

DEVELOPMENT CHARGES
BACKGROUND STUDY
FOR THE MOUNT BRYDGES
SERVICE AREA

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June 18, 2018

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EXECUTIVE SUMMARY

The following summarizes the findings of the Municipality of Strathroy-Caradoc's Area-Specific Development Charges (ASDC) Background Study for the Mount-Brydges Service Area. The development charges identified in the study would be applied in addition to the Municipal-wide and the Area-Specific Mount Brydges charges currently levied under DC By-law 14-15.

A. STUDY CONSISTENT WITH DEVELOPMENT CHARGES LEGISLATION

- This study calculates area-specific development charges for the Municipality of Strathroy-Caradoc's Mount Brydges service area in compliance with the provisions of the *Development Charges Act, 1997 (DCA)* and its associated regulation (*Ontario Regulation 82/98*) and the recently amended provisions of the legislation.
- On March 2, 2015, the Council of the Municipality of Strathroy-Caradoc passed Development Charges By-law 14-15 that will expire on March 3rd 2020. This ASDC Background Study and by-law are intended to build on the existing By-law 14-15 to include additional area-specific development charge (ASDC) rates applicable to development in the Mount Brydges service area.
- The Municipality needs to implement development charges to fund the capital projects necessary in the Mount Brydges service area so that new development pays for its capital requirements to the extent allowed by the *DCA* and so that new services required by growth are provided in a fiscally responsible manner.
- The *DCA* and *Ontario Regulation (O. Reg.) 82/98* require that a development charges background study be prepared in which development charges are determined with reference to:
 - A forecast of the amount, type and location of residential and non-residential development anticipated;
 - A review of future capital projects, including an analysis of gross expenditures, funding sources and net expenditures incurred or to be incurred by the Municipality 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-law relates; and
- An asset management plan to deal with all assets whose capital costs are proposed to be funded under the DC by-law, and that demonstrates that all assets are financial sustainable over their full life cycle.
- This report identifies the development-related net capital costs attributable to development that is forecast to occur in the Mount Brydges service area. These costs are apportioned to types of development (residential, non-residential) in a manner that reflects the increase in the need for each service.
- The calculated charges are the maximum charges the Municipality may adopt. Lower charges may be approved; however, this will require a reduction in the capital plan and reduced service levels, or financing from other sources, likely property taxes and utility rates.

B. ENGINEERED SERVICES WITH AREA-SPECIFIC DEVELOPMENT-RELATED COSTS INCLUDED IN THE ANALYSIS

The following Municipal services have been included in the Engineered ASDC analysis:

- Roads and Related;
- Sanitary Sewer;
- Storm Sewer and Municipal Drains; and
- Water Services.

These services represent the preliminary infrastructure works necessary to allow development to proceed in Mount Brydges.

C. DEVELOPMENT FORECAST

- A forecast of the amount, type and location of residential and non-residential development anticipated in the Mount Brydges area over the 2018-2037 planning period was used in the ASDC calculation.
- The development forecast was prepared with input from the Municipality's planning and engineering departments, through a review of known applications, and land use designations and policies.

- The development forecast for the 2018 to 2037 planning period estimates that the Mount Brydges area will accommodate about 1,140 new dwelling units by 2037. The population in these new dwelling is estimated at 2,990.
- Approximately 7,420 square metres of new, non-residential building space is anticipated between 2018 and 2037. This new non-residential space will accommodate approximately 185 jobs.
- The following is a summary of the projected growth for the Mount Brydges service area in the Municipality:

Development Forecast	Growth Over Planning Period 2018 - 2037
Residential	
Total Occupied Dwellings	1,137
<i>Singles/Semi</i>	997
<i>Rows & Other Multiples</i>	70
<i>Apartments</i>	70
Population in New Dwellings	2,990
Non-Residential	
Total Employment Growth	185
Non-Residential Building Space (sq.m.)	7,416

D. DEVELOPMENT-RELATED CAPITAL PROGRAM

- Municipal staff, in collaboration with Hemson Consulting, have prepared a development-related capital program setting out the projects that are required to service anticipated development in Mount Brydges to 2037.
- A single engineering ASDC is calculated, however, includes for the provision of roads, sanitary sewer, storm sewer and municipal drains, and water services. The total cost associated with all of the area-specific development-related works amounts to \$12.76 million.

- Of the \$12.76 million in the engineered services capital program, approximately \$9.40 million of the total program is to be recovered from development charges over the 2018-2037 planning period.
- No grants, subsidies or other recoveries are anticipated. Furthermore, as this is a new service category, no development charge reserves are available to help offset the cost of the program.
- The following is a summary of the development-related capital forecast for all engineered services:

Area-Specific Engineered Services (2018-2037)		
Project Description	Gross Cost (\$000)	DC Eligible Cost (\$000)
Rougham Road	\$7,090.4	\$5,267.3
Parkhouse Drive	\$2,836.2	\$1,964.4
Falconbridge Drive	\$2,836.2	\$2,170.4
Total	\$12,762.7	\$9,402.2

- Appendix B provides details on the calculation for these engineered services.
- E. DEVELOPMENT CHARGES ARE CALCULATED WITH FULL REFERENCE TO THE DCA**
- The fully calculated residential ASDCs are recommended to vary by unit type, reflecting the difference in occupancy patterns expected in various unit types and associated differences in demand placed on municipal services.

Calculated Residential Area-Specific Development Charges

	Residential Charge By Unit Type (1)		
	Singles & Semis	Rows	Apartments
Engineered Services	\$9,116	\$6,535	\$4,738
(1) Based on Persons Per Unit Of:	2.79	2.00	1.45

- The calculated non-residential ASDCs are uniform and applicable to all non-residential development.

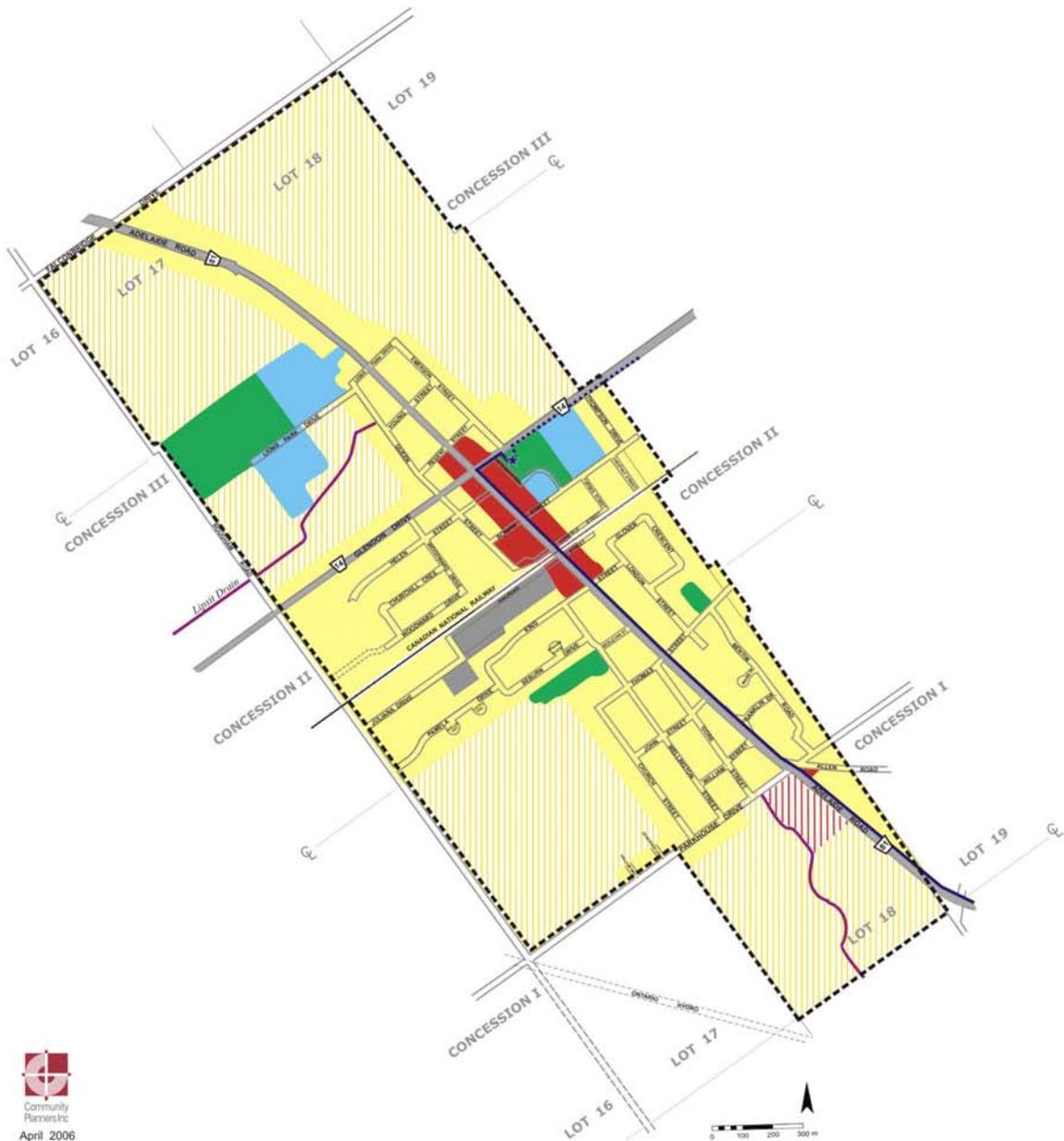
Calculated Non-Residential Area-Specific Development Charges

