	($/unit)
Social Housing Units (1)	574	574	574	574	574	574	574	574	574	574	$137,000
Rent Supplement (2)	-	-	-	27	42	111	161	219	287	343	$2,760
Rent Supplements - Retirement Homes (3)	-	-	-	-	-	7	11	16	34	34	$2,760
Total (Units)	**574**	**574**	**574**	**601**	**616**	**692**	**746**	**809**	**895**	**951**	
Total ($000)	**$78,638.0**	**$78,638.0**	**$78,638.0**	**$78,712.5**	**$78,753.9**	**$78,963.7**	**$79,112.7**	**$79,286.6**	**$79,524.0**	**$79,678.5**	

(1) Are units developed under various government programs by DMM, private non-profits and co-operatives.

(2) Rent supplements are rental subsidies which are provided, under Agreement with the District, to a landlord and distributed by them to tenants in that building.

(3) Rent supplements retirement homes are rental subsidies which are provided, under Agreement with the District, to a retirment home operator and distributed by them to tenants in retirment homes.

Affordable Houisng Units	# of Units										UNIT COST
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	($/unit)
Affordable Rental (1)	36	54	134	145	145	149	175	181	221	230	$137,000
Total (Units)	**36**	**54**	**134**	**145**	**145**	**149**	**175**	**181**	**221**	**230**	
Total ($000)	**4,932**	**$7,398.0**	**$18,358.0**	**$19,865.0**	**$19,865.0**	**$20,413.0**	**$23,975.0**	**$24,797.0**	**$30,277.0**	**$31,510.0**	

(1) Units are supported by federal, provincial, and District capital funding programs.

APPENDIX B.3
TABLE 1

DISTRICT OF MUSKOKA
CALCULATION OF SERVICE LEVELS
SOCIAL HOUSING SERVICES

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Historical Population	138,105	139,439	140,787	141,872	142,968	142,917	142,868	142,822	143,852	144,890

INVENTORY SUMMARY ($000)

Buildings	$78,638.0	$78,638.0	$78,638.0	$78,712.5	$78,753.9	$78,963.7	$79,112.7	$79,286.6	$79,524.0	$79,678.5
Affordable Houisng Units	$4,932.0	$7,398.0	$18,358.0	$19,865.0	$19,865.0	$20,413.0	$23,975.0	$24,797.0	$30,277.0	$31,510.0
Total ($000)	**$83,570.0**	**$86,036.0**	**$96,996.0**	**$98,577.5**	**$98,618.9**	**$99,376.7**	**$103,087.7**	**$104,083.6**	**$109,801.0**	**$111,188.5**

SERVICE LEVEL ($/capita)

											Average Service Level
Buildings	$569.41	$563.96	$558.56	$554.81	$550.85	$552.51	$553.75	$555.14	$552.82	$549.92	$556.17
Affordable Houisng Units	$35.71	$53.06	$130.40	$140.02	$138.95	$142.83	$167.81	$173.62	$210.47	$217.48	$141.03
Total ($/capita)	**$605.12**	**$617.02**	**$688.96**	**$694.83**	**$689.80**	**$695.35**	**$721.56**	**$728.76**	**$763.29**	**$767.40**	**$697.21**

DISTRICT OF MUSKOKA
CALCULATION OF MAXIMUM ALLOWABLE
SOCIAL HOUSING SERVICES

10-Year Fuding Envelope Calculation	
10 Year Average Service Level (2009-2018)	$697.21
Net Population Growth 2009 - 2018	10,316
Maximum Allowable Funding Envelope	$7,192,418
Less: 10% Legislated Reduction	$719,242
Discounted Maximum Allowable Funding Envelope	$6,473,177

APPENDIX B.3
TABLE 2

DISTRICT OF MUSKOKA
DEVELOPMENT-RELATED CAPITAL PROGRAM
SOCIAL HOUSING SERVICES

Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs			Total Development Related Costs	Development-Related Costs		
					BTE (%)	Replacement & BTE Shares	10% Reduction		Available DC Reserves	2019-2028	Post 2028
3.0 SOCIAL HOUSING SERVICES											
3.1 Buildings, Land & Furnishings											
3.1.1 Provision for Development-Related Affordable Housing	Various	$ 2,000,000	$ 469,500	$ 1,530,500	0%	$ -	$ 153,050	$ 1,377,450	$ -	$ 1,377,450	$ -
TOTAL SOCIAL HOUSING SERVICES		**$ 2,000,000**	**$ 469,500**	**$ 1,530,500**		**$ -**	**$ 153,050**	**$ 1,377,450**	**$ -**	**$ 1,377,450**	**$ -**

Residential Development Charge Calculation		
Residential Share of 2019-2028 Discounted Growth-Related Capital Program	100%	$1,377,450
10 Year Growth in Population in New Units		11,162
Unadjusted Development Charge Per Capita ($)		**$123.40**
Non-Residential Development Charge Calculation		
Non-Residential Share of 2019-2028 Discounted Growth-Related Capital Program	0%	$0
10 Year Growth in Square Metres		54,680
Unadjusted Development Charge Per sq. m ($)		**$0.00**

2019 - 2028 Net Funding Envelope	$6,473,177
Reserve Fund Balance	
Balance as at December 31, 2013	$0

APPENDIX B.3
TABLE 3

DISTRICT OF MUSKOKA
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
SOCIAL HOUSING SERVICES
RESIDENTIAL DEVELOPMENT CHARGE
(in $000)

SOCIAL HOUSING SERVICES	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	$0.00	$14.54	$29.89	$46.07	$41.63	$36.91	$31.90	$26.60	$20.97	$10.70	
2019 - 2028 RESIDENTIAL FUNDING REQUIREMENTS											
- Social Housing Services: Non Inflated	$137.7	$137.7	$137.7	$137.7	$137.7	$137.7	$137.7	$137.7	$137.7	$137.7	**$1,377.5**
- Social Housing Services: Inflated	$137.7	$140.5	$143.3	$146.2	$149.1	$152.1	$155.1	$158.2	$161.4	$164.6	**$1,508.3**
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,235	1,235	1,235	1,074	1,074	1,074	1,074	1,074	1,045	1,045	**11,162**
REVENUE											
- DC Receipts: Inflated	$152.0	$155.1	$158.2	$140.3	$143.1	$146.0	$148.9	$151.8	$150.7	$153.7	**$1,499.7**
INTEREST											
- Interest on Opening Balance	$0.0	$0.5	$1.0	$1.6	$1.5	$1.3	$1.1	$0.9	$0.7	$0.4	**$9.1**
- Interest on In-year Transactions	$0.3	$0.3	$0.3	($0.2)	($0.2)	($0.2)	($0.2)	($0.2)	($0.3)	($0.3)	**($0.7)**
TOTAL REVENUE	$152.3	$155.8	$159.5	$141.7	$144.4	$147.1	$149.8	$152.6	$151.1	$153.8	**$1,508.1**
CLOSING CASH BALANCE	$14.5	$29.9	$46.1	$41.6	$36.9	$31.9	$26.6	$21.0	$10.7	($0.1)	

2019 Adjusted Charge Per Capita	**$123.12**

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

APPENDIX B.4

LONG TERM CARE

APPENDIX B.4

LONG TERM CARE

The District's Health Services Department is responsible for the provision of long-term care facilities and services: the Pines Long-Term Care Home, which contains 160 beds and is located in Bracebridge. The benefits of the Long Term Care service are considered to be District-wide for the purpose of calculating the development charge.

TABLE 1 HISTORICAL SERVICE LEVELS

Table 1 displays the ten-year historical inventory for the Long Term Care provided by the District. There is one long-term care facility with 125,200 square feet, which is valued at $28.34 million. It sits on 3.95 acres that are worth $427,000. The furniture and equipment, including medical and janitorial equipment, are valued at $2.15 million.

The combined replacement value of the District's inventory of capital assets for Long Term Care is $30.92 million. This results in a ten-year historical average service level of $212.12 per capita. The historical service level, multiplied by the ten-year net population growth (10,316), results in a ten-year maximum allowable funding envelope of $2.19 million. Finally, the required ten per cent discount totals $218,823 and so the remaining discounted funding envelope brought forward to the development charge calculation totals $1.97 million.

TABLE 2 2019–2028 DEVELOPMENT-RELATED CAPITAL PROGRAM & CALCULATION OF THE "UNADJUSTED" DEVELOPMENT CHARGES

The 2019 to 2028 development-related capital program consists of a provision for additional long-term care beds in Huntsville and South Muskoka in 2024 and 2028 respectively. The total cost of these two projects is $69.59 million. Both of these provisions are expected to receive significant provincial funding, totalling $57.76 million. The additional beds in Huntsville are expected to have a benefit to existing share of 48 per cent, resulting in a deduction of $2.84 million.

The ten per cent discount amounts to $899,270. There are no available DC reserves, but both projects are expected to benefit a future population beyond the 2019-2028 time period, so $6.12 million is attributed to post-2028 development.

The remaining $1.97 million is eligible for DC recovery. This amount is attributed entirely to residential development, and is divided by the ten year growth of population in new units to result in an unadjusted per capita charge of $176.43.

TABLE 3 CASH FLOW ANALYSIS

After cash flow consideration, the residential calculated charge increases to $179.08 per capita. The following table summarizes the calculation of the Long Term Care development charge:

LONG TERM CARE SUMMARY

10-year Hist. Service Level per capita	2019 - 2028 Development-Related Capital Program		Unadjusted Development Charge		**Adjusted Development Charge**	
	Total	Net DC Recoverable	$/capita	$/sq.m	**$/capita**	**$/sq.m**
$212.12	$69,590,000	$1,969,407	$176.43	$0.00	**$179.08**	**$0.00**

APPENDIX B.4
TABLE 1

DISTRICT OF MUSKOKA
INVENTORY OF CAPITAL ASSETS
LONG TERM CARE

BUILDINGS	# of Square Feet										UNIT COST
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	($/sq. ft.)
Old Pines (80 beds)	7,000	7,000	-	-	-	-	-	-	-	-	$226
New Pines (160 beds)	113,882	113,882	113,882	113,882	125,206	125,206	125,206	125,206	125,206	125,206	$226
Total (sq.ft.)	**120,882**	**120,882**	**113,882**	**113,882**	**125,206**	**125,206**	**125,206**	**125,206**	**125,206**	**125,206**	
Total ($000)	**$27,362.5**	**$27,362.5**	**$25,778.0**	**$25,778.0**	**$28,341.3**	**$28,341.3**	**$28,341.3**	**$28,341.3**	**$28,341.3**	**$28,341.3**	

LAND	# of Acres										UNIT COST
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	($/acres)
New Pines (160 beds)	3.95	3.95	3.95	3.95	3.95	3.95	3.95	3.95	3.95	3.95	$108,100
Total (acres)	**3.95**	**3.95**	**3.95**	**3.95**	**3.95**	**3.95**	**3.95**	**3.95**	**3.95**	**3.95**	
Total ($000)	**$427.0**	**$427.0**	**$427.0**	**$427.0**	**$427.0**	**$427.0**	**$427.0**	**$427.0**	**$427.0**	**$427.0**	

FURNITURE & EQUIPMENT	Total Value of Furniture & Equipment ($)									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Medical	$327,809	$327,809	$327,809	$327,809	$327,809	$327,809	$327,809	$352,610	$352,610	$352,610
Furniture	$1,589,414	$1,589,414	$1,589,414	$1,589,414	$1,680,525	$1,689,225	$1,694,896	$1,709,617	$1,717,698	$1,717,698
Janitorial	$81,668	$81,668	$81,668	$81,668	$81,668	$81,668	$81,668	$81,668	$81,668	$81,668
Total ($000)	**$1,998.9**	**$1,998.9**	**$1,998.9**	**$1,998.9**	**$2,090.0**	**$2,098.7**	**$2,104.4**	**$2,143.9**	**$2,152.0**	**$2,152.0**

APPENDIX B.4
TABLE 1

DISTRICT OF MUSKOKA
CALCULATION OF SERVICE LEVELS
LONG TERM CARE

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Historic Population	138,105	139,439	140,787	141,872	142,968	142,917	142,868	142,822	143,852	144,890

INVENTORY SUMMARY ($000)

Buildings	$27,362.5	$27,362.5	$25,778.0	$25,778.0	$28,341.3	$28,341.3	$28,341.3	$28,341.3	$28,341.3	$28,341.3
Land	$427.0	$427.0	$427.0	$427.0	$427.0	$427.0	$427.0	$427.0	$427.0	$427.0
Furniture & Equipment	$1,998.9	$1,998.9	$1,998.9	$1,998.9	$2,090.0	$2,098.7	$2,104.4	$2,143.9	$2,152.0	$2,152.0
Total ($000)	**$29,788.4**	**$29,788.4**	**$28,203.9**	**$28,203.9**	**$30,858.3**	**$30,867.0**	**$30,872.7**	**$30,912.2**	**$30,920.3**	**$30,920.3**

SERVICE LEVEL ($/capita)

											Average Service Level
Buildings	$198.13	$196.23	$183.10	$181.70	$198.24	$198.31	$198.37	$198.44	$197.02	$195.61	$194.51
Land	$3.09	$3.06	$3.03	$3.01	$2.99	$2.99	$2.99	$2.99	$2.97	$2.95	$3.01
Furniture & Equipment	$14.47	$14.34	$14.20	$14.09	$14.62	$14.68	$14.73	$15.01	$14.96	$14.85	$14.60
Total ($/capita)	**$215.69**	**$213.63**	**$200.33**	**$198.80**	**$215.84**	**$215.98**	**$216.09**	**$216.44**	**$214.94**	**$213.41**	**$212.12**

DISTRICT OF MUSKOKA
CALCULATION OF MAXIMUM ALLOWABLE
LONG TERM CARE

10-Year Funding Envelope Calculation	
10 Year Average Service Level 2009 - 2018	$212.12
Net Population Growth 2019 - 2028	10,316
Maximum Allowable Funding Envelope	$2,188,230
Less: 10% Legislated Reduction	$218,823
Discounted Maximum Allowable Funding Envelope	**$1,969,407**

APPENDIX B.4
TABLE 2

DISTRICT OF MUSKOKA
DEVELOPMENT-RELATED CAPITAL PROGRAM
LONG TERM CARE

Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs			Total Development Related Costs	Development-Related Costs		
					BTE (%)	Replacement & BTE Shares	10% Reduction		Available DC Reserves	2019-2028	Post 2028
4.0 LONG TERM CARE											
4.1 Buildings, Land & Furnishings											
4.1.1 Provision for Additional Beds in Huntsville	2024	$ 34,795,000	$ 28,878,750	$ 5,916,250	48%	$ 2,839,800	$ 307,645	$ 2,768,805	$ -	$ 1,969,407	$ 799,398
4.1.2 Provision for Additional Beds in South Muskoka	2028	$ 34,795,000	$ 28,878,750	$ 5,916,250	0%	$ -	$ 591,625	$ 5,324,625	$ -	$ -	$ 5,324,625
TOTAL LONG TERM CARE		**$ 69,590,000**	**$ 57,757,500**	**$ 11,832,500**		**$ 2,839,800**	**$ 899,270**	**$ 8,093,430**	**$ -**	**$ 1,969,407**	**$ 6,124,023**

Residential Development Charge Calculation		
Residential Share of 2019-2028 Discounted Growth-Related Capital Program	100%	$1,969,407
10 Year Growth in Population in New Units		11,162
Unadjusted Development Charge Per Capita ($)		**$176.43**
Non-Residential Development Charge Calculation		
Non-Residential Share of 2019-2028 Discounted Growth-Related Capital Program	0%	$0
10 Year Growth in Square Metres		54,680
Unadjusted Development Charge Per sq. m ($)		**$0.00**

2019 - 2028 Net Funding Envelope	$1,969,407
Reserve Fund Balance	
Balance as at December 31, 2018	$0

APPENDIX B.4
TABLE 3

DISTRICT OF MUSKOKA
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
LONG TERM CARE
RESIDENTIAL DEVELOPMENT CHARGE
(in $000)

LONG TERM CARE	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	$0.00	$225.01	$462.40	$712.69	$945.25	$1,190.11	($784.29)	($607.10)	($415.76)	($215.63)	
2019 - 2028 RESIDENTIAL FUNDING REQUIREMENTS											
- Long Term Care: Non Inflated	$0.0	$0.0	$0.0	$0.0	$0.0	$1,969.4	$0.0	$0.0	$0.0	$0.0	**$1,969.4**
- Long Term Care: Inflated	$0.0	$0.0	$0.0	$0.0	$0.0	$2,174.4	$0.0	$0.0	$0.0	$0.0	**$2,174.4**
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,235	1,235	1,235	1,074	1,074	1,074	1,074	1,074	1,045	1,045	**11,162**
REVENUE											
- DC Receipts: Inflated	$221.1	$225.6	$230.1	$204.0	$208.1	$212.3	$216.5	$220.9	$219.2	$223.6	**$2,181.4**
INTEREST											
- Interest on Opening Balance	$0.0	$7.9	$16.2	$24.9	$33.1	$41.7	($43.1)	($33.4)	($22.9)	($11.9)	**$12.5**
- Interest on In-year Transactions	$3.9	$3.9	$4.0	$3.6	$3.6	($54.0)	$3.8	$3.9	$3.8	$3.9	**($19.5)**
TOTAL REVENUE	$225.0	$237.4	$250.3	$232.6	$244.9	$200.0	$177.2	$191.3	$200.1	$215.6	**$2,174.4**
CLOSING CASH BALANCE	$225.0	$462.4	$712.7	$945.3	$1,190.1	($784.3)	($607.1)	($415.8)	($215.6)	($0.0)	

2019 Adjusted Charge Per Capita	**$179.08**

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

APPENDIX B.5

SOCIAL SERVICES

APPENDIX B.5

SOCIAL SERVICES

The District's Community and Planning Services Department provides a broad range of Social Services throughout the community. The benefits of these services are considered to be District-wide for the purpose of calculating the development charge.

TABLE 1 HISTORICAL SERVICE LEVELS

The District leases and operates several Social Services offices that total 11,200 square feet, and are valued at $3.38 million. These buildings sit on land totalling half an acre, which is valued at $159,000. Furniture and equipment add a further $2,000 to the Social Services inventory.

The combined replacement value for inventory in Social Services totals $3.54 million, with a ten-year average service level of $15.16 per population and employment. When multiplied by the ten-year net population and employment growth between 2019 and 2028, the resulting maximum funding envelope is $177,524. After a ten per cent deduction of $17,752 the discounted maximum allowable funding envelope totals $159,771.

As no development-related projects have been identified, development charges have not been calculated for Social Services.

SOCIAL SERVICES SUMMARY

10-year Hist. Service Level per pop & emp	2019 - 2028 Development-Related Capital Program		Unadjusted Development Charge		**Adjusted Development Charge**	
	Total	Net DC Recoverable	$/capita	$/sq.m	**$/capita**	**$/sq.m**
$15.16	$0	$0	$0.00	$0.00	**$0.00**	**$0.00**

APPENDIX B.5
TABLE 1

DISTRICT OF MUSKOKA
INVENTORY OF CAPITAL ASSETS
SOCIAL SERVICES

BUILDINGS	# of Square Feet										UNIT COST
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	($/sq. ft.)
1 King William St., Unit 5, Huntsville	1,993	1,993	1,993	1,993	1,993	3,200	3,200	3,200	3,200	3,200	$302
141 Main St, Gravenhurst	1,338	1,338	1,338	2,500	2,500	2,500	2,500	2,500	2,500	2,500	$302
205 Manitoba St., Bracebridge	2,436	2,436	2,436	2,436	2,436	2,436	2,436	2,436	$0	$0	$302
169 Pine Street	$0	$0	$0	$0	$0	$0	$0	$0	5,500	5,500	$302
Total (sq.ft.)	**5,767**	**5,767**	**5,767**	**6,929**	**6,929**	**8,136**	**8,136**	**8,136**	**11,200**	**11,200**	
Total ($000)	**$1,741.6**	**$1,741.6**	**$1,741.6**	**$2,092.6**	**$2,092.6**	**$2,457.1**	**$2,457.1**	**$2,457.1**	**$3,382.4**	**$3,382.4**	

LAND	# of Acres										UNIT COST
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	($/acres)
1 King William St., Unit 5, Huntsville	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	$318,000
141 Main St, Gravenhurst	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	$318,000
205 Manitoba St., Bracebridge	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	-	-	$318,000
Total (acres)	**0.65**	**0.65**	**0.65**	**0.65**	**0.65**	**0.65**	**0.65**	**0.65**	**0.50**	**0.50**	
Total ($000)	**$206.3**	**$206.3**	**$206.3**	**$206.3**	**$206.3**	**$206.7**	**$206.7**	**$206.7**	**$159.0**	**$159.0**	

FURNITURE & EQUIPMENT	Total Value of Furniture & Equipment ($)									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Furniture rental - 169 Pine Street	$2,027	$2,027	$2,027	$2,027	$2,027	$2,027	$2,027	$2,027	$2,027	$2,027
Total ($000)	**$2.0**	**$2.0**	**$2.0**	**$2.0**	**$2.0**	**$2.0**	**$2.0**	**$2.0**	**$2.0**	**$2.0**

APPENDIX B.5
TABLE 1

DISTRICT OF MUSKOKA
CALCULATION OF SERVICE LEVELS
SOCIAL SERVICES

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Historical Population	138,105	139,439	140,787	141,872	142,968	142,917	142,868	142,822	143,852	144,890
Historical Employment	26,682	26,247	25,820	25,852	25,884	25,916	25,948	25,980	26,111	26,247
Total Historical Population & Employment	164,787	165,686	166,607	167,724	168,852	168,833	168,816	168,802	169,963	171,137

INVENTORY SUMMARY ($000)

Buildings	$1,741.6	$1,741.6	$1,741.6	$2,092.6	$2,092.6	$2,457.1	$2,457.1	$2,457.1	$3,382.4	$3,382.4
Land	$206.3	$206.3	$206.3	$206.3	$206.3	$206.7	$206.7	$206.7	$159.0	$159.0
Furniture & Equipment	$2.0	$2.0	$2.0	$2.0	$2.0	$2.0	$2.0	$2.0	$2.0	$2.0
Total ($000)	**$1,950.0**	**$1,950.0**	**$1,950.0**	**$2,300.9**	**$2,300.9**	**$2,665.8**	**$2,665.8**	**$2,665.8**	**$3,543.4**	**$3,543.4**

SERVICE LEVEL ($/pop & emp)

											Average Service Level
Buildings	$10.57	$10.51	$10.45	$12.48	$12.39	$14.55	$14.55	$14.56	$19.90	$19.76	$13.97
Land	$1.25	$1.25	$1.24	$1.23	$1.22	$1.22	$1.22	$1.22	$0.94	$0.93	$1.17
Furniture & Equipment	$0.01	$0.01	$0.01	$0.01	$0.01	$0.01	$0.01	$0.01	$0.01	$0.01	$0.01
Total ($/pop & emp)	**$11.83**	**$11.77**	**$11.70**	**$13.72**	**$13.63**	**$15.79**	**$15.79**	**$15.79**	**$20.85**	**$20.71**	**$15.16**

DISTRICT OF MUSKOKA
CALCULATION OF MAXIMUM ALLOWABLE
SOCIAL SERVICES

10-Year Funding Envelope Calculation	
10 Year Average Service Level 2009 - 2018	$15.16
Net Population & Employment Growth 2019 - 2028	11,710
Maximum Allowable Funding Envelope	$177,524
Less: 10% Legislated Reduction	$17,752
Discounted Maximum Allowable Funding Envelope	**$159,771**

APPENDIX B.6

PARAMEDIC SERVICES

APPENDIX B.6

PARAMEDIC SERVICES

On January 1, 2001 The District assumed operational responsibility for the delivery of Paramedic Services from the provincial Ministry of Health and Long-Term Care. Muskoka Paramedic Services provides land ambulance services throughout the District that deliver emergency response and non-emergency medical transportation services. There are five paramedic stations located in Bracebridge, Gravenhurst, Huntsville, Mactier, and Port Carling. The benefits of Paramedic services are considered to be District-wide for the purpose of calculating the development charge.

