2021 Development Charges Background Study Update

DEVELOPMENT FINANCE
COUNCIL APPROVED OCTOBER 2020

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Executive Summary

CHAPTER 1: Executive Summary

Development Charges (DCs) provide a method for municipalities to recover the capital costs of providing infrastructure and services associated with growth. In Ontario, the *Development Charges Act* (DCA) governs the calculation of rates and the collection of DCs. Since the passing of the 2014 DC Study, the Province has amended the DCA through Bill 73 (Smart Growth for Our Communities Act) which came into force and effect January 1, 2016. Some of the key changes resulting from Bill 73 include the following:

- Transit has been removed from the required 10% statutory deduction;
- The service standard calculation for Transit is now forward looking based on ridership, rather than a backward looking historical service standard;
- The list of ineligible services for which DCs could not be imposed has changed so that municipal infrastructure for Waste Diversion can now be recovered from DCs;
- Municipalities must consider the use of an Area Rating to reflect different needs for services in different areas;
- DCs must be collected at the time of the first building permit;
- An asset management plan must be prepared to deal with all assets whose capital costs are proposed to be funded under the DC By-law and demonstrate that all of the assets are financially sustainable over their full lifecycle; and
- A DC Background Study must be made available to the public at least 60 days prior to the passing of the DC By-law and until the By-law expires or is repealed.

These legislative requirements were incorporated into the 2019 DC Background Study and By-law to ensure compliance with the DCA.

More recently, since the passing of the 2019 DC Background Study and By-law, the Province has further amended the DCA through Bill 108 (*More Homes More Choice Act*, 2019) and subsequent legislation (Bill 138 and Bill 197). Some of the key changes include the following:

- expanded exemption from DC's for certain additional units within existing structures;
- when the amount of DC is calculated and payable;
- services eligible for DC recovery;
- elimination of the statutory 10% reduction for soft services; and
- elimination of the 10 year planning period for certain services.

Since the 2019 DC Study included a comprehensive process for establishing capital infrastructure required to support growth over the planning period, the 2021 DC Study is an update to the predecessor DC Study. The need for the 2021 DC Study Update is primarily driven by the recent changes to the DCA through Bill 108 and subsequent legislative changes. In addition to the legislative changes, additional changes were limited in scope to the following:

- Federal and Provincial funding that has been committed to approved projects has been reallocated. These funding commitments were not approved until after the approval of the 2019 DC Study;
- A review of the growth / non-growth splits for Rapid Transit was a deferred matter from the 2019 DC Study. For the 2021 DC Study Update, a review of the methodology and associated growth / non-growth splits was completed by IBI Consulting, in conjunction with Hemson Consulting, with the adjustments being incorporated into this Study;
- Project timing is aligned with the 2019 DC Study, with the exception of projects that have been adjusted due to the completion of Environmental Assessments and/or studies, operational constraints (such as land acquisition), and Growth Management Implementation Strategy decisions that have been made to respond to growth; and
- A technical financing adjustment contained in the DC model to better align with corporate schedules and market conditions.

The DCA also dictates that a background study be completed which demonstrates that the DC rates were calculated in accordance with the requirements of the legislation. Included in the DC Study are:

- A forecast of the amount, type and location of population, employment, housing and non-residential development (Institutional, Commercial, Industrial);
- Identification of future servicing needs associated with growth were determined for all DC recoverable service areas;
- The estimated capital costs and timing of growth infrastructure needs and operating impact required to support growth;
- Statutory deductions and service standard limitations were applied to arrive at net capital costs attributable to development; and
- Allocation of net capital costs amongst benefitting forms of development (residential and non-residential).

The primary objective of this DC Study was to be consistent with the London Plan provision that "Growth pays for Growth". With that as a key guiding principle, DC rates have been calculated based on projected growth, associated infrastructure needs and the requirements of the DCA.

Consistent with prior practice, a consultative process where information pertinent to policy matters and rate calculations were reviewed and discussed with various stakeholders. Since the 2021 DC Study Update is an extension of the 2019 DC Study, the DC External Stakeholder Committee that

was in place for the 2019 DC Study was carried forward for this Study. This Committee's composition includes representatives from the London Home Builders' Association, the Urban League of London, and the London Development Institute that represent the interests of the community and industry. This Committee met on multiple occasions since the initiation of the Update process to discuss the scope of changes. Each participant provided valuable input and perspective which has been reflected in this document and accompanying By-law. In addition, Staff held targeted review meetings with individual stakeholders to address more detailed and technical matters.

This Study update reflects DC rates that are calculated within the bounds of the governing legislation and are a reasonable representation of the estimated costs resulting from projected growth over the planning horizon. The rates resulting from this update are summarized below:

Type of Development	DC Rate
Residential (Single & Semi Detached)	$34,158
Institutional ($/m2)	$178.49
Commercial ($/m2)	$289.34
Industrial ($/m2)	$206.26

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CHAPTER 2:

Background Study Purpose & Process

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2.1 Purpose of the Development Charge Background Study

Development Charges (DCs) play an important part in how growth infrastructure is financed in London. Each new house, commercial centre, educational facility, and/or manufacturing plant requires infrastructure and servicing (e.g. sewers, stormwater ponds, fire stations, road improvements, etc.) in order to function efficiently and effectively. DCs are fees that are paid by new development to fund growth infrastructure and services constructed throughout the City.

In Ontario, the Provincial government regulates the setting of DC rates through the *Development Charges Act* (DCA). The purpose of DCs is to collect funds from new development to finance capital works supporting current and future growth.

At least every five years, as required by the DCA, the City of London conducts a DC Background Study to forecast the City's future residential and non-residential growth to determine infrastructure needs and costs. This information is used to calculate the amount of money that new development needs to pay in order to support growth infrastructure and services.

2.2 Development Charge Process

Since the 2019 DC Study was approved by Council in 2019 and included a comprehensive process, the 2021 DC Study is an update to the predecessor Study. As a result, the process has been condensed for the 2021 DC Study Update. The DC Study process is described below.

2.2.1 DC External Stakeholder Committee

The DC External Stakeholder Committee plays an integral part in the DC process. This Committee was established during the 2014 DC Study and was carried forward to the 2019 DC Study and 2021 DC Study Update. This Committee is composed of representatives from the London Home Builders' Association, the Urban League of London and the London Development Institute, which represent the interests of the community and industry. The purpose and mandate of this Committee is to:

a. Review, analyze and provide informed opinions to shape DC policy matters from a Stakeholder perspective;
b. Discuss viable alternative policy directions;
c. Provide suggestions on communicating policy issues;
d. Provide input and comment on items such as:
    i. Growth forecasts;
    ii. Servicing needs and studies to support growth; and
    iii. DC rate calculations.

Since the adoption of the 2019 DC Study and By-law, the DC External Stakeholder Committee has met on several occasions to discuss the scoped changes outlined in the Executive Summary. These meetings have resulted in positive and constructive conversations that have helped shape the 2021 DC Study Update. The DC External Stakeholder Committee is actively involved throughout the entire DC process providing input and valuable perspectives.

2.2.2 Policy Decisions

The City's DC policy choices can have a significant impact on the cost and allocation of growth-related works. Decisions on DC policy issues can impact the information gathered to complete the rate calculations and the drafting of the DC Background Study and By-law. As a result, a number of key policy issues were reviewed early in the process of the 2019 DC Study, and rolled forward into the 2021 DC Study and By-law. Early identification and vetting of key policy matters is critical because implementation and associated adjustments can be difficult if introduced towards the end of the process. A comprehensive listing of policy matters addressed as part of the development of the 2019 and 2021 DC Studies can be found in Chapter 3.

2.2.3 Growth Forecasts

Under section 5 (1) 1 of the DCA, "*the anticipated amount, type and location of development for which development charges can be imposed must be estimated*". Growth projections are necessary for prudent planning of municipal services and facilities. They represent the base assumption from which growth needs were projected.

To satisfy this requirement, Watson & Associates Economists Ltd. (Watson) was retained to prepare growth forecasts for population, employment, housing and non-residential construction (Institutional, Commercial and Industrial) to the year 2044. The growth forecasts were used for analysis necessary to determine infrastructure requirements for the 2019 DC Study. These forecasts were reviewed by Watson and it was determined that they remain appropriate for use in the 2021 DC Study. More detailed information pertaining to growth projections can be found in Appendix A.

2.2.4 Servicing Needs and DC Master Plans

Once the growth forecasts have been completed, the determination of municipal infrastructure, equipment and facility requirements resulting from growth are estimated. This step in the process satisfies section 5 (1) 2 of the DCA.

The capital needs study for Water, Wastewater and Stormwater termed 'One Water' was undertaken in-house by Staff from Environmental and Engineering Services. The Roads Service capital needs study was completed by IBI Group Inc., in conjunction with Hemson Consulting Ltd. These comprehensive studies were completed as part of the 2019 DC Study process. The findings from each of these studies can be referenced in the corresponding Appendices.

The capital needs for soft services including Police, Fire, Library, Parks & Recreation, Transit, and Waste Diversion, were estimated based on capital budgets and master planning up to a historical level of service.

For the 2021 DC Study Update, the master plans and capital budgets have been reviewed with changes to capital works made if driven by recently completed Environmental Assessments or studies, operational adjustments (ex. anticipated delays with land acquisition), or changes driven by decisions through the Growth Management Implementation Strategy. The scope of changes that have been incorporated into the 2021 DC Study process have been limited.

2.2.5 Rate Calculations

The culmination of the prior steps in the DC process ultimately feed into determining the DC rate calculations. The rates determine the growth related net capital costs which are attributable to forecasted development in the City of London. These net capital costs are then apportioned to the various types of development (residential and non-residential) in a manner that reflect the increase in need for each DC recoverable service to each type of development.

2.2.6 Council Review and Public Input Process

The public meeting required under Section 12 of the DCA was held at the Strategic Priorities and Policy Committee Meeting on July 14, 2020 in order solicit public input. Notice of this public meeting was advertised and posted to the City website on June 24th 2020, meeting the legislative requirement of 20 days in advance of the public meeting.

The public review process was initiated by posting the 2021 DC Background Study Update and By-law on the City's website on June 29th, 2020 which meets the DCA requirement under section 12 (1) (c) of at least two weeks prior to the public meeting. This public disclosure also meets the DCA requirements of section 10 (4) to make the documents available to the public at least 60 days prior to the passing of a By-law. This allowed interested parties to comment and provide feedback prior to Council consideration for the adoption of the By-law which occurred on October 27, 2020.

CHAPTER 3:

Development Charges Act & Policies

CHAPTER 3: Development Charges Act & Policies

This chapter provides an overview of the amendments to the *Development Charges Act* (DCA) under Bill 73 (*Smart Growth for Our Communities Act*) in 2016, Bill 108 (*More Homes More Choice Act)* in 2019 and subsequent legislative changes (Bill 138 and Bill 197). This chapter also summarizes the policy matters reviewed as part of the 2019 Development Charges (DC) Study which were carried forward under the 2021 DC Study Update.

3.1 Amendments to *Development Charges Act, 1997* – Bill 73 *Smart Growth for Our Communities Act*

Effective January 1, 2016, a number of amendments to the DCA were enacted as a result of Bill 73 (*Smart Growth for Our Communities Act*). Amendments to the DCA included a number of considerations to be made which were not required in the 2014 DC Study. The following provides brief explanations of the key changes to the DCA and how these changes were incorporated into the 2019 DC Study and 2021 DC Study Update.

3.1.1 Area Rating

Section 2 (9) of the DCA requires a municipality to investigate area-specific DCs for services which are prescribed and/or for municipalities which are to be regulated. It is noted that at this time no municipalities or services are prescribed by the Regulations. Further to the above, Section 10 (2) c.1 requires consideration for the use of more than one DC By-law to reflect different needs for services in different areas.

In order to address this legislative requirement, Staff brought forward a report addressing area rating early in the 2019 DC process. On January 30, 2018, Council resolved the following:

> *a) the staff report dated January 29, 2018 BE ENDORSED for use in the preparation of the 2019 Development Charges Background Study, consistent with the Development Charges Act requirements related to area rating;*
>
> *b) the current policy to distinguish Development Charges rates inside the Urban Growth Boundary from those outside the Urban Growth Boundary, BE CONTINUED; and*
>
> *c) the Civic Administration BE DIRECTED to continue its analysis to review services that are candidates for differential recovery areas, and that the City work towards an area rating servicing policy to be implemented beyond 2019;*

Further investigation will take place as part of the next comprehensive DC Background Study process.

3.1.2 Asset Management Plan for New Infrastructure

The DCA requires a municipality to include an Asset Management Plan for all capital costs which are proposed to be funded in whole or in part under the DC By-law. The DCA does not provide specifics on how the Asset Management Plan is to be prepared which leaves it to the discretion of each municipality. However, the DCA regulations provide specific criteria related to the Transit Services Asset Management Plan. More information related to these Asset Management Plans can be found in Appendix M.

3.1.3 60 Day Circulation Period for DC Background Study

Prior to the DCA amendments, the DC Background Study was to be publicly available at least two weeks prior to the public meeting. The amended legislation requires public release at least 60 days prior to the passage of the DC By-law and includes posting on the City's website.

The 2021 DC Study Update was provided to the public on June 29, 2020 to ensure the legislative requirement was met prior to the passage of the By-law on October 27, 2020.

3.1.4 Timing of DC Collection

The Bill 73 amendments to the DCA required that DCs be collected at the time of the first building permit. For certain development types, DCs are payable at the time of building permit issuance and are collected by the City of London Building Department. Further amendments to the timing of DC collection were made under Bill 108 and are described under section 3.2.

3.1.5 Transit

The DC calculation with respect to Transit Services was amended by Bill 73 under the DCA and incorporated into O. Reg. 428/15 & 82/98. A number of prescribed elements are referenced in these regulations as follows:

- removal of the 10% statutory deduction from the growth-related costs;
- prescriptive methodology for determining the level of service; and
- change to forecasted approach for ridership capacity for all modes over the planning horizon, and identification of whether the new ridership is attributable from existing or planned development.

The City engaged IBI Group Inc. along with Hemson Consulting Ltd. to undertake a review of the requirements and incorporate the necessary changes into the 2019 DC Study. The service standard calculation for Transit is forward looking based on ridership, rather than a backward looking historical service standard. The calculations and background can be found in Appendix F.

3.1.6 Changes to Ineligible Services

Through Bill 73, the list of DC ineligible services changed so that municipal infrastructure related to Waste Diversion could be recovered from DCs. As a result of these changes, Waste Diversion was included as a new service for DC recovery in the City's 2019 DC Rate. The details surrounding the inclusion of this new service can be found in Appendix G. This inclusion is in line with Bill 108 as Waste Diversion remains an eligible service and the capital costs identified in 2019 will be carried forward under the 2021 DC Update.

3.2 Amendments to the *Development Charges Act, 1997* - Bill 108 – *More Homes More Choice Act*

A number of amendments to the DCA were enacted under Bill 108 and subsequent legislative changes (Bill 138 and Bill 197). As a result, a number of considerations were needed to be implemented as part of this DC update. The following provides a brief overview of the key changes to the DCA and how these changes have been incorporated into the 2021 DC Study Update.

3.2.1 Eligible Services for DC Collection

The amended DCA identifies the following list of eligible services for which a DC can be imposed:

- Water supply services, including distribution and treatment services;
- Waste water services, including sewers and treatment services;
- Storm water drainage and control services;
- Services related to a highway as defined in subsection 1 (1) of the *Municipal Act, 2001* or subsection 3 (1) of the *City of Toronto Act, 2006*, as the case may be;
- Electrical power services;
- Toronto-York subway extension, as defined in subsection 5.1 (1);
- Transit services other than the Toronto-York subway extension;
- Waste diversion services;
- Policing services;
- Fire protection services;
- Ambulance services;
- Services provided by a board within the meaning of the *Public Libraries Act*;
- Services related to long-term care;
- Parks and recreation services, but not the acquisition of land for parks;
- Services related to public health;
- Child care and early years programs and services within the meaning of Part VI of the *Child Care and Early Years Act, 2014* and any related services;
- Housing services;
- Services related to proceedings under the *Provincial Offences Act*, including by-law enforcement services and municipally administered court services;
- Services related to emergency preparedness;
- Services related to airports, but only in the Regional Municipality of Waterloo, and;
- Additional services as prescribed. 2020, c. 18, Sched. 3, s. 1 (2).

3.2.2 Exemption for Certain Dwelling Units & Secondary Suites

The amended DCA exempts a DC for the following dwelling types:

a) a permit for the enlargement of an existing dwelling unit;
b) a permit for the creation of additional dwelling units as prescribed, subject to the prescribed restrictions, in prescribed classes of exiting residential buildings or prescribed structure ancillary to exiting residential buildings; and
c) an additional unit in a new single detached dwelling, semi-detached dwelling, and rowhousing dwelling, including structures ancillary to one of these dwellings.

Section 35 of the DC By-law lists the dwelling types that are exempt from paying DCs.

3.2.3 Elimination of 10 Year Horizon Cap for Certain Services

Prior to the DCA amendments, certain soft services were limited to a 10 year planning horizon. Under the revised DCA, this cap has been removed.

3.2.4 Elimination of Mandatory 10% Reduction for Certain Services

Prior to the DCA amendments, a mandatory cost reduction for certain services of 10% was included in DC rate calculations. The revised DCA has eliminated this 10% statutory deduction for eligible DC services. In the 2021 DC Study Update, this impacts the DC rate calculation for Waste Diversion,

Parks & Recreation, Library and services that have been assigned studies previously captured as Corporate Growth Studies under the 2019 DC Background Study.

3.2.5 Changes to When the DC Rate is Calculated

Prior to the most recent DCA amendments, all DCs were calculated and paid at the time of building permit issuance. The amended DCA now requires that DC rates be frozen on the day a complete application is received for a Site Plan or a Zoning By-law Amendment (ZBA). If a building permit is not issued within a 2 year frozen period following the approval of the application, the DC rate will revert back to the charges in effect on the date the building permit is issued.

3.2.6 Changes to When the DC is Payable

For all non-deferred development types, the DC is paid on the date the building permit is issued. Certain deferred development types are now eligible for a DC deferral which is to be paid over a period of either 6 or 21 annual instalments. Rental housing which is not non-profit and certain Institutional developments are eligible for 6 annual instalments, and non-profit housing developments are eligible for 21 annual instalments.

3.2.7 Municipalities May Charge Interest on DCs

Bill 108 includes a provision for Municipalities to charge interest on DCs during the frozen period and deferred annual instalments. Staff brought forward a report which received Council approval in March 2020 for a DC Interest Rate Policy. The rate is calculated based on the average annual historical five year Statistics Canada Non-residential Building Construction Price Index. The approach provides an objective interest rate setting process that supports the 'growth pays for growth' model while providing a balance between affordability and the need to fund growth projects.

3.3 Services & Types of Work Identified for DC Recovery

The tables which follow outline the services and types of works that are included in the 2021 DC Study Update rate calculations.

Hard Services	
Roads & Related Services	• Arterial Road Works • Two-Lane Arterial Upgrades • RT Related Arterial Road Works • Minor Road Works • Additional Programs • Operations Centre • Transportation Servicing Studies • Planning and Growth Management Studies
Wastewater	• Wastewater Trunk Sewers • Wastewater Internal Oversizing Sewers • Built Area Works Servicing • Strategic Links Servicing • Wastewater Treatment Plant Upgrades • Wastewater Pumping Station Works • Industrial Land Servicing (trunk & oversizing) • Wastewater Servicing Studies
Stormwater Management	• Community Growth SWM Works • Storm Trunk Sewers • Stormwater Internal Oversizing Sewers • Built Area Works Servicing • Low Impact Development • Industrial SWM Ponds • Industrial Land Servicing (trunk & oversizing) • Stormwater Servicing Studies
Water Distribution	• Low Level System • Southeast Pressure Zone • High Level System • Watermain Internal Oversizing • Built Area Works Servicing • Strategic Links Servicing • Industrial Servicing (trunk & oversizing) • Water Distribution Facilities • Water Servicing Studies

Soft Services	
Fire	• Facility • Outfitting • Vehicles
Police	• Facility • Outfitting
Transit	• Facility • Vehicles
Waste Diversion	• Facility
Parks & Recreation	• Parkland Development • Facility • Parks and Recreation Studies
Library	• Facility • Collections

3.4 When a DC is Calculated and Payable

The DC By-law requires DCs to be calculated at the time of building permit issuance for all development types unless the lands are subject to a Site Plan or Zoning By-law Amendment made on or after January 1, 2020. In these cases, the DC is calculated at an earlier point in time on the day a complete application is received. This DC rate remains 'frozen' for up to two years from the date the application is approved, after which the DC payable reverts back to time of building permit issuance.

For all non-deferred development types, a DC shall be paid on the date a building permit is issued under the *Building Code Act*. The Development Charges By-law allows deferred payment of DCs for certain development types as follows:

- Rental Housing that is not non-profit and certain Institutional development are to pay DCs in 6 annual instalments; and
- Non-Profit Housing is to pay DCs in 21 annual instalments.

It is noted that if any part of a deferred development type is changed so that it no longer meets the criteria for deferred payment instalments, the remaining DC, including interest, shall be paid immediately.

In March 2020, Council provided delegated authority to the City Treasurer or delegate to permit Owners to enter into an Alternative Payment Agreement that provides options to these payment schedules.

3.5 Notice of Occupation

Notice of occupation for eligible deferred development types that have not entered into an Alternative Payment Agreement will be at the earlier of a partial occupancy permit or interior final permit issued by the Building Division.

3.6 Interest on DCs

For non-deferred development on lands subject to a Site Plan or Zoning By-law Amendment application made on or after January 1, 2020, and a permit is issued within the frozen period, interest is applied from the date of complete application and is due at time of building permit issuance along with the DC payment. For deferred development types, interest accrues starting from the date the DC is calculated until the final instalment payment is received. The interest rate shall be applied consistent with the Council approved DC Interest Rate Policy.

