

INTERIM AREA-SPECIFIC  
DEVELOPMENT CHARGES  
BACKGROUND STUDY  
FOR THE SANDWICH SOUTH  
PLANNING DISTRICT

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Draft Report

HEMSON Consulting Ltd.

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April 30, 2018

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## EXECUTIVE SUMMARY

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The following summarizes the findings of the City of Windsor's Interim Area-Specific Development Charges (ASDC) Background Study for the Sandwich South Planning District.

### A. STUDY CONSISTENT WITH DEVELOPMENT CHARGES LEGISLATION

- This study calculates area-specific development charges for the City of Windsor's Sandwich South Planning District 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 June 1, 2015, the Council of the City of Windsor passed its City-wide Development Charges By-law 60-2015 that will expire on June 1, 2020. The Interim ASDC Background Study and By-law are intended to work in conjunction with By-law 60-2015.
- The City needs to implement development charges to fund the capital projects necessary in the Sandwich South Planning District 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 City 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 Sandwich South Planning District. 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 City 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 City services have been included in the 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 Sandwich South.

**C. DEVELOPMENT FORECAST**

- A forecast of the amount, type and location of residential and non-residential development anticipated in the Sandwich South Planning District to 2036 is included in this report and was used in the ASDC calculation.
- The development forecast was prepared with input from the City's planning department and through a review of relevant Secondary Plan land use designations and policies. It is anticipated that development in Sandwich South over the planning period of 2018 to 2036 will occur predominantly within the East Pelton Secondary Plan area and County Road 42 Secondary Plan area. These two Secondary Plan areas are anticipated to reach build-out in 2036.

- The development forecast for the 2018 to 2036 planning period estimates that the East Pelton and County Road 42 Secondary Plan areas will accommodate nearly 5,000 new dwelling units by 2036. The population in these new dwelling is estimated at 13,200.
- Approximately 872,500 square metres of new, non-residential building space is anticipated between 2018 and 2036. This new non-residential space will accommodate approximately 11,000 jobs.
- The following is a summary of the projected growth for the City:

<b>Development Forecast</b>	<b>Growth Over Planning Period 2018 - 2036</b>
<b>Residential</b>	
Total Occupied Dwellings	4,978
Population in New Dwellings	13,243
<b>Non-Residential</b>	
Total Employment Growth	10,977
Non-Residential Building Space (sq.m.)	872,493

#### **D. DEVELOPMENT-RELATED CAPITAL PROGRAM**

- City staff, in collaboration with Hemson Consulting, have prepared a development-related capital program setting out projects that are required to service anticipated development in Sandwich South to 2036.
- The ASDCs are calculated 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 \$850.36 million.
- Of the \$850.36 million in the engineered services capital program, approximately \$265.38 million of the total program is to be recovered from development charges over the 2018-2036 planning period.

- In total, approximately \$57.89 million has been identified as subsidies, or other recoveries, that the City will anticipate receiving to fund development-related projects.
- Non-DC funding for replacement portions of the capital forecast and for portions of the capital projects that benefit existing development total \$108.22 million. These shares will require funding from other sources.
- A portion of the capital program is currently being funded through the City-wide DC by-law. This share is calculated at \$70.60 million and has been excluded from the development charges calculation.
- Many of the engineered infrastructure projects will provide benefit to broader Sandwich South Planning District development beyond 2036. This share is calculated at \$348.28 million and will be eligible under future development charges.
- The following is a summary of the development-related capital forecast for all engineered services:

<b>Area-Specific Engineered Services (2018-2036)</b>		
<b>Service</b>	<b>Gross Cost (\$000)</b>	<b>DC Eligible Cost (\$000)</b>
Roads	\$550,240.0	\$177,426.7
Sanitary Sewer	\$56,436.0	\$11,788.7
Storm Sewer & Municipal Drains	\$211,196.0	\$61,889.8
Water	\$32,486.4	\$14,270.1
<b>Total</b>	<b>\$850,358.4</b>	<b>\$265,375.3</b>

- Appendix C provides full calculation details for the 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

Service	Charge By Unit Type (1)		
	Single Detached	Semis, Rows & Other Multiples	Apartments
Roads And Related	\$25,147	\$16,934	\$12,065
Sanitary Sewer	\$1,865	\$1,256	\$895
Storm Sewer & Municipal Drains	\$8,584	\$5,781	\$4,118
Water	\$2,052	\$1,382	\$984
<b>Area-Specific Engineered Services Charge Per Unit</b>	<b>\$37,648</b>	<b>\$25,353</b>	<b>\$18,062</b>
(1) Based on Persons Per Unit Of:	3.46	2.33	1.66

- The fully calculated non-residential ASDCs are recommended to vary by type of development. Non-residential development charges have been calculated and will be levied on industrial and non-industrial development, reflecting the shares of anticipated employment growth.

### Calculated Non-Residential Area-Specific Development Charges

Service	Charge per sq.m.	
	Industrial	Non-Industrial
Roads And Related	\$72.62	\$101.90
Sanitary Sewer	\$5.38	\$7.55
Storm Sewer & Municipal Drains	\$24.79	\$34.79
Water	\$5.93	\$8.31
<b>Area-Specific Engineered Services Charge Per sq.m</b>	<b>\$108.72</b>	<b>\$152.55</b>

- It is intended that development in Sandwich South be subject to the ASDC rates for Roads and Related, Sanitary Sewer, Storm Sewer and Municipal Drains, and Water services. In addition to these area-specific rates, the City-wide charges for general services (Library, Fire, Police, Indoor Recreation, Park Development, Public Works and Fleet, Parking, Transit) and Pollution Control will continue to apply in Sandwich South.



## I INTRODUCTION AND BACKGROUND

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This City of Windsor Interim Area-Specific Development Charges (ASDC) Background Study for the Sandwich South Planning District 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)*.

The Sandwich South Planning District encompasses approximately 2,530 hectares in southeast Windsor, which were transferred from the Town of Tecumseh in 2003. The Sandwich South Planning District now encompasses two Secondary Plan areas: the East Pelton Secondary Plan and the County Road 42 Secondary Plan.

Significant development is anticipated to occur within these two Secondary Plans over a planning period of 2018 to 2036, and the City has identified preliminary infrastructure works necessary to allow development to proceed. The City 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 City 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.

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 Sandwich South

Planning District between 2018 and 2036. 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 City of Windsor currently levies development charges on a City-wide, uniform basis. The City-wide charges recover for development-related costs for the provision of general government, library, fire, police, parks and recreation, public works and fleet, parking, and transit services, as well as the engineered services of roads and related, sanitary sewers and pollution control, storm sewer and municipal drains, and water storage and distribution.

This ASDC Background Study and its accompanying ASDC by-law are intended to operate in conjunction with the City-wide DC by-law. ASDCs are calculated for the provision of roads and related, sanitary sewer, storm sewer and municipal drains, and water services. These charges are intended to be imposed on future development within Sandwich South. It is intended that the remaining services under the City-wide DC by-law continue to be collected for on a City-wide basis.

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 ASDCs for Sandwich South.

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 City 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 which is expected to occur within Sandwich South over the 2018–2036 period.

Section IV summarizes the future development-related capital costs associated with the provision of City services related to development in Sandwich South.

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

Section VI provides a comparison of the existing City-wide DC rates with the ASDC rates calculated in this study.

Section VII provides an examination of the long-term capital and operating cost impacts for each service 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 VIII provides a discussion of other issues and considerations including by-law administration, rules and policies.

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## **II AREA-SPECIFIC APPROACH IS USED TO ALIGN DEVELOPMENT-RELATED COSTS AND BENEFITS**

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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 City of Windsor and the Sandwich South Planning District. The approach to the proposed development charges is focused on providing a reasonable alignment of development-related costs with the development that necessitates them.

### **A. AREA-SPECIFIC DEVELOPMENT CHARGES ARE CALCULATED**

The *DCA* provides 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 City of Windsor currently levies development charges on a City-wide basis. The development charges recover costs related to City-wide General Government (studies), Library, Fire, Police, Indoor Recreation, Park Development, Public Works and Fleet, Parking, Transit, Roads and Related, Sanitary Sewers, Pollution Control, Storm Sewers and Municipal Drains, and Water Storage and Distribution.

This ASDC Background Study calculates development charges related to the provision of Roads and Related, Sanitary Sewers, Storm Sewers and Municipal Drains, and Water infrastructure within the Sandwich South Planning District. 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 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 2036. The forecast of the future residential and non-residential development used in this study was prepared by Hemson Consulting Ltd. in collaboration with City planning staff. The forecasts are consistent with the land use designations and policies of the two Secondary Plans within the Sandwich South Planning District: the East Pelton Secondary Plan and the County Road 42 Secondary Plan.

When calculating the development charge, the development-related net capital costs are spread over the total population that will occupy new housing units in Sandwich South. 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 Sandwich South 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 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 City engineering staff and the Windsor Utility Commission (WUC) 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 City from non-development charges sources. The amount of City 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

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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 of the forecasts, including tables illustrating forecast results 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 2036.

The Sandwich South Planning District is anticipated to see nearly 5,000 new housing units over the planning period. These units are anticipated to be accommodated within lands designated for residential development within the East Pelton and County Road 42 Secondary Plan areas. The forecast of population expected to reside in these new housing units over the 2018 to 2036 period is approximately 13,200 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 City.

Sandwich South is anticipated to accommodate nearly 11,000 jobs within new non-residential space over the 2018 to 2036 planning period. Approximately 872,500 square metres of new non-residential building space is anticipated. Approximately 60 per cent of this growth is expected in the population-related sector, while 40 per cent is expected in the employment land sector.

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

TABLE 1

**SANDWICH SOUTH PLANNING DISTRICT  
SUMMARY OF RESIDENTIAL AND NON-RESIDENTIAL  
DEVELOPMENT FORECAST**

Development Forecast	Growth Over Planning Period 2018 - 2036
<b>Residential</b>	
Total Occupied Dwellings	4,978
<i>Singles</i>	2,340
<i>Semis, Rows &amp; Other Multiples</i>	1,139
<i>Apartments</i>	1,499
Population in New Dwellings	13,243
<b>Non-Residential</b>	
Total Employment Growth	10,977
<i>Population-Related</i>	7,507
<i>Employment Land</i>	3,470
Non-Residential Building Space (sq.m.)	872,493
<i>Population-Related</i>	525,483
<i>Employment Land</i>	347,009



## **IV THE DEVELOPMENT-RELATED CAPITAL PROGRAM**

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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, City staff, in collaboration with the consultants have created a development-related capital program setting out those projects that are required to service anticipated growth. The capital plan covers the planning period from 2018 to 2036.

One of the recommendations contained in this 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 Sandwich South. It is acknowledged that changes to the forecast presented here may occur through the City's normal capital budget process.

### **B. THE DEVELOPMENT-RELATED CAPITAL FORECAST FOR AREA-SPECIFIC ENGINEERED SERVICES**

Table 2 provides the area-specific development-related capital recoveries for the engineered services of roads, sanitary sewers, storm sewers and drains, and water. The area-specific capital program totals \$850.36 million and provides servicing for anticipated development over the planning period.

Grants, subsidies and other recoveries have been identified at a total of \$57.88 million. The remaining net cost of \$792.48 million is the cost to be paid by the City. The majority of the net capital program is associated with development-related Roads and Related servicing projects. The various Sandwich South road infrastructure projects, urbanizations, and studies total \$550.24 million, or 69 per cent of the total forecast.

The Storm Sewer and Municipal Drains capital program includes significant projects benefitting development in Sandwich South, such as Upper Little River stormwater management implementation, drain improvements, and various servicing studies. These projects have a total net cost of \$176.77 million, or 22 per cent.

The development-related net capital program for Sanitary Sewers totals \$32.98 million, or 4 per cent, and includes Sandwich South-specific linear sewer works, related studies, and recovery of past development-related projects.

Finally, the net municipal costs associated with Water Services totals \$32.49 million, or 4 per cent, and provides for various linear water works.

TABLE 2

**SANDWICH SOUTH PLANNING DISTRICT  
SUMMARY OF DEVELOPMENT-RELATED CAPITAL PROGRAM  
FOR AREA-SPECIFIC SERVICES 2018 - 2036  
(in \$000)**

Service	Gross Cost	Grants/ Subsidies	Municipal Cost	Total Net Capital Program							
				2018	2019	2020	2021	2022	2023	2024	2025
<b>1.0 ROADS AND RELATED</b>	<b>\$550,240.0</b>	<b>\$0.0</b>	<b>\$550,240.0</b>	<b>\$7,848.5</b>	<b>\$7,848.5</b>	<b>\$7,848.5</b>	<b>\$9,701.9</b>	<b>\$7,701.9</b>	<b>\$8,701.9</b>	<b>\$34,192.6</b>	<b>\$34,192.6</b>
1.1 Road Improvements	\$105,880.0	\$0.0	\$105,880.0	\$3,228.1	\$3,228.1	\$3,228.1	\$3,228.1	\$3,228.1	\$3,228.1	\$7,399.7	\$7,399.7
1.2 Road Construction (1)	\$443,920.0	\$0.0	\$443,920.0	\$4,473.8	\$4,473.8	\$4,473.8	\$6,473.8	\$4,473.8	\$5,473.8	\$26,793.0	\$26,793.0
1.3 Studies and Other	\$440.0	\$0.0	\$440.0	\$146.7	\$146.7	\$146.7	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
<b>2.0 SANITARY SEWERS</b>	<b>\$56,436.0</b>	<b>\$23,456.0</b>	<b>\$32,980.0</b>	<b>\$13,335.9</b>	<b>\$1,090.9</b>	<b>\$1,090.9</b>	<b>\$1,017.6</b>	<b>\$1,017.6</b>	<b>\$1,017.6</b>	<b>\$1,017.6</b>	<b>\$1,017.6</b>
2.1 Sewer Infrastructure	\$56,216.0	\$23,456.0	\$32,760.0	\$13,262.6	\$1,017.6	\$1,017.6	\$1,017.6	\$1,017.6	\$1,017.6	\$1,017.6	\$1,017.6
2.2 Studies and Other	\$220.0	\$0.0	\$220.0	\$73.3	\$73.3	\$73.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
<b>3.0 STORM SEWERS &amp; MUNICIPAL DRAINS</b>	<b>\$211,196.0</b>	<b>\$34,425.0</b>	<b>\$176,771.0</b>	<b>\$1,795.0</b>	<b>\$1,230.0</b>	<b>\$1,900.0</b>	<b>\$853.3</b>	<b>\$1,523.3</b>	<b>\$853.3</b>	<b>\$13,758.1</b>	<b>\$12,904.8</b>
3.1 Upper Little River Stormwater Management (2)	\$202,500.0	\$34,425.0	\$168,075.0	\$415.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$12,896.9	\$12,896.9
3.2 Drains	\$4,186.0	\$0.0	\$4,186.0	\$0.0	\$0.0	\$670.0	\$853.3	\$853.3	\$853.3	\$861.2	\$7.9
3.3 Studies and Other	\$4,510.0	\$0.0	\$4,510.0	\$1,380.0	\$1,230.0	\$1,230.0	\$0.0	\$670.0	\$0.0	\$0.0	\$0.0
<b>4.0 WATER</b>	<b>\$32,486.4</b>	<b>\$0.0</b>	<b>\$32,486.4</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$14,304.9</b>	<b>\$0.0</b>	<b>\$0.0</b>
4.1 Water Infrastructure	\$32,486.4	\$0.0	\$32,486.4	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$14,304.9	\$0.0	\$0.0
<b>TOTAL - ENGINEERED SERVICES</b>	<b>\$850,358.4</b>	<b>\$57,881.0</b>	<b>\$792,477.4</b>	<b>\$22,979.5</b>	<b>\$10,169.5</b>	<b>\$10,839.5</b>	<b>\$11,572.7</b>	<b>\$10,242.7</b>	<b>\$24,877.6</b>	<b>\$48,968.3</b>	<b>\$48,115.1</b>

Service	Total Net Capital Program										
	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
<b>1.0 ROADS AND RELATED</b>	<b>\$34,192.6</b>	<b>\$34,192.6</b>	<b>\$34,192.6</b>	<b>\$33,642.6</b>	<b>\$33,642.6</b>	<b>\$33,642.6</b>	<b>\$33,642.6</b>	<b>\$33,642.6</b>	<b>\$25,940.8</b>	<b>\$25,940.8</b>	<b>\$25,940.8</b>
1.1 Road Improvements	\$7,399.7	\$7,399.7	\$7,399.7	\$7,399.7	\$7,399.7	\$7,399.7	\$7,399.7	\$7,399.7	\$4,171.5	\$4,171.5	\$4,171.5
1.2 Road Construction (1)	\$26,793.0	\$26,793.0	\$26,793.0	\$26,243.0	\$26,243.0	\$26,243.0	\$26,243.0	\$26,243.0	\$21,769.2	\$21,769.2	\$21,769.2
1.3 Studies and Other	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
<b>2.0 SANITARY SEWERS</b>	<b>\$1,017.6</b>	<b>\$1,017.6</b>	<b>\$1,148.8</b>	<b>\$1,148.8</b>	<b>\$1,148.8</b>	<b>\$1,148.8</b>	<b>\$1,148.8</b>	<b>\$1,148.8</b>	<b>\$1,148.8</b>	<b>\$1,148.8</b>	<b>\$1,148.8</b>
2.1 Sewer Infrastructure	\$1,017.6	\$1,017.6	\$1,148.8	\$1,148.8	\$1,148.8	\$1,148.8	\$1,148.8	\$1,148.8	\$1,148.8	\$1,148.8	\$1,148.8
2.2 Studies and Other	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
<b>3.0 STORM SEWERS &amp; MUNICIPAL DRAINS</b>	<b>\$12,904.8</b>	<b>\$12,904.8</b>	<b>\$12,904.8</b>	<b>\$12,904.8</b>	<b>\$12,904.8</b>	<b>\$12,904.8</b>	<b>\$12,904.8</b>	<b>\$12,904.8</b>	<b>\$12,904.8</b>	<b>\$12,904.8</b>	<b>\$12,904.8</b>
3.1 Upper Little River Stormwater Management (2)	\$12,896.9	\$12,896.9	\$12,896.9	\$12,896.9	\$12,896.9	\$12,896.9	\$12,896.9	\$12,896.9	\$12,896.9	\$12,896.9	\$12,896.9
3.2 Drains	\$7.9	\$7.9	\$7.9	\$7.9	\$7.9	\$7.9	\$7.9	\$7.9	\$7.9	\$7.9	\$7.9
3.3 Studies and Other	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
<b>4.0 WATER</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$18,181.5</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>
4.1 Water Infrastructure	\$0.0	\$0.0	\$0.0	\$0.0	\$18,181.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
<b>TOTAL - ENGINEERED SERVICES</b>	<b>\$48,115.1</b>	<b>\$48,115.1</b>	<b>\$48,246.3</b>	<b>\$47,696.3</b>	<b>\$65,877.8</b>	<b>\$47,696.3</b>	<b>\$47,696.3</b>	<b>\$47,696.3</b>	<b>\$39,994.4</b>	<b>\$39,994.4</b>	<b>\$39,994.4</b>

Note 1: Portion of collector road projects allocated to post-2036 Sandwich South growth  
 Note 2: Upper Little River Stormwater Management Grants and Subsidies include Tecumseh share of project costs

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

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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 for each individual City service category 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, \$792.48 million, not all are to be recovered from new development by way of development charges. Table 3 shows that \$108.22 million (14 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.

Some of the Sandwich South capital projects were included in the City’s 2015 DC Background Study and are being partially funded through the City-wide DC by-law.

Through discussions with City staff, it was determined that this portion should be removed from the development charges calculation. This amount is calculated at \$70.60 million, or 9 per cent of the capital program.

As this ASDC Background Study relates to development anticipated to occur over the planning period to 2036 within the East Pelton and County Road 42 Secondary Plan areas, a share of the capital projects deemed to benefit post-2036 development in Sandwich South, or outside of the existing Secondary Plan areas, has been identified by City staff and the WUC. The Sandwich South post-2036 share totals \$348.28 and has been removed from the ASDC calculation.

The remaining \$265.38 million is related to development within the two Secondary Plan areas over the 2018-2036 planning period and has been included in the 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. As with the City's current practice, separate non-residential charges have been calculated for the industrial and non-industrial sector. The increase in anticipated non-residential space for each type of development has been forecast based on anticipated rates of employment growth. On this basis, the allocation to the residential and non-residential sectors is calculated at 55 per cent and 45 per cent, respectively. The 45 per cent non-residential share is allocated 32 per cent to the industrial sector and 68 per cent to the non-industrial sector.