TABLE 1 HISTORICAL SERVICE LEVELS

The District of Muskoka operates five ambulance stations that total 28,040 square feet and are valued at $12.45 million. These stations occupy 4.78 acres of land that are altogether worth $1.52 million. The ambulance fleet includes 13 ambulances and 3 Command Response Units, and are valued at $2.86 million.

The new Bracebridge Station, opened in 2017, was funded from property taxes to address existing deficiencies in needs. There is no excess available capacity within this station.

The total value of the Paramedic Service inventory of capital assets is $16.83 million. The resulting ten-year historical average service level is $71.56 per population and employment, and this, multiplied by the ten-year growth in population and employment, results in a maximum allowable funding envelope of $837,968. After applying the statutory ten per cent discount, the resulting discounted maximum allowable funding envelope is $754,171.

TABLE 2 2019 – 2028 DEVELOPMENT-RELATED CAPITAL PROGRAM & CALCULATION OF THE "UNADJUSTED" DEVELOPMENT CHARGES

The ten-year development-related capital program for Paramedic Services totals $4.94 million. The majority of the capital program is for two replacement stations in Mactier and Port Carling, which altogether will cost $4.53 million. The remaining capital program consists of the purchase of new ambulance vehicles.

Because both new stations will be replacing existing stations, there is a deduction for replacement shares that totals $2.04 million. The ten per cent deduction removes

another $289,800 from the calculation. Because much of the capital program is expected to benefit the population beyond the 2019-2028 time period, $1.85 million has been deemed post-2028 recovery. The remaining $754,171 is brought forward into the DC calculation and will be recovered during the 2019-2028 time period.

This cost is allocated 89 per cent or $670,442 against new residential development and 11 per cent or $83,728 to non-residential development. When applied to the ten-year growth in population in new units (11,162) and growth in square metres of non-residential building space (54,680), unadjusted development charges of $60.06 per capita and $1.53 per square metre result.

TABLE 3 CASH FLOW ANALYSIS

After cash flow considerations, both the residential and non-residential development charges increase to $64.58 per capita and $1.66 per square metre, respectively. The increases represent the front-ended nature of the timing of the capital program.

The following table summarizes the calculation of the Paramedic Services development charge:

PARAMEDIC SERVICES SUMMARY

10-year Hist. Service Level per pop & emp	2019 - 2028 Development-Related Capital Program		Unadjusted Development Charge		**Adjusted Development Charge**	
	Total	Net DC Recoverable	$/capita	$/sq.m	**$/capita**	**$/sq.m**
$71.56	$4,935,600	$754,171	$60.06	$1.53	**$64.58**	**$1.66**

APPENDIX B.6
TABLE 1

DISTRICT OF MUSKOKA
INVENTORY OF CAPITAL ASSETS
PARAMEDIC SERVICES

BUILDINGS	# of Square Feet										UNIT COST
Station Name	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	($/sq. ft.)
Mactier	2,734	2,734	2,734	2,734	2,734	2,734	2,734	2,734	2,734	2,734	$400
Port Carling	1,717	2,360	2,360	2,360	2,360	2,360	2,360	2,360	2,360	2,360	$400
Huntsville	1,488	5,317	5,317	5,317	5,317	5,317	5,317	5,317	5,317	5,317	$400
Gravenhurst	3,825	3,825	3,825	3,825	3,825	3,285	3,285	3,285	3,285	3,285	$470
Bracebridge (Old)	3,310	3,310	3,310	3,310	3,310	3,310	3,310	3,310	-	-	$470
New Bracebridge Ambulance Station	-	-	-	-	-	-	-	-	14,344	14,344	$470
Total (sq.ft.)	**13,074**	**17,546**	**17,546**	**17,546**	**17,546**	**17,006**	**17,006**	**17,006**	**28,040**	**28,040**	
Total ($000)	**$5,729.1**	**$7,517.9**	**$7,517.9**	**$7,517.9**	**$7,517.9**	**$7,264.1**	**$7,264.1**	**$7,264.1**	**$12,450.0**	**$12,450.0**	

LAND	# of Acres										UNIT COST
Station Name	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	($/acres)
Mactier	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	$318,000
Port Carling	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	$318,000
Huntsville	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	$318,000
Gravenhurst	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	$318,000
Bracebridge (Old)	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	-	-	$318,000
New Bracebridge Ambulance Station	-	-	-	-	-	-	-	-	2.58	2.58	$318,000
Total (acres)	**2.83**	**2.83**	**2.83**	**2.83**	**2.83**	**2.83**	**2.83**	**2.83**	**4.78**	**4.78**	
Total ($000)	**$899.2**	**$899.2**	**$899.2**	**$899.2**	**$899.2**	**$899.9**	**$899.9**	**$899.9**	**$1,520.0**	**$1,520.0**	

VEHICLES	# of Vehicles										UNIT COST
Vehicle Type	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	($/vehicle)
First/Command Response Units	2	2	2	2	2	2	2	2	3	3	$65,100
Trailer	1	1	1	1	1	1	1	-	-	-	$7,280
Ambulances	12	12	13	13	13	13	13	13	13	13	$ 205,300
Total (#)	**15**	**15**	**16**	**16**	**16**	**16**	**16**	**15**	**16**	**16**	
Total ($000)	**$2,601.1**	**$2,601.1**	**$2,806.4**	**$2,806.4**	**$2,806.4**	**$2,806.4**	**$2,806.4**	**$2,799.1**	**$2,864.2**	**$2,864.2**	

APPENDIX B.6
TABLE 1

DISTRICT OF MUSKOKA
CALCULATION OF SERVICE LEVELS
PARAMEDIC SERVICES

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Historical Population	138,105	139,439	140,787	141,872	142,968	142,917	142,868	142,822	143,852	144,890
Historical Employment	26,682	26,247	25,820	25,852	25,884	25,916	25,948	25,980	26,111	26,247
Total Historical Population & Employment	164,787	165,686	166,607	167,724	168,852	168,833	168,816	168,802	169,963	171,137

INVENTORY SUMMARY ($000)

Buildings	$5,729.1	$7,517.9	$7,517.9	$7,517.9	$7,517.9	$7,264.1	$7,264.1	$7,264.1	$12,450.0	$12,450.0
Land	$899.2	$899.2	$899.2	$899.2	$899.2	$899.9	$899.9	$899.9	$1,520.0	$1,520.0
Vehicles	$2,601.1	$2,601.1	$2,806.4	$2,806.4	$2,806.4	$2,806.4	$2,806.4	$2,799.1	$2,864.2	$2,864.2
Total ($000)	**$9,229.3**	**$11,018.1**	**$11,223.4**	**$11,223.4**	**$11,223.4**	**$10,970.4**	**$10,970.4**	**$10,963.1**	**$16,834.3**	**$16,834.3**

SERVICE LEVEL ($/pop and emp)

											Average Service Level
Buildings	$34.77	$45.37	$45.12	$44.82	$44.52	$43.03	$43.03	$43.03	$73.25	$72.75	$48.97
Land	$5.46	$5.43	$5.40	$5.36	$5.33	$5.33	$5.33	$5.33	$8.94	$8.88	$6.08
Vehicles	$15.78	$15.70	$16.84	$16.73	$16.62	$16.62	$16.62	$16.58	$16.85	$16.74	$16.51
Total ($/pop & emp)	**$56.01**	**$66.50**	**$67.36**	**$66.92**	**$66.47**	**$64.98**	**$64.98**	**$64.95**	**$99.05**	**$98.37**	**$71.56**

DISTRICT OF MUSKOKA
CALCULATION OF MAXIMUM ALLOWABLE
PARAMEDIC SERVICES

10-Year Funding Envelope Calculation	
10 Year Average Service Level 2009 - 2018	$71.56
Net Population & Employment Growth 2019 - 2028	11,710
Maximum Allowable Funding Envelope	$837,968
Less: 10% Legislated Reduction	$83,797
Discounted Maximum Allowable Funding Envelope	**$754,171**

APPENDIX B.6
TABLE 2

DISTRICT OF MUSKOKA
DEVELOPMENT-RELATED CAPITAL PROGRAM
PARAMEDIC SERVICES

Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs			Total Development Related Costs	Development-Related Costs		
					BTE (%)	Replacement & BTE Shares	10% Reduction		Available DC Reserves	2019-2028	Post 2028
6.0 PARAMEDIC SERVICES											
6.1 Buildings, Land & Furnishings											
8.1.3 $ -	2026		$ -	$ -	94%	$ -	$ -	$ -	$ -	$ -	$ -
8.1.4 $ -	2021		$ -	$ -	94%	$ -	$ -	$ -	$ -	$ -	$ -
6.1.1 New Mactier Station Land	2021	$ 500,000	$ -	$ 500,000	0%	$ -	$ 50,000	$ 450,000	$ -	$ 450,000	$ -
6.1.2 New Port Carling Station Land	2025	$ 500,000	$ -	$ 500,000	0%	$ -	$ 50,000	$ 450,000	$ -	$ 19,411	$ 430,589
6.1.3 New Mactier Station (3,000sq.ft.) - replacement	2022	$ 1,410,000	$ -	$ 1,410,000	78%	$ 1,093,600	$ 31,640	$ 284,760	$ -	$ 284,760	$ -
6.1.4 New Port Carling Station (4,500sq.ft.) - replacement	2026	$ 2,115,000	$ -	$ 2,115,000	45%	$ 944,000	$ 117,100	$ 1,053,900	$ -	$ -	$ 1,053,900
Subtotal Buildings, Land & Furnishings		$ 4,525,000	$ -	$ 4,525,000		$ 2,037,600	$ 248,740	$ 2,238,660	$ -	$ 754,171	$ 1,484,489
6.2 Vehicles											
6.2.1 New Ambulance Vehicles	2023	$ 205,300	$ -	$ 205,300	0%	$ -	$ 20,530	$ 184,770	$ -	$ -	$ 184,770
6.2.2 New Ambulance Vehicles	2027	$ 205,300	$ -	$ 205,300	0%	$ -	$ 20,530	$ 184,770	$ -	$ -	$ 184,770
Subtotal Vehicles		$ 410,600	$ -	$ 410,600		$ -	$ 41,060	$ 369,540	$ -	$ -	$ 369,540
TOTAL PARAMEDIC SERVICES		**$ 4,935,600**	**$ -**	**$ 4,935,600**		**$ 2,037,600**	**$ 289,800**	**$ 2,608,200**	**$ -**	**$ 754,171**	**$ 1,854,029**

Residential Development Charge Calculation		
Residential Share of 2019-2028 Discounted Growth-Related Capital Program	89%	$670,442
10 Year Growth in Population in New Units		11,162
Unadjusted Development Charge Per Capita ($)		**$60.06**
Non-Residential Development Charge Calculation		
Non-Residential Share of 2019-2028 Discounted Growth-Related Capital Program	11%	$83,728
10 Year Growth in Square Metres		54,680
Unadjusted Development Charge Per sq. m ($)		**$1.53**

2019 - 2028 Net Funding Envelope	$754,171
Reserve Fund Balance	
Balance as at December 31, 2018	$0

APPENDIX B.6
TABLE 3

DISTRICT OF MUSKOKA
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
PARAMEDIC SERVICES
RESIDENTIAL DEVELOPMENT CHARGE
(in $000)

PARAMEDIC SERVICES	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	$0.00	$81.09	$166.66	($169.88)	($379.62)	($324.09)	($263.97)	($218.80)	($149.84)	($77.70)	
2019 - 2028 RESIDENTIAL FUNDING REQUIREMENTS											
- Paramedic Services: Non Inflated	$0.0	$0.0	$400.0	$253.1	$0.0	$0.0	$17.3	$0.0	$0.0	$0.0	**$670.4**
- Paramedic Services: Inflated	$0.0	$0.0	$416.2	$268.6	$0.0	$0.0	$19.4	$0.0	$0.0	$0.0	**$704.3**
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,235	1,235	1,235	1,074	1,074	1,074	1,074	1,074	1,045	1,045	**11,162**
REVENUE											
- DC Receipts: Inflated	$79.7	$81.3	$83.0	$73.6	$75.1	$76.6	$78.1	$79.6	$79.0	$80.6	**$786.6**
INTEREST											
- Interest on Opening Balance	$0.0	$2.8	$5.8	($9.3)	($20.9)	($17.8)	($14.5)	($12.0)	($8.2)	($4.3)	**($78.4)**
- Interest on In-year Transactions	$1.4	$1.4	($9.2)	($5.4)	$1.3	$1.3	$1.0	$1.4	$1.4	$1.4	**($3.8)**
TOTAL REVENUE	$81.1	$85.6	$79.7	$58.9	$55.5	$60.1	$64.6	$69.0	$72.1	$77.7	**$704.3**
CLOSING CASH BALANCE	$81.1	$166.7	($169.9)	($379.6)	($324.1)	($264.0)	($218.8)	($149.8)	($77.7)	$0.0	

2019 Adjusted Charge Per Capita	**$64.58**

Allocation of Capital Program	
Residential Sector	88.9%
Non-Residential Sector	11.1%
Rates for 2019	
Inflation Rate:	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX B.6
TABLE 3

DISTRICT OF MUSKOKA
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
PARAMEDIC SERVICES
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in $000)

PARAMEDIC SERVICES	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	$0.00	$9.12	$18.81	($24.28)	($50.17)	($42.84)	($34.90)	($28.71)	($19.90)	($10.14)	
2019 - 2028 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Paramedic Services: Non Inflated	$0.0	$0.0	$50.0	$31.6	$0.0	$0.0	$2.2	$0.0	$0.0	$0.0	**$83.7**
- Paramedic Services: Inflated	$0.0	$0.0	$52.0	$33.5	$0.0	$0.0	$2.4	$0.0	$0.0	$0.0	**$88.0**
NON-RESIDENTIAL SPACE GROWTH											
- Growth in Square Metres	5,400	5,440	5,440	5,480	5,520	5,520	5,560	5,357	5,483	5,480	**54,680**
REVENUE											
- DC Receipts: Inflated	$9.0	$9.2	$9.4	$9.7	$9.9	$10.1	$10.4	$10.2	$10.7	$10.9	**$99.4**
INTEREST											
- Interest on Opening Balance	$0.0	$0.3	$0.7	($1.3)	($2.8)	($2.4)	($1.9)	($1.6)	($1.1)	($0.6)	**($10.6)**
- Interest on In-year Transactions	$0.2	$0.2	($1.2)	($0.7)	$0.2	$0.2	$0.1	$0.2	$0.2	$0.2	**($0.5)**
TOTAL REVENUE	$9.1	$9.7	$8.9	$7.7	$7.3	$7.9	$8.6	$8.8	$9.8	$10.5	**$88.3**
CLOSING CASH BALANCE	$9.1	$18.8	($24.3)	($50.2)	($42.8)	($34.9)	($28.7)	($19.9)	($10.1)	$0.4	

2019 Adjusted Charge Per Square Metre	**$1.66**

Allocation of Capital Program	
Residential Sector	88.9%
Non-Residential Sector	11.1%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX B.7

WASTE MANAGEMENT SERVICES

APPENDIX B.7

WASTE MANAGEMENT SERVICES

The District's Engineering and Public Works Department is responsible for an integrated system of waste collection, diversion, and processing. There are currently ten transfer stations, three depots and ninety remote bin sites located across the six area municipalities. Diverted material and garbage is processed or disposed of at the various sites. Transfer and haulage operations are facilitated by the District and contracted out to external operators.

As of January 1, 2016, the *Development Charges Act* permits the inclusion of capital costs associated with all waste management operations with the exception of incineration and landfill activities. Facilities, land, vehicles and equipment associated with the latter have been removed from the development charges calculation, both in the historical service level calculation and the development-related capital program. The benefits of the eligible waste management services are considered to be District-wide for the purpose of calculating the development charge.

TABLE 1 HISTORICAL SERVICE LEVELS

The District of Muskoka operates a number of waste diversion sites located throughout the District. A variety of waste-related services are provided at these sites, including diversion, landfill, and processing. As landfill is ineligible under the *DCA,* shares have been removed from each site to account for the portion of each item in the inventory that relates to landfill operations. These shares were determined by District Staff.

The total square footage of buildings that relate to the eligible operations of waste management services totalled 8,226 in 2018. This space is valued at $823,000. The land at all sites related to the eligible portions of the service provision total 54.9 acres, which is worth $5.93 million.

There are 35 vehicles that relate to the eligible provision of Waste Management Services, which are valued at $7.24 million. Another $32.25 million of equipment is included in the inventory, which consists of scales, mechanical equipment, bins, and compactors.

The total value of the inventory of capital assets for Waste Management Services in 2018 was $46.25 million, resulting in a ten-year historical average service level of $276.47 per capita. The historical service level, multiplied by the ten-year net

population growth, results in a ten-year maximum allowable funding envelope of $2.85 million. The ten per cent reduction totals $285,206 and must be netted out. As such, the maximum allowable funding envelope brought forward to the development charges calculation is reduced to $2.57 million.

TABLE 2 2019 – 2028 DEVELOPMENT-RELATED CAPITAL PROGRAM & CALCULATION OF THE "UNADJUSTED" DEVELOPMENT CHARGES

The ten-year development-related capital plan for Waste Management totals $2.34 million. It includes provisions for new vehicles, compactors, a compost pad, and facilities. In addition it includes a land purchase feasibility study and a waste management study. There are no identified grants or subsidies or replacement shares. The ten per cent discount removes $234,500 from the calculation. The remaining $2.11 million is eligible for recovery through development charges in the 2019-2028 period. This amount is entirely allocated to the residential sector, yielding an unadjusted residential development charge of $189.07 per capita.

TABLE 3 CASH FLOW ANALYSIS

After cash flow consideration, the residential charge increases to $209.53. The following table summarizes the calculation of the Waste Management Services development charge:

WASTE MANAGEMENT SERVICES SUMMARY

10-year Hist. Service Level per pop & emp	2019 - 2028 Development-Related Capital Program		Unadjusted Development Charge		**Adjusted Development Charge**	
	Total	Net DC Recoverable	$/capita	$/sq.m	**$/capita**	**$/sq.m**
$276.47	$2,345,000	$2,110,500	$189.07	$0.00	**$209.53**	**$0.00**

APPENDIX B.7
TABLE 1

DISTRICT OF MUSKOKA
INVENTORY OF CAPITAL ASSETS
WASTE MANAGEMENT SERVICES

BUILDINGS	# of Square Feet										UNIT COST
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	($/sq. ft.)
Buildings (re-use, sheds, storage, office)	6,706	6,896	7,086	7,276	7,466	7,656	7,846	8,036	8,226	8,226	$ 100
Total (sq.ft.)	**6,706**	**6,896**	**7,086**	**7,276**	**7,466**	**7,656**	**7,846**	**8,036**	**8,226**	**8,226**	
Total ($000)	**$671**	**$690**	**$709**	**$728**	**$747**	**$766**	**$785**	**$804**	**$823**	**$823**	

LAND	# of Acres										UNIT COST
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	($/acres)
Land	54.9	54.9	54.9	54.9	54.9	54.9	54.9	54.9	54.9	54.9	$ 108,100
Total (acres)	**54.9**	**54.9**	**54.9**	**54.9**	**54.9**	**54.9**	**54.9**	**54.9**	**54.9**	**54.9**	
Total ($000)	**$5,931**	**$5,931**	**$5,931**	**$5,931**	**$5,931**	**$5,931**	**$5,931**	**$5,931**	**$5,931**	**$5,931**	

VEHICLES	# of Vehicles										UNIT COST
Vehicle Type	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	($/vehicle)
Vehicles	7	7	9	12	14	17	17	18	18	18	$ 113,200
Collection (Contract)	10	11	12	12	13	13	14	15	16	17	$ 307,500
Total (#)	**17**	**18**	**21**	**24**	**27**	**30**	**31**	**33**	**34**	**35**	
Total ($000)	**$3,867**	**$4,175**	**$4,664**	**$5,003**	**$5,605**	**$5,899**	**$6,207**	**$6,627**	**$6,935**	**$7,242**	

EQUIPMENT	# of Pieces of Equipment										UNIT COST
Description	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	($/unit)
Scales	9	10	10	10	11	11	11	11	11	11	$ 774,600
Mechanical, electrical, tank, snow blower	1	1	1	1	1	2	2	4	4	4	$ 108,275
Bins	259	265	274	274	274	286	286	286	286	286	$ 39,900
Compactors	-	-	6	7	8	15	15	15	15	15	$ 792,500
Total (#)	**269**	**276**	**291**	**292**	**294**	**314**	**314**	**316**	**316**	**316**	
Total ($000)	**$17,414**	**$18,428**	**$23,542**	**$24,334**	**$25,901**	**$32,036**	**$32,036**	**$32,253**	**$32,253**	**$32,253**	

APPENDIX B.7
TABLE 1

DISTRICT OF MUSKOKA
CALCULATION OF SERVICE LEVELS
WASTE MANAGEMENT SERVICES

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Historical Population	138,105	139,439	140,787	141,872	142,968	142,917	142,868	142,822	143,852	144,890

INVENTORY SUMMARY ($000)

Buildings	$670.6	$689.6	$708.6	$727.6	$746.6	$765.6	$784.6	$803.6	$822.6	$822.6
Land	$5,930.9	$5,930.9	$5,930.9	$5,930.9	$5,930.9	$5,930.9	$5,930.9	$5,930.9	$5,930.9	$5,930.9
Vehicles	$3,867.4	$4,174.9	$4,663.5	$5,003.1	$5,604.9	$5,899.3	$6,206.8	$6,627.5	$6,935.0	$7,242.5
Equipment	$17,413.8	$18,427.8	$23,541.9	$24,334.4	$25,901.5	$32,036.1	$32,036.1	$32,252.6	$32,252.6	$32,252.6
Total ($000)	**$27,882.6**	**$29,223.1**	**$34,844.8**	**$35,995.9**	**$38,183.9**	**$44,631.8**	**$44,958.3**	**$45,614.5**	**$45,941.0**	**$46,248.5**

