

AGENDA
and Schedule "A" to the minutes of the meeting of the
**INTERIM DEVELOPMENT CHARGES TASK FORCE – SANDWICH SOUTH
PLANNING DISTRICT**
held Thursday, May 10, 2018
at 3:00 o'clock p.m.
Council Chambers, City Hall

1. **CALL TO ORDER**

2. **DECLARATIONS OF CONFLICT**

3. **Adoption of the Minutes**

Adoption of the minutes of the meeting held March 7, 2018 – ***attached***.

4. **BUSINESS ITEMS**

Presentation by Hemson Consulting Ltd.

- The PowerPoint Presentation entitled "City of Windsor Interim Development Charges Study for the Sandwich South Planning District – Draft Results" – ***to be e-mailed***.

- The report of the Deputy Treasurer, Financial Planning entitled "Draft 2018 Interim Development Charges Background Study and DC Bylaw for the Sandwich South Planning District - ***attached***."

5. **ADJOURNMENT**

**Interim Development Charges Task Force -
Sandwich South Planning District (SSPD)
Meeting held March 7, 2018**

A meeting of the Interim Development Charges Task Force – SSPD is held this day commencing at 3:00 o'clock p.m. in the Council Chambers, 3rd floor, City Hall, there being present the following members:

Councillor Hilary Payne, Chair
Councillor Rino Bortolin
Councillor Chris Holt
Councillor Ed Sleiman
Tony Rosati (Non-voting)

Also present are the following administrative personnel:

Craig Binning, Project Director, HEMSON Consulting Ltd.
Julia Cziraky, Day-to-Day Consultant, HEMSON Consulting Ltd.
Jim Abbs, Planner III
Tony Ardovini, Deputy Treasurer – Financial Planning
Michael Cooke, Manager, Planning Policy
Natasha Couvillon, Manager, Performance Measurement
Dwayne Dawson, Executive Director, Operations
Anna Godo, Engineer III
Wes Hicks, Senior Manager, Infrastructure, & Geomatics
Joe Mancina, City Treasurer
Chris Manson, Senior Manager of Pollution Control
John Revell, Chief Building Official
Gary Rossi, Vice President of Enwin Water Operations
France Isabelle Tunks, Senior Manager Development Projects, R.O.W.
Wira Vendrasco, Deputy City Solicitor
Pat Winters, Development Engineer
Mark Winterton, City Engineer
Karen Kadour, Committee Coordinator

1. Call to Order

The Committee Coordinator calls the meeting to order at 3:02 o'clock p.m. and the Task Force considers the Agenda being Schedule "A" **attached** hereto, matters which are dealt with as follows:

2. Election of Chair

The Committee Coordinator calls for nominations from the floor for the position of Chair. Councillor Holt nominates Councillor Payne, seconded by Councillor Bortolin. The Committee Coordinator asks if there are further nominations from the floor. Seeing none, the Committee Coordinator asks Councillor Payne if he accepts. Councillor Payne accepts and assumes the Chair.

Moved by Councillor Holt, seconded by Councillor Bortolin,
That Councillor Payne **BE ELECTED** Chair of the Interim Development Charges Task Force – Sandwich South Planning District.
Carried.

4. Business Items

The presentation entitled “City of Windsor Interim Development Charges Study for the Sandwich South Planning District – Task Force Meeting #1” provided by Craig Binning and Julia Cziraky, HEMSON Consulting Inc. is distributed and **attached** as Appendix “A”. The highlights of the presentation are as follows:

- Development charges (DC) are fees imposed on developments to fund “growth-related” capital costs.
- Development charges pay for new infrastructure and facilities to maintain service levels.
- The principle is “growth pays for growth” so that the financial burden is not borne by existing tax/rate payers.
- The City of Windsor passed the Development Charges By-law 60-2015 in June 2015 which imposed City-wide development charges for General Services and Engineering Services. This By-law expires on June 1, 2020.
- City to examine an areas specific development charge (ASDC) By-law for the Sandwich South Planning District (SSPD).
 - Set ASDC rates for Engineered Services only
 - Existing City-wide DC By-law will still apply in SSPD
 - Anticipate aligning by-laws as part of the 2020 update
- The Sandwich South ASDC to be limited to engineered services such as:
 - Roads
 - Sanitary Sewage - Linear, Pollution Control to be covered by existing City-Wide DC
 - Water Services (Enwin) – Linear & Storage, Water Supply to be covered by existing City-Wide DC
- ASDC study to exclude Airport and Solar Farm lands
- Growth within the study area to 2036 will occur within the East Pelton and County Road 42 Secondary Plan areas.
- Key steps in passing a DC Bylaw includes the following:

- Release DC background study 60 days prior to by-law passage
- Advertise public meeting
- Release DC study and proposed by-law
- Hold statutory public meeting of Council
- Receive feedback and amend proposed charges and by-law if warranted
- Determine if additional public meeting is required
- By-law passage by Council

Councillor Holt refers to the possibility of the new megahospital and asks, as this structure is a regional institution, are there opportunities to receive funding from surrounding municipalities. C. Binning replies the legislation does not provide for this.

Councillor Holt states in terms of population projections, what has changed, and what was the process to gather the numbers, specifically in the Sandwich South Lands (indicated on slide 11 of the presentation). C. Binning states the development that has been summarized relates to the secondary plan areas for East Pelton and County Road 42 and the lands within those that have been designated both for residential and non-residential.

Councillor Holt asks if we are projecting population growth or population shifting. C. Binning responds that in these areas it is anticipated there will be new dwelling units and populated growth. As the development of the land occurs, there will be infrastructure needs. There are some general services for a flat population and not really changing and development can make use of capacity being freed up by decline of the base population. It is related to the land being developed and the population occurring with the land from which the infrastructure needs arise.

In response to a question asked by Councillor Sleiman regarding if all development charges in the city will expire in 2020, C. Binning recommends that the by-law be implemented and allow it to have the maximum potential life so, when the City moves to update the city-wide by-law in late 2019, that consideration be given to updating both by-laws.

Councillor Sleiman asks if the consultant will be working with the Planning Department, City Engineers, and the Windsor Utilities Commission. C. Binning states they have met with the key departments and are looking for them to identify infrastructure and development needs in the area.

Councillor Bortolin refers to the Preliminary Residential Development Forecast and asks how the breakdown – residential versus employment was developed. C. Binning states in terms of the development of these numbers, they looked at the land areas in each of the two areas. The land areas are designated according to those that are available to accommodate single detached units and multiple and high density units. East Pelton has a target density ratio for the single family and looked at the development potential according to the lands designated by each of the types of activities and density assumptions.

In response to a question asked by Councillor Bortolin regarding if the lands for high density, multi-use units are baked into Planning Policy and could the lands be used for single detached units. C. Binning replies the method in which the numbers were developed is consistent with the planning policies and documents related to the secondary plan area and it is assumed the lands were designated for these types of uses.

Councillor Bortolin questions if there is a definitive answer regarding if the new megahospital will be required to pay development charges. W. Vendrasco responds this question has been examined and adds the hospital will be subject to development charges.

Tony Rosati states that it is projected that 4,500 residential units will be built between the years 2018-2036, which averages to 250 units being built annually. He asks how this compares to the current build units. J. Revell responds development was slow in the area of the airport lands and notes 100 houses were built in 2017.