As a result, \$145.96 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 (13,243) an unadjusted charge of \$11,021.41 per capita is the result.

The non-residential share totals \$119.42 million and, when this amount is divided by the forecast of non-residential space growth (872,493 square metres) an unadjusted charge of \$136.87 per square metre is the result. When the industrial share (32 per cent) is divided by the anticipated increase in non-residential industrial building space over the planning period to 2036 (347,009) a development charge of \$110.12 is the result. The remaining portion of the non-residential share, 68 per cent, is associated with the non-industrial sector. The non-industrial share is divided by the anticipated increase in non-industrial building space in Sandwich South between 2018 and 2036 (525,483), resulting in an unadjusted charge of \$154.53 per square metre.

## **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 for each service category, 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 decreases from \$11,021.41 per capita to \$10,881 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-detached unit is \$37,648 per unit, \$25,353 for a semi-detached, row or other type of multiple unit, and \$18,062 for an apartment unit.

The industrial and non-industrial non-residential development charges also experience a decrease after cash flow considerations. The industrial charge decreases from \$110.12 to \$108.72 per square metre. The non-industrial charge decreases from \$154.53 to \$152.55 per square metre after cash flow considerations and is displayed on Table 5.

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**TABLE 4**

**SANDWICH SOUTH PLANNING DISTRICT  
 SANDWICH SOUTH DEVELOPMENT CHARGES  
 RESIDENTIAL DEVELOPMENT CHARGES**

Service	Unadjusted Charge Per Capita	Adjusted Charge After Cashflow Per Capita	Charge By Unit Type (1)		
			Single Detached	Semis, Rows & Other Multiples	Apartments
Roads And Related	\$7,368.78	\$7,268.00	\$25,147	\$16,934	\$12,065
Sanitary Sewer	\$489.60	\$539.00	\$1,865	\$1,256	\$895
Storm Sewer & Municipal Drains	\$2,570.37	\$2,481.00	\$8,584	\$5,781	\$4,118
Water	\$592.66	\$593.00	\$2,052	\$1,382	\$984
<b>Area-Specific Engineered Services Charge Per Unit</b>	<b>\$11,021.41</b>	<b>\$10,881.00</b>	<b>\$37,648</b>	<b>\$25,353</b>	<b>\$18,062</b>
(1) Based on Persons Per Unit Of:			3.46	2.33	1.66



TABLE 5

**SANDWICH SOUTH PLANNING DISTRICT  
SANDWICH SOUTH DEVELOPMENT CHARGES  
NON-RESIDENTIAL DEVELOPMENT CHARGES**

Service	Industrial		Non-Industrial	
	Unadjusted Charge (\$/sq.m)	Adjusted Charge After Cashflow (\$/sq.m)	Unadjusted Charge (\$/sq.m)	Adjusted Charge After Cashflow (\$/sq.m)
Roads And Related	\$73.63	\$72.62	\$103.32	\$101.90
Sanitary Sewer	\$4.89	\$5.38	\$6.86	\$7.55
Storm Sewer & Municipal Drains	\$25.68	\$24.79	\$36.04	\$34.79
Water	\$5.92	\$5.93	\$8.31	\$8.31
<b>Area-Specific Engineered Services Charge Per sq.m</b>	<b>\$110.12</b>	<b>\$108.72</b>	<b>\$154.53</b>	<b>\$152.55</b>

## **VI COMPARISON OF CALCULATED AREA-SPECIFIC CHARGES AND CITY-WIDE DEVELOPMENT CHARGES**

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Tables 6, 7 and 8 present a comparison of the calculated area-specific residential and non-residential development charges with the City-wide development charge rates as per the 2015 DC Background Study.

It is intended that development in Sandwich South be subject to the ASDC rates for Roads and Related, Sanitary Sewer, Storm Sewer and Municipal Drains, and Water services. In addition to these area-specific rates, the City-wide charges for general services (Library, Fire, Police, Indoor Recreation, Park Development, Public Works and Fleet, Parking, Transit) and Pollution Control will continue to apply in Sandwich South.

Table 6 illustrates that the full residential development charge for a single-detached unit in Sandwich South is calculated at \$40,726; a 52 per cent increase from the City-wide total rate of \$26,874. It is noted that the City-wide rates presented in this section are as per the 2015 DC Background Study, and are subject to annual phasing-in and indexing.

The full development charge rate for non-industrial development is calculated at \$160.13 per square metre, a 32 per cent increase over the 2015 City-wide development charge of \$120.99 per square metre (Table 7)

Under the City-wide by-law, industrial development is exempt from the payment of development charges. This practice is proposed to continue in the area-specific by-law, however a maximum charge on industrial development of \$108.72 has been calculated and is shown in Table 8.

TABLE 6

**SANDWICH SOUTH PLANNING DISTRICT  
COMPARISON OF CITY-WIDE AND CALCULATED SANDWICH SOUTH AREA SPECIFIC  
RESIDENTIAL DEVELOPMENT CHARGES**

Service	City-wide Residential Charge / SDU	Sandwich South Residential Charge / SDU	Difference in Charge	
General Services*	\$2,040	\$2,040	N/A	N/A
Roads And Related	\$13,539	\$25,147	\$11,608	86%
Sanitary Sewer	\$1,209	\$1,865	\$656	54%
Pollution Control*	\$1,038	\$1,038	N/A	N/A
Storm Sewer & Municipal Drains	\$7,088	\$8,584	\$1,496	21%
Water	\$1,960	\$2,052	\$92	5%
<b>Charge Per Unit</b>	<b>\$26,874</b>	<b>\$40,726</b>	<b>\$13,852</b>	<b>52%</b>

Note: City-wide rates as per 2015 DC Background Study. Rates are subject to annual phasing-in and indexing.

\*City-wide General Services and Pollution Control charges to continue to apply to Sandwich South development.

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**TABLE 7**

**SANDWICH SOUTH PLANNING DISTRICT  
 COMPARISON OF CITY-WIDE AND CALCULATED AREA-SPECIFIC  
 NON-RESIDENTIAL DEVELOPMENT CHARGES  
 NON-INDUSTRIAL**

Service	City-wide Non-Industrial Charge / Sq.m	Sandwich South Non-Industrial Charge / Sq.m	Difference in Charge	
General Services*	\$2.60	\$2.60	N/A	N/A
Roads And Related	\$64.60	\$101.90	\$37.30	58%
Sanitary Sewer	\$5.71	\$7.55	\$1.84	32%
Pollution Control*	\$4.98	\$4.98	N/A	N/A
Storm Sewer & Municipal Drains	\$33.75	\$34.79	\$1.04	3%
Water	\$9.35	\$8.31	(\$1.04)	-11%
<b>Charge Per Unit</b>	<b>\$120.99</b>	<b>\$160.13</b>	<b>\$39.14</b>	<b>32%</b>

Note: City-wide rates as per 2015 DC Background Study. Rates are subject to annual phasing-in and indexing.

\*City-wide General Services and Pollution Control charges to continue to apply to Sandwich South development.

TABLE 8

**SANDWICH SOUTH PLANNING DISTRICT  
COMPARISON OF CITY-WIDE AND CALCULATED AREA-SPECIFIC  
NON-RESIDENTIAL DEVELOPMENT CHARGES  
INDUSTRIAL**

Service	City-wide Industrial Charge / Sq.m	Sandwich South Industrial Charge / Sq.m	Difference in Charge	
General Services*	\$0.00	\$0.00	N/A	N/A
Roads And Related	\$0.00	\$72.62	N/A	N/A
Sanitary Sewer	\$0.00	\$5.38	N/A	N/A
Pollution Control*	\$0.00	\$0.00	N/A	N/A
Storm Sewer & Municipal Drains	\$0.00	\$24.79	N/A	N/A
Water	\$0.00	\$5.93	N/A	N/A
<b>Charge Per Unit</b>	<b>\$0.00</b>	<b>\$108.72</b>	<b>N/A</b>	<b>N/A</b>

Note: Industrial development exempt from payment of DCs under current by-law

City-wide rates as per 2015 DC Background Study. Rates are subject to annual phasing-in and indexing.

\*City-wide General Services and Pollution Control charges to continue to apply to Sandwich South development.

## **VII LONG-TERM CAPITAL AND OPERATING COSTS AND ASSET MANAGEMENT PROVISIONS**

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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 ASDC by-law. Also addressed is the required asset management provisions that must be considered.

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

Table 9 summarizes the estimated increase in net operating costs that the City will experience for additions associated with the planned capital program.

As shown in Table 9, by 2036, the City's net operating costs are estimated to increase by \$1.67 million. This increase relates to the roads and related program. Services related to sanitary sewers, storm sewers and municipal drains, and water are rate-supported.

### **B. LONG-TERM CAPITAL FINANCING FROM NON-DEVELOPMENT CHARGE SOURCES TOTALS \$99.86 MILLION**

Table 9 also 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 \$99.86 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. In addition, \$284.34 million in interim financing may be required for projects related to development in Sandwich South in the post-2036 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.

### **C. ANNUAL ASSET MANAGEMENT PLAN PROVISION REQUIREMENTS**

*NTD: To be completed.*

TABLE 9

**SANDWICH SOUTH PLANNING DISTRICT  
SUMMARY OF LONG TERM CAPITAL AND  
OPERATING COST IMPACTS FOR TAX SUPPORTED SERVICES  
(in thousands of constant dollars)**

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
<b>Net Operating Impacts (1)</b>										
Roads And Related	\$85.1	\$170.2	\$255.3	\$340.3	\$425.4	\$510.5	\$595.6	\$680.7	\$765.8	\$850.9
Sanitary Sewer	\$0.0	\$0.0	\$1.0	\$2.0	\$3.0	\$4.0	\$5.0	\$6.0	\$7.0	\$8.0
Storm Sewer & Municipal Drains	\$0.0	\$0.0	\$1.0	\$2.0	\$3.0	\$4.0	\$5.0	\$6.0	\$7.0	\$8.0
Water	\$0.0	\$0.0	\$1.0	\$2.0	\$3.0	\$4.0	\$5.0	\$6.0	\$7.0	\$8.0
<b>NET OPERATING IMPACTS</b>	<b>\$85.1</b>	<b>\$170.2</b>	<b>\$258.3</b>	<b>\$346.3</b>	<b>\$434.4</b>	<b>\$522.5</b>	<b>\$610.6</b>	<b>\$698.7</b>	<b>\$786.8</b>	<b>\$874.9</b>

	2028	2029	2030	2031	2032	2033	2034	2035	2036
<b>Net Operating Impacts (1)</b>									
Roads And Related	\$936.0	\$1,021.0	\$1,106.1	\$1,191.2	\$1,276.3	\$1,361.4	\$1,446.5	\$1,531.6	\$1,616.6
Sanitary Sewer	\$9.0	\$10.0	\$11.0	\$12.0	\$13.0	\$14.0	\$15.0	\$16.0	\$17.0
Storm Sewer & Municipal Drains	\$9.0	\$10.0	\$11.0	\$12.0	\$13.0	\$14.0	\$15.0	\$16.0	\$17.0
Water	\$9.0	\$10.0	\$11.0	\$12.0	\$13.0	\$14.0	\$15.0	\$16.0	\$17.0
<b>NET OPERATING IMPACTS</b>	<b>\$963.0</b>	<b>\$1,051.0</b>	<b>\$1,139.1</b>	<b>\$1,227.2</b>	<b>\$1,315.3</b>	<b>\$1,403.4</b>	<b>\$1,491.5</b>	<b>\$1,579.6</b>	<b>\$1,667.6</b>

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
<b>Long-term Capital Impact (1)</b>										
Total Net Cost	\$22,979.5	\$10,169.5	\$10,839.5	\$11,572.7	\$10,242.7	\$10,572.7	\$48,968.3	\$62,420.0	\$48,115.1	\$48,115.1
Net Cost From Development Charges	\$9,124.2	\$5,298.0	\$5,686.6	\$6,046.7	\$5,515.5	\$5,700.7	\$17,933.3	\$21,279.8	\$17,536.5	\$17,536.5
City-wide DC Share(2)	\$4,232.1	\$1,099.5	\$1,099.5	\$1,070.7	\$1,070.7	\$1,070.7	\$4,082.9	\$4,078.7	\$4,078.7	\$4,078.7
Portion for Post-2036 Development (3)	\$8,853.0	\$3,001.7	\$3,283.1	\$3,029.4	\$2,730.6	\$2,625.4	\$20,022.5	\$22,458.2	\$19,725.9	\$19,725.9
<b>Funding From Non-DC Sources</b>										
Replacement	\$770.2	\$770.2	\$770.2	\$1,426.0	\$926.0	\$1,176.0	\$6,929.6	\$14,603.2	\$6,773.9	\$6,773.9
<b>FUNDING FROM NON-DC SOURCES</b>	<b>\$770.2</b>	<b>\$770.2</b>	<b>\$770.2</b>	<b>\$1,426.0</b>	<b>\$926.0</b>	<b>\$1,176.0</b>	<b>\$6,929.6</b>	<b>\$14,603.2</b>	<b>\$6,773.9</b>	<b>\$6,773.9</b>

	2028	2029	2030	2031	2032	2033	2034	2035	2036	Total
<b>Long-term Capital Impact (1)</b>										
Total Net Cost	\$48,246.3	\$47,696.3	\$65,877.8	\$47,696.3	\$47,696.3	\$47,696.3	\$39,994.4	\$39,994.4	\$39,994.4	\$708,887.4
Net Cost From Development Charges	\$17,599.7	\$17,409.4	\$27,936.3	\$17,409.4	\$17,409.4	\$17,409.4	\$12,847.8	\$12,847.8	\$12,847.8	\$265,375.3
City-wide DC Share(2)	\$4,051.9	\$4,051.9	\$4,051.9	\$4,051.9	\$4,051.9	\$4,051.9	\$3,012.2	\$3,012.2	\$3,012.2	\$59,310.5
Portion for Post-2036 Development (3)	\$19,820.7	\$19,598.5	\$25,862.8	\$19,598.5	\$19,598.5	\$19,598.5	\$18,268.2	\$18,268.2	\$18,268.2	\$284,337.8
<b>Funding From Non-DC Sources</b>										
Replacement	\$6,773.9	\$6,636.4	\$8,026.7	\$6,636.4	\$6,636.4	\$6,636.4	\$5,866.2	\$5,866.2	\$5,866.2	\$99,863.8
<b>FUNDING FROM NON-DC SOURCES</b>	<b>\$6,773.9</b>	<b>\$6,636.4</b>	<b>\$8,026.7</b>	<b>\$6,636.4</b>	<b>\$6,636.4</b>	<b>\$6,636.4</b>	<b>\$5,866.2</b>	<b>\$5,866.2</b>	<b>\$5,866.2</b>	<b>\$99,863.8</b>

Notes:

(1) See Appendix C

(2) Portion of development-related capital program attributed to the 2015 City-wide DC by-law.

(3) Post 2036 development-related net capital costs may be eligible for development charge funding in future DC by-laws

## VIII OTHER ISSUES AND CONSIDERATIONS

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### A. DEVELOPMENT CHARGES ADMINISTRATION

No significant changes are recommended to the City'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 City 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 City's normal capital budget process.
- It is recommended that limited exemptions, other than those required in the *DCA* and existing City-wide DC by-law, be formally adopted in the ASDC by-law.

### B. ASDC BY-LAW POLICY RECOMMENDATIONS

City staff have made a number of policy recommendations for consideration by the Task Force and Council. It is noted that the formal adopted policies will be as per City Council direction and determination. The following is an overview summary of the staff policy recommendations:

- As development in Sandwich South over the 2018-2036 planning period is anticipated to be limited to the East Pelton and County Road 42 Secondary Plan areas, it is recommended that the ASDC by-law apply to lands within the Secondary Plan boundaries only;
- In addition to the calculated area-specific rates for Roads and Related, Sanitary Sewer, Storm Sewer and Municipal Drains, and Water services, it is recommended that the City-wide charges for general services (Library, Fire, Police, Indoor Recreation, Park Development, Public Works and Fleet, Parking, Transit) and Pollution Control continue to apply in Sandwich South;



- Non-statutory exemptions within the ASDC by-law should remain consistent with City-wide By-law 60-2015, including an exemption for industrial development; and
- The City must undertake a City-wide DC Background Study and By-law review prior to the expiry of DC By-law 60-2015 in June 2020 in order to continue to collect development charges on a City-wide basis. It is recommended that the City-wide and ASDC by-laws be combined at this time.

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## **APPENDIX A**

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### ***DEVELOPMENT FORECAST***

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**DRAFT APPENDIX A**  
**DEVELOPMENT FORECAST**

This appendix provides details of the development forecast used to prepare the 2018 Interim Area-Specific Development Charges (ASDC) Background Study for Sandwich South. The forecast method and assumptions are discussed herein. The forecast results are provided in the following tables:

Table 1	Population, Household & Employment Forecast Summary
Table 2	Forecast of Building Permit Issuance by Unit Type
Table 3	Forecast of Population Growth in New Households by Unit Type
Table 4	Non-Residential Growth by Employment Category
Table 5	Employment Growth in New Non-Residential Space by Category

**A. FORECAST APPROACH AND KEY ASSUMPTIONS**

The *Development Charges Act (DCA)* requires an estimate of “the anticipated amount, type and location of development” for which development charges may be imposed. The forecast must cover both residential and non-residential development and be specific enough with regards to the quantum, type, location and timing of such development to assist in the preparation of a reasonable development-related capital program. For the purposes of this ASDC Background Study, a development forecast for the Sandwich South Planning District for the planning period of 2018 to 2036 has been used for all engineered services considered.

Forecasts of population, households and employment were prepared for the City by Hemson Consulting Ltd. The development forecasts assume that development in Sandwich South over the planning period of 2018 to 2036 will be primarily contained within the East Pelton and County Road 42 Secondary Plan areas, and that build-out of the two Secondary Plan areas will occur over this timeframe. The development forecasts were prepared through a review of the Secondary Plan land use designations and policies, active development applications within Sandwich South, and discussions with City planning staff.

It is noted that assumptions related to persons per unit and employment density are consistent with the 2015 City-wide DC Background Study. As development in

Sandwich South will be subject to both the Interim ASDC by-law and the current City-wide DC by-law, this ensures consistency in the calculation of the rates per dwelling unit and gross floor area. These assumptions will be reviewed at the time of the next City-wide DC Background Study.

### **C. FORECAST METHOD AND RESULTS**

This section describes the method used to establish the development charges forecast for the planning period 2018 to 2036.

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.

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 City.

#### **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 Sandwich South Planning District. The population in new units considered the overall occupancy assumptions used previously in the 2015 City-wide DC Background Study.

As detailed in Tables 1 and 2, the Sandwich South Planning District is anticipated to see nearly 5,000 new housing units over the planning period. These units are anticipated to be accommodated within lands designated for residential development within the East Pelton and County Road 42 Secondary Plan areas. The forecast assumes a steady annual increase of 262 dwelling units per year.

A breakdown of the housing unit forecast for Sandwich South is shown in Table 2. The shares of residential development by unit are calculated based on the breakdown of Low Density, Medium Density, and Mixed Use residential land use designations within the Secondary Plan areas, as well as active residential development applications. Overall, 47 per cent of housing growth is forecast to be in the form of single-detached units, while 30 per cent are expected to be apartments and the remaining 23 per cent are expected to be semis, rows, and other multiples.

Population growth in new units is estimated by applying the following PPUs to the housing unit forecast: 3.46 for single-detached units; 2.33 for semi-detached, rows and other multiples; and 1.66 for apartments. These PPU assumptions are consistent with the 2015 City-wide DC Background Study. The forecast of population expected to reside in these new housing units over the 2018 to 2036 period is approximately 13,200 additional persons. This population growth by unit type is shown in Table 3.

## **2. Non-Residential Forecast**

Table 4 shows that Sandwich South is anticipated to accommodate nearly 11,000 jobs within new non-residential space over the 2018 to 2036 planning period. The forecast assumes a steady annual increase of 578 jobs per year.

Table 4 also shows the forecast of new employment in Sandwich South by employment category to 2036. No major office growth is expected in Sandwich South over the planning period. The majority of employment growth, 68 per cent, is anticipated within the population-related sector, which includes commercial and institutional jobs. It is noted that much of the employment growth would be associated with a proposed regional hospital within the County Road 42 Secondary Plan area.

The remaining 32 per cent of forecast jobs are anticipated within the employment land sector. These jobs would be accommodated within the County Road 42 Secondary Plan's Business Park land use designations. These land use designations are primarily intended for light industrial, research and development, and business and professional office uses.