	Non-Residential Charge per Square Metre
Engineered Services	\$90.17

- It is intended that development in Mount Brydges be subject to the engineering ASDC rate calculated. In addition to the area-specific rate calculated in this study, the Municipal-wide charges for services such as Library, Fire, Police, Indoor Recreation, Park Development & Facilities, Public Works and Fleet, Cemeteries, General Government and Engineering as well as the ASDCs will continue to apply. A map identifying the area to which the development charge applies is illustrated on the following page.

SCHEDULE 'F' Land Use & Transportation Plan

Mount Brydges



LAND USE

- COMMERCIAL
- INDUSTRIAL
- RESIDENTIAL
- COMMUNITY FACILITY
- OPEN SPACE

development permitted only on the basis of full municipal services (i.e. water supply and sanitary sewage disposal)

ARTERIAL ROAD

DRAIN/WATERCOURSE

WATER SUPPLY SYSTEM

- MAIN PUMPING STATION
- TRUNK WATER MAIN
- LOW PRESSURE
- HIGH PRESSURE

- SETTLEMENT AREA BOUNDARY
- COUNTY ROAD

Township of Strathroy-Caradoc

I INTRODUCTION AND BACKGROUND

This Municipality of Strathroy-Caradoc Area-Specific Development Charges (ASDC) Background Study for the Mount Brydges Service Area is presented as part of a process to lead to the approval of a new ASDC by-law in compliance with the *Development Charges Act, 1997 (DCA)* and its associated *Ontario Regulation 82/98 (O. Reg. 82/98)*.

Significant development is anticipated to occur within this area over a planning period of 2018 to 2037, and the Municipality has identified preliminary infrastructure works necessary to allow development to proceed. The Municipality wishes to implement ASDCs to fund development-related capital projects so that development may be serviced in a fiscally responsible manner.

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

- A forecast of the amount, type and location of development anticipated;
- 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 Municipality 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
- As 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.

This study presents the results of the review, which determines the net capital costs attributable to new development that is forecast to occur in the Mount Brydges Service Area between 2018 and 2037. These development-related net capital costs are apportioned to various types of development (residential; non-residential) in a manner that reflects the increase in the need for each service.

The Municipality of Strathroy-Caradoc currently levies development charges on a municipal-wide, uniform basis in addition to other area-specific development charges. The municipal-wide charges recover for development-related costs for the provision of Library, Fire, Police, Indoor Recreation, Park Development & Facilities, Public Works and Fleet, Cemeteries and General Government as well as the engineered services.

This ASDC Background Study and its accompanying by-law are intended to build on the existing Municipal-wide and ASDC by-law. ASDCs are calculated for the provision of Engineering services as they relate to Roads and Related, Sanitary Sewer, Storm Sewer and Municipal Drains, and Water services. These charges are intended to be imposed on future development within the Mount Brydges area.

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

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 Municipality to which the development charges will apply. It also briefly reviews the methodology that has been used in this background study.

Section III presents a summary of the forecast residential and non-residential development that is expected to occur within Mount Brydges over the 2018–2037 period.

Section IV summarizes the future development-related capital costs associated with the provision of engineering services related to development in Mount Brydges.

Section V details the calculated ASDC rates by class and type of development.

Section VI provides an examination of the long-term capital and operating cost impacts for the infrastructure included in the ASDC calculation. It also addresses the asset management provisions required to maintain the development-related components of the capital projects included in the analysis.

Section VII provides a discussion of other issues and considerations including by-law administration, rules and policies.

II AREA-SPECIFIC APPROACH IS USED TO ALIGN 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, we have tailored our approach to the unique circumstances in the Municipality of Strathroy-Caradoc and the Mount Brydges Service Area. The approach to the proposed area-specific development charges is focused on providing a reasonable alignment of development-related costs with the development that necessitates them.

A. AREA-SPECIFIC DEVELOPMENT CHARGES ARE CALCULATED

The *DCA* provides municipalities with flexibility to define services that will be included in the development charge by-laws, provided that the other provisions of the *Act* and its associated regulations are met. The *DCA* also requires that the by-laws designate the areas within which the by-laws shall be imposed. The development charges may apply to all lands in the municipality or to other designated development areas as specified in the by-laws.

The Municipality of Strathroy-Caradoc currently levies development charges on a Municipal-wide and Area-Specific basis. The development charges recover costs related to Municipal-wide General Government (studies), Library, Fire, Police, Indoor Recreation, Park Development, Public Works and Fleet, Cemeteries and Engineering.

This ASDC Background Study calculates development charges related to the provision of engineered services as they relate to roads, sanitary sewers, storm sewers and municipal drains, and water infrastructure within the Mount Brydges Service Area. The area-specific approach is applied to these services to align the capital costs for these services with the particular areas that will be serviced by the required infrastructure.

B. KEY STEPS IN DETERMINING AREA-SPECIFIC 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 study period, in this case from 2018 to 2037. The forecast of the future residential and non-residential development used in this study was prepared by Hemson Consulting Ltd. in collaboration with municipal planning and engineering staff. The forecasts are based on the number of known applications anticipated with the planning area as well as land use designations and policies.

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

The non-residential portion of the forecast estimates the Gross Floor Area (GFA) of non-residential building space to be developed in Mount Brydges over the planning period. Factors for floor space per worker are used to convert the employment forecast into gross floor area for the purposes of the area-specific development charges study.

2. Development-Related Capital Program and DC Eligible Costs to be recovered through the ASDCs

A development-related capital program has been prepared by municipal planning and engineering staff as part of the present study. The program 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 forecast provides another cornerstone upon which development charges are based. The *DCA* requires that the increase in the need for service attributable to the anticipated development may include an increase:

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

The development-related capital 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 program, 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 Municipality from non-development charges sources. The amount of municipal funding for such non-development shares of projects is also identified as part of the preparation of the development-related capital program.

Finally, the development-related net capital costs must be reduced by ten per cent for all services except roads and related services, protection services (*DCA*, s. 5. (1) 8.) and engineered services. As this study deals with roads and engineered services capital costs, 100 per cent of the development-related costs are recoverable through development charges.