The Chair indicates (as identified in slide 10 of the presentation) that the charges to the study area or brown area (East Pelton and County Road 42) do not apply to the green area of the Town of Tecumseh transfer lands. He questions if the development charges approved in 2015 will apply to the brown area. C. Binning replies the existing city-wide development charges apply to any development within the city. He adds Sandwich South was not included in the denominator of the calculations because it was not known and the vast majority of the infrastructure that was identified as providing benefit to Sandwich South was removed from the calculations. He further notes the intent is to recognize that development in the Sandwich South area is resulting in incremental addition of infrastructure that is beyond what's required for servicing elsewhere in the city. However, there is some potential within some sub components such as sewage treatment for some overlaps and that will be accounted for in the calculations to net out any double counts.

The Chair asks if the charges for the brown areas will be the only charges for that area. C. Binning indicates the charges for the brown areas will be subject to the existing city-wide development charges as that covers a full range of services that are not being examined at this time.

The Chair questions if there will be duplicate engineering charges for the brown area. C. Binning responds there are still components within the city-wide engineering occurring within the two brown areas, so there will be charges within the city-wide, i.e. road infrastructure, plus what will be discovered in the area specific findings. They will need to ensure infrastructure costs are only included once.

In terms of next steps, C. Binning advises the draft background study in its entirety including a calculation of the findings will be provided at the next meeting to be held on May 10, 2018.

J. Mancina states an administrative report will be provided for the May 10, 2018 meeting, which will be circulated, to City Council in advance of the meeting.

5. Adjournment

There being no further business, the meeting is adjourned at 3:58 o'clock p.m.

CHAIR

COMMITTEE COORDINATOR

AGENDA
and Schedule “A” to the minutes of the meeting of the
INTERIM DEVELOPMENT CHARGES TASK FORCE – SANDWICH
SOUTH PLANNING DISTRICT
held Wednesday, March 7, 2018
at 3:00 o’clock p.m.
Council Chambers, City Hall

1. **CALL TO ORDER**
Introduction of members

2. **ELECTION OF CHAIR**

3. **DECLARATIONS OF CONFLICT**

4. **BUSINESS ITEMS**
Presentation by Hemson Consulting Ltd.
 - a. What are Development Charges?
 - b. Development Charges in Windsor
 - c. Area-Specific Development Charges Study Process
 - d. Preliminary Draft Development Forecast
 - e. Capital Program: Considerations and Information Needs
 - f. Next StepsQuestions and Discussion

5. **ADJOURNMENT**

Subject: Draft 2018 Interim Development Charges (DC) Background Study and DC Bylaw for the Sandwich South Planning District (SSPD)

Reference:

Date to Committee: May 10, 2018
Author: Tony Ardovini
Deputy Treasurer, Financial Planning
(519) 255-6100 Ext 6223
tardovini@citywindsor.ca
Financial Planning
Report Date: 04/23/2018
Clerk's File #:

To: Members of Interim DC Task Force for the SSPD

Recommendation:

Recommendation for the May 10, 2018 Interim DC Task Force – SSPD Meeting

THAT the Interim Development Charges Task Force for SSPD **RECOMMEND TO CITY COUNCIL** that the new 2018 Development Charges (DC) Bylaw for the SSPD be approved on the basis of the following main parameters:

1. The Implementation of the new Area Specific DC rates for the Sandwich South Planning District as calculated by Hemson Consulting (detailed in Appendix A) in accordance with the governing legislation. More specifically, that the new rates be implemented in full as calculated in the Interim Development Charges Background Study for the SSPD.
2. That the Industrial development exemption policy should continue. The current practice of exempting all industrial development from development charges should continue in the new area specific DC Bylaw.
3. That the new Area Specific DC rates for the SSPD be adjusted annually in accordance with the most recent annual change in Statistics Canada Quarterly Construction Price Statistics (Catalogue No. 62-007). This will allow the DC revenues to preserve purchasing power to keep pace with the increasing costs of development expenditures and remain consistent with the City-wide Bylaw.
4. That the two DC Bylaws (i.e. City-Wide and Interim ASDC) be aligned as part of the 2020 DC Bylaw update.

5. That the current City-wide Bylaw #60-2015 remain in effect for the remainder of the City.

Recommendation for June 18, 2018 Public Meeting

THAT City Council **APPROVE** the April 30, 2018 Interim Development Charges Background Study for the Sandwich South Planning District, along with recommendations from the Interim Development Charges Task Force - SSPD, and that the new Interim Development Charges (DC) Bylaw for the SSPD **Be Brought Back** to City Council for Final Approval on July 23, 2018.

Recommendation for the July 23, 2018 Council Meeting

1. THAT City Council **PASS** the Sandwich South Planning District Area Specific Development Charges Bylaw #XX-XXXX effective August 1, 2018 with the rates outlined below, and policies & CPI indexing as recommended by the Interim DC Task Force – SSPD and approved by City Council.

The schedule of development charges imposed by Schedule B of the Sandwich South Planning District Area Specific Bylaw #XX-XXXX are as follows:

Single Detached Units	\$XX,XXX / unit
Semi, Row, Townhouse Units	\$XX,XXX / unit
Apartment	\$XX,XXX / unit
Industrial Development	\$0 / Square Metre of GFA
Other Non-Residential Development	\$XXX.XX / Square Metre of GFA

The City-wide General Services and Pollution Control charges will continue to apply to the Sandwich South Planning District Area Specific Rates and are subject to annual phasing-in and indexing.

- 2) That City Council indicates its **INTENT** to ensure that the increase in the need for services attributable to the anticipated development, including any capital costs, will be met, by updating its capital budget and forecast where appropriate;
- 3) That City Council indicates its **INTENT** that the future excess capacity identified in the Interim Development Charges Background Study for the SSPD, dated April 30, 2018, prepared by Hemson Consulting Limited, shall be paid for by development charges or other similar charges;
- 4) That no further public meeting pursuant to Section 12 of the Development Charges Act, 1997 is necessary prior to the passage of Bylaw #XX-XXX.

Executive Summary:

Development charges are a very important component of a municipality's capital budget funding strategy. Capital projects relative to roads, sanitary sewers, storm water & drainage, and water distribution, etc., are required to allow for development to proceed in the Sandwich South Planning District. More specifically, the East Pelton and County Road 42 Secondary Plans are proposed to be built out by 2036. Since the last City-wide DC Background was completed in 2015, proposed development has accelerated, requiring the City to complete an interim Area Specific Background Study for this area.

If appropriate development charges rates are not implemented to support the new growth related capital costs, the only alternative is to subsidize that growth by increasing the property taxes of existing taxpayers or to reduce expenditures (which then results in a degradation of service, as roads aren't maintained as well, etc.).

Higher property taxes and/or lower service levels (inadequate infrastructure, etc.) will also negatively impact the ability to attract new investment or retain existing ones.

The new fully calculated area specific rates for the SSPD being proposed are shown in the following table. The recommendation is for the industrial rate to remain at zero.

Calculation of Sandwich South Planning District ASDC Rates

Service	Charge per Single Detached Unit	Charge per Semi / Row Unit	Charge per Apartment Unit	Charge per sq. m. For Non-Residential (Commercial Development)
Roads & Related	\$25,147	\$16,934	\$12,065	\$101.90
Sanitary Sewer Collection	\$1,865	\$1,256	\$895	\$7.55
Storm Water & Municipal Drains	\$8,584	\$5,781	\$4,118	\$34.79
Water Distribution (WUC)	\$2,052	\$1,382	\$984	\$8.31
Total	\$37,648	\$25,353	\$18,062	\$152.55

NOTE: City-wide General Services and Pollution Control charges continue to apply in addition to these rates.