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 2036. This forecast is shown in Table 5.

An assumed floor space per worker (FSW) is applied to the employment forecast by category in order to project growth in new non-residential space in the City. The FSW assumptions used herein are 27 square metres per employee for major office, 70 square metres per employee for population-related space, and 100 square metres per employee in employment-related space. These assumptions are consistent with the 2015 City-wide DC Background Study.

Approximately 872,500 square metres of new non-residential building space is anticipated within Sandwich South over the 2018 to 2036 period. Approximately 60 per cent of this growth is expected in the population-related sector, while 40 per cent is expected in the employment land sector.

## APPENDIX A

TABLE 1

**SANDWICH SOUTH PLANNING DISTRICT  
POPULATION, HOUSEHOLD & EMPLOYMENT FORECAST SUMMARY**

Mid-Year	Population in New Households	Pop. in New HH Growth	New Occupied Households	Occupied Household Growth	HH Size	Employment by POW	Employment by POW Growth	Activity Rate
2018	697	697	262	262	2.66	578	578	82.9%
2019	1,394	697	524	262	2.66	1,155	578	82.9%
2020	2,091	697	786	262	2.66	1,733	578	82.9%
2021	2,788	697	1,048	262	2.66	2,311	578	82.9%
2022	3,485	697	1,310	262	2.66	2,889	578	82.9%
2023	4,182	697	1,572	262	2.66	3,466	578	82.9%
2024	4,879	697	1,834	262	2.66	4,044	578	82.9%
2025	5,576	697	2,096	262	2.66	4,622	578	82.9%
2026	6,273	697	2,358	262	2.66	5,200	578	82.9%
2027	6,970	697	2,620	262	2.66	5,777	578	82.9%
2028	7,667	697	2,882	262	2.66	6,355	578	82.9%
2029	8,364	697	3,144	262	2.66	6,933	578	82.9%
2030	9,061	697	3,406	262	2.66	7,511	578	82.9%
2031	9,758	697	3,668	262	2.66	8,088	578	82.9%
2032	10,455	697	3,930	262	2.66	8,666	578	82.9%
2033	11,152	697	4,192	262	2.66	9,244	578	82.9%
2034	11,849	697	4,454	262	2.66	9,822	578	82.9%
2035	12,546	697	4,716	262	2.66	10,399	578	82.9%
2036	13,243	697	4,978	262	2.66	10,977	578	82.9%
2018-2036		13,243		4,978			10,977	

Source: Hemson Consulting, 2018, based on City of Windsor East Pelton Secondary Plan and County Road 42 Secondary Plan

## APPENDIX A

## TABLE 2

**SANDWICH SOUTH PLANNING DISTRICT  
FORECAST OF BUILDING PERMIT ISSUANCES BY UNIT TYPE**

Mid-Year	Singles	Semis, Rows & Other Multiples	Apartments	Total New HH
2018	123	60	79	262
2019	123	60	79	262
2020	123	60	79	262
2021	123	60	79	262
2022	123	60	79	262
2023	123	60	79	262
2024	123	60	79	262
2025	123	60	79	262
2026	123	60	79	262
2027	123	60	79	262
2028	123	60	79	262
2029	123	60	79	262
2030	123	60	79	262
2031	123	60	79	262
2032	123	60	79	262
2033	123	60	79	262
2034	123	60	79	262
2035	123	60	79	262
2036	123	60	79	262
2018-2036	2,340	1,139	1,499	4,978

Source: Hemson Consulting, 2018

## APPENDIX A

TABLE 3

**SANDWICH SOUTH PLANNING DISTRICT  
FORECAST POPULATION GROWTH IN NEW HOUSEHOLDS BY UNIT TYPE\***

Mid-Year	Singles	Semis, Rows & Other Multiples	Apartments	Total Population in New HH
2018	426	140	131	697
2019	426	140	131	697
2020	426	140	131	697
2021	426	140	131	697
2022	426	140	131	697
2023	426	140	131	697
2024	426	140	131	697
2025	426	140	131	697
2026	426	140	131	697
2027	426	140	131	697
2028	426	140	131	697
2029	426	140	131	697
2030	426	140	131	697
2031	426	140	131	697
2032	426	140	131	697
2033	426	140	131	697
2034	426	140	131	697
2035	426	140	131	697
2036	426	140	131	697
2018-2036	8,094	2,660	2,489	13,243

\*Based on PPU's

3.46

2.33

1.66

Source: Hemson Consulting, 2018



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**TABLE 4**

**SANDWICH SOUTH PLANNING DISTRICT**  
**NON-RESIDENTIAL GROWTH BY EMPLOYMENT CATEGORY**

Mid-Year	<u>Major Office</u>		<u>Population-Related</u>		<u>Employment Land</u>		<u>Total</u>	
	Total Emp	Emp Growth	Total Emp	Emp Growth	Total Emp	Emp Growth	Total Emp	Empl Growth
2018	0	0	395	395	183	183	578	578
2019	0	0	790	395	365	183	1,155	578
2020	0	0	1,185	395	548	183	1,733	578
2021	0	0	1,580	395	731	183	2,311	578
2022	0	0	1,976	395	913	183	2,889	578
2023	0	0	2,371	395	1,096	183	3,466	578
2024	0	0	2,766	395	1,278	183	4,044	578
2025	0	0	3,161	395	1,461	183	4,622	578
2026	0	0	3,556	395	1,644	183	5,200	578
2027	0	0	3,951	395	1,826	183	5,777	578
2028	0	0	4,346	395	2,009	183	6,355	578
2029	0	0	4,741	395	2,192	183	6,933	578
2030	0	0	5,136	395	2,374	183	7,511	578
2031	0	0	5,531	395	2,557	183	8,088	578
2032	0	0	5,927	395	2,740	183	8,666	578
2033	0	0	6,322	395	2,922	183	9,244	578
2034	0	0	6,717	395	3,105	183	9,822	578
2035	0	0	7,112	395	3,287	183	10,399	578
2036	0	0	7,507	395	3,470	183	10,977	578
2018-2036		0		7,507		3,470		10,977

Source: Hemson Consulting, 2018

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**TABLE 5**

**SANDWICH SOUTH PLANNING DISTRICT**  
**EMPLOYMENT GROWTH IN NEW NON-RESIDENTIAL SPACE BY CATEGORY**

**Employment Density**  
Major Office 27.0 m<sup>2</sup> per employee  
Population-Related Employment 70.0 m<sup>2</sup> per employee  
Employment Land Employment 100.0 m<sup>2</sup> per employee

Mid-Year	<u>Major Office</u>		<u>Population-Related</u>		<u>Employment Land</u>		<u>Total Emp in New Space</u>	
	Emp Growth in New Space	Growth in New Space (m <sup>2</sup> )	Emp Growth in New Space	Growth in New Space (m <sup>2</sup> )	Emp Growth in New Space	Growth in New Space (m <sup>2</sup> )	Emp Growth in New Space	Space (m <sup>2</sup> )
2018	0	0	395	27,657	183	18,264	578	45,921
2019	0	0	395	27,657	183	18,264	578	45,921
2020	0	0	395	27,657	183	18,264	578	45,921
2021	0	0	395	27,657	183	18,264	578	45,921
2022	0	0	395	27,657	183	18,264	578	45,921
2023	0	0	395	27,657	183	18,264	578	45,921
2024	0	0	395	27,657	183	18,264	578	45,921
2025	0	0	395	27,657	183	18,264	578	45,921
2026	0	0	395	27,657	183	18,264	578	45,921
2027	0	0	395	27,657	183	18,264	578	45,921
2028	0	0	395	27,657	183	18,264	578	45,921
2029	0	0	395	27,657	183	18,264	578	45,921
2030	0	0	395	27,657	183	18,264	578	45,921
2031	0	0	395	27,657	183	18,264	578	45,921
2032	0	0	395	27,657	183	18,264	578	45,921
2033	0	0	395	27,657	183	18,264	578	45,921
2034	0	0	395	27,657	183	18,264	578	45,921
2035	0	0	395	27,657	183	18,264	578	45,921
2036	0	0	395	27,657	183	18,264	578	45,921
2018-2036	0	0	7,507	525,483	3,470	347,009	10,977	872,493

Source: Hemson Consulting, 2018

## **APPENDIX B**

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### ***AREA-SPECIFIC ENGINEERED SERVICES TECHNICAL APPENDIX***

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## APPENDIX B

### AREA-SPECIFIC ENGINEERING SERVICES TECHNICAL APPENDIX

Through the Office of the City Engineer, the City of Windsor provides the municipal engineered services of roads and traffic operations, sanitary sewerage, storm water management and municipal drains. These essential services are designed for the appropriate health, protection and quality of life of those living or working in Windsor. The department also provides review and inspection services to facilitate new development, maintain service standards and sustain existing infrastructure. The engineered service of water supply and distribution is provided by the Windsor Utility Commission (WUC).

This appendix provides the detailed analysis undertaken to establish the development charge rates for the eligible Sandwich South area-specific engineered services of roads, sanitary sewage, stormwater management and municipal drains, and water supply and distribution.

The basis of the development-related capital program is the City's capital budget, servicing plans, and detailed discussions with City staff. The projects identified in the capital program are required to service the demands of the anticipated development in the East Pelton and County Road 42 Secondary Plan areas to occur over the planning period of 2018 to 2036. 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

Table 2: Calculation of Unadjusted Development Charges

Table 3: Residential & Non-Residential Cash Flow Analysis

## ALLOCATION OF CAPITAL COSTS

Many of the projects included in the Sandwich South capital programs, with the exception of Water services projects, were previously included within the 2015 City-wide DC Background Study. However, at the time of the 2015 study, development in Sandwich South was anticipated to occur over a much longer timeframe and as such, the majority of these project costs were allocated to post-period development. For the purposes of this ASDC Background Study, the details of these capital projects (e.g. timing, cost, and allocation of costs) have been updated through discussions with City staff to reflect the infrastructure needs associated with build-out of the East Pelton and County Road 42 Secondary Plan areas over the 2018 to 2036 period.

Through discussions with City engineering staff, a number of new projects considered to be necessary to support development in Sandwich South were added to the capital program. It is noted that the Water services capital program was provided by the WUC through its report *WUC Water Servicing Plan Update 2018 – Sandwich South Planning District Area Development Charges* draft dated April 9, 2018.

The engineered services capital program totals \$850.36 million, which is reduced by \$57.88 million in available grants, subsidies and other funding sources. The remaining net cost to the municipality is \$792.48 million. Of this amount, \$108.22 million (14 per cent) is attributed to replacement or benefit-to-existing shares and \$70.60 million (9 per cent) is attributed to shares being funded through the City-wide DC by-law. Approximately \$348.28 million (44 per cent) is attributable to development occurring in Sandwich South beyond 2036; this development is expected to occur outside of the East Pelton and County Road 42 Secondary Plan areas. The remaining amount to be funded through ASDCs over the 2018-2036 planning period is \$265.38.

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

Service	Gross Cost	Net Cost	BTE	City-Wide DC Share	Sandwich South DC Share	
					Post-2036	2018-2036
Roads	\$550,240.0	\$550,240.0	\$98,292.5	\$67,145.3	\$207,375.5	\$177,426.7
Sanitary Sewer	\$56,436.0	\$32,980.0	\$0.0	\$3,433.5	\$17,757.9	\$11,788.7
Storm Sewer & Municipal Drains	\$211,196.0	\$176,771.0	\$710.6	\$16.5	\$114,154.1	\$61,889.8
Water	\$32,486.4	\$32,486.4	\$9,219.7	\$0.0	\$8,996.6	\$14,270.1
<b>Total</b>	<b>\$850,358.4</b>	<b>\$792,477.4</b>	<b>\$108,222.8</b>	<b>\$70,595.3</b>	<b>\$348,284.2</b>	<b>\$265,375.3</b>

### **Benefit-to-Existing Shares**

Overall the benefit-to-existing shares used in the previous study have been maintained, unless otherwise instructed from City engineering staff. Benefit-to-existing shares for Water services were calculated by the WUC based on current flows.

### **City-wide DC Shares**

Some of the Sandwich South capital projects are being partially funded through the City-wide DC by-law. The 2015 DC Background Study generally allocated 85 per cent of the Sandwich South net capital project costs to post-period development, with the remaining 15 per cent currently being funded through the City-wide DC by-law. Through discussions with City staff it was determined that this portion should be removed from the development charges calculation.

### **Sandwich South Post-2036 Shares**

As stated previously, it is anticipated that over the 2018-2036 planning period development in Sandwich South will occur within the East Pelton and County Road 42 Secondary Plan areas. Further, it is forecast that build-out of these Secondary Plan areas will occur over this period. As such, this Interim ASDC Background Study is intended to fund the infrastructure works necessary to support development within the two Secondary Plan areas.

Through discussions with City engineering staff, a share of the capital projects has been identified to serve development within Sandwich South, but outside of the East Pelton and County Road 42 Secondary Plan areas. This share is allocated to post-period development and has been removed from the development charges calculation. Post-2036 shares for Water services were calculated by the WUC based on calculated flows to areas outside of the two Secondary Plan areas.

## **APPENDIX B.1**

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### **ROADS AND RELATED**

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## APPENDIX B.1

### ROADS AND RELATED SERVICES

Road surfaces, sidewalks, bridges, culverts, and traffic signals in the City of Windsor are maintained by the Public Works department, under the supervision of the City Engineer. The capital program contained herein was assembled by the City's engineering staff and is designed to serve the anticipated population and employment growth in Sandwich South between 2018 and 2036.

The 2018-2036 Roads and Related capital program totals \$550.24 million and includes the urbanization of existing roads within Sandwich South, road construction, and functional servicing studies. The details, timing, and cost breakdown of each road project are shown on Table 1.

The 2018-2036 development-related costs included in the capital program are not to be entirely recovered through future development charges. Approximately \$98.29 million of the program has been identified as a benefit to the existing community, or replacement share. The majority of replacement shares have been carried forward from the 2015 City-wide DC Background Study. Following consultation with engineering staff, shares for new projects have been established and are shown in Table 1. These shares represent the portion of the projects that will benefit the existing City-wide population, or the replacement portion of a road upgrade project.

Shares allocated to the City-wide DC by-law are calculated at \$67.15 million. These costs are removed from the development charges calculation.

Finally, a share of \$207.38 million is deemed to benefit future Sandwich South development outside of the East Pelton and County Road 42 Secondary Plan areas. This share of project costs is to be paid for largely by future development and will be considered under future development charges studies.

The remaining \$177.43 million is identified as the net development-related share eligible for funding through development charges over the 2018 to 2036 planning period.

Table 2 summarizes the Roads and Related program and calculation of the unadjusted residential and non-residential development charges. The DC eligible share of \$177.43 million has been allocated 55 per cent to new residential development and 45 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 to 2036. The residential share of the capital program totals \$97.58 million and, when divided by the forecast growth in population in new units (13,243), an unadjusted charge of \$7,369 per capita results.

The non-residential share, \$79.84 million is applied against the forecast increase in square metres of non-residential floor space by type of development. Of the 872,493 square metres of new non-residential building space anticipated between 2018 and 2036 in Sandwich South, 32 per cent is anticipated to be industrial, and the remaining 68 per cent is anticipated to be non-industrial space, based on shares of employment growth. The industrial share totals \$25.55 million, which, when divided by the increase in square metres of industrial building space (347,009), yields an unadjusted charge of \$73.63 per square metre. The remaining non-industrial share totals \$54.29 million and yields an unadjusted charge of \$103.32 per square metre of new non-residential non-industrial development, when divided by the anticipated increase in square metres (525,483).

The residential and non-residential cash flow analysis is shown on Table 3. The analysis takes into consideration expenditure timing and DC revenue projections. The residential cash flow analysis is displayed on page 1, and pages 2 and 3 provide the non-residential analysis for industrial and non-industrial charges, respectively.

After cash flow considerations, the residential and non-residential charges decrease to \$7,268 per capita, \$72.62 per square metre (industrial) and \$101.90 per square metre (non-industrial), respectively.

2018 - 2036		ROADS AND RELATED SUMMARY					
Development-Related Capital Program		Unadjusted Development Charge			Adjusted Development Charge		
Total	Net DC Recoverable	Residential \$/capita	Industrial \$/sq.m	Non-Industrial \$/sq.m	Residential \$/capita	Industrial \$/sq.m	Non-Industrial \$/sq.m
\$550,240,000	\$177,426,707	\$7,369	\$73.63	\$103.32	<b>\$7,268</b>	<b>\$72.62</b>	<b>\$101.90</b>

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APPENDIX B.1  
TABLE 1

SANDWICH SOUTH PLANNING DISTRICT  
DEVELOPMENT-RELATED CAPITAL PROGRAM  
ROADS AND RELATED 2018 - 2036

NO.	Infrastructure Requirement	From	To	Timing		Estimated Project Costs							
				Start	Finish	Gross Cost	Grants and Subsidies	Net Municipal Cost	Benefit to Existing Share	City-wide DC Share	Sandwich South Post-2036	East Pelton & County Road 42 2018-2036	
<b>Roads and Related Infrastructure</b>													
<b>Road Improvements</b>													
1	7th Concession	County Road 42	E-W Arterial	2018	2033	\$9,390,000	\$0	\$9,390,000	10%	\$939,000	\$1,267,650	\$3,869,667	\$3,313,683
2	8th Concession	County Road 42	Hwy 401	2018	2033	\$18,000,000	\$0	\$18,000,000	10%	\$1,800,000	\$2,430,000	\$7,417,892	\$6,352,108
3	9th Concession	County Road 42	Hwy 401	2018	2033	\$24,260,000	\$0	\$24,260,000	10%	\$2,426,000	\$3,275,100	\$9,997,670	\$8,561,230
4	Baseline Road	7th Concession	E. City Limits	2024	2036	\$27,620,000	\$0	\$27,620,000	10%	\$2,762,000	\$3,728,700	\$11,382,343	\$9,746,957
5	County Road 17	County Road 42	Hwy 401	2024	2036	\$26,610,000	\$0	\$26,610,000	10%	\$2,661,000	\$3,592,350	\$10,966,117	\$9,390,533
<b>Subtotal Road Improvements</b>						<b>\$105,880,000</b>	<b>\$0</b>	<b>\$105,880,000</b>		<b>\$10,588,000</b>	<b>\$14,293,800</b>	<b>\$43,633,689</b>	<b>\$37,364,511</b>
<b>Road Construction</b>													
6	Collector Roads - County Road 42 Secondary Plan			2018	2033	\$32,660,000	\$0	\$32,660,000	10%	\$3,266,000	\$4,409,100	\$0	\$24,984,900
7	Collector Roads - East Pelton Secondary Plan			2018	2033	\$38,920,000	\$0	\$38,920,000	10%	\$3,892,000	\$5,254,200	\$0	\$29,773,800
8	Collector Roads - Balance of SSPD			2036+		\$83,590,000	\$0	\$83,590,000	10%	\$8,359,000	\$11,284,650	\$63,946,350	\$0
9	County Road 42 - Engineering			2021	2021	\$2,000,000	\$0	\$2,000,000	25%	\$500,000	\$0	\$808,049	\$691,951
10	Lauzon Parkway / County Road 42 - Engineering			2023	2023	\$1,000,000	\$0	\$1,000,000	25%	\$250,000	\$0	\$404,025	\$345,975
11	County Road 42 - Engineering & Land Acquisition			2024	2028	\$2,750,000	\$0	\$2,750,000	25%	\$687,500	\$0	\$1,111,068	\$951,432
12	County Road 42 - Engineering & Construction	Walker Road	E. City Limits	2024	2036	\$70,750,000	\$0	\$70,750,000	25%	\$17,687,500	\$7,959,375	\$24,297,030	\$20,806,095
13	Lauzon Parkway - Engineering & Construction	E.C. Row Expressway	Hwy 401	2024	2036	\$169,500,000	\$0	\$169,500,000	25%	\$42,375,000	\$19,068,750	\$58,209,847	\$49,846,403
14	E-W Arterial - Engineering & Construction	Walker Road	Lauzon Parkway	2024	2036	\$42,750,000	\$0	\$42,750,000	25%	\$10,687,500	\$4,809,375	\$14,681,245	\$12,571,880
<b>Subtotal Road Construction</b>						<b>\$443,920,000</b>	<b>\$0</b>	<b>\$443,920,000</b>		<b>\$87,704,500</b>	<b>\$52,785,450</b>	<b>\$163,457,613</b>	<b>\$139,972,437</b>
<b>Studies and Other</b>													
15	Functional Servicing Reports			2018	2020	\$440,000	\$0	\$440,000	0%	\$0	\$66,000	\$284,240	\$89,760
<b>Subtotal Studies and Other</b>						<b>\$440,000</b>	<b>\$0</b>	<b>\$440,000</b>		<b>\$0</b>	<b>\$66,000</b>	<b>\$284,240</b>	<b>\$89,760</b>
<b>Total Roads Projects</b>						<b>\$550,240,000</b>	<b>\$0</b>	<b>\$550,240,000</b>		<b>\$98,292,500</b>	<b>\$67,145,250</b>	<b>\$207,375,543</b>	<b>\$177,426,707</b>