3.7 Demolition Credits

If a development involves the demolition of and replacement of a building or structure on the same site, demolition credits for the demolished units and/or gross floor area are available. A key caveat is that the demolition permit related to the site must be issued less than 10 years prior to the issuance of a building permit. The specified period is extended to less than 20 years in the Downtown and Old East areas identified on Schedule 2 of the DC By-law. The credit can, in no case, exceed the amount of DCs that would otherwise be payable.

3.8 Non-Residential Rates

The DCA provides municipalities with the authority to impose DCs on new development to recover the capital costs to service those new developments. Section 2 (1) of the DCA states:

"The council of a municipality may by By-law impose development charges against land to pay for increased capital costs required because of increased needs for services arising from development of the area to which the By-law applies."

The DCA speaks to the development of land, but provides limited guidance regarding subcategorizing uses of the land. Some references to residential development are made in the DCA, and by inference non-residential, but no framework is provided to guide municipalities in the establishment of categorizing DCs. As a result, municipalities across Ontario define non-residential uses in different ways. The City is maintaining its current approach of separate non-residential DC rates for Institutional, Commercial, and Industrial (ICI) development after discussions with the broader DC External Stakeholder Committee. On December 18th, 2018 Council endorsed the continual use of the ICI rate structure for non-residential development in the City.

3.9 Conversion Credits

A change to the conversion policy was incorporated in the 2019 DC By-law and carried forward under the 2021 DC Study Update with respect to one form of non-residential use to another form of non-residential use. As a result of the non-residential rate policy consultation and review, a key issue was raised in terms of the existing policy. The City of London classifies non-residential development by ICI which results in different DC rates. Thus, the issue of converting a lower rate non-residential use to a higher rate non-residential use (i.e. Industrial to Commercial) triggers a DC payment. This approach may act as a barrier to redeveloping existing non-residential space, even though the servicing impacts of the change in use may be marginal. In order to address this issue, the 2019 DC By-law and 2021 Update includes the provision to exempt DC payments resulting from conversion from one non-residential use to another non-residential use when no additional floor space is being added. Further details on conversions can be found in the 2021 DC By-law.

3.10 Local Service Policy

The City's Local Service Policies for Roads and Related Services, Wastewater, Stormwater, Water Distribution and Parks are referenced within each individual service area chapter of the DC Background Study. For a comprehensive and complete list, all Local Service Policies are included in the DC By-law. All DC claimable works are paid for from the CSRF, and the Local Service Policy provides a guideline for the cost responsibilities related to construction of engineered infrastructure. Under the Local Service Policies, the costs of engineered infrastructure are determined to be either DC eligible or a local service cost, which is the Owner's responsibility pursuant to a registered Development Agreement.

The Local Service Policy has been developed in accordance with Section 59 of the DCA and through consultation with the DC External Stakeholder Committee.

3.11 Retirement of the Urban Works Reserve Fund (UWRF)

As part of the 2014 DC Study, Council approved the retirement of the UWRF and the consolidation of UWRF funding under the various CSRFs. The 2014 DC By-law established clear rules related to claimability from both "families" of reserve funds and recognized that no future claims to the UWRF would occur for agreements entered into following the in-force date of the 2014 DC By-law (August 4, 2014). As part of the 2019 DC Study, the UWRF was formally retired and the remaining legacy projects were transferred to the CSRF. Refer to Appendix L for further details including a list of outstanding UWRF obligations.

3.12 Rural Area Charges

DCs outside the Urban Growth Boundary (UGB) are lower than those that exist within the UGB due to the fact municipal owned infrastructure (water distribution, wastewater and stormwater servicing) are not planned to be extended to service this area.

Services that are "urban" in nature (wastewater, water distribution, stormwater servicing) are not applicable to development outside of the UGB; therefore, no policy changes have been proposed for rural area charges.

3.13 Intention Not to Introduce Credits Into the System

The DCA provides for the potential for a City to provide credits for work performed relating to a service to which the DC By-law relates.

The City's current and past approach for financing growth works completed by an Owner is through a claim submission process. The works identified in a registered Development Agreement are eligible for reimbursement from the applicable CSRF upon approval of a claim submission. A credit system that reimburses Owners for works they construct, opposed to payment upon claim approval, would compete with the existing system of payments under current practices. There is currently no intention to introduce a credit system under the 2021 DC By-law.

3.14 Reserve Funds

A separate fund is maintained for each of the service components listed in the City's DC rate structure. In accordance with section 35 of the DCA, draws from the Reserve Funds shall be made for the purposes which form the basis of the rate calculations.

3.15 Annual Indexing of DC Rates

The DCA provides for the annual indexing of the calculated rates by a prescribed index. The index that will be applied on an annual basis will be the Statistics Canada Non-residential Building Construction Price Index, (Toronto) as amended from time to time. Costs contained in this Study have been estimated in 2021 dollars, therefore indexing is required to ensure that DC rates keep pace with municipal servicing costs.

3.16 Administration of By-law

The administration of the By-law is assigned in part to the Chief Building Official, and in part to the City Treasurer (safekeeping of Reserve Funds, etc.), consistent with current practice.

3.17 Fund Reporting and Monitoring

As required under the DCA, an annual report on the activity in the DC Reserve Funds is to be filed with the Minister of Municipal Affairs. The monitoring program will continue as established from the 2014 and 2019 DC Studies. This annual Staff report will continue to advance the City's knowledge of how revenues in the CSRF compare to those predicted by the growth forecasts. It should also provide observations of how actual costs compare with those incorporated into the rate calculations. This monitoring will assist in further improving the DC rate calculation methods employed in the future, and help to ensure that rates are an accurate reflection of growth costs.

Based on the analysis provided in the report, Staff may recommend that a DC Background Study and By-law amendment be initiated should it be deemed that the actual costs consistently exceed estimates provided in the DC Study, resulting in the City collecting insufficient funds through DCs to pay for growth infrastructure and service costs.

3.18 Growth Management Implementation Strategy

The Growth Management Implementation Strategy (GMIS) is an important tool for the City to coordinate growth infrastructure with development approvals and correspond with the pace of growth across the city, while maintaining an acceptable financial position. In the intervening years of a DC Study, the GMIS is a valuable policy tool to proactively manage growth in the City of London. The GMIS considers the pace of development, the status of DC reserve funds and the desires of Owners to progress development applications in areas approved for growth. It provides flexibility to respond to changes in market conditions or to make adjustments that reflect the financial status of the DC reserve funds. Annual updates are provided to Council in the form of a Staff report.

3.19 Municipal Servicing and Financing Agreements

Municipal Servicing and Financing Agreements (MSFA) are a means to accelerate infrastructure projects from GMIS timing on a limited basis. An MSFA Policy was enacted by Council on July 30, 2013 for accepting, assessing and administering applications for the acceleration of DC-funded works through Front-Ending Agreements under the DCA. The MSFA Policy includes evaluation criteria to assess the appropriateness of MSFAs and identifies a 'cap' on total obligations as a key component of those criteria. No changes are proposed under the 2021 DC Study Update.

3.20 Effective Date of By-law

The approved 2021 DC By-law is scheduled to take effect on January 1, 2021, and may be in force and effect for up to 5 years. However it is the City's intention to initiate a comprehensive DC Background Study to adopt a new DC By-law for January 1, 2025.

CHAPTER 4:

Calculation of the Development Charge Rate

CHAPTER 4: Calculation of the Development Charge Rate

4.1 Planning Period

The service needs of the City have been planned on varying time horizons. The *Development Charges Act* (DCA) previously limited, for the purpose of Development Charge (DC) rate calculations, the planning period of certain services to 10 years under the DCA section 5 (1) 4. Consistent with this provision, in the 2019 DC Background Study the planning period for Fire, Police, Library, Parks and Recreation, Transit, Corporate Growth Studies, Waste Diversion and Operation Centres was limited to ten years. The planning horizon for other services (Roads, Water Distribution, Wastewater, Stormwater Management) was planned over a 20 year time horizon. The 10-year restriction was eliminated as part of the most recent amendments to the DCA.

For the 2021 DC Study Update, the end of the planning period for DC eligible growth related works will remain unchanged from the 2019 DC Background Study. As such, Fire, Police, Library, Parks and Recreation, Transit and Waste Diversion will have an 8-year planning period for DC rate calculation purposes (2021-2028) with the remaining services having an 18-year planning horizon (2021-2038).

4.2 Growth Forecasts

The DCA requires under section 5 (1) 1, that "*the anticipated amount, type and location of development for which development charges can be imposed must be estimated*". The 2019 DC Study began with a forecast of development activity; these forecasts are necessary for prudent planning of municipal services and facilities and represent the base assumption from which growth needs were forecasted.

Watson & Associates Economists Ltd. (Watson) was engaged to prepare population, employment, housing and non-residential space forecasts for the City of London. On February 13, 2018 Council endorsed the use of the reference growth scenario provided by Watson for 2019 DC Study purposes, based on Staff's recommendation. In April 2020, Watson reviewed the adopted 2019 DC Background Study forecasts and recommended that these forecasts remain appropriate for use in the 2021 DC Study Update.

Ultimately, the growth forecasts become the basis for the determination of the growth-related capital needs used in the DC rate calculations. A complete explanation of the growth forecast study methodology and its conclusions can be found in Appendix A.

4.3 Forecasting Future Capital Needs

Assumptions about the location of the anticipated growth were prerequisite to the next phase of the DC Study, that being the determination of municipal infrastructure and facility needs that result from anticipated growth. The determination of municipal needs answers 'what infrastructure or service needs arise from anticipated growth in London?' This step is required under section 5 (1) 2 of the DCA. The types of expenditures that are eligible for inclusion in the cost of capital needs are specified in section 5 (3) of the amended DCA, being:

1. *Costs to acquire land or an interest in land, including a leasehold interest.*
2. *Costs to improve land.*
3. *Costs to acquire, lease, construct or improve buildings and structures.*
4. *Costs to acquire, lease, construct or improve facilities including,*
    - i. *rolling stock with an estimated useful life of seven years or more;*
    - ii. *furniture and equipment, other than computer equipment; and*
    - iii. *materials acquired for circulation, reference or information purposes by a library board as defined in the Public Libraries Act.*
5. *Costs to undertake studies in connection with any of the matters referred to in paragraphs 1 to 4.*
6. *Costs of the development charge background study required under section 10.*
7. *Interest on money borrowed to pay for costs described in paragraphs 1 to 4.*

4.4 Legislated Adjustments to Arrive at Net DC Eligible Amount

Before arriving at amounts eligible for inclusion in DC rates, there are several adjustments that must be addressed:

1. Any excess capacity in existing facilities must be taken into account in arriving at the amount of the capital needs used for DC rate calculation purposes (s.5 (1) 5). Excess capacity is considered in planning all growth related works. Where there is excess capacity that Council has stated an intention would be paid for by new development, an exception exists. This exception pertains, for example, to "oversized services"[1] constructed in the past and which have been funded by private debt. In this case, the existing debt on the works which benefits growth in the time horizon of this study is included in rate calculations.

2. The DC rate calculation cannot include an increase in need which provides benefit to existing development (s.5 (1) 6). The benefit to "existing development" is also commonly referred to

[1] The term "oversized services" refers to services which were designed to serve growth beyond the particular development that triggered the works.

as the “non-growth share”. The assessment of benefit to existing development is unique to each projected capital need and to when the need was identified and is excluded from the determination of net DC eligible costs.

3. The rate calculation must exclude anticipated capital grants, subsidies or other contributions (s.5 (2)) subject to whether the person making it expressed a clear intention that all or part of the grant, subsidy or other contribution be used to benefit existing development or new development. Where applicable, these contributions have been identified and accounted for in the rate calculations.

4. In order to facilitate the calculation of separate residential and non-residential rates for each service, an allocation of the eligible costs to the various types of growth is made. The determination of this allocation is driven by the Council endorsed growth forecasts.

5. The rate calculations included in this study incorporate an offset to the costs otherwise included in the rate calculations to recognize the amount of uncommitted reserve funds. These uncommitted reserve funds have been accumulated in the past, for projects that remain to be completed in the future, and are available to fund a portion of the growth needs identified in this study. They have therefore been deducted from the amounts to be collected from future growth.

6. Finally, the rate calculations include financing costs. These financing costs have been determined through a cash flow analysis that combines:

    a. the allocation of opening uncommitted balance of the Reserve Fund;
    b. the projected revenues from DC rates (prior to inclusion of the financing costs in the rate);
    c. the projected drawdowns from the DC reserve funds, based on the portion eligible for DC funding; and,
    d. the projected ending balance, which includes provision for funding the post period benefit from future growth.

The cash flow model that simulates reserve fund activity and incorporates the above elements then produces the DC rates that include financing costs. These are the key elements of the rate calculations as set out in the legislation. Each element has been addressed in arriving at the DC rate eligible amount.

4.5 Examination of Existing Levels of Service

To ensure that municipalities do not improve their existing levels of service through capital improvements funded by growth, the DCA provides protection under section 5 (1) 4.

Section 5 (1) 4 of the DCA prohibits inclusion of infrastructure and facilities in rate calculations if their inclusion would improve municipal service standards above those that existed in the ten years preceding this DC Study. The regulations provide additional detail on this point:

- First, the regulations provide that where existing service standards are lower than those provided by another Act, the standard of service provided under the other Act prevails. In cases where the historical standard exceeds the forecasted growth capital needs, then the capital need remains the plan for future works. Services subject to an examination of a historical level of service include roads and related services, police, fire, library, parks & recreation, and waste diversion. Transit is subject to a planned level of service approach.

- Secondly, the regulations specify that in measuring existing service levels, both the quantity and quality of those services should be taken into account. The City interprets quality to refer to the ‘nature and grade of excellence’ of a service. Quantity refers to the ‘number and size’ of the facilities used to provide services. By assessing the existing services with respect to these two characteristics, this study has arrived at an objective measure of existing service standards (where required). By using replacement costs to calculate the existing standard (as required by regulation), a rational, objective comparison can be made between:

    1. the current cost estimate of planned future services; and
    2. the current cost equivalent (considering quality and quantity) of existing services.

Analysis of existing levels of service are included in the Appendices, where applicable.

4.6 Calculating DC Rates

The forecast of growth provides the basis for the growth needs calculation (denominator). The capital needs that result from the forecasted growth have been determined through the master plan studies and service areas. The cost of each identified need was estimated, along with its expected timing (numerator). Through attention to the various exclusions required by the legislation, an amount eligible for inclusion in the DC rate calculation has been determined.

CHAPTER 4: Calculation of the Development Charge Rate

DC rates are ultimately calculated by:

$$\frac{\textbf{Net Eligible Capital Needs (\$)}}{\textbf{Growth Forecasts (units or square metres)}}$$

Refer to Table 4-1 for the approved DC rates. DC rate summary tables can be found in Chapter 5.

CHAPTER 4: Calculation of the Development Charge Rate
TABLE 4-1: Approved Development Charge Rates

	Service Component:	Single & Semi Detached (per dwelling unit)	Rowhousing (per dwelling unit)	Apartments with < 2 bedrooms (per dwelling unit)	Apartments with > = 2 bedrooms (per dwelling unit)	Commercial (per sq. m. of gross floor area)	Institutional (per sq. m. of gross floor area)	Industrial (per sq. m. of gross floor area)
City Services	Fire	$ 67.35	$ 45.55	$ 29.79	$ 40.37	$ 0.52	$ 0.26	$ 0.05
	Police	$ 498.56	$ 337.17	$ 220.52	$ 298.82	$ 3.31	$ 1.68	$ 0.32
	Library	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Parks & Recreation	$ 3,980.66	$ 2,692.05	$ 1,760.68	$ 2,385.84	$ 0.22	$ 0.13	$ 0.09
	Transit	$ 146.72	$ 99.22	$ 64.90	$ 87.94	$ 1.35	$ 0.84	$ 0.24
	Waste Diversion	$ 260.95	$ 176.48	$ 115.42	$ 156.40	$ -	$ -	$ -
	Roads & Related Services	$ 16,990.07	$ 11,490.08	$ 7,514.84	$ 10,183.15	$ 170.85	$ 106.20	$ 74.80
	Wastewater	$ 3,488.31	$ 2,359.08	$ 1,542.90	$ 2,090.75	$ 26.82	$ 15.99	$ 44.77
	Stormwater	$ 6,917.61	$ 4,678.26	$ 3,059.71	$ 4,146.13	$ 68.03	$ 42.08	$ 66.49
	Water Distribution	$ 1,807.71	$ 1,222.52	$ 799.56	$ 1,083.47	$ 18.24	$ 11.30	$ 19.50
Total Rates	**TOTAL RATE - City Services and Urban Works (applied within the Urban Growth Area)**	**$ 34,157.94**	**$ 23,100.40**	**$ 15,108.32**	**$ 20,472.87**	**$ 289.34**	**$ 178.49**	**$ 206.26**
	TOTAL RATE - City Services (Rural Rate) (applied outside of the Urban Growth Area)	**$ 21,944.31**	**$ 14,840.55**	**$ 9,706.14**	**$ 13,152.52**	**$ 176.25**	**$ 109.12**	**$ 75.50**

Subject to rounding

CHAPTER 5:

Summaries of the Development Charge Rates

TABLE 5-1: All Services

Service Component	Sub Component	Total Estimated Cost (000's)	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded in Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																Commercial		Institutional		Industrial	
(all in $000's)		(1)	(2)	(3)	(4) (1) - sum(2,3)	(5)	(6) (4) * (5)	(7) (4) - (6)	% (8)	benefit (9) (7) * (8)	[(7) - (9)] * 10% (10)	(11) (7) - sum(9,10)	(12)	(13) (11) - (12)	% (14)	$ (15) (13) * (14)	% (16)	$ (17) (13) * (16)	% (18)	$ (19) (13) * (18)	% (20)	$ (21) (13) * (20)
FIRE																					
	Facilities	$3,856.6	$0.0	$500.0	$3,356.6	49.6%	$1,664.9	$1,691.7	35.3%	$597.2	$0.0	$1,094.5	$0.0	$1,094.5	79.4%	$869.1	11.8%	$129.2	7.7%	$84.3	1.1%	$12.0
	Vehicles	$2,704.9	$0.0	$0.0	$2,704.9	57.9%	$1,567.3	$1,137.6	26.1%	$296.9	$0.0	$840.7	$0.0	$840.7	79.4%	$667.5	11.8%	$99.2	7.7%	$64.7	1.1%	$9.2
	Outfitting	$121.1	$0.0	$0.0	$121.1	49.6%	$60.1	$61.0	35.3%	$21.5	$0.0	$39.5	$0.0	$39.5	79.4%	$31.4	11.8%	$4.7	7.7%	$3.0	1.1%	$.4
		$6,682.6	$0.0	$500.0	$6,182.6	53.2%	$3,292.2	$2,890.4	31.7%	$915.6	$0.0	$1,974.8	$0.0	$1,974.8	79.4%	$1,568.0	11.8%	$233.0	7.7%	$152.1	1.1%	$21.7
POLICE																					
	Facilities	$82,619.5	$0.0	$0.0	$82,619.5	11.9%	$9,840.0	$72,779.5	71.7%	$52,199.0	$0.0	$20,580.5	$12,570.0	$8,010.5	82.0%	$6,570.4	10.3%	$824.9	6.7%	$538.3	1.0%	$76.9
	Outfitting	$412.1	$0.0	$0.0	$412.1	0.0%	$0.0	$412.1	0.0%	$0.0	$0.0	$412.1	$0.0	$412.1	79.4%	$327.2	11.8%	$48.6	7.7%	$31.7	1.1%	$4.5
		$83,031.6	$0.0	$0.0	$83,031.6	11.9%	$9,840.0	$73,191.6	71.3%	$52,199.0	$0.0	$20,992.6	$12,570.0	$8,422.6	81.9%	$6,897.6	10.4%	$873.6	6.8%	$570.0	1.0%	$81.4
LIBRARY																					
	Facilities	$2,718.2	$0.0	$0.0	$2,718.2	0.0%	$0.0	$2,718.2	0.0%	$0.0	$0.0	$2,718.2	$0.0	$2,718.2	100.0%	$2,718.2	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0
	Collections	$0.0	$0.0	$0.0	$0.0	0.0%	$0.0	$0.0	0.0%	$0.0	$0.0	$0.0	$0.0	$0.0	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0
		$2,718.2	$0.0	$0.0	$2,718.2	0.0%	$0.0	$2,718.2	0.0%	$0.0	$0.0	$2,718.2	$0.0	$2,718.2	100.0%	$2,718.2	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0
PARKS & RECREATION																					
	Facilities	$112,424.7	$0.0	$25,955.7	$86,469.0	11.6%	$10,069.3	$76,399.7	62.9%	$48,017.8	$0.0	$28,381.9	$0.0	$28,381.9	100.0%	$28,381.9	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0
	Parkland Development	$34,722.4	$0.0	$0.0	$34,722.4	2.4%	$836.3	$33,886.1	26.5%	$8,981.1	$0.0	$24,905.1	$812.2	$24,092.9	99.5%	$23,973.7	0.2%	$54.0	0.2%	$42.5	0.1%	$22.6
		$147,147.2	$0.0	$25,955.7	$121,191.5	9.0%	$10,905.6	$110,285.8	51.7%	$56,998.9	$0.0	$53,287.0	$812.2	$52,474.8	99.8%	$52,355.6	0.1%	$54.0	0.1%	$42.5	0.0%	$22.6
TRANSIT																					
	Facilities	$48,557.4	$35,607.2	$0.0	$12,950.3	18.0%	$2,331.0	$10,619.2	57.0%	$6,053.0	$0.0	$4,566.3	$0.0	$4,566.3	73.1%	$3,337.9	12.2%	$557.1	9.6%	$438.4	5.1%	$232.9
	Vehicles	$51,079.6	$37,456.7	$0.0	$13,622.9	0.0%	$0.0	$13,622.9	60.0%	$8,173.8	$0.0	$5,449.2	$0.0	$5,449.2	73.1%	$3,983.3	12.2%	$664.8	9.6%	$523.1	5.1%	$277.9
		$99,637.0	$73,063.8	$0.0	$26,573.2	8.8%	$2,331.0	$24,242.1	58.7%	$14,226.7	$0.0	$10,015.4	$0.0	$10,015.4	73.1%	$7,321.3	12.2%	$1,221.9	9.6%	$961.5	5.1%	$510.8
WASTE DIVERSION		$20,000.0	$0.0	$0.0	$20,000.0	20.4%	$4,080.0	$15,920.0	71.2%	$11,335.0	$0.0	$4,585.0	$228.2	$4,356.8	100.0%	$4,356.8	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0
		$359,216.6	**$73,063.8**	**$26,455.7**	**$265,879.6**	**11.5%**	**$30,448.9**	**$229,248.2**	**59.2%**	**$135,675.3**	**$0.0**	**$93,572.9**	**$13,610.3**	**$79,962.6**	**94.1%**	**$75,217.5**	**3.0%**	**$2,382.5**	**2.2%**	**$1,726.1**	**0.8%**	**$636.5**
ROADS & RELATED SERVICES		$1,240,613.8	$227,885.0	$59,517.9	$953,210.9	22.4%	$213,798.7	$739,412.2	12.2%	$90,233.1	$0.0	$649,179.0	$0.0	$649,179.0	69.7%	$452,722.5	14.5%	$93,865.8	10.2%	$66,128.4	5.6%	$36,462.3
WASTEWATER		$248,293.7	$0.0	$3,603.0	$244,690.7	38.4%	$93,966.0	$150,724.7	16.1%	$24,248.5	$0.0	$126,476.1	$0.0	$126,476.1	66.7%	$84,330.2	10.6%	$13,345.0	7.1%	$9,014.5	15.6%	$19,786.4
STORMWATER		$341,624.6	$0.0	$3,545.8	$338,078.8	7.9%	$26,559.5	$311,519.3	13.2%	$41,077.3	$0.0	$270,441.9	$0.0	$270,441.9	65.8%	$177,869.4	13.3%	$36,030.8	9.3%	$25,258.6	11.6%	$31,283.1
WATER DISTRIBUTION		$128,199.4	$0.0	$1,593.8	$126,605.5	16.4%	$20,759.8	$105,845.8	17.7%	$18,759.5	$0.0	$87,086.3	$0.0	$87,086.3	64.1%	$55,818.7	13.3%	$11,617.1	9.4%	$8,157.9	13.2%	$11,492.6
		$1,958,731.4	**$227,885.0**	**$68,260.5**	**$1,662,585.9**	**21.4%**	**$355,084.0**	**$1,307,501.9**	**13.3%**	**$174,318.5**	**$0.0**	**$1,133,183.4**	**$0.0**	**$1,133,183.4**	**68.0%**	**$770,740.8**	**13.7%**	**$154,858.7**	**9.6%**	**$108,559.5**	**8.7%**	**$99,024.4**
		$2,317,948.0	**$300,948.8**	**$94,716.2**	**$1,928,465.5**	**20.0%**	**$385,532.8**	**$1,536,750.1**	**20.2%**	**$309,993.8**	**$0.0**	**$1,226,756.3**	**$13,610.3**	**$1,213,146.0**	**69.7%**	**$845,958.3**	**13.0%**	**$157,241.2**	**9.1%**	**$110,285.6**	**8.2%**	**$99,660.9**