Background:

At its meeting of January 15, 2018, City Council approved the following Council Resolution:

"B1/2018

- A. That City Council **APPROVE** the timelines for the 2018 Interim Area Specific Development Charge (DC) Background Study and DC Bylaw for the Sandwich South Planning District; and,*
- B. That City Council **APPROVE** the hiring of Hemson Consulting Ltd. through a sole source procurement consistent with the City's Purchasing Bylaw at a cost of \$40,000 plus HST as recommended in the 2018 Capital Budget and **FUNDED** from the DC General Reserve Fund; and,*
- C. That City Council **APPROVE** entering into an agreement with Hemson Consulting Ltd. subject to approval as to legal form by the City Solicitor, and to technical and financial content by the City Treasurer; and,*
- D. That similar to the previous process in 2015, Council **INVITE** stakeholders and other interested parties to participate on a DC Task Force (as non-voting members) when the Committee of Council is established at the beginning of 2018, to provide input on the Interim Area Specific DC Background Study and its related policies, along with the new DC Bylaw.*

Carried."

Report Number: C 240/2017

The previous City Wide DC Background Study was completed on April 10, 2015 and the DC Bylaw passed on May 4, 2015. Due to the challenging economic situation in the Windsor region at the time, the 2015 Background Study and maximum permissible rates were calculated using the "low growth" scenarios contained within the City's Official Plan 5 Year review. The Study also projected zero growth for the Sandwich South Planning District for the period covered by the study. These are the lands that were transferred from the Town of Tecumseh in 2003 comprising of 2,530ha and include Windsor International Airport and the Solar Farm Lands.

The various policy recommendations of the DC Task Force that were approved by City Council and implemented in the 2015 DC Bylaw are summarized below. In accordance with the Development Charges Act (DCA), the revenue losses resulting from the recommended exemptions and phasing in of the DC fees were funded from non-development charge sources such as user fees and the property tax levy.

Industrial Exemption – This exemption was approved to continue and is in alignment with the Planning policies to encourage industrial development. Development Charge revenue loss arising from the exemption was funded from property tax levy and user fees.

Brownfield Re-development – This exemption was approved to be incorporated into the Development Charges By-law. The exemption is for up to a maximum of 60% of the development charges payable, should the redevelopment meet the terms, conditions and requirements established in the Brownfield Re-development Community Improvement Plan.

Residential Infill – The DC Task Force recommended maintaining the incremental approach that was applied to 3 distinct areas in the previous DC Bylaw. The areas were defined as Area 1, Area 2, and Area 3 receiving 25%, 50% and 75% exemptions respectively on the linear component of the engineered services (i.e., roads, sewers, etc.).

The residential infill recommendations continued to form a strategy that encourages infill and intensification within the City core and around Business Improvement Areas. This recommendation supported the goals and defined areas within the Official Plan Review.

In addition, the Planning Department identified the need for a Windsor Neighbourhood Market Value Analysis as the Comprehensive Planning Study to establish refined Development Charge Reductions/Exemptions. This study was intended to identify areas of the City where a DC rate discount would have the greatest impact on core neighbourhoods.

On April 27, 2015, Council passed a motion (M151-2015) that approved the Development Charges (DC) Background Study and accepted the recommendations of the Development Charges Task Force, including the preparation of the necessary by-law (Bylaw 60-2015 passed on May 4, 2015) to establish the new DC rates that took effect on June 1, 2015. Additionally, as part of the same motion, Council allocated \$100,000 to the preparation of a 'Comprehensive Planning Study' that will review the current defined area specific boundaries and residential DC reductions included in the Development Charges By-law.

On August 2, 2016, City Council approved CR496/2016 that adopted and approved the City of Windsor Neighbourhood Market Value Analysis as the "Comprehensive Planning Study" identified in M151-2015, along with the DC Exemptions Boundary Adjustment Recommendations. These recommendations effectively reduced the previous 3 Areas receiving 25%, 50% & 75% exemptions to one core area receiving 100% exemption of engineered (hard) services costs.

Differentiated Non-Residential DC Charge – The DC Bylaw differentiates the non-residential charge between industrial and other non-residential development such that the development charge applicable to both types is consistent with the demand on services provided.

Phase-In of Fully Calculated DC Rates – The DC Bylaw provided a phase-in, or transition, of the increase in the applicable development charges. The rate increase on adoption of the DC Bylaw was equal to 25% of the overall increase between the fully

calculated rates and previous rates. Each subsequent year, the residential charge will increase based on the number of residential permits issued as a percentage of the development forecast. The non-residential charge will increase based on the additional square metres of gross floor area built, based on permits issued, as a percentage of the forecast included in the background study. In each case the cumulative used to calculate the increase would be adjusted upwards each year by 25%, since the increase has to be allocated over four years because the bylaw would expire in the fifth year. The DC rates will also be indexed for inflation annually based on the Construction Price Index.

The table below outlines the current City Wide DC Rates:

Table 1: June 1, 2017 to May 31, 2018 Development Charges

	Single Detached	Semis, Rows & Other Multiples	Apartment	Non Residential per sq ft / sq m
City Wide	\$26,435	\$19,080	\$12,728	\$11.88 / \$127.88
Area 1 (100%)	\$2,005	\$1,447	\$967	\$0.24 / \$2.58

- Plus Non-Municipal Educational Development Charge of \$305.00 per dwelling unit
- Industrial Development is exempt

Discussion:

Why Municipalities Levy Development Charges

As a municipality grows, it requires capital expenditures for a variety of infrastructure such as new or expanded roads, sewers, fire stations, parks, libraries, etc. These expenditures can be financed by way of development charges or alternatively by the general taxpayers. It should be noted that these fees do not replace subdivision agreements with developers that ensure that **local** services are provided; development charges cover **citywide/specific area** services.

Financing by way of development charges is consistent with the user pay principle in that the individuals/companies responsible for, and benefiting from, the growth related expenditures pay for those costs. These fees are typically paid at the time a building permit is issued. Conversely, financing growth related expenditures from the general tax base forces existing taxpayers (who have already paid for the existing infrastructure) to pay again for the new, growth related expenditures. Therefore, the municipality's choice is to forego needed capital expenditures or fund the shortfall from existing taxpayers. Raising the total shortfall from property taxes would increase taxes on the average home and would likely result in much needed capital projects being postponed due to lack of funds being available to undertake the work.