3. Attribution to Types of Development

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

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.

4. Final Adjustment

The final determination of the development charge results from adjustments made to development-related net capital costs for each service and sector resulting from the application of any unallocated reserve fund balances. A cash flow analysis is also undertaken to account for the timing of projects and receipt of development charges. Interest earnings or borrowing costs are therefore accounted for in the calculation as allowed under the *DCA*.

III DEVELOPMENT FORECAST

This section provides the basis for the development forecasts used in calculating the ASDCs, as well as a summary of the forecast results. A more detailed summary 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 the *population in new housing units* is required. This *population in new units* represents the population from which development charges will be collected.

Table 1 provides a summary of the residential forecast over the planning period from 2018 to 2037.

The Mount Brydges Service Area is anticipated to see about 1,140 new housing units over the planning period. These units are anticipated to be accommodated within lands designated for residential development within the service area boundary. The forecast of population expected to reside in these new housing units over the 2018 to 2037 period is approximately 2,990 additional persons.

B. NON-RESIDENTIAL FORECAST

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

Mount Brydges is anticipated to accommodate nearly 185 jobs within new non-residential space over the 2018 to 2037 planning period. Approximately 7,420 square metres of new non-residential building space is anticipated.

Table 1 also provides a summary of the non-residential development forecasts used in this analysis.

TABLE 1

**STRATHROY-CARADOC - MOUNT BRYDGES SERVICE AREA
SUMMARY OF RESIDENTIAL AND NON-RESIDENTIAL
DEVELOPMENT FORECAST**

Development Forecast	Growth Over Planning Period 2018 - 2037
Residential	
Total Occupied Dwellings	1,137
<i>Singles/Semi</i>	997
<i>Rows & Other Multiples</i>	70
<i>Apartments</i>	70
Population in New Dwellings	2,990
Non-Residential	
Total Employment Growth	185
Non-Residential Building Space (sq.m.)	7,416

IV 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 above in Section II, *Ontario Regulation 82/98*, s. 3 states that:

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

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

Based on the development forecasts summarized in Section III and detailed in Appendix A, Municipal staff, in collaboration with the consultants have created a development-related capital program setting out those projects that are required to service anticipated growth over the planning period.

One of the recommendations contained in this ASDC Background Study is for Council to adopt the capital programs created for the purposes of this area-specific 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 Mount Brydges. It is acknowledged that changes to the forecast presented here may occur through the Municipality's normal capital budget process.

B. THE DEVELOPMENT-RELATED CAPITAL FORECAST FOR ENGINEERED SERVICES

Table 2 provides the development-related capital recoveries for the engineered services of roads, sanitary sewers, storm sewers and drains, and water. The area-specific capital program totals \$12.76 million and provides servicing for anticipated development over the planning period.

No grants, subsidies and other recoveries have been identified for these projects and thus the net municipal cost remains at \$12.76 million. The majority of the net capital

program is associated with the infrastructure requirements to reconstruct Rougham Road (from Parkhouse Drive to Falconbridge Road).

**Table 2 –Summary of Development-Related Capital Program
For Area-Specific Services 2018 – 2037**

Project Description	Gross Cost	Grants/Subsidies	Net Municipal Cost
Rougham Road	\$7,090,398	\$0	\$7,090,398
Parkhouse Drive	\$2,836,159	\$0	\$2,836,159
Falconbridge Drive	\$2,836,159	\$0	\$2,836,159
Total – Engineered Services	\$12,762,717	\$0	\$12,762,717

V AREA-SPECIFIC DEVELOPMENT CHARGES ARE CALCULATED IN ACCORDANCE WITH THE DCA

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

For residential development, the adjusted total per capita amount is then converted to a variable charge by housing unit type using various unit occupancy factors. For non-residential development, the charges are based on gross floor area (GFA) of building space.

It is noted that the calculation of the ASDCs does not include any provision for exemptions required under the *DCA*, such as the exemption from the payment of DCs for 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. DEVELOPMENT CHARGES CALCULATION

A summary of the calculated residential and non-residential ASDCs is presented across the following pages. Further details of the calculations are available in Appendix B.

1. Unadjusted Residential and Non-Residential Development Charges

Table 3 displays the calculation of the unadjusted rates for the services of roads, sanitary sewer, storm sewer and drains, and water.

Of the total net municipal cost of all engineered services development-related projects, \$12.76 million, not all are to be recovered from new development by way of development charges. Table 3 shows that \$3.36 million (26 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. This amount has been netted off the chargeable capital costs.

MUNICIPALITY OF STRATHROY-CARADOC - MOUNT BRYDGES SERVICE AREA
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES
2018-2037 AREA-SPECIFIC CAPITAL PROGRAM

2018-2037 Year Growth in Population in New Units	2,990
2018-2037 Year Growth in New Building Space (Sq.M)	7,416

Service	Development-Related Capital Program (2018 - 2037)					Residential Share		Non-Residential Share	
	Net Municipal Cost (\$000)	Replacement & Benefit to Existing (\$000)	Available DC Reserves (\$000)	Post-2037 (\$000)	Total DC Eligible Costs for Recovery (\$000)	%	(\$000)	%	(\$000)
	1.0 ENGINEERED SERVICES	\$12,762.7	\$3,360.5	\$0.0	\$0.0	\$9,402.2	94%	\$8,838.1	6%
Unadjusted Development Charge Per Capita							\$2,955.69		
Unadjusted Development Charge Per Sq.M									\$76.07
TOTAL 2018-2037 ENGINEERED SERVICES	\$12,762.7	\$3,360.5	\$0.0	\$0.0	\$9,402.2		\$8,838.1		\$564.1
Unadjusted Development Charge Per Capita							\$2,955.69		
Unadjusted Development Charge Per Sq.M									\$76.07

The remaining \$9.40 million is related to development within the Mount Brydges area over the 2018-2037 planning period and has been included in the area-specific development charge calculation.

The capital program eligible for recovery through development charges is allocated to the residential and non-residential sectors based on future shares of population in new units and employment growth over the planning period. On this basis, the allocation to the residential and non-residential sectors is calculated at 94 per cent and 6 per cent, respectively.

As a result, \$8.84 million of the engineered services capital program is deemed to benefit residential development. When this amount is divided by the growth in population in new dwelling units over the planning period (2,990) an unadjusted charge of \$2,955.69 per capita is the result.

The non-residential share totals \$564,130 and, when this amount is divided by the forecast of non-residential space growth (7,416 square metres) an unadjusted charge of \$76.07 per square metre is the result.

2. Adjusted Residential and Non-Residential Development Charges

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

Table 4 summarizes the results of the cash flow adjustments for the residential ASDC rates. The adjusted per capita rate increases from \$2,955.69 per capita to \$3,267.51 per capita after the cash flow analysis for the residential charge.

Table 4 also provides the calculated rates by residential unit with the total charge per unit. The charge for a single-semi detached unit is \$9,116, \$6,535 for a row or other type of multiple unit, and \$4,738 for an apartment unit.

The non-residential development charges also experience a increase after cash flow considerations. As shown on Table 5, the adjusted charge per square metre increases from \$76.07 to \$90.17 per square metre.