SERVICE LEVEL ($/capita)

											Average Service Level
Buildings	$4.86	$4.95	$5.03	$5.13	$5.22	$5.36	$5.49	$5.63	$5.72	$5.68	$ 5.31
Land	$42.94	$42.53	$42.13	$41.80	$41.48	$41.50	$41.51	$41.53	$41.23	$40.93	$ 41.76
Vehicles	$28.00	$29.94	$33.12	$35.27	$39.20	$41.28	$43.44	$46.40	$48.21	$49.99	$ 39.49
Equipment	$126.09	$132.16	$167.22	$171.52	$181.17	$224.16	$224.24	$225.82	$224.21	$222.60	$ 189.92
Total ($/capita)	**$201.89**	**$209.58**	**$247.50**	**$253.72**	**$267.08**	**$312.29**	**$314.68**	**$319.38**	**$319.36**	**$319.20**	**$ 276.47**

10-Year Funding Envelope Calculation	
10 Year Average Service Level 2009 - 2018	$276.47
Net Population Growth 2019 - 2028	10,316
Maximum Allowable Funding Envelope	$2,852,065
Less: 10% Legislated Reduction	$285,206
Discounted Maximum Allowable Funding Envelope	**$2,566,858**

APPENDIX B.7
TABLE 2

DISTRICT OF MUSKOKA
DEVELOPMENT-RELATED CAPITAL PROGRAM
WASTE MANAGEMENT SERVICES

Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs			Total Development Related Costs	Development-Related Costs		
					BTE (%)	Replacement & BTE Shares	10% Reduction		Available DC Reserves	2019-2028	Post 2028
7.0 WASTE MANAGEMENT SERVICES											
7.1 Buildings, Land & Furnishings											
7.1.1 New Huntsville TS Upon Stisted Closure	2019	$ 500,000	$ -	$ 500,000	0%	$ -	$ 50,000	$ 450,000	$ -	$ 450,000	$ -
7.1.2 Beiers TS Facilities (Washroom/Lunchroom/ Office Trail	2019	$ 200,000	$ -	$ 200,000	0%	$ -	$ 20,000	$ 180,000	$ -	$ 180,000	$ -
7.1.3 RW Compost Pad (RAP, SWM & Bear Fence)	2020	$ 500,000	$ -	$ 500,000	0%	$ -	$ 50,000	$ 450,000	$ -	$ 450,000	$ -
Subtotal Buildings, Land & Furnishings		$ 1,200,000	$ -	$ 1,200,000		$ -	$ 120,000	$ 1,080,000	$ -	$ 1,080,000	$ -
7.2 Vehicles & Equipment											
7.2.1 Additional Vehicles	2020	$ 131,000	$ -	$ 131,000	0%	$ -	$ 13,100	$ 117,900	$ -	$ 117,900	$ -
7.2.2 Additional Vehicles	2024	$ 131,000	$ -	$ 131,000	0%	$ -	$ 13,100	$ 117,900	$ -	$ 117,900	$ -
7.2.3 Additional Vehicles	2026	$ 131,000	$ -	$ 131,000	0%	$ -	$ 13,100	$ 117,900	$ -	$ 117,900	$ -
Subtotal Vehicles & Equipment		$ 393,000	$ -	$ 393,000		$ -	$ 39,300	$ 353,700	$ -	$ 353,700	$ -
7.3 Compactors											
7.3.1 Recycling Compactors at Rosewarne	2019	$ 200,000	$ -	$ 200,000	0%	$ -	$ 20,000	$ 180,000	$ -	$ 180,000	$ -
7.3.2 Garbage/Recycling Compactors at Eveleigh Road	2019	$ 100,000	$ -	$ 100,000	0%	$ -	$ 10,000	$ 90,000	$ -	$ 90,000	$ -
7.3.3 Garbage/Recycling Compactors at Eveleigh Road	2020	$ 102,000	$ -	$ 102,000	0%	$ -	$ 10,200	$ 91,800	$ -	$ 91,800	$ -
7.3.4 Garbage/Recycling Compactors at HV TS	2021	$ 250,000	$ -	$ 250,000	0%	$ -	$ 25,000	$ 225,000	$ -	$ 225,000	$ -
Subtotal Compactors		$ 652,000	$ -	$ 652,000		$ -	$ 65,200	$ 586,800	$ -	$ 586,800	$ -
7.4 Studies											
7.4.1 Feasibility Study - Land Purchase	2019	$ 25,000	$ -	$ 25,000	30%	$ -	$ 2,500	$ 22,500	$ -	$ 22,500	$ -
7.4.2 DMM Waste Management Strategy	2024	$ 75,000	$ -	$ 75,000	0%	$ -	$ 7,500	$ 67,500	$ -	$ 67,500	$ -
Subtotal Studies		$ 100,000	$ -	$ 100,000		$ -	$ 10,000	$ 90,000	$ -	$ 90,000	$ -
TOTAL WASTE MANAGEMENT SERVICES		**$ 2,345,000**	**$ -**	**$ 2,345,000**		**$ -**	**$ 234,500**	**$ 2,110,500**	**$ -**	**$ 2,110,500**	**$ -**

Residential Development Charge Calculation		
Residential Share of 2019-2028 Discounted Growth-Related Capital Program	100%	$2,110,500
10 Year Growth in Population in New Units		11,162
Unadjusted Development Charge Per Capita ($)		**$189.07**
Non-Residential Development Charge Calculation		
Non-Residential Share of 2019-2028 Discounted Growth-Related Capital Program	0%	$0
10 Year Growth in Square Metres		54,680
Unadjusted Development Charge Per sq. m ($)		**$0.00**

2019 - 2028 Net Funding Envelope	$2,566,858
Reserve Fund Balance Balance as at December 31, 2018	$0

APPENDIX B.7
TABLE 3

DISTRICT OF MUSKOKA
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
WASTE MANAGEMENT SERVICES
RESIDENTIAL DEVELOPMENT CHARGE
(in $000)

WASTE MANAGEMENT SERVICES	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	$0.00	($682.01)	($1,139.74)	($1,166.70)	($987.95)	($794.51)	($793.75)	($579.62)	($486.35)	($252.18)	
2019 - 2028 RESIDENTIAL FUNDING REQUIREMENTS											
- Waste Management Services: Non Inflated	$922.5	$659.7	$225.0	$0.0	$0.0	$185.4	$0.0	$117.9	$0.0	$0.0	**$2,110.5**
- Waste Management Services: Inflated	$922.5	$672.9	$234.1	$0.0	$0.0	$204.7	$0.0	$135.4	$0.0	$0.0	**$2,169.6**
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,235	1,235	1,235	1,074	1,074	1,074	1,074	1,074	1,045	1,045	**11,162**
REVENUE											
- DC Receipts: Inflated	$258.7	$263.9	$269.2	$238.7	$243.5	$248.4	$253.4	$258.4	$256.4	$261.6	**$2,552.3**
INTEREST											
- Interest on Opening Balance	$0.0	($37.5)	($62.7)	($64.2)	($54.3)	($43.7)	($43.7)	($31.9)	($26.7)	($13.9)	**($378.6)**
- Interest on In-year Transactions	($18.3)	($11.2)	$0.6	$4.2	$4.3	$0.8	$4.4	$2.2	$4.5	$4.6	**($4.0)**
TOTAL REVENUE	$240.5	$215.2	$207.1	$178.8	$193.4	$205.5	$214.1	$228.7	$234.2	$252.3	**$2,169.7**
CLOSING CASH BALANCE	($682.0)	($1,139.7)	($1,166.7)	($987.9)	($794.5)	($793.7)	($579.6)	($486.4)	($252.2)	$0.1	

2019 Adjusted Charge Per Capita	**$209.53**

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

APPENDIX B.8

ADMINISTRATION

APPENDIX B.8

ADMINISTRATION

The *DCA* allows the cost of development-related studies and other general government functions to be included in the calculation of development charges. Consistent with s. 5 (1) 7 of the *DCA*, the eligible development-related net capital cost for the provision of studies and permitted general government expenditures is reduced by ten per cent when calculating the development charges. The benefits of Administration services are considered to be District-wide for the purpose of calculating the development charge.

TABLE 1 2019 – 2028 DEVELOPMENT-RELATED CAPITAL PROGRAM AND CALCULATION OF THE "UNADJUSTED" DEVELOPMENT CHARGES

As shown in Table 1, the 2019-2028 development-related gross cost for general government is $868,600. The capital program relates to various development-related studies, including two future Development Charges Studies, two Second Home Studies, two Natural Heritage Reviews, and annual expenditures related to Official Plan updates.

Benefit to existing shares have been calculated at 50 per cent of the net municipal costs for many of the studies, totalling $314,300. This is to account for the portion of certain studies that will review the state of existing infrastructure and make recommendations for its improvement. Only development-related and development charges studies are not subject to a benefit to existing deduction.

The legislated ten per cent discount totals $55,430 and is deducted from the capital costs. The remaining DC eligible share totals $498,870, all of which is eligible for recovery over the ten-year planning period under review.

This amount is apportioned 89 per cent ($443,485) to residential development and 11 per cent ($55,385) to non-residential development. The resulting unadjusted charges for Administration are $39.73 per capita and $1.01 per square metre of non-residential development.

TABLE 2 CASH FLOW ANALYSIS

The cash flow analysis is displayed in Table 2 and considers the timing of the development charges revenues to determine the adjusted rates. After cash flow

considerations, the residential development charge increases to $40.30 per capita and the non-residential charge increases to $1.05 per square metre.

ADMINISTRATION SUMMARY

2019 - 2028 Development-Related Capital Program		Unadjusted Development Charge		**Adjusted Development Charge**	
Total	Net DC Recoverable	$/capita	$/sq.m	**$/capita**	**$/sq.m**
$868,600	$498,870	$39.73	$1.01	**$40.30**	**$1.05**

APPENDIX B.8
TABLE 1

DISTRICT OF MUSKOKA
DEVELOPMENT-RELATED CAPITAL PROGRAM
ADMINISTRATION

Project Description	Timing	Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs			Total Development Related Costs	Development-Related Costs		
					BTE (%)	Replacement & BTE Shares	10% Reduction		Available DC Reserves	2019-2028	Post 2028
8.0 ADMINISTRATION											
8.1 Studies											
8.1.1 Development Charges Study Future	2023	$ 70,000		$ 70,000	0%	$ -	$ 7,000	$ 63,000	$ -	$ 63,000	$ -
8.1.2 Development Charges Study Future	2028	$ 70,000	$ -	$ 70,000	0%	$ -	$ 7,000	$ 63,000	$ -	$ 63,000	$ -
8.1.3 OP Review - Minett Policies	2019	$ 250,000	$ -	$ 250,000	50%	$ 125,000	$ 12,500	$ 112,500	$ -	$ 112,500	$ -
8.1.4 Annual Provison for Official Plan Update	2020	$ 21,400	$ -	$ 21,400	50%	$ 10,700	$ 1,070	$ 9,630	$ -	$ 9,630	$ -
8.1.5 Annual Provison for Official Plan Update	2021	$ 21,700	$ -	$ 21,700	50%	$ 10,850	$ 1,085	$ 9,765	$ -	$ 9,765	$ -
8.1.6 Annual Provison for Official Plan Update	2022	$ 22,100	$ -	$ 22,100	50%	$ 11,050	$ 1,105	$ 9,945	$ -	$ 9,945	$ -
8.1.7 Annual Provison for Official Plan Update	2023	$ 22,400	$ -	$ 22,400	50%	$ 11,200	$ 1,120	$ 10,080	$ -	$ 10,080	$ -
8.1.8 Annual Provison for Official Plan Update	2024	$ 22,800	$ -	$ 22,800	50%	$ 11,400	$ 1,140	$ 10,260	$ -	$ 10,260	$ -
8.1.9 Annual Provison for Official Plan Update	2025	$ 23,200	$ -	$ 23,200	50%	$ 11,600	$ 1,160	$ 10,440	$ -	$ 10,440	$ -
8.1.10 Annual Provison for Official Plan Update	2026	$ 23,600	$ -	$ 23,600	50%	$ 11,800	$ 1,180	$ 10,620	$ -	$ 10,620	$ -
8.1.11 Annual Provison for Official Plan Update	2027	$ 24,100	$ -	$ 24,100	50%	$ 12,050	$ 1,205	$ 10,845	$ -	$ 10,845	$ -
8.1.12 Annual Provison for Official Plan Update	2028	$ 24,500	$ -	$ 24,500	50%	$ 12,250	$ 1,225	$ 11,025	$ -	$ 11,025	$ -
8.1.13 Natural Heritage Review	2020	$ 51,700	$ -	$ 51,700	50%	$ 25,850	$ 2,585	$ 23,265	$ -	$ 23,265	$ -
8.1.14 Natural Heritage Review	2025	$ 56,100	$ -	$ 56,100	50%	$ 28,050	$ 2,805	$ 25,245	$ -	$ 25,245	$ -
8.1.15 Second Home Study	2022	$ 30,000	$ -	$ 30,000	50%	$ 15,000	$ 1,500	$ 13,500	$ -	$ 13,500	$ -
8.1.16 Second Home Study	2027	$ 35,000	$ -	$ 35,000	50%	$ 17,500	$ 1,750	$ 15,750	$ -	$ 15,750	$ -
8.1.17 Provision for Development-Related Studies	Various	$ 100,000	$ -	$ 100,000	0%	$ -	$ 10,000	$ 90,000	$ -	$ 90,000	$ -
TOTAL ADMINISTRATION		**$ 868,600**	**$ -**	**$ 868,600**		**$ 314,300**	**$ 55,430**	**$ 498,870**	**$ -**	**$ 498,870**	**$ -**

Residential Development Charge Calculation		
Residential Share of 2019-2028 Discounted Growth-Related Capital Program	89%	$443,485
10 Year Growth in Population in New Units		11,162
Unadjusted Development Charge Per Capita ($)		**$39.73**
Non-Residential Development Charge Calculation		
Non-Residential Share of 2019-2028 Discounted Growth-Related Capital Program	11%	$55,385
10 Year Growth in Square Metres		54,680
Unadjusted Development Charge Per sq. m ($)		**$1.01**

Reserve Fund Balance	
Balance as at December 31, 2018	$0

APPENDIX B.8
TABLE 2

DISTRICT OF MUSKOKA
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
ADMINISTRATION
RESIDENTIAL DEVELOPMENT CHARGE
(in $000)

ADMINISTRATION	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	$0.00	($59.85)	($50.14)	($17.88)	($3.28)	($36.49)	($9.12)	($5.56)	$24.32	$37.63	
2019 - 2028 RESIDENTIAL FUNDING REQUIREMENTS											
- Administration: Non Inflated	$108.0	$37.2	$16.7	$28.8	$73.0	$17.1	$39.7	$17.4	$31.6	$73.8	**$443.5**
- Administration: Inflated	$108.0	$38.0	$17.4	$30.6	$79.0	$18.9	$44.7	$20.0	$37.1	$88.2	**$481.9**
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1,235	1,235	1,235	1,074	1,074	1,074	1,074	1,074	1,045	1,045	**11,162**
REVENUE											
- DC Receipts: Inflated	$49.8	$50.8	$51.8	$45.9	$46.8	$47.8	$48.7	$49.7	$49.3	$50.3	**$490.9**
INTEREST											
- Interest on Opening Balance	$0.0	($3.3)	($2.8)	($1.0)	($0.2)	($2.0)	($0.5)	($0.3)	$0.9	$1.3	**($7.9)**
- Interest on In-year Transactions	($1.6)	$0.2	$0.6	$0.3	($0.9)	$0.5	$0.1	$0.5	$0.2	($1.0)	**($1.1)**
TOTAL REVENUE	$48.2	$47.7	$49.6	$45.2	$45.8	$46.3	$48.3	$49.9	$50.4	$50.6	**$481.9**
CLOSING CASH BALANCE	($59.8)	($50.1)	($17.9)	($3.3)	($36.5)	($9.1)	($5.6)	$24.3	$37.6	$0.0	

2019 Adjusted Charge Per Capita	**$40.30**

Allocation of Capital Program	
Residential Sector	88.9%
Non-Residential Sector	11.1%
Rates for 2019	
Inflation Rate:	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX B.8
TABLE 2

DISTRICT OF MUSKOKA
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
ADMINISTRATION
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in $000)

ADMINISTRATION	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	TOTAL
OPENING CASH BALANCE	$0.00	($8.03)	($7.37)	($3.94)	($1.83)	($5.62)	($1.82)	($0.92)	$3.06	$5.32	
2019 - 2028 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Administration: Non Inflated	$13.5	$4.7	$2.1	$3.6	$9.1	$2.1	$5.0	$2.2	$4.0	$9.2	**$55.4**
- Administration: Inflated	$13.5	$4.7	$2.2	$3.8	$9.9	$2.4	$5.6	$2.5	$4.6	$11.0	**$60.2**
NON-RESIDENTIAL SPACE GROWTH											
- Growth in Square Metres	5,400	5,440	5,440	5,480	5,520	5,520	5,560	5,357	5,483	5,480	**54,680**
REVENUE											
- DC Receipts: Inflated	$5.7	$5.8	$5.9	$6.1	$6.3	$6.4	$6.6	$6.5	$6.7	$6.9	**$62.9**
INTEREST											
- Interest on Opening Balance	$0.0	($0.4)	($0.4)	($0.2)	($0.1)	($0.3)	($0.1)	($0.1)	$0.1	$0.2	**($1.3)**
- Interest on In-year Transactions	($0.2)	$0.0	$0.1	$0.0	($0.1)	$0.1	$0.0	$0.1	$0.0	($0.1)	**($0.1)**
TOTAL REVENUE	$5.5	$5.4	$5.6	$5.9	$6.1	$6.2	$6.5	$6.5	$6.9	$6.9	**$61.4**
CLOSING CASH BALANCE	($8.0)	($7.4)	($3.9)	($1.8)	($5.6)	($1.8)	($0.9)	$3.1	$5.3	$1.3	

2019 Adjusted Charge Per Square Metre	**$1.05**

Allocation of Capital Program	
Residential Sector	88.9%
Non-Residential Sector	11.1%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX C

ENGINEERING INFRASTRUCTURE TECHNICAL APPENDIX

APPENDIX C

ENGINEERED INFRASTRUCTURE TECHNICAL APPENDIX

In the District of Muskoka, the Engineering and Public Works Department is responsible for all municipal water and wastewater systems, the waste management program and roads; these responsibilities include the design, construction, maintenance and rehabilitation of the local infrastructure. The department also provides review and inspection services to facilitate new development and to maintain service standards to sustain existing infrastructure.

This appendix provides a brief outline to establish the development charge rates for each of the eligible engineered services provided by the District of Muskoka. Four services have been analyzed as part of the Development Charges Background Study:

C.1 Roads & Related

C.2 Wastewater

C.3 Water

C.4 Rural Area Septage

The following tables set out the capital forecast and the calculation of the development charge for engineered services. The cost, quantum and description of the projects included in the forecast are based upon servicing plans from the District that will meet the servicing demands within the District. The planning horizon of twenty-years from 2019 to 2038 was utilized for all engineering services to account for the benefiting period of the capital costs related to the infrastructure as permitted under the *DCA*.

APPENDIX C.1

ROADS & RELATED

APPENDIX C.1

ROADS & RELATED

The Engineering and Public Works Department delivers operational, maintenance, and construction services required for the District's road and bridge network. This department is committed to the daily maintenance activities, rehabilitation, and reconstruction of the road and bridge infrastructure through the application of effective traffic operation and planning principles. The department currently manages an infrastructure inventory of over 1,460 lane kilometres of road, 32 signalized intersections, 2,401 various bridges, culverts and railway crossings and a fleet of 18 vehicles.

This appendix provides the detailed analysis undertaken to establish the development charge rates for the Roads & Related service in the District of Muskoka. The service includes the capital expenditures related to the road network as well intersection improvements, bridge and culvert improvements, studies and other related expenditures.

The development-related Road and Related infrastructure projects are required to service the demands of new development to 2038 in the District. This forecast is discussed in greater detail in Appendix A.

The following tables set out the 2019 to 2038 development-related capital program and the calculation of the development charges. The development-related capital program for Roads & Related services is based upon the District's 2019 Capital Budget and updated information provided by District staff. The benefits of roads and related infrastructure are considered to be District-wide for the purpose of calculating the development charge.

The projects identified in the capital program are required to service the demands of new development between 2019 and 2038, subject to annual capital budget reviews. Consistent with s.5.(1)7. of the *DCA*, there is no legislated percentage reduction in the eligible development-related capital cost for the provision of roads and related infrastructure.

Tables 1 to 4 provide details of the projects included in the District-wide Roads & Related development charges calculation. The content of the tables is as follows:

Table 1 2009 – 2018 Historical Service Level Analysis
Table 2 Benefit to Existing Shares Methodology

Table 3 2019 – 2038 Roads & Related Capital Program
Table 4 Residential & Non-Residential Cash Flow Analysis

TABLE 1 HISTORICAL SERVICE LEVELS

Table 1 displays the ten-year historical inventory for Roads and Related infrastructure. District roads total 1,460 lane kilometres in cumulative length and are valued at $1.17 billion in 2018. Associated with the roadways are various signs which make up $4.96 million in value. The bridges, culverts and railway crossings in the District add approximately $257.94 million to the value of capital assets. There are currently 32 signalized intersections in the District, which are worth a combined $8.00 million. Vehicles and related equipment used for the provision of Roads and Related services are worth a combined $696,700. The total value of all Roads and Related infrastructure in 2018 was approximately $1.44 billion. This results in a ten-year historical average service level of $8,565.87 per population and employee. The historical service level, multiplied by the long-term net population and employment in growth (21,844), results in a ten-year maximum allowable funding envelope of $187.11 million. There is no required ten per cent discount and, as such, the full maximum allowable funding envelope is brought forward to the development charges calculation.

TABLE 2 BENEFIT TO EXISTING SHARES METHODOLOGY

Table 2 provides a summary of the approaches used to establish the benefit to existing shares for different types of roads and related capital projects included in the development-related capital program. The Transportation Master Plan is entirely driven by, and related to the increased needs arising from development and therefore have been assigned no benefit to existing. Similarly, the transportation corridors are fully driven by, and related to, the increased needs arising from development and have also been assigned no benefit to existing. Projects to be located in the urban areas are based on an 80 per cent benefit to existing share, District-wide projects, including surfacing projects, are based on an 86 per cent benefit to existing share and projects to be located in the rural areas of the District are based on an 88 per cent benefit to existing share.

TABLE 3 2019–2038 DEVELOPMENT-RELATED CAPITAL PROGRAM & CALCULATION OF THE "UNADJUSTED" DEVELOPMENT CHARGES

The total cost of the Roads and Related capital program is $340.84 million and provides for the undertaking of projects throughout the District. The project list is based on the District's 2019 Capital Budget and only in-period shares of projects benefitting development in the planning period are included. No grants, subsidies or other recoveries have been identified for the projects in the capital program.