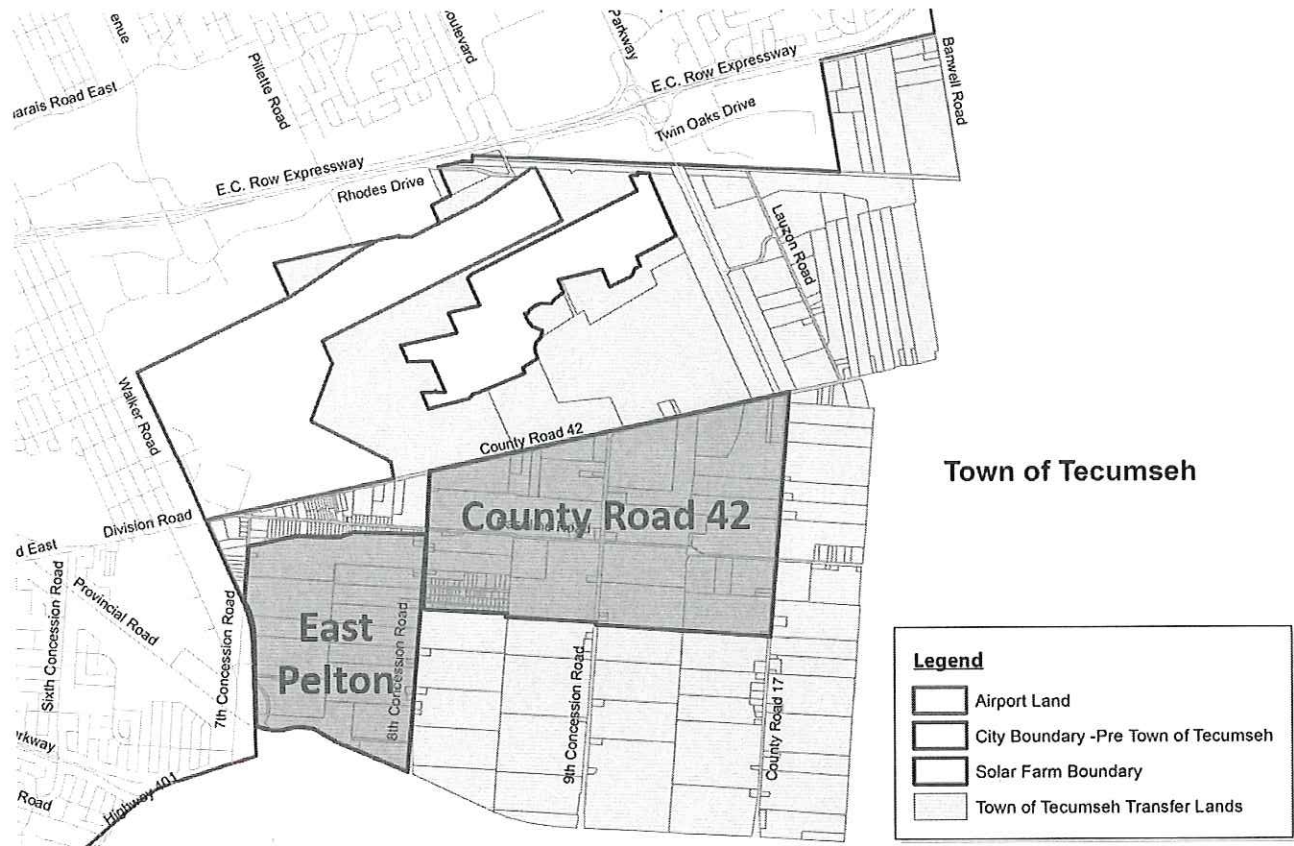
Growth in the Sandwich South Planning District

As discussed in the Background section, the 2015 DC Background Study and maximum permissible DC rates were calculated using the “low growth” scenarios contained within the City’s Official Plan 5 Year review. The Study also projected zero growth for the Sandwich South Planning District for the period covered by the study. Therefore, while the preliminary estimated engineering costs for the Sandwich South Planning District were included in the background study, they were removed for the calculation of the rates as no growth was expected in the 10 year period of the Background Study.

Since the 2015 Background Study was completed, the City of Windsor and surrounding areas have experienced significant economic growth due to the strong local economy and resulting low unemployment rate. This area of the City is needed next to accommodate new areas of growth and settlement.

Currently within the Sandwich South Planning District, the East Pelton Secondary Plan (2009) has been completed and the County Road 42 Secondary Plan (2018) is pending completion. There is a draft plan of subdivision submitted by a developer for a phased residential (approximately 748 units) and neighbourhood commercial development within the East Pelton Secondary Plan area. While specific developments may not take place for a number of years, it is prudent to study/establish the costs of preliminary infrastructure works and set the DC rate accordingly in advance to allow development to proceed.

For this reason, Hemson Consulting was engaged to complete an Interim Area Specific Development Charge (ASDC) Background Study and DC Bylaw for the Sandwich South Planning District prior to the regular updating of the City Wide DC Bylaw in 2020. The Interim DC Study focused on growth in the East Pelton and County Road 42 Secondary Plan areas and includes Capital Infrastructure Plans required to support the new growth in these areas. Existing DC Charges for General Services and Pollution Control will be used from the existing 2015 City-wide study. A map of the area is included below.



Approach and Methodology

The Interim ASDC rates will address the engineering infrastructure of:

- Roads & Related
- Sanitary Sewage Collection System
- Storm Sewers & Municipal Drains
- Water Services Distribution System (WUC)

The existing City –Wide DC rates for the above services would not apply in the ASDC area, but the following City-Wide DC rates would still apply:

- All General Services
- Wastewater Treatment

The plan is to align the two DC Bylaws (i.e. City-Wide and Interim ASDC) as part of the 2020 DC Bylaw update.

Growth Forecast Assumptions for Draft Interim Development Charge Study for the Sandwich South Planning District

The Development forecast completed by the consultant was refined through discussions with City Planning staff. The Sandwich South ASDC will consider a planning period of 2018-2036. The growth forecast includes growth within the study area to 2036 for the the East Pelton and County Road 42 Secondary Plan areas. The ASDC study excluded the airport and solar farm lands

Types of development included:

- Residential – using population and dwelling units
- Non-residential – using non-residential floor space and employment

Growth Assumptions

The Persons per Unit (PPU) and Employment Density assumptions used are consistent with the City’s 2015 DC Background Study

Persons Per Unit (PPU):

- Singles - 3.46
- Semis, Rows & Multiples - 2.33
- Apartments - 1.66

Employment Density:

- Population Related – 70 M2 per employee
- Employment Land – 100 M2 per employee
- No Major Office Construction Expected

East Pelton & County Road 42 Secondary Plans

Growth 2018-2036

<u>Residential</u>	
Total Occupied Units	4,978
Singles	2,340
Semis, Rows, Multiples	1,139
Apartments	1,499
Population in New Units	13,243

<u>Non-Residential</u>	
Employment	10,977
Population Related	7,507
Employment Related	3,470
Non-Residential Floor Area (sq. m.)	872,493
Population Related	525,483
Employment Land	347,009

Capital Infrastructure Programs

Capital investments required to support the future growth in the Sandwich South Planning District have been compiled by Hemson Consulting in consultation with City of Windsor and WUC staff. The tables below are summarized into five main infrastructure categories. Further information and detailed schedules can be found in the DC Background Study attached as Appendix A.

Capital costs have been adjusted as follows:

- For any capital grants, subsidies, and other recoveries that reduce the cost
- Capital assets that are replacing or benefitting existing residents (BTE)
- Shares of capital costs already included in the 2015 City-wide DC Fees
- For share of the capital programs that benefit future period (post 2036)
 - This includes areas in the Sandwich South Planning District outside of the East Pelton & County Road 42 Secondary Plans

Roads and Related (costs in \$000s)

Total Capital Program	Grants & Other Recoveries	BTE Shares	City Wide Shares	SSPD Post 2036	DC Recovery (2018-2036)
\$550,240	\$0	\$98,293	\$67,145	\$207,376	\$177,427
100%	0%	18%	12%	38%	32%

- Capital program includes:
 - Urbanization of 7th, 8th, & 9th Concession Roads, Baseline Road and County Road 17
 - New road construction of Collector Roads, Lauzon Parkway, County Road 42, East-West Arterial
- The amounts adjusted for benefitting existing shares (BTE) and City-Wide shares is consistent with the 2015 City-wide Study
- Post Period (>2036) is based on land area

Sanitary Sewers (in \$000s)

Total Capital Program	Grants & Other Recoveries	BTE Shares	City Wide Shares	SSPD Post 2036	DC Recovery (2018-2036)
\$56,436	\$23,456	\$0	\$3,433	\$17,758	\$11,789
100%	42%	0%	6%	31%	21%

- Capital program includes:
 - County Road 42, County Road 17, 9th Concession, and Legacy Park Drive sanitary sewer construction
 - Adjusted for recoveries from previously completed Sandwich South Planning District sanitary sewers
- Grant amount takes into account Infrastructure Stimulus Funding (ISF) Grant previously received for the completion of sewers in the Sandwich South Planning District
- The amounts adjusted for benefitting existing residents (BTE) and City-wide Study shares is consistent with the 2015 City-wide Study
- Post Period (>2036) is based on land area

Storm Sewer & Municipal Drains (in \$000s)