TABLE 4

**MUNICIPALITY OF STRATHROY-CARADOC
 AREA-SPECIFIC UNIFORM DEVELOPMENT CHARGES - MOUNT BRYDGES
 RESIDENTIAL DEVELOPMENT CHARGES BY UNIT TYPE**

	Unadjusted Charge Per Capita	Adjusted Charge Per Capita	Residential Charge By Unit Type (1)		
			Singles & Semis	Rows	Apartments
Engineered Services	\$2,955.69	\$3,267.51	\$9,116	\$6,535	\$4,738
(1) Based on Persons Per Unit Of:			2.79	2.00	1.45

TABLE 5

**MUNICIPALITY OF STRATHROY-CARADOC
AREA-SPECIFIC UNIFORM DEVELOPMENT CHARGES - MOUNT BRYDGES
NON-RESIDENTIAL DEVELOPMENT CHARGES PER SQUARE METRE**

	Non-Residential	
	Unadjusted Charge per Square Metre	Adjusted Charge per Square Metre
Engineered Services	\$76.07	\$90.17

VI LONG-TERM CAPITAL AND OPERATING COSTS AND ASSET MANAGEMENT PROVISIONS

This section provides a brief examination of the long-term capital and operating costs for the area-specific capital facilities and infrastructure to be included in the ASDC by-law. Also addressed is the required asset management provisions that must be considered.

A. NO NET INCREASE IN OPERATING COSTS ARE ANTICIPATED OVER THE FORECAST PERIOD

Further to discussions with municipal staff, it is estimated that the Municipality would not experience any additional net tax-related operating costs associated with undertaking the roads and related program. Services related to water and sanitary sewers are rate-supported.

B. LONG-TERM CAPITAL FINANCING FROM NON-DEVELOPMENT CHARGE SOURCES TOTALS \$3.36 MILLION

Table 6 summarizes the components of the development-related capital program that will require funding from non-development charge sources as discussed in Section V. In total \$3.36 million will need to be financed from non-development charge sources over the planning period. This amount is related to non-development shares of projects that provide benefit to the existing community and would likely need to be funded from taxes and utility rates.

Table 6 – Summary of Non-Development Charge Sources

Long-Term Capital Impacts	Total Costs (\$000)
Total Net Costs	\$12,762.7
<i>Net costs from development charges</i>	<i>\$9,402.2</i>
<i>Post 2037 Development</i>	<i>\$0.0</i>
Funding from Non-DC Sources	
<i>Replacement/BTE</i>	<i>\$3,360.5</i>

C. ANNUAL ASSET MANAGEMENT PLAN PROVISION REQUIREMENTS

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.

Table 7 summarizes the annual capital provisions required to replace the capital infrastructure proposed to be funded through ASDCs under the by-law. This estimate is based on useful life assumptions typically used by Municipal staff and the capital cost of acquiring and/or emplacing each asset.

Table 7 illustrates that, by 2038, the Municipality will need to fund an additional \$166,000 per annum in order to properly fund the full life cycle costs of the new assets supported under this by-law. The calculated life cycle funding requirement of \$166,000 equates to approximately 0.5 per cent of the Municipality's 2018 total own source revenues of \$33.7 million.

The calculated annual funding provision should be considered within the context of the Municipality's projected growth. By 2037, the Mount Brydges service area is projected to grow by approximately 1,140 new households as well as roughly 185 new employees. This growth will have the effect of increasing the overall assessment base to offset the capital asset provisions required to replace the infrastructure proposed to be funded through ASDCs under the by-law.

The calculated annual provisions identified are considered 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 7				
Calculated Annual Provision by 2038				
Service	2018-2037 Capital Program		Calculated AMP Annual Provision by 2038	
	DC Recoverable	Non-DC Funded	DC Related	Non-DC Related
Engineered Services	\$ 9,402,000	\$ 3,361,000	\$ 166,000	\$ 66,000
Total 2038 Provision	\$ 9,402,000	\$ 3,361,000	\$ 166,000	\$ 66,000

VII OTHER ISSUES AND CONSIDERATIONS

A. DEVELOPMENT CHARGES ADMINISTRATION

No significant changes are recommended to the Municipality's current policies and practices regarding development charge administration. 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 Municipality 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 Municipality's normal capital budget process.
- It is recommended that limited exemptions, other than those required in the *DCA* and existing Municipal-wide DC by-law, be formally adopted in the amending DC by-law.

APPENDIX A

DEVELOPMENT FORECAST

APPENDIX A

DEVELOPMENT FORECAST

This appendix provides details of the development forecast used to prepare the 2018 Area-Specific Development Charges (ASDC) Background Study for Mount Brydges in Strathroy-Caradoc. The forecast method and assumptions are discussed herein.

A. FORECAST APPROACH AND KEY ASSUMPTIONS

The *Development Charges Act (DCA)* requires an estimate of “the anticipated amount, type and location of development” for which development charges may be imposed. The forecast must cover both residential and non-residential development and be specific enough with regards to the quantum, type, location and timing of such development to assist in the preparation of a reasonable development-related capital program. For the purposes of this ASDC Background Study, a development forecast for the planning period of 2018 to 2037 has been used for the engineered services considered in this study.

Forecasts of population, households and employment were prepared through a review of the land use designations and policies, active development applications within Mount Brydges, and discussions with municipal planning and engineering staff. It is noted that assumptions related to persons per unit are based on the most recent census data detailing historical occupancy patterns in the Municipality. The person per unit assumptions will also be reviewed at the time of the next Municipal-wide DC Background Study.

B. FORECAST METHOD AND RESULTS

Development charges are levied on residential development as a charge per new unit. Therefore, for the residential forecast, a projection of the *population in new housing units* is required. This *population in new units* represents the population from which development charges will be collected. For the purposes of this study, the population in new units is also considered the census population growth in this area.

Development charges are levied on non-residential development as a charge per square metre of gross floor area (GFA). As with the residential forecast, the non-

residential forecast requires a projection of the *employment growth associated with new floorspace* in the Municipality.

1. Residential Forecast

The residential development forecast incorporates anticipated growth in population and occupied dwelling units by type. The residential development charges calculation is based on a forecast of population growth in new housing units in the Mount Brydges Service Area. The population in new units considered the overall occupancy assumptions from the most recent census results.

As detailed in Table 1, the Mount Brydges Service Area is anticipated to see nearly 1,140 new housing units over the planning period. These units are anticipated to be accommodated within lands designated for residential development within Mount Brydges. Based on the number of known planning applications, the forecast assumes more robust growth in the first seven years of the forecast – 94 dwelling units per year – while the remaining 13 years a steady 37 units per annum is assumed. Overall, about 88% of housing growth is forecast to be in the form of single-semi detached units, while the remaining 12 per cent are expected to be split evenly between apartments and row units.

Population growth in new units is estimated by applying the following PPU to the housing unit forecast: 2.79 for single-semi detached units, 2.0 for row units and 1.45 for apartments. These PPU assumptions are consistent with the most recent 2016 census information regarding historical occupancy patterns. The forecast of population expected to reside in these new housing units over the 2018 to 2037 period is approximately 2,990 additional persons. This population growth by unit type is shown in Table 1 while specific details on historical occupancy patterns in the Municipality are shown in Table 2.

2. Non-Residential Forecast

Table 1 also shows that Mount Brydges is anticipated to accommodate nearly 185 jobs within new non-residential space over the 2018 to 2037 planning period. The forecast assumes a steady annual increase of 9 jobs per year.

Non-residential development charges are calculated on a per unit of gross floor area (GFA) basis. Therefore, as per the *DCA*, a forecast of future non-residential building space has been developed. As with the residential forecast, the GFA forecast covers the period from 2018 to 2037. Approximately 7,420 square metres of new non-residential building space is anticipated, and this space is entirely attributed to population-related employment.