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TABLE 2

**SANDWICH SOUTH PLANNING DISTRICT  
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES  
ROADS AND RELATED 2018 - 2036**

Growth in Population in New Units 2018-2036	13,243
Employment Growth in New Space 2018-2036	10,977
Growth in New Building Space (Square Meters) 2018-2036	872,493
Industrial	347,009
Non-Industrial	525,483

	Development-related Capital Forecast						Residential Share		Non-Residential Share	
	Gross Project Cost (\$000)	Grants and Subsidies (\$000)	Benefit to Existing Share (\$000)	City-Wide DC Share (\$000)	Sandwich South Post-2036 (\$000)	Total Net Capital Costs (\$000)	%	\$000	%	\$000
	<b>ROADS AND RELATED 2018 - 2036</b>									
Road Improvements	\$105,880.00	\$0.00	\$10,588.00	\$14,293.80	\$43,633.69	\$37,364.51	55%	\$20,550.48	45%	\$16,814.03
Road Construction	\$443,920.00	\$0.00	\$87,704.50	\$52,785.45	\$163,457.61	\$139,972.44	55%	\$76,984.84	45%	\$62,987.60
Studies and Other	\$440.00	\$0.00	\$0.00	\$66.00	\$284.24	\$89.76	55%	\$49.37	45%	\$40.39
<b>TOTAL ROADS AND RELATED 2018 - 2036</b>	<b>\$550,240.00</b>	<b>\$0.00</b>	<b>\$98,292.50</b>	<b>\$67,145.25</b>	<b>\$207,375.54</b>	<b>\$177,426.71</b>		<b>\$97,584.69</b>		<b>\$79,842.02</b>
<b>Unadjusted Development Charge Per Capita (\$)</b>								<b>\$7,368.78</b>		
<b>Unadjusted Development Charge Per Sq. M. (\$)</b>										<b>\$91.51</b>
								<b>Non-Residential Allocation <sup>1</sup></b>		
								<b>(\$000)</b>	<b>%</b>	<b>\$/sq m</b>
Unadjusted Charge Per Sq. M. (\$) - Industrial								\$25,549.4	32%	\$73.63
Unadjusted Charge Per Sq. M. (\$) - Non-Industrial								\$54,292.6	68%	\$103.32

Notes:

1) Non-residential cost allocated based on percentage shares of employment growth over the period 2018-2036

<b>Residential Development Charge Calculation</b>		
Residential Share of 2018-2036 DC Eligible Costs	55%	\$97,584,689
2018-2036 Growth in Population in New Units		13,243
Development Charge Per Capital (Unadjusted)		\$7,369
Development Charge Per Capita after Cash Flow		<b>\$7,268</b>
Charge per Single Detached Unit	3.46	\$25,147
<b>Non-Residential Development Charge Calculation</b>		
Non-Residential Share of 2018-2036 DC Eligible Costs	45%	\$79,842,018
2018-2036 Growth in Non-Residential Building Space (sq.m)		872,493
2018-2036 Growth in Industrial Space		347,009
2018-2036 Growth in Non-Industrial Space		525,483
Industrial Charge Per Sq.M After Cash Flow	32%	\$73.63
Industrial Charge Per Sq.M (Unadjusted)		<b>\$72.62</b>
Non-Industrial Charge Per Sq.M (Unadjusted)	68%	\$103.32
Non-Industrial Charge Per Sq.M After Cash Flow		<b>\$101.90</b>

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**SANDWICH SOUTH PLANNING DISTRICT  
ROADS AND RELATED 2018 - 2036  
CASHFLOW AND DETERMINATION OF RESIDENTIAL DEVELOPMENT CHARGE**

<b>ROADS: RESIDENTIAL</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>
OPENING CASH BALANCE (\$000)	\$0.0	\$2,584.9	\$5,312.0	\$8,187.3	\$10,823.9	\$14,018.8	\$17,168.1	\$15,595.4	\$13,924.1	\$12,150.1
2018 to 2036 RESIDENTIAL FUNDING REQUIREMENTS										
Roads: Residential: Non Inflated	\$2,525.3	\$2,525.3	\$2,525.3	\$2,889.5	\$2,508.9	\$2,699.2	\$6,944.2	\$6,944.2	\$6,944.2	\$6,944.2
Roads: Residential: Inflated	\$2,525.3	\$2,575.8	\$2,627.4	\$3,066.3	\$2,715.7	\$2,980.1	\$7,820.3	\$7,976.7	\$8,136.3	\$8,299.0
NEW RESIDENTIAL DEVELOPMENT										
- Population Growth in New Units	697	697	697	697	697	697	697	697	697	697
REVENUE										
- DC Receipts: Inflated	\$5,065.8	\$5,167.1	\$5,270.5	\$5,375.9	\$5,483.4	\$5,593.0	\$5,704.9	\$5,819.0	\$5,935.4	\$6,054.1
INTEREST										
- Interest on Opening Balance	\$0.0	\$90.5	\$185.9	\$286.6	\$378.8	\$490.7	\$600.9	\$545.8	\$487.3	\$425.3
- Interest on In-year Transactions	\$44.5	\$45.3	\$46.3	\$40.4	\$48.4	\$45.7	(\$58.2)	(\$59.3)	(\$60.5)	(\$61.7)
TOTAL REVENUE	\$5,110.3	\$5,302.9	\$5,502.7	\$5,702.9	\$5,910.7	\$6,129.4	\$6,247.6	\$6,305.5	\$6,362.2	\$6,417.6
CLOSING CASH BALANCE	\$2,584.9	\$5,312.0	\$8,187.3	\$10,823.9	\$14,018.8	\$17,168.1	\$15,595.4	\$13,924.1	\$12,150.1	\$10,268.7

<b>ROADS: RESIDENTIAL</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>	<b>2032</b>	<b>2033</b>	<b>2034</b>	<b>2035</b>	<b>2036</b>	<b>TOTAL</b>
OPENING CASH BALANCE (\$000)	\$10,268.7	\$8,275.3	\$6,298.9	\$4,207.9	\$1,997.5	(\$337.4)	(\$2,808.9)	(\$1,936.6)	(\$995.8)	
2018 to 2036 RESIDENTIAL FUNDING REQUIREMENTS										
Roads: Residential: Non Inflated	\$6,944.2	\$6,839.6	\$6,839.6	\$6,839.6	\$6,839.6	\$6,839.6	\$4,330.7	\$4,330.7	\$4,330.7	\$97,584.7
Roads: Residential: Inflated	\$8,465.0	\$8,504.2	\$8,674.2	\$8,847.7	\$9,024.7	\$9,205.2	\$5,945.1	\$6,064.0	\$6,185.3	\$119,638.4
NEW RESIDENTIAL DEVELOPMENT										
- Population Growth in New Units	697	697	697	697	697	697	697	697	697	13,243
REVENUE										
- DC Receipts: Inflated	\$6,175.2	\$6,298.7	\$6,424.7	\$6,553.1	\$6,684.2	\$6,817.9	\$6,954.3	\$7,093.3	\$7,235.2	\$115,705.7
INTEREST										
- Interest on Opening Balance	\$359.4	\$289.6	\$220.5	\$147.3	\$69.9	(\$18.6)	(\$154.5)	(\$106.5)	(\$54.8)	\$4,244.1
- Interest on In-year Transactions	(\$63.0)	(\$60.7)	(\$61.9)	(\$63.1)	(\$64.4)	(\$65.6)	\$17.7	\$18.0	\$18.4	(\$293.7)
TOTAL REVENUE	\$6,471.6	\$6,527.7	\$6,583.3	\$6,637.3	\$6,689.7	\$6,733.7	\$6,817.5	\$7,004.8	\$7,198.8	\$119,656.1
CLOSING CASH BALANCE	\$8,275.3	\$6,298.9	\$4,207.9	\$1,997.5	(\$337.4)	(\$2,808.9)	(\$1,936.6)	(\$995.8)	\$17.7	

<b>2018 Adjusted Charge Per Capita</b>	<b>\$ 7,268</b>
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<b>Allocation of Capital Program</b>	
Residential Sector	55%
Non-Residential Sector	45%
<b>Rates for 2018</b>	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

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**SANDWICH SOUTH PLANNING DISTRICT  
ROADS AND RELATED 2018 - 2036  
CASHFLOW AND DETERMINATION OF NON-RESIDENTIAL: INDUSTRIAL DEVELOPMENT CHARGE**

<b>ROADS: NON-RESIDENTIAL - INDUSTRIAL</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>
OPENING CASH BALANCE (\$000)	\$0.0	\$676.8	\$1,390.7	\$2,143.5	\$2,833.8	\$3,670.2	\$4,494.7	\$4,082.9	\$3,645.3	\$3,180.8
2018 to 2036 NON-RESIDENTIAL FUNDING REQUIREMENTS										
Roads: Non-Residential - Industrial: Non: Inflated	\$661.2	\$661.2	\$661.2	\$756.5	\$656.9	\$706.7	\$1,818.1	\$1,818.1	\$1,818.1	\$1,818.1
Roads: Non-Residential - Industrial: Inflated	\$661.2	\$674.4	\$687.9	\$802.8	\$711.0	\$780.2	\$2,047.5	\$2,088.5	\$2,130.2	\$2,172.8
NEW NON-RESIDENTIAL DEVELOPMENT										
- New Industrial Building GFA - square metres	18,264	18,264	18,264	18,264	18,264	18,264	18,264	18,264	18,264	18,264
REVENUE										
- DC Receipts: Inflated	\$1,326.3	\$1,352.8	\$1,379.9	\$1,407.5	\$1,435.6	\$1,464.3	\$1,493.6	\$1,523.5	\$1,554.0	\$1,585.1
INTEREST										
- Interest on Opening Balance	\$0.0	\$23.7	\$48.7	\$75.0	\$99.2	\$128.5	\$157.3	\$142.9	\$127.6	\$111.3
- Interest on In-year Transactions	\$11.6	\$11.9	\$12.1	\$10.6	\$12.7	\$12.0	(\$15.2)	(\$15.5)	(\$15.8)	(\$16.2)
TOTAL REVENUE	\$1,337.9	\$1,388.4	\$1,440.7	\$1,493.1	\$1,547.5	\$1,604.7	\$1,635.7	\$1,650.9	\$1,665.7	\$1,680.3
CLOSING CASH BALANCE	\$676.8	\$1,390.7	\$2,143.5	\$2,833.8	\$3,670.2	\$4,494.7	\$4,082.9	\$3,645.3	\$3,180.8	\$2,688.3

<b>ROADS: NON-RESIDENTIAL - INDUSTRIAL</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>	<b>2032</b>	<b>2033</b>	<b>2034</b>	<b>2035</b>	<b>2036</b>	<b>TOTAL</b>
OPENING CASH BALANCE (\$000)	\$2,688.3	\$2,166.4	\$1,648.9	\$1,101.4	\$522.6	(\$88.7)	(\$735.9)	(\$507.6)	(\$261.4)	
2018 to 2036 NON-RESIDENTIAL FUNDING REQUIREMENTS										
Roads: Non-Residential - Industrial: Non: Inflated	\$1,818.1	\$1,790.7	\$1,790.7	\$1,790.7	\$1,790.7	\$1,790.7	\$1,133.9	\$1,133.9	\$1,133.9	\$25,549.4
Roads: Non-Residential - Industrial: Inflated	\$2,216.3	\$2,226.5	\$2,271.1	\$2,316.5	\$2,362.8	\$2,410.1	\$1,556.5	\$1,587.7	\$1,619.4	\$31,323.5
NEW NON-RESIDENTIAL DEVELOPMENT										
- New Industrial Building GFA - square metres	18,264	18,264	18,264	18,264	18,264	18,264	18,264	18,264	18,264	347,009
REVENUE										
- DC Receipts: Inflated	\$1,616.8	\$1,649.1	\$1,682.1	\$1,715.7	\$1,750.0	\$1,785.0	\$1,820.7	\$1,857.1	\$1,894.3	\$30,293.4
INTEREST										
- Interest on Opening Balance	\$94.1	\$75.8	\$57.7	\$38.5	\$18.3	(\$4.9)	(\$40.5)	(\$27.9)	(\$14.4)	\$1,111.0
- Interest on In-year Transactions	(\$16.5)	(\$15.9)	(\$16.2)	(\$16.5)	(\$16.9)	(\$17.2)	\$4.6	\$4.7	\$4.8	(\$76.9)
TOTAL REVENUE	\$1,694.4	\$1,709.0	\$1,723.6	\$1,737.7	\$1,751.4	\$1,762.9	\$1,784.8	\$1,833.9	\$1,884.7	\$31,327.5
CLOSING CASH BALANCE	\$2,166.4	\$1,648.9	\$1,101.4	\$522.6	(\$88.7)	(\$735.9)	(\$507.6)	(\$261.4)	\$4.0	

<b>2018 Adjusted Charge Per Square Metre</b>	<b>\$72.62</b>
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<b>Allocation of Capital Program</b>	
Residential Sector	55%
Non-Residential Sector	45%
<b>Non-Residential Allocation</b>	
Industrial	32%
Non-Industrial	68%
<b>Rates for 2018</b>	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

SANDWICH SOUTH PLANNING DISTRICT  
ROADS AND RELATED 2018 - 2036  
CASHFLOW AND DETERMINATION OF NON-RESIDENTIAL: NON-INDUSTRIAL DEVELOPMENT CHARGE

ROADS: NON-RESIDENTIAL - NON-INDUSTRIAL	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
OPENING CASH BALANCE (\$000)	\$0.0	\$1,438.0	\$2,955.1	\$4,554.6	\$6,021.2	\$7,798.5	\$9,550.5	\$8,675.3	\$7,745.2	\$6,757.9
2018 to 2036 NON-RESIDENTIAL FUNDING REQUIREMENTS										
Roads: Non-Residential - Non-Industrial: Non: Inflated	\$1,405.0	\$1,405.0	\$1,405.0	\$1,607.6	\$1,395.9	\$1,501.7	\$3,863.5	\$3,863.5	\$3,863.5	\$3,863.5
Roads: Non-Residential - Non-Industrial: Inflated	\$1,405.0	\$1,433.1	\$1,461.8	\$1,706.0	\$1,510.9	\$1,658.0	\$4,351.0	\$4,438.0	\$4,526.7	\$4,617.3
NEW NON-RESIDENTIAL DEVELOPMENT										
- New Non-Industrial Building GFA - square metres	27,657	27,657	27,657	27,657	27,657	27,657	27,657	27,657	27,657	27,657
REVENUE										
- DC Receipts: Inflated	\$2,818.3	\$2,874.6	\$2,932.1	\$2,990.7	\$3,050.6	\$3,111.6	\$3,173.8	\$3,237.3	\$3,302.0	\$3,368.1
INTEREST										
- Interest on Opening Balance	\$0.0	\$50.3	\$103.4	\$159.4	\$210.7	\$272.9	\$334.3	\$303.6	\$271.1	\$236.5
- Interest on In-year Transactions	\$24.7	\$25.2	\$25.7	\$22.5	\$26.9	\$25.4	(\$32.4)	(\$33.0)	(\$33.7)	(\$34.4)
TOTAL REVENUE	\$2,843.0	\$2,950.2	\$3,061.3	\$3,172.6	\$3,288.3	\$3,410.0	\$3,475.7	\$3,507.9	\$3,539.4	\$3,570.3
CLOSING CASH BALANCE	\$1,438.0	\$2,955.1	\$4,554.6	\$6,021.2	\$7,798.5	\$9,550.5	\$8,675.3	\$7,745.2	\$6,757.9	\$5,710.9

ROADS: NON-RESIDENTIAL - NON-INDUSTRIAL	2028	2029	2030	2031	2032	2033	2034	2035	2036	TOTAL
OPENING CASH BALANCE (\$000)	\$5,710.9	\$4,601.5	\$3,501.5	\$2,337.8	\$1,107.7	(\$191.8)	(\$1,567.3)	(\$1,082.4)	(\$559.5)	
2018 to 2036 NON-RESIDENTIAL FUNDING REQUIREMENTS										
Roads: Non-Residential - Non-Industrial: Non: Inflated	\$3,863.5	\$3,805.3	\$3,805.3	\$3,805.3	\$3,805.3	\$3,805.3	\$2,409.4	\$2,409.4	\$2,409.4	\$54,292.6
Roads: Non-Residential - Non-Industrial: Inflated	\$4,709.6	\$4,731.4	\$4,826.0	\$4,922.6	\$5,021.0	\$5,121.4	\$3,307.6	\$3,373.8	\$3,441.3	\$66,562.5
NEW NON-RESIDENTIAL DEVELOPMENT										
- New Non-Industrial Building GFA - square metres	27,657	27,657	27,657	27,657	27,657	27,657	27,657	27,657	27,657	525,483
REVENUE										
- DC Receipts: Inflated	\$3,435.4	\$3,504.1	\$3,574.2	\$3,645.7	\$3,718.6	\$3,793.0	\$3,868.9	\$3,946.2	\$4,025.2	\$64,370.4
INTEREST										
- Interest on Opening Balance	\$199.9	\$161.1	\$122.6	\$81.8	\$38.8	(\$10.5)	(\$86.2)	(\$59.5)	(\$30.8)	\$2,359.4
- Interest on In-year Transactions	(\$35.0)	(\$33.8)	(\$34.4)	(\$35.1)	(\$35.8)	(\$36.5)	\$9.8	\$10.0	\$10.2	(\$163.5)
TOTAL REVENUE	\$3,600.2	\$3,631.4	\$3,662.3	\$3,692.4	\$3,721.6	\$3,745.9	\$3,792.5	\$3,896.7	\$4,004.6	\$66,566.3
CLOSING CASH BALANCE	\$4,601.5	\$3,501.5	\$2,337.8	\$1,107.7	(\$191.8)	(\$1,567.3)	(\$1,082.4)	(\$559.5)	\$3.8	

<b>2018 Adjusted Charge Per Square Metre</b>	<b>\$101.90</b>
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<b>Allocation of Capital Program</b>	
Residential Sector	55%
Non-Residential Sector	45%
<b>Non-Residential Allocation</b>	
Industrial	32%
Non-Industrial	68%
<b>Rates for 2018</b>	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

## **APPENDIX B.2**

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### ***SANITARY SEWER SERVICES***

DRAFT

## APPENDIX B.2

### SANITARY SEWER SERVICES

The Office of the City Engineer is responsible for the planning, design and maintenance of the City's sewer and drainage systems. The capital program for Sanitary Sewer Services was assembled by the City's engineering staff and is designed to serve the anticipated population and employment growth in Sandwich South between 2018 and 2036.

The 2018-2036 Sanitary Sewer capital program totals \$56.44 million and includes sanitary sewers planned to serve development in Sandwich South, as well as the recovery of completed development-related projects not yet fully funded. It also includes a share of functional servicing study costs for Sandwich South. The details, timing, and cost breakdown of each project are shown on Table 1.

The development-related costs included in the capital program are not to be entirely recovered through future DCs. The City previously received an Infrastructure Stimulus Funding grant of \$23.46 million to fund a share of completed Sandwich South sewer projects, yielding a net municipal cost of \$32.98 million.

Consistent with the 2015 City-wide DC Background Study, no benefit-to-existing shares have been identified for these projects. However, some of the capital projects are allocated to the City-wide DC by-law. This share, totaling \$3.43 million, has been excluded from the development charges calculation.

Finally, a share of \$17.76 million is deemed to benefit Sandwich South post-2036. These shares will be reconsidered through future DC Background Studies.

Of specific note is the Sandwich South Sanitary Sewer Projects Phases 1-6 (Projects 5 and 6). Although these projects were completed in 2007 and 2009-2012, respectively, they have been treated as a future project in the allocation of costs. The treatment of these specific projects is meant to reflect the long-term benefits of these projects as development in Sandwich South has not yet proceeded, and the benefits of the works will likely extend to 2036 and beyond.