CHAPTER 5: Summaries of the Development Charge Rates
TABLE 5-2: Residential

Service Component	Sub Component	Net Amount Eligible for DC Rate Calculation (000's)	Gross Population Forecast (8 & 18 year)	Pre Financing DC Rate (per dwelling unit)					Post Financing DC Rate (per dwelling unit)				
				Per Capita	Single & Semi Detached	Multiples / Row Housing	Apartment with < 2 bedroom	Apartment with >= 2 bedroom	Per Capita	Single & Semi Detached	Multiples / Row Housing	Apartment with < 2 bedroom	Apartment with >= 2 bedroom
					persons pre unit (ppu)	persons pre unit (ppu)	persons per unit (ppu)	persons per unit (ppu)		persons pre unit (ppu)	persons pre unit (ppu)	persons per unit (ppu)	persons per unit (ppu)
					3.12	2.11	1.38	1.87		3.12	2.11	1.38	1.87
FIRE													
	Facilities	$1,094.5	42,307	$7.80	$24.34	$16.46	$10.77	$14.59					
	Vehicles	$840.7		$5.99	$18.70	$12.64	$8.27	$11.21					
	Outfitting	$39.5		$0.28	$0.88	$0.59	$0.39	$0.53					
		$1,974.8		$14.07	$43.91	$29.70	$19.42	$26.32	**$21.59**	**$67.35**	**$45.55**	**$29.79**	**$40.37**
POLICE													
	Facilities	$8,010.5	42,307	$138.24	$431.31	$291.69	$190.77	$258.51					
	Outfitting	$412.1		$6.85	$21.36	$14.44	$9.45	$12.80					
		$8,422.6		$145.09	$452.67	$306.13	$200.22	$271.31	**$159.80**	**$498.56**	**$337.17**	**$220.52**	**$298.82**
LIBRARY													
	Facilities	$2,718.2	42,307	$0.00	$0.00	$0.00	$0.00	$0.00					
	Collections	$0		$0.00	$0.00	$0.00	$0.00	$0.00					
		$2,718.2		$0.00	$0.00	$0.00	$0.00	$0.00	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
PARKS & RECREATION													
	Facilities	$28,381.9	42,307	$653.41	$2,038.64	$1,378.69	$901.70	$1,221.87					
	Parkland Development	$24,092.9		$550.73	$1,718.29	$1,162.05	$760.01	$1,029.87					
		$52,474.8		$1,204.14	$3,756.93	$2,540.74	$1,661.72	$2,251.75	**$1,275.85**	**$3,980.66**	**$2,692.05**	**$1,760.68**	**$2,385.84**
TRANSIT													
	Facilities	$4,566.3	42,307	$34.89	$108.85	$73.61	$48.14	$65.24					
	Vehicles	$5,449.2		$19.04	$59.40	$40.17	$26.27	$35.60					
		$10,015.4		$53.92	$168.24	$113.78	$74.42	$100.84	**$47.03**	**$146.72**	**$99.22**	**$64.90**	**$87.94**
WASTE DIVERSION		$4,356.8	42,307	$88.31	$275.53	$186.34	$121.87	$165.14	**$83.64**	**$260.95**	**$176.48**	**$115.42**	**$156.40**
	SOFT SERVICE SUBTOTAL	**$79,962.6**		**$1,505.54**	**$4,697.28**	**$3,176.69**	**$2,077.64**	**$2,815.36**	**$1,587.90**	**$4,954.24**	**$3,350.46**	**$2,191.30**	**$2,969.37**
ROADS		$649,179.0	90,930	$4,944.12	$15,425.66	$10,432.10	$6,822.89	$9,245.51	**$5,445.54**	**$16,990.07**	**$11,490.08**	**$7,514.84**	**$10,183.15**
WASTEWATER		$126,476.1	90,930	$918.98	$2,867.22	$1,939.05	$1,268.19	$1,718.49	**$1,118.05**	**$3,488.31**	**$2,359.08**	**$1,542.90**	**$2,090.75**
STORMWATER		$270,441.9	90,930	$1,929.78	$6,020.91	$4,071.83	$2,663.09	$3,608.69	**$2,217.18**	**$6,917.61**	**$4,678.26**	**$3,059.71**	**$4,146.13**
WATER DISTRIBUTION		$87,086.3	90,930	$531.65	$1,658.75	$1,121.78	$733.68	$994.19	**$579.39**	**$1,807.71**	**$1,222.52**	**$799.56**	**$1,083.47**
	HARD SERVICE SUBTOTAL	**$1,133,183.4**		**$8,324.53**	**$25,972.54**	**$17,564.76**	**$11,487.85**	**$15,566.87**	**$9,360.16**	**$29,203.70**	**$19,749.94**	**$12,917.02**	**$17,503.50**
	GRAND TOTAL	**$1,213,146.0**		**$9,830.07**	**$30,669.82**	**$20,741.45**	**$13,565.50**	**$18,382.23**	**$10,948.06**	**$34,157.94**	**$23,100.40**	**$15,108.32**	**$20,472.87**

CHAPTER 5: Summaries of the Development Charge Rates
TABLE 5-3: Non-Residential

Service Component	Sub Component	Net Amount Eligible for DC Rate Calculation (000's)	Commercial			Institutional			Industrial		
			Floor Space Forecast (10 & 20 Year)	Pre Financing $ per Square Meter	Post Financing $ per Square Meter	Floor Space Forecast (10 & 20 Year)	Pre Financing $ per Square Meter	Post Financing $ per Square Meter	Floor Space Forecast (10 & 20 Year)	Pre Financing $ per Square Meter	Post Financing $ per Square Meter
FIRE											
	Facilities	$1,094.5		$0.19			$0.10			$0.02	
	Vehicles	$840.7	*260,742*	$0.14		*335,361*	$0.07		*252,919*	$0.01	
	Outfitting	$39.5		$0.01			$0.00			$0.00	
		$1,974.8		$0.34	$0.52		$0.17	$0.26		$0.03	$0.05
POLICE											
	Facilities	$8,010.5	*260,742*	$2.83		*335,361*	$1.44		*252,919*	$0.27	
	Outfitting	$412.1		$0.17			$0.09			$0.02	
		$8,422.6		$3.00	$3.31		$1.52	$1.68		$0.29	$0.32
LIBRARY											
	Facilities	$2,718.2	*260,742*	$0.00		*335,361*	$0.00		*252,919*	$0.00	
	Collections	$.0		$0.00			$0.00			$0.00	
		$2,718.2		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
PARKS & RECREATION											
	Facilities	$28,381.9	*260,742*	$0.00		*335,361*	$0.00		*252,919*	$0.00	
	Parkland Development	$24,092.9		$0.21			$0.13			$0.09	
		$52,474.8		$0.21	$0.22		$0.13	$0.13		$0.09	$0.09
TRANSIT											
	Facilities	$4,566.3	*260,742*	$0.98		*335,361*	$0.61		*252,919*	$0.28	
	Vehicles	$5,449.2		$0.57			$0.36			$0.00	
		$10,015.4		$1.55	$1.35		$0.97	$0.84		$0.28	$0.24
WASTE DIVERSION		$4,356.8	*260,742*	$0.00	$0.00	*335,361*	$0.00	$0.00	*252,919*	$0.00	$0.00
	SOFT SERVICE SUBTOTAL	**$79,962.6**		**$5.10**	**$5.40**		**$2.79**	**$2.92**		**$0.69**	**$0.70**
ROADS		$649,179.0	*600,943*	$155.12	$170.85	*681,100*	$96.42	$106.20	*532,975*	$67.91	$74.80
WASTEWATER		$126,476.1	*600,943*	$22.04	$26.82	*681,100*	$13.14	$15.99	*532,975*	$36.80	$44.77
STORMWATER		$270,441.9	*600,943*	$59.21	$68.03	*681,100*	$36.63	$42.08	*532,975*	$57.88	$66.49
WATER DISTRIBUTION		$87,086.3	*600,943*	$16.74	$18.24	*681,100*	$10.37	$11.30	*532,975*	$17.89	$19.50
	HARD SERVICE SUBTOTAL	**$1,133,183.4**		**$253.11**	**$283.94**		**$156.56**	**$175.57**		**$180.47**	**$205.56**
	GRAND TOTAL	**$1,213,146.0**		**$258.21**	**$289.34**		**$159.35**	**$178.49**		**$181.16**	**$206.26**

TABLE 5-4: Timing of Expenditures

Timing of Growth Related Capital Expenditures

(000's) Service Component	Total Estimated Costs	Net 2021 DC Rate Eligible Costs < 5 Years (2021-2025)	5 - 10 Years (2026-2030)	> 10 Years (2031 +)
FIRE	$6,682.6	$1,974.8	$.0	$.0
POLICE	$83,031.6	$7,531.7	$890.9	$.0
LIBRARY	$2,718.2	$755.0	$1,963.1	$.0
PARKS & RECREATION	$147,147.2	$37,878.7	$14,596.1	$.0
TRANSIT	$99,637.0	$6,334.9	$3,680.5	$.0
WASTE DIVERSION	$20,000.0	$.0	$4,356.8	$.0
SOFT SERVICE SUBTOTAL	**$359,216.6**	**$54,475.1**	**$25,487.5**	**$.0**
ROADS & RELATED SERVICES	$1,240,613.8	$243,207.3	$225,359.2	$180,612.5
WASTEWATER	$248,293.7	$49,426.8	$64,374.6	$12,674.7
STORMWATER	$341,624.6	$112,065.1	$109,260.4	$49,116.4
WATER DISTRIBUTION	$128,199.4	$38,429.1	$29,672.1	$18,985.1
HARD SERVICE SUBTOTAL	**$1,958,731.4**	**$443,128.3**	**$428,666.3**	**$261,388.8**
GRAND TOTAL	**$2,317,948.0**	**$497,603.4**	**$454,153.8**	**$261,388.8**

APPENDIX A:

Growth Forecasts

Growth Forecasts

Background

In November 2016, Watson & Associates Economists Ltd. (Watson) was retained by the City through a Request for Proposals process to prepare growth forecasts for population, employment, housing and non-residential construction which includes Industrial, Commercial and Institutional (ICI) to the year 2044. Watson has extensive experience in preparing growth forecasts for a multitude of municipalities, developers, agencies and other levels of government.

In February 2018, Watson finalized and presented to Council a report, entitled "City of London Population, Housing and Employment Growth Forecast, 2016 to 2044". The housing and non-residential reference growth scenarios contained in the report were endorsed by Council for use in the 2019 Development Charges (DC) Study. These forecasts are used to forecast growth-related capital needs and provide the quantum of growth over which costs were spread and DC rates were calculated.

Watson have reviewed these forecasts and determined that they remain appropriate for use in the 2021 DC Study Update as they are tracking reasonably close to recent residential and non-residential trends in the City. Their Memorandum is attached as a Technical Appendix to Appendix A.

In their conclusions, they recommend that housing type market demand shifts be continuously monitored and that recent events related to COVID-19 may influence building permit activity over the short-term. However, they recommend that it is premature to conclude on the broader economic impacts of COVID-19 at this time and that any emerging trends should be considered in the context of comprehensive population, housing and employment forecasts to be completed following the release of the 2021 Statistics Canada Census to inform the upcoming comprehensive DC Background Study.

This Appendix describes, in condensed form, the contents and conclusions of the 2018 Watson report that are pertinent to the DC rate setting process. It contains the following sections:

- Growth Forecast Methodology
- DC Study Growth Forecast
- Distribution of Growth Forecast
- Growth Forecast Summary

Growth Forecast Methodology

The methodology Watson applied in preparing the growth forecasts is reviewed in detail in Chapter 2 of the 2018 Watson report. A combined forecasting approach is used to derive population, household and employment forecasts, which incorporates both the traditional top-down cohort-survival forecast method and a bottom-up household formation method. This combined approach is used to ensure that both regional economic/demographic trends and local housing market conditions are adequately assessed. The approach and methodology involved several phases to arrive at the ultimate forecasts of housing and non-residential construction activity including:

1. Employment forecasts, taking into account the macro-economic environment for Canada and Ontario, as well as the economic drivers of local labour force growth and forecasted labour force growth by age.
2. Population forecasts by age and sex using a standard cohort survival model. This model recognizes age-specific fertility and death rates, and an estimated rate of net migration is added (in-migration to the City, less out-migration, by age group).
3. A housing model forecasts the anticipated household growth associated with the population forecasts. This model relies on assumptions regarding headship rates (the propensity of persons within an age group to head up a household or 'household maintainers').
4. A non-residential building space model produced forecasts based largely on employment growth forecasts presented in the economic model (see 1. above) and the use of floor space to employment ratios.

DC Study Growth Forecasts

The 2018 report prepared by Watson provides a full account of historical employment, population, housing and ICI floor space growth in London, in addition to forecasted growth. The following sections provide excerpts of this information.

Employment Forecast

Table A-1 shows forecasted employment growth, by major sector, for the City of London. It shows that employment growth is expected across a wide range of sectors driven by the continued economic diversification of the regional and local economic base. Over the course of the period 2016-2031, the employment base is forecasted to increase at an annual rate of 1.0%. Following 2031, the annual employment growth rate is forecasted to slow, largely as a result of an aging population and labour force base.

Growth Forecasts

Population Forecast

Population growth is a function of several variables. Birth, death and net migration assumptions were applied to existing populations to forecast population by age group. Table A-2 shows both historical and forecasted population by age group (cohorts).

For the 2021 DC Study Update, the planning period start date has been adjusted to 2021 while the end of the planning horizons used in the 2019 DC Background Study have been maintained. Both 8-year net population growth (2021-2029) and 18-year net population growth (2021-2039) are calculated to determine growth-related capital need requirements, 8-year forecasts are used by soft services and 18-year forecasts are applicable to hard services.

During the 8-year period of 2021-2029, net population growth is forecasted to be 39,300 persons. Net population growth over the 20 year period 2019-2039 is 70,900 persons. Watson's population growth forecast includes an upward adjustment of approximately 2.7% to account for the net Census undercount, which represents the net number of persons missed during Census enumeration. This has become a conventional approach employed by municipalities throughout Ontario for DC rate setting purposes.

Housing Forecast

Headship rates are defined as the number of primary household maintainers or heads of households by major population age group (cohorts). Primary maintainers are low among the under 25 population and rise rapidly in the 20-30 year old cohorts. The highest rates are in the 'over 50' age groups. Forecasted population growth in households in London will come from both overall population growth, and growth in cohorts that display the highest headship rate. This is important because, as the City's population ages, the ratio of household maintainers is anticipated to increase. Headship rates inform the household forecast as well as required housing construction. Table A-3 shows forecasted households by the age cohort of primary maintainers.

Housing mix was another important factor used to prepare the forecasts. Table A-4 shows the housing mix of historical housing construction and provides the forecasted mix. Nearly 52,500 new housing units are anticipated to be constructed between 2016 and 2044.

Over the forecasted period, housing growth is forecasted to be comprised of 44% low-density housing, 23% medium-density housing and 33% high-density housing between 2016 and 2044.

Table A-5 shows a summary of the historic and forecasted population and housing growth aligned with DC Study periods. A total of 42,420 housing units are forecasted between 2019 and 2039.

Over this period, the capture share of Medium density (townhouse) and high density (apartment) housing units are forecasted to increase in relation to Low density (single and semi- detached) housing units.

Non-Residential Building Space Forecast

In order to determine required non-residential space, Watson used assumptions for the number of square feet per employee. These space factors are applied to net employment growth by general categories Industrial, Commercial (Office and Retail) and Institutional. Table A-6 provides the space factors used in the 2019 DC Study. Table A-6 also provides required non-residential space for 2019-2039. These net space requirements and their associated employees produce demands for new servicing and were used for growth allocations and rate calculation purposes.

As noted, the Watson report formed the basis of the residential and ICI final growth forecasts used in the 2019 DC Study and have been revised to reflect a planning period start date of 2021; these forecasts are summarized in Tables A-7 & A-8 at the end of this appendix. The tables reflect both residential population growth and non-residential space forecasts beginning in 2021 and ending in 2039. The figures differ from the Watson forecasts adopted by Council only to the extent that they have been interpolated to match the timeframe used to forecast capital needs for DC Study purposes.

Distribution of Growth Forecasts

Growth results in different demands for infrastructure and services depending upon where it occurs. To forecast capital needs, it was necessary to distribute the growth forecasts into smaller geographic areas. Forecasted growth by type was allocated to locations designated to accommodate corresponding residential and non-residential development in accordance with Map 1 of the City's Official Plan, The London Plan, which has been adopted by Council and approved by the Province.

In general, the timing of this allocation was completed employing certain assumptions regarding the timing of development relative to each vacant land parcel's status in the planning approvals process, GMIS infrastructure timelines, contiguity of development and service outlets, previous build-out in the general area (as a proxy for market demand) and a reasonable allocation of growth to differing regions and market segments within the City. Assumptions were also made relating to infill and intensification. The 2019 Growth Management Implementation Strategy Update confirmed the assumptions used by Administration in distributing growth and forecasting infrastructure needs.

Having allocated the population, unit, employment and space forecasts, the allocated population, unit employment and space forecasts were re-aggregated using land segmentation that was meaningful

for each municipal service being planned. For example, forecasts of growth into traffic zones allowed for the City's consulting engineers to forecast road capacity expansion needs, growth by library district for Library capital needs, etc. The allocations used in the 2019 Background Study have been carried forward into the 2021 DC Study Update.

Capital needs planning based on forecasts ensures that the 2021 DC Study process complies with sections 5 (1) 1 and 5 (1) 2 of the *Development Charges Act* (DCA).

Growth Forecasts Summary

Growth forecasts for use in the 2019 DC Study were prepared by Watson and remain appropriate for use in the 2021 DC Study Update. Using the Watson forecasts, Staff allocated growth to geographic areas in accordance with Map 1 of The London Plan to determine capital needs for DC recoverable services, consistent with the requirements of the DCA. The growth forecasts and methodology described in this Appendix were reviewed and discussed with the DC External Stakeholder Committee.

Memorandum

To	Kevin Edwards, Manager, Development Finance
From	Jamie Cook and Vlad Petrov
Date	April 17, 2020
Re:	City of London Development Charges Growth Forecast Update

Fax ☐ Courier ☐ Mail ☐ Email ☒

1. Introduction:

1.1 Terms of Reference

Watson & Associates Economists Ltd. (Watson) was retained by the City of London in late 2019 to undertake a re-examination of the City of London Population, Housing and Employment Growth Forecast, 2016 to 2044, February 1, 2018, hereafter referred to as the 2018 Growth Forecast Study. Recent demographic and economic trends which have occurred within the City and surrounding region since the release of the 2018 Growth Forecast Study are examined herein. More specifically, this memo provides the following:

- Final 2016 Census population adjusted for the Census undercount (released in March, 2019);
- Recent residential and non-residential building permits by dwelling type and major employment sector from 2016 to 2019;
- Total residential development supply by structure type;
- Active non-residential site plans by major employment sector;
- Ontario Ministry of Finance (M.O.F.) population projections for Middlesex County;[1]
- Statistics Canada post 2016 population estimates for Middlesex County[1]; and
- Post 2016 labour force data for the London Census Metropolitan Area (C.M.A.).