TABLE 1

**MUNICIPALITY OF STRATHROY-CARADOC - MOUNT BRYDGES SERVICE AREA
FORECAST POPULATION, HOUSEHOLD, EMPLOYMENT & NON-RESIDENTIAL SPACE FORECAST**

Population-Related Employment

40.0 m² per employee

Mid-Year	Population in New Dwellings	Total Occupied Dwellings Growth	Employment by POW Growth	Employment Growth	Space (m ²)
2018	254	94	9	9	371
2019	254	94	9	9	371
2020	254	94	9	9	371
2021	254	94	9	9	371
2022	254	94	9	9	371
2023	254	94	9	9	371
2024	254	94	9	9	371
2025	93	37	9	9	371
2026	93	37	9	9	371
2027	93	37	9	9	371
2028	93	37	9	9	371
2029	93	37	9	9	371
2030	93	37	9	9	371
2031	93	37	9	9	371
2032	93	37	9	9	371
2033	93	37	9	9	371
2034	93	37	9	9	371
2035	93	37	9	9	371
2036	93	37	9	9	371
2037	93	37	9	9	371
2018-2027	2,058	768	93	93	3,708
2018-2037	2,990	1,137	185	185	7,416

TABLE 2
MUNICIPALITY OF STRATHROY-CARADOC - MOUNT BRYDGES SERVICE AREA
HISTORIC HOUSEHOLDS BY PERIOD OF CONSTRUCTION SHOWING HOUSEHOLD SIZE

	Period of Construction										Pre 2006	2006-2016	Total
	Pre 1945	1946-1960	1961-1970	1971-1980	1981-1990	1991-1995	1996-2000	2001-2005	2006-2010	2011-2016			
Singles/Semis													
Household Population	2,690	1,580	2,070	2,795	2,160	1,405	1,695	1,445	1,300	1,125	15,840	2,425	18,265
Households	1,045	675	850	1,085	825	495	575	510	465	405	6,060	870	6,930
Household Size	2.57	2.34	2.44	2.58	2.62	2.84	2.95	2.83	2.80	2.78	2.61	2.79	2.64
Rows													
Household Population	80	0	65	95	30	0	80	50	60	0	400	60	460
Households	20	0	30	60	15	0	45	30	35	10	200	45	245
Household Size	4.00	0.00	2.17	1.58	2.00	0.00	1.78	1.67	1.71	0.00	2.00	1.33	1.88
Apartments (no duplex)													
Household Population	315	170	150	200	280	125	105	15	110	35	1,360	145	1,505
Households	200	105	110	135	230	80	70	20	90	10	950	100	1,050
Household Size	1.58	1.62	1.36	1.48	1.22	1.56	1.50	0.75	1.22	3.50	1.43	1.45	1.43
Duplex													
Household Population	30	40	40	0	0	0	0	0	0	0	110	0	110
Households	20	20	15	10	10	0	0	0	0	0	75	0	75
Household Size	1.50	2.00	2.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.47	0.00	1.47
All Units													
Household Population	3,085	1,750	2,285	3,090	2,470	1,530	1,880	1,510	1,470	1,160	17,600	2,630	20,230
Households	1,265	780	990	1,280	1,070	575	690	560	590	425	7,210	1,015	8,225
Household Size	2.44	2.24	2.31	2.41	2.31	2.66	2.72	2.70	2.49	2.73	2.44	2.59	2.46

Source: Statistics Canada, 2011 National Household Survey Special Run.

APPENDIX B

AREA-SPECIFIC ENGINEERED SERVICES TECHNICAL APPENDIX

APPENDIX B

AREA-SPECIFIC ENGINEERED SERVICES

This appendix provides the detailed analysis undertaken to establish the area-specific development charge rates for the Mount Brydges engineered services. The projects identified in the capital program are driven by the need for road reconstruction works along the three main roads in Mount Brydges to service new development. Water, sanitary sewer and storm drainage works would be required as part of the road works. A map outlining the Mount Brydges service area is illustrated below.

The development-related capital program is based on preliminary cost estimates to undertake the work and with detailed discussions with Municipal staff. The projects identified in the capital program are required to service the demands of the anticipated development in the Mount Brydges Service Area to occur over the planning period of 2018 to 2037. Consistent with s.5.(1)7. of the *Development Charges Act (DCA)*, there is no legislated reduction in the eligible development-related capital costs for the provision of engineered infrastructure.

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

Table 1: Development-Related Capital Program and Calculation of Unadjusted Development Charges

Table 2: Residential & Non-Residential Cash Flow Analysis

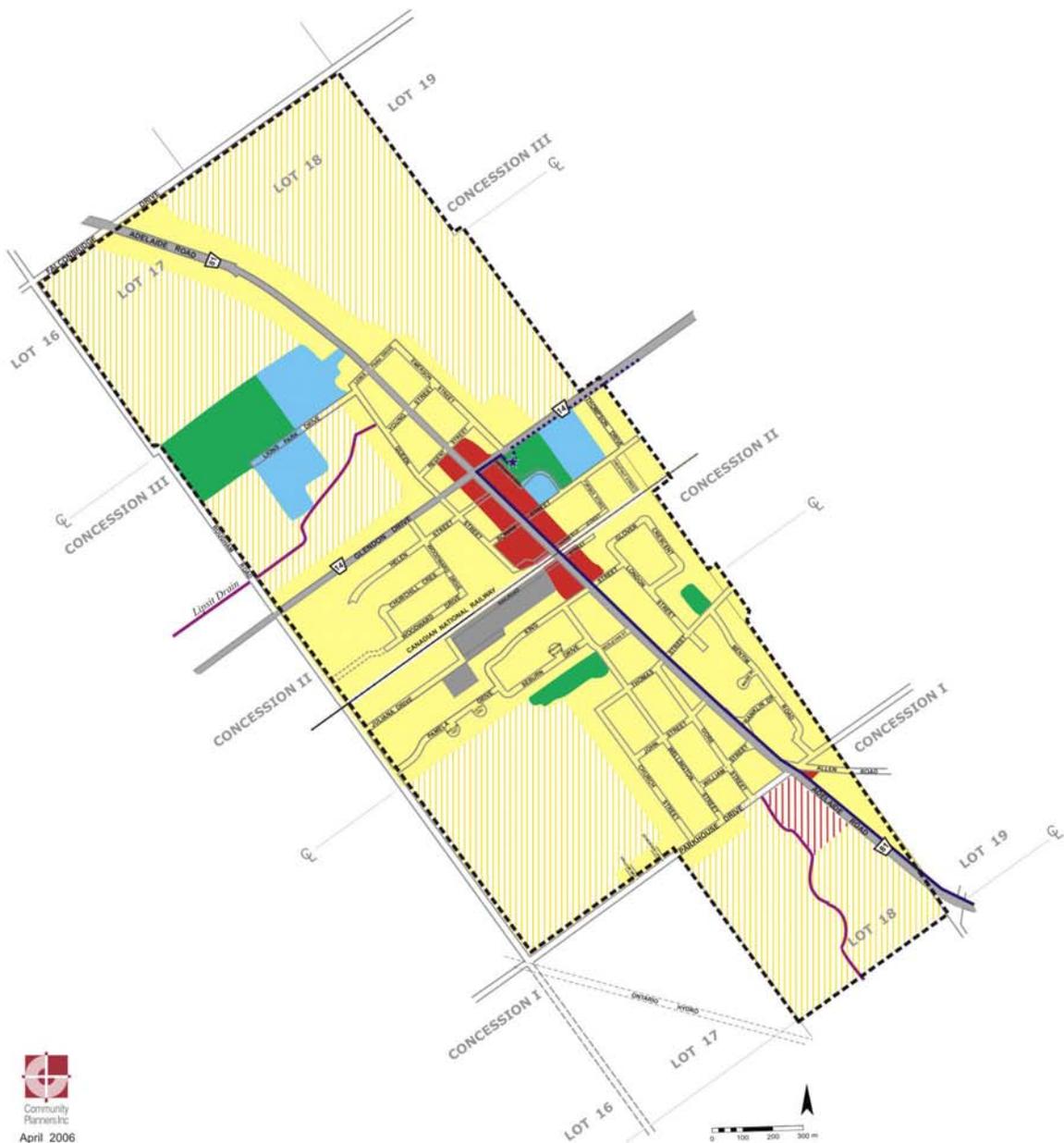
Table 1: Development-Related Capital Program

The 2018-2037-engineered services capital program totals \$12.76 million and includes for the reconstruction of three main roadways. The details, timing, and cost breakdown of each road project are shown on Table 1.