The capital program consists of road construction projects for a variety of new infrastructure on District road right-of-ways, including land purchases, grade separation, new roads construction and rehabilitation, traffic lights, traffic calming measures, and multiple bridges with a total gross cost of $225.32 million. Included in this total is a provision for future roadway construction at a cost of $117.62 million. A portion of this provision, $1.74 million, is allocated to benefitting development beyond 2038.

The capital program also includes projects related to surfacing of the roadway. Surface upgrades of roadways is partially attributed to increased traffic as a result of both residential and non-residential development. The gross cost of the surfacing projects amounts to $115.42 million. The benefit to existing share of $99.51 million is netted off and the remaining $15.91 million is brought forward into the calculation of the development charges.

Overall, $280.23 million or 82 per cent, of the capital program has been identified as the benefit to existing share. Details on the methodology for arriving at the shares can be found in Table 2.

Consistent with s.5.(1)7. of the *DCA*, there is no legislated percentage reduction in the eligible development-related capital cost for the provision of roads and related infrastructure. It should be noted that the reserve fund balance is entirely committed against past expenditures and therefore eligible capital program costs are included in the in-period recovery amount. The eligible costs for recovery through development charges during the planning period from 2019 to 2038 is $58.86 million or approximately 17 per cent of the gross capital cost.

The in-period recoverable cost of $58.86 million has been allocated 88 per cent ($51.70 million) to residential development and 12 per cent ($7.15 million) to non-residential development. The allocation of costs is based on forecasted shares of population and employment growth over the 2019 to 2038 planning period. The

development-related capital program an unadjusted residential charge of $2,531.75 per capita and an unadjusted non-residential charge of $64.43 per square metre.

TABLE 4 CASH FLOW ANALYSIS

The long term cash flow analysis, shown on Table 4 takes into consideration expenditure timing and revenue projections. The residential charge decreases to $2,486.75 per capita and the non-residential charge decreases to $64.07 per square metre.

The following is a summary of the Roads and Related calculated unadjusted and cash flow adjusted development charge rates:

ROADS AND RELATED SUMMARY

10-year Hist. Service Level per pop & emp	2019 - 2038 Development-Related Capital Program		Unadjusted Development Charge		**Adjusted Development Charge**	
	Total	Net DC Recoverable	$/capita	$/sq.m	**$/capita**	**$/sq.m**
$8,565.87	$340,837,850	$58,858,616	$2,531.75	$64.43	**$2,486.76**	**$64.07**

APPENDIX C.1
TABLE 1

DISTRICT OF MUSKOKA
INVENTORY OF CAPITAL ASSETS
ROADS & RELATED

ROADS	# of Lane Kilometres										UNIT COST
Type of Road	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	($/lane km)
Bituminous Road - Low Cost	572	572	572	572	582	580	580	576	570	570	$ 596,700
Bituminous Road - Intermediate Cost	166	166	166	166	156	144	142	136	124	124	$ 697,200
Bituminous Road - High Cost	740	740	740	740	740	748	750	746	766	766	$ 972,600
Total (lane km)	**1,478**	**1,478**	**1,478**	**1,478**	**1,478**	**1,472**	**1,472**	**1,458**	**1,460**	**1,460**	
Total ($000)	**$ 1,176,771.6**	**$ 1,176,771.6**	**$ 1,176,771.6**	**$ 1,176,771.6**	**$1,175,766.6**	**$1,173,987.6**	**$1,174,538.4**	**$1,164,078.0**	**$1,171,583.4**	**$1,171,583.4**	

SIGNAGE	# of Units										UNIT COST
Type of Signs	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	($/unit)
Signs - installed	17,350	17,700	18,000	18,393	18,393	18,244	18,244	18,244	18,244	18,244	$ 182
Signs - stock	14,819	15,564	17,322	12,285	12,285	8,731	11,536	10,958	8,988	8,988	$ 182
Total (#)	**32,169**	**33,264**	**35,322**	**30,678**	**30,678**	**26,975**	**29,780**	**29,202**	**27,232**	**27,232**	
Total ($000)	**$ 5,860.0**	**$ 6,059.4**	**$ 6,434.3**	**$ 5,588.4**	**$ 5,588.4**	**$ 4,913.8**	**$ 5,424.8**	**$ 5,319.5**	**$ 4,960.6**	**$ 4,960.6**	

BRIDGES, CULVERS AND RAILWAY CR	# of Units										UNIT COST
Types of Briges, Culverts and Railway CRs	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	($/units)
Bridges	54	54	54	54	54	55	54	51	52	52	$ 3,821,900
Culverts - major	18	18	18	18	19	17	24	39	40	40	$ 693,500
Culverts - minor	2,392	2,392	2,392	2,392	2,392	2,293	2,293	2,293	2,293	2,293	$ 5,300
Railway Crossings	16	16	16	16	16	16	16	16	16	16	$ 1,207,100
Total (#)	**2,480**	**2,480**	**2,480**	**2,480**	**2,481**	**2,381**	**2,387**	**2,399**	**2,401**	**2,401**	
Total ($000)	**$ 250,856.8**	**$ 250,856.8**	**$ 250,856.8**	**$ 250,856.8**	**$ 251,550.3**	**$ 253,460.5**	**$ 254,493.1**	**$ 253,429.9**	**$ 257,945.3**	**$ 257,945.3**	

SIGNALIZED INTERSECTIONS	# of Units										UNIT COST
Types of Signalized Intersections	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	($/units)
Signalized intersections	26	26	26	26	26	28	28	28	28	32	$ 250,000
Total (#)	**26**	**26**	**26**	**26**	**26**	**28**	**28**	**28**	**28**	**32**	
Total ($000)	**$ 6,500.0**	**$ 6,500.0**	**$ 6,500.0**	**$ 6,500.0**	**$ 6,500.0**	**$ 7,000.0**	**$ 7,000.0**	**$ 7,000.0**	**$ 7,000.0**	**$ 8,000.0**	

VEHICLES AND EQUIPMENT	# of Vehicles									
Types of Vehicles	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Vehicles	3	4	5	7	12	17	18	18	18	18
Total (#)	**3**	**4**	**5**	**7**	**12**	**17**	**18**	**18**	**18**	**18**
Total ($000)	**$ 154.3**	**$ 195.0**	**$ 235.7**	**$ 312.0**	**$ 465.7**	**$ 657.0**	**$ 696.7**	**$ 696.7**	**$ 696.7**	**$ 696.7**

APPENDIX C.1
TABLE 1

DISTRICT OF MUSKOKA
CALCULATION OF SERVICE LEVELS
ROADS & RELATED

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Historical Population	138,105	139,439	140,787	141,872	142,968	142,917	142,868	142,822	143,852	144,890
Historical Employment	26,682	26,247	25,820	25,852	25,884	25,916	25,948	25,980	26,111	26,247
Total Historical Population & Employment	164,787	165,686	166,607	167,724	168,852	168,833	168,816	168,802	169,963	171,137

INVENTORY SUMMARY ($000)

Roads	$1,176,771.6	$1,176,771.6	$1,176,771.6	$1,176,771.6	$1,175,766.6	$1,173,987.6	$1,174,538.4	$1,164,078.0	$1,171,583.4	$1,171,583.4
Signage	$5,860.0	$6,059.4	$6,434.3	$5,588.4	$5,588.4	$4,913.8	$5,424.8	$5,319.5	$4,960.6	$4,960.6
Bridges, Culvers And Railway Cr	$250,856.8	$250,856.8	$250,856.8	$250,856.8	$251,550.3	$253,460.5	$254,493.1	$253,429.9	$257,945.3	$257,945.3
Signalized Intersections	$6,500.0	$6,500.0	$6,500.0	$6,500.0	$6,500.0	$7,000.0	$7,000.0	$7,000.0	$7,000.0	$8,000.0
Vehicles And Equipment	$154.3	$195.0	$235.7	$312.0	$465.7	$657.0	$696.7	$696.7	$696.7	$696.7
Total ($000)	**$1,440,142.6**	**$1,440,382.8**	**$1,440,798.4**	**$1,440,028.8**	**$1,439,870.9**	**$1,440,018.9**	**$1,442,152.9**	**$1,430,524.0**	**$1,442,186.0**	**$1,443,186.0**

SERVICE LEVEL ($/pop & emp)

											Average Service Level
Roads	$7,141.2	$7,102.4	$7,063.2	$7,016.1	$6,963.3	$6,953.5	$6,957.5	$6,896.1	$6,893.2	$6,845.9	$6,983.24
Signage	$35.6	$36.6	$38.6	$33.3	$33.1	$29.1	$32.1	$31.5	$29.2	$29.0	$32.81
Bridges, Culvers And Railway Cr	$1,522.3	$1,514.0	$1,505.7	$1,495.7	$1,489.8	$1,501.2	$1,507.5	$1,501.3	$1,517.7	$1,507.2	$1,506.25
Signalized Intersections	$39.4	$39.2	$39.0	$38.8	$38.5	$41.5	$41.5	$41.5	$41.2	$46.7	$40.73
Vehicles And Equipment	$0.9	$1.2	$1.4	$1.9	$2.8	$3.9	$4.1	$4.1	$4.1	$4.1	$2.85
Total ($/pop & emp)	**$8,739.42**	**$8,693.45**	**$8,647.89**	**$8,585.70**	**$8,527.41**	**$8,529.25**	**$8,542.75**	**$8,474.57**	**$8,485.29**	**$8,432.93**	**$8,565.87**

DISTRICT OF MUSKOKA
CALCULATION OF MAXIMUM ALLOWABLE
ROADS & RELATED

10-Year Funding Envelope Calculation	
10 Year Average Service Level 2009 - 2018	$8,565.87
Net Population & Employment Growth 2019 - 2038	21,844
Maximum Allowable Funding Envelope	**$187,112,864**

Table 2
Benefit to Existing Shares Methodology

Roads & Related Projects	Benefit to Existing Share	Share Attributed to Development
LOCATION OF PROJECT		
Urban	**80%**	**20%**
• Based on the average between the weighted growth within the urban or serviced area and the new total unit growth which leads to a BTE of 80%. • Weighted growth yields a BTE of 75% while un-weighted yields 85%. • The 85% BTE is based on total new dwelling units (incl. seasonal, year-round and commercial accommodations) between 2019-2038 over the existing unit base. • The weighted BTE reflects that roads projects in the urban area are more largely driven by development and therefore a lower BTE is used than the method for the District and Rural areas.		
District-wide	**86%**	**14%**
• Based on total new dwelling units growth (including seasonal, year-round and commercial accommodations) between 2019-2038 over the existing unit base.		
Rural	**88%**	**12%**
• Based on total new dwelling units growth (including seasonal, year-round and commercial accommodations) between 2019-2038 within the rural or un-serviced area over the existing unit base.		
PROJECT-SPECIFIC BTE		
Transportation Corridors	**0%**	**100%**
• Entirely growth-related benefitting the period of 2019-2038		
Transportation Master Plan	**0%**	**100%**
• Entirely growth-related.		
Roadway Construction Future	**85%**	**15%**
• Based on average BTEs of projects between 2019-2028.		
Surfacing	**86%**	**14%**
• Based on the District-wide BTE (see above).		

Source: Hemson Consulting Ltd., 2019

APPENDIX C.1
TABLE 3

DISTRICT OF MUSKOKA
DEVELOPMENT-RELATED CAPITAL PROGRAM
ROADS & RELATED

Project Description	Timing	Gross Project Cost	Net Municpal Cost	Ineligible Costs		Total Development-Related Costs	Development-Related Costs	
				BTE (%)	Replacement & BTE Shares		2019-2038	Post 2038
1.0 ROADS & RELATED								
1.1 Roads Construction								
1.1.1 DMM Miscellaneous Land Future	2019-2038	$ 2,793,500	$ 2,793,500	86%	$ 2,408,484	$ 385,016	$ 385,016	$ -
1.1.2 GH MR 13 Kilworthy Rd to S Morrison Lk Rd 8.6 km	2026-2028	$ 2,400,000	$ 2,400,000	88%	$ 2,112,000	$ 288,000	$ 288,000	$ -
1.1.3 ML MR 27 from Tom Dixon Rd N 1.5 km	2021-2023	$ 1,605,000	$ 1,605,000	88%	$ 1,412,400	$ 192,600	$ 192,600	$ -
1.1.4 GH MR 49 from MR 13 to Bea Dale Ln 2.6 km	2025-2027	$ 2,675,000	$ 2,675,000	88%	$ 2,354,000	$ 321,000	$ 321,000	$ -
1.1.5 BB MR 15 Beaver Creek Bridge to Santa's Village Rd Entrance 3.4 km	2019	$ 2,124,150	$ 2,124,150	80%	$ 1,699,320	$ 424,830	$ 424,830	$ -
1.1.6 BB S Trans Corridor Phase 1 - MR 118 Grade Separation	2027-2028	$ 2,025,000	$ 2,025,000	0%	$ -	$ 2,025,000	$ 2,025,000	$ -
1.1.7 BB S Trans Corridor Phase 2 - 4 km	2029-2038	$ 4,800,000	$ 4,800,000	0%	$ -	$ 4,800,000	$ 4,800,000	$ -
1.1.8 BB S Trans Corridor Phase 3 - Muskoka River Crossing	2029-2038	$ 2,400,000	$ 2,400,000	0%	$ -	$ 2,400,000	$ 2,400,000	$ -
1.1.9 BB S Trans Corridor Phase 4 - 3 km	2029-2038	$ 3,900,000	$ 3,900,000	0%	$ -	$ 3,900,000	$ 3,900,000	$ -
1.1.10 GH MR 19 from CN Rail Crossing to Hwy 11 Overpass 1.4 km	2023-2025	$ 2,133,000	$ 2,133,000	88%	$ 1,877,040	$ 255,960	$ 255,960	$ -
1.1.11 HV MR 3 from Lorne to Centre St	2020	$ 1,200,000	$ 1,200,000	80%	$ 960,000	$ 240,000	$ 240,000	$ -
1.1.12 LB MR 39 from MR 117 to Hwy 35 1.8 km	2025-2027	$ 872,200	$ 872,200	80%	$ 697,760	$ 174,440	$ 174,440	$ -
1.1.13 LB MR 51 from Manitou Rd to South Ril Lk Rd 4.4 km	2025-2027	$ 2,168,000	$ 2,168,000	88%	$ 1,907,840	$ 260,160	$ 260,160	$ -
1.1.14 LB MR 51 from MR 117 to Manitou Rd 2.1 km	2024-2026	$ 1,900,000	$ 1,900,000	88%	$ 1,672,000	$ 228,000	$ 228,000	$ -
1.1.15 GH MR 17 1.6 km N of Hoc Roc Riv Brg to Ennis Bay Rd 3.6 km	2020-2022	$ 2,589,600	$ 2,589,600	88%	$ 2,278,848	$ 310,752	$ 310,752	$ -
1.1.16 BB MR 16 from MR 118 (Wellington) to Stephens Bay Rd 3.7 km	2021-2023	$ 1,835,000	$ 1,835,000	88%	$ 1,614,800	$ 220,200	$ 220,200	$ -
1.1.17 HV MR 2 King William Rd (MR 3) to Shay Rd 700m	2022-2024	$ 1,450,000	$ 1,450,000	88%	$ 1,276,000	$ 174,000	$ 174,000	$ -
1.1.18 DMM Miscellaneous Land 2019	2019	$ 123,800	$ 123,800	86%	$ 106,737	$ 17,063	$ 17,063	$ -
1.1.19 GH MR 17 Ennis Bay Rd to Muskoka Brewery 2.7 km	2022-2024	$ 2,750,000	$ 2,750,000	88%	$ 2,420,000	$ 330,000	$ 330,000	$ -
1.1.20 ML MR 27 from MR 118 to Tom Dixon Rd 0.3 km	2026	$ 725,000	$ 725,000	80%	$ 580,000	$ 145,000	$ 145,000	$ -
1.1.21 ML MR 169 from 3206 MR 118 to MR 29 5.4 km	2021-2023	$ 2,280,000	$ 2,280,000	88%	$ 2,006,400	$ 273,600	$ 273,600	$ -
1.1.22 ML MR 169 from MR 118 N'ly 3.3 km	2024-2026	$ 1,325,000	$ 1,325,000	88%	$ 1,166,000	$ 159,000	$ 159,000	$ -
1.1.23 BB MR 15 Santa's Village Rd to Boyers Beach Rd 2.9 km	2019-2021	$ 885,000	$ 885,000	80%	$ 708,000	$ 177,000	$ 177,000	$ -
1.1.24 BB MR 15 Boyers Beach Rd to MR 118 3.3 km	2021-2022	$ 975,000	$ 975,000	88%	$ 858,000	$ 117,000	$ 117,000	$ -
1.1.25 BB MR 118 from MR 4 to West Mall Dr 0.9 km	2020-2021	$ 1,075,000	$ 1,075,000	80%	$ 860,000	$ 215,000	$ 215,000	$ -
1.1.26 GH MR 169 from MR 41 to North Muldrew Lk Rd 1.9 km	2019-2020	$ 2,175,000	$ 2,175,000	88%	$ 1,914,000	$ 261,000	$ 261,000	$ -
1.1.27 ML MR 118 E of Carr Rd to Stephen Rd 1.1 km	2020-2022	$ 1,116,500	$ 1,116,500	88%	$ 982,520	$ 133,980	$ 133,980	$ -
1.1.28 ML MR 169 from 0.7 km S of MR 38 to 1.8 km N of MR 38 2.5 km	2022-2024	$ 1,701,400	$ 1,701,400	80%	$ 1,361,120	$ 340,280	$ 340,280	$ -
1.1.29 HV MR 2 from Hwy 11 to Silver St 0.7 km	2021-2023	$ 1,725,000	$ 1,725,000	80%	$ 1,380,000	$ 345,000	$ 345,000	$ -
1.1.30 BB MR 4 from Wellington St to Meadow Heights 1.1 km	2020-2023	$ 770,000	$ 770,000	80%	$ 616,000	$ 154,000	$ 154,000	$ -
1.1.31 HV MR 3 from Bridge to Hwy 60 1.3 km	2019	$ 4,200,000	$ 4,200,000	80%	$ 3,360,000	$ 840,000	$ 840,000	$ -
1.1.32 HV MR 3 from Centre to West St 0.13 km	2019-2020	$ 1,595,000	$ 1,595,000	80%	$ 1,276,000	$ 319,000	$ 319,000	$ -
1.1.33 HV MR 3 from West St to Bridge 0.3 km	2019-2020	$ 1,595,000	$ 1,595,000	80%	$ 1,276,000	$ 319,000	$ 319,000	$ -
1.1.34 GH MR 6 from 0.7 km E of Conservation Rd to MR 20 3.1 km	2020-2021	$ 761,600	$ 761,600	88%	$ 670,208	$ 91,392	$ 91,392	$ -
1.1.35 ML MR 7 from Joseph River Bridge to MR 28 2.1 km	2019	$ 525,000	$ 525,000	88%	$ 462,000	$ 63,000	$ 63,000	$ -
1.1.36 GB MR 11 from Lake Joseph Rd to Seguin Twp 6.1 km	2024-2026	$ 3,450,000	$ 3,450,000	88%	$ 3,036,000	$ 414,000	$ 414,000	$ -