Total Capital Program	Grants & Other Recoveries	BTE Shares	City Wide Shares	SSPD Post 2036	DC Recovery (2018-2036)
\$211,196	\$34,425	\$711	\$16	\$114,154	\$61,890
100%	16%	0.3%	0.01%	54%	29%

- Capital program includes:
 - Upper Little River Storm Water Management (SWM) Plan and Implementation
 - Little River Drain Improvements
 - Related Studies
- Grant and recoveries account for Tecumseh’s share of the Upper Little River SWM Plan
- The amounts adjusted for benefitting existing residents (BTE) and City-wide Study shares is consistent with the 2015 City-wide Study
- Post Period (>2036) is based on land area

Water Services Distribution System (WUC) (in \$000s)

Total Capital Program	Grants & Other Recoveries	BTE Shares	City Wide Shares	SSPD Post 2036	DC Recovery (2018-2036)
\$32,486	\$0	\$9,220	\$0	\$8,997	\$14,270
100%	0%	28%	0%	28%	44%

- Capital program and all adjustments as per the WUC Water Servicing Plan Update 2018 – Sandwich South Planning District Area Development Charges (draft report dated April 9, 2018)

While the costs included in the capital programs above, totalling \$850 million, are engineering level estimates for the entire planning area, it is important to note that the draft interim DC study only includes works for development expected within the planning

period of 2018 to 2036. The capital works identified for the planning period of this study total \$265 million. It is important that we begin collecting DC Fees for the growth area based on these increased expenditures as soon as possible. The costs to support development in this area will continue to be refined as more detailed engineering and functional studies are completed. Future DC studies that will be undertaken will continue to allocate costs to the appropriate planning period.

Calculation of DC Rates

The key steps to the calculation of the new rates for ASDC include:

- Allocation of costs between residential and non-residential sectors
- Preparing a cash flow analysis to reflect project and development timing
- Calculate the charges
 - Residential – per dwelling unit type
 - Non-residential – per square metre of GFA

Calculation of Sandwich South Planning District ASDC Rates

Service	Charge per Single Detached Unit	Charge per Semi / Row Unit	Charge per Apartment Unit	Charge per sq. m. For Non-residential (Commercial Development)
Roads & Related	\$25,147	\$16,934	\$12,065	\$101.90
Sanitary Sewer Collection	\$1,865	\$1,256	\$895	\$7.55
Storm Water & Municipal Drains	\$8,584	\$5,781	\$4,118	\$34.79
Water Distribution (WUC)	\$2,052	\$1,382	\$984	\$8.31
Total	\$37,648	\$25,353	\$18,062	\$152.55

NOTE: City-wide General Services and Pollution Control charges continue to apply in addition to these rates

City-wide vs. Draft Calculated SSPD Residential Rates for Single Detached Unit

Service	2015 City –wide DC Rate**	Sandwich South Planning District ASDC Rate (Single Detached Unit)
<i>Total General Services (City –wide)*</i>	\$2,040	\$2,040
Roads & Related	\$13,539	\$25,147
Sanitary Sewer Collection	\$1,209	\$1,865
Pollution Control (City-wide)*	\$1,038	\$1,038
Storm Water & Municipal Drains	\$7,088	\$8,584
Water Distribution (WUC)	\$1,960	\$2,052
<i>Total Engineered Services</i>	\$24,834	\$38,686
Total Charge Per Unit	\$26,874	\$40,726

* City-wide General Services and Pollution Control charges continue to apply in addition to these rates.

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

City-wide vs. Draft Calculated SSPD Non-Residential DC Rates \$/Sq. M

Service	2015 City –wide DC Rate**	Sandwich South Planning District ASDC Rate (\$ per Sq. M.)
<i>Total General Services (City –wide)*</i>	\$2.60	\$2.60
Roads & Related	\$64.60	\$101.90
Sanitary Sewer Collection	\$5.71	\$7.55
Pollution Control (City-wide)*	\$4.98	\$4.98
Storm Water & Municipal Drains	\$33.75	\$34.79
Water Distribution (WUC)	\$9.35	\$8.31
<i>Total Engineered Services</i>	\$118.39	\$157.53

Total Charge Per Unit (Inclusive of Total General Services plus Total Engineered Services Component)	\$120.99	\$160.13
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* City-wide General Services and Pollution Control charges continue to apply in addition to these rates

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

Development Charges Rate Comparison

In comparing development charges, you cannot always directly compare the DC rates of municipalities since every municipality determines what services will be recovered from DCs based on their individual circumstances and Council policies. Some municipalities may choose to fund growth related capital programs through tax supported sources. Therefore, the range of services included in DC rates can have a significant impact on the amount of the charge.

The current City of Windsor City-wide DC rates are below the provincial average based on the 2017 BMA Municipal Study, which shows that across the province, the **average** fee for **residential-single family** detached homes is **\$30,512**. This is higher than Windsor's current fee of \$26,435, and lower than the new calculated area specific rate for the Sandwich South Planning District of \$40,726.

The BMA provincial **average** for **commercial** properties is \$15.36 per square foot, with a maximum rate of \$49.81/sq ft. Windsor's current rate is of \$11.88/sq ft is well below the average. The newly calculated area specific rate of \$14.88/sq ft (\$160.13/sq m) will still be lower than the provincial average.

The **average** provincial fee for **industrial** development is **\$9.71 /sq ft**, while Windsor's is currently NIL and is recommended to remain at that level.

It is also important to note that the City of Windsor has approved a 100% discount for engineered services for a large defined core (Area 1) of the City. This results in significantly reduced DC fees for development in the core.

More comparable DC Fees to the proposed new area specific DC fee for the Sandwich South Planning District would be the DC fees for growth communities in the GTA where new infrastructure programs are being funded to allow development to proceed. This comparison to municipalities like Vaughan, Oakville and Barrie shows that the proposed DC fee for the Sandwich South Planning District is significantly lower as illustrated in the table below.

The table below provides a comparison of some peer municipalities.

Municipality	Residential – Single Detached	Commercial (per Square Foot)
City of Windsor – City Wide	\$26,435	\$11.88
City of Windsor - Proposed ASDC for SSPD	\$40,726	\$14.88
City of Vaughan	\$79,405	\$46.26
City of Oakville	\$60,919	\$36.27
City of Barrie	\$46,056	\$28.29
City of Kitchener	\$34,496	\$18.24
City of London	\$29,561	\$23.92

In order to ensure that the Task Force has appropriate and complete comparative information a comparison to the much smaller local municipalities in the Windsor /Essex region is also presented in the following table. Although administration believes that this type of comparison is much less valid than the foregoing comparison to peer municipalities, the information is provided so as to give some perspective as to the local comparisons.

Municipality	Residential – Single Detached	Commercial (per Square Foot)
City of Windsor – City Wide	\$26,435	\$11.88
City of Windsor - Proposed ASDC for SSPD	\$40,726	\$14.88
Town of Tecumseh (Urban Service Area)	\$13,398	\$4.10
Town of LaSalle	\$13,443	\$4.36
Town of Lakeshore (Urban Service Area)	\$18,225	\$7.68
Town of Amherstburg	\$12,743	N/A
Town of Kingsville (Urban Service Area)	\$9,801	\$1.03
Town of Essex (Ward 1)	\$10,770	\$4.08
Town of Leamington	100% discount	100% discount

It should be noted that care should be taken to compare Windsor's calculated rates to the existing rates of other municipalities. Given that the legislation requires a new background study be done every five years, other municipalities will also have to calculate new rates. Inflationary cost increases relating to the underlying capital projects generally tend to push rates higher as new studies are undertaken.