The results of the analysis have been prepared to inform the City with respect to the use of the 2018 Growth Forecast for the City's 2021 Development Charges Background Study (D.C.B.S.). It is noted that Watson has not undertaken a comparative analysis regarding the recent geographic location of residential and non-residential development related to anticipated development trends.

1.2 Summary of Key Findings

Recent demographic and economic trends which have occurred within the City of London and Middlesex County indicate that the 2018 Growth Forecast Study is tracking reasonably close to recent residential and non-residential development trends within the City of London. The regional economy has experienced relatively stronger growth during the post-2016 period according to Statistics Canada postcensal estimates and 2019 M.O.F. population projections also indicate increasing levels of population growth.

At the local level, the City of London residential building permit activity has been strong post-2016, averaging approximately 2,600 units annually from 2016 to 2019, compared to 2,350 units during the 2016 to 2021 period in the 2018 Growth Forecast Study, and has been more weighed towards high-density units. Future housing supply (active and future developments) as of September 2019 also suggests that this more rapid shift towards more high-density development will likely continue over the near term (i.e. next five-years) and potentially over the longer-term. Total non-residential gross floor area (G.F.A.) from building permit activity is tracking very closely to forecasted G.F.A. in the 2018 Growth Forecast Study, and this trend is anticipated to continue based on our review of active non-residential site plans.

These relatively minor differences between the 2018 Growth Forecast study and recent building permit activity do not suggest a need to revise the City's population, housing and employment growth forecast at this time for the purpose of updating the City's D.C.B.S. However, it is noted that the potential effects of COVID-19 on the near-term economic outlook as well as residential and non-residential real estate market should be closely monitored.

2. Regional Economic Trends

2.1 Middlesex County Long-Term Population Forecast, 2016 to 2041

Figure 2-1 compares the most recent Summer 2019 M.O.F. population projections for Middlesex County with the previous M.O.F. population projections prepared in 2017 and the population forecast prepared by Altus Group in 2012.[1,2] Under the most current 2019 M.O.F. population projections, Middlesex County is tracking higher than both the 2017 M.O.F. projections and the forecast prepared by Altus Group in 2012. Under the 2019 M.O.F. forecast, Middlesex County is projected to reach a permanent population

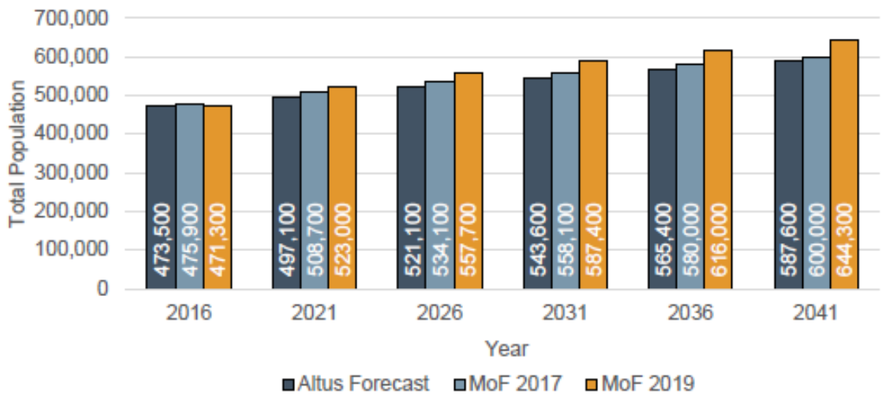
[1] For the purpose of this analysis, Middlesex County includes the City of London.

[1] For the purpose of this analysis, Middlesex County includes the City of London.
[2] Employment, Population, Housing and Non-Residential Construction Projections, City of London, Ontario 2011 Update, by Altus Group.

of 664,300 by 2041.[1] This represents an increase of 44,300 persons relative to the previous 2017 M.O.F. projections, and an increase of 56,700 persons relative to the Altus Group projections.

Population growth in Middlesex County is expected to grow at a steady annual rate of 1.3% under the Summer 2019 M.O.F. projections.[1] This represents a long-term annual population growth rate similar to the Provincial average.

Figure 2-1: Long-Term Population Projections for Middlesex County, 2016 to 2041

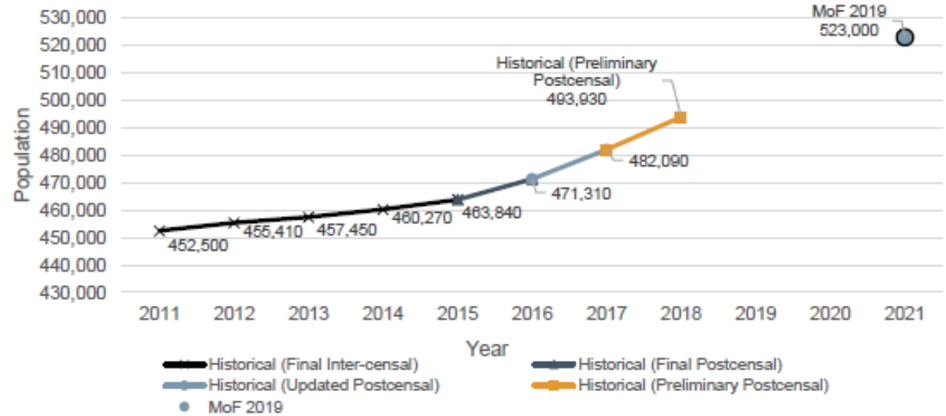


Note: Ontario Ministry of Finance projections for Middlesex County include the City of London. Population includes the net Census Undercount.
Source: Adapted from Ontario Ministry of Finance Population Projections Update, Spring 2017 and Summer 2019. Altus forecast numbers from Employment, Population, Housing and Non-Residential Construction Projections, City of London, Ontario, 2011 Update. By Watson & Associates Economists Ltd., 2020.

2.2 Middlesex County[2] Short-Term Population Estimate, 2011 to 2021

Figure 2-2 summarizes the annual intercensal and postcensal population estimates for Middlesex County as provided by Statistics Canada.[1] The 2018 postcensal population estimate provided by Statistics Canada is 493,930.[3] As identified in Figure 2-2, the Statistics Canada population estimates for Middlesex County are tracking noticeably higher from 2015 to 2018 compared to historical levels from 2011 to 2015. Post 2015, the Middlesex County[1] population is tracking closely to the Summer 2019 M.O.F. 2021 projection of 523,000. It is noted that population growth in Middlesex County over the past decade has been largely driven by net migration and to a lesser extent natural increase (i.e. births less deaths). As such, the revised Statistics Canada postcensal data indicates that Middlesex County has attracted a higher number of new residents (in-migration less out-migration) during the post-2015 period relative to the 2011 to 2015 period.

Figure 2-2: Middlesex County, Short-Term population Estimates, 2011 to 2018



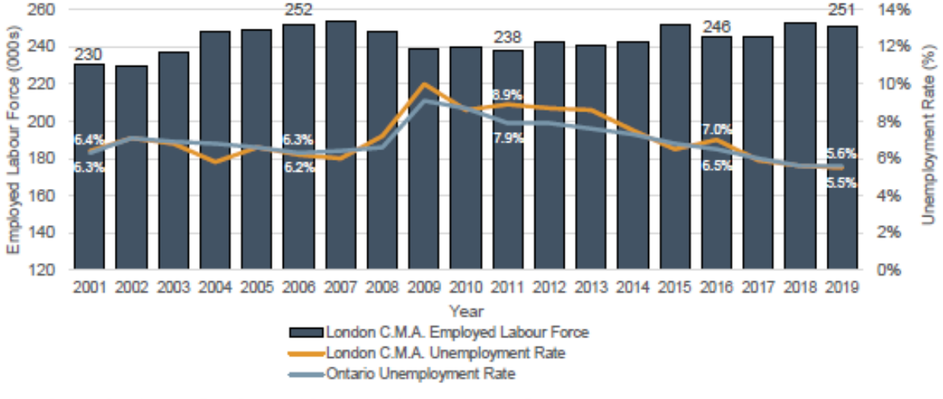
Note: Statistics Canada projections for Middlesex County include the City of London. Population includes the net Census undercount and is rounded.
Source: Historical population derived from Statistics Canada Annual Demographic Estimates, July 1, by Census Division (Table 17-10-0139-01), by Watson & Associates Economists Ltd., 2020.

2.3 Regional Labour Force Trends

Figure 2-3 summarizes total employed labour force and unemployment rate trends for the London C.M.A. Census labour force data is not available for the City of London post-2016, but it is captured in the London C.M.A. by the Statistics Canada Labour Force Survey. From 2007 to 2011 the employed labour force declined and the unemployment rate peaked at a historical high in 2009, coinciding with the 2008/2009 global economic recession. Since 2011 the London C.M.A. economy has shown signs of recovery with steady overall growth in the employed labour force and a declining unemployment rate. From 2016 to 2019 the employed labour force has increased by approximately 5,300 people at an annual growth rate of 0.7%. During this same period, the unemployment rate has continued to fall to a historical low of 5.5% in 2019. Comparatively, the unemployment rate for the Province of Ontario as a whole was 5.6% in 2019.

[1] An increase from 0.9% annual population growth for Middlesex County as per the 2017 M.O.F. projections.
[2] For the purpose of this analysis, Middlesex County includes the City of London.
[3] The Statistics Canada 2018 population estimates are preliminary and are subject to change.

Figure 2-3: London CMA Total Employed Labour Force and Unemployment Rate Trends, 2001 to 2018



Note: Statistics Canada Labour Force Survey and Census labour force statistics may differ.
Source: London Census Metropolitan Area (C.M.A.) employed labour force and unemployment rate from Statistics Canada Table 14-10-0096-01. Province of Ontario unemployment rate from Statistics Canada Table 14-10-0090-01. By Watson & Associates Economists Ltd., 2020.

3. City of London Trends

3.1 City of London Residential Trends

3.1.1 Net Census Undercount

During every Statistics Canada Census there are a number of Canadian residents who are incorrectly recorded in the Statistics Canada Census. Typically, a small percentage of residents are missed during enumeration while to a lesser extent a portion of the population is double-counted (e.g. students incorrectly captured as permanent residents). To account for these potential reporting errors, the population recorded by Statistics Canada is adjusted to account for the net number of persons who are missed (i.e. over-coverage less under-coverage) during enumeration. This adjustment is referred to by Statistics Canada as the net Census undercount. The net Census undercount typically varies with each Census period.

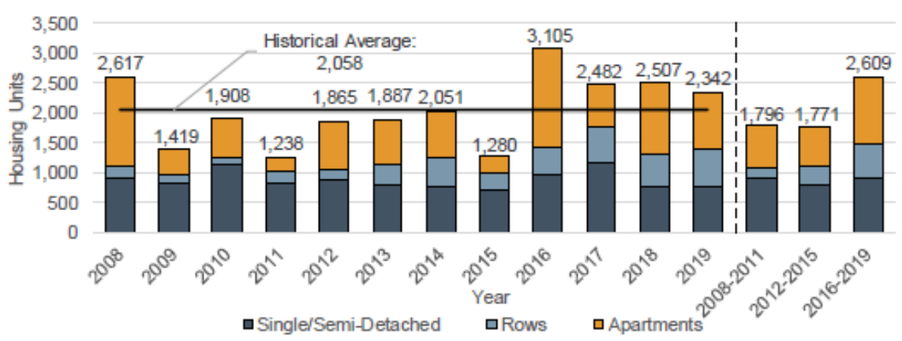
The 2016 net Census undercount was not released at the time of the 2018 City of London Population, Housing and Employment Growth Forecast, which assumed an undercount of 2.7%. The 2016 total population for the City of London, as adjusted for the Census undercount (finalized by Statistics Canada in March 2019), was reported at 3.5% for Middlesex County. The final 2016 total population adjusted for the net Census undercount for the City of London is 397,122.[1,2,3]

3.1.2 City of London Residential Building Permit Activity by Dwellings Type

Figure 3-1 and Figure 3-2 summarize historical trends regarding residential building permit activity (new units) for City of London during the 2008 to 2019 period. Over the past decade:

- The City of London issued an average of approximately 2,060 residential building permits per year related to new residential dwellings;
- The average rate of residential building permit activity has noticeably increased during the 2016 to 2019 period, partly driven by a large number of permits issued for new high-density residential dwellings during this time period; and
- The share of residential building permits issued for low-density housing has progressively decreased from 52% during the 2008 to 2011 period, to 45% during the 2012 to 2015 period, and to 35% during the 2016 to 2019 period.

Figure 3-1: City of London, Residential Building Permit Activity by Dwelling Type, 2008 to 2019



Note: 2019 is estimated based on November year-to-date data by Watson & Associates Economists Ltd.
Source: Data provided by the City of London, 2020.

[1] For the purpose of this analysis, Middlesex County includes the City of London.
[2] Statistics Canada Annual Demographic Estimates does not report on Census Subdivision (C.S.D.) population including the net Census undercount. The net Census undercount for single-tier municipalities and CSDs are based on the Census Division (C.D.) they are part of in the Standard Geographical Classification (S.G.C.) 2016 as delineated in the 2016 Census.
[3] The 2018 Growth Forecast Study estimated a 2016 total population for the City of London of 394,300.

Figure 3-2: City of London, Percentage Share of Residential Building Permit Activity by Dwelling Type, 2008 to 2019

Period	Low	Medium	High	Total
2008-2011	52%	10%	39%	100%
2012-2015	45%	18%	37%	100%
2016-2019	35%	22%	43%	100%

Note: 2019 is estimated based on November year-to-date data by Watson & Associates Economists Ltd.
Source: Data provided by the City of London, 2020.

3.1.3 City of London Residential Building Permit Activity Comparison

Figure 3-3 summarizes how the 2018 Growth Forecast Study is tracking to historical residential building permit activity. Key observations are as follows:

- Over the 2016 to 2019 period, an annual average of 2,609 building permits were issued for new housing units, compared to a forecast annual average of 2,348 housing units over the 2016 to 2021 period as reported in the 2018 Growth Forecast Study. This represents an increase of 13% over the 2018 study, with respect to short-term annual housing growth. It is noted that actual household growth between Census periods, is typically about 10% lower than annual residential building permits issued for new units for City of London.[1]
- The annual average housing mix derived from residential building permits issued for new dwellings from 2016 to 2019 is follows:
  - High-density dwelling units (apartments) - 43%;
  - Low-density dwelling units (single and semi-detached) - 35%; and
  - Medium-density dwelling units - 22%
- Comparatively, the housing unit forecast by type between 2016 to 2021 as per the 2018 Growth Forecast Study, anticipated a higher share of low-density development and a lower share of high-density development. These results are summarized below in Figure 3-3.

Figure 3-3: City of London, Short-Term Housing Forecast Comparison, 2016 to 2021

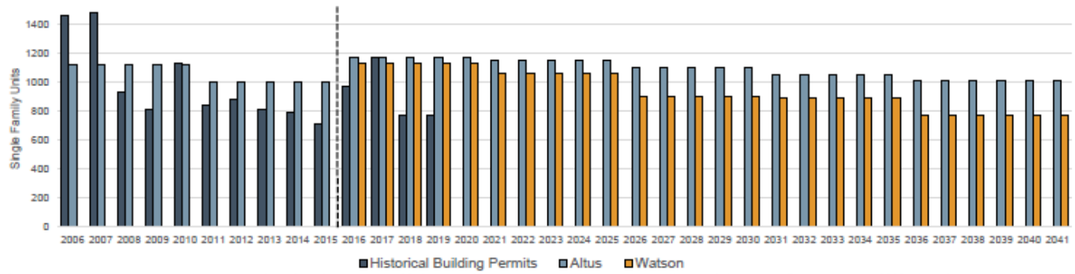
Density	City of London Population, Housing and Employment Growth Forecast, 2016 to 2021 Annual Average		Historical Activity 2016 to 2019 Annual Average		Difference (Forecast - Actual)	
	Total	Share	Total	Share	Total	Share
Low	1,128	48%	919	35%	209	13%
Medium	516	22%	567	22%	-51	0%
High	704	30%	1,123	43%	-419	-13%
Total	**2,348**	**100%**	**2,609**	**100%**	**-261**	**0%**

Source: City of London Population, Housing and Employment Growth Forecast, 2016 to 2044, by Watson & Associates Economists Ltd., 2018. Historical activity from City of London.

[1] Based on a review of Census household data and residential building permit data (new units only) between 2006 and 2016 for the City of London.

Figure 3-4 compares the low density housing development forecasts by Altus Group in 2012 and Watson in 2018 relative to historical building permit activity.[1] [2] During the 2006 to 2015 period, low density dwellings derived from building permit data was tracking significantly lower than the 2012 Altus Group forecast. During 2016 and 2017, low density housing unit development activity increased before moderating again in 2018 and 2019. Overall, from 2016 to 2019, low-density dwellings derived from building permit data has been tracking below levels anticipated by both Altus Group and Watson.

Figure 3-4: City of London Low Density Housing Activity Comparison



Source: Historical building permit data recieved from City of London, with 2019 derived from year-to-date November data by Watson & Associates Economists Ltd., 2020. Altus forecast from Employment, Population, Housing and Non-Residential Construction Projections, City of London, Ontario 2011 Update, by Altus Group. Watson forecast from City of London Population, Housing and Employment Growth Forecast, 2016 to 2044, released February 1, 2018, by Watson & Associates Economists Ltd.

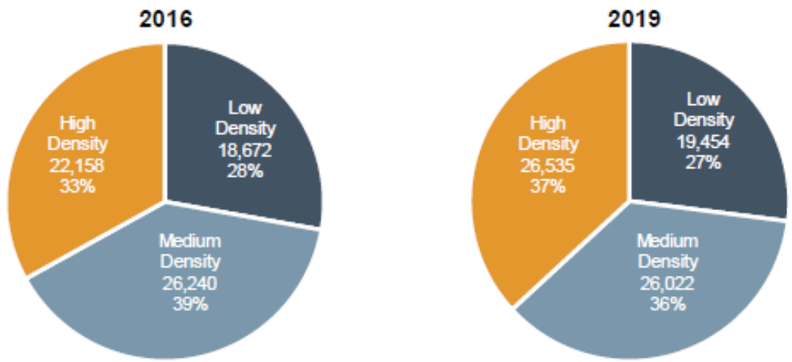
[1] Employment, Population, Housing and Non-Residential Construction Projections, City of London, Ontario 2011 Update, Altus Group.
[2] City of London Population, Housing and Employment Growth Forecast, 2016 to 2044, February 1, 2018, Watson & Associates Economists Ltd.

3.1.4 City of London Future Housing Supply Potential

Figure 3-5 and Figure 3-6 compare the City of London's housing supply potential by housing structure type as of September 2019 to the 2016 supply identified in the 2018 Growth Forecast. Key observations include:

- As of 2019, the City of London has a potential future housing supply of approximately 72,000 future residential units in active and future developments, up from approximately 67,100 in 2016;
- Of the City's total residential supply potential (housing units), 27% is low density (single detached and semi-detached), 36% is medium density (townhouses) and 37% is high density (apartments);
- In comparison to the 2016 housing supply, the City's total long-term housing supply has shifted further towards medium and high-density development;
- The City's active developments have slightly decreased from approximately 28,800 in 2016 to approximately 26,800 in 2019;
- Active housing supply has also become slightly more oriented to high-density developments with the high-density share of active developments increasing from 26% to 30% of the total active housing development inventory; and
- This shift in the City's active housing development inventory suggests that the City's housing forecast may continue to be more weighted toward high-density housing relative to the results of the 2018 Growth Forecast Study.

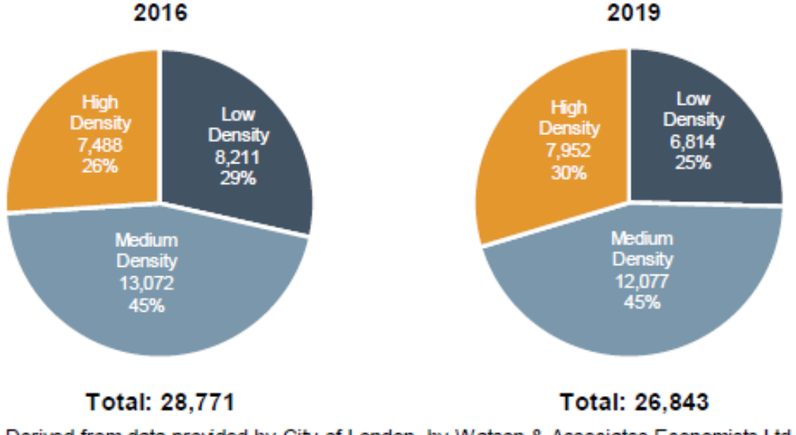
Figure 3-5: City of London, Summary of Future Residential Supply (Housing Units) by Housing Structure Type (Active and Future Developments)



Total: 67,070 **Total: 72,011**

Source: Derived from data provided by City of London, by Watson & Associates Economists Ltd., 2020.

Figure 3-6: City of London, Summary of Future Residential Supply (Housing Units) by Housing Structure Type (Active Developments Only)



Source: Derived from data provided by City of London, by Watson & Associates Economists Ltd., 2020.

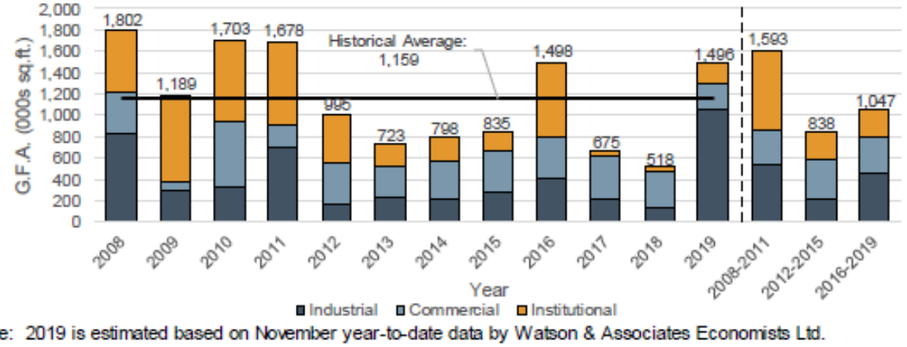
3.2 City of London Non-Residential Trends

3.2.1 *City of London Non-Residential Building Permit Activity*

Figure 3-7 and Figure 3-8 summarize non-residential building construction by industrial, commercial and institutional sector (I.C.I.) for the City of London during the 2008 to 2019 period, expressed in G.F.A. in square feet (sq.ft.). Key observations include:

- As shown, the City of London has averaged 1,159,000 sq.ft. of non-residential building activity over the 2008 to 2019 period;
- Non-residential construction activity has slowed since 2011, however, the 2016 to 2019 period has shown signs of a slight rebound; and
- The 2016 to 2019 period experienced a shift towards industrial development activity which accounted for 43% of all non-residential activity during the four-year period. This is largely due to strong industrial development activity in 2019.