APPENDIX C.1
TABLE 3

DISTRICT OF MUSKOKA
DEVELOPMENT-RELATED CAPITAL PROGRAM
ROADS & RELATED

Project Description	Timing	Gross Project Cost	Net Municpal Cost	Ineligible Costs		Total Development-Related Costs	Development-Related Costs	
				BTE (%)	Replacement & BTE Shares		2019-2038	Post 2038
1.0 ROADS & RELATED								
1.1.37 GH MR 169 from N Muldrew Lk to Sniders Bay Rd 5.8km	2022-2024	$ 2,350,000	$ 2,350,000	88%	$ 2,068,000	$ 282,000	$ 282,000	$ -
1.1.38 BB MR 37 from Taylor to Ida St 400m	2020-2021	$ 1,675,000	$ 1,675,000	80%	$ 1,340,000	$ 335,000	$ 335,000	$ -
1.1.39 ML MR 118 from Cedar Beach Rd to Butter & Egg Rd 8.8 km	2026-2028	$ 4,125,000	$ 4,125,000	88%	$ 3,630,000	$ 495,000	$ 495,000	$ -
1.1.40 BB MR 37 from Ida St to Monck Dr 565m	2020-2022	$ 1,900,000	$ 1,900,000	80%	$ 1,520,000	$ 380,000	$ 380,000	$ -
1.1.41 ML MR 169 from MR 29 to MR 118 3.5 km	2023-2025	$ 1,680,000	$ 1,680,000	88%	$ 1,478,400	$ 201,600	$ 201,600	$ -
1.1.42 ML MR 30 Walkers Pt Rd to Broadley Rd 3.7 km	2021-2023	$ 1,725,000	$ 1,725,000	88%	$ 1,518,000	$ 207,000	$ 207,000	$ -
1.1.43 ML MR 169 from Sutton Dr to 3206 MR 169 1.7 km	2020-2023	$ 3,100,000	$ 3,100,000	88%	$ 2,728,000	$ 372,000	$ 372,000	$ -
1.1.44 ML MR 118 from Stephen Rd to PC Lock 400m	2020-2023	$ 1,300,000	$ 1,300,000	80%	$ 1,040,000	$ 260,000	$ 260,000	$ -
1.1.45 BB MR 118 from Hwy 11 to MR 17 1.2 km	2026-2028	$ 950,000	$ 950,000	80%	$ 760,000	$ 190,000	$ 190,000	$ -
1.1.46 GH MR 169 from MR 13 to Sutton Dr 4.1 km	2026-2028	$ 1,875,000	$ 1,875,000	88%	$ 1,650,000	$ 225,000	$ 225,000	$ -
1.1.47 GH MR 169 from Sniders Bay Rd to McKenzie Rd 7.3 km	2023-2025	$ 2,625,000	$ 2,625,000	88%	$ 2,310,000	$ 315,000	$ 315,000	$ -
1.1.48 GB MR 5 Port Severn Bridge East #005014	2022-2023	$ 1,150,000	$ 1,150,000	80%	$ 920,000	$ 230,000	$ 230,000	$ -
1.1.49 HV MR 2 Locks Bridge #002205	2020-2022	$ 1,000,000	$ 1,000,000	80%	$ 800,000	$ 200,000	$ 200,000	$ -
1.1.50 GH MR 41 Concrete Repairs to Soffit & Abutment #041035	2019	$ 175,000	$ 175,000	80%	$ 140,000	$ 35,000	$ 35,000	$ -
1.1.51 GH MR 13 Kahshe River Bridge Rehab #013051	2023-2025	$ 90,000	$ 90,000	88%	$ 79,200	$ 10,800	$ 10,800	$ -
1.1.52 ML MR 29 Acton Island Bridge Rehab #029013	2019-2021	$ 865,000	$ 865,000	88%	$ 761,200	$ 103,800	$ 103,800	$ -
1.1.53 ML MR 169 CPR Subway Rehab #169275	2025-2027	$ 475,000	$ 475,000	88%	$ 418,000	$ 57,000	$ 57,000	$ -
1.1.54 ML MR 7 Port Sandfield Bridge #007031	2019-2020	$ 125,000	$ 125,000	80%	$ 100,000	$ 25,000	$ 25,000	$ -
1.1.55 HV MR 23 Canal Bridge #023075	2019-2020	$ 620,000	$ 620,000	80%	$ 496,000	$ 124,000	$ 124,000	$ -
1.1.56 BB MR 118 CNR Underpass Repair Wingwalls & Abut #118009	2025-2027	$ 650,000	$ 650,000	80%	$ 520,000	$ 130,000	$ 130,000	$ -
1.1.57 BB MR 42 Muskoka River Bridge #042002	2019-2020	$ 620,000	$ 620,000	80%	$ 496,000	$ 124,000	$ 124,000	$ -
1.1.58 BB MR 16 Silver Bridge #016001	2021-2023	$ 975,000	$ 975,000	80%	$ 780,000	$ 195,000	$ 195,000	$ -
1.1.59 HV MR 2 Big East River Bridge #002278	2019-2020	$ 555,000	$ 555,000	88%	$ 488,400	$ 66,600	$ 66,600	$ -
1.1.60 HV MR 3 Muskoka River Bridge #003065	2021-2023	$ 730,000	$ 730,000	80%	$ 584,000	$ 146,000	$ 146,000	$ -
1.1.61 ML MR 169 Bala Creek Bridge Rehab #169282	2019	$ 220,000	$ 220,000	80%	$ 176,000	$ 44,000	$ 44,000	$ -
1.1.62 GB MR 34 White's Falls Bridge Rehab #034024	2023-2025	$ 290,000	$ 290,000	88%	$ 255,200	$ 34,800	$ 34,800	$ -
1.1.63 BB MR 16 Pre Muskoka River Crossing Bridge #016002	2020-2022	$ 345,000	$ 345,000	80%	$ 276,000	$ 69,000	$ 69,000	$ -
1.1.64 BB MR 118 Culvert End Scour (Perch) & Concrete Repairs #118104	2019	$ 75,000	$ 75,000	88%	$ 66,000	$ 9,000	$ 9,000	$ -
1.1.65 HV MR 2 Peacock Bay Twin Culverts Repl #002348	2019-2020	$ 400,000	$ 400,000	88%	$ 352,000	$ 48,000	$ 48,000	$ -
1.1.66 ML MR 118 Indian River Bridge Rehab #118315	2024-2026	$ 1,675,000	$ 1,675,000	80%	$ 1,340,000	$ 335,000	$ 335,000	$ -
1.1.67 ML MR 24 Rehab Dee Bank Bridge #024047	2023-2025	$ 360,000	$ 360,000	88%	$ 316,800	$ 43,200	$ 43,200	$ -
1.1.68 ML PC Traffic Light Installation (Tim Horton)	2019	$ 240,000	$ 240,000	80%	$ 192,000	$ 48,000	$ 48,000	$ -
1.1.69 DMM Vehicle Activated Traffic Calming Signs 2019	2019	$ 70,000	$ 70,000	88%	$ 61,600	$ 8,400	$ 8,400	$ -
1.1.70 DMM Vehicle Activated Traffic Calming Signs Future	2020-2028	$ 3,719,800	$ 3,719,800	88%	$ 3,273,424	$ 446,376	$ 446,376	$ -
1.1.71 DMM Traffic Audible Program	2019	$ 100,000	$ 100,000	88%	$ 88,000	$ 12,000	$ 12,000	$ -
1.1.72 GB MR 11 Drainage - Mactier	2019	$ 250,000	$ 250,000	88%	$ 220,000	$ 30,000	$ 30,000	$ -
1.1.73 Roadway Construction Future	2029-2038	$ 117,615,700	$ 117,615,700	85%	$ 100,172,235	$ 17,443,465	$ 15,699,119	$ 1,744,347
Sub-Total Roads Construction		**$ 225,319,250**	**$ 225,319,250**		**$ 180,723,936**	**$ 44,595,314**	**$ 42,850,968**	**$ 1,744,347**

APPENDIX C.1
TABLE 3

DISTRICT OF MUSKOKA
DEVELOPMENT-RELATED CAPITAL PROGRAM
ROADS & RELATED

Project Description	Timing	Gross Project Cost	Net Municpal Cost	Ineligible Costs BTE (%)	Ineligible Costs Replacement & BTE Shares	Total Development-Related Costs	Development-Related Costs 2019-2038	Development-Related Costs Post 2038
1.0 ROADS & RELATED								
1.2 Surfacing Projects								
1.2.1 Asphalt Surfacing Future	2019-2038	$ 49,141,900	$ 49,141,900	86%	$ 42,368,884	$ 6,773,016	$ 6,773,016	$ -
1.2.2 BB MR 118 from West Mall Dr to BB/ML Bndry	2019-2038	$ 2,800,000	$ 2,800,000	86%	$ 2,414,088	$ 385,912	$ 385,912	$ -
1.2.3 ML MR 28 from MR 7 Past Entrance of Cleveland's House 0.65 km	2019	$ 400,000	$ 400,000	86%	$ 344,870	$ 55,130	$ 55,130	$ -
1.2.4 ML MR 169 from 3.3 km N or MR 118 3.3 km	2019	$ 1,000,000	$ 1,000,000	86%	$ 862,174	$ 137,826	$ 137,826	$ -
1.2.5 BB MR 4 from MR 25 to Rostrevor Rd 3.2 km	2019	$ 1,800,000	$ 1,800,000	86%	$ 1,551,914	$ 248,086	$ 248,086	$ -
1.2.6 GH MR 1 from 1 km N of MR 6 to MR 6 1 km	2019	$ 500,000	$ 500,000	86%	$ 431,087	$ 68,913	$ 68,913	$ -
1.2.7 Emulsion Surfacing Future	2019-2038	$ 56,001,700	$ 56,001,700	86%	$ 48,283,227	$ 7,718,473	$ 7,718,473	$ -
1.2.8 BB MR 16 Stephens Bay Rd to Kirby's Beach Rd 2.1 km	2019	$ 375,000	$ 375,000	86%	$ 323,315	$ 51,685	$ 51,685	$ -
1.2.9 ML MR 25 Boyce Rd to Falkenburg Rd 1.9 km	2019	$ 500,000	$ 500,000	86%	$ 431,087	$ 68,913	$ 68,913	$ -
1.2.10 ML MR 47 Butter & Egg Rd to 4km E of butter & Egg Rd 4 km	2019	$ 1,050,000	$ 1,050,000	86%	$ 905,283	$ 144,717	$ 144,717	$ -
1.2.11 LB MR 8 Scott Ln to North Tasso Lk Rd 2 km	2019	$ 525,000	$ 525,000	86%	$ 452,642	$ 72,358	$ 72,358	$ -
1.2.12 HV MR 46 1 km N of Bonnie Lk Camp Rd to BB/HV Bndry 2.5 km	2019	$ 700,000	$ 700,000	86%	$ 603,522	$ 96,478	$ 96,478	$ -
1.2.13 GH MR 6 fr Halls Rd to Black River Rd 4 km	2019	$ 625,000	$ 625,000	86%	$ 538,859	$ 86,141	$ 86,141	$ -
Sub-Total Surfacing Projects		**$ 115,418,600**	**$ 115,418,600**		**$ 99,510,952**	**$ 15,907,648**	**$ 15,907,648**	**$ -**
1.3 Other Projects								
1.3.1 Transportation Master Plan	2023	$ 100,000	$ 100,000	0%	$ -	$ 100,000	$ 100,000	$ -
Sub-Total Other Projects		**$ 100,000**	**$ 100,000**		**$ -**	**$ 100,000**	**$ 100,000**	**$ -**
TOTAL ROADS & RELATED		**$ 340,837,850**	**$ 340,837,850**		**$ 280,234,888**	**$ 60,602,962**	**$ 58,858,616**	**$ 1,744,347**

Note: No grants, subsidies or other recoveries have been identified in this capital program.

Residential Development Charge Calculation		
Residential Share of 2019-2038 Discounted Growth-Related Capital Program	88%	$51,703,884
20 Year Growth in Population in New Units - District-Wide		20,422
Unadjusted Development Charge Per Capita ($)		**$2,531.75**
Non-Residential Development Charge Calculation		
Non-Residential Share of 2019-2038 Discounted Growth-Related Capital Program	12%	$7,154,732
20 Year Growth in Square Metres - District-Wide		111,040
Unadjusted Development Charge Per sq. m ($)		**$64.43**

2019 - 2038 Net Funding Envelope	$187,112,864
Reserve Fund Balance	
Balance as at December 31, 2018	$ 2,266,272
Committed Reserves	$ (2,266,272)
Adjusted Reserve Fund Balance	$ -

APPENDIX C.1
TABLE 4

DISTRICT OF MUSKOKA
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
ROADS & RELATED
RESIDENTIAL DEVELOPMENT CHARGE
(in $000)

ROADS & RELATED	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
OPENING CASH BALANCE	$0	($511)	$171	$1,127	$1,803	$2,526	$3,850	$5,306	$6,466	$7,088	$8,075
2019 - 2038 RESIDENTIAL FUNDING REQUIREMENTS											
- Roads & Related: Non Inflated	$3,568	$2,387	$2,173	$2,081	$2,070	$1,571	$1,517	$1,836	$2,266	$1,990	$3,025
- Roads & Related: Inflated	$3,568	$2,435	$2,261	$2,209	$2,241	$1,734	$1,708	$2,109	$2,655	$2,378	$3,687
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	1235	1235	1235	1074	1074	1074	1074	1074	1045	1045	1045
REVENUE											
- DC Receipts: Inflated	$3,071	$3,132	$3,195	$2,833	$2,890	$2,948	$3,007	$3,067	$3,043	$3,104	$3,166
INTEREST											
- Interest on Opening Balance	$0	($28)	$6	$39	$63	$88	$135	$186	$226	$248	$283
- Interest on In-year Transactions	($14)	$12	$16	$11	$11	$21	$23	$17	$7	$13	($14)
TOTAL REVENUE	$3,057	$3,116	$3,217	$2,884	$2,965	$3,058	$3,164	$3,269	$3,277	$3,365	$3,435
CLOSING CASH BALANCE	($511)	$171	$1,127	$1,803	$2,526	$3,850	$5,306	$6,466	$7,088	$8,075	$7,823

ROADS & RELATED	2030	2031	2032	2033	2034	2035	2036	2037	2038	TOTAL
OPENING CASH BALANCE	$7,823	$7,551	$7,259	$6,565	$5,828	$5,046	$4,217	$3,339	$1,715	
2019 - 2038 RESIDENTIAL FUNDING REQUIREMENTS										
- Roads & Related: Non Inflated	$3,025	$3,025	$3,025	$3,025	$3,025	$3,025	$3,025	$3,025	$3,025	**$51,704**
- Roads & Related: Inflated	$3,761	$3,836	$3,913	$3,991	$4,071	$4,152	$4,235	$4,320	$4,406	**$63,667**
NEW RESIDENTIAL DEVELOPMENT										
- Population Growth in New Units	1045	1045	930	930	930	930	930	739	739	**20,422**
REVENUE										
- DC Receipts: Inflated	$3,230	$3,294	$2,990	$3,050	$3,111	$3,173	$3,237	$2,626	$2,679	**$60,847**
INTEREST										
- Interest on Opening Balance	$274	$264	$254	$230	$204	$177	$148	$117	$60	**$2,973**
- Interest on In-year Transactions	($15)	($15)	($25)	($26)	($26)	($27)	($27)	($47)	($48)	**($152)**
TOTAL REVENUE	$3,489	$3,544	$3,219	$3,254	$3,289	$3,323	$3,357	$2,696	$2,691	**$63,668**
CLOSING CASH BALANCE	$7,551	$7,259	$6,565	$5,828	$5,046	$4,217	$3,339	$1,715	$0	

2019 Adjusted Charge Per Capita	**$2,486.76**

Allocation of Capital Program	
Residential Sector	87.8%
Non-Residential Sector	12.2%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX C.1
TABLE 4

DISTRICT OF MUSKOKA
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
ROADS & RELATED
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in $000)

ROADS & RELATED	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
OPENING CASH BALANCE	$0	($152)	($141)	($98)	($36)	$36	$191	$365	$482	$544	$655
2019 - 2038 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Roads & Related: Non Inflated	$494	$330	$301	$288	$286	$217	$210	$254	$314	$275	$419
- Roads & Related: Inflated	$494	$337	$313	$306	$310	$240	$236	$292	$367	$329	$510
NEW NON-RESIDENTIAL DEVELOPMENT											
- Non-Residential GFA	5400	5440	5440	5480	5520	5520	5560	5357	5483	5480	5520
REVENUE											
- DC Receipts: Inflated	$346	$356	$363	$373	$383	$390	$401	$394	$412	$420	$431
INTEREST											
- Interest on Opening Balance	$0	($8)	($8)	($5)	($2)	$1	$7	$13	$17	$19	$23
- Interest on In-year Transactions	($4)	$0	$1	$1	$1	$3	$3	$2	$1	$2	($2)
TOTAL REVENUE	$342	$347	$356	$368	$382	$394	$411	$409	$429	$440	$452
CLOSING CASH BALANCE	($152)	($141)	($98)	($36)	$36	$191	$365	$482	$544	$655	$597

ROADS & RELATED	2030	2031	2032	2033	2034	2035	2036	2037	2038	TOTAL
OPENING CASH BALANCE	$597	$538	$476	$413	$347	$280	$209	$137	$70	
2019 - 2038 NON-RESIDENTIAL FUNDING REQUIREMENTS										
- Roads & Related: Non Inflated	$419	$419	$419	$419	$419	$419	$419	$419	$419	**$7,155**
- Roads & Related: Inflated	$520	$531	$541	$552	$563	$575	$586	$598	$610	**$8,810**
NEW NON-RESIDENTIAL DEVELOPMENT										
- Non-Residential GFA	5560	5560	5600	5600	5640	5640	5680	5760	5800	**111,040**
REVENUE										
- DC Receipts: Inflated	$443	$452	$464	$473	$486	$496	$510	$527	$541	**$8,660**
INTEREST										
- Interest on Opening Balance	$21	$19	$17	$14	$12	$10	$7	$5	$2	**$163**
- Interest on In-year Transactions	($2)	($2)	($2)	($2)	($2)	($2)	($2)	($2)	($2)	**($12)**
TOTAL REVENUE	$462	$468	$479	$486	$496	$504	$515	$530	$542	**$8,812**
CLOSING CASH BALANCE	$538	$476	$413	$347	$280	$209	$137	$70	$2	

2019 Adjusted Charge Per Sq.M.	**$64.07**

Allocation of Capital Program	
Residential Sector	87.8%
Non-Residential Sector	12.2%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX C.2

WASTEWATER SERVICES

APPENDIX C.2

WASTEWATER SERVICES

The Engineering and Public Works Department oversees the design, development and construction of all municipal wastewater infrastructure. The department also provides review and inspection services to facilitate new development and to maintain service standards. This appendix provides a brief outline of the District's Wastewater Services which provides for wastewater collection and treatment. The benefits of wastewater infrastructure are considered to be limited to those areas in which the service is delivered, therefore the development charge is calculated based only on development in serviced areas. Residential and non-residential forecasts for the serviced area have been developed and the details can be found in Appendix A.

The cost, quantum and description of the projects included in the capital program are based upon the 2019 Capital Budget and information provided by District staff. A capacity allocation analysis was completed based on available information to date regarding available servicing remaining in the exiting treatment systems.

The project list has been updated from the District's 2014 Development Charge Background Study to remove completed projects or shares of partially completed projects. The project costs have been updated to 2019 dollars based on recent tender prices and Statistics Canada Construction Price Index.

Tables 1 to 3 provide details of the projects included in the Wastewater Services development charges calculation applicable to the lands serviced by the District. The content of the tables is as follows:

Table 1	Wastewater Plant Capacity Analysis
Table 2	Development-Related Capital Program Wastewater Services
Table 3	Residential & Non-Residential Cash Flow Analysis

TABLE 1 WASTEWATER PLANT CAPACITY ANALYSIS

Water and wastewater plants were analyzed on their existing capacity and the amount remaining at 2038. Capacity was based on available cubic metres remaining and the Equivalent Residential Units (ERUs) currently serviced by District water and wastewater plants. The development forecast for the serviced areas was translated into ERUs to account for both the residential and non-residential development over the planning period. The results were used to develop the share of net DC eligible costs to

be recovered in-period and post-period (costs may be recovered through future DC Background Studies).

Table 1
Wastewater Treatment Plant Capacity

Plant Location	Requires Expansion before 2038	Share of Cost to be Recovered 2019-2038 (%)	Share of Cost to be Recovered Post-2038 (%)
Bracebridge WWTP	No	**0%**	**100%**
Gravenhurst WWTP	Yes	**56%**	**44%**
Huntsville WWTP	Yes	**67%**	**33%**
Port Severn (Lone Line) WWTP	No	**0%**	**100%**

Hemson Consulting Ltd., 2019 and District of Muskoka

TABLE 2 2019 - 2038 DEVELOPMENT RELATED CAPITAL PROGRAM

Table 2 provides details of the development-related capital program for wastewater collection. The gross capital costs amount to $99.89 million and consist of future internal and external debt financing costs ($17.07 million), system expansion projects ($12.21 million), large pumping stations ($16.02 million), small pumping stations ($158,600), wastewater treatment infrastructure ($31.14 million), costs related to the transfer of capacity from Mountview WWTP to Golden Pheasant WWTP ($18.50 million), and other projects ($4.79 million). There are no grants, subsidies or other recoveries identified in the wastewater capital program.

Existing principal debt payments included in the capital program is committed excess capacity brought forward for recovery in the 2019-2038 period and totals $17.07 million. The existing debts relates to various WWTP and linear infrastructure throughout the District that was constructed previously and debt financed.

The capacity analysis as described above was completed to determine in-period eligible costs and costs benefitting development beyond 2038 for WWTPs and related infrastructure projects to be constructed over the planning period. The in-period cost for linear system expansion is $2.15 million, $5.27 million is deemed as benefitting the existing share and a share of $4.79 million is deemed to benefit development beyond 2038.

Large pumping stations are related to the system of wastewater infrastructure of various WWTPs. The same benefit to existing, in-period and post 2038 benefitting shares have been applied to the projects that are on the same collection and treatment system. The benefitting to existing cost is $1.19 million and the post period share is $9.29 million are netted off the gross cost. The remaining in-period cost brought forward for the DC calculation is $5.54 million. Coveside Dr Sewage Pumping Station expansion and related forcemain in Huntsville are not required to service development in the twenty-year period from 2019 to 2038, however the projects will be reviewed in subsequent DC Background Studies to determine future eligibility for DC funding.

Two small pumping stations in Bracebridge are both assigned a benefit to existing share of 60 per cent and the remaining in-period share of $63,400 is brought forward for the calculation of development charges.

The capacity at Mountview Wastewater Treatment Plant will be transferred to the Golden Pheasant facility in Huntsville. The upgrade at the Golden Pheasant facility will accommodate both the existing capacity needs of Mountview WWTP and provide for increased capacity to service future development in the District. The gross cost of the project is estimated at $18.50 million. A portion of 60 per cent has been assigned to benefit the existing development and a portion of 33 per cent or 2.05 million, has been attributed post-period, the same portion as assigned to other treatment plants in Huntsville, leaving the remaining in-period cost of $5.35 million eligible for DC recovery in the twenty-year period.

Finally, other projects like upgrades to SCADA, Mater Servicing Plan and a balloon debt payment make up $4.79 million. Net of $843,800 benefit to existing share, $3.94 million of these project costs is related to development in the 2019-2038 period.

The total DC eligible costs of $52.27 million is allocated 85 per cent, or $44.17 million, residential and 15 per cent, or $8.10 million non-residential. The resulting unadjusted charges for Wastewater services are $3,684.82 per capita for residential development and $93.78 per square metre for non-residential development.

TABLE 3 RESIDENTIAL & NON-RESIDENTIAL CASH FLOW ANALYSIS

The long term cash flow analysis, shown on Table 3 takes into consideration expenditure timing and revenue projections. The residential charge increases to

$4,153.73 per capita and the non-residential charge increases to $105.75 per square metre.