The remaining \$11.79 million is identified as the net development-related share eligible for funding through development charges over the 2018-2036 planning period.



Table 2 summarizes the capital program and calculation of the unadjusted residential and non-residential development charges. The DC eligible share of \$11.79 million has been allocated 55 per cent to new residential development and 45 per cent to non-residential development based on shares of population in new units and employment growth in new space to 2036. The residential share of the capital program totals \$6.48 million and, when divided by the forecast growth in population in new units (13,243), an unadjusted charge of \$490 per capita results.

The non-residential share, \$5.30 million is applied against the forecast increase in square metres of non-residential floor space by type of development. Of the 872,493 square metres of new non-residential building space anticipated between 2018 and 2036 in the Sandwich South area, 32 per cent is anticipated to be industrial, and the remaining 68 per cent is anticipated to be non-industrial space, based on shares of employment growth. The industrial share totals \$1.70 million, which, when divided by the increase in square metres of industrial building space (347,009), yields an unadjusted charge of \$4.89 per square metre. The remaining non-industrial share totals \$3.61 million and yields an unadjusted charge of \$6.86 per square metre of new non-residential non-industrial development, when divided by the anticipated increase (525,483).

The residential and non-residential cash flow analysis is shown on Table 3. The analysis takes into consideration expenditure timing and DC revenue projections. The residential cash flow analysis is displayed on page 1, and pages 2 and 3 provide the non-residential analysis for industrial and non-industrial charges, respectively.

After cash flow considerations, the residential and non-residential charges increase to \$539 per capita, \$5.38 per square metre (industrial) and \$7.55 per square metre (non-industrial), respectively.

SANITARY SEWER SUMMARY							
2018 - 2036		Unadjusted			Adjusted		
Development-Related Capital Program		Development Charge			Development Charge		
Total	Net DC Recoverable	Residential	Industrial	Non-Industrial	Residential	Industrial	Non-Industrial
		\$/capita	\$/sq.m	\$/sq.m	\$/capita	\$/sq.m	\$/sq.m
\$56,436,000	\$11,788,700	\$490	\$4.89	\$6.86	<b>\$539</b>	<b>\$5.38</b>	<b>\$7.55</b>

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APPENDIX B.2  
TABLE 1

SANDWICH SOUTH PLANNING DISTRICT  
DEVELOPMENT-RELATED CAPITAL PROGRAM  
SANITARY SEWERS 2018 - 2036

NO.	Road	From	To	Timing		Estimated Project Costs							
				Start	Finish	Gross Cost	Grants and Subsidies	Net Municipal Cost	Benefit to Existing Share	City-Wide DC Share	Sandwich South Post-2036	East Pelton & County Road 42 2018-2036	
<b>Sanitary Sewers</b>													
<b>Sewer Infrastructure</b>													
1	County Road 42	Pelton Spur	8th Concession	2018	2027	\$1,786,000	\$0	\$1,786,000	0%	\$0	\$267,900	\$910,860	\$607,240
2	9th Concession	County Road 42	Hwy 401	2018	2027	\$8,390,000	\$0	\$8,390,000	0%	\$0	\$0	\$5,034,000	\$3,356,000
3	County Road 17	County Road 42	Hwy 401	2028	2036	\$9,580,000	\$0	\$9,580,000	0%	\$0	\$0	\$5,748,000	\$3,832,000
4	Legacy Park Drive	Provincial Road	Walker Road	2028	2036	\$759,000	\$0	\$759,000	0%	\$0	\$0	\$455,400	\$303,600
5	Sandwich South - Ph 1A, 1B, & 3 (complete)			2018	2018	\$5,425,000	\$0	\$5,425,000	0%	\$0	\$813,750	\$2,766,750	\$1,844,500
6	Sandwich South - Ph 2 & 4-6 (complete)			2018	2018	\$30,276,000	\$23,456,000	\$6,820,000	0%	\$0	\$2,318,800	\$2,700,720	\$1,800,480
<b>Subtotal Sewer Infrastructure</b>						<b>\$56,216,000</b>	<b>\$23,456,000</b>	<b>\$32,760,000</b>		<b>\$0</b>	<b>\$3,400,450</b>	<b>\$17,615,730</b>	<b>\$11,743,820</b>
<b>Studies and Other</b>													
7	Functional Servicing Reports			2018	2020	\$220,000	\$0	\$220,000	0%	\$0	\$33,000	\$142,120	\$44,880
<b>Subtotal Studies and Other</b>						<b>\$220,000</b>	<b>\$0</b>	<b>\$220,000</b>		<b>\$0</b>	<b>\$33,000</b>	<b>\$142,120</b>	<b>\$44,880</b>
<b>Total Sanitary Sewers</b>						<b>\$56,436,000</b>	<b>\$23,456,000</b>	<b>\$32,980,000</b>		<b>\$0</b>	<b>\$3,433,450</b>	<b>\$17,757,850</b>	<b>\$11,788,700</b>

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APPENDIX B.2  
TABLE 2

SANDWICH SOUTH PLANNING DISTRICT  
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES  
SANITARY SEWERS 2018 - 2036

Growth in Population in New Units 2018-2036	13,243
Employment Growth in New Space 2018-2036	10,977
Growth in New Building Space (Square Meters) 2018-2036	872,493
Industrial	347,009
Non-Industrial	525,483

	Development-related Capital Forecast						Residential Share		Non-Residential Share	
	Gross Project Cost (\$000)	Grants and Subsidies (\$000)	Benefit to Existing Share (\$000)	City-Wide DC Share (\$000)	Sandwich South Post-2036 (\$000)	Total Net Capital Costs (\$000)	%	\$000	%	\$000
<b>SANITARY SEWERS 2018 - 2036</b>										
Sewer Infrastructure	\$56,216.00	\$23,456.00	\$0.00	\$3,400.45	\$17,615.73	\$11,743.82	55%	\$6,459.10	45%	\$5,284.72
Studies and Other	\$220.00	\$0.00	\$0.00	\$33.00	\$142.12	\$44.88	55%	\$24.68	45%	\$20.20
<b>TOTAL SANITARY SEWERS 2018 - 2036</b>	<b>\$56,436.00</b>	<b>\$23,456.00</b>	<b>\$0.00</b>	<b>\$3,433.45</b>	<b>\$17,757.85</b>	<b>\$11,788.70</b>		<b>\$6,483.79</b>		<b>\$5,304.92</b>
<b>Unadjusted Development Charge Per Capita (\$)</b>								<b>\$489.60</b>		
<b>Unadjusted Development Charge Per Sq. M. (\$)</b>										<b>\$6.08</b>
								<b>Non-Residential Allocation <sup>1</sup></b>		
								<b>(\$000)</b>	<b>%</b>	<b>\$/sq m</b>
Unadjusted Charge Per Sq. M. (\$) - Industrial								\$1,697.6	32%	\$4.89
Unadjusted Charge Per Sq. M. (\$) - Non-Industrial								\$3,607.3	68%	\$6.86

Notes:

1) Non-residential cost allocated based on percentage shares of employment growth over the period 2018-2036

Residential Development Charge Calculation		
Residential Share of 2018-2036 DC Eligible Costs	55%	\$6,483,785
2018-2036 Growth in Population in New Units		13,243
Development Charge Per Capital (Unadjusted)		\$490
Development Charge Per Capita after Cash Flow		<b>\$539</b>
Charge per Single Detached Unit	3.46	\$1,865
Non-Residential Development Charge Calculation		
Non-Residential Share of 2018-2036 DC Eligible Costs	45%	\$5,304,915
2018-2036 Growth in Non-Residential Building Space (sq.m)		872,493
2018-2036 Growth in Industrial Space		347,009
2018-2036 Growth in Non-Industrial Space		525,483
Industrial Charge Per Sq.M After Cash Flow	32%	\$4.89
Industrial Charge Per Sq.M (Unadjusted)		<b>\$5.38</b>
Non-Industrial Charge Per Sq.M (Unadjusted)	68%	\$6.86
Non-Industrial Charge Per Sq.M After Cash Flow		<b>\$7.55</b>

SANDWICH SOUTH PLANNING DISTRICT  
SANITARY SEWERS 2018 - 2036  
CASHFLOW AND DETERMINATION OF RESIDENTIAL DEVELOPMENT CHARGE

SANITARY SEWER: RESIDENTIAL	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
OPENING CASH BALANCE (\$000)	\$0.0	(\$1,906.3)	(\$1,856.0)	(\$1,799.8)	(\$1,728.5)	(\$1,649.8)	(\$1,563.3)	(\$1,468.6)	(\$1,365.1)	(\$1,252.1)
2018 to 2036 RESIDENTIAL FUNDING REQUIREMENTS										
Sanitary Sewer: Residential: Non Inflated	\$2,230.9	\$226.2	\$226.2	\$218.0	\$218.0	\$218.0	\$218.0	\$218.0	\$218.0	\$218.0
Sanitary Sewer: Residential: Inflated	\$2,230.9	\$230.7	\$235.3	\$231.3	\$235.9	\$240.7	\$245.5	\$250.4	\$255.4	\$260.5
NEW RESIDENTIAL DEVELOPMENT										
- Population Growth in New Units	697	697	697	697	697	697	697	697	697	697
REVENUE										
- DC Receipts: Inflated	\$375.7	\$383.2	\$390.9	\$398.7	\$406.7	\$414.8	\$423.1	\$431.5	\$440.2	\$449.0
INTEREST										
- Interest on Opening Balance	\$0.0	(\$104.8)	(\$102.1)	(\$99.0)	(\$95.1)	(\$90.7)	(\$86.0)	(\$80.8)	(\$75.1)	(\$68.9)
- Interest on In-year Transactions	(\$51.0)	\$2.7	\$2.7	\$2.9	\$3.0	\$3.0	\$3.1	\$3.2	\$3.2	\$3.3
TOTAL REVENUE	\$324.7	\$281.0	\$291.5	\$302.6	\$314.6	\$327.1	\$340.2	\$353.9	\$368.4	\$383.4
CLOSING CASH BALANCE	(\$1,906.3)	(\$1,856.0)	(\$1,799.8)	(\$1,728.5)	(\$1,649.8)	(\$1,563.3)	(\$1,468.6)	(\$1,365.1)	(\$1,252.1)	(\$1,129.2)

SANITARY SEWER: RESIDENTIAL	2028	2029	2030	2031	2032	2033	2034	2035	2036	TOTAL
OPENING CASH BALANCE (\$000)	(\$1,129.2)	(\$1,038.7)	(\$940.3)	(\$833.4)	(\$717.3)	(\$591.7)	(\$455.9)	(\$309.3)	(\$151.2)	
2018 to 2036 RESIDENTIAL FUNDING REQUIREMENTS										
Sanitary Sewer: Residential: Non Inflated	\$252.7	\$252.7	\$252.7	\$252.7	\$252.7	\$252.7	\$252.7	\$252.7	\$252.7	\$6,483.8
Sanitary Sewer: Residential: Inflated	\$308.1	\$314.2	\$320.5	\$326.9	\$333.5	\$340.1	\$346.9	\$353.9	\$361.0	\$7,421.9
NEW RESIDENTIAL DEVELOPMENT										
- Population Growth in New Units	697	697	697	697	697	697	697	697	697	13,243
REVENUE										
- DC Receipts: Inflated	\$458.0	\$467.1	\$476.5	\$486.0	\$495.7	\$505.6	\$515.7	\$526.0	\$536.6	\$8,581.0
INTEREST										
- Interest on Opening Balance	(\$62.1)	(\$57.1)	(\$51.7)	(\$45.8)	(\$39.5)	(\$32.5)	(\$25.1)	(\$17.0)	(\$8.3)	(\$1,141.6)
- Interest on In-year Transactions	\$2.6	\$2.7	\$2.7	\$2.8	\$2.8	\$2.9	\$3.0	\$3.0	\$3.1	\$1.7
TOTAL REVENUE	\$398.5	\$412.6	\$427.5	\$442.9	\$459.1	\$476.0	\$493.6	\$512.0	\$531.4	\$7,441.1
CLOSING CASH BALANCE	(\$1,038.7)	(\$940.3)	(\$833.4)	(\$717.3)	(\$591.7)	(\$455.9)	(\$309.3)	(\$151.2)	\$19.2	

<b>2018 Adjusted Charge Per Capita</b>	<b>\$ 539</b>
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<b>Allocation of Capital Program</b>	
Residential Sector	55%
Non-Residential Sector	45%
<b>Rates for 2018</b>	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

SANDWICH SOUTH PLANNING DISTRICT  
SANITARY SEWERS 2018 - 2036  
CASHFLOW AND DETERMINATION OF NON-RESIDENTIAL: INDUSTRIAL DEVELOPMENT CHARGE

SANITARY SEWERS: NON-RESIDENTIAL - INDUSTRIAL	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
OPENING CASH BALANCE (\$000)	\$0.0	(\$499.2)	(\$486.1)	(\$471.6)	(\$453.0)	(\$432.5)	(\$410.0)	(\$385.3)	(\$358.4)	(\$329.0)
2018 to 2036 NON-RESIDENTIAL FUNDING REQUIREMENTS										
Sanitary Sewers: Non-Residential - Industrial: Non: Inflated	\$584.1	\$59.2	\$59.2	\$57.1	\$57.1	\$57.1	\$57.1	\$57.1	\$57.1	\$57.1
Sanitary Sewers: Non-Residential - Industrial: Inflated	\$584.1	\$60.4	\$61.6	\$60.6	\$61.8	\$63.0	\$64.3	\$65.6	\$66.9	\$68.2
NEW NON-RESIDENTIAL DEVELOPMENT										
- New Industrial Building GFA - square metres	18,264	18,264	18,264	18,264	18,264	18,264	18,264	18,264	18,264	18,264
REVENUE										
- DC Receipts: Inflated	\$98.3	\$100.2	\$102.2	\$104.3	\$106.4	\$108.5	\$110.7	\$112.9	\$115.1	\$117.4
INTEREST										
- Interest on Opening Balance	\$0.0	(\$27.5)	(\$26.7)	(\$25.9)	(\$24.9)	(\$23.8)	(\$22.6)	(\$21.2)	(\$19.7)	(\$18.1)
- Interest on In-year Transactions	(\$13.4)	\$0.7	\$0.7	\$0.8	\$0.8	\$0.8	\$0.8	\$0.8	\$0.8	\$0.9
TOTAL REVENUE	\$84.9	\$73.4	\$76.2	\$79.1	\$82.3	\$85.5	\$89.0	\$92.5	\$96.2	\$100.2
CLOSING CASH BALANCE	(\$499.2)	(\$486.1)	(\$471.6)	(\$453.0)	(\$432.5)	(\$410.0)	(\$385.3)	(\$358.4)	(\$329.0)	(\$297.0)

SANITARY SEWERS: NON-RESIDENTIAL - INDUSTRIAL	2028	2029	2030	2031	2032	2033	2034	2035	2036	TOTAL
OPENING CASH BALANCE (\$000)	(\$297.0)	(\$273.5)	(\$248.0)	(\$220.2)	(\$190.1)	(\$157.5)	(\$122.3)	(\$84.2)	(\$43.1)	
2018 to 2036 NON-RESIDENTIAL FUNDING REQUIREMENTS										
Sanitary Sewers: Non-Residential - Industrial: Non: Inflated	\$66.2	\$66.2	\$66.2	\$66.2	\$66.2	\$66.2	\$66.2	\$66.2	\$66.2	\$1,697.6
Sanitary Sewers: Non-Residential - Industrial: Inflated	\$80.7	\$82.3	\$83.9	\$85.6	\$87.3	\$89.1	\$90.8	\$92.7	\$94.5	\$1,943.2
NEW NON-RESIDENTIAL DEVELOPMENT										
- New Industrial Building GFA - square metres	18,264	18,264	18,264	18,264	18,264	18,264	18,264	18,264	18,264	347,009
REVENUE										
- DC Receipts: Inflated	\$119.8	\$122.2	\$124.6	\$127.1	\$129.6	\$132.2	\$134.9	\$137.6	\$140.3	\$2,244.3
INTEREST										
- Interest on Opening Balance	(\$16.3)	(\$15.0)	(\$13.6)	(\$12.1)	(\$10.5)	(\$8.7)	(\$6.7)	(\$4.6)	(\$2.4)	(\$300.3)
- Interest on In-year Transactions	\$0.7	\$0.7	\$0.7	\$0.7	\$0.7	\$0.8	\$0.8	\$0.8	\$0.8	\$0.4
TOTAL REVENUE	\$104.1	\$107.9	\$111.7	\$115.7	\$119.9	\$124.3	\$128.9	\$133.8	\$138.7	\$1,944.4
CLOSING CASH BALANCE	(\$273.5)	(\$248.0)	(\$220.2)	(\$190.1)	(\$157.5)	(\$122.3)	(\$84.2)	(\$43.1)	\$1.2	

<b>2018 Adjusted Charge Per Square Metre</b>	<b>\$5.38</b>
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<b>Allocation of Capital Program</b>	
Residential Sector	55%
Non-Residential Sector	45%
<b>Non-Residential Allocation</b>	
Industrial	32%
Non-Industrial	68%
<b>Rates for 2018</b>	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

SANDWICH SOUTH PLANNING DISTRICT  
SANITARY SEWERS 2018 - 2036  
CASHFLOW AND DETERMINATION OF NON-RESIDENTIAL: NON-INDUSTRIAL DEVELOPMENT CHARGE

SANITARY SEWERS: NON-RESIDENTIAL - NON-INDUSTRIAL	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
OPENING CASH BALANCE (\$000)	\$0.0	(\$1,060.8)	(\$1,033.0)	(\$1,002.1)	(\$962.7)	(\$919.2)	(\$871.5)	(\$819.1)	(\$761.8)	(\$699.3)
2018 to 2036 NON-RESIDENTIAL FUNDING REQUIREMENTS										
Sanitary Sewers: Non-Residential - Non-Industrial: Non: Inflated	\$1,241.2	\$125.9	\$125.9	\$121.3	\$121.3	\$121.3	\$121.3	\$121.3	\$121.3	\$121.3
Sanitary Sewers: Non-Residential - Non-Industrial: Inflated	\$1,241.2	\$128.4	\$130.9	\$128.7	\$131.3	\$133.9	\$136.6	\$139.3	\$142.1	\$144.9
NEW NON-RESIDENTIAL DEVELOPMENT										
- New Non-Industrial Building GFA - square metres	27,657	27,657	27,657	27,657	27,657	27,657	27,657	27,657	27,657	27,657
REVENUE										
- DC Receipts: Inflated	\$208.8	\$213.0	\$217.2	\$221.6	\$226.0	\$230.5	\$235.2	\$239.9	\$244.7	\$249.5
INTEREST										
- Interest on Opening Balance	\$0.0	(\$58.3)	(\$56.8)	(\$55.1)	(\$52.9)	(\$50.6)	(\$47.9)	(\$45.0)	(\$41.9)	(\$38.5)
- Interest on In-year Transactions	(\$28.4)	\$1.5	\$1.5	\$1.6	\$1.7	\$1.7	\$1.7	\$1.8	\$1.8	\$1.8
TOTAL REVENUE	\$180.4	\$156.1	\$161.9	\$168.1	\$174.7	\$181.6	\$189.0	\$196.6	\$204.6	\$212.9
CLOSING CASH BALANCE	(\$1,060.8)	(\$1,033.0)	(\$1,002.1)	(\$962.7)	(\$919.2)	(\$871.5)	(\$819.1)	(\$761.8)	(\$699.3)	(\$631.3)

SANITARY SEWERS: NON-RESIDENTIAL - NON-INDUSTRIAL	2028	2029	2030	2031	2032	2033	2034	2035	2036	TOTAL
OPENING CASH BALANCE (\$000)	(\$631.3)	(\$581.5)	(\$527.2)	(\$468.3)	(\$404.3)	(\$335.0)	(\$260.0)	(\$179.0)	(\$91.7)	
2018 to 2036 NON-RESIDENTIAL FUNDING REQUIREMENTS										
Sanitary Sewers: Non-Residential - Non-Industrial: Non: Inflated	\$140.6	\$140.6	\$140.6	\$140.6	\$140.6	\$140.6	\$140.6	\$140.6	\$140.6	\$3,607.3
Sanitary Sewers: Non-Residential - Non-Industrial: Inflated	\$171.4	\$174.8	\$178.3	\$181.9	\$185.5	\$189.2	\$193.0	\$196.9	\$200.8	\$4,129.3
NEW NON-RESIDENTIAL DEVELOPMENT										
- New Non-Industrial Building GFA - square metres	27,657	27,657	27,657	27,657	27,657	27,657	27,657	27,657	27,657	525,483
REVENUE										
- DC Receipts: Inflated	\$254.5	\$259.6	\$264.8	\$270.1	\$275.5	\$281.0	\$286.7	\$292.4	\$298.2	\$4,769.2
INTEREST										
- Interest on Opening Balance	(\$34.7)	(\$32.0)	(\$29.0)	(\$25.8)	(\$22.2)	(\$18.4)	(\$14.3)	(\$9.8)	(\$5.0)	(\$638.4)
- Interest on In-year Transactions	\$1.5	\$1.5	\$1.5	\$1.5	\$1.6	\$1.6	\$1.6	\$1.7	\$1.7	\$0.9
TOTAL REVENUE	\$221.2	\$229.1	\$237.3	\$245.9	\$254.8	\$264.2	\$274.0	\$284.2	\$294.9	\$4,131.6
CLOSING CASH BALANCE	(\$581.5)	(\$527.2)	(\$468.3)	(\$404.3)	(\$335.0)	(\$260.0)	(\$179.0)	(\$91.7)	\$2.4	

<b>2018 Adjusted Charge Per Square Metre</b>	<b>\$7.55</b>
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<b>Allocation of Capital Program</b>	
Residential Sector	55%
Non-Residential Sector	45%
<b>Non-Residential Allocation</b>	
Industrial	32%
Non-Industrial	68%
<b>Rates for 2018</b>	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

**APPENDIX B.3**

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***STORM SEWER AND MUNICIPAL DRAIN SERVICES***

DRAFT

### APPENDIX B.3

#### STORM SEWER & MUNICIPAL DRAIN SERVICES

Through the Office of the City Engineer, the public works department is responsible for the provision, maintenance and operation of a network of storm sewer management and municipal drain infrastructure. As was the practice for the City-wide DC Background Study, the services of storm sewer and municipal drains have been considered together as part of the development charges study, and a combined charge has been calculated.