Figure 3-7: City of London, Non-Residential Building Permit Activity by ICI, 2008 to 2019



Note: 2019 is estimated based on November year-to-date data by Watson & Associates Economists Ltd.
Source: Data provided by the City of London, 2020.

Figure 3-8: City of London, Percentage Share of Non-Residential Building Permit Activity by ICI, 2008 to 2019

Period	Industrial	Commercial	Institutional	Total
2008-2011	34%	20%	46%	100%
2012-2015	26%	42%	31%	100%
2016-2019	43%	33%	24%	100%

Note: 2019 is estimated based on November year-to-date data by Watson & Associates Economists Ltd.
Source: Data provided by the City of London, 2020.

3.2.2 *City of London Non-Residential Building Permit Activity Comparison*

Figure 3-9 further summarizes how the 2018 Growth Forecast Study is tracking to historical non-residential building permit activity. Key observations include:

- Over the 2016 to 2019 period, approximately 1,046,700 sq.ft. has been issued annually through non-residential building permit activity. This compares to an annual average of 1,089,100 sq.ft. over the 2016 to 2021 period as per the 2018 Growth Forecast Study, or approximately 4% lower than anticipated total non-residential building activity;
- Average actual building permit activity from 2016 to 2019 indicates that the recent share of industrial and commercial development activity has been higher, while the share of institutional development activity has been lower relative to the short-term forecast relative to the 2018 Growth Forecast Study.

Figure 3-9: City of London, Annual Average G.F.A. from Non-Residential Building Permit Activity Comparison

Density	City of London Population, Housing and Employment Growth Forecast, 2016 to 2020 Annual Average		Historical Activity 2016 to 2019 Annual Average		Difference (Forecast - Actual)	
Sector	G.F.A.	Share	G.F.A.	Share	G.F.A.	Share
Industrial	326,730	30%	451,715	43%	-124,985	-13%
Commercial	304,948	28%	343,649	33%	-38,701	-5%
Institutional	457,422	42%	251,301	24%	206,121	18%
Total	**1,089,100**	**100%**	**1,046,665**	**100%**	**42,435**	**0%**

Source: City of London Population, Housing and Employment Growth Forecast, 2016 to 2044, by Watson & Associates Economists Ltd., 2018. Historical activity from City of London, with 2019 derived from year-to-date November data by Watson & Associates Economists Ltd., 2020.

3.2.3 *City of London Non-Residential Active Site Plan Applications*

As summarized in Figure 3-10, the City of London has over 1 million sq.ft. of G.F.A. in active site plan applications for new non-residential construction and additions. Over half of the applications are for commercial development (57%), followed by institutional (27%) and industrial (16%) development. In addition, there is almost 1 million sq.ft. of G.F.A. associated with conversions to commercial uses. Recent non-residential site plan activity suggests that near-term non-residential development may shift towards the commercial sector.

Figure 3-10: City of London Non-Residential Active Site Plan Applications

	Industrial	Commercial	Institutional	Total
New and Additions (sq.ft.)				
G.F.A. (sq.ft.)	168,709	610,786	286,955	1,066,451
Share	16%	57%	27%	100%
Conversions (sq.ft.)				
G.F.A. (sq.ft.)	0	942,100	0	942,100
Share	0%	100%	0%	100%

Source: Derived from City of London data as of December 1, 2019, by Watson & Associates Economists Ltd., 2020.

4. Conclusions

The following key conclusions are provided below resulting from our analysis of recent demographic and economic trends which have occurred within the City of London and Middlesex County[1] since the release of the 2018 Growth Forecast Study.

- The regional economy has experienced positive growth during the post-2016 period. Middlesex County[1] has experienced strong population growth post-2016 according to Statistics Canada postcensal estimates. The 2019 M.O.F. population projections for Middlesex County[1] also indicate a higher level of population growth compared to what was previously identified in the Fall 2017 M.O.F. projections and 2012 Altus forecast, with an annual population growth rate of 1.3% over the 2016 to 2041 period.
- Residential building permit activity has been strong post-2016, averaging approximately 2,600 units annually from 2016 to 2019. This is relatively comparable to the 2016 to 2021 annual average housing forecast of 2,350 units as per the 2018 Growth Forecast Study, when comparing residential building permits (new dwellings) to households.
- Recent historical building permit activity (2016 to 2019) by dwelling type has been more weighed towards high-density units than previously anticipated during the 2016 to 2021 period (43% vs 30%, respectively).
- Future housing supply (active and future developments) as of September 2019 also suggests that this more rapid shift towards more high-density development will likely continue over the near term (i.e. next five-years) and potentially over the longer-term, relative to the 2018 Growth Forecast Study.
- Total non-residential G.F.A. from building permit activity is tracking very closely to forecasted G.F.A. and this trend is anticipated to continue based on our review of active non-residential site plans.

In conclusion, the 2018 Growth Forecast Study is tracking reasonably close to recent residential and non-residential development trends within the City of London. Residential building permit activity from 2016 to 2019 is tracking 13% over the 2016 to 2021 annual growth forecast in the 2018 study, however it is noted that actual household growth between Census periods is typically about 10% lower than annual residential building permits issued for new units in the City of London. As noted, the forecast shift towards medium and high-density households from low-density households has been occurring more rapidly than anticipated. With respect to non-residential development activity, (I.C.I.) building permit activity is tracking 4% lower than anticipated. These relatively minor differences between the 2018 Growth Forecast Study and recent building permit activity do not suggest a need to revise the City's population, housing and employment growth forecast at this time for the purpose of updating the City's D.C.B.S. However, it is noted that this shift in housing market demand should be continually monitored as it may ultimately have an impact on the geographic concentration of development and longer-term land budgeting requirements for the City. In addition, recent events related to COVID-19 may influence the residential and non-residential real estate market with building permit activity potentially slowing in 2020 and 2021 relative to recent years, however it is premature to conclude on the broader economic impacts related to COVID-19 at this point in time.

It should be noted that this is an interim memo and the City of London will complete a comprehensive population, housing and employment forecast following the release of the 2021 Statistics Canada Census that will be used to inform the 2024 D.C.B.S and associated By-Law.

[1] For the purpose of this analysis, Middlesex County includes the City of London.

Growth Forecasts
TABLE A-1: Employment

Annual Employment Growth, City of London, 2001 - 2044

Census Periods		Primary	Work at Home	Industrial	Office	Retail	Institutional	NFPOW [1]	Total
2001-2006	a	-16	22	155	568	771	993	341	2,833
2006-2011	a	4	138	-842	-135	-309	1,361	257	475
2011-2016	a	2	158	-785	57	355	62	429	279
2016-2021	f	0	127	326	364	362	650	242	2,070
2021-2026	f	0	136	355	330	529	656	404	2,411
2026-2031	f	0	130	327	271	551	628	231	2,137
2031-2036	f	0	214	320	339	567	538	309	2,287
2036-2041	f	0	108	254	303	510	457	286	1,918
2041-2044	f	0	80	261	306	556	457	144	1,804
2016-2044									
Avg. Annual		0	136	310	320	509	572	278	2,126
Total		0	3,813	8,692	8,954	14,266	16,015	7,789	59,528

Percent Distribution

Census Periods									
2001-2006	a	-1%	1%	5%	20%	27%	35%	12%	100%
2006-2011	a	1%	29%	-177%	-28%	-65%	287%	54%	100%
2011-2016	a	1%	57%	-281%	21%	127%	22%	154%	100%
2016-2021	f	0%	6%	16%	18%	17%	31%	12%	100%
2021-2026	f	0%	6%	15%	14%	22%	27%	17%	100%
2026-2031	f	0%	6%	15%	13%	26%	29%	11%	100%
2031-2036	f	0%	9%	14%	15%	25%	24%	13%	100%
2036-2041	f	0%	6%	13%	16%	27%	24%	15%	100%
2041-2044	f	0%	4%	14%	17%	31%	25%	8%	100%
2016-2044		0%	6%	15%	15%	24%	27%	13%	100%

Totals may not add up due to rounding
a: Final Statistics Canada census data
f: Forecasts by Watson & Associates Economists Ltd.

Source: Watson & Associates Economists Ltd. based on data from Statistics Canada Place of Work data from 2001 to 2016. 2021 to 2044 is a forecast by Watson & Associates Economists Ltd.

TABLE A-2: Population

Population (Including Census Undercount) [1]

Cohort	1991	1996	2001	2006	2011	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
0 - 4	22,900	23,200	19,000	18,300	19,800	20,100	20,400	20,700	21,100	21,500	21,900	22,300	22,700	23,000	23,200	23,400	23,500
5 - 9	21,400	22,600	23,400	20,400	19,900	21,700	22,000	22,100	22,300	22,400	22,400	22,700	23,000	23,300	23,800	24,200	24,500
10 - 14	19,300	21,900	23,400	23,600	21,100	21,600	21,900	22,600	23,100	23,600	24,100	24,500	24,700	24,900	25,000	25,000	25,200
15 - 19	21,000	21,100	23,300	25,000	25,300	22,800	22,800	22,800	23,100	23,200	23,900	24,200	25,000	25,500	26,100	26,700	26,900
20 - 24	28,700	25,900	24,500	26,700	27,400	28,900	28,400	27,700	27,100	26,900	26,400	26,400	26,300	26,600	26,700	27,400	27,700
25 - 29	33,100	27,500	26,900	28,800	31,100	32,800	32,900	33,500	33,800	33,800	33,600	33,300	32,700	32,200	32,000	31,500	31,200
30 - 34	30,000	30,700	25,400	24,100	25,300	27,900	29,900	30,900	31,400	31,500	31,400	32,000	32,900	33,500	33,800	33,800	33,700
35 - 39	26,100	28,700	29,800	25,300	24,000	25,100	24,100	24,100	24,900	26,500	28,300	30,300	31,300	32,000	32,300	32,600	32,700
40 - 44	23,500	25,800	28,500	29,300	25,200	24,000	25,300	26,200	26,400	26,200	25,400	24,600	24,700	25,700	27,300	29,200	31,300
45 - 49	17,900	23,100	25,700	28,600	29,200	25,300	24,100	23,300	22,900	23,300	24,100	25,400	26,300	26,500	26,300	25,800	24,900
50 - 54	14,400	17,300	22,600	25,300	28,300	28,900	29,000	28,500	27,700	26,800	25,900	24,700	23,800	23,500	23,800	24,500	25,800
55 - 59	13,100	14,000	16,600	22,000	24,400	27,300	27,100	27,400	27,800	27,900	28,100	28,100	27,700	26,800	25,900	25,000	23,900
60 - 64	13,000	12,600	13,300	16,300	21,600	23,800	24,800	25,600	26,200	26,600	26,600	26,400	26,700	27,000	27,100	27,300	27,300
65 - 69	12,700	12,100	11,900	12,700	15,500	20,500	20,700	20,900	21,500	22,400	23,200	24,100	24,800	25,400	25,800	25,700	25,600
70 - 74	9,800	11,500	11,200	11,300	12,000	14,800	16,000	17,000	17,600	18,400	19,500	19,700	19,900	20,500	21,300	22,000	22,900
75 - 79	7,200	8,100	9,800	9,900	9,900	10,800	11,500	12,200	12,900	13,400	13,700	14,700	15,500	16,100	16,800	17,800	18,000
80 - 84	4,600	5,400	6,100	8,100	8,000	8,300	8,200	8,300	8,600	8,900	9,300	9,800	10,400	10,900	11,300	11,500	12,300
85 - 89	2,300	2,800	3,300	4,300	5,700	5,700	6,000	6,200	6,200	6,100	6,200	6,100	6,100	6,400	6,600	6,800	7,200
90+	1,100	1,300	1,600	2,200	2,800	3,900	4,000	4,200	4,400	4,600	4,800	5,000	5,200	5,200	5,300	5,400	5,500
Total	**322,300**	**335,700**	**346,300**	**362,200**	**376,200**	**394,300**	**399,200**	**404,100**	**409,000**	**413,900**	**418,800**	**424,300**	**429,700**	**435,100**	**440,400**	**445,600**	**449,900**

Cohort	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
0 - 4	23,500	23,500	23,500	23,400	23,200	22,900	22,700	22,400	22,200	22,000	21,800	21,500	21,300	21,100	21,300	21,400	20,400
5 - 9	24,600	24,800	25,000	25,100	25,100	25,000	24,900	24,800	24,700	24,600	24,400	24,200	24,000	23,800	24,000	24,100	23,200
10 - 14	25,300	25,600	25,900	26,200	26,300	26,400	26,500	26,600	26,600	26,700	26,700	26,600	26,600	26,600	26,700	26,900	26,500
15 - 19	26,900	26,900	26,900	26,800	26,800	26,900	27,000	27,200	27,400	27,600	27,700	27,800	27,900	28,000	28,200	28,400	28,400
20 - 24	28,400	28,800	29,300	29,800	29,900	29,800	29,800	29,600	29,400	29,400	29,400	29,500	29,600	29,800	30,000	30,200	29,900
25 - 29	30,900	31,000	30,900	31,500	31,600	32,000	32,300	32,600	33,000	33,500	33,700	33,900	33,800	33,700	33,900	34,100	34,300
30 - 34	33,200	32,700	32,300	31,700	31,500	31,400	31,500	31,300	31,700	31,700	32,200	32,600	33,200	33,800	34,000	34,200	34,900
35 - 39	33,300	33,700	33,900	34,000	33,700	33,200	32,800	32,500	32,000	31,900	31,800	31,900	31,700	32,100	32,300	32,500	31,900
40 - 44	32,300	33,000	33,100	33,000	33,200	33,800	34,200	34,400	34,400	34,200	33,700	33,400	33,200	32,700	32,900	33,100	31,600
45 - 49	25,000	25,900	27,600	29,500	31,600	32,500	33,100	33,200	33,100	33,300	34,000	34,400	34,600	34,700	34,900	35,100	36,000
50 - 54	26,700	26,900	26,700	26,000	25,200	25,200	26,100	27,700	29,600	31,500	32,500	33,100	33,200	33,100	33,300	33,500	35,900
55 - 59	23,100	22,800	23,100	23,900	25,100	26,000	26,300	26,000	25,400	24,600	24,600	25,500	27,100	28,900	29,100	29,200	30,100
60 - 64	26,800	26,100	25,200	24,300	23,200	22,500	22,200	22,500	23,300	24,500	25,400	25,600	25,400	24,800	24,900	25,100	26,500
65 - 69	25,800	26,200	26,300	26,400	26,400	26,000	25,300	24,400	23,600	22,500	21,800	21,600	21,900	22,600	22,800	22,900	21,100
70 - 74	23,600	24,100	24,400	24,400	24,200	24,500	24,800	24,900	25,100	25,100	24,700	24,000	23,300	22,500	22,600	22,800	21,000
75 - 79	18,200	18,700	19,400	20,100	20,900	21,500	22,000	22,300	22,300	22,200	22,400	22,800	22,900	23,000	23,200	23,300	23,600
80 - 84	13,100	13,500	14,100	14,900	15,100	15,400	15,800	16,500	17,100	17,800	18,400	18,800	19,100	19,200	19,300	19,400	20,800
85 - 89	7,600	8,000	8,300	8,500	9,200	9,800	10,100	10,600	11,200	11,500	11,700	12,100	12,700	13,200	13,300	13,300	14,200
90+	5,700	6,000	6,200	6,400	6,900	7,300	7,800	8,200	8,500	9,200	9,900	10,400	11,000	11,600	11,600	11,700	13,600
Total	**454,100**	**458,100**	**462,100**	**465,900**	**469,100**	**472,200**	**475,100**	**477,900**	**480,600**	**483,800**	**486,800**	**489,700**	**492,500**	**495,200**	**498,100**	**501,100**	**504,000**

[1] Includes Net Undercount of approximatelv 2.7%
Source: 1991 to 2016 is based from Statistics Canada, 2017 to 2044 is a forecast generated by Watson & Associates Economists Ltd., 2017
Note: Numbers may not add up due to rounding

Growth Forecasts
TABLE A-3: Housing

Age Cohort	Total Household by Age of Primary Maintainer								
	2006	2011	2016	2021	2026	2031	2036	2041	2044
Under 25	8,270	8,245	8,407	8,664	9,257	9,600	9,600	9,554	9,514
25-34	23,395	24,920	26,912	28,809	28,940	28,029	28,894	30,223	31,068
35-44	29,170	26,100	26,203	28,683	32,944	35,822	35,732	35,032	34,398
45-54	31,230	33,190	31,591	29,136	29,352	32,492	36,884	40,064	42,564
55-64	22,690	27,540	30,967	33,161	31,697	29,302	29,770	32,939	34,811
65-74	15,035	17,300	21,430	25,660	28,630	30,505	29,395	27,360	25,610
75+	15,730	16,340	17,630	20,770	25,300	30,535	36,395	41,390	44,710
Total	**145,520**	**153,635**	**163,140**	**174,882**	**186,120**	**196,284**	**206,669**	**216,562**	**222,676**

Persons Per Unit (Incl. Net Census Undercount)	**2.49**	**2.45**	**2.42**	**2.39**	**2.39**	**2.37**	**2.33**	**2.29**	**2.26**
Persons Per Unit (Excl. Net Census Undercount)	**2.42**	**2.38**	**2.35**	**2.33**	**2.33**	**2.31**	**2.26**	**2.23**	**2.20**

Annual Households	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036	2036-2041	2041-2044
	1,623	1,901	2,348	2,248	2,033	2,077	1,979	2,038

Annual Household forecast derived from headship rate approach differs from annual housing units forecast using market forecast approach.
Source: 1991-2006 Headship rate data provided from Statistics Canada Demography Division. Headship rate forecast provided by Watson & Associates Economists Ltd.
Note: Numbers may not add up due to rounding.

Growth Forecasts
TABLE A-4: Residential

Annual Household Growth, City of London, 1996 - 2044

Census Periods		Singles and Semis	Row	Apartments and Other	Total
		Occupied Dwellings Units			
1996-2001	a	1,083	34	501	1,618
2001-2006	a	625	636	293	1,554
2006-2011	a	1,181	46	408	1,635
2011-2016	a	662	378	861	1,901
2016-2021	e	1,128	516	704	2,348
2021-2026	f	1,062	518	670	2,250
2026-2031	f	894	466	670	2,030
2031-2036	f	892	500	686	2,078
2036-2041	f	772	474	732	1,978
2041-2044	f	693	490	857	2,040
2016-2044					
Avg. Annual		907	494	720	2,121
Total		8,992	4,058	6,382	19,432
		Percent Distribution			
Census Periods					
1996-2001	a	67%	2%	31%	100%
2001-2006	a	40%	41%	19%	100%
2006-2011	a	72%	3%	25%	100%
2011-2016	a	35%	20%	45%	100%
2016-2021	e	48%	22%	30%	100%
2021-2026	f	47%	23%	30%	100%
2026-2031	f	44%	23%	33%	100%
2031-2036	f	43%	24%	33%	100%
2036-2041	f	39%	24%	37%	100%
2041-2044	f	34%	24%	42%	100%
2016-2044		46%	21%	33%	100%

Totals may not add up due to rounding
a: Final Statistics Canada census data
e: Estimates based on actual building permit data from City of London
f: Forecasts by Watson & Associates Economists Ltd.

Source: Watson & Associates Economists Ltd. based on data from Statistics Canada Census and from City of London building permit data

TABLE A-5: Summary of Annual Housing Growth 1996 - 2044

Year		Population (Excluding Institutional Population)	Institutional Population	Population (Excluding Census Undercount)	Population (Including Census Undercount)[1]	Housing Units					
						Singles & Semi-Detached	Multiple Dwellings[2]	Apartments[3]	Other	Total Households	Persons Per Unit (PPU)
Historical	*Mid 1996*	321,345	4,301	325,646	334,570	69,275	19,470	40,545	445	129,735	2.51
	Mid 2001	332,420	4,119	336,539	345,760	74,690	19,640	43,050	385	137,765	2.44
	Mid 2006	347,470	4,925	352,395	362,050	77,815	22,820	44,515	365	145,515	2.42
	Mid 2011	360,720	5,431	366,151	376,180	83,720	23,050	46,555	310	153,635	2.38
	Mid 2016	378,040	5,782	383,822	394,300	87,030	24,935	50,855	320	163,140	2.35
Forecast	*Mid 2019*	391,880	6,258	398,139	409,000	90,414	26,483	52,967	320	170,184	2.34
	Mid 2024	416,500	6,967	423,466	435,100	95,856	29,070	56,390	320	181,636	2.33
	Mid 2029	438,370	7,560	445,930	458,100	100,662	31,503	59,735	320	192,220	2.32
	Mid 2034	454,370	8,071	462,441	475,100	105,126	33,935	63,133	320	202,514	2.28
	Mid 2039	468,130	8,558	476,685	489,700	109,226	36,357	66,701	320	212,604	2.24
	Mid 2044	481,420	9,150	490,570	504,000	112,849	38,775	70,736	320	222,680	2.20
Incremental	**Mid 2001 - Mid 2006**	**15,050**	**806**	**15,856**	**16,290**	**3,125**	**3,180**	**1,465**	**-20**	**7,750**	
	Mid 2006 - Mid 2011	**13,250**	**506**	**13,756**	**14,130**	**5,905**	**230**	**2,040**	**-55**	**8,120**	
	Mid 2011 - Mid 2016	**17,320**	**351**	**17,671**	**18,120**	**3,310**	**1,885**	**4,300**	**10**	**9,505**	
	Mid 2016 - Mid 2019	**13,840**	**476**	**14,317**	**14,700**	**3,384**	**1,548**	**2,112**	**0**	**7,044**	
	Mid 2019 - Mid 2024	**24,620**	**709**	**25,327**	**26,100**	**5,442**	**2,587**	**3,423**	**0**	**11,452**	
	Mid 2019 - Mid 2029	**46,490**	**1,302**	**47,791**	**49,100**	**10,248**	**5,020**	**6,768**	**0**	**22,036**	
	Mid 2019 - Mid 2034	**62,490**	**1,813**	**64,302**	**66,100**	**14,712**	**7,452**	**10,166**	**0**	**32,330**	
	Mid 2019 - Mid 2039	**76,250**	**2,300**	**78,546**	**80,700**	**18,812**	**9,874**	**13,734**	**0**	**42,420**	
	Mid 2019 - Mid 2044	**89,540**	**2,892**	**92,431**	**95,000**	**22,435**	**12,292**	**17,769**	**0**	**52,496**	

Source: Watson & Associates Economists Ltd., 2018.