The following is a summary of the Wastewater calculated unadjusted and cash flow adjusted development charge rates:

WASTEWATER SERVICES SUMMARY

2019 - 2038 Development-Related Capital Program		Unadjusted Development Charge		**Adjusted Development Charge**	
Total	Net DC Recoverable	$/capita	$/sq.m	**$/capita**	**$/sq.m**
$99,887,989	$52,274,185	$3,684.82	$93.78	**$4,153.73**	**$105.75**

APPENDIX C.2
TABLE 2

DISTRICT OF MUSKOKA
DEVELOPMENT-RELATED CAPITAL PROGRAM
WASTEWATER SERVICES

Project Description	Timing	Gross Project Cost	Net Municpal Cost	Ineligible Costs		Total Development-Related Costs	Development-Related Costs	
				BTE (%)	Replacement & BTE Shares		2019-2038	Post 2038
2.0 WASTEWATER SERVICES								
2.1 Existing Debt								
2.1.1 BB Sewer Debt Principal	2019-2037	$ 1,847,533	$ 1,847,533	0%	$ -	$ 1,847,533	$ 1,847,533	$ -
2.1.2 Baysville Sewer Principal	2019-2037	$ 1,541,667	$ 1,541,667	0%	$ -	$ 1,541,667	$ 1,541,667	$ -
2.1.3 Mactier Sewer Principal	2019-2037	$ 1,070,410	$ 1,070,410	0%	$ -	$ 1,070,410	$ 1,070,410	$ -
2.1.4 Bracebridge Lagoon Lane STP Principal (DC related)	2019-2021	$ 1,537,320	$ 1,537,320	0%	$ -	$ 1,537,320	$ 1,537,320	$ -
2.1.5 Bracebridge Lagoon Lane STP Principal	2019-2033	$ 955,555	$ 955,555	0%	$ -	$ 955,555	$ 955,555	$ -
2.1.6 Port Carling WWTP Principal	2019-2033	$ 1,227,164	$ 1,227,164	0%	$ -	$ 1,227,164	$ 1,227,164	$ -
2.1.7 Bracebridge Lagoon Lane STP Principal	2019-2019	$ 300,000	$ 300,000	0%	$ -	$ 300,000	$ 300,000	$ -
2.1.8 Port Carling WWTP Principal	2019-2034	$ 1,739,395	$ 1,739,395	0%	$ -	$ 1,739,395	$ 1,739,395	$ -
2.1.9 Huntsville Mountview STP Principal	2019-2034	$ 145,020	$ 145,020	0%	$ -	$ 145,020	$ 145,020	$ -
2.1.10 Bracebridge Lagoon Lane STP Principal	2019-2034	$ 308,193	$ 308,193	0%	$ -	$ 308,193	$ 308,193	$ -
2.1.11 Huntsville Ravensglen Sewer Principal	2019-2029	$ 598,518	$ 598,518	0%	$ -	$ 598,518	$ 598,518	$ -
2.1.12 Huntsville Mountview STP Principal	2019-2029	$ 179,549	$ 179,549	0%	$ -	$ 179,549	$ 179,549	$ -
2.1.13 Bracebridge River Rd Principal	2019-2034	$ 257,080	$ 257,080	0%	$ -	$ 257,080	$ 257,080	$ -
2.1.14 Port Severn Sewer Principal	2019-2027	$ 1,702,418	$ 1,702,418	0%	$ -	$ 1,702,418	$ 1,702,418	$ -
2.1.15 Consol. 2007-90 Mactier Sewage Works Principal	2019-2037	$ 2,635,493	$ 2,635,493	0%	$ -	$ 2,635,493	$ 2,635,493	$ -
2.1.16 Consol. 2007-90 Baysville Sewage Works Principal	2019-2037	$ 996,696	$ 996,696	0%	$ -	$ 996,696	$ 996,696	$ -
2.1.17 Huntsville Church St Principal	2019-2034	$ 27,304	$ 27,304	0%	$ -	$ 27,304	$ 27,304	$ -
Sub-Total Existing Debt		**$ 17,069,314**	**$ 17,069,314**		**$ -**	**$ 17,069,314**	**$ 17,069,314**	**$ -**
2.2 System Expansion Wastewater								
2.2.1 BB Trunk Main from Inveraray Crt to MR 118	2029-2038	$ 1,569,200	$ 1,569,200	50%	$ 784,600	$ 784,600	$ -	$ 784,600
2.2.2 BB Trunk Main Sellens N	2029-2038	$ 1,539,000	$ 1,539,000	50%	$ 769,500	$ 769,500	$ -	$ 769,500
2.2.3 BB Trunk Main MR 4 from Meadow to Sellens	2029-2038	$ 845,000	$ 845,000	50%	$ 422,500	$ 422,500	$ -	$ 422,500
2.2.4 HV North End Servicing	2029-2038	$ 1,539,000	$ 1,539,000	50%	$ 769,500	$ 769,500	$ 519,388	$ 250,112
2.2.5 BB Lagoon Lane STP Headworks	Pre-2019	$ 6,714,875	$ 6,714,875	38%	$ 2,521,436	$ 4,193,439	$ 1,626,950	$ 2,566,489
Sub-Total System Expansion Wastewater		**$ 12,207,075**	**$ 12,207,075**		**$ 5,267,536**	**$ 6,939,539**	**$ 2,146,338**	**$ 4,793,202**
2.3 Pumping Station Large								
2.3.1 HV Ferguson Rd SPS Expansion	2029-2038	$ 603,500	$ 603,500	0%	$ -	$ 603,500	$ 407,343	$ 196,157
2.3.2 HV Hodges Lane SPS Expansion	2029-2038	$ 3,379,900	$ 3,379,900	0%	$ -	$ 3,379,900	$ 2,281,324	$ 1,098,576
2.3.3 HV Twin Hodges PS Forcemain	Pre-2019	$ 236,600	$ 236,600	50%	$ 118,300	$ 118,300	$ 118,300	$ -
2.3.4 HV Coveside Dr SPS Expansion	2029-2038	$ 4,224,800	$ 4,224,800	0%	$ -	$ 4,224,800	$ -	$ 4,224,800
2.3.5 HV Coveside Dr SPS Forcemain	2029-2038	$ 1,810,600	$ 1,810,600	0%	$ -	$ 1,810,600	$ -	$ 1,810,600
2.3.6 GH Taboo SPS Expansion	2029-2038	$ 3,621,300	$ 3,621,300	0%	$ -	$ 3,621,300	$ 2,014,200	$ 1,607,100
2.3.7 HV Twin Hodges PS Forcemain Future	2029-2038	$ 2,145,900	$ 2,145,900	50%	$ 1,072,950	$ 1,072,950	$ 724,207	$ 348,743
Sub-Total Pumping Station Large		**$ 16,022,600**	**$ 16,022,600**		**$ 1,191,250**	**$ 14,831,350**	**$ 5,545,374**	**$ 9,285,976**

APPENDIX C.2
TABLE 2

DISTRICT OF MUSKOKA
DEVELOPMENT-RELATED CAPITAL PROGRAM
WASTEWATER SERVICES

Project Description	Timing	Gross Project Cost	Net Municpal Cost	Ineligible Costs BTE (%)	Ineligible Costs Replacement & BTE Shares	Total Development-Related Costs	Development-Related Costs 2019-2038	Development-Related Costs Post 2038
2.4 Pumping Station Small								
2.4.1 BB Ridge Valley SPS	2019	$ 74,100	$ 74,100	60%	$ 44,460	$ 29,640	$ 29,640	$ -
2.4.2 BB Ridge Valley SPS	2029-2038	$ 84,500	$ 84,500	60%	$ 50,700	$ 33,800	$ 33,800	$ -
Sub-Total Pumping Station Small		**$ 158,600**	**$ 158,600**		**$ 95,160**	**$ 63,440**	**$ 63,440**	**$ -**
2.5 Treatment Wastewater								
2.5.1 GH STP Expansion	2029-2038	$ 24,141,900	$ 24,141,900	0%	$ -	$ 24,141,900	$ 13,427,945	$ 10,713,955
2.5.2 HV GP Upgrade/Expansion Future	2028	$ 7,000,000	$ 7,000,000	0%	$ -	$ 7,000,000	$ 4,724,776	$ 2,275,224
Sub-Total Treatment Wastewater		**$ 31,141,900**	**$ 31,141,900**		**$ -**	**$ 31,141,900**	**$ 18,152,720**	**$ 12,989,180**
2.6 Mountview/Golden Pheasant								
2.6.1 HV Forcemain from MV to GP Phase I	Pre-2019	$ 2,750,000	$ 2,750,000	60%	$ 1,650,000	$ 1,100,000	$ 1,100,000	$ -
2.6.2 HV MV STP Convert SPS	2020-2021	$ 8,000,000	$ 8,000,000	60%	$ 4,800,000	$ 3,200,000	$ 2,159,897	$ 1,040,103
2.6.3 HV Forcemain from MV to GP Phase II	2019-2020	$ 7,750,000	$ 7,750,000	60%	$ 4,650,000	$ 3,100,000	$ 2,092,401	$ 1,007,599
Sub-Total Mountview/Golden Pheasant		**$ 18,500,000**	**$ 18,500,000**		**$ 11,100,000**	**$ 7,400,000**	**$ 5,352,298**	**$ 2,047,702**
2.7 Other Projects								
2.7.1 DMM SCADA Upgrades Future	Various	$ 953,500	$ 953,500	80%	$ 762,800	$ 190,700	$ 190,700	$ -
2.7.2 DMM Green House Gas Inventory & Reduction Strategy	2019	$ 135,000	$ 135,000	60%	$ 81,000	$ 54,000	$ 54,000	$ -
2.7.3 Master Servicing Plan (Wastewater Share)	2023	$ 100,000	$ 100,000	0%	$ -	$ 100,000	$ 100,000	$ -
2.7.4 Debt Balloon Payment (2009-63) Lagoon Lane	2019	$ 3,600,000	$ 3,600,000	0%	$ -	$ 3,600,000	$ 3,600,000	$ -
Sub-Total Other Projects		**$ 4,788,500**	**$ 4,788,500**		**$ 843,800**	**$ 3,944,700**	**$ 3,944,700**	**$ -**
TOTAL WASTEWATER SERVICES		**$ 99,887,989**	**$ 99,887,989**		**$ 18,497,746**	**$ 81,390,244**	**$ 52,274,185**	**$ 29,116,059**

Note: No grants, subsidies or other recoveries have been identified in this capital program.

Residential Development Charge Calculation		
Residential Share of 2019-2038 Discounted Growth-Related Capital Program	85%	$44,171,905
20 Year Growth in Population in New Units - On Municipal Servicing		11,988
Unadjusted Development Charge Per Capita ($)		**$3,684.82**
Non-Residential Development Charge Calculation		
Non-Residential Share of 2019-2038 Discounted Growth-Related Capital Program	15%	$8,102,280
20 Year Growth in Square Metres - On Municipal Servicing		86,397
Unadjusted Development Charge Per sq. m ($)		**$93.78**

2019 - 2038 Net Funding Envelope	N/A
Reserve Fund Balance	
Balance as at December 31, 2018	$2,246,584
Committed to BTE as units developed and in Existing	($2,246,584)
Net Available Balance	**$ -**

APPENDIX C.2
TABLE 3

DISTRICT OF MUSKOKA
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
WASTEWATER SERVICES
RESIDENTIAL DEVELOPMENT CHARGE
(in $000)

WASTEWATER SERVICES	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
OPENING CASH BALANCE	$0	($6,574)	($8,323)	($9,182)	($8,387)	($7,557)	($6,502)	($5,302)	($3,945)	($1,969)	($4,502)
2019 - 2038 RESIDENTIAL FUNDING REQUIREMENTS											
- Wastewater Services: Non Inflated	$6,409	$1,805	$921	$8	$93	$8	$8	$8	$8	$4,001	$1,648
- Debt Wastewater Services: Not Inflated (1)	$1,520	$1,266	$1,266	$833	$833	$833	$833	$833	$833	$673	$673
- Wastewater Services: Inflated	$7,929	$3,107	$2,224	$842	$933	$842	$842	$843	$843	$5,454	$2,682
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	543	543	543	583	583	583	583	583	674	674	674
REVENUE											
- DC Receipts: Inflated	$2,256	$2,301	$2,347	$2,571	$2,622	$2,675	$2,728	$2,783	$3,282	$3,347	$3,414
INTEREST											
- Interest on Opening Balance	$0	($362)	($458)	($505)	($461)	($416)	($358)	($292)	($217)	($108)	($248)
- Interest on In-year Transactions	($156)	($22)	$2	$30	$30	$32	$33	$34	$43	($58)	$13
- Debt Wastewater Services: Not Inflated (1)	($745)	($560)	($527)	($459)	($427)	($395)	($361)	($326)	($289)	($260)	($231)
TOTAL REVENUE	$1,355	$1,357	$1,365	$1,637	$1,763	$1,896	$2,043	$2,200	$2,818	$2,921	$2,948
CLOSING CASH BALANCE	($6,574)	($8,323)	($9,182)	($8,387)	($7,557)	($6,502)	($5,302)	($3,945)	($1,969)	($4,502)	($4,236)

WASTEWATER SERVICES	2030	2031	2032	2033	2034	2035	2036	2037	2038	TOTAL
OPENING CASH BALANCE	($4,236)	($3,837)	($3,357)	($3,119)	($2,813)	($2,308)	($1,591)	($789)	($595)	
2019 - 2038 RESIDENTIAL FUNDING REQUIREMENTS										
- Wastewater Services: Non Inflated	$1,648	$1,648	$1,648	$1,648	$1,648	$1,648	$1,648	$1,648	$1,648	**$29,748**
- Debt Wastewater Services: Not Inflated (1)	$614	$614	$614	$614	$491	$360	$360	$360	$0	**$14,424**
- Wastewater Services: Inflated	$2,663	$2,704	$2,746	$2,788	$2,709	$2,622	$2,668	$2,714	$2,401	**$50,555**
NEW RESIDENTIAL DEVELOPMENT										
- Population Growth in New Units	674	674	615	615	615	615	615	499	499	**11,988**
REVENUE										
- DC Receipts: Inflated	$3,483	$3,552	$3,302	$3,368	$3,435	$3,504	$3,574	$2,959	$3,018	**$60,523**
INTEREST										
- Interest on Opening Balance	($233)	($211)	($185)	($172)	($155)	($127)	($88)	($43)	($33)	**($4,669)**
- Interest on In-year Transactions	$14	$15	$10	$10	$13	$15	$16	$4	$11	**$89**
- Debt Wastewater Services: Not Inflated (1)	($202)	($173)	($143)	($112)	($80)	($53)	($33)	($12)	$0	**($5,388)**
TOTAL REVENUE	$3,062	$3,183	$2,984	$3,095	$3,213	$3,339	$3,469	$2,908	$2,996	**$50,555**
CLOSING CASH BALANCE	($3,837)	($3,357)	($3,119)	($2,813)	($2,308)	($1,591)	($789)	($595)	$0	

(1) Includes principal and interest payments for debt related to BB Sewer (By-law 2007-3), Baysville Sewer (By-law 2007-4), (By-law 2011-52), Bracebrige Sewer (By-law 2013-61), (By-law 2013-61), Port Carling Sewer (By-law 2015-7), Bracebridge Sewer (By-law 2015-7), Huntsville Sewer (by-law 2015-7), Huntsville Sewer (By-law 2009-74), Bracebrindge Sewer (By-law 2009-74), Bracebridge Sewer (By-law 2015-7), Huntsville Sewer (By-law 2015-7)

2019 Adjusted Charge Per Capita	**$4,153.73**

Allocation of Capital Program	
Residential Sector	84.5%
Non-Residential Sector	15.5%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX C.2
TABLE 3

DISTRICT OF MUSKOKA
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
WASTEWATER SERVICES
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in $000)

WASTEWATER SERVICES	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
OPENING CASH BALANCE	$0	($1,174)	($1,458)	($1,576)	($1,417)	($1,248)	($1,036)	($792)	($537)	($239)	($774)
2019 - 2038 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Wastewater Services: Non Inflated	$1,176	$331	$169	$1	$17	$1	$1	$1	$1	$734	$302
- Debt Wastewater Services: Not Inflated (1)	$279	$232	$232	$153	$153	$153	$153	$153	$153	$124	$124
- Wastewater Services: Inflated	$1,454.35	$570	$408	$154	$171	$154	$155	$155	$155	$1,000	$492
NEW NON-RESIDENTIAL DEVELOPMENT											
- Non-Residential GFA	4202	4233	4233	4264	4295	4295	4326	4168	4266	4264	4295
REVENUE											
- DC Receipts: Inflated	$444	$457	$466	$479	$492	$501	$515	$506	$529	$539	$554
INTEREST											
- Interest on Opening Balance	$0	($65)	($80)	($87)	($78)	($69)	($57)	($44)	($30)	($13)	($43)
- Interest on In-year Transactions	($28)	($3)	$1	$6	$6	$6	$6	$6	$7	($13)	$1
- Debt Wastewater Services: Not Inflated (1)	($137)	($103)	($97)	($84)	($78)	($72)	($66)	($60)	($53)	($48)	($42)
TOTAL REVENUE	$280	$286	$290	$313	$341	$367	$398	$409	$453	$465	$470
CLOSING CASH BALANCE	($1,174)	($1,458)	($1,576)	($1,417)	($1,248)	($1,036)	($792)	($537)	($239)	($774)	($797)

WASTEWATER SERVICES	2030	2031	2032	2033	2034	2035	2036	2037	2038	TOTAL
OPENING CASH BALANCE	($797)	($796)	($785)	($761)	($725)	($649)	($536)	($404)	($246)	
2019 - 2038 NON-RESIDENTIAL FUNDING REQUIREMENTS										
- Wastewater Services: Non Inflated	$302	$302	$302	$302	$302	$302	$302	$302	$302	**$5,457**
- Debt Wastewater Services: Not Inflated (1)	$113	$113	$113	$113	$90	$66	$66	$66	$0	**$2,646**
- Wastewater Services: Inflated	$488	$496	$504	$511	$497	$481	$489	$498	$440	**$9,273**
NEW NON-RESIDENTIAL DEVELOPMENT										
- Non-Residential GFA	4326	4326	4357	4357	4388	4388	4419	4482	4513	**86,397**
REVENUE										
- DC Receipts: Inflated	$569	$580	$596	$608	$625	$637	$654	$677	$695	**$11,122**
INTEREST										
- Interest on Opening Balance	($44)	($44)	($43)	($42)	($40)	($36)	($29)	($22)	($14)	**($877)**
- Interest on In-year Transactions	$1	$1	$2	$2	$2	$3	$3	$3	$4	**$17**
- Debt Wastewater Services: Not Inflated (1)	($37)	($32)	($26)	($21)	($15)	($10)	($6)	($2)	$0	**$0**
TOTAL REVENUE	$489	$506	$528	$547	$572	$594	$622	$656	$686	**$9,273**
CLOSING CASH BALANCE	($796)	($785)	($761)	($725)	($649)	($536)	($404)	($246)	$0	

(1) Includes principal and interest payments for debt related to BB Sewer (By-law 2007-3), Baysville Sewer (By-law 2007-4), (By-law 2011-52), Bracebrige Sewer (By-law 2013-61), (By-law 2013-61), Port Carling Sewer (By-law 2015-7), Bracebridge Sewer (By-law 2015-7), Huntsville Sewer (by-law 2015-7), Huntsville Sewer (By-law 2009-74), Bracebrindge Sewer (By-law 2009-74), Bracebridge Sewer (By-law 2015-7), Huntsville Sewer (By-law 2015-7)

2019 Adjusted Charge Per Sq.M.	**$105.75**

Allocation of Capital Program	
Residential Sector	84.5%
Non-Residential Sector	15.5%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX C.3

WATER SERVICES

APPENDIX C.3

WATER SERVICES

The Engineering and Public Works Department oversees the design, development and construction of all municipal water infrastructure. The department also provides review and inspection services to facilitate new development and to maintain legislated service standards. This appendix provides a brief outline of the District's Water services which provides for water distribution and treatment. The benefits of water infrastructure are considered to be limited to areas that are serviced by water, therefore the development charges are calculated based on development in the serviced areas only. A forecast has been prepared for the serviced area and details are included in Appendix A.

The following tables set out the 2019 to 2038 development-related capital program and the calculation of the development charges for Water services. The cost, quantum and description of the projects included in the forecast are based upon the 2019 Capital Budget and information provided by District staff.

The project list has been updated from the District's 2014 Development Charge Background Study to remove completed projects or shares of partially completed projects. The project costs have been updated to 2019 dollars based on recent tender prices and the Statistic Canada Construction Price Index.

Tables 1 to 3 provide details of the projects included in the Water Services development charges calculation applicable to the land serviced by the District. The content of the tables is as follows:

Table 1	Water Plant Capacity Analysis
Table 2	Development-Related Capital Program Water Services
Table 3	Residential & Non-Residential Cash Flow Analysis

TABLE 1 WATER PLANT CAPACITY ANALYSIS

Water Treatment Plants were analyzed in a similar manner to the Wastewater Treatment Plants detailed in Appendix C.2. Outlined in Table 1 below, are the results

of the capacity analysis completed on a system-by-system basis for Water Treatment Plants as presented in the capital program tables below.

Table 1
Water Treatment Plant Capacity

Plant Location	Requires Expansion before 2038	Share of Cost to be Recovered 2019-2038 (%)	Share of Cost to be Recovered Post-2038 (%)
Bracebridge WTP	No	**0%**	**100%**
Gravenhurst WTP	No	**0%**	**100%**
Huntsville WTP	Yes	**37%**	**63%**
Port Severn (Lone Line) WTP	No	**0%**	**100%**

Source: Hemson Consulting Ltd., 2019 and District of Muskoka

TABLE 2 2019 - 2038 DEVELOPMENT RELATED CAPITAL PROGRAM

Table 2 provides details of the development-related capital program for water distribution and treatment. The total gross capital cost amounts to $77.89 million. The capital program is made up of internal and external long-term debt payments related to Gravenhurst Water Tower, Huntsville Hanes Road Reservoir, Bayvsille water distribution and treatment system, Port Severn distribution and treatment system, and Bala and Macteir WTP. The existing principal payments total of $10.27 million and relates to various Water Treatment Plants and linear infrastructure throughout the District. The entire amount is deemed committed excess capacity, and therefore DC eligible, and is brought forward for calculation of the development charges in the 2019 DC Background Study.

Water distribution includes four projects at a gross cost of $2.65 million of which $873,400 is the benefit to existing share. The remaining $1.77 million is deemed eligible for recovery through development charges in the 2019-2038 period.

The treatment of water includes expansions at the Bracebridge, Gravenhurst and Huntsville WTPs with a gross cost of $60.30 million. Costs related to Huntvsille Phase III works and proposed expansion of the plant are deemed eligible for recovery in the 2019-2038 period at 30 per cent and 37 per cent respectively. The shares are based on the allocation analysis as show in Table 1 above. The remaining costs of $3.58 million and $47.44 million are the benefit to exiting and post-2038 benefitting costs respectively.

Two water tower projects are included in the capital program proposed in this DC Background Study. Half of the costs associated with the water reservoirs, $1.81 million, are deemed eligible for recovery though DCs in the twenty-year period. The remaining half of the cost is deemed to benefit existing development.

Lastly, other projects make up $1.05 million of the gross cost, $290,700 of which is deemed eligible for DC recovery in the 2019-2038 period.

The total in-period cost eligible for recovery through development charges is $23.42 million and is allocated 85 per cent to residential development ($19.79 million) and 15 per cent non-residential development ($3.63 million). The resulting unadjusted development charges are $1,651.17 per capita and $42.02 per square metre.

TABLE 3 RESIDENTIAL & NON-RESIDENTIAL CASH FLOW ANALYSIS

The long term cash flow analysis, shown on Table 3 takes into consideration expenditure timing and revenue projections. The residential charge increases to $1,864.95 per capita and the non-residential charge decrease to $47.48 per square metre.