The details and timing of the 2018-2036 development-related Storm Sewer and Municipal Drains capital program are shown on Table 1. The gross costs included in the program total \$211.20 million, which includes both future and past area-specific storm sewer projects.

It is noted that the \$34.43 million identified in grants and subsidies for the Upper Little River Stormwater Management items represents a 17 per cent share falling under the responsibility of the neighbouring Town of Tecumseh. The resulting net municipal cost is \$176.77 million.

A benefit-to-existing share of 85 per cent has been identified for the Little River Improvements and Little River Study items. This is consistent with the City-wide DC Background Study's calculated share. Further, a portion of the Little River Improvements project (approximately \$16,500) is allocated to the City-wide DC by-law.

Finally, a share of \$114.15 million is deemed to benefit Sandwich South development beyond 2036. The remaining \$61.89 million is identified as the net development-related share eligible for funding through development charges over the planning period from 2018 to 2036.

Table 2 summarizes the capital program and calculation of the unadjusted residential and non-residential development charges for both storm sewer and municipal drain servicing. The combined DC eligible share of \$61.89 million has been allocated 55 per cent to new residential development and 45 per cent to non-residential development based on shares of population in new units and employment growth in new space to 2036.



The residential share of the capital program totals \$34.04 million and, when divided by the forecast growth in population in new units (13,243), results in an unadjusted charge of \$2,570 per capita.

The non-residential share, \$27.85 million is applied against the forecast increase in square metres of non-residential floor space by type of development. The industrial share totals \$8.91 million, which, when divided by the increase in square metres of industrial building space (347,009), yields an unadjusted charge of \$25.68 per square metre. The remaining non-industrial share totals \$18.94 million and yields an unadjusted charge of \$36.04 per square metre of new non-residential non-industrial development, when divided by the anticipated increase (525,483).

The residential and non-residential cash flow analysis is shown in Table 3. The analysis takes into consideration expenditure timing and DC revenue projections. Page 1 displays the residential cash flow analysis and pages 2 and 3 provide the non-residential analysis for industrial and non-industrial charges, respectively.

After cash flow considerations, the residential charge decreases to \$2,481 per capita and the non-residential charges decrease to \$24.79 per square metre (industrial) and \$34.79 per square metre (non-industrial). The changes in rates reflect the relationship between the timing of anticipated development and projected DC revenues.

STORM SEWER & MUNICIPAL DRAINS SUMMARY							
2018 - 2036		Unadjusted			Adjusted		
Development-Related Capital Program		Development Charge			Development Charge		
Total	Net DC Recoverable	Residential	Industrial	Non-Industrial	Residential	Industrial	Non-Industrial
		\$/capita	\$/sq.m	\$/sq.m	\$/capita	\$/sq.m	\$/sq.m
\$211,196,000	\$61,889,768	\$2,570	\$25.68	\$36.04	<b>\$2,481</b>	<b>\$24.79</b>	<b>\$34.79</b>

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 APPENDIX B.3  
 TABLE 1

SANDWICH SOUTH PLANNING DISTRICT  
 DEVELOPMENT-RELATED CAPITAL PROGRAM  
 STORM SEWER & MUNICIPAL DRAINS 2018 - 2036

NO.	Project Description	From	To	Timing		Estimated Project Costs							
				Start	Finish	Gross Cost	Grants and Subsidies	Net Municipal Cost	Benefit to Existing Share	City-Wide DC Share	Sandwich South Post-2036	East Pelton & County Road 42 2018-2036	
<b>Storm Sewer &amp; Municipal Drain Infrastructure</b>													
<b>Upper Little River Stormwater Management</b>													
1	Engineering			2018	2018	\$500,000	\$85,000	\$415,000	0%	\$0	\$0	\$269,750	\$145,250
2	Phased Engineering, Land Acquisition and Construction			2024	2036	\$202,000,000	\$34,340,000	\$167,660,000	0%	\$0	\$0	\$108,979,000	\$58,681,000
<b>Subtotal Upper Little River Stormwater Management</b>						<b>\$202,500,000</b>	<b>\$34,425,000</b>	<b>\$168,075,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$109,248,750</b>	<b>\$58,826,250</b>
<b>Drains</b>													
3	Little River Improvements	Via Rail	Lauzon Road	2021	2024	\$733,000	\$0	\$733,000	85%	\$623,050	\$16,493	\$60,747	\$32,710
4	Little River Study	Lauzon Road	E.C. Row Expressway	2024	2036	\$103,000	\$0	\$103,000	85%	\$87,550	\$0	\$10,043	\$5,408
5	Little River Drain Improvements	SS Diversion Drain	6th Concession Drain	2020	2024	\$550,000	\$0	\$550,000	0%	\$0	\$0	\$231,000	\$319,000
6	Sandwich South Drain Diversion	7th Concession	Little River	2020	2024	\$2,800,000	\$0	\$2,800,000	0%	\$0	\$0	\$1,176,000	\$1,624,000
<b>Subtotal Drains</b>						<b>\$4,186,000</b>	<b>\$0</b>	<b>\$4,186,000</b>	<b>\$710,600</b>	<b>\$16,493</b>	<b>\$0</b>	<b>\$1,477,790</b>	<b>\$1,981,118</b>
<b>Studies and Other</b>													
7	Annexed Lands Growth/Development - Stormwater Charge Study			2018	2018	\$150,000	\$0	\$150,000	0%	\$0	\$0	\$114,000	\$36,000
8	Annexed Lands Growth/Development - Stormwater Charge Study			2022	2022	\$670,000	\$0	\$670,000	0%	\$0	\$0	\$509,200	\$160,800
9	SSPD Master Servicing Studies			2018	2020	\$2,000,000	\$0	\$2,000,000	0%	\$0	\$0	\$1,520,000	\$480,000
10	Upper Little River Floodplain Study			2018	2020	\$350,000	\$0	\$350,000	0%	\$0	\$0	\$266,000	\$84,000
11	Functional Servicing Reports			2018	2020	\$1,340,000	\$0	\$1,340,000	0%	\$0	\$0	\$1,018,400	\$321,600
<b>Subtotal Studies and Other</b>						<b>\$4,510,000</b>	<b>\$0</b>	<b>\$4,510,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$3,427,600</b>	<b>\$1,082,400</b>
<b>Total Storm Sewers</b>						<b>\$211,196,000</b>	<b>\$34,425,000</b>	<b>\$176,771,000</b>	<b>\$710,600</b>	<b>\$16,493</b>	<b>\$0</b>	<b>\$114,154,140</b>	<b>\$61,889,768</b>

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APPENDIX B.3  
TABLE 2

SANDWICH SOUTH PLANNING DISTRICT  
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES  
STORM SEWER & MUNICIPAL DRAINS 2018 - 2036

Growth in Population in New Units 2018-2036	13,243
Employment Growth in New Space 2018-2036	10,977
Growth in New Building Space (Square Meters) 2018-2036	872,493
Industrial	347,009
Non-Industrial	525,483

	Development-related Capital Forecast						Residential Share		Non-Residential Share	
	Gross Project Cost (\$000)	Grants and Subsidies (\$000)	Benefit to Existing Share (\$000)	City-Wide DC Share (\$000)	Sandwich South Post-2036 (\$000)	Total Net Capital Costs (\$000)	%	\$000	%	\$000
	<b>STORM SEWER &amp; MUNICIPAL DRAINS 2018 - 2036</b>									
Upper Little River Stormwater Management	\$202,500.00	\$34,425.00	\$0.00	\$0.00	\$109,248.75	\$58,826.25	55%	\$32,354.44	45%	\$26,471.81
Drains	\$4,186.00	\$0.00	\$710.60	\$16.49	\$1,477.79	\$1,981.12	55%	\$1,089.61	45%	\$891.50
Studies and Other	\$4,510.00	\$0.00	\$0.00	\$0.00	\$3,427.60	\$1,082.40	55%	\$595.32	45%	\$487.08
<b>TOTAL STORM SEWER &amp; MUNICIPAL DRAINS 2018 - 2036</b>	<b>\$211,196.00</b>	<b>\$34,425.00</b>	<b>\$710.60</b>	<b>\$16.49</b>	<b>\$114,154.14</b>	<b>\$61,889.77</b>		<b>\$34,039.37</b>		<b>\$27,850.40</b>
<b>Unadjusted Development Charge Per Capita (\$)</b>								<b>\$2,570.37</b>		
<b>Unadjusted Development Charge Per Sq. M. (\$)</b>										<b>\$31.92</b>
								<b>Non-Residential Allocation <sup>1</sup></b>		
								<b>(\$000)</b>	<b>%</b>	<b>\$/sq m</b>
Unadjusted Charge Per Sq. M. (\$) - Industrial								\$8,912.1	32%	\$25.68
Unadjusted Charge Per Sq. M. (\$) - Non-Industrial								\$18,938.3	68%	\$36.04

Notes:

1) Non-residential cost allocated based on percentage shares of employment growth over the period 2018-2036

Residential Development Charge Calculation		
Residential Share of 2018-2036 DC Eligible Costs	55%	\$34,039,372
2018-2036 Growth in Population in New Units		13,243
Development Charge Per Capital (Unadjusted)		\$2,570
Development Charge Per Capita after Cash Flow		<b>\$2,481</b>
Charge per Single Detached Unit	3.46	\$8,584
Non-Residential Development Charge Calculation		
Non-Residential Share of 2018-2036 DC Eligible Costs	45%	\$27,850,395
2018-2036 Growth in Non-Residential Building Space (sq.m)		872,493
2018-2036 Growth in Industrial Space		347,009
2018-2036 Growth in Non-Industrial Space		525,483
Industrial Charge Per Sq.M After Cash Flow	32%	\$25.68
Industrial Charge Per Sq.M (Unadjusted)		<b>\$24.79</b>
Non-Industrial Charge Per Sq.M (Unadjusted)	68%	\$36.04
Non-Industrial Charge Per Sq.M After Cash Flow		<b>\$34.79</b>

APPENDIX B.3  
TABLE 3 - PAGE 1

**SANDWICH SOUTH PLANNING DISTRICT  
STORM SEWER & MUNICIPAL DRAINS 2018 - 2036  
CASHFLOW AND DETERMINATION OF RESIDENTIAL DEVELOPMENT CHARGE**

<b>STORM &amp; MUNICIPAL DRAINS: RESIDENTIAL</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>
OPENING CASH BALANCE (\$000)	\$0.0	\$1,492.9	\$3,171.3	\$4,714.8	\$6,511.4	\$8,306.1	\$10,294.3	\$9,530.0	\$8,974.0	\$8,380.9
<b>2018 to 2036 RESIDENTIAL FUNDING REQUIREMENTS</b>										
Storm & Municipal Drains: Residential: Non Infl:	\$262.0	\$162.4	\$376.1	\$218.2	\$306.7	\$218.2	\$2,701.1	\$2,482.9	\$2,482.9	\$2,482.9
Storm & Municipal Drains: Residential: Inflated	\$262.0	\$165.6	\$391.3	\$231.6	\$331.9	\$240.9	\$3,041.9	\$2,852.1	\$2,909.1	\$2,967.3
<b>NEW RESIDENTIAL DEVELOPMENT</b>										
- Population Growth in New Units	697	697	697	697	697	697	697	697	697	697
<b>REVENUE</b>										
- DC Receipts: Inflated	\$1,729.3	\$1,763.8	\$1,799.1	\$1,835.1	\$1,871.8	\$1,909.2	\$1,947.4	\$1,986.4	\$2,026.1	\$2,066.6
<b>INTEREST</b>										
- Interest on Opening Balance	\$0.0	\$52.3	\$111.0	\$165.0	\$227.9	\$290.7	\$360.3	\$333.5	\$314.1	\$293.3
- Interest on In-year Transactions	\$25.7	\$28.0	\$24.6	\$28.1	\$26.9	\$29.2	(\$30.1)	(\$23.8)	(\$24.3)	(\$24.8)
<b>TOTAL REVENUE</b>	<b>\$1,755.0</b>	<b>\$1,844.0</b>	<b>\$1,934.7</b>	<b>\$2,028.2</b>	<b>\$2,126.6</b>	<b>\$2,229.1</b>	<b>\$2,277.6</b>	<b>\$2,296.1</b>	<b>\$2,315.9</b>	<b>\$2,335.2</b>
CLOSING CASH BALANCE	\$1,492.9	\$3,171.3	\$4,714.8	\$6,511.4	\$8,306.1	\$10,294.3	\$9,530.0	\$8,974.0	\$8,380.9	\$7,748.7

<b>STORM &amp; MUNICIPAL DRAINS: RESIDENTIAL</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>	<b>2032</b>	<b>2033</b>	<b>2034</b>	<b>2035</b>	<b>2036</b>	<b>TOTAL</b>
OPENING CASH BALANCE (\$000)	\$7,748.7	\$7,076.1	\$6,360.9	\$5,601.4	\$4,795.8	\$3,941.9	\$3,037.7	\$2,081.0	\$1,069.6	
<b>2018 to 2036 RESIDENTIAL FUNDING REQUIREMENTS</b>										
Storm & Municipal Drains: Residential: Non Infl:	\$2,482.9	\$2,482.9	\$2,482.9	\$2,482.9	\$2,482.9	\$2,482.9	\$2,482.9	\$2,482.9	\$2,482.9	\$34,039.4
Storm & Municipal Drains: Residential: Inflated	\$3,026.6	\$3,087.2	\$3,148.9	\$3,211.9	\$3,276.1	\$3,341.6	\$3,408.5	\$3,476.6	\$3,546.2	\$42,917.3
<b>NEW RESIDENTIAL DEVELOPMENT</b>										
- Population Growth in New Units	697	697	697	697	697	697	697	697	697	13,243
<b>REVENUE</b>										
- DC Receipts: Inflated	\$2,108.0	\$2,150.1	\$2,193.1	\$2,237.0	\$2,281.7	\$2,327.4	\$2,373.9	\$2,421.4	\$2,469.8	\$39,497.2
<b>INTEREST</b>										
- Interest on Opening Balance	\$271.2	\$247.7	\$222.6	\$196.1	\$167.9	\$138.0	\$106.3	\$72.8	\$37.4	\$3,608.1
- Interest on In-year Transactions	(\$25.3)	(\$25.8)	(\$26.3)	(\$26.8)	(\$27.3)	(\$27.9)	(\$28.5)	(\$29.0)	(\$29.6)	(\$186.9)
<b>TOTAL REVENUE</b>	<b>\$2,353.9</b>	<b>\$2,372.0</b>	<b>\$2,389.4</b>	<b>\$2,406.2</b>	<b>\$2,422.2</b>	<b>\$2,437.5</b>	<b>\$2,451.8</b>	<b>\$2,465.2</b>	<b>\$2,477.6</b>	<b>\$42,918.4</b>
CLOSING CASH BALANCE	\$7,076.1	\$6,360.9	\$5,601.4	\$4,795.8	\$3,941.9	\$3,037.7	\$2,081.0	\$1,069.6	\$1.1	

**2018 Adjusted Charge Per Capita** \$ **2,481**

<b>Allocation of Capital Program</b>	
Residential Sector	55%
Non-Residential Sector	45%
<b>Rates for 2018</b>	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

SANDWICH SOUTH PLANNING DISTRICT  
STORM SEWER & MUNICIPAL DRAINS 2018 - 2036  
CASHFLOW AND DETERMINATION OF NON-RESIDENTIAL: INDUSTRIAL DEVELOPMENT CHARGE

STORM SEWER & DRAINS: NON-RESIDENTIAL - INDUSTRIAL	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
OPENING CASH BALANCE (\$000)	\$0.0	\$390.9	\$830.4	\$1,234.4	\$1,704.8	\$2,174.8	\$2,695.3	\$2,495.3	\$2,349.8	\$2,194.5
2018 to 2036 NON-RESIDENTIAL FUNDING REQUIREMENTS										
Storm Sewer & Drains: Non-Residential - Industrial: Non: Inflated	\$68.6	\$42.5	\$98.5	\$57.1	\$80.3	\$57.1	\$707.2	\$650.1	\$650.1	\$650.1
Storm Sewer & Drains: Non-Residential - Industrial: Inflated	\$68.6	\$43.4	\$102.4	\$60.6	\$86.9	\$63.1	\$796.4	\$746.7	\$761.7	\$776.9
NEW NON-RESIDENTIAL DEVELOPMENT										
- New Industrial Building GFA - square metres	18,264	18,264	18,264	18,264	18,264	18,264	18,264	18,264	18,264	18,264
REVENUE										
- DC Receipts: Inflated	\$452.8	\$461.8	\$471.0	\$480.5	\$490.1	\$499.9	\$509.9	\$520.1	\$530.5	\$541.1
INTEREST										
- Interest on Opening Balance	\$0.0	\$13.7	\$29.1	\$43.2	\$59.7	\$76.1	\$94.3	\$87.3	\$82.2	\$76.8
- Interest on In-year Transactions	\$6.7	\$7.3	\$6.4	\$7.3	\$7.1	\$7.6	(\$7.9)	(\$6.2)	(\$6.4)	(\$6.5)
TOTAL REVENUE	\$459.5	\$482.8	\$506.5	\$531.1	\$556.8	\$583.7	\$596.4	\$601.2	\$606.4	\$611.4
CLOSING CASH BALANCE	\$390.9	\$830.4	\$1,234.4	\$1,704.8	\$2,174.8	\$2,695.3	\$2,495.3	\$2,349.8	\$2,194.5	\$2,029.0

STORM SEWER & DRAINS: NON-RESIDENTIAL - INDUSTRIAL	2028	2029	2030	2031	2032	2033	2034	2035	2036	TOTAL
OPENING CASH BALANCE (\$000)	\$2,029.0	\$1,852.9	\$1,665.6	\$1,466.8	\$1,255.9	\$1,032.3	\$795.7	\$545.2	\$280.4	
2018 to 2036 NON-RESIDENTIAL FUNDING REQUIREMENTS										
Storm Sewer & Drains: Non-Residential - Industrial: Non: Inflated	\$650.1	\$650.1	\$650.1	\$650.1	\$650.1	\$650.1	\$650.1	\$650.1	\$650.1	\$8,912.1
Storm Sewer & Drains: Non-Residential - Industrial: Inflated	\$792.4	\$808.3	\$824.4	\$840.9	\$857.7	\$874.9	\$892.4	\$910.2	\$928.5	\$11,236.5
NEW NON-RESIDENTIAL DEVELOPMENT										
- New Industrial Building GFA - square metres	18,264	18,264	18,264	18,264	18,264	18,264	18,264	18,264	18,264	347,009
REVENUE										
- DC Receipts: Inflated	\$551.9	\$562.9	\$574.2	\$585.7	\$597.4	\$609.4	\$621.5	\$634.0	\$646.6	\$10,341.3
INTEREST										
- Interest on Opening Balance	\$71.0	\$64.9	\$58.3	\$51.3	\$44.0	\$36.1	\$27.8	\$19.1	\$9.8	\$944.8
- Interest on In-year Transactions	(\$6.6)	(\$6.7)	(\$6.9)	(\$7.0)	(\$7.2)	(\$7.3)	(\$7.4)	(\$7.6)	(\$7.8)	(\$48.9)
TOTAL REVENUE	\$616.3	\$621.0	\$625.6	\$630.0	\$634.2	\$638.2	\$641.9	\$645.5	\$648.7	\$11,237.2
CLOSING CASH BALANCE	\$1,852.9	\$1,665.6	\$1,466.8	\$1,255.9	\$1,032.3	\$795.7	\$545.2	\$280.4	\$0.6	