1. Census Undercount estimated at approximately 2.73%. Note: Population Including the Undercount has been rounded.
2. Townhouses
3. Includes bachelor, 1 bedroom and 2 bedroom+ apartments.

Gross Floor Area Forecast Per Worker (F.S.W.) Assumptions

Sector	Sq.ft. Per Worker
Industrial	1,000
Commercial	425
Institutional	700

Source: Watson & Associates Economists Ltd.

Employment and Gross Floor Area (G.F.A.) Forecast, 2016 to 2044

Annual Non-Residential Gross Floor Area Forecast, 2016-2044

Forecast Period	Industrial	Office	Retail	Institutional	Total
2016-2019	326,000	118,100	190,200	454,900	1,089,200
2019-2024	343,300	111,700	230,900	457,600	1,143,500
2024-2029	338,500	95,800	259,960	447,400	1,141,660
2029-2034	322,800	101,400	269,480	401,840	1,095,520
2034-2039	280,100	103,300	258,200	342,500	984,100
2039-2044	258,100	99,000	259,000	319,800	935,900
2019-2044	308,600	102,200	255,500	393,800	1,060,100

Forecast Period	Industrial	Office	Retail	Institutional	Total
2016-2019	30%	11%	17%	42%	100%
2019-2024	30%	10%	20%	40%	100%
2024-2029	30%	8%	23%	39%	100%
2029-2034	29%	9%	25%	37%	100%
2034-2039	28%	10%	26%	35%	100%
2039-2044	28%	11%	28%	34%	100%
2019-2044	29%	10%	24%	37%	100%

Source: Watson & Associates Economists Ltd., 2018

Growth Forecasts
TABLE A-7: Residential Forecast Summary

Population, Residential Units, and Growth Forecasts					Allocation of Total Unit Growth to Housing Types					
	Population	Net. Pop Growth	Res. Units	Unit Growth Forecast	Total of Units per Allocation at right	Low	Med	High Density Apts < 1 bedroom	High Density Apts > 2 bedroom	Total High Density Apartments
2016	394,300		175,558							
2019	409,000		182,602							
2021	418,800		187,298							
2024	435,100	16,300	194,054	6,750	6,750	3,186	1,554	804	1,206	2,010
2029	458,100	23,000	204,638	10,584	10,584	4,803	2,432	1,340	2,009	3,349
2034	475,100	17,000	214,932	10,294	10,294	4,464	2,432	1,359	2,039	3,398
2039	489,700	14,600	225,022	10,090	10,090	4,100	2,422	1,427	2,141	3,568
2044	504,000	14,300	235,098	10,076	10,076	3,623	2,418	1,614	2,421	4,035
Total		85,200		47,794	47,794	20,176	11,258	6,544	9,816	16,360
8 yr. 2021-2029	Net pop'n growth:	39,300		17,334		7,989	3,986	2,144	3,215	5,359
	Gross pop'n growth in new units (Note 2)	42,307	(Note 2)		density:	3.12	2.11	1.38	1.87	1.68
18 yr. 2021-2039	Net pop'n growth:	70,900		37,718		16,553	8,840	4,930	7,395	12,325
	Gross pop'n growth in new units (Note	90,930	(Note 2)		density:	3.12	2.11	1.38	1.87	1.68

Note:
(1) Gross population in new units derived from multiplying unit forecasts (italicized above) by unit density figures (italicized).
(2) 'Population growth', 'Unit growth' and 'Density assumptions' provided by Watson & Associates, adjusted for the DC Study periods.

Growth Forecasts
TABLE A-8: Non-Residential Forecast Summary

	Growth of Space - 2021-2039 (4)				Employment Growth - 2021-2039 (3)					Total Place of Work (POW) Employment
	Industrial (sq.m)	Commercial (sq.m)	Institutional (sq.m.)	Total (sq.m)	Industrial Emp.	Commercial Emp.	Institutional Emp.	At Home/ Other	Total Emp't	Total
2021-2024	95,681	95,486	127,537	318,704	1,030	2,418	1,961	333	5,742	193,142
2024-2029	157,238	165,256	207,824	530,318	1,693	4,186	3,195	660	9,734	202,875
2029-2034	149,946	172,279	186,642	508,867	1,614	4,363	2,871	901	9,749	212,624
2034-2039	130,111	167,922	159,096	457,129	1,400	4,254	2,446	752	8,852	221,476
Total	532,975	600,943	681,100	1,815,019	5,737	15,221	10,473	2,646	34,077	
8 yr. 2021-2029	252,919	260,742	335,361	849,022	2,723	6,604	5,156	993	15,476	
	29.79%	30.71%	39.50%	100.00%						
18 yr. 2021-2039	532,975	600,943	681,100	1,815,019	5,737	15,221	10,473	2,646	34,077	
	29.36%	33.11%	37.53%	100.00%						
Floor Area Ratio (5)	23%	30%	42%							

	Land Needs associated with Growth of Space forecast 2019-2039		
	Industrial (ha)	Commercial (ha)	Institutional (ha)
2021-2024	42	32	30
2024-2029	68	55	49
2029-2034	65	57	44
2034-2039	57	56	38
Total	232	200	162

Notes:

(1) 'Population growth', 'Unit growth' and 'Density assumptions' provided by Watson & Associates, adjusted for the DC Study periods.

(2) Gross population in new units dervied from multiplying unit forecasts (italicized above) by unit density figures (italicized).

(3) Employment growth forecast by Watson & Associates, adjusted by Watson for the DC Study periods.

(4) Floor Space conversions based on Watson & Associates space factors by ICI category.

(5) Floor area ratio calculations based on City of London 2011 Land Needs Background Study.

(6) Conversion based on floor area ratio assumptions.

APPENDIX B:

Fire Services

Fire Services

Existing Service Levels

The City of London Fire Department (LFD) is organized into seven divisions that provide proactive and reactive services including, but not limited to: Fire Fighting; Communications; Fire Prevention; Apparatus, Training, Stores and Administration. At peak staffing, the LFD employs 415 people.

In order to measure the existing service standard in a way that would make it useful for comparison to standards for new stations, the City undertook a detailed inventory of its assets used in delivery of Fire services. The inventory includes valuation of all existing facilities (based on their size, quality and nature of construction, land value, and estimated building contents), Fire service vehicles, and Firefighter outfitting equipment. A per capita measure of Fire services was calculated. That measure combines the quality and the quantity of assets used for delivery of Fire services which assists in ensuring that the amounts included in the rate calculations did not exceed existing historical standards. Refer to tables B-1 through B-3 for Service Standards related to Fire Services.

Approach to Planning Fire Services

With respect to the delivery of front line fire apparatus and staff, the adequacy of fire and emergency service levels is measured in two ways. The first key indicator, which is 'response time of the first Engine Company', is a measure of the elapsed time from when the vehicle begins to respond to an alarm and when it arrives on scene. The measure looks at the geography covered within a set time frame, as well as the risks within the same. For example, if the area is not populated or very sparsely populated, there is no need to add a fire station; however, that need increases as the area is populated.

The second key indicator is also time sensitive, albeit it refers to when the balance of the necessary vehicles and fire fighters arrive on scene, which is defined as the 'weight of the response'. Both are critical components with respect to the fire department's primary goals: saving lives, preserving property and conservation of the environment. When engine company response times exceed accepted industry norms, the need for a new station is triggered. An additional vehicle with staffing may also be necessary if the department is unable to maintain an acceptable 'response weight' based on industry norms. In planning services for new areas, LFD relies upon industry standards and guidelines to establish levels of service.

At the time of preparation of the 2019 DC Study, the LFD was in the review stages of its future staffing and associated capital needs. Identified capital needs in the 2019 DC Study were brought forward under the 2021 DC Study Update and are based on a review of growth allocations, projects identified in the previous Fire Master Study, and previously approved reports to Council regarding anticipated growth and fire service needs. That being said, the LFD can state that its current coverage is aimed at servicing the populated areas within the Urban Growth Boundary and, to an extent, some areas that are not yet built out.

Capital Needs Identified

Under the 2021 DC Study Update, the same methodologies were used to determine the Fire Services projects and rates as were applied under the 2019 DC Study. Using the growth forecasts (see Appendix A), LFD undertook a capital needs forecast to update the capital requirements identified in the previous DC Studies. This forecast identified the location and timing of fire station construction, with the intention of providing the required response times. Once the location of a station was known, it employed modeling software, that incorporates arterial road patterns and traveling speeds from which the service area of the new station was delineated.

The result of the process suggests that there are some significant capital challenges the City will face as a result of the anticipated growth and its geographic distribution. Below are some of the implications resulting from the capital needs forecast:

- Subject to the speed of growth in the southeast area of the City, there is a need for one new station within the planning horizon (Station #15 – Southeast) currently scheduled to be operational in 2022. The new station will need to be equipped with a Quint vehicle to provide the best overall coverage. Other related capital costs identified are firefighting gear needed to outfit the firefighters who will provide service from the new station. The capital needs for Station #15 and its associated vehicle and outfitting are carried forward from the 2019 DC Study.
- Growth allocations have supported the identified need for an Aerial Company to address the increasing number of high rise buildings being constructed in the central part of the City. This fire vehicle is proposed to be located at Fire Station 1, and will provide support to other areas of the City as backup to existing aerial vehicles (and vice-versa). Buildings requiring the dispatch of an aerial company for fire suppression generally require response by two aerial vehicles. The capital needs for the Aerial Company are carried forward from the 2019 DC Study.

Portion of Capital Needs Eligible for DC Rate Calculations

Growth associated with Station #15 and the Aerial Company will benefit beyond the forecast period. A provision has been made in the determination of the growth amount for the purposes of rate calculations, to recognize a benefit to growth occurring beyond the planning horizon.

The determination of the amount eligible for inclusion in the DC rate calculations also includes provision for the benefit to existing development as required by section 5 (1) 6 of the *Development Charges Act*. For Station #15 and its associated vehicle and outfitting, the non-growth share reflects existing development as of 1999 (the year the project was first identified). The benefit to existing allocation for the Aerial Company recognizes that the vehicle will provide service for existing properties in the central part of the City, albeit the need is being driven by the number of new high rises being added to the core area.

Final Costs for DC Rate Calculation

The required Fire Services projects form the basis for determining DCs for the CSRF and represent the numerator in the rate calculation. The final total costs calculated for Fire Services projects are shown in Tables B-4 through B-6.

Financing Costs

Table B-7 was produced to simulate cash flows for CSRF funded Fire Services projects for the purpose of calculating the final DC rate inclusive of financing costs. Forecasting cash flow and financing costs involved:

a) Starting with the 2021 opening balance, which reflects accumulated uncommitted funds for growth projects identified in past DC studies;
b) Projecting DC revenues using the pre-finance rate;
c) Incorporating DC drawdowns in the cash flow projection based on the growth projects identified in the study period;
d) Incorporating provisions for debt payments for previously approved commitments on growth works funded by debt; and
e) Estimating annual interest revenues to be earned and/or financing costs to be incurred due to fund deficits throughout the planning horizon.

Any deficit in the cash flow analysis at the end of the planning period equates to the amounts of the expenditures incurred during the planning period to be recovered from growth in the future (i.e. the post-period benefit). All figures are un-inflated and were determined for the period immediately preceding the DC Study. The rates generated from this cash flow analysis reflect the appropriate cost recovery from growth for the planning horizon.

Fire Services
TABLE B-1 Vehicles Service Standard

Contact Person(s) Katerina Barton
Unit of Measure Vehicle
Type of Measure Quantity

Unit Description	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020 $value/unit
Aerial	2	2	2	2	2	2	2	2	2	2	$ 1,271,000
Platform Aerial	1	1	1	1	1	1	1	1	1	1	$ 1,354,000
Aerial Spare						1	1	1	1	1	$ 1,271,000
Tanker (1500 gal)	2	1	1								$ 357,000
Tanker (2500 gal)		1	1	2	2	2	2	2	2	2	$ 428,000
Tanker Spare (1500 gal)	1	1	1	1	1	1	1	1	1	1	$ 357,000
Engine	6	6	6	3	3	3	3	3	3	3	$ 673,000
Engine (spare)	4	4	4	4	4	3	3	3	3	3	$ 673,000
Pumper Rescue	5	5	5	7	7	8	8	8	8	8	$ 666,000
Quint	3	3	3	3	3	3	3	3	3	3	$ 961,000
Rescue	1	1	1	1	1	1	1	1	1	1	$ 657,000
Platoon Car	2	2	2	2	2	2	2	3	3	3	$ 46,000
Marine Vehicles	2	2	2	2	2	2	2	2	2	2	$ 39,000
Service Units (2, 4, 9)	3	3	3	3	3	3	3	3	3	3	$ 39,000
Service Units (1 - air bottle transport)	1	1	1	1	1	1	1	1	1	1	$ 43,000
Training Units (1, 2, 3)	3	3	3	3	3	3	3	3	3	3	$ 28,000
Zodiac Boat	2	2	2	2	2	2	2	2	2	2	$ 13,000
Zodiac Boat (spare)	1	1	1	1	1	1	1	1	1	1	$ 13,000
Zodiac Trailer	2	2	2	2	2	2	2	2	2	2	$ 3,000
Zodiac Trailer (spare)	1	1	1	1	1	1	1	1	1	1	$ 3,000
HAZMAT Vehicle	1	1	1	1	1	1	1	1	1	1	$ 600,000
Decontamination Trailer	1	1	1	1	1	1	1	1	1	1	$ 29,000
Air Light Vehicle	1	1	1	1	1	1	1	1	1	1	$ 550,000
Investigation Vehicle	1	1	1	1	1	1	1	1	1	1	$ 38,000
Service Vehicles (3, Stores)	2	2	2	2	2	2	2	2	2	2	$ 34,000
Safety House Trailer	1	1	1	1	1	1	1	1			$ 4,000
Fire Prevention Inspection	16	16	16	16	16	19	19	19	19	19	$ 21,000
Public Education	4	4	4	4	4	4	4	4	4	4	$ 31,000
Administration	1	1	1	1	1	1	1	1	1	1	$ 27,000
Total	70	70	70	69	69	73	73	74	73	73	

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	0.000186	0.000184	0.000183	0.000178	0.000177	0.000185	0.000183	0.000183	0.000178	0.000176

10 Year Average	
Quantity Standard per Capita	0.000181

NOTES:
Quantity of vehicles taken from inventory reports and $ values based on actual replacement costs maintained by Fire Administration.

Fire Services
TABLE B-1 Vehicles Service Standard Cont'd

Contact Person(s) Katerina Barton
Unit of Measure 2020 Replacement Value ($000's)
Type of Measure Quality & Quantity

Unit Description	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Aerial	$2,542	$2,542	$2,542	$2,542	$2,542	$2,542	$2,542	$2,542	$2,542	$2,542
Platform Aerial	$1,354	$1,354	$1,354	$1,354	$1,354	$1,354	$1,354	$1,354	$1,354	$1,354
Aerial Spare						$1,271	$1,271	$1,271	$1,271	$1,271
Tanker (1500 gal)	$714	$357	$357							
Tanker (2500 gal)		$428	$428	$856	$856	$856	$856	$856	$856	$856
Tanker Spare (1500 gal)	$357	$357	$357	$357	$357	$357	$357	$357	$357	$357
Engine	$4,038	$4,038	$4,038	$2,019	$2,019	$2,019	$2,019	$2,019	$2,019	$2,019
Engine (spare)	$2,692	$2,692	$2,692	$2,692	$2,692	$2,019	$2,019	$2,019	$2,019	$2,019
Pumper Rescue	$3,330	$3,330	$3,330	$4,662	$4,662	$5,328	$5,328	$5,328	$5,328	$5,328
Quint	$2,883	$2,883	$2,883	$2,883	$2,883	$2,883	$2,883	$2,883	$2,883	$2,883
Rescue	$657	$657	$657	$657	$657	$657	$657	$657	$657	$657
Platoon Car	$92	$92	$92	$92	$92	$92	$92	$138	$138	$138
Marine Vehicles	$78	$78	$78	$78	$78	$78	$78	$78	$78	$78
Service Units (2, 4, 9)	$117	$117	$117	$117	$117	$117	$117	$117	$117	$117
Service Units (1 - air bottle transport)	$43	$43	$43	$43	$43	$43	$43	$43	$43	$43
Training Units (1, 2, 3)	$84	$84	$84	$84	$84	$84	$84	$84	$84	$84
Zodiac Boat	$26	$26	$26	$26	$26	$26	$26	$26	$26	$26
Zodiac Boat (spare)	$13	$13	$13	$13	$13	$13	$13	$13	$13	$13
Zodiac Trailer	$6	$6	$6	$6	$6	$6	$6	$6	$6	$6
Zodiac Trailer (spare)	$3	$3	$3	$3	$3	$3	$3	$3	$3	$3
HAZMAT Vehicle	$600	$600	$600	$600	$600	$600	$600	$600	$600	$600
Decontamination Trailer	$29	$29	$29	$29	$29	$29	$29	$29	$29	$29
Air Light Vehicle	$550	$550	$550	$550	$550	$550	$550	$550	$550	$550
Investigation Vehicle	$38	$38	$38	$38	$38	$38	$38	$38	$38	$38
Service Vehicles (3, Stores)	$68	$68	$68	$68	$68	$68	$68	$68	$68	$68
Safety House Trailer	$4	$4	$4	$4	$4	$4	$4	$4		
Fire Prevention Inspection	$336	$336	$336	$336	$336	$399	$399	$399	$399	$399
Public Education	$124	$124	$124	$124	$124	$124	$124	$124	$124	$124
Administration	$27	$27	$27	$27	$27	$27	$27	$27	$27	$27
Total	$20,805.0	$20,876.0	$20,876.0	$20,260.0	$20,260.0	$21,587.0	$21,587.0	$21,633.0	$21,629.0	$21,629.0
Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	$55.31	$54.97	$54.45	$52.34	$51.86	$54.75	$54.08	$53.53	$52.88	$52.26

10 Year Average	
Level of Service per Capita	$53.64

DC Eligible Amount (before adjustments)	
Net Forecast Population - 8 Year	39,300
$ Per Capita	$53.64
DC Rate Eligible Amount (Gross)	$2,108,052

Fire Services
TABLE B-2 Facilities Service Standard

Contact Person(s) Tim Wellhauser
Unit of Measure Square Feet
Type of Measure Quantity

Facility Name	Location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020 $/sq.ft.
No. 1	300 Horton Street	32,937	32,937	32,937	32,937	32,937	32,937	32,937	32,937	32,937	32,937	$ 328
No. 2	1101 Florence St	24,700	24,700	24,700	24,700	24,700	24,700	24,700	24,700	24,700	24,700	$ 338
No. 3	550 Commissioners Rd W	8,052	8,052	8,052	8,052	8,052	8,052	8,052	8,052	8,052	8,052	$ 371
No. 4	807 Colborne St	4,418	4,418	4,418	4,418	4,418	4,418	4,418	4,418	4,418	4,418	$ 326
No. 5	751 Deveron Cr	8,120	8,120	8,120	8,120	8,120	8,120	8,120	8,120	8,120	8,120	$ 464
No. 6	590 Oxford St E	8,490	8,490	9,666	9,666	9,666	9,666	9,666	9,666	9,666	9,666	$ 400
No. 7 - OLD	1192 Highbury Ave	6,594	6,594	6,594								$ 370
No. 7 - NEW	1295 Webster St				7,535	7,535	7,500	7,535	7,535	7,535	7,535	$ 299
No. 8	1565 Western Rd.	6,594	6,594	6,594	6,594	6,594	6,594	6,594	6,594	6,594	6,594	$ 380
No. 9	746 Wellington Rd S	15,388	15,388	15,388	15,388	15,388	15,388	15,388	15,388	15,388	15,388	$ 461
Training Tower	746 Wellington Rd S	4,220	4,220	4,220	4,220	4,220	4,220	4,220	4,220	4,220	4,220	$ 148
Storage Garage	746 Wellington Rd S	240	240	240	240	240	240	240	240	240	240	$ 33
No. 10	2125 Trafalgar St	9,063	9,063	9,063	9,063	9,063	9,063	9,063	9,063	9,063	9,063	$ 355
No. 11 - OLD (Note 2)	7109 Westminster Dr	10,187	10,187	10,187	10,187	10,187	10,187	10,187	10,187	10,187	10,187	$ 199
No. 11 - NEW	3970 Savoy Street							6,500	6,500	6,500	6,500	$ 384
No. 12	275 Boler Road	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	$ 371
No. 13	790 Fanshawe Park Rd E	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400	$ 338
No. 14	2225 Hyde Park Road	8,429	8,429	8,429	8,429	8,429	8,429	8,429	8,429	8,429	8,429	$ 260
N/E Communications Tower	1795 Oxford St. E	300	300	300	300	300	300	300	300	300	300	$ 939
	Total	164,132	164,132	165,308	166,249	166,249	166,214	172,749	172,749	172,749	172,749	

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	0.436312	0.432149	0.431132	0.429526	0.425542	0.421542	0.432738	0.427491	0.422369	0.417369

10 Year Average	
Quantity Standard per Capita	0.427617

NOTES:

1) Building measures provided by Facility Services division. Land values provided by Realty Services division.