- 1) Rougham Road – Parkhouse Drive to Falconbridge Road
- 2) Parkhouse Drive – Rougham Road to Adelaide Road
- 3) Falconbridge Drive – Rougham Road to Settlement Boundary.

SCHEDULE 'F' Land Use & Transportation Plan

Mount Brydges



LAND USE

- COMMERCIAL
- INDUSTRIAL
- RESIDENTIAL
- COMMUNITY FACILITY
- OPEN SPACE

development permitted only on the basis of full municipal services (i.e. water supply and sanitary sewage disposal)

ARTERIAL ROAD

DRAIN/WATERCOURSE

WATER SUPPLY SYSTEM

- MAIN PUMPING STATION
- TRUNK WATER MAIN
- LOW PRESSURE
- HIGH PRESSURE

SETTLEMENT AREA BOUNDARY

COUNTY ROAD

Township of Strathroy-Caradoc

The 2018-2037 development-related costs included in the capital program are not to be entirely recovered through future development charges. Approximately \$3.36 million of the program has been identified as a benefit to the existing community, or replacement share. The benefit-to-existing shares for each service category within each of the three road reconstruction projects costs are based on the following approaches:

Sanitary Sewers: linear sanitary sewer infrastructure is anticipated to be entirely related to servicing new development and no benefit to existing share has been applied.

Watermains: linear watermain infrastructure is anticipated to be entirely related to servicing new development and no benefit to existing share has been applied.

Drainage: the benefit to existing share has been determined based on the length of road with existing houses relative to the total length of the road, for each of the three projects.

Roadworks: costs associated with road resurfacing and maintenance work that the Municipality would have incurred in the absence of growth is considered the benefit to existing component.

Electrical and Utilities: benefit to existing shares were only applied to the installation of street poles using the allocation based on the length of road with existing houses relative to the total road length for each of the three projects.

Remaining Categories: the benefit to existing share was determined relative to the average BTE share applied to the cost categories noted above.

The remaining \$9.40 million is identified as the net development-related share eligible for funding through development charges over the 2018 to 2037 planning period. Table 1 summarizes the Engineered Services program and calculation of the unadjusted residential and non-residential development charges. The DC eligible share of \$9.40 million has been allocated 94 per cent to new residential development and 6 per cent to non-residential development. The allocation of costs is based on the future shares of population in new units and employment growth in new space. The residential share of the capital program totals \$8.84 million and, when divided by the forecast growth in population in new units (2,990), an unadjusted charge of \$2,955.69 per capita is the result.

The non-residential share is applied against the forecast increase in square metres of non-residential floor space by type of development. The \$564,131 divided by the increase in square metres of non-residential building space (7,416), yields an unadjusted charge of \$76.07 per square metre.

The residential and non-residential cash flow analysis is shown on Table 2. The analysis takes into consideration expenditure timing and DC revenue projections. The residential cash flow analysis is displayed on page 1 while the non-residential cash flow analysis is shown on page 2.

After cash flow considerations, the residential and non-residential charges increase to \$3,267.51 per capita and \$90.17 per square metre, respectively.

ENGINEERED SERVICES					
2018 - 2037		Unadjusted		Adjusted	
Development-Related Capital Program		Development Charge		Development Charge	
Total	Net DC Recoverable	\$/capita	\$/sq.m	\$/capita	\$/sq.m
\$12,762,717	\$9,402,187	\$2,955.69	\$76.07	\$3,267.51	\$90.17

Operating Cost Implications

The *DCA* requires that a background study estimate the future tax supported operating cost implications of the development-related capital program contained in the study. The capital program contained in this background study relates to the provision of roads, water and sewer services in Mount Brydges.

Funds required for operating the water and sewer systems are generated through the utility rates. Any additional operating costs as a result of the capital program will be included in the rates.

There is no anticipated increases in operating costs associated with the road reconstruction works.