The following is a summary of the Water calculated unadjusted and cash flow adjusted development charge rates:

WATER SERVICES SUMMARY

2019 - 2038 Development-Related Capital Program		Unadjusted Development Charge		**Adjusted Development Charge**	
Total	Net DC Recoverable	$/capita	$/sq.m	**$/capita**	**$/sq.m**
$77,889,667	$23,424,131	$1,651.17	$42.02	**$1,864.95**	**$47.48**

APPENDIX C.3
TABLE 2

DISTRICT OF MUSKOKA
DEVELOPMENT-RELATED CAPITAL PROGRAM
WATER SERVICES

Project Description	Timing	Gross Project Cost	Net Municpal Cost	Ineligible Costs		Total Development-Related Costs	Development-Related Costs	
				BTE (%)	Replacement & BTE Shares		2019-2038	Post 2038
3.0 WATER SERVICES								
3.1 Existing Debt								
3.1.1 Gravenhurst Water Tower Principal	2019-2029	$ 369,586	$ 369,586	0%	$ -	$ 369,586	$ 369,586	$ -
3.1.2 Huntsville - Hanes Road Reservoir and Booster Stn.	2019-2037	$ 3,026,824	$ 3,026,824	0%	$ -	$ 3,026,824	$ 3,026,824	$ -
3.1.3 Huntsville - Hanes Road Principal	2019-2027	$ 583,017	$ 583,017	0%	$ -	$ 583,017	$ 583,017	$ -
3.1.4 Baysville Water Construction Principal	2019-2037	$ 2,279,200	$ 2,279,200	0%	$ -	$ 2,279,200	$ 2,279,200	$ -
3.1.5 Baysville New Connections Principal	2019-2037	$ 1,517,405	$ 1,517,405	0%	$ -	$ 1,517,405	$ 1,517,405	$ -
3.1.6 Port Severn Water (refin) Principal	2019-2027	$ 537,463	$ 537,463	0%	$ -	$ 537,463	$ 537,463	$ -
3.1.7 Improvemetns to Bala and Mactier WTP Principal	2019-2027	$ 417,605	$ 417,605	0%	$ -	$ 417,605	$ 417,605	$ -
3.1.8 Baysville Water Principal	2019-2037	$ 1,541,667	$ 1,541,667	0%	$ -	$ 1,541,667	$ 1,541,667	$ -
Sub-Total Existing Debt		**$ 10,272,767**	**$ 10,272,767**		**$ -**	**$ 10,272,767**	**$ 10,272,767**	**$ -**
3.2 Distribution Water								
3.2.1 HV North End Servicing	2019	$ 1,500,000	$ 1,500,000	20%	$ 300,000	$ 1,200,000	$ 1,200,000	$ -
3.2.2 GH Brydon Bay Loop - Gravenhurst	2029-2038	$ 1,146,800	$ 1,146,800	50%	$ 573,400	$ 573,400	$ 573,400	$ -
Sub-Total Distribution Water		**$ 2,646,800**	**$ 2,646,800**		**$ 873,400**	**$ 1,773,400**	**$ 1,773,400**	**$ -**
3.3 Treatment Water								
3.3.1 BB WTP Expansion	2029-2038	$ 24,141,900	$ 24,141,900	0%	$ -	$ 24,141,900	$ -	$ 24,141,900
3.3.2 GH WTP Expansion	2029-2038	$ 10,000,000	$ 10,000,000	0%	$ -	$ 10,000,000	$ -	$ 10,000,000
3.3.3 HV WTP Phase III	2019	$ 5,111,600	$ 5,111,600	70%	$ 3,578,120	$ 1,533,480	$ 1,533,480	$ -
3.3.4 HV WTP Expansion	2029-2038	$ 21,041,900	$ 21,041,900	0%	$ -	$ 21,041,900	$ 7,743,184	$ 13,298,716
Sub-Total Treatment Water		**$ 60,295,400**	**$ 60,295,400**		**$ 3,578,120**	**$ 56,717,280**	**$ 9,276,664**	**$ 47,440,616**

APPENDIX C.3
TABLE 2

DISTRICT OF MUSKOKA
DEVELOPMENT-RELATED CAPITAL PROGRAM
WATER SERVICES

Project Description	Timing	Gross Project Cost	Net Municpal Cost	Ineligible Costs BTE (%)	Ineligible Costs Replacement & BTE Shares	Total Development-Related Costs	Development-Related Costs 2019-2038	Development-Related Costs Post 2038
3.0 WATER SERVICES								
3.4 Reservoir Water								
3.4.1 BAYS Water Tower	2027-2028	$ 1,810,600	$ 1,810,600	50%	$ 905,300	$ 905,300	$ 905,300	$ -
3.4.2 PS Water Tower	2025-2026	$ 1,810,600	$ 1,810,600	50%	$ 905,300	$ 905,300	$ 905,300	$ -
Sub-Total Reservoir Water		**$ 3,621,200**	**$ 3,621,200**		**$ 1,810,600**	**$ 1,810,600**	**$ 1,810,600**	**$ -**
3.5 Other Projects								
3.5.1 DMM SCADA Upgrades Future	2020-2038	$ 953,500	$ 953,500	80%	$ 762,800	$ 190,700	$ 190,700	$ -
3.5.2 Master Servicing Plan (Water Share)	2023	$ 100,000	$ 100,000	0%	$ -	$ 100,000	$ 100,000	$ -
Sub-Total Other Projects		**$ 1,053,500**	**$ 1,053,500**		**$ 762,800**	**$ 290,700**	**$ 290,700**	**$ -**
TOTAL WATER SERVICES		**$ 77,889,667**	**$ 77,889,667**		**$ 7,024,920**	**$ 70,864,747**	**$ 23,424,131**	**$ 47,440,616**

Note: No grants, subsidies or other recoveries have been identified in this capital program.

Residential Development Charge Calculation		
Residential Share of 2019-2038 Discounted Growth-Related Capital Program	85%	$19,793,489
20 Year Growth in Population in New Units - On Municipal Servicing		11,988
Unadjusted Development Charge Per Capita ($)		**$1,651.17**
Non-Residential Development Charge Calculation		
Non-Residential Share of 2019-2038 Discounted Growth-Related Capital Program	15%	$3,630,642
20 Year Growth in Square Metres - On Municipal Servicing		86,397
Unadjusted Development Charge Per sq. m ($)		**$42.02**

2019 - 2038 Net Funding Envelope	N/A
Reserve Fund Balance	
Balance as at December 31, 2018	$1,914,230
Committed to BTE as units developed and in Existing	($1,914,230)
Net Available Balance	**$ -**

APPENDIX C.3
TABLE 3

DISTRICT OF MUSKOKA
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
WATER SERVICES
RESIDENTIAL DEVELOPMENT CHARGE
(in $000)

WATER SERVICES	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
OPENING CASH BALANCE	$0	($2,173)	($2,082)	($1,958)	($1,719)	($1,532)	($1,212)	($1,282)	($1,335)	($1,106)	($709)
2019 - 2038 RESIDENTIAL FUNDING REQUIREMENTS											
- Water Services: Non Inflated	$2,310	$8	$8	$8	$93	$8	$391	$391	$391	$391	$711
- Debt Water Services: Not Inflated (1)	$443	$456	$470	$485	$500	$516	$534	$552	$512	$399	$410
- Water Services: Inflated	$2,753	$465	$479	$494	$601	$526	$974	$1,001	$970	$866	$1,277
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	543	543	543	583	583	583	583	583	674	674	674
REVENUE											
- DC Receipts: Inflated	$1,013	$1,033	$1,054	$1,154	$1,177	$1,201	$1,225	$1,249	$1,473	$1,503	$1,533
INTEREST											
- Interest on Opening Balance	$0	($120)	($114)	($108)	($95)	($84)	($67)	($71)	($73)	($61)	($39)
- Interest on In-year Transactions	($48)	$10	$10	$12	$10	$12	$4	$4	$9	$11	$4
- Debt Water Services: Not Inflated (1)	($386)	($367)	($347)	($326)	($305)	($283)	($259)	($235)	($210)	($190)	($172)
TOTAL REVENUE	$579	$557	$603	$732	$788	$846	$903	$948	$1,199	$1,263	$1,326
CLOSING CASH BALANCE	($2,173)	($2,082)	($1,958)	($1,719)	($1,532)	($1,212)	($1,282)	($1,335)	($1,106)	($709)	($660)

WATER SERVICES	2030	2031	2032	2033	2034	2035	2036	2037	2038	TOTAL
OPENING CASH BALANCE	($660)	($556)	($427)	($418)	($391)	($345)	($280)	($192)	($308)	
2019 - 2038 RESIDENTIAL FUNDING REQUIREMENTS										
- Water Services: Non Inflated	$711	$711	$711	$711	$711	$711	$711	$711	$711	**$11,113**
- Debt Water Services: Not Inflated (1)	$390	$402	$414	$428	$442	$456	$472	$401	$0	**$8,681**
- Water Services: Inflated	$1,274	$1,304	$1,334	$1,366	$1,399	$1,433	$1,468	$1,417	$1,036	**$22,435**
NEW RESIDENTIAL DEVELOPMENT										
- Population Growth in New Units	674	674	615	615	615	615	615	499	499	**11,988**
REVENUE										
- DC Receipts: Inflated	$1,564	$1,595	$1,483	$1,512	$1,542	$1,573	$1,605	$1,329	$1,355	**$27,174**
INTEREST										
- Interest on Opening Balance	($36)	($31)	($23)	($23)	($22)	($19)	($15)	($11)	($17)	**($1,028)**
- Interest on In-year Transactions	$5	$5	$3	$3	$3	$2	$2	($2)	$6	**$65**
- Debt Water Services: Not Inflated (1)	($154)	($137)	($118)	($99)	($79)	($58)	($37)	($14)	$0	**($3,776)**
TOTAL REVENUE	$1,378	$1,433	$1,344	$1,393	$1,445	$1,499	$1,555	$1,301	$1,344	**$22,435**
CLOSING CASH BALANCE	($556)	($427)	($418)	($391)	($345)	($280)	($192)	($308)	$0	

(1) Includes principal and interest payments for the debt related to Gravenhurst Water (By-law 2009-74), Huntsville - Haynes Rd (By-law 2007-84/2007-90), and Baysville Water (By-law 2007-3)

2019 Adjusted Charge Per Capita	**$1,864.95**

Allocation of Capital Program	
Residential Sector	84.5%
Non-Residential Sector	15.5%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX C.3
TABLE 3

DISTRICT OF MUSKOKA
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
WATER SERVICES
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in $000)

WATER SERVICES	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
OPENING CASH BALANCE	$0	($385)	($351)	($311)	($261)	($219)	($152)	($154)	($161)	($148)	($107)
2019 - 2038 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Water Services: Non Inflated	$424	$2	$2	$2	$17	$2	$72	$72	$72	$72	$130
- Debt Water Services: Not Inflated (1)	$81	$84	$86	$89	$92	$95	$98	$101	$94	$73	$75
- Water Services: Inflated	$505	$85	$88	$91	$110	$96	$179	$184	$178	$159	$234
NEW NON-RESIDENTIAL DEVELOPMENT											
- Non-Residential GFA	4202	4233	4233	4264	4295	4295	4326	4168	4266	4264	4295
REVENUE											
- DC Receipts: Inflated	$199	$205	$209	$215	$221	$225	$231	$227	$237	$242	$249
INTEREST											
- Interest on Opening Balance	$0	($21)	($19)	($17)	($14)	($12)	($8)	($8)	($9)	($8)	($6)
- Interest on In-year Transactions	($8)	$2	$2	$2	$2	$2	$1	$1	$1	$1	$0
- Debt Water Services: Not Inflated (1)	($71)	($67)	($64)	($60)	($56)	($52)	($48)	($43)	($39)	($35)	($32)
TOTAL REVENUE	$120	$119	$128	$140	$152	$164	$176	$176	$191	$200	$211
CLOSING CASH BALANCE	($385)	($351)	($311)	($261)	($219)	($152)	($154)	($161)	($148)	($107)	($130)

WATER SERVICES	2030	2031	2032	2033	2034	2035	2036	2037	2038	TOTAL
OPENING CASH BALANCE	($130)	($143)	($154)	($161)	($165)	($165)	($161)	($151)	($117)	
2019 - 2038 NON-RESIDENTIAL FUNDING REQUIREMENTS										
- Water Services: Non Inflated	$130	$130	$130	$130	$130	$130	$130	$130	$130	**$2,038**
- Debt Water Services: Not Inflated (1)	$72	$74	$76	$78	$81	$84	$87	$74	$0	**$1,592**
- Water Services: Inflated	$234	$239	$245	$251	$257	$263	$269	$260	$190	**$4,115**
NEW NON-RESIDENTIAL DEVELOPMENT										
- Non-Residential GFA	4326	4326	4357	4357	4388	4388	4419	4482	4513	**86,397**
REVENUE										
- DC Receipts: Inflated	$255	$261	$268	$273	$280	$286	$294	$304	$312	**$4,994**
INTEREST										
- Interest on Opening Balance	($7)	($8)	($8)	($9)	($9)	($9)	($9)	($8)	($6)	**($198)**
- Interest on In-year Transactions	$0	$0	$0	$0	$0	$0	$0	$1	$2	**$12**
- Debt Water Services: Not Inflated (1)	($28)	($25)	($22)	($18)	($14)	($11)	($7)	($3)	$0	**($693)**
TOTAL REVENUE	$220	$228	$238	$246	$257	$267	$279	$294	$308	**$4,116**
CLOSING CASH BALANCE	($143)	($154)	($161)	($165)	($165)	($161)	($151)	($117)	$0	

(1) Includes principal and interest payments for the debt related to Gravenhurst Water (By-law 2009-74), Huntsville - Haynes Rd (By-law 2007-84/2007-90), and Baysville Water (By-law 2007-3)

2019 Adjusted Charge Per Sq.M.	**$47.48**

Allocation of Capital Program	
Residential Sector	84.5%
Non-Residential Sector	15.5%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX C.4

RURAL AREA SEPTAGE

APPENDIX C.4

RURAL AREA SEPTAGE

The Engineering and Public Works Department oversee the design, development and construction of all septic waste treatment infrastructure. The department also provides review and inspection services to facilitate new development and to maintain service standards. This appendix provides a brief outline of the District's Rural Area Septage services, which provides for hauling septic waste from holding tanks to sewage lagoons or urban septage treatment plants for treatment in rural areas. The benefits of Rural Area Septage infrastructure are considered to be limited to those areas not serviced by municipal water and wastewater services and therefore the development charges are calculated based on development in the unserviced areas only. A forecast has been prepared for the unserviced area and details are included in Appendix A.

The following tables set out the 2019 to 2038 development-related capital program and the calculation of the development charge for Rural Area Septage services. The cost, quantum and description of the projects included in the program are based upon the 2019 Capital Budget and information provided by District staff.

The project list has been updated from the District's 2014 Development Charge Background Study to remove completed projects or shares of partially completed projects. The project costs have been updated to 2019 dollars based on recent tender prices and the Statistics Canada Construction Price Index.

Tables 1 and 2 provide details of the projects included in the Rural Area Septage development charges calculations applicable to unserviced land in the District. The content of the tables is as follows:

Table 1	Development-Related Capital Program Rural Area Septage
Table 2	Residential & Non-Residential Cash Flow Analysis

TABLE 1 2019 - 2038 DEVELOPMENT-RELATED CAPITAL PROGRAM

Table 1 provides details of the development-related capital program for hauled sewage collection and treatment. The gross capital costs amount to $16.63 million. A benefit to existing share of 88 per cent, $14.63 million, is attributed to all projects in the capital program to account for current unserviced units in the District. This share is based on development of new units in the unserved area over the existing base.

The remaining amount of $2.00 million is deemed eligible for recovery in the 2019-2038 period and is allocated 93 per cent unserviced residential development ($1.86 million) and 7 per cent unserviced non-residential development ($138,096). The resulting unadjusted development charges are $220.19 per capita and $5.60 per square metre.

TABLE 2 RESIDENTIAL & NON-RESIDENTIAL CASH FLOW ANALYSIS

The long term cash flow analysis, shown on Table 2 takes into consideration expenditure timing and revenue projections. The residential charge decreases to $215.60 per capita and the non-residential charge decrease to $5.67 per square metre.

The following is a summary of the Rural Area Septage calculated unadjusted and cash flow adjusted development charge rates:

RURAL AREA SEPTAGE SUMMARY

2019 - 2038 Development-Related Capital Program		Unadjusted Development Charge		**Adjusted Development Charge**	
Total	Net DC Recoverable	$/capita	$/sq.m	**$/capita**	**$/sq.m**
$16,627,500	$1,995,300	$220.19	$5.60	**$215.60**	**$5.67**

APPENDIX C.4
TABLE 1

DISTRICT OF MUSKOKA
DEVELOPMENT-RELATED CAPITAL PROGRAM
RURAL AREA SEPTAGE

Project Description	Timing	Gross Project Cost	Net Municpal Cost	Ineligible Costs BTE (%)	Ineligible Costs Replacement & BTE Shares	Total Development-Related Costs	Development-Related Costs 2019-2038	Development-Related Costs Post 2038
4.0 RURAL AREA SEPTAGE								
4.1 Hauled Sewage Projects								
4.1.1 McLean Upgrade/Expansion	Various	$ 836,000	$ 836,000	88%	$ 735,680	$ 100,320	$ 100,320	$ -
4.1.2 Baxter Upgrade/Expansion Future	Various	$ 1,240,100	$ 1,240,100	88%	$ 1,091,288	$ 148,812	$ 148,812	$ -
4.1.3 Medora Spray Irrigation Expansion	Various	$ 340,500	$ 340,500	88%	$ 299,640	$ 40,860	$ 40,860	$ -
4.1.4 Receiving Facilities HV Sewage Plant	Prior to 2019	$ 2,070,000	$ 2,070,000	88%	$ 1,821,600	$ 248,400	$ 248,400	$ -
4.1.5 Receiving Facilities GH Sewage Plant	2029-2038	$ 2,355,600	$ 2,355,600	88%	$ 2,072,928	$ 282,672	$ 282,672	$ -
4.1.6 Franklin Exfiltration Pond Expansion Future	Various	$ 1,124,600	$ 1,124,600	88%	$ 989,648	$ 134,952	$ 134,952	$ -
4.1.7 Mobile Dewatering Equipment	Various	$ 533,800	$ 533,800	88%	$ 469,744	$ 64,056	$ 64,056	$ -
4.1.8 Watt Rehabilitation Future	2029-2038	$ 1,030,600	$ 1,030,600	88%	$ 906,928	$ 123,672	$ 123,672	$ -
4.1.9 Freeman Spray Irrigation Expansion Future	Various	$ 1,376,400	$ 1,376,400	88%	$ 1,211,232	$ 165,168	$ 165,168	$ -
4.1.10 Ryde Upgrade/Expansion & Property Future	2029-2038	$ 765,600	$ 765,600	88%	$ 673,728	$ 91,872	$ 91,872	$ -
4.1.11 Stephenson Upgrade	Prior to 2019	$ 900,000	$ 900,000	88%	$ 792,000	$ 108,000	$ 108,000	$ -
4.1.12 Bracebridge Lagoon Upgrade/Expansion Future	2029-2038	$ 441,700	$ 441,700	88%	$ 388,696	$ 53,004	$ 53,004	$ -
4.1.13 Medora Spray Irrigation Expansion Future	2029-2038	$ 1,030,600	$ 1,030,600	88%	$ 906,928	$ 123,672	$ 123,672	$ -
4.1.14 Receiving Facilities MT Sewage Plant	2029-2038	$ 471,100	$ 471,100	88%	$ 414,568	$ 56,532	$ 56,532	$ -
4.1.15 Receiving Facilities BAYS Sewage Plant	2029-2038	$ 471,100	$ 471,100	88%	$ 414,568	$ 56,532	$ 56,532	$ -
4.1.16 Bracebridge Lagoon Upgrade/Expansion	2019-2020	$ 432,500	$ 432,500	88%	$ 380,600	$ 51,900	$ 51,900	$ -
4.1.17 Stephenson Upgrade Future	2029-2038	$ 1,207,300	$ 1,207,300	88%	$ 1,062,424	$ 144,876	$ 144,876	$ -
TOTAL RURAL AREA SEPTAGE		**$ 16,627,500**	**$ 16,627,500**	**88%**	**$ 14,632,200**	**$ 1,995,300**	**$ 1,995,300**	**$ -**

Note: No grants, subsidies or other recoveries have been identified in this capital program.

Residential Development Charge Calculation		
Residential Share of 2019-2038 Discounted Growth-Related Capital Program	93%	$1,857,204
20 Year Growth in Population in New Units - Rural (non-serviced)		8,435
Unadjusted Development Charge Per Capita ($)		**$220.19**
Non-Residential Development Charge Calculation		
Non-Residential Share of 2019-2038 Discounted Growth-Related Capital Program	7%	$138,096
20 Year Growth in Square Metres - Rural (non-serviced)		24,643
Unadjusted Development Charge Per sq. m ($)		**$5.60**

2019 - 2038 Net Funding Envelope	N/A
Reserve Fund Balance	
Balance as at December 31, 2018	$ 647,838
Committed to BTE as units developed and in Existing	($647,838)
Net Available Balance	**$ -**

APPENDIX C.4
TABLE 2

DISTRICT OF MUSKOKA
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
RURAL AREA SEPTAGE
RESIDENTIAL DEVELOPMENT CHARGE
(in $000)

RURAL AREA SEPTAGE	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
OPENING CASH BALANCE	$0	($244)	($159)	($42)	$37	$121	$210	$304	$402	$475	$552
2019 - 2038 RESIDENTIAL FUNDING REQUIREMENTS											
- Rural Area Septage: Non Inflated	$386	$55	$30	$30	$30	$30	$30	$30	$30	$30	$117
- Rural Area Septage: Inflated	$386	$56	$32	$32	$33	$34	$34	$35	$36	$36	$143
NEW RESIDENTIAL DEVELOPMENT											
- Population Growth in New Units	692	692	692	490	490	490	490	490	370	370	370
REVENUE											
- DC Receipts: Inflated	$149	$152	$155	$112	$114	$117	$119	$121	$94	$95	$97
INTEREST											
- Interest on Opening Balance	$0	($13)	($9)	($2)	$1	$4	$7	$11	$14	$17	$19
- Interest on In-year Transactions	($7)	$2	$2	$1	$1	$1	$1	$2	$1	$1	($1)
TOTAL REVENUE	$143	$140	$149	$111	$117	$122	$128	$134	$109	$113	$115
CLOSING CASH BALANCE	($244)	($159)	($42)	$37	$121	$210	$304	$402	$475	$552	$524

RURAL AREA SEPTAGE	2030	2031	2032	2033	2034	2035	2036	2037	2038	TOTAL
OPENING CASH BALANCE	$524	$495	$463	$414	$361	$306	$247	$184	$95	
2019 - 2038 RESIDENTIAL FUNDING REQUIREMENTS										
- Rural Area Septage: Non Inflated	$117	$117	$117	$117	$117	$117	$117	$117	$117	**$1,857**
- Rural Area Septage: Inflated	$146	$149	$152	$155	$158	$161	$164	$167	$171	**$2,279**
NEW RESIDENTIAL DEVELOPMENT										
- Population Growth in New Units	370	370	315	315	315	315	315	241	241	**8,435**
REVENUE										
- DC Receipts: Inflated	$99	$101	$88	$90	$91	$93	$95	$74	$76	**$2,134**
INTEREST										
- Interest on Opening Balance	$18	$17	$16	$14	$13	$11	$9	$6	$3	**$157**
- Interest on In-year Transactions	($1)	($1)	($2)	($2)	($2)	($2)	($2)	($3)	($3)	**($12)**
TOTAL REVENUE	$116	$117	$102	$102	$102	$102	$102	$78	$76	**$2,280**
CLOSING CASH BALANCE	$495	$463	$414	$361	$306	$247	$184	$95	$0	

2019 Adjusted Charge Per Capita	**$215.60**

Allocation of Capital Program	
Residential Sector	93.1%
Non-Residential Sector	6.9%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX C.4
TABLE 2

DISTRICT OF MUSKOKA
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
RURAL AREA SEPTAGE
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in $000)

RURAL AREA SEPTAGE	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
OPENING CASH BALANCE	$0	($23)	($21)	($17)	($13)	($9)	($4)	$1	$7	$12	$18
2019 - 2038 NON-RESIDENTIAL FUNDING REQUIREMENTS											
- Rural Area Septage: Non Inflated	$29	$4	$2	$2	$2	$2	$2	$2	$2	$2	$9
- Rural Area Septage: Inflated	$29	$4	$2	$2	$2	$2	$3	$3	$3	$3	$11
NEW NON-RESIDENTIAL DEVELOPMENT											
- Non-Residential GFA	1,198	1,207	1,207	1,216	1,225	1,225	1,234	1,189	1,217	1,216	1,225
REVENUE											
- DC Receipts: Inflated	$7	$7	$7	$7	$8	$8	$8	$8	$8	$8	$8
INTEREST											
- Interest on Opening Balance	$0	($1)	($1)	($1)	($1)	($0)	($0)	$0	$0	$0	$1
- Interest on In-year Transactions	($1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	($0)
TOTAL REVENUE	$6	$6	$6	$6	$7	$7	$8	$8	$8	$9	$9
CLOSING CASH BALANCE	($23)	($21)	($17)	($13)	($9)	($4)	$1	$7	$12	$18	$17

RURAL AREA SEPTAGE	2030	2031	2032	2033	2034	2035	2036	2037	2038	TOTAL
OPENING CASH BALANCE	$17	$15	$14	$12	$10	$8	$6	$4	$2	
2019 - 2038 NON-RESIDENTIAL FUNDING REQUIREMENTS										
- Rural Area Septage: Non Inflated	$9	$9	$9	$9	$9	$9	$9	$9	$9	**$138**
- Rural Area Septage: Inflated	$11	$11	$11	$12	$12	$12	$12	$12	$13	**$169**
NEW NON-RESIDENTIAL DEVELOPMENT										
- Non-Residential GFA	1234	1234	1243	1243	1252	1252	1261	1278	1287	**24,643**
REVENUE										
- DC Receipts: Inflated	$9	$9	$9	$9	$10	$10	$10	$10	$11	**$170**
INTEREST										
- Interest on Opening Balance	$1	$1	$0	$0	$0	$0	$0	$0	$0	**($0)**
- Interest on In-year Transactions	($0)	($0)	($0)	($0)	($0)	($0)	($0)	($0)	($0)	**($0)**
TOTAL REVENUE	$9	$9	$10	$10	$10	$10	$10	$10	$11	**$169**
CLOSING CASH BALANCE	$15	$14	$12	$10	$8	$6	$4	$2	$0	

2019 Adjusted Charge Per Sq.M.	**$5.67**

Allocation of Capital Program	
Residential Sector	93.1%
Non-Residential Sector	6.9%
Rates for 2019	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX D

RESERVE FUNDS

APPENDIX D

DEVELOPMENT CHARGES RESERVE FUNDS

The *Development Charges Act* requires that a reserve fund be established for each service for which development charges are collected. The District has reserves established for the four Engineering services Roads and Related, Wastewater, Water, and Rural Area Septage. Collections from development over the last five years have been allocated to the reserve funds to be used for capital costs associated with the benefit to the previous five-year DC Study period. As seen in Table 1 below, the reserve fund balances were in a positive position on December 31, 2018. Those reserves have been committed against existing capital costs in the District. Therefore, a balance of $0 is carried forward into the calculations of the rates in the 2019 DC Background Study.