2) A new Station No. 11 was built at 3970 Savoy Street in 2017 and the existing Station No. 11 was repurposed to a Fire Training Facility.

Fire Services
TABLE B-2 Facilities Service Standard Cont'd

Contact Person(s) Tim Wellhauser
Unit of Measure 2020 Replacement Value ($000's)
Type of Measure Quality & Quantity

Facility Name	Location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
No. 1	300 Horton Street	$10,803.3	$10,803.3	$10,803.3	$10,803.3	$10,803.3	$10,803.3	$10,803.3	$10,803.3	$10,803.3	$10,803.3
No. 2	1101 Florence St	$8,348.6	$8,348.6	$8,348.6	$8,348.6	$8,348.6	$8,348.6	$8,348.6	$8,348.6	$8,348.6	$8,348.6
No. 3	550 Commissioners Rd W	$2,987.3	$2,987.3	$2,987.3	$2,987.3	$2,987.3	$2,987.3	$2,987.3	$2,987.3	$2,987.3	$2,987.3
No. 4	807 Colborne St	$1,440.3	$1,440.3	$1,440.3	$1,440.3	$1,440.3	$1,440.3	$1,440.3	$1,440.3	$1,440.3	$1,440.3
No. 5	751 Deveron Cr	$3,767.7	$3,767.7	$3,767.7	$3,767.7	$3,767.7	$3,767.7	$3,767.7	$3,767.7	$3,767.7	$3,767.7
No. 6	590 Oxford St E	$3,396.0	$3,396.0	$3,866.4	$3,866.4	$3,866.4	$3,866.4	$3,866.4	$3,866.4	$3,866.4	$3,866.4
No. 7 - OLD	1192 Highbury Ave	$2,439.8	$2,439.8	$2,439.8							
No. 7 - NEW	1295 Webster St				$2,253.0	$2,253.0	$2,242.5	$2,253.0	$2,253.0	$2,253.0	$2,253.0
No. 8	1565 Western Rd.	$2,505.7	$2,505.7	$2,505.7	$2,505.7	$2,505.7	$2,505.7	$2,505.7	$2,505.7	$2,505.7	$2,505.7
No. 9	746 Wellington Rd S	$7,093.9	$7,093.9	$7,093.9	$7,093.9	$7,093.9	$7,093.9	$7,093.9	$7,093.9	$7,093.9	$7,093.9
Training Tower	746 Wellington Rd S	$624.6	$624.6	$624.6	$624.6	$624.6	$624.6	$624.6	$624.6	$624.6	$624.6
Storage Garage	746 Wellington Rd S	$7.9	$7.9	$7.9	$7.9	$7.9	$7.9	$7.9	$7.9	$7.9	$7.9
No. 10	2125 Trafalgar St	$3,217.4	$3,217.4	$3,217.4	$3,217.4	$3,217.4	$3,217.4	$3,217.4	$3,217.4	$3,217.4	$3,217.4
No. 11 - OLD (Note 2)	7109 Westminster Dr	$2,027.2	$2,027.2	$2,027.2	$2,027.2	$2,027.2	$2,027.2	$2,027.2	$2,027.2	$2,027.2	$2,027.2
No. 11 - NEW	3970 Savoy Street							$2,496.0	$2,496.0	$2,496.0	$2,496.0
No. 12	275 Boler Road	$4,452.0	$4,452.0	$4,452.0	$4,452.0	$4,452.0	$4,452.0	$4,452.0	$4,452.0	$4,452.0	$4,452.0
No. 13	790 Fanshawe Park Rd E	$1,487.2	$1,487.2	$1,487.2	$1,487.2	$1,487.2	$1,487.2	$1,487.2	$1,487.2	$1,487.2	$1,487.2
No. 14	2225 Hyde Park Road	$2,191.5	$2,191.5	$2,191.5	$2,191.5	$2,191.5	$2,191.5	$2,191.5	$2,191.5	$2,191.5	$2,191.5
N/E Communications Tower	1795 Oxford St. E	$281.7	$281.7	$281.7	$281.7	$281.7	$281.7	$281.7	$281.7	$281.7	$281.7
	Total	$57,072.0	$57,072.0	$57,542.4	$57,355.6	$57,355.6	$57,345.2	$59,851.6	$59,851.6	$59,851.6	$59,851.6
Population		376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita		$151.71	$150.27	$150.07	$148.19	$146.81	$145.44	$149.93	$148.11	$146.34	$144.60

10 Year Average	
Level of Service per Capita	$148.15

DC Eligible Amount (before adjustments)	
Net Forecast Population - 8 Year	39,300
$ Per Capita	$148.15
DC Rate Eligible Amount (Gross)	$5,822,295

NOTES:

1) The valuations above include the 2020 replacement value of building, land, and site improvements.

2) A new Station No. 11 was built at 3970 Savoy Street in 2017 and the existing Station No. 11 was repurposed to a Fire Training Facility.

Fire Services
TABLE B-3 Outfitting Service Standard

Contact Person(s) Katerina Barton
Unit of Measure Firefighter
Type of Measure Quantity

Type	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020 $value/unit
Firefighters	360	360	360	375	375	375	375	375	375	375	$ 6,054
Total	360	360	360	375	375	375	375	375	375	375	

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	0.000957	0.000948	0.000939	0.000969	0.000960	0.000951	0.000939	0.000928	0.000917	0.000906

10 Year Average	
Quantity Standard per Capita	0.000941

NOTES:
1) Number of Firefighters and outfitting costs compiled by Fire Administration.

2) As of 2014 Firefighter outfitting also includes Fire Prevention Inspectors as they are required to have Bunker Gear for Fire Investigations.

3) As of 2015 Firefighter outfitting includes 2 sets of Bunker Gear

Contact Person(s) Katerina Barton
Unit of Measure 2020 Replacement Value ($000's)
Type of Measure Quality & Quantity

Type	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Firefighters	$2,179	$2,179	$2,179	$2,270	$2,270	$2,270	$2,270	$2,270	$2,270	$2,270
Total	$2,179	$2,179	$2,179	$2,270	$2,270	$2,270	$2,270	$2,270	$2,270	$2,270

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	$5.79	$5.74	$5.68	$5.86	$5.81	$5.76	$5.69	$5.62	$5.55	$5.48

10 Year Average	
Level of Service per Capita	$5.70

DC Eligible Amount (before adjustments)	
Net Forecast Population - 8 Year	39,300
$ Per Capita	$5.70
DC Rate Eligible Amount (Gross)	$224,010

Fire Services
TABLE B-4 Vehicles Rate Calculation

Planning horizon for this component : **2021-2028**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																	Commercial		Institutional		Industrial	
									%	benefit					%	$	%	$	%	$	%	$
	(all $'s in ,000's)		*(1)*	*(2)*	*(3)*	*(4) - (1) - sum(2,3)*	*(5)*	*(6) (4) * (5)*	*(7) (4) - (6)*	*(8)*	*(9) (7) * (8)*	*[(7) - (9)] * 10%*	*(11) (7) - sum(9,10)*	*(12)*	*(13) (11) - (12)*	*(14)*	*(15) (13) * (14)*	*(16)*	*(17) (13) * (16)*	*(18)*	*(19) (13) * (18)*	*(20)*	*(21) (13) * (20)*
	Vehicles																					
DC14FS0003	Quint - Station 15 Vehicle	2022	$899.9	$.0	$.0	$899.9	49.6%	$446.4	$453.5	35.3%	$160.1	$.0	$293.4	$.0	$293.4	79.4%	$233.0	11.8%	$34.6	7.7%	$22.6	1.1%	$3.2
DC14FS0004	Aerial Company - Cental London	2022	$1,805.0	$.0	$.0	$1,805.0	62.1%	$1,120.9	$684.1	20.0%	$136.8	$.0	$547.3	$.0	$547.3	79.4%	$434.5	11.8%	$64.6	7.7%	$42.1	1.1%	$6.0
	SUBTOTAL		$2,704.9	$.0	$.0	$2,704.9	57.9%	$1,567.3	$1,137.6	26.1%	$296.9	$.0	$840.7	$.0	$840.7	79.4%	$667.5	11.8%	$99.2	7.7%	$64.7	1.1%	$9.2
	Debentures																					
	PORTION OF GROWTH PROJECTS FINANCED WITH DEBT (PRINCIPLE)		$.0			$.0			$.0				$.0	$.0	$.0	79.4%	$.0	11.8%	$.0	7.7%	$.0	1.1%	$.0
TOTAL			**$2,704.9**	**$.0**	**$.0**	**$2,704.9**	**57.9%**	**$1,567.3**	**$1,137.6**	**26.1%**	**$296.9**	**$.0**	**$840.7**	**$.0**	**$840.7**	**79.4%**	**$667.5**	**11.8%**	**$99.2**	**7.7%**	**$64.7**	**1.1%**	**$9.2**

Supplement A: Existing Service Standard Limitation		
Existing Service Standard Measure (per capita)	$	53.64
Net 8 year Growth Projection		39,300
Maximum Eligible Amount for DC Rate Calculation	$	2,108,052
Growth Needs	$	840,723
Total Excess of Growth Needs	$	-

Notes:
1) Only growth related vehicle purchases are reflected on this schedule.
2) The future growth benefit has been applied consistent with the future growth benefit for the Station in which the vehicle will be used.
3) Allocation between Residential and non-residential based on tax assessment roll analysis.

Development Charge Rate Calculation (Pre-Financing Cost)			**Residential**		**Commercial**		**Institutional**		**Industrial**
Less: Uncommitted Reserve Fund Balance	$521.4	79.4%	$414.0	11.8%	$61.5	7.7%	$40.2	1.1%	$5.7
Total net cost eligible for DC rate calculation purposes	$319.3	79.4%	$253.5	11.8%	$37.7	7.7%	$24.6	1.1%	$3.5
Divided By: Total Gross Growth Projections			42,307		260,742		335,361		252,919
Calculated DC Rate - Pre-Financing			**$ 5.99** /person		**$ 0.14** /sq. m.		**$ 0.07** /sq. m.		**$ 0.01** /sq. m.

Pre- Financing Cost Residential Rates:

		Pre Financing
Single Family Dwelling	3.12	$ 18.70
Multiple unit dwelling	2.11	$ 12.64
Apartment - bach. & 1 bed	1.38	$ 8.27
Apartment - ≥ 2 bedroom	1.87	$ 11.21

Fire Services
TABLE B-5 Facilities Rate Calculation

Planning horizon for this component : **2021-2028**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - Improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																	Commercial		Institutional		Industrial	
									%	benefit					%	$	%	$	%	$	%	$
	(all $'s in ,000's)		(1)	(2)	(3)	(4) (1) - sum(2,3)	(5)	(6) (4) * (5)	(7) (4) - (6)	(8)	(9) (7) * (8)	(10) [(7) - (9)] * 10%	(11) (7) - sum(9,10)	(12)	(13) (11) - (12)	(14)	(15) (13) * (14)	(16)	(17) (13) * (16)	(18)	(19) (13) * (18)	(20)	(21) (13) * (20)
	Facility Expansion																					
DC14FS0001	Fire Station 15 - New Station	2022	$3,856.6	$0.0	$500.0	$3,356.6	49.6%	$1,664.9	$1,691.7	35.3%	$597.2	$0.0	$1,094.5	$0.0	$1,094.5	79.4%	$869.1	11.8%	$129.2	7.7%	$84.3	1.1%	$12.0
	SUBTOTAL		$3,856.6	$0.0	$500.0	$3,356.6	49.6%	$1,664.9	$1,691.7	35.3%	$597.2	$0.0	$1,094.5	$0.0	$1,094.5	79.4%	$869.1	11.8%	$129.2	7.7%	$84.3	1.1%	$12.0
	Debentures																					
	PORTION OF GROWTH PROJECTS FINANCED WITH DEBT (PRINCIPLE)		$0.0			$0.0			$0.0				$0.0	$0.0	$0.0	79.4%	$0.0	11.8%	$0.0	7.7%	$0.0	1.1%	$0.0
TOTAL			**$3,856.6**	**$0.0**	**$500.0**	**$3,356.6**	**49.6%**	**$1,664.9**	**$1,691.7**	**35.3%**	**$597.2**	**$0.0**	**$1,094.5**	**$0.0**	**$1,094.5**	**79.4%**	**$869.1**	**11.8%**	**$129.2**	**7.7%**	**$84.3**	**1.1%**	**$12.0**

Supplement A: Existing Service Standard Limitation	
Existing Service Standard Measure (per capita)	$ 148.15
Net 8 year Growth Projection	39,300
Maximum Eligible Amount for DC Rate Calculation	$ 5,822,295
Growth needs	$ 1,094,547
Total Excess of Growth Needs	$ -

Notes:

1) Estimated costs include building fees, construction, land, furniture and equipment.

2) Allocation between Residential and non-residential based on tax assessment roll analysis.

Development Charge Rate Calculation (Pre-Financing Cost)								
			Residential		**Commercial**		**Institutional**		**Industrial**
Less: Uncommitted Reserve Fund Balance	$678.9	79.4%	$539.0	11.8%	$80.1	7.7%	$52.3	1.1%	$7.5
Total net cost eligible for DC rate calculation purposes	$415.7	79.4%	$330.0	11.8%	$49.0	7.7%	$32.0	1.1%	$4.6
Divided By: Total Gross Growth Projections			42,307		260,742		335,361		252,919
Calculated DC Rate - Pre-Financing			**$ 7.80** /person		**$ 0.19** /sq. m.		**$ 0.10** /sq. m.		**$ 0.02** /sq. m.

Pre- Financing Cost Residential Rates:

		Pre Financing
Single Family Dwelling	3.12	$ 24.34
Multiple unit dwelling	2.11	$ 16.46
Apartment - bach. & 1 bed	1.38	$ 10.77
Apartment - ≥ 2 bedroom	1.87	$ 14.59

Fire Services
TABLE B-6 Outfitting Rate Calculation

Planning horizon for this component : **2021-2028**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share %	Non-growth share benefit	Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL %	RESIDENTIAL $	NON - RESIDENTIAL Commercial %	NON - RESIDENTIAL Commercial $	NON - RESIDENTIAL Institutional %	NON - RESIDENTIAL Institutional $	NON - RESIDENTIAL Industrial %	NON - RESIDENTIAL Industrial $
	(all $'s in ,000's)		(1)	(2)	(3)	(4) (1) - sum(2,3)	(5)	(6) (4) * (5)	(7) (4) - (6)	(8)	(9) (7) * (8)	[(7) - (9)] * 10%	(11) (7) - sum(9,10)	(12)	(13) (11) - (12)	(14)	(15) (13) * (14)	(16)	(17) (13) * (16)	(18)	(19) (13) * (18)	(20)	(21) (13) * (20)
	Outfitting																						
DC14FS0005	Fire Fighter Outfitting - Station 15	2022	$121.1	$.0	$.0	$121.1	49.6%	$60.1	$61.0	35.3%	$21.5	$.0	$39.5	$.0	$39.5	79.4%	$31.4	11.8%	$4.7	7.7%	$3.0	1.1%	$.4
	SUBTOTAL		$121.1	$.0	$.0	$121.1	49.6%	$60.1	$61.0	35.3%	$21.5	$.0	$39.5	$.0	$39.5	79.4%	$31.4	11.8%	$4.7	7.7%	$3.0	1.1%	$.4
	Debentures																						
	PORTION OF GROWTH PROJECTS FINANCED WITH DEBT (PRINCIPLE)		$.0			$.0			$.0				$.0		$.0	79.4%	$.0	11.8%	$.0	7.7%	$.0	1.1%	$.0
TOTAL			**$121.1**	**$.0**	**$.0**	**$121.1**	**49.6%**	**$60.1**	**$61.0**	**35.3%**	**$21.5**	**$.0**	**$39.5**	**$.0**	**$39.5**	**79.4%**	**$31.4**	**11.8%**	**$4.7**	**7.7%**	**$3.0**	**1.1%**	**$.4**

Supplement A: Existing Service Standard Limitation		
Existing Service Standard Measure (per capita)	$	5.70
Net 8 year Growth Projection		39,300
Maximum Eligible Amount for DC Rate Calculation	$	224,010
Growth Needs	$	39,485
Total Excess of Growth Needs	$	-

Development Charge Rate Calculation (Pre-Financing Cost)		**Residential**		**Commercial**		**Institutional**		**Industrial**
Less: Uncommitted Reserve Fund Balance	$24.5	79.4%	$19.4	11.8%	$2.9	7.7%	$1.9	1.1%	$.3
Total net cost eligible for DC rate calculation purposes	$15.0	79.4%	$11.9	11.8%	$1.8	7.7%	$1.2	1.1%	$.2
Divided By: Total Gross Growth Projections			42,307		260,742		335,361		252,919
Calculated DC Rate - Pre-Financing			**$ 0.28** /person		**$ 0.01** /sq. m.		**$ 0.00** /sq. m.		**$ 0.00** /sq. m.

Pre- Financing Cost Residential Rates:

		Pre Financing
Single Family Dwelling	3.12	$ 0.88
Multiple unit dwelling	2.11	$ 0.59
Apartment - bach. & 1 bed	1.38	$ 0.39
Apartment - ≥ 2 bedroom	1.87	$ 0.53

Notes:

1) The outfitting costs associated with Station 15.
2) The future growth benefit has been applied consistent with the future growth benefit for the Station in which the outfitting will be used.
3) The non-growth share has been applied consistent with the non-growth share for the Station in which the outfitting will be used.
4) Allocation between Residential and non-residential based on tax assessment roll analysis.

Fire Services
TABLE B-7 Cash Flow Analysis & Final Rate Calculation

($000's)

			FINAL RESULT		2021	2022	2023	2024	2025	2026	2027	2028	Total
		Pre-Financing DC Rate	Post-Financing DC Rate	% Collected assumption									
Planning Horizon - yrs	8												
Growth - Residential (Persons In New Housing)	42,307	$ 14.07	$ 21.59	100%	5,288.4	5,288.4	5,288.4	5,288.4	5,288.4	5,288.4	5,288.4	5,288.4	42,307.0
Growth - Non-Res. (sq. m.)													
Commercial	260,742	$ 0.34	$ 0.52	100%	32,592.8	32,592.8	32,592.8	32,592.8	32,592.8	32,592.8	32,592.8	32,592.8	260,742.0
Institutional	335,361	$ 0.17	$ 0.26	100%	41,920.1	41,920.1	41,920.1	41,920.1	41,920.1	41,920.1	41,920.1	41,920.1	335,361.0
Industrial	252,919	$ 0.03	$ 0.05	100%	31,614.9	31,614.9	31,614.9	31,614.9	31,614.9	31,614.9	31,614.9	31,614.9	252,919.0
Total Non-Res.	849,022				106,127.8	106,127.8	106,127.8	106,127.8	106,127.8	106,127.8	106,127.8	106,127.8	849,022.0
Reserve Fund Projections:													
Opening Surplus / <Deficit>					$1,224.8	$1,391.9	-$2,758.8	-$2,687.6	-$2,614.4	-$2,539.3	-$2,462.2	-$2,382.9	$1,224.8
Revenues - Development Charge Collections													
Residential					$114.2	$114.2	$114.2	$114.2	$114.2	$114.2	$114.2	$114.2	$913.2
Non-Res.													
Commercial					$17.0	$17.0	$17.0	$17.0	$17.0	$17.0	$17.0	$17.0	$135.7
Institutional					$11.1	$11.1	$11.1	$11.1	$11.1	$11.1	$11.1	$11.1	$88.6
Industrial					$1.6	$1.6	$1.6	$1.6	$1.6	$1.6	$1.6	$1.6	$12.7
Total Non-Res.					$29.6	$29.6	$29.6	$29.6	$29.6	$29.6	$29.6	$29.6	$236.9
Total revenues					$143.8	$143.8	$143.8	$143.8	$143.8	$143.8	$143.8	$143.8	$1,150.2
Development Charge draws - calculated on separate page					$.0	$4,276.3	$.0	$.0	$.0	$.0	$.0	$.0	$4,276.3
Closing surplus / <deficit> before interest					$1,368.6	-$2,740.6	-$2,615.0	-$2,543.8	-$2,470.7	-$2,395.5	-$2,318.4	-$2,239.1	-$1,901.3
Non-inflationary interest revenue /<expense>													
on savings	1.80%				$23.3								$23.3
on borrowings	2.70%					-$18.2	-$72.5	-$70.6	-$68.6	-$66.6	-$64.5	-$62.4	-$423.6
Closing surplus / <deficit>					$1,391.9	-$2,758.8	-$2,687.6	-$2,614.4	-$2,539.3	-$2,462.2	-$2,382.9	-$2,301.5	-$2,301.5

Target which reflects growth costs incurred in the forecast period and recoverable from future growth -$2,301.5

Other Information:	Pre	Post
Residential share	79%	79%
Non-residential		
Commercial	12%	12%
Institutional	8%	8%
Industrial	1%	1%

Explanatory note

This worksheet projects future activity in this reserve fund. It ultimately determines the rates necessary to recover all costs intended for recovery from growth (including financing costs).
The deficit in the fund at the end of the planning horizon reflects costs intended for recovery from future growth.

APPENDIX C:

Police Services

Police Services

Existing Service Levels

The City of London Police Service (LPS) employs more than 600 sworn officers and 257 vehicles from its headquarters of over 200,000 square feet at 601 Dundas Street. Existing service standards have been measured using capital budgets and data employed by LPS. These measures assisted in ensuring that the amounts included in the Police Service Development Charge (DC) rate calculations did not exceed existing historical standards. Refer to tables C-1 through C-3 for Service Standards related to Police Services.

Capital Needs – Facility

Under the 2021 DC Study Update, the same methodologies were used to determine the Police Services projects and rates as were applied under the 2019 DC Study. LPS has identified a need to expand its facilities to accommodate growth. This expansion is identified in the capital budget as a project timed for 2023 and having a cost of $80 million. LPS is undertaking a Facility Needs Assessment to determine whether this expansion should be to the existing police headquarters or the construction of additional community 'hubs'. The DC eligible portion of the project is estimated to be $7 million after the various deductions discussed below.