Timelines and Process of the Background Study

Hemson Consulting Ltd has completed the Draft Interim DC Background Study for the Sandwich South Planning District within a very aggressive timeline. This was the result of a number of efficiencies gained by Hemson already having completed the previous DC Studies and already having City background data and information in their offices.

The primary objective of the Study was to prepare a well documented and defensible Interim DC Background Study and related DC By-law that complies with the requirements of the Development Charges Act, 1997 (DCA) and its accompanying regulation 82/98 (O.Reg.82/98) and the recently adopted Ontario Regulation 428/15 (O.Reg428/15) that will fund the growth related costs of new developments in the area specific planning area.

A Secondary objective was to undertake a review of DC policies, particularly as they relate to servicing and financing (e.g. industrial exemption & indexing for inflation), and make policy recommendations based on input from Councillors and key stakeholders on the DC Task Force.

Key Dates are as follows:

Kick Off Meeting with City Staff	January 30, 2018
Initial Meeting with DC Task Force	March 7, 2018
Teleconference with City Staff	April 16, 2018
2 nd Meeting with DC Task Force	May 10, 2018
Release of Interim DC Background Study & DC Bylaw	May 24, 2018
Statutory Public Meeting	June 18, 2018
Council Approval of the DC Bylaw	July 23, 2018

Key Steps in Passing the new Area Specific DC Bylaw for the SSPD

- Release DC Background Study 60 days prior to bylaw passage (including on web site)
- Advertise public meeting
- Release DC Study and proposed Bylaw
- Hold statutory public meeting
- Receive feedback and amend proposed charges and by-law if warranted
- Determine if additional public meeting is required
- Bylaw passage by City Council

The Administrative Steering Committee was comprised of the following:

City Treasurer and Chief Financial Officer

City Engineer

City Planner

City Solicitor

Windsor Utilities Commission – VP of Water Operations

Supporting the collection of data included Administration from different areas that form The Technical Working Committee. This committee is composed of representatives from the following service areas:

Legal	Public Works – Sewers & Wastewater
Planning & Building	Public Works – Pollution Control
Finance	Public Works – Roads
Windsor Utilities Commission	Public Works – Storm Water Management

Additional staff was consulted by the Technical Working Committee as required.

Risk Analysis:

Development is expected to occur within the Sandwich South Planning District sooner than originally planned. This will require a significant investment in infrastructure to support the new growth. By not approving an Interim Area Specific Background Study and new DC Bylaw to collect revenue from new developments to fund this growth, funding from other sources, including the Tax Levy, will be required.

Approval of Interim Area Specific DC rates which are less than those proposed in the study also poses a risk in that they will not generate sufficient funds to undertake the significant capital works required for the development of this area. As a result, the development work would need to be reduced/limited or alternatively other funding sources including increased tax levies would be required to undertake this significant development. This would place significant financial pressures on the Corporation and negatively impact its ability to address other pressing capital and asset management demands.

An estimate of the annual DC fee revenues from residential and non-residential development results in an annual forecast of about \$11.8 million. This does not take into account any other DC exemptions, aside from the industrial exemption, and assumes a constant rate of development. A 10% reduction in the calculated rates would therefore lead to an annual revenue loss from DCs of approximately \$1.2 million.

Hemson Consulting was engaged to complete the Interim DC Background Study for the Sandwich South Planning District to ensure all requirements of the DC Act and related regulations are met. This significantly reduces the risk that the bylaw will be challenged in the future.

Financial Matters:

The completion of an Interim DC Background Study and DC Bylaw for the Sandwich South Planning District is to assist the City in the funding of the infrastructure required by the new growth. This is a first step to start collecting additional DC fees to allow developments to proceed in the area. New Area Specific DC rates for the Sandwich South Planning District have been outlined in the Discussion section of the report.

Additionally as reflected in the 6 year capital budget, the Planning area will also be completing a Growth Management Study for the Sandwich South Planning District in 2018 that will detail the land use plan and phases for the area. This plan will also include any functional studies required for planned developments. It is also contemplated that a complementary study will be undertaken in 2018 that will recommend a proposed funding strategy for the infrastructure required for the phased development of the area. This study will outline all of the funding options available to fund the planned growth, one of the main ones of which is DC Fees.

The current City Wide DC Bylaw expires on May 31, 2020 and as per the Development Charges Act, a new DC Background Study and DC Bylaw will need to be completed prior to that date. The plan is to also update the interim background study for the

Sandwich South Planning District at that time to include additional costing that may become available as more detailed engineering is completed.

Consultations:

- Planning & Building Department
- Engineering Department
- Public Works Operations
- Legal
- Windsor Utilities Commission (WUC)

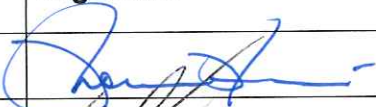



Conclusion:

The increased growth planned in the Sandwich South Planning District has necessitated the need for an Interim Area Specific DC Background Study & DC Bylaw for the planning area. This draft study includes preliminary infrastructure costs required to support the new development proposed for the area and follows the principle that "Growth pays for Growth". The regular City Wide Development Charge Bylaw expires on May 31, 2020 and a new DC Background Study & DC Bylaw that will include an Area Specific DC Bylaw update will still be required as per the DC Act.

Planning Act Matters:

N/A

Approvals:

Name	Signature
Thom Hunt, City Planner	
Mark Winterton, City Engineer	
Shelby Askin Hager, City Solicitor	
Joe Mancina, CFO & City Treasurer <i>for</i>	
Onorio Colucci, Chief Administrative Officer	

Notifications:

Name	Address	Email

Appendices:

- A. Draft Interim Development Charges Study for the Sandwich South Planning District

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



Draft Report

HEMSON Consulting Ltd.

April 30, 2018

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EXECUTIVE SUMMARY

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:

Development Forecast	Growth Over Planning Period 2018 - 2036
Residential	
Total Occupied Dwellings	4,978
Population in New Dwellings	13,243
Non-Residential	
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:

Area-Specific Engineered Services (2018-2036)		
Service	Gross Cost (\$000)	DC Eligible Cost (\$000)
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
Total	\$850,358.4	\$265,375.3

- 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
Area-Specific Engineered Services Charge Per Unit	\$37,648	\$25,353	\$18,062
(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
Area-Specific Engineered Services Charge Per sq.m	\$108.72	\$152.55

- 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

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
- As asset management plan to deal with all assets whose capital costs are proposed to be funded under the DC by-law, demonstrating that all assets included in the capital program are financially sustainable over their full life cycle.

This study presents the results of the review, which determines the net capital costs attributable to new development that is forecast to occur in the 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.

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

Several key steps are required when calculating any development charge. However, specific circumstances arise in each municipality that must be reflected in the calculation. Therefore, we have tailored our approach to the unique circumstances in the 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

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
Residential	
Total Occupied Dwellings	4,978
<i>Singles</i>	2,340
<i>Semis, Rows & Other Multiples</i>	1,139
<i>Apartments</i>	1,499
Population in New Dwellings	13,243
Non-Residential	
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

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.