<b>2018 Adjusted Charge Per Square Metre</b>	<b>\$24.79</b>
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<b>Allocation of Capital Program</b>	
Residential Sector	55%
Non-Residential Sector	45%
<b>Non-Residential Allocation</b>	
Industrial	32%
Non-Industrial	68%
<b>Rates for 2018</b>	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

SANDWICH SOUTH PLANNING DISTRICT  
STORM SEWER & MUNICIPAL DRAINS 2018 - 2036  
CASHFLOW AND DETERMINATION OF NON-RESIDENTIAL: NON-INDUSTRIAL DEVELOPMENT CHARGE

STORM SEWERS & DRAINS: NON-RESIDENTIAL - NON-INDUSTRIAL	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
OPENING CASH BALANCE (\$000)	\$0.0	\$830.7	\$1,764.6	\$2,623.5	\$3,623.2	\$4,621.8	\$5,728.0	\$5,303.0	\$4,993.9	\$4,664.0
2018 to 2036 NON-RESIDENTIAL FUNDING REQUIREMENTS										
Storm Sewers & Drains: Non-Residential - Non-Industrial: Non: Inflated	\$145.8	\$90.3	\$209.2	\$121.4	\$170.6	\$121.4	\$1,502.8	\$1,381.4	\$1,381.4	\$1,381.4
Storm Sewers & Drains: Non-Residential - Non-Industrial: Inflated	\$145.8	\$92.1	\$217.7	\$128.8	\$184.7	\$134.1	\$1,692.4	\$1,586.8	\$1,618.5	\$1,650.9
NEW NON-RESIDENTIAL DEVELOPMENT										
- New Non-Industrial Building GFA - square metres	27,657	27,657	27,657	27,657	27,657	27,657	27,657	27,657	27,657	27,657
REVENUE										
- DC Receipts: Inflated	\$962.2	\$981.4	\$1,001.1	\$1,021.1	\$1,041.5	\$1,062.3	\$1,083.6	\$1,105.3	\$1,127.4	\$1,149.9
INTEREST										
- Interest on Opening Balance	\$0.0	\$29.1	\$61.8	\$91.8	\$126.8	\$161.8	\$200.5	\$185.6	\$174.8	\$163.2
- Interest on In-year Transactions	\$14.3	\$15.6	\$13.7	\$15.6	\$15.0	\$16.2	(\$16.7)	(\$13.2)	(\$13.5)	(\$13.8)
TOTAL REVENUE	\$976.5	\$1,026.0	\$1,076.6	\$1,128.5	\$1,183.3	\$1,240.3	\$1,267.3	\$1,277.7	\$1,288.7	\$1,299.4
CLOSING CASH BALANCE	\$830.7	\$1,764.6	\$2,623.5	\$3,623.2	\$4,621.8	\$5,728.0	\$5,303.0	\$4,993.9	\$4,664.0	\$4,312.5

STORM SEWERS & DRAINS: NON-RESIDENTIAL - NON-INDUSTRIAL	2028	2029	2030	2031	2032	2033	2034	2035	2036	TOTAL
OPENING CASH BALANCE (\$000)	\$4,312.5	\$3,938.4	\$3,540.7	\$3,118.4	\$2,670.3	\$2,195.5	\$1,692.6	\$1,160.6	\$598.1	
2018 to 2036 NON-RESIDENTIAL FUNDING REQUIREMENTS										
Storm Sewers & Drains: Non-Residential - Non-Industrial: Non: Inflated	\$1,381.4	\$1,381.4	\$1,381.4	\$1,381.4	\$1,381.4	\$1,381.4	\$1,381.4	\$1,381.4	\$1,381.4	\$18,938.3
Storm Sewers & Drains: Non-Residential - Non-Industrial: Inflated	\$1,683.9	\$1,717.6	\$1,751.9	\$1,787.0	\$1,822.7	\$1,859.2	\$1,896.3	\$1,934.3	\$1,973.0	\$23,877.6
NEW NON-RESIDENTIAL DEVELOPMENT										
- New Non-Industrial Building GFA - square metres	27,657	27,657	27,657	27,657	27,657	27,657	27,657	27,657	27,657	525,483
REVENUE										
- DC Receipts: Inflated	\$1,172.9	\$1,196.4	\$1,220.3	\$1,244.7	\$1,269.6	\$1,295.0	\$1,320.9	\$1,347.3	\$1,374.2	\$21,977.1
INTEREST										
- Interest on Opening Balance	\$150.9	\$137.8	\$123.9	\$109.1	\$93.5	\$76.8	\$59.2	\$40.6	\$20.9	\$2,008.3
- Interest on In-year Transactions	(\$14.1)	(\$14.3)	(\$14.6)	(\$14.9)	(\$15.2)	(\$15.5)	(\$15.8)	(\$16.1)	(\$16.5)	(\$103.9)
TOTAL REVENUE	\$1,309.8	\$1,319.9	\$1,329.6	\$1,338.9	\$1,347.9	\$1,356.3	\$1,364.3	\$1,371.8	\$1,378.7	\$23,881.5
CLOSING CASH BALANCE	\$3,938.4	\$3,540.7	\$3,118.4	\$2,670.3	\$2,195.5	\$1,692.6	\$1,160.6	\$598.1	\$3.8	

<b>2018 Adjusted Charge Per Square Metre</b>	<b>\$34.79</b>
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<b>Allocation of Capital Program</b>	
Residential Sector	55%
Non-Residential Sector	45%
<b>Non-Residential Allocation</b>	
Industrial	32%
Non-Industrial	68%
<b>Rates for 2018</b>	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

## **APPENDIX B.4**

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### ***WATER SERVICES***

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## APPENDIX B.4

### WATER SERVICES

The Windsor Utilities Commission is responsible for providing clean, reliable and safe drinking water to the City of Windsor and administers the service delivery on behalf of the municipality. The Windsor Utilities Commission has outsourced all of its operations to ENWIN.

The development-related capital program for water servicing was provided by the WUC through their report *WUC Water Servicing Plan Update 2018 – Sandwich South Planning District Area Development Charges*, which was completed in April 2018 and includes watermain infrastructure necessary to service development in Sandwich South.

The total cost of the capital program is approximately \$32.49 million. Not all of these costs relate to development in the two Secondary Plan areas. The benefit-to-existing shares shown on Table 1 were provided by the WUC's report and account for a total of \$9.22 million. Further, shares of projects anticipated to benefit areas outside of the two Secondary Plans total \$9.00 million. The remaining \$14.27 million is considered to be related to development for the East Pelton & County Road 42 area during the 2018-2036 period.

As shown in Table 2, the development-related share of \$14.27 million has been allocated 55 per cent, or \$7.85 million to new residential development and 45 per cent, or \$6.42 million to new non-residential development.

The residential share is divided by the anticipated growth in population in new units between 2018 and 2036 in the Sandwich South area (13,243), which yields an unadjusted development charge of \$593 per capita. The non-residential share is allocated between the industrial (32 per cent) and non-industrial (68 per cent) sector based on shares of employment growth. The industrial portion of the non-residential share is \$2.05 million, which, when divided by the anticipated increase in square metres of new industrial space (347,009) yields an unadjusted DC of \$5.92 per square metre. The non-industrial share of \$4.37 million is divided by the growth in square metres of non-industrial space (525,483), which results in an unadjusted non-industrial development charge of \$8.31 per square metre.

On Table 3, the residential and non-residential cash flow analysis is shown. After cash flow analysis, the residential calculated charge remains at \$593 per capita. The



adjusted industrial development charge increases very slightly to \$5.93 per square metre, and the non-industrial charge remains unchanged after cash flow considerations at \$8.31 per square metre.

2018 - 2036		<b>WATER SUMMARY</b>			Adjusted		
Development-Related Capital Program		Unadjusted			Development Charge		
Total	Net DC Recoverable	Residential	Industrial	Non-Industrial	Residential	Industrial	Non-Industrial
		\$/capita	\$/sq.m	\$/sq.m	\$/capita	\$/sq.m	\$/sq.m
\$32,486,400	\$14,270,084	\$593	\$5.92	\$8.31	<b>\$593</b>	<b>\$5.93</b>	<b>\$8.31</b>

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APPENDIX B.4  
TABLE 1

SANDWICH SOUTH PLANNING DISTRICT  
DEVELOPMENT-RELATED CAPITAL PROGRAM  
WATER SERVICES 2018-2036

NO.	Road	From	To	Timing		Estimated Project Costs							
				Start	Finish	Gross Cost	Grants and Subsidies	Net Municipal Costs	Benefit to Existing Share	City-Wide DC Share	Sandwich South Post-2036	East Pelton & County Road 42 2018-2036	
<b>Water Infrastructure</b>													
1	WM1b - Division Rd./County Rd. 42	Cook PS	Walker Rd.	2025	2025	\$6,912,600	\$0	\$6,912,600	63%	\$4,354,938	\$0	\$1,106,016	\$1,451,646
2	WM5 - County Rd. 42	8th Concession	Lauzon Rd.	2025	2025	\$7,392,300	\$0	\$7,392,300	47%	\$3,474,381	\$0	\$1,626,306	\$2,291,613
3	Seg 1 - 8th Concession	County Rd. 42	Hwy 401 (N)	2030	2030	\$3,704,500	\$0	\$3,704,500	10%	\$370,450	\$0	\$555,675	\$2,778,375
4	Seg 2 - 9th Concession	County Rd. 42	Hwy 401 (N)	2030	2030	\$4,836,000	\$0	\$4,836,000	10%	\$483,600	\$0	\$1,692,600	\$2,659,800
5	Seg 3 - County Rd. 17	County Rd. 42	Hwy 401 (N)	2030	2030	\$5,363,000	\$0	\$5,363,000	10%	\$536,300	\$0	\$1,877,050	\$2,949,650
6	Seg 5 - Hwy 401 (N)	8th Concession	9th Concession	2030	2030	\$2,201,000	\$0	\$2,201,000	0%	\$0	\$0	\$1,100,500	\$1,100,500
7	Seg 4 - Hwy 401 (N)	9th Concession	County Rd. 17	2030	2030	\$2,077,000	\$0	\$2,077,000	0%	\$0	\$0	\$1,038,500	\$1,038,500
<b>Total Water Infrastructure</b>						<b>\$32,486,400</b>	<b>\$0</b>	<b>\$32,486,400</b>		<b>\$9,219,669</b>	<b>\$0</b>	<b>\$8,996,647</b>	<b>\$14,270,084</b>

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APPENDIX B.4  
TABLE 2

**SANDWICH SOUTH PLANNING DISTRICT  
SUMMARY OF UNADJUSTED RESIDENTIAL AND NON-RESIDENTIAL DEVELOPMENT CHARGES  
WATER SERVICES 2018-2036**

Growth in Population in New Units 2018-2036	13,243
Employment Growth in New Space 2018-2036	10,977
Growth in New Building Space (Square Meters) 2018-2036	872,493
Industrial	347,009
Non-Industrial	525,483

	Development-related Capital Forecast						Residential Share		Non-Residential Share	
	Gross Project Cost (\$000)	Grants and Subsidies (\$000)	Benefit to Existing Share (\$000)	City-Wide DC Share (\$000)	Sandwich South Post-2036 (\$000)	Total Net Capital Costs (\$000)	%	\$000	%	\$000
	<b>WATER SERVICES 2018-2036</b>									
Water Infrastructure	\$32,486.40	\$0.00	\$9,219.67	\$0.00	\$8,996.65	\$14,270.08	55%	\$7,848.55	45%	\$6,421.54
<b>TOTAL WATER SERVICES 2018-2036</b>	<b>\$32,486.40</b>	<b>\$0.00</b>	<b>\$9,219.67</b>	<b>\$0.00</b>	<b>\$8,996.65</b>	<b>\$14,270.08</b>		<b>\$7,848.55</b>		<b>\$6,421.54</b>
<b>Unadjusted Development Charge Per Capita (\$)</b>								<b>\$592.66</b>		
<b>Unadjusted Development Charge Per Sq. M. (\$)</b>										<b>\$7.36</b>
								<b>Non-Residential Allocation <sup>1</sup></b>		
								<b>(\$000)</b>	<b>%</b>	<b>\$/sq m</b>
Unadjusted Charge Per Sq. M. (\$) - Industrial								\$2,054.9	32%	\$5.92
Unadjusted Charge Per Sq. M. (\$) - Non-Industrial								\$4,366.6	68%	\$8.31

Notes:

1) Non-residential cost allocated based on percentage shares of employment growth over the period 2018-2036

<b>Residential Development Charge Calculation</b>		
Residential Share of 2018-2036 DC Eligible Costs	55%	\$7,848,546
2018-2036 Growth in Population in New Units		13,243
Development Charge Per Capital (Unadjusted)		\$593
Development Charge Per Capita after Cash Flow		<b>\$593</b>
Charge per Single Detached Unit	3.46	\$2,052
<b>Non-Residential Development Charge Calculation</b>		
Non-Residential Share of 2018-2036 DC Eligible Costs	45%	\$6,421,538
2018-2036 Growth in Non-Residential Building Space (sq.m)		872,493
2018-2036 Growth in Industrial Space		347,009
2018-2036 Growth in Non-Industrial Space		525,483
Industrial Charge Per Sq.M After Cash Flow	32%	\$5.92
Industrial Charge Per Sq.M (Unadjusted)		<b>\$5.93</b>
Non-Industrial Charge Per Sq.M (Unadjusted)	68%	\$8.31
Non-Industrial Charge Per Sq.M After Cash Flow		<b>\$8.31</b>

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APPENDIX B.4  
TABLE 3 - PAGE 1

**SANDWICH SOUTH PLANNING DISTRICT  
WATER SERVICES 2018-2036  
CASHFLOW AND DETERMINATION OF RESIDENTIAL DEVELOPMENT CHARGE**

<b>WATER: RESIDENTIAL</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>
OPENING CASH BALANCE (\$000)	\$0.0	\$420.5	\$864.2	\$1,332.0	\$1,824.9	\$2,344.0	\$2,890.3	\$3,465.1	\$1,644.3	\$2,194.7
<b>2018 to 2036 RESIDENTIAL FUNDING REQUIREMENTS</b>										
Water: Residential: Non Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$2,058.8	\$0.0	\$0.0
Water: Residential: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$2,364.9	\$0.0	\$0.0
<b>NEW RESIDENTIAL DEVELOPMENT</b>										
- Population Growth in New Units	697	697	697	697	697	697	697	697	697	697
<b>REVENUE</b>										
- DC Receipts: Inflated	\$413.3	\$421.6	\$430.0	\$438.6	\$447.4	\$456.3	\$465.5	\$474.8	\$484.3	\$494.0
<b>INTEREST</b>										
- Interest on Opening Balance	\$0.0	\$14.7	\$30.2	\$46.6	\$63.9	\$82.0	\$101.2	\$121.3	\$57.6	\$76.8
- Interest on In-year Transactions	\$7.2	\$7.4	\$7.5	\$7.7	\$7.8	\$8.0	\$8.1	(\$52.0)	\$8.5	\$8.6
<b>TOTAL REVENUE</b>	<b>\$420.5</b>	<b>\$443.7</b>	<b>\$467.8</b>	<b>\$492.9</b>	<b>\$519.1</b>	<b>\$546.3</b>	<b>\$574.8</b>	<b>\$544.1</b>	<b>\$550.3</b>	<b>\$579.5</b>
CLOSING CASH BALANCE	\$420.5	\$864.2	\$1,332.0	\$1,824.9	\$2,344.0	\$2,890.3	\$3,465.1	\$1,644.3	\$2,194.7	\$2,774.1

<b>WATER: RESIDENTIAL</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>	<b>2032</b>	<b>2033</b>	<b>2034</b>	<b>2035</b>	<b>2036</b>	<b>TOTAL</b>
OPENING CASH BALANCE (\$000)	\$2,774.1	\$3,383.8	\$4,025.2	(\$2,840.1)	(\$2,452.2)	(\$2,032.2)	(\$1,577.9)	(\$1,087.4)	(\$558.3)	
<b>2018 to 2036 RESIDENTIAL FUNDING REQUIREMENTS</b>										
Water: Residential: Non Inflated	\$0.0	\$0.0	\$5,789.8	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	<b>\$7,848.5</b>
Water: Residential: Inflated	\$0.0	\$0.0	\$7,342.8	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	<b>\$9,707.7</b>
<b>NEW RESIDENTIAL DEVELOPMENT</b>										
- Population Growth in New Units	697	697	697	697	697	697	697	697	697	<b>13,243</b>
<b>REVENUE</b>										
- DC Receipts: Inflated	\$503.8	\$513.9	\$524.2	\$534.7	\$545.4	\$556.3	\$567.4	\$578.7	\$590.3	<b>\$9,440.5</b>
<b>INTEREST</b>										
- Interest on Opening Balance	\$97.1	\$118.4	\$140.9	(\$156.2)	(\$134.9)	(\$111.8)	(\$86.8)	(\$59.8)	(\$30.7)	<b>\$370.6</b>
- Interest on In-year Transactions	\$8.8	\$9.0	(\$187.5)	\$9.4	\$9.5	\$9.7	\$9.9	\$10.1	\$10.3	<b>(\$91.8)</b>
<b>TOTAL REVENUE</b>	<b>\$609.7</b>	<b>\$641.3</b>	<b>\$477.6</b>	<b>\$387.9</b>	<b>\$420.1</b>	<b>\$454.3</b>	<b>\$490.5</b>	<b>\$529.0</b>	<b>\$569.9</b>	<b>\$9,719.3</b>
CLOSING CASH BALANCE	\$3,383.8	\$4,025.2	(\$2,840.1)	(\$2,452.2)	(\$2,032.2)	(\$1,577.9)	(\$1,087.4)	(\$558.3)	\$11.6	

<b>2018 Adjusted Charge Per Capita</b>	<b>\$ 593</b>
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<b>Allocation of Capital Program</b>	
Residential Sector	55%
Non-Residential Sector	45%
<b>Rates for 2018</b>	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

SANDWICH SOUTH PLANNING DISTRICT  
WATER SERVICES 2018-2036  
CASHFLOW AND DETERMINATION OF NON-RESIDENTIAL: INDUSTRIAL DEVELOPMENT CHARGE

WATER: NON-RESIDENTIAL - INDUSTRIAL	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
OPENING CASH BALANCE (\$000)	\$0.0	\$110.2	\$226.5	\$349.1	\$478.2	\$614.2	\$757.4	\$908.0	\$431.4	\$575.7
2018 to 2036 NON-RESIDENTIAL FUNDING REQUIREMENTS										
Water: Non-Residential - Industrial: Non: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$539.0	\$0.0	\$0.0
Water: Non-Residential - Industrial: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$619.2	\$0.0	\$0.0
NEW NON-RESIDENTIAL DEVELOPMENT										
- New Industrial Building GFA - square metres	18,264	18,264	18,264	18,264	18,264	18,264	18,264	18,264	18,264	18,264
REVENUE										
- DC Receipts: Inflated	\$108.3	\$110.5	\$112.7	\$114.9	\$117.2	\$119.6	\$122.0	\$124.4	\$126.9	\$129.4
INTEREST										
- Interest on Opening Balance	\$0.0	\$3.9	\$7.9	\$12.2	\$16.7	\$21.5	\$26.5	\$31.8	\$15.1	\$20.1
- Interest on In-year Transactions	\$1.9	\$1.9	\$2.0	\$2.0	\$2.1	\$2.1	\$2.1	(\$13.6)	\$2.2	\$2.3
TOTAL REVENUE	\$110.2	\$116.3	\$122.6	\$129.1	\$136.0	\$143.2	\$150.6	\$142.6	\$144.2	\$151.8
CLOSING CASH BALANCE	\$110.2	\$226.5	\$349.1	\$478.2	\$614.2	\$757.4	\$908.0	\$431.4	\$575.7	\$727.5