APPENDIX D
TABLE 1

DISTRICT OF MUSKOKA
DEVELOPMENT CHARGE RESERVE FUND BALANCE BY ACCOUNT
YEAR ENDING DECEMBER 31, 2018

Service	Reserve Fund Balance as of Dec. 31, 2018	Adjustment	Adjusted Dec. 31, 2018 Balance
Airport Services	$0		$0
Police Services	$0		$0
Social Housing Services	$0		$0
Long Term Care	$0		$0
Social Services	$0		$0
Paramedic Services	$0		$0
Waste Management Services	$0		$0
Administration	$0		$0
Roads & Related	$2,266,272	($2,266,272)	$0
Wastewater Services	$1,986,031	($1,986,031)	$0
Water Services	$2,131,919	($2,131,919)	$0
Rural Area Septage	$647,838	($647,838)	$0
Total Development Charge Reserves	**$7,032,060**	**($7,032,060)**	**$0**

APPENDIX E

LONG-TERM CAPITAL AND OPERATING COST IMPACTS

APPENDIX E

TABLE 1

DISTRICT OF MUSKOKA
ESTIMATED NET OPERATING COST OF THE PROPOSED
DEVELOPMENT-RELATED CAPITAL PROGRAM
(in constant 2018 dollars)

	Net Cost (in 2018$)		Estimated Operating Costs ($000) 2028
Airport Services	**$0.02**	**per $ of capital**	**$11.4**
Buildings, Land & Furnishings			$10.2
Equipment and Materials			$1.2
Police Services	**$219**	**Household**	**$938.9**
Social Housing Services	**$20**	**Household**	**$83.7**
Long Term Care	**$27**	**Household**	**$117.5**
Paramedic Services	**$139**	**Household**	**$593.3**
Waste Management Services	**$67**	**Household**	**$862.6**
Administration			
No additional operating costs			
Roads & Related	**$76**	**Household**	**$323.8**
TOTAL ESTIMATED OPERATING COSTS			**$2,931.2**

APPENDIX E
TABLE 2

DISTRICT OF MUSKOKA
SUMMARY OF TAX SUPPORTED FUNDING REQUIREMENTS

Net Capital Cost of Development-Related Projects	2019 ($000)	2020 ($000)	2021 ($000)	2022 ($000)	2023 ($000)	2024 ($000)	2025 ($000)	2026 ($000)	2027 ($000)	2028 ($000)	TOTAL ($000)
AIRPORT SERVICES											
Total Net Cost (1)	58.4	689.6	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	815.6
Net Cost From Development Charges (2)	30.1	620.7	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	711.5
Net Cost From Non-DC Sources	28.3	69.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	104.1
- Discount Portion (3)	3.3	69.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	79.1
- Replacement & Benefit to Existing	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0
- For Post 2028 Development (4)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
POLICE SERVICES											
Total Net Cost (1)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	109.7
Net Cost From Development Charges (2)	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	102.3
Net Cost From Non-DC Sources	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- Discount Portion (3)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- Replacement & Benefit to Existing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- For Post 2028 Development (4)	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	7.4
SOCIAL HOUSING SERVICES											
Total Net Cost (1)	153.1	153.1	153.1	153.1	153.1	153.1	153.1	153.1	153.1	153.1	1,530.5
Net Cost From Development Charges (2)	137.7	137.7	137.7	137.7	137.7	137.7	137.7	137.7	137.7	137.7	1,377.5
Net Cost From Non-DC Sources	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	153.1
- Discount Portion (3)	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	153.1
- Replacement & Benefit to Existing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- For Post 2028 Development (4)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LONG TERM CARE											
Total Net Cost (1)	0.0	0.0	0.0	0.0	0.0	5,916.3	0.0	0.0	0.0	5,916.3	11,832.5
Net Cost From Development Charges (2)	0.0	0.0	0.0	0.0	0.0	1,969.4	0.0	0.0	0.0	0.0	1,969.4
Net Cost From Non-DC Sources	0.0	0.0	0.0	0.0	0.0	3,147.4	0.0	0.0	0.0	591.6	3,739.1
- Discount Portion (3)	0.0	0.0	0.0	0.0	0.0	307.6	0.0	0.0	0.0	591.6	899.3
- Replacement & Benefit to Existing	0.0	0.0	0.0	0.0	0.0	2,839.8	0.0	0.0	0.0	0.0	2,839.8
- For Post 2028 Development (4)	0.0	0.0	0.0	0.0	0.0	799.4	0.0	0.0	0.0	5,324.6	6,124.0

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

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

(3) Mandatory 10% reduction for applicable services

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

APPENDIX E
TABLE 2

DISTRICT OF MUSKOKA
SUMMARY OF TAX SUPPORTED FUNDING REQUIREMENTS

Net Capital Cost of Development-Related Projects	2019 ($000)	2020 ($000)	2021 ($000)	2022 ($000)	2023 ($000)	2024 ($000)	2025 ($000)	2026 ($000)	2027 ($000)	2028 ($000)	TOTAL ($000)
SOCIAL SERVICES											
Total Net Cost (1)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Cost From Development Charges (2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Cost From Non-DC Sources	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- Discount Portion (3)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- Replacement & Benefit to Existing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- For Post 2028 Development (4)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PARAMEDIC SERVICES											
Total Net Cost (1)	0.0	0.0	500.0	1,410.0	205.3	0.0	500.0	2,115.0	205.3	0.0	4,935.6
Net Cost From Development Charges (2)	0.0	0.0	450.0	284.8	0.0	0.0	19.4	0.0	0.0	0.0	754.2
Net Cost From Non-DC Sources	0.0	0.0	50.0	1,125.2	20.5	0.0	50.0	1,061.1	20.5	0.0	2,327.4
- Discount Portion (3)	0.0	0.0	50.0	31.6	20.5	0.0	50.0	117.1	20.5	0.0	289.8
- Replacement & Benefit to Existing	0.0	0.0	0.0	1,093.6	0.0	0.0	0.0	944.0	0.0	0.0	2,037.6
- For Post 2028 Development (4)	0.0	0.0	0.0	0.0	184.8	0.0	430.6	1,053.9	184.8	0.0	1,854.0
WASTE MANAGEMENT SERVICES											
Total Net Cost (1)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.5	24.5
Net Cost From Development Charges (2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.0	11.0
Net Cost From Non-DC Sources	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.5	13.5
- Discount Portion (3)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2
- Replacement & Benefit to Existing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.3	12.3
- For Post 2028 Development (4)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ADMINISTRATION											
Total Net Cost (1)	260.0	83.1	31.7	62.1	102.4	32.8	89.3	33.6	69.1	104.5	868.6
Net Cost From Development Charges (2)	121.5	41.9	18.8	32.4	82.1	19.3	44.7	19.6	35.6	83.0	498.9
Net Cost From Non-DC Sources	138.5	41.2	12.9	29.7	20.3	13.5	44.6	14.0	33.5	21.5	369.7
- Discount Portion (3)	13.5	4.7	2.1	3.6	9.1	2.1	5.0	2.2	4.0	9.2	55.4
- Replacement & Benefit to Existing	125.0	36.6	10.9	26.1	11.2	11.4	39.7	11.8	29.6	12.3	314.3
- For Post 2028 Development (4)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL ALL SERVICES											
Total Net Cost (1)	482.5	936.8	704.2	1,644.6	480.2	6,121.5	761.8	2,321.1	446.9	6,217.7	20,117.0
Net Cost From Development Charges (2)	299.6	810.5	624.3	472.8	237.7	2,144.2	219.7	175.2	191.2	249.6	5,424.8
Net Cost From Non-DC Sources	182.1	125.5	79.1	1,171.0	57.0	3,177.1	110.8	1,091.2	70.2	642.7	6,706.8
- Discount Portion (3)	32.1	88.9	68.2	51.4	45.8	325.9	71.1	135.4	40.6	617.0	1,476.6
- Replacement & Benefit to Existing	150.0	36.6	10.9	1,119.7	11.2	2,851.2	39.7	955.8	29.6	24.5	5,229.0
- For Post 2028 Development (4)	0.7	0.7	0.7	0.7	185.5	800.1	431.3	1,054.6	185.5	5,325.4	7,985.4

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

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

(3) Mandatory 10% reduction for applicable services

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

APPENDIX F

ASSET MANAGEMENT PLAN

APPENDIX F

ASSET MANAGEMENT PLAN

The *Development Charges Act* was amended in late 2015 and, effective January 1st 2016, municipalities are required to complete an Asset Management Plan before the passing of a development charges by-law. A key function of the Asset Management Plan is to demonstrate that all assets proposed to be funded under the development charges by-law are financially sustainable over their full life cycle.

Asset Types

A summary of the future municipal-owned assets and estimated useful life assumptions considered under this Development Charges Study is outlined in Table 1 for general services and Table 2 for engineered services. Although all capital assets considered in the study have been identified, not all assets necessitate future replacement or ongoing maintenance activities. Some exceptions apply and the justification is as follows:

- Some projects do not relate to the replacement of a tangible capital asset– some examples include the acquisition of land or the undertaking of development-related studies. These projects/costs do not necessarily require future replacement or ongoing maintenance. Such projects have been excluded from the asset management provision calculations.

It should be noted that the capital cost estimates prepared for each of the projects identified in this study include grouped costs of various individual elements, which, as a stand-alone item, may have its own useful life (ex. New buildings include: HVAC, structural elements, roof, etc.). The current District AMP uses 80 years for structures and lower useful life for the components. A blended useful life has been used at 50 years. Accordingly, the average useful life assumptions noted below are applicable to all project components.

Table 1 Summary of Municipal Assets Considered District-wide General Services	
Service and Amenities	**Estimated Useful Life**
Airport	
• Buildings	• 50 years
• Equipment	• 15 years
Police Services	
• Vehicles and equipment	• 15 years
Affordable Housing Services	
• Buildings	• 50 years
Homes for the Aged	
• Buildings	• 50 years
Ambulance	
• Buildings	• 50 years
• Ambulances	• 10 years
Waste Collection and Transfer	
• Buildings and other structures	• 50-60 years
• Vehicles	• 10 years
• Compactors	• 15 years
Administration	
• Studies	• Studies do not have a useful life assumption

Table 2 Summary of Municipal Assets Considered Engineered Services	
Capital Project Description	**Estimated Useful Life**
Roads	
• Road infrastructure	• 30 years
• Surfacing projects	• 20 years
• Bridges	• 75 years
Wastewater	
• Pumping stations	• 50-75 years
• Wastewater treatment facilities	• 50 years
• SCADA upgrades	• 20 years
• Pipelines	• 75-100 years
Water	
• Distribution infrastructure	• 75 years
• Water treatment facilities	• 50 years
• Water towers	• 50 years
• SCADA upgrades	• 20 years
Rural Area Septage	
• Lagoons	• 20 years

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

Annual Provision

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

Based on the information obtained through discussions with District staff regarding useful life assumptions and the capital cost of acquiring and/or emplacing each asset, a provision for infrastructure replacement has been calculated. 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%) and interest (3.5%). Consistent with the requirements of the *Development Charge Act*, only the assets that are proposed to be funded under the development charges by-law have been included analysis. As a result, the total calculated annual provision has been netted down to consider the replacement of existing infrastructure or benefit-to-existing development, as well as infrastructure as it relates to development occurring outside of the respective planning periods (post 2028 for general services and post 2038 for engineered services). However, for reference, the annual replacement provisions associated with the non-development charge funded costs, including costs related to the ten per cent statutory discount, benefit-to-existing and post-period benefit have also been calculated.

Table 3 provides the calculated annual asset management contribution by 2028 as it relates to the non-DC funded and the DC recoverable portions for general services. As shown in Table 3, by 2028, the District will need to fund an additional $219,000 per year in order to properly fund the full life-cycle costs of the new assets related to the general services under the development charges by-law.

TABLE 3
DISTRICT OF MUSKOKA
GENERAL SERVICES CALCULATED ANNUAL PROVISION BY 2028

Service	2019-2028 Capital Program		Calculated AMP Annual Provision by 2028	
	DC Recoverable	Non DC Funded	DC Related	Non DC Related
Airport Services	$ 791,000	$ 25,000	$ 19,000	$ -
Police Services	$ 102,000	$ 7,000	$ 7,000	$ 496
Social Housing Services	$ 1,531,000	$ 470,000	$ 30,000	$ 9,321
Long Term Care	$ 2,188,000	$ 67,402,000	$ 48,000	$ 714,681
Paramedic Services	$ 838,000	$ 4,098,000	$ 7,000	$ 117,728
Waste Management Services	$ 2,345,000	$ -	$ 108,000	$ -
Administration	$ 554,000	$ 314,000	$ -	$ -
Total 2028 Provision			**$ 219,000**	**$ 842,226**

Table 4 provides the calculated annual asset management contribution by 2038 as it relates to the non-DC funded and the DC recoverable portions for engineered services. Table 4 shows that by 2038 the District will need to fund an additional $2.77million per year in order to properly fund the full life-cycle costs of the new assets related to the engineered services under the development charges by-law.

TABLE 4
DISTRICT OF MUSKOKA
ENGINEERED SERVICES CALCULATED ANNUAL PROVISION BY 2038

Service	2019-2038 Capital Program		Calculated AMP Annual Provision by 2038	
	DC Recoverable	Non DC Funded	DC Related	Non DC Related
Roads & Related	$ 58,859,000	$ 281,979,000	$ 2,376,000	$ 11,870,000
Wastewater Services	$ 52,274,000	$ 47,614,000	$ 236,000	$ 276,000
Water Services	$ 23,424,000	$ 55,759,000	$ 108,000	$ 501,000
Rural Area Septage	$ 1,995,000	$ 14,632,000	$ 56,000	$ 408,000
Total 2038 Provision			**$ 2,776,000**	**$ 13,055,000**

Financial Sustainability of the Program

Future Revenue Growth

The calculated annual funding provision should be considered within the context of the District's projected growth. Over the next ten years, the District is projected to increase by 11,162 people. By 2038, the District is expected to grow by 20,422 people. In addition, the District will also add 1,394 new employees by 2028 that will result in approximately 54,680 square metres of additional non-residential building space. By the year 2038, the District will add 2,826 new employees that will result in 111,040 square metres of new 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 District's reserves for future replacement of these assets.

Asset Management Plan

In order to maintain, protect and manage the District's infrastructure and assets, staff monitor current levels of service and life cycle trends. These assessments are used to schedule appropriate activities, such as road reconstruction, bridge replacement, and equipment and vehicle replacement. Ongoing maintenance and repairs to community facilities will ensure that they continue to meet the needs of a growing population into the future.

Overall, the District will continue to invest, renew, and manage infrastructure and assets through its Asset Management Plan. This plan is crucial for forecasting capital budgetary needs both in the short and long terms. The AMP process helps to improve financial sustainability to maximize benefits, reduce risk and provide satisfactory levels of service to the community in an environmentally and financially responsible manner.

The Program is Deemed Financially Sustainable

The calculated annual provisions identified in Table 3 and Table 4 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 District's annual operating budget review will allow staff to continue to monitor and implement mitigating measures should the program become less sustainable.

APPENDIX G

LOCAL SERVICE POLICY

APPENDIX G

LOCAL SERVICE POLICY

The following guidelines put in general terms the size and nature of engineered infrastructure that is included in the District of Muskoka Development Charge Study, as a project to be eligible to be funded in part by development charges the following will apply:

1. The project will be required to be listed in the most current District of Muskoka Development Charges Study.
2. If any infrastructure does not add any additional capacity over and above the capacity requirement for that development, these projects are assumed to be the sole responsibility of the developer.
3. Infrastructure that provides servicing or capacity for more than one development is not necessarily fully or partially funded from development charges. If a project is considered fully or partially local in nature, the District will require the benefiting land owners to fund the works directly.

The following policy guidelines are general principles by which staff will be guided in considering development applications. However, each application will be considered on its own merits having regard to, among other factors, the nature, type and location of the development in any existing development and proposed development in its surrounding area these policy guidelines, the location and type of services required and their relationship to the proposed development and to existing and proposed development in the area, and subsection 59(2) of the *Development Charges Act*, 1997.

These local service policy guidelines are subject to review and amendment by the District which may be independent of an amendment or update to the District's development charge by-laws.

The detailed engineering requirements for all work and/or development are governed by the District of Muskoka, or if not specified in the Official Plan, by the approved detailed engineering standards.

1. District Roads & Related

All improvements to a District road and road-related infrastructure that are required to facilitate development are considered a local service to be paid directly by the developer, as a condition of development approvals, subject to the following rules and tests:

- For the purpose of this local service policy "District Roads & Related" excludes all costs to undertake a roads projects and includes, but is not limited to, the following types of works:
- New roads (any and all types), extensions of existing roads, and improvements to existing roads; including any improvements related to additional/increased traffic volumes;
- Traffic signals, intersection improvements, traffic control systems, signage and other similar works;
- All types of crossings (streams, bridges, etc.);
- Any and all other works within the road-right-of-way;
- Land acquisition for any type of development-related roads and related projects.

Overriding Principles for Roads & Related Infrastructure

- Roads and related infrastructure must be provided to the satisfaction of the District's Engineering and Public Works Department;
- Infrastructure needs that are within, adjacent to, or related to, a specific development application, including rezoning, are considered to be a local service and direct responsibility of the developer as a condition of development approval process;
- On-site and off-site Transportation infrastructure must comply with applicable policies and applicable design guidelines;
- Infrastructure needs that are driven by overall District development, that are external to a development site and not directly related to a specific development, are considered to be "non-local" and potentially funded via DCs.

2. Water Services

All improvements to the District's water system that are required to facilitate development are considered a local service to be paid directly by the developer, as a condition of develop approvals, subject to the following rules and tests:

- All water supply, storage, treatment facilities and booster pumping stations may be included in the development charge calculation.
- Watermains within the development that are 300 mm and under are deemed to be a local service and are a direct funding responsibility of the developer. Watermains within the development that are larger than 300mm that also service other lands maybe eligible for cost sharing with the District. The amount of cost sharing for watermains within a development shall be calculated using tendered unit prices and shall be the difference between the cost of the actual pipe diameter and the cost of a 300mm pipe diameter including a 12 per cent engineering fee. Only watermains and valves will be included in the calculation. Any costs related to the depth of pipe are the responsibility of the developer.
- Water mains within the development that are 300mm and under are deemed to be a local service and are a direct funding responsibility of the developer.
- Connections to trunk mains and pumping stations to service specific areas are to be a direct developer responsibility.
- Trunk watermains, generally outside the development area, identified by a Class Environmental Assessment, Servicing Study or by District Staff will be included in the development charge calculation.

3. Wastewater Services

All improvements to the District's sanitary sewer system that are required to facilitate development are considered a local service to be paid directly by the developer, as a condition of develop approvals, subject to the following rules and tests:

- All sanitary sewage treatment facilities are to be included in the development charge calculation.
- Sewer collectors within the development that are 300 mm and under are deemed to be a local service and are a direct funding responsibility of the developer. Sanitary sewers within the development that are larger than 300mm that also service upstream properties will have cost sharing calculated on the tendered unit

prices and shall be the difference between the cost of the actual pipe diameter and the cost of a 300mm pipe including a 12 per cent engineering fee. All other appurtenances with respect to oversizing and any costs related to the depth of pipe are the responsibility of the developer.

- Major sanitary trunk sewers, external to the development, and major pumping stations serving more than one development are to be included in the development charge calculation. These services will be identified through a Class Environmental Assessment, Servicing Study or by District staff.

- Connections to collectors and pumping stations to service specific areas are to be a direct developer responsibility.

- Sewage pumping stations within the development or local pumping stations serving a small localized area are deemed to be a local service and are a direct funding responsibility of the developer or developers on a flow area or proportional basis, or by agreement between the developers.

- All other development-related pumping stations to be in the development charge calculation.

APPENDIX H

DRAFT 2019 DEVELOPMENT CHARGES BY-LAW

(AVAILABLE UNDER SEPARATE COVER)