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
1.0 ROADS AND RELATED	\$550,240.0	\$0.0	\$550,240.0	\$7,848.5	\$7,848.5	\$7,848.5	\$9,701.9	\$7,701.9	\$8,701.9	\$34,192.6	\$34,192.6
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
2.0 SANITARY SEWERS	\$56,436.0	\$23,456.0	\$32,980.0	\$13,335.9	\$1,090.9	\$1,090.9	\$1,017.6	\$1,017.6	\$1,017.6	\$1,017.6	\$1,017.6
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
3.0 STORM SEWERS & MUNICIPAL DRAINS	\$211,196.0	\$34,425.0	\$176,771.0	\$1,795.0	\$1,230.0	\$1,900.0	\$853.3	\$1,523.3	\$853.3	\$13,758.1	\$12,904.8
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
4.0 WATER	\$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
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
TOTAL - ENGINEERED SERVICES	\$850,358.4	\$57,881.0	\$792,477.4	\$22,979.5	\$10,169.5	\$10,839.5	\$11,572.7	\$10,242.7	\$24,877.6	\$48,968.3	\$48,115.1

Service	Total Net Capital Program										
	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
1.0 ROADS AND RELATED	\$34,192.6	\$34,192.6	\$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
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
2.0 SANITARY SEWERS	\$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
2.1 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
3.0 STORM SEWERS & MUNICIPAL DRAINS	\$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	\$12,904.8	\$12,904.8
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
4.0 WATER	\$0.0	\$0.0	\$0.0	\$0.0	\$18,181.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
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
TOTAL - ENGINEERED SERVICES	\$48,115.1	\$48,115.1	\$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

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*

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
Area-Specific Engineered Services Charge Per Unit	\$11,021.41	\$10,881.00	\$37,648	\$25,353	\$18,062
(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
Area-Specific Engineered Services Charge Per sq.m	\$110.12	\$108.72	\$154.53	\$152.55

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

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.

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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%
Charge Per Unit	\$26,874	\$40,726	\$13,852	52%

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 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%
Charge Per Unit	\$120.99	\$160.13	\$39.14	32%

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 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
Charge Per Unit	\$0.00	\$108.72	N/A	N/A

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

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.

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
Net Operating Impacts (1)										
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
NET OPERATING IMPACTS	\$85.1	\$170.2	\$258.3	\$346.3	\$434.4	\$522.5	\$610.6	\$698.7	\$786.8	\$874.9

	2028	2029	2030	2031	2032	2033	2034	2035	2036
Net Operating Impacts (1)									
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
NET OPERATING IMPACTS	\$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

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Long-term Capital Impact (1)										
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
Funding From Non-DC Sources										
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
FUNDING FROM NON-DC SOURCES	\$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

	2028	2029	2030	2031	2032	2033	2034	2035	2036	Total
Long-term Capital Impact (1)										
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
Funding From Non-DC Sources										
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
FUNDING FROM NON-DC SOURCES	\$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

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

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.

APPENDIX A

DEVELOPMENT FORECAST

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.

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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

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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

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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 m² per employee
 Population-Related Employment 70.0 m² per employee
 Employment Land Employment 100.0 m² 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 ²)	Emp Growth in New Space	Growth in New Space (m ²)	Emp Growth in New Space	Growth in New Space (m ²)	Emp Growth in New Space	Space (m ²)
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

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

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 sewerage, 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
Total	\$850,358.4	\$792,477.4	\$108,222.8	\$70,595.3	\$348,284.2	\$265,375.3

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

ROADS AND RELATED

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			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
\$550,240,000	\$177,426,707	\$7,369	\$73.63	\$103.32	\$7,268	\$72.62	\$101.90

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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	
Roads and Related Infrastructure													
Road Improvements													
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
Subtotal Road Improvements						\$105,880,000	\$0	\$105,880,000		\$10,588,000	\$14,293,800	\$43,633,689	\$37,364,511
Road Construction													
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
Subtotal Road Construction						\$443,920,000	\$0	\$443,920,000		\$87,704,500	\$52,785,450	\$163,457,613	\$139,972,437
Studies and Other													
15	Functional Servicing Reports			2018	2020	\$440,000	\$0	\$440,000	0%	\$0	\$66,000	\$284,240	\$89,760
Subtotal Studies and Other						\$440,000	\$0	\$440,000		\$0	\$66,000	\$284,240	\$89,760
Total Roads Projects						\$550,240,000	\$0	\$550,240,000		\$98,292,500	\$67,145,250	\$207,375,543	\$177,426,707

APPENDIX B.1
TABLE 2SANDWICH 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
ROADS AND RELATED 2018 - 2036										
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
TOTAL ROADS AND RELATED 2018 - 2036	\$550,240.00	\$0.00	\$98,292.50	\$67,145.25	\$207,375.54	\$177,426.71		\$97,584.69		\$79,842.02
Unadjusted Development Charge Per Capita (\$)								\$7,368.78		
Unadjusted Development Charge Per Sq. M. (\$)										\$91.51
								Non-Residential Allocation ¹		
								(\$000)	%	\$/sq m
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

Residential Development Charge Calculation		
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		\$7,268
Charge per Single Detached Unit	3.46	\$25,147
Non-Residential Development Charge Calculation		
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)		\$72.62
Non-Industrial Charge Per Sq.M (Unadjusted)	68%	\$103.32
Non-Industrial Charge Per Sq.M After Cash Flow		\$101.90

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APPENDIX B.1
TABLE 3 - PAGE 1

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

ROADS: RESIDENTIAL	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
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

ROADS: RESIDENTIAL	2028	2029	2030	2031	2032	2033	2034	2035	2036	TOTAL
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	

2018 Adjusted Charge Per Capita	\$ 7,268
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Allocation of Capital Program	
Residential Sector	55%
Non-Residential Sector	45%
Rates for 2018	
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: INDUSTRIAL DEVELOPMENT CHARGE

ROADS: NON-RESIDENTIAL - INDUSTRIAL	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
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

ROADS: NON-RESIDENTIAL - INDUSTRIAL	2028	2029	2030	2031	2032	2033	2034	2035	2036	TOTAL
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	\$1,662.1	\$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	

2018 Adjusted Charge Per Square Metre	\$72.62
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Allocation of Capital Program	
Residential Sector	55%
Non-Residential Sector	45%
Non-Residential Allocation	
Industrial	32%
Non-Industrial	68%
Rates for 2018	
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	

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

APPENDIX B.2

SANITARY SEWER SERVICES

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.

2018 - 2036		SANITARY SEWER SUMMARY			Adjusted		
Development-Related Capital Program		Unadjusted 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	\$539	\$5.38	\$7.55

APPENDIX B.2
TABLE 1SANDWICH 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	
Sanitary Sewers													
Sewer Infrastructure													
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
Subtotal Sewer Infrastructure						\$56,216,000	\$23,456,000	\$32,760,000		\$0	\$3,400,450	\$17,615,730	\$11,743,820
Studies and Other													
7	Functional Servicing Reports			2018	2020	\$220,000	\$0	\$220,000	0%	\$0	\$33,000	\$142,120	\$44,880
Subtotal Studies and Other						\$220,000	\$0	\$220,000		\$0	\$33,000	\$142,120	\$44,880
Total Sanitary Sewers						\$56,436,000	\$23,456,000	\$32,980,000		\$0	\$3,433,450	\$17,757,850	\$11,788,700

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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
	SANITARY SEWERS 2018 - 2036									
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
TOTAL SANITARY SEWERS 2018 - 2036	\$56,436.00	\$23,456.00	\$0.00	\$3,433.45	\$17,757.85	\$11,788.70		\$6,483.79		\$5,304.92
Unadjusted Development Charge Per Capita (\$)								\$489.60		
Unadjusted Development Charge Per Sq. M. (\$)										\$6.08
								Non-Residential Allocation ¹		
								(\$000)	%	\$/sq m
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		\$539
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)		\$5.38
Non-Industrial Charge Per Sq.M (Unadjusted)	68%	\$6.86
Non-Industrial Charge Per Sq.M After Cash Flow		\$7.55

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APPENDIX B.2
TABLE 3 - PAGE 1

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	

2018 Adjusted Charge Per Capita	\$ 539
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Allocation of Capital Program	
Residential Sector	55%
Non-Residential Sector	45%
Rates for 2018	
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	