WATER: NON-RESIDENTIAL - INDUSTRIAL	2028	2029	2030	2031	2032	2033	2034	2035	2036	TOTAL
OPENING CASH BALANCE (\$000)	\$727.5	\$887.2	\$1,055.4	(\$741.9)	(\$640.1)	(\$529.9)	(\$410.7)	(\$282.0)	(\$143.2)	
2018 to 2036 NON-RESIDENTIAL FUNDING REQUIREMENTS										
Water: Non-Residential - Industrial: Non: Inflated	\$0.0	\$0.0	\$1,515.9	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$2,054.9
Water: Non-Residential - Industrial: Inflated	\$0.0	\$0.0	\$1,922.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$2,541.7
NEW NON-RESIDENTIAL DEVELOPMENT										
- New Industrial Building GFA - square metres	18,264	18,264	18,264	18,264	18,264	18,264	18,264	18,264	18,264	347,009
REVENUE										
- DC Receipts: Inflated	\$132.0	\$134.7	\$137.4	\$140.1	\$142.9	\$145.8	\$148.7	\$151.7	\$154.7	\$2,473.9
INTEREST										
- Interest on Opening Balance	\$25.5	\$31.1	\$36.9	(\$40.8)	(\$35.2)	(\$29.1)	(\$22.6)	(\$15.5)	(\$7.9)	\$98.1
- Interest on In-year Transactions	\$2.3	\$2.4	(\$49.1)	\$2.5	\$2.5	\$2.6	\$2.6	\$2.7	\$2.7	(\$24.0)
TOTAL REVENUE	\$159.8	\$168.1	\$125.2	\$101.7	\$110.2	\$119.2	\$128.7	\$138.8	\$149.5	\$2,548.0
CLOSING CASH BALANCE	\$887.2	\$1,055.4	(\$741.9)	(\$640.1)	(\$529.9)	(\$410.7)	(\$282.0)	(\$143.2)	\$6.4	

<b>2018 Adjusted Charge Per Square Metre</b>	<b>\$5.93</b>
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<b>Allocation of Capital Program</b>	
Residential Sector	55%
Non-Residential Sector	45%
<b>Non-Residential Allocation</b>	
Industrial	32%
Non-Industrial	68%
<b>Rates for 2018</b>	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

SANDWICH SOUTH PLANNING DISTRICT  
WATER SERVICES 2018-2036  
CASHFLOW AND DETERMINATION OF NON-RESIDENTIAL: NON-INDUSTRIAL DEVELOPMENT CHARGE

WATER: NON-RESIDENTIAL - NON-INDUSTRIAL	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
OPENING CASH BALANCE (\$000)	\$0.0	\$233.8	\$480.5	\$740.6	\$1,014.7	\$1,303.4	\$1,607.2	\$1,926.8	\$913.6	\$1,219.6
2018 to 2036 NON-RESIDENTIAL FUNDING REQUIREMENTS										
Water: Non-Residential - Non-Industrial: Non: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$1,145.4	\$0.0	\$0.0
Water: Non-Residential - Non-Industrial: Inflated	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$1,315.7	\$0.0	\$0.0
NEW NON-RESIDENTIAL DEVELOPMENT										
- New Non-Industrial Building GFA - square metres	27,657	27,657	27,657	27,657	27,657	27,657	27,657	27,657	27,657	27,657
REVENUE										
- DC Receipts: Inflated	\$229.8	\$234.4	\$239.1	\$243.9	\$248.8	\$253.8	\$258.8	\$264.0	\$269.3	\$274.7
INTEREST										
- Interest on Opening Balance	\$0.0	\$8.2	\$16.8	\$25.9	\$35.5	\$45.6	\$56.3	\$67.4	\$32.0	\$42.7
- Interest on In-year Transactions	\$4.0	\$4.1	\$4.2	\$4.3	\$4.4	\$4.4	\$4.5	(\$28.9)	\$4.7	\$4.8
TOTAL REVENUE	\$233.8	\$246.7	\$260.1	\$274.1	\$288.7	\$303.9	\$319.6	\$302.5	\$306.0	\$322.2
CLOSING CASH BALANCE	\$233.8	\$480.5	\$740.6	\$1,014.7	\$1,303.4	\$1,607.2	\$1,926.8	\$913.6	\$1,219.6	\$1,541.8

WATER: NON-RESIDENTIAL - NON-INDUSTRIAL	2028	2029	2030	2031	2032	2033	2034	2035	2036	TOTAL
OPENING CASH BALANCE (\$000)	\$1,541.8	\$1,880.8	\$2,237.5	(\$1,582.3)	(\$1,366.9)	(\$1,133.4)	(\$881.1)	(\$608.5)	(\$314.5)	
2018 to 2036 NON-RESIDENTIAL FUNDING REQUIREMENTS										
Water: Non-Residential - Non-Industrial: Non: Inflated	\$0.0	\$0.0	\$3,221.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$4,366.6
Water: Non-Residential - Non-Industrial: Inflated	\$0.0	\$0.0	\$4,085.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$5,401.0
NEW NON-RESIDENTIAL DEVELOPMENT										
- New Non-Industrial Building GFA - square metres	27,657	27,657	27,657	27,657	27,657	27,657	27,657	27,657	27,657	525,483
REVENUE										
- DC Receipts: Inflated	\$280.2	\$285.8	\$291.5	\$297.3	\$303.3	\$309.3	\$315.5	\$321.8	\$328.3	\$5,249.6
INTEREST										
- Interest on Opening Balance	\$54.0	\$65.8	\$78.3	(\$87.0)	(\$75.2)	(\$62.3)	(\$48.5)	(\$33.5)	(\$17.3)	\$204.7
- Interest on In-year Transactions	\$4.9	\$5.0	(\$104.3)	\$5.2	\$5.3	\$5.4	\$5.5	\$5.6	\$5.7	(\$51.1)
TOTAL REVENUE	\$339.1	\$356.6	\$265.5	\$215.5	\$233.4	\$252.4	\$272.6	\$294.0	\$316.7	\$5,403.2
CLOSING CASH BALANCE	\$1,880.8	\$2,237.5	(\$1,582.3)	(\$1,366.9)	(\$1,133.4)	(\$881.1)	(\$608.5)	(\$314.5)	\$2.2	

<b>2018 Adjusted Charge Per Square Metre</b>	<b>\$8.31</b>
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<b>Allocation of Capital Program</b>	
Residential Sector	55%
Non-Residential Sector	45%
<b>Non-Residential Allocation</b>	
Industrial	32%
Non-Industrial	68%
<b>Rates for 2018</b>	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

## **APPENDIX C**

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### ***LONG-TERM CAPITAL AND OPERATING COSTS***

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APPENDIX C

TABLE 1

**SANDWICH SOUTH PLANNING DISTRICT  
ESTIMATED NET OPERATING COST OF THE PROPOSED  
DEVELOPMENT-RELATED CAPITAL PROGRAM  
(in constant 2018 dollars)**

	Net Cost (in 2018\$)	Estimated Operating Costs (\$000)									
		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
<b>Roads And Related</b>		\$85.1	\$170.2	\$255.3	\$340.3	\$425.4	\$510.5	\$595.6	\$680.7	\$765.8	\$850.9
- Development-Related Roads Infrastructure	\$325 per household	\$85.1	\$170.2	\$255.3	\$340.3	\$425.4	\$510.5	\$595.6	\$680.7	\$765.8	\$850.9
<b>Sanitary Sewer</b>		\$0.0	\$0.0	\$1.0	\$2.0	\$3.0	\$4.0	\$5.0	\$6.0	\$7.0	\$8.0
- Rate supported service - no additional op costs		\$0.0	\$0.0	\$1.0	\$2.0	\$3.0	\$4.0	\$5.0	\$6.0	\$7.0	\$8.0
<b>Storm Sewer &amp; Municipal Drains</b>		\$0.0	\$0.0	\$1.0	\$2.0	\$3.0	\$4.0	\$5.0	\$6.0	\$7.0	\$8.0
- Rate supported service - no additional op costs		\$0.0	\$0.0	\$1.0	\$2.0	\$3.0	\$4.0	\$5.0	\$6.0	\$7.0	\$8.0
<b>Water</b>		\$0.0	\$0.0	\$1.0	\$2.0	\$3.0	\$4.0	\$5.0	\$6.0	\$7.0	\$8.0
- Rate supported service - no additional op costs		\$0.0	\$0.0	\$1.0	\$2.0	\$3.0	\$4.0	\$5.0	\$6.0	\$7.0	\$8.0
<b>TOTAL ESTIMATED OPERATING COSTS</b>		\$85.1	\$170.2	\$258.3	\$346.3	\$434.4	\$522.5	\$610.6	\$698.7	\$786.8	\$874.9

	Net Cost (in 2018\$)	Estimated Operating Costs (\$000)								
		2028	2029	2030	2031	2032	2033	2034	2035	2036
<b>Roads And Related</b>		\$936.0	\$1,021.0	\$1,106.1	\$1,191.2	\$1,276.3	\$1,361.4	\$1,446.5	\$1,531.6	\$1,616.6
- Development-Related Roads Infrastructure	\$325 per household	\$936.0	\$1,021.0	\$1,106.1	\$1,191.2	\$1,276.3	\$1,361.4	\$1,446.5	\$1,531.6	\$1,616.6
<b>Sanitary Sewer</b>		\$9.0	\$10.0	\$11.0	\$12.0	\$13.0	\$14.0	\$15.0	\$16.0	\$17.0
- Rate supported service - no additional op costs		\$9.0	\$10.0	\$11.0	\$12.0	\$13.0	\$14.0	\$15.0	\$16.0	\$17.0
<b>Storm Sewer &amp; Municipal Drains</b>		\$9.0	\$10.0	\$11.0	\$12.0	\$13.0	\$14.0	\$15.0	\$16.0	\$17.0
- Rate supported service - no additional op costs		\$9.0	\$10.0	\$11.0	\$12.0	\$13.0	\$14.0	\$15.0	\$16.0	\$17.0
<b>Water</b>		\$9.0	\$10.0	\$11.0	\$12.0	\$13.0	\$14.0	\$15.0	\$16.0	\$17.0
- Rate supported service - no additional op costs		\$9.0	\$10.0	\$11.0	\$12.0	\$13.0	\$14.0	\$15.0	\$16.0	\$17.0
<b>TOTAL ESTIMATED OPERATING COSTS</b>		\$963.0	\$1,051.0	\$1,139.1	\$1,227.2	\$1,315.3	\$1,403.4	\$1,491.5	\$1,579.6	\$1,667.6



APPENDIX E  
TABLE 2SANDWICH SOUTH PLANNING DISTRICT  
SUMMARY OF TAX SUPPORTED FUNDING REQUIREMENTS

Net Capital Cost of Development-Related Projects	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)	2022 (\$000)	2023 (\$000)	2024 (\$000)	2025 (\$000)	2026 (\$000)	2027 (\$000)
<b>ROADS AND RELATED</b>										
Total Net Cost (1)	7,848.5	7,848.5	7,848.5	9,701.9	7,701.9	8,701.9	34,192.6	34,192.6	34,192.6	34,192.6
Net Cost From Development Charges (2)	4,591.5	4,591.5	4,591.5	5,253.6	4,561.6	4,907.6	12,625.9	12,625.9	12,625.9	12,625.9
Net Cost From Non-DC Sources	3,257.0	3,257.0	3,257.0	4,448.3	3,140.3	3,794.3	21,566.8	21,566.8	21,566.8	21,566.8
- City-wide DC Share (3)	1,061.8	1,061.8	1,061.8	1,039.8	1,039.8	1,039.8	4,051.9	4,051.9	4,051.9	4,051.9
- Replacement & Benefit to Existing	770.2	770.2	770.2	1,270.2	770.2	1,020.2	6,767.1	6,767.1	6,767.1	6,767.1
- For Post 2036 Development (4)	1,425.1	1,425.1	1,425.1	2,138.4	1,330.3	1,734.4	10,747.7	10,747.7	10,747.7	10,747.7
<b>SANITARY SEWER</b>										
Total Net Cost (1)	13,335.9	1,090.9	1,090.9	1,017.6	1,017.6	1,017.6	1,017.6	1,017.6	1,017.6	1,017.6
Net Cost From Development Charges (2)	4,056.3	411.3	411.3	396.3	396.3	396.3	396.3	396.3	396.3	396.3
Net Cost From Non-DC Sources	9,279.7	679.6	679.6	621.3	621.3	621.3	621.3	621.3	621.3	621.3
- City-wide DC Share (3)	3,170.3	37.8	37.8	26.8	26.8	26.8	26.8	26.8	26.8	26.8
- Replacement & Benefit to Existing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- For Post 2036 Development (4)	6,109.3	641.9	641.9	594.5	594.5	594.5	594.5	594.5	594.5	594.5
<b>STORM SEWER &amp; MUNICIPAL DRAINS</b>										
Total Net Cost (1)	1,795.0	1,230.0	1,900.0	853.3	1,523.3	853.3	13,758.1	12,904.8	12,904.8	12,904.8
Net Cost From Development Charges (2)	476.5	295.2	683.8	396.8	557.6	396.8	4,911.1	4,514.3	4,514.3	4,514.3
Net Cost From Non-DC Sources	1,318.6	934.8	1,216.2	456.5	965.7	456.5	8,847.0	8,390.5	8,390.5	8,390.5
- City-wide DC Share (3)	0.0	0.0	0.0	4.1	4.1	4.1	4.1	0.0	0.0	0.0
- Replacement & Benefit to Existing	0.0	0.0	0.0	155.8	155.8	155.8	162.5	6.7	6.7	6.7
- For Post 2036 Development (4)	1,318.6	934.8	1,216.2	296.6	805.8	296.6	8,680.4	8,383.8	8,383.8	8,383.8
<b>WATER</b>										
Total Net Cost (1)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14,304.9	0.0	0.0
Net Cost From Development Charges (2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3,743.3	0.0	0.0
Net Cost From Non-DC Sources	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10,561.6	0.0	0.0
- City-wide DC Share (3)	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	7,829.3	0.0	0.0
- For Post 2036 Development (4)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2,732.3	0.0	0.0
<b>TOTAL MUNICIPAL SERVICES</b>										
Total Net Cost (1)	22,979.5	10,169.5	10,839.5	11,572.7	10,242.7	10,572.7	48,968.3	62,420.0	48,115.1	48,115.1
Net Cost From Development Charges (2)	9,124.2	5,298.0	5,686.6	6,046.7	5,515.5	5,700.7	17,933.3	21,279.8	17,536.5	17,536.5
Net Cost From Non-DC Sources	13,855.2	4,871.5	5,152.9	5,526.1	4,727.2	4,872.0	31,035.0	41,140.2	30,578.5	30,578.5
- City-wide DC Share (3)	4,232.1	1,099.5	1,099.5	1,070.7	1,070.7	1,070.7	4,082.9	4,078.7	4,078.7	4,078.7
- Replacement & Benefit to Existing	770.2	770.2	770.2	1,426.0	926.0	1,176.0	6,929.6	14,603.2	6,773.9	6,773.9
- For Post 2036 Development (4)	8,853.0	3,001.7	3,283.1	3,029.4	2,730.6	2,625.4	20,022.5	22,458.2	19,725.9	19,725.9

Net Capital Cost of Development-Related Projects	2028 (\$000)	2029 (\$000)	2030 (\$000)	2031 (\$000)	2032 (\$000)	2033 (\$000)	2034 (\$000)	2035 (\$000)	2036 (\$000)	TOTAL (\$000)
<b>ROADS AND RELATED</b>										
Total Net Cost (1)	34,192.6	33,642.6	33,642.6	33,642.6	33,642.6	33,642.6	25,940.8	25,940.8	25,940.8	466,650.0
Net Cost From Development Charges (2)	12,625.9	12,435.6	12,435.6	12,435.6	12,435.6	12,435.6	7,874.0	7,874.0	7,874.0	177,426.7
Net Cost From Non-DC Sources	21,566.8	21,207.0	21,207.0	21,207.0	21,207.0	21,207.0	18,066.8	18,066.8	18,066.8	289,223.3
- City-wide DC Share (3)	4,051.9	4,051.9	4,051.9	4,051.9	4,051.9	4,051.9	3,012.2	3,012.2	3,012.2	55,860.6
- Replacement & Benefit to Existing	6,767.1	6,629.6	6,629.6	6,629.6	6,629.6	6,629.6	5,859.5	5,859.5	5,859.5	89,933.5
- For Post 2036 Development (4)	10,747.7	10,525.4	10,525.4	10,525.4	10,525.4	10,525.4	9,195.1	9,195.1	9,195.1	143,429.2
<b>SANITARY SEWER</b>										
Total Net Cost (1)	1,148.8	1,148.8	1,148.8	1,148.8	1,148.8	1,148.8	1,148.8	1,148.8	1,148.8	32,980.0
Net Cost From Development Charges (2)	459.5	459.5	459.5	459.5	459.5	459.5	459.5	459.5	459.5	11,788.7
Net Cost From Non-DC Sources	689.3	689.3	689.3	689.3	689.3	689.3	689.3	689.3	689.3	21,191.3
- City-wide DC Share (3)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3,433.5
- Replacement & Benefit to Existing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- For Post 2036 Development (4)	689.3	689.3	689.3	689.3	689.3	689.3	689.3	689.3	689.3	17,757.9
<b>STORM SEWER &amp; MUNICIPAL DRAINS</b>										
Total Net Cost (1)	12,904.8	12,904.8	12,904.8	12,904.8	12,904.8	12,904.8	12,904.8	12,904.8	12,904.8	176,771.0
Net Cost From Development Charges (2)	4,514.3	4,514.3	4,514.3	4,514.3	4,514.3	4,514.3	4,514.3	4,514.3	4,514.3	61,889.8
Net Cost From Non-DC Sources	8,390.5	8,390.5	8,390.5	8,390.5	8,390.5	8,390.5	8,390.5	8,390.5	8,390.5	114,881.2
- City-wide DC Share (3)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.5
- Replacement & Benefit to Existing	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	710.6
- For Post 2036 Development (4)	8,383.8	8,383.8	8,383.8	8,383.8	8,383.8	8,383.8	8,383.8	8,383.8	8,383.8	114,154.1
<b>WATER</b>										
Total Net Cost (1)	0.0	0.0	18,181.5	0.0	0.0	0.0	0.0	0.0	0.0	32,486.4
Net Cost From Development Charges (2)	0.0	0.0	10,526.8	0.0	0.0	0.0	0.0	0.0	0.0	14,270.1
Net Cost From Non-DC Sources	0.0	0.0	7,654.7	0.0	0.0	0.0	0.0	0.0	0.0	18,216.3
- City-wide DC Share (3)	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	1,390.4	0.0	0.0	0.0	0.0	0.0	0.0	9,219.7
- For Post 2036 Development (4)	0.0	0.0	6,264.3	0.0	0.0	0.0	0.0	0.0	0.0	8,996.6
<b>TOTAL MUNICIPAL SERVICES</b>										
Total Net Cost (1)	48,246.3	47,696.3	65,877.8	47,696.3	47,696.3	47,696.3	39,994.4	39,994.4	39,994.4	708,887.4
Net Cost From Development Charges (2)	17,599.7	17,409.4	27,936.3	17,409.4	17,409.4	17,409.4	12,847.8	12,847.8	12,847.8	265,375.3
Net Cost From Non-DC Sources	30,646.5	30,286.8	37,941.5	30,286.8	30,286.8	30,286.8	27,146.6	27,146.6	27,146.6	443,512.1
- City-wide DC Share (3)	4,051.9	4,051.9	4,051.9	4,051.9	4,051.9	4,051.9	3,012.2	3,012.2	3,012.2	59,310.5
- Replacement & Benefit to Existing	6,773.9	6,636.4	8,026.7	6,636.4	6,636.4	6,636.4	5,866.2	5,866.2	5,866.2	99,863.8
- For Post 2036 Development (4)	19,820.7	19,598.5	25,862.8	19,598.5	19,598.5	19,598.5	18,268.2	18,268.2	18,268.2	284,337.8

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

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

(3) Portion of development-related capital program attributed to the 2015 City-wide DC by-law.

(4) Post 2036 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 D**

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### ***ASSET MANAGEMENT PLAN***

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**APPENDIX D**

**ASSET MANAGEMENT PLAN**

*NTD – Asset Management Plan to be completed following May 10, 2018 Task Force meeting.*

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