MUNICIPALITY OF STRATHROY-CARADOC - MOUNT BRYDGES ASDC
DEVELOPMENT RELATED CAPITAL PROGRAM
ENGINEERED SERVICES

Project Description	From	To	Timing		Gross Project Cost	Grants/ Subsidies/Other Recoveries	Net Municipal Cost	Ineligible Costs		Total DC Eligible Costs	DC Eligible Costs		
			Start	Finish				Replacement & BTE Shares	0% Reduction		Available DC Reserves	2018 - 2037	Post 2037
Reconstruction to Minor Collector 10m - Rougham Road													
Sanitary Sewers	Parkhouse Drive	Falconbridge Road	2019	2022	\$ 193,500	\$ -	\$ 193,500	\$ -	\$ -	\$ 193,500	\$ -	\$ 193,500	\$ -
Watermains	Parkhouse Drive	Falconbridge Road	2019	2022	\$ 764,550	\$ -	\$ 764,550	\$ -	\$ -	\$ 764,550	\$ -	\$ 764,550	\$ -
Drainage	Parkhouse Drive	Falconbridge Road	2019	2022	\$ 592,500	\$ -	\$ 592,500	\$ 165,900	\$ -	\$ 426,600	\$ -	\$ 426,600	\$ -
Roadworks	Parkhouse Drive	Falconbridge Road	2019	2022	\$ 2,724,000	\$ -	\$ 2,724,000	\$ 939,000	\$ -	\$ 1,785,000	\$ -	\$ 1,785,000	\$ -
Electrical & Utilities	Parkhouse Drive	Falconbridge Road	2019	2022	\$ 186,000	\$ -	\$ 186,000	\$ 42,000	\$ -	\$ 144,000	\$ -	\$ 144,000	\$ -
Provisional & Contingency	Parkhouse Drive	Falconbridge Road	2019	2022	\$ 1,000,000	\$ -	\$ 1,000,000	\$ 257,121	\$ -	\$ 742,879	\$ -	\$ 742,879	\$ -
General Provisions	Parkhouse Drive	Falconbridge Road	2019	2022	\$ 234,000	\$ -	\$ 234,000	\$ 60,166	\$ -	\$ 173,834	\$ -	\$ 173,834	\$ -
EA, Design & Admin	Parkhouse Drive	Falconbridge Road	2019	2022	\$ 1,138,910	\$ -	\$ 1,138,910	\$ 292,837	\$ -	\$ 846,073	\$ -	\$ 846,073	\$ -
HST (1.76%) & In-house Cost Allowances (2%)	Parkhouse Drive	Falconbridge Road	2019	2022	\$ 256,938	\$ -	\$ 256,938	\$ 66,064	\$ -	\$ 190,874	\$ -	\$ 190,874	\$ -
Subtotal					\$ 7,090,398	\$ -	\$ 7,090,398	\$ 1,823,089	\$ -	\$ 5,267,310	\$ -	\$ 5,267,310	\$ -
Reconstruction to Minor Collector 10m - Parkhouse Drive													
Sanitary Sewers	Rougham Road	Adelaide Road	2019	2020	\$ 77,400	\$ -	\$ 77,400	\$ -	\$ -	\$ 77,400	\$ -	\$ 77,400	\$ -
Watermains	Rougham Road	Adelaide Road	2019	2020	\$ 305,820	\$ -	\$ 305,820	\$ -	\$ -	\$ 305,820	\$ -	\$ 305,820	\$ -
Drainage	Rougham Road	Adelaide Road	2019	2020	\$ 237,000	\$ -	\$ 237,000	\$ 137,891	\$ -	\$ 99,109	\$ -	\$ 99,109	\$ -
Roadworks	Rougham Road	Adelaide Road	2019	2020	\$ 1,089,600	\$ -	\$ 1,089,600	\$ 375,600	\$ -	\$ 714,000	\$ -	\$ 714,000	\$ -
Electrical & Utilities	Rougham Road	Adelaide Road	2019	2020	\$ 74,400	\$ -	\$ 74,400	\$ 34,909	\$ -	\$ 39,491	\$ -	\$ 39,491	\$ -
Provisional & Contingency	Rougham Road	Adelaide Road	2019	2020	\$ 400,000	\$ -	\$ 400,000	\$ 122,944	\$ -	\$ 277,056	\$ -	\$ 277,056	\$ -
General Provisions	Rougham Road	Adelaide Road	2019	2020	\$ 93,600	\$ -	\$ 93,600	\$ 28,769	\$ -	\$ 64,831	\$ -	\$ 64,831	\$ -
EA, Design & Admin	Rougham Road	Adelaide Road	2019	2020	\$ 455,564	\$ -	\$ 455,564	\$ 140,023	\$ -	\$ 315,541	\$ -	\$ 315,541	\$ -
HST (1.76%) & In-house Cost Allowances (2%)	Rougham Road	Adelaide Road	2019	2020	\$ 102,775	\$ -	\$ 102,775	\$ 31,589	\$ -	\$ 71,186	\$ -	\$ 71,186	\$ -
Subtotal					\$ 2,836,159	\$ -	\$ 2,836,159	\$ 871,725	\$ -	\$ 1,964,434	\$ -	\$ 1,964,434	\$ -
Reconstruction to Minor Collector 10m - Falconbridge Drive													
Sanitary Sewers	Rougham Road	Settlement Boundary	2024	2027	\$ 77,400	\$ -	\$ 77,400	\$ -	\$ -	\$ 77,400	\$ -	\$ 77,400	\$ -
Watermains	Rougham Road	Settlement Boundary	2024	2027	\$ 305,820	\$ -	\$ 305,820	\$ -	\$ -	\$ 305,820	\$ -	\$ 305,820	\$ -
Drainage	Rougham Road	Settlement Boundary	2024	2027	\$ 237,000	\$ -	\$ 237,000	\$ 34,473	\$ -	\$ 202,527	\$ -	\$ 202,527	\$ -
Roadworks	Rougham Road	Settlement Boundary	2024	2027	\$ 1,089,600	\$ -	\$ 1,089,600	\$ 375,600	\$ -	\$ 714,000	\$ -	\$ 714,000	\$ -
Electrical & Utilities	Rougham Road	Settlement Boundary	2024	2027	\$ 74,400	\$ -	\$ 74,400	\$ 8,727	\$ -	\$ 65,673	\$ -	\$ 65,673	\$ -
Provisional & Contingency	Rougham Road	Settlement Boundary	2024	2027	\$ 400,000	\$ -	\$ 400,000	\$ 93,890	\$ -	\$ 306,110	\$ -	\$ 306,110	\$ -
General Provisions	Rougham Road	Settlement Boundary	2024	2027	\$ 93,600	\$ -	\$ 93,600	\$ 21,970	\$ -	\$ 71,630	\$ -	\$ 71,630	\$ -
EA, Design & Admin	Rougham Road	Settlement Boundary	2024	2027	\$ 455,564	\$ -	\$ 455,564	\$ 106,932	\$ -	\$ 348,632	\$ -	\$ 348,632	\$ -
HST (1.76%) & In-house Cost Allowances (2%)	Rougham Road	Settlement Boundary	2024	2027	\$ 102,775	\$ -	\$ 102,775	\$ 24,124	\$ -	\$ 78,651	\$ -	\$ 78,651	\$ -
Subtotal					\$ 2,836,159	\$ -	\$ 2,836,159	\$ 665,716	\$ -	\$ 2,170,443	\$ -	\$ 2,170,443	\$ -
					\$ 12,762,717	\$ -	\$ 12,762,717	\$ 3,360,530	\$ -	\$ 9,402,187	\$ -	\$ 9,402,187	\$ -

Residential Development Charge Calculation			
Residential Share of 2018 - 2037 DC Eligible Costs	94%	\$8,838,056	
20-Year Growth in Population in New Units		2,990	
Unadjusted Development Charge Per Capita		\$2,955.69	
Non-Residential Development Charge Calculation			
Non-Residential Share of 2018 - 2037 DC Eligible Costs	6%	\$564,131	
20-Year Growth in Square Metres		7,416	
Unadjusted Development Charge Per Square Metre		\$76.07	

2018 - 2037 Net Funding Envelope	\$0
Reserve Fund Balance	\$0

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APPENDIX B
TABLE 2 - PAGE 1

**MUNICIPALITY OF STRATHROY-CARADOC - MOUNT BRYDGES ASDC
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
ENGINEERED SERVICES
RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)**

ENGINEERED SERVICES	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
OPENING CASH BALANCE	\$0.0	\$844.3	(\$528.2)	(\$1,994.4)	(\$2,555.5)	(\$3,158.8)	(\$2,377.3)	(\$2,130.7)	(\$2,498.6)	(\$2,893.1)
2018 - 2037 RESIDENTIAL FUNDING REQUIREMENTS										
- Engineered Services: Non Inflated	\$0.0	\$2,161.1	\$2,161.1	\$1,237.8	\$1,237.8	\$0.0	\$510.1	\$510.1	\$510.1	\$510.1
- Engineered Services: Inflated	\$0.0	\$2,215.1	\$2,270.5	\$1,333.0	\$1,366.3	\$0.0	\$591.5	\$606.3	\$621.5	\$637.0
NEW RESIDENTIAL DEVELOPMENT										
- Population Growth in New Units	254	254	254	254	254	254	254	93	93	93
REVENUE										
- DC Receipts: Inflated	\$829.8	\$850.6	\$871.8	\$893.6	\$916.0	\$938.9	\$962.3	\$362.2	\$371.3	\$380.6
INTEREST										
- Interest on Opening Balance	\$0.0	\$29.6	(\$29.1)	(\$109.7)	(\$140.6)	(\$173.7)	(\$130.7)	(\$117.2)	(\$137.4)	(\$159.1)
- Interest on In-year Transactions	\$14.5	(\$37.5)	(\$38.5)	(\$12.1)	(\$12.4)	\$16.4	\$6.5	(\$6.7)	(\$6.9)	(\$7.1)
TOTAL REVENUE	\$844.3	\$842.6	\$804.3	\$771.9	\$763.0	\$781.6	\$838.1	\$238.3	\$227.0	\$214.4
CLOSING CASH BALANCE	\$844.3	(\$528.2)	(\$1,994.4)	(\$2,555.5)	(\$3,158.8)	(\$2,377.3)	(\$2,130.7)	(\$2,498.6)	(\$2,893.1)	(\$3,315.7)

ENGINEERED SERVICES	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
OPENING CASH BALANCE	(\$3,315.7)	(\$3,101.1)	(\$2,864.8)	(\$2,605.3)	(\$2,321.2)	(\$2,010.7)	(\$1,672.2)	(\$1,303.9)	(\$903.8)	(\$469.9)
2018 - 2037 RESIDENTIAL FUNDING REQUIREMENTS										
- Engineered Services: Non Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
- Engineered Services: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
NEW RESIDENTIAL DEVELOPMENT										
- Population Growth in New Units	93	93	93	93	93	93	93	93	93	93
REVENUE										
- DC Receipts: Inflated	\$390.1	\$399.9	\$409.8	\$420.1	\$430.6	\$441.4	\$452.4	\$463.7	\$475.3	\$487.2
INTEREST										
- Interest on Opening Balance	(\$182.4)	(\$170.6)	(\$157.6)	(\$143.3)	(\$127.7)	(\$110.6)	(\$92.0)	(\$71.7)	(\$49.7)	(\$25.8)
- Interest on In-year Transactions	\$6.8	\$7.0	\$7.2	\$7.4	\$7.5	\$7.7	\$7.9	\$8.1	\$8.3	\$8.5
TOTAL REVENUE	\$214.6	\$236.3	\$259.5	\$284.2	\$310.5	\$338.5	\$368.3	\$400.1	\$433.9	\$469.9
CLOSING CASH BALANCE	(\$3,101.1)	(\$2,864.8)	(\$2,605.3)	(\$2,321.2)	(\$2,010.7)	(\$1,672.2)	(\$1,303.9)	(\$903.8)	(\$469.9)	\$0.0