2018 Adjusted Charge Per Square Metre	\$5.38
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Allocation of Capital Program	
Residential Sector	55%
Non-Residential Sector	45%
Non-Residential Allocation	
Industrial	32%
Non-Industrial	68%
Rates for 2018	
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	

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

APPENDIX B.3

STORM SEWER AND MUNICIPAL DRAIN SERVICES

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 \$/capita	Industrial \$/sq.m	Non-Industrial \$/sq.m	Residential \$/capita	Industrial \$/sq.m	Non-Industrial \$/sq.m
\$211,196,000	\$61,889,768	\$2,570	\$25.68	\$36.04	\$2,481	\$24.79	\$34.79

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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	
Storm Sewer & Municipal Drain Infrastructure													
Upper Little River Stormwater Management													
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
Subtotal Upper Little River Stormwater Management						\$202,500,000	\$34,425,000	\$168,075,000	\$0	\$0	\$0	\$109,248,750	\$58,826,250
Drains													
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
Subtotal Drains						\$4,186,000	\$0	\$4,186,000	\$710,600	\$16,493	\$0	\$1,477,790	\$1,981,118
Studies and Other													
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
Subtotal Studies and Other						\$4,510,000	\$0	\$4,510,000	\$0	\$0	\$0	\$3,427,600	\$1,082,400
Total Storm Sewers						\$211,196,000	\$34,425,000	\$176,771,000	\$710,600	\$16,493	\$0	\$114,154,140	\$61,889,768

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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
STORM SEWER & MUNICIPAL DRAINS 2018 - 2036										
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
TOTAL STORM SEWER & MUNICIPAL DRAINS 2018 - 2036	\$211,196.00	\$34,425.00	\$710.60	\$16.49	\$114,154.14	\$61,889.77		\$34,039.37		\$27,850.40
Unadjusted Development Charge Per Capita (\$)								\$2,570.37		
Unadjusted Development Charge Per Sq. M. (\$)										\$31.92
								Non-Residential Allocation ¹		
								(\$000)	%	\$/sq m
Unadjusted Charge Per Sq. M. (\$) - Industrial								\$6,912.1	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		\$2,481
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)		\$24.79
Non-Industrial Charge Per Sq.M (Unadjusted)	68%	\$36.04
Non-Industrial Charge Per Sq.M After Cash Flow		\$34.79

APPENDIX B.3
TABLE 3 - PAGE 1

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

STORM & MUNICIPAL DRAINS: RESIDENTIAL	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
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
2018 to 2036 RESIDENTIAL FUNDING REQUIREMENTS										
- 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
NEW RESIDENTIAL DEVELOPMENT										
- Population Growth in New Units	697	697	697	697	697	697	697	697	697	697
REVENUE										
- 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
INTEREST										
- 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)
TOTAL REVENUE	\$1,755.0	\$1,844.0	\$1,934.7	\$2,028.2	\$2,126.6	\$2,229.1	\$2,277.6	\$2,296.1	\$2,315.9	\$2,335.2
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

STORM & MUNICIPAL DRAINS: RESIDENTIAL	2028	2029	2030	2031	2032	2033	2034	2035	2036	TOTAL
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	
2018 to 2036 RESIDENTIAL FUNDING REQUIREMENTS										
- 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	\$3,067.2	\$3,148.9	\$3,211.9	\$3,276.1	\$3,341.6	\$3,408.5	\$3,476.6	\$3,546.2	\$42,917.3
NEW RESIDENTIAL DEVELOPMENT										
- Population Growth in New Units	697	697	697	697	697	697	697	697	697	13,243
REVENUE										
- 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
INTEREST										
- 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)
TOTAL REVENUE	\$2,353.9	\$2,372.0	\$2,389.4	\$2,406.2	\$2,422.2	\$2,437.5	\$2,451.8	\$2,465.2	\$2,477.6	\$42,918.4
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
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Allocation of Capital Program	
Residential Sector	55%
Non-Residential Sector	45%
Rates for 2018	
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	

2018 Adjusted Charge Per Square Metre	\$24.79
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Allocation of Capital Program	
Residential Sector	55%
Non-Residential Sector	45%
Non-Residential Allocation	
Industrial	32%
Non-Industrial	68%
Rates for 2018	
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	

2018 Adjusted Charge Per Square Metre **\$34.79**

Allocation of Capital Program	
Residential Sector	55%
Non-Residential Sector	45%
Non-Residential Allocation	
Industrial	32%
Non-Industrial	68%
Rates for 2018	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

APPENDIX B.4

WATER SERVICES

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		WATER SUMMARY			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	\$593	\$5.93	\$8.31

APPENDIX B.4
TABLE 1SANDWICH 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	
Water Infrastructure													
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
Total Water Infrastructure						\$32,486,400	\$0	\$32,486,400		\$9,219,669	\$0	\$8,996,647	\$14,270,084

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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
WATER SERVICES 2018-2036										
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
TOTAL WATER SERVICES 2018-2036	\$32,486.40	\$0.00	\$9,219.67	\$0.00	\$8,996.65	\$14,270.08		\$7,848.55		\$6,421.54
Unadjusted Development Charge Per Capita (\$)							\$592.66			
Unadjusted Development Charge Per Sq. M. (\$)										\$7.36
							Non-Residential Allocation ¹			
							(\$000)	%	\$ /sq m	
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

Residential Development Charge Calculation		
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		\$593
Charge per Single Detached Unit	3.46	\$2,052
Non-Residential Development Charge Calculation		
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)		\$5.93
Non-Industrial Charge Per Sq.M (Unadjusted)	68%	\$8.31
Non-Industrial Charge Per Sq.M After Cash Flow		\$8.31

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

WATER: RESIDENTIAL	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
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
2018 to 2036 RESIDENTIAL FUNDING REQUIREMENTS										
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
NEW RESIDENTIAL DEVELOPMENT - Population Growth in New Units	697	697	697	697	697	697	697	697	697	697
REVENUE - DC Receipts: Inflated	\$413.3	\$421.6	\$430.0	\$438.6	\$447.4	\$456.3	\$465.5	\$474.8	\$484.3	\$494.0
INTEREST - 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
TOTAL REVENUE	\$420.5	\$443.7	\$467.8	\$492.9	\$519.1	\$546.3	\$574.8	\$544.1	\$550.3	\$579.5
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

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

2018 Adjusted Charge Per Capita \$ 593

Allocation of Capital Program
 Residential Sector 55%
 Non-Residential Sector 45%

Rates for 2018
 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	

2018 Adjusted Charge Per Square Metre	\$5.93
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Allocation of Capital Program	
Residential Sector	55%
Non-Residential Sector	45%
Non-Residential Allocation	
Industrial	32%
Non-Industrial	68%
Rates for 2018	
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	\$25,483
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	

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

APPENDIX C

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

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
Roads And Related		\$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
Sanitary Sewer		\$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
Storm Sewer & Municipal Drains		\$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
Water		\$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
TOTAL ESTIMATED OPERATING COSTS		\$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
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
- 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
Sanitary Sewer		\$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
Storm Sewer & Municipal Drains		\$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
Water		\$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
TOTAL ESTIMATED OPERATING COSTS		\$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

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APPENDIX E
TABLE 2

SANDWICH 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)
ROADS AND RELATED										
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
SANITARY SEWER										
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
STORM SEWER & MUNICIPAL DRAINS										
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
WATER										
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
TOTAL MUNICIPAL SERVICES										
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)
ROADS AND RELATED										
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
SANITARY SEWER										
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
STORM SEWER & MUNICIPAL DRAINS										
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
WATER										
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
TOTAL MUNICIPAL SERVICES										
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

ASSET MANAGEMENT PLAN

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