2018 Adjusted Charge Per Capita	\$3,267.51
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APPENDIX B
TABLE 2 - PAGE 2

**MUNICIPALITY OF STRATHROY-CARADOC - MOUNT BRYDGES ASDC
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
ENGINEERED SERVICES
NON-RESIDENTIAL DEVELOPMENT CHARGE
(in \$000)**

ENGINEERED SERVICES	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
OPENING CASH BALANCE	\$0.0	\$34.0	(\$74.9)	(\$191.8)	(\$252.8)	(\$318.4)	(\$297.4)	(\$312.7)	(\$328.9)	(\$345.9)
2018 - 2037 RESIDENTIAL FUNDING REQUIREMENTS										
- Engineered Services: Non Inflated	\$0.0	\$137.9	\$137.9	\$79.0	\$79.0	\$0.0	\$32.6	\$32.6	\$32.6	\$32.6
- Engineered Services: Inflated	\$0.0	\$141.4	\$144.9	\$85.1	\$87.2	\$0.0	\$37.8	\$38.7	\$39.7	\$40.7
NEW RESIDENTIAL DEVELOPMENT										
- Growth in Square Metres	371	371	371	371	371	371	371	371	371	371
REVENUE										
- DC Receipts: Inflated	\$33.4	\$34.3	\$35.1	\$36.0	\$36.9	\$37.8	\$38.8	\$39.7	\$40.7	\$41.8
INTEREST										
- Interest on Opening Balance	\$0.0	\$1.2	(\$4.1)	(\$10.5)	(\$13.9)	(\$17.5)	(\$16.4)	(\$17.2)	(\$18.1)	(\$19.0)
- Interest on In-year Transactions	\$0.6	(\$2.9)	(\$3.0)	(\$1.3)	(\$1.4)	\$0.7	\$0.0	\$0.0	\$0.0	\$0.0
TOTAL REVENUE	\$34.0	\$32.5	\$28.0	\$24.1	\$21.6	\$21.0	\$22.4	\$22.6	\$22.7	\$22.8
CLOSING CASH BALANCE	\$34.0	(\$74.9)	(\$191.8)	(\$252.8)	(\$318.4)	(\$297.4)	(\$312.7)	(\$328.9)	(\$345.9)	(\$363.8)

ENGINEERED SERVICES	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
OPENING CASH BALANCE	(\$363.8)	(\$340.2)	(\$314.3)	(\$285.8)	(\$254.7)	(\$220.6)	(\$183.5)	(\$143.0)	(\$99.2)	(\$51.5)
2018 - 2037 RESIDENTIAL FUNDING REQUIREMENTS										
- Engineered Services: Non Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
- Engineered Services: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
NEW RESIDENTIAL DEVELOPMENT										
- Growth in Square Metres	371	371	371	371	371	371	371	371	371	371
REVENUE										
- DC Receipts: Inflated	\$42.8	\$43.9	\$45.0	\$46.1	\$47.2	\$48.4	\$49.6	\$50.9	\$52.1	\$53.4
INTEREST										
- Interest on Opening Balance	(\$20.0)	(\$18.7)	(\$17.3)	(\$15.7)	(\$14.0)	(\$12.1)	(\$10.1)	(\$7.9)	(\$5.5)	(\$2.8)
- Interest on In-year Transactions	\$0.7	\$0.8	\$0.8	\$0.8	\$0.8	\$0.8	\$0.9	\$0.9	\$0.9	\$0.9
TOTAL REVENUE	\$23.5	\$25.9	\$28.5	\$31.2	\$34.1	\$37.1	\$40.4	\$43.9	\$47.6	\$51.5
CLOSING CASH BALANCE	(\$340.2)	(\$314.3)	(\$285.8)	(\$254.7)	(\$220.6)	(\$183.5)	(\$143.0)	(\$99.2)	(\$51.5)	(\$0.0)

2018 Adjusted Charge Per Sq.M	\$90.17
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APPENDIX C

ASSET MANAGEMENT PLAN

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ASSET MANAGEMENT PLAN

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

Asset Types

A summary of the future municipal-owned assets and estimated useful life assumptions for eligible DC services considered as part of the study are outlined in Table 1. The useful life assumptions were informed by the Municipality of Strathroy-Caradoc's Asset Management Plan (2013).

Although all capital assets considered in the study have been identified, some projects, such as the undertaking of development-related studies or design work, do not relate to the emplacement of a tangible capital asset. These projects/costs do not necessarily require future replacement or ongoing maintenance.

Capital Project	Estimated Useful Life
Engineered Infrastructure	
• Roads	50 years
• Watermains	75 years
• Sanitary Sewers	50 years
• Storm Drainage	50 years
• EA, Studies, Design	Not Infrastructure

Annual Provision

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

Based on the information obtained from the Municipality's 2013 Asset Management Plan regarding useful life assumptions and from Municipal staff on the capital cost of

acquiring and/or emplacing each asset, a provision for infrastructure replacement has been calculated for all engineered services considered within the ASDC Background Study. Provisions for infrastructure replacement are initially calculated for each asset based on their useful life and the anticipated cost of replacement. The aggregate of all individual provisions form the required annual capital provision. In calculating the annual provisions, a number of assumptions are made to account for inflation (2.0 per cent) and interest (3.5 per cent).

Consistent with the requirements of the *Development Charge Act*, assets that are proposed to be funded under the development charges by-law have been included in the analysis. As a result, the total calculated annual provision for development charge related infrastructure has been netted down to consider the replacement of existing infrastructure or benefit-to-existing development.

Table 2 provides the calculated annual asset management contribution for both the gross capital expenditures and the share related to the 2018-2037 DC recoverable portion. As shown in Table 2, by 2037, the Municipality will need to fund an additional \$166,000 per annum in order to properly fund the full life cycle costs of the new assets related to all servicing costs supported under the development charges by-law for the Mount Brydges area. The calculated life cycle funding requirement of \$166,000 equates to approximately 0.5 per cent of the Municipalities 2018 total own source revenues (i.e. taxation and user fees) of \$33.7 million.

Service	2018-2037 Capital Program		Calculated AMP Annual Provision by 2038	
	DC Recoverable	Non-DC Funded	DC Related	Non-DC Related
Engineered Services	\$ 9,402,000	\$ 3,361,000	\$ 166,000	\$ 66,000
Total 2038 Provision	\$ 9,402,000	\$ 3,361,000	\$ 166,000	\$ 66,000

Financial Sustainability of the Program

Future Revenue Growth

The calculated annual funding provision should be considered within the context of the Municipality's projected growth. By 2037, the Mount Brydges area is projected to increase by approximately 1,140 households. In addition, the Mount Brydges area is expected to add 185 new employees that will result in approximately 7,420 square metres of additional non-residential building space.

This growth will have the effect of increasing the overall assessment base and additional user fee and charges revenues to offset the capital asset provisions required to replace the infrastructure proposed to be funded under the development charges by-law. The collection of these funds is intended to be allocated to the Municipality's reserves for the future replacement of these assets.

Annual Budgetary Reviews

In order to maintain, protect and manage the Municipality's infrastructure and assets, staff monitor current levels of service and life cycle trends. These assessments are used to schedule appropriate activities, such as pavement management and road reconstruction and rehabilitation.

The Program is Deemed Financially Sustainable

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