The non-growth portion of this project is identified as 74.4% or approximately $52 million. This reflects the percentage of developed area in 2019 (the initiation of the collection of DC's for this project) in relation to the total developable area within the urban growth boundary. A 12.3% future growth benefit has been applied to the project based on the percentage of undeveloped hectares beyond 2028 (beyond the planning horizon) to the total developable hectares.

Growth Needs – Vehicles and Equipment

Police patrol vehicles account for most of the equipment used by the LPS. The majority of vehicles are routinely disposed of on a five year cycle. The *Development Charges Act* allows the inclusion of growth related vehicles with an expected useful life of seven years or more and makes no allowance for the fact that these vehicles are used around the clock. Police patrol vehicles are therefore generally excluded from the DC rate calculations, although some municipalities include them on the basis of around the clock usage.

The LPS vehicle fleet does contain a number of eligible vehicles that have a lifecycle replacement period that extends beyond seven years (e.g., motorcycles, passenger vans, R.I.D.E vehicles, emergency response units, etc.). These are identified in the Police vehicles service standard. None of these specialized vehicles have been identified as a growth need within the 2021 DC Study Update period. LPS have preliminarily identified additional vehicle needs related to growth that would have a lifecycle replacement period beyond 7 years. This need will be further investigated by LPS as part of their planning process for possible inclusion in the next comprehensive DC Background Study.

Growth Needs – Outfitting

There are significant costs involved in outfitting new officers. Based on the existing ten year average of sworn officers to population, and with an expected net growth in population, the City can expect an additional complement of 61 sworn officers over the planning horizon. Each of these officers require non-personal gear and radio at a total current cost of $6,758 per officer. This results in a total projected capital need of approximately $412,000 for outfitting new officers to serve growth over the planning horizon.

Allocation of Costs of Growth to Growth Types

The allocation of growth costs amongst the different types of growth (residential and non-residential) have been apportioned on the basis of city-wide assessed property values by category, consistent with the methodology employed in previous DC Studies.

Final Costs for DC Rate Calculation

The required LPS projects form the basis for determining DCs for the CSRF and represent the numerator in the rate calculation. The final total costs calculated for LPS projects are shown in Tables C-4 and C-5.

Financing Costs

Table C-6 was produced to simulate cash flows for CSRF funded LPS projects for the purpose of calculating the final DC rate inclusive of financing costs. Forecasting cash flow and financing costs involved:

a) Starting with the 2021 opening balance, which reflects accumulated uncommitted funds for growth projects identified in past DC studies;
b) Projecting DC revenues using the pre-finance rate;
c) Incorporating DC drawdowns in the cash flow projection based on the growth projects identified in the study period;
d) Incorporating provisions for debt payments for previously approved commitments on growth works funded by debt; and
e) Estimating annual interest revenues to be earned and/or financing costs to be incurred due to fund deficits throughout the planning horizon.

Any deficit in the cash flow analysis at the end of the planning period equates to the amounts of the expenditures incurred during the planning period to be recovered from growth in the future (i.e. the post-period benefit). All figures are un-inflated and were determined for the period immediately preceding the DC Background Study. The rates generated from this cash flow analysis reflect the appropriate cost recovery from growth for the planning horizon.

Police Services
TABLE C-1 Facilities Service Standard

Contact Person(s) Tim Wellhauser
Unit of Measure Square Feet of Building
Type of Measure Quantity

Facility Name	Location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020 $/sq.ft.
London Police Headquarters Expand.	601 Dundas St	207,790	207,790	207,790	207,790	207,790	207,790	207,790	207,790	207,790	207,790	$372
Sub Station (Lambeth)	Main St Lambeth	300	300	300	300	300	300	300	300	300	300	$165
Court Offices/Cells	824 Dundas St.	7,983	7,983	7,983	7,983	7,983	7,983	7,983	7,983	7,983	7,983	$302
Sub Station (Covent Garden Market)	130 King Street	224	224	224	224	224	224	224	224	224	224	$165
Communications & 911 Backup	Confidential	2,042	2,042	2,042	2,042	2,042	2,042	2,042	2,042	2,042	2,042	$192
	Total	218,339	218,339	218,339	218,339	218,339	218,339	218,339	218,339	218,339	218,339	

Population		376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita		0.580411	0.574873	0.569439	0.564108	0.558875	0.553738	0.546941	0.540309	0.533836	0.527516

10 Year Average	
Quantity Standard per Capita	0.555005

NOTES:
1) Building and land measures provided by Police in cooperation with City of London Facility Services division and Realty Services division
2) Land values have been excluded from the rented and non-City owned facilities.

Contact Person(s) Tim Wellhauser
Unit of Measure 2020 Replacement Value ($000's)
Type of Measure Quality & Quantity

Facility Name	Location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
London Police Headquarters Expand.	601 Dundas St	$77,297.9	$77,297.9	$77,297.9	$77,297.9	$77,297.9	$77,297.9	$77,297.9	$77,297.9	$77,297.9	$77,297.9
Sub Station (Lambeth)	Main St Lambeth	$49.5	$49.5	$49.5	$49.5	$49.5	$49.5	$49.5	$49.5	$49.5	$49.5
Court Offices/Cells	824 Dundas St.	$2,410.9	$2,410.9	$2,410.9	$2,410.9	$2,410.9	$2,410.9	$2,410.9	$2,410.9	$2,410.9	$2,410.9
Sub Station (Covent Garden Market)	130 King Street	$37.0	$37.0	$37.0	$37.0	$37.0	$37.0	$37.0	$37.0	$37.0	$37.0
Communications & 911 Backup	Confidential	$392.1	$392.1	$392.1	$392.1	$392.1	$392.1	$392.1	$392.1	$392.1	$392.1
	Total	$80,187.3	$80,187.3	$80,187.3	$80,187.3	$80,187.3	$80,187.3	$80,187.3	$80,187.3	$80,187.3	$80,187.3

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	$213.16	$211.13	$209.13	$207.17	$205.25	$203.37	$200.87	$198.43	$196.06	$193.74

10 Year Average	
Level of Service per Capita	$203.83

DC Eligible Amount (before adjustments)	
Net Forecast Population - 8 Year	39,300
$ per Capita	$203.83
DC Rate Eligible Amount (gross)	$8,010,519

NOTES:
1) Land values have been excluded from the rented and non-City owned facilities.

Police Services
TABLE C-2 Vehicles Service Standard

Contact Person(s) Mike Weaver
Unit of Measure Number of Vehicles
Type of Measure Quantity

Unit Description	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020 $/Item
Motorcycles	5	5	5	5	5	5	5	5	5	5	$ 28,051
Court Security Van	1	1	1	1	1	1	1	1	1	1	$ 48,615
Court Multi Prisoner Transport Vehicle	1	1	1	1	1	1	1	1	1	1	$ 133,234
Community Service Vehicles	8	8	8	8	8	8	8	8	8	8	$ 33,034
Explosive Disposal Unit Van	1	1	1	1	1	1	1	1	1	1	$ 361,655
Mobile Command Vehicle	1	1	1	1	1	1	1	1	1	1	$ 525,552
Emergency Response Unit (Truck)	1	1	1	1	1	1	1	1	1	1	$ 241,890
Facilities Pickup	1	1	1	1	1	1	1	1	1	1	$ 33,039
Facilities Stake Truck	1	1	1	1	1	1	1	1	1	1	$ 55,800
Facilities Cube Truck	1	1	1	1	1	1	1				$ 50,556
Bicycle Recovery Pickup	1	1	1								$ 21,630
R.I.D.E. Van	1	1	1	1	1	1	1	1	1	1	$ 40,600
Reconstruction Van	1	1	1	1	1	1	1	1	1	1	$ 53,709
Passenger Van - 15 passenger	3	3	3	3	3	3	3	3	3	3	$ 31,600
Surveillance Vehicle/Module	1	1	1	1	1	1	1	1	1	1	$ 141,658
Court Security Van (new style)		1	1	1	1	1	1	1	1	1	$ 137,200
ERS Response Unit (new style)		1	1	1	1	1	1	1	1	1	$ 248,300
Search and Rescue Truck						1	1	1	1	1	$ 62,500
Delivery / Raid Vehicle								1	1	1	$ 50,000
Total	28	30	30	29	29	30	30	30	30	30	

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service Per Capita	0.000074	0.000079	0.000078	0.000075	0.000074	0.000076	0.000075	0.000074	0.000073	0.000072

10 Year Average	
Quantity Standard per Capita	0.000075

NOTES:
1) Quantity of vehicles taken from inventory reports and $ values based on actual replacement costs maintained by Police Fleet Services.

Police Services
TABLE C-2 Vehicles Service Standard Cont'd

Contact Person(s) Mike Weaver
Unit of Measure 2020 Replacement Value ($000's)
Type of Measure Quality & Quantity

Unit Description	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Motorcycles	$140.0	$140.0	$140.0	$140.0	$140.0	$140.0	$140.0	$140.0	$140.0	$140.0
Court Security Van	$49.0	$49.0	$49.0	$49.0	$49.0	$49.0	$49.0	$49.0	$49.0	$49.0
Court Multi Prisoner Transport Vehicle	$133.0	$133.0	$133.0	$133.0	$133.0	$133.0	$133.0	$133.0	$133.0	$133.0
Community Service Vehicles	$264.0	$264.0	$264.0	$264.0	$264.0	$264.0	$264.0	$264.0	$264.0	$264.0
Explosive Disposal Unit Van	$362.0	$362.0	$362.0	$362.0	$362.0	$362.0	$362.0	$362.0	$362.0	$362.0
Mobile Command Vehicle	$526.0	$526.0	$526.0	$526.0	$526.0	$526.0	$526.0	$526.0	$526.0	$526.0
Emergency Response Unit (Truck)	$242.0	$242.0	$242.0	$242.0	$242.0	$242.0	$242.0	$242.0	$242.0	$242.0
Facilities Pickup	$33.0	$33.0	$33.0	$33.0	$33.0	$33.0	$33.0	$33.0	$33.0	$33.0
Facilities Stake Truck	$56.0	$56.0	$56.0	$56.0	$56.0	$56.0	$56.0	$56.0	$56.0	$56.0
Facilities Cube Truck	$51.0	$51.0	$51.0	$51.0	$51.0	$51.0	$51.0			
Bicycle Recovery Pickup	$22.0	$22.0	$22.0							
R.I.D.E. Van	$41.0	$41.0	$41.0	$41.0	$41.0	$41.0	$41.0	$41.0	$41.0	$41.0
Reconstruction Van	$54.0	$54.0	$54.0	$54.0	$54.0	$54.0	$54.0	$54.0	$54.0	$54.0
Passenger Van - 15 passenger	$95.0	$95.0	$95.0	$95.0	$95.0	$95.0	$95.0	$95.0	$95.0	$95.0
Surveillance Vehicle/Module	$142.0	$142.0	$142.0	$142.0	$142.0	$142.0	$142.0	$142.0	$142.0	$142.0
Court Security Van (new style)		$137.0	$137.0	$137.0	$137.0	$137.0	$137.0	$137.0	$137.0	$137.0
ERS Response Unit (new style)		$248.0	$248.0	$248.0	$248.0	$248.0	$248.0	$248.0	$248.0	$248.0
Search and Rescue Truck						$63.0	$63.0	$63.0	$63.0	$63.0
Delivery / Raid Vehicle								$50.0	$50.0	$50.0
Total	$2,210.0	$2,595.0	$2,595.0	$2,573.0	$2,573.0	$2,636.0	$2,636.0	$2,635.0	$2,635.0	$2,635.0
Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service Per Capita	$5.87	$6.83	$6.77	$6.65	$6.59	$6.69	$6.60	$6.52	$6.44	$6.37

10 Year Average	
Level of Service per Capita	$6.53

DC Eligible amount (before adjustments)	
Net Forecast Population - 8 Year	39,300
$ per Capita	$6.53
DC Rate Eligible Amount (gross)	$256,629

Police Services
TABLE C-3 Outfitting Service Standard

Contact Person(s) Kim Darling
Unit of Measure Number of Equipped Officers
Type of Measure Quantity

Type	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020 $/Officer
Officers	592	606	606	606	593	598	607	605	608	621	$ 6,758
Auxiliary Officers	50	50	196	196	193.5	194.5	200	202	202	202	$ 546
Total	642	656	802	802	786.5	792.5	807	807	810	823	

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita (Officers)	0.001574	0.001596	0.001580	0.001566	0.001518	0.001517	0.001521	0.001497	0.001487	0.001500
Level of Service per Capita (combined)	0.001707	0.001727	0.002092	0.002072	0.002013	0.002010	0.002022	0.001997	0.001980	0.001988

10 Year Average	
Quantity Standard per Capita (Officers)	0.001535
Quantity Standard per Capita (combined)	0.001961

NOTES:
1) Number of Officers and Volunteers taken from personnel records maintained by Police Administration. Outfitting costs compiled by Police Administration.

2) Officer Outfitting costs include the cost of radios.

Contact person(s) Kim Darling
Unit of measure 2020 Replacement Value ($000's)
Type of measure Quality & Quantity

Type	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Officers	$4,001	$4,095	$4,095	$4,095	$4,007	$4,041	$4,102	$4,089	$4,109	$4,197
Auxiliary Officers	$27	$27	$107	$107	$106	$106	$109	$110	$110	$110
Total	$4,028	$4,122	$4,202	$4,202	$4,113	$4,147	$4,211	$4,199	$4,219	$4,307

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	$10.71	$10.85	$10.96	$10.86	$10.53	$10.52	$10.55	$10.39	$10.32	$10.41

10 Year Average	
Level of Service per Capita	$10.61

DC Eligible Amount (before adjustments)	
Net Forecast Population - 8 Year	39,300
$ per Capita	$10.61
DC Rate Eligible Amount (gross)	$416,973

Police Services
TABLE C-4 Facility Rate Calculation

Planning horizon for this component : **2021-2028**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																	Commercial		Institutional		Industrial	
									%	benefit					%	$	%	$	%	$	%	$
	(all $'s in ,000's)		(1)	(2)	(3)	(4) (1) - sum(2,3)	(5)	(6) (4) * (5)	(7) (4) - (6)	(8)	(9) (7) * (8)	(10) [(7) - (9)] * 10%	(11) (7) - sum(9,10)	(12)	(13) (11) - (12)	(14)	(15) (13) * (14)	(16)	(17) (13) * (16)	(18)	(19) (13) * (18)	(20)	(21) (13) * (20)
	Facility Expansion																					
DC19PS1001	Police Headquarters Expansion	2023	$80,000.0	$.0	$.0	$80,000.0	12.3%	$9,840.0	$70,160.0	74.4%	$52,199.0	$.0	$17,961.0	$10,970.0	$6,990.9	79.4%	$5,550.8	11.8%	$824.9	7.7%	$538.3	1.1%	$76.9
	SUBTOTAL		$80,000.0	$.0	$.0	$80,000.0	12.3%	$9,840.0	$70,160.0	74.4%	$52,199.0	$.0	$17,961.0	$10,970.0	$6,990.9	79.4%	$5,550.8	11.8%	$824.9	7.7%	$538.3	1.1%	$76.9
	Debentures																					
	PORTION OF GROWTH PROJECTS FINANCED WITH DEBT (PRINCIPLE)		$2,619.5			$2,619.5			$2,619.5				$2,619.5	$1,599.9	$1,019.6	100.0%	$1,019.6	0.0%	$.0	0.0%	$.0	0.0%	$.0
TOTAL			**$82,619.5**	**$.0**	**$.0**	**$82,619.5**	**11.9%**	**$9,840.0**	**$72,779.5**	**71.7%**	**$52,199.0**	**$.0**	**$20,580.477**	**$12,570.0**	**$8,010.5**	**82.0%**	**$6,570.4**	**10.3%**	**$824.9**	**6.7%**	**$538.3**	**1.0%**	**$76.9**

Supplement A: Existing Service Standard Limitation		
Existing Service Standard Measure (per capita)	$	203.83
Net 8 year Growth Projection		39,300
Maximum Eligible Amount for DC Rate Calculation	$	8,010,519
Growth Needs	$	20,580,477
Total Excess of Growth Needs	$	12,569,958

Notes:

1) Allocation of benefit to future growth for the future expansion has been based on the percentage of undeveloped hectares beyond 2028 to the total developable hectares.
2) Non-growth share for the future expansion reflects the percentage of developed area at the initiation of collection of DC's in relation to the total developable area.
3) Growth Projects Financed with Debt represents debt outstanding for the expansion to the London Police Service headquarters building in 2010. DC recovery for this item is 100% residential, consistent with the 2014 and 2019 DC Studies. When the project was originally financed, Council determined that non-residential costs associated with the headquarters expansion would be funded by taxpayer sources. As a result, no DC recovery is allocated for non-residential.
4) Allocation between Residential and non-residential based on tax assessment roll analysis.

Development Charge Rate Calculation (Pre-Financing Cost)

	Residential		Commercial		Institutional		Industrial	
Less: Uncommitted Reserve Fund Balance	$872.2	82.8%	$721.9	9.9%	$86.1	6.4%	$56.2	0.9%	$8.0
Total net cost eligible for DC rate calculation	$7,138.4	81.9%	$5,848.5	10.4%	$738.8	6.8%	$482.1	1.0%	$68.9
Divided By: Total Gross Growth Projections			42,307		260,742		335,361		252,919
Calculated DC Rate - Pre-Financing			**$ 138.24** /person		**$ 2.83** /sq. m.		**$ 1.44** /sq. m.		**$ 0.27** /sq. m.

Pre- Financing Cost Residential Rates:

		Pre Financing
Single Family Dwelling	3.12	$ 431.31
Multiple unit dwelling	2.11	$ 291.69
Apartment - bach. & 1 bed	1.38	$ 190.77
Apartment - ≥ 2 bedroom	1.87	$ 258.51

Police Services
TABLE C-5 Outfitting Rate Calculation

Planning horizon for this component : **2021-2028**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																	Commercial		Institutional		Industrial	
									%	benefit					%	$	%	$	%	$	%	$
			(1)	(2)	(3)	(4)	(5)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
	(all $'s in ,000's)					(1) - sum(2,3)	(6)	(4) - (6)		(7) * (8)	[(7) - (9)] * 10%	(7) - sum(9,10)		(11) - (12)		(13) * (14)		(13) * (16)		(13) * (18)		(13) * (20)
	Outfitting																					
DC19PS2001	Officer Outfitting (due to growth)	2021-2028	$412.1	$0.0	$0.0	$412.1	0.0%	$412.1	0.0%	$0.0	$0.0	$412.1	$0.0	$412.1	79.4%	$327.2	11.8%	$48.6	7.7%	$31.7	1.1%	$4.5
	SUBTOTAL		$412.1	$0.0	$0.0	$412.1	0.0%	$412.1	0.0%	$0.0	$0.0	$412.1	$0.0	$412.1	79.4%	$327.2	11.8%	$48.6	7.7%	$31.7	1.1%	$4.5
	Debentures																					
	PORTION OF GROWTH PROJECTS FINANCED WITH DEBT (PRINCIPLE)		$0.0			$0.0		$0.0				$0.0		$0.0	79.4%	$0.0	11.8%	$0.0	7.7%	$0.0	1.1%	$0.0
TOTAL			**$412.1**	**$0.0**	**$0.0**	**$412.1**	**0.0%**	**$412.1**	**0.0%**	**$0.0**	**$0.0**	**$412.1**	**$0.0**	**$412.1**	**79.4%**	**$327.2**	**11.8%**	**$48.6**	**7.7%**	**$31.7**	**1.1%**	**$4.5**

Supplement A: Existing Service Standard Limitation	
Existing Service Standard Measure (per capita)	$ 10.61
Net 8 year Growth Projection	39,300
Maximum Eligible Amount for DC Rate Calculation	$ 416,973
Growth Needs	$ 412,116
Total Excess of Growth Needs	$ -

Notes:

1) Outfitting costs associated with new officers attributable to growth over 8 year period.
2) Outfitting costs only represent officer needs due to growth during the 8 year period. Therefore, no future benefit or non-growth share has been allocated.
3) Allocation between Residential and non-residential based on tax assessment roll analysis.

Development Charge Rate Calculation (Pre-Financing Cost)			**Residential**		**Commercial**		**Institutional**		**Industrial**
Less: Uncommitted Reserve Fund Balance	$45.5	82.8%	$37.6	9.9%	$4.5	6.4%	$2.9	0.9%	$.4
Total net cost eligible for DC rate calculation	$366.7	79.0%	$289.6	12.0%	$44.1	7.9%	$28.8	1.1%	$4.1
Divided By: Total Gross Growth Projections			42,307		260,742		335,361		252,919
Calculated DC Rate - Pre-Financing			**$ 6.85** /person		**$ 0.17** /sq. m.		**$ 0.09** /sq. m.		**$ 0.02** /sq. m.

Pre- Financing Cost Residential Rates:

		Pre Financing
Single Family Dwelling	3.12	$ 21.36
Multiple unit dwelling	2.11	$ 14.44
Apartment - bach. & 1 bed	1.38	$ 9.45
Apartment - ≥ 2 bedroom	1.87	$ 12.80

Police Services
TABLE C-6 Cash Flow Analysis & Final Rate Calculation

($ 000's)			FINAL RESULT		2021	2022	2023	2024	2025	2026	2027	2028	Total
Planning Horizon - yrs	8	Pre-Financing DC Rate	Post-Financing DC Rate	% Collected assumption									
Growth - Residential (Persons In New Housing)	42,307	$ 145.09	$ 159.80	100%	5,288.4	5,288.4	5,288.4	5,288.4	5,288.4	5,288.4	5,288.4	5,288.4	42,307.0
Growth - Non-Res. (sq. m.)													
Commercial	260,742	$ 3.00	$ 3.31	100%	32,592.8	32,592.8	32,592.8	32,592.8	32,592.8	32,592.8	32,592.8	32,592.8	260,742.0
Institutional	335,361	$ 1.52	$ 1.68	100%	41,920.1	41,920.1	41,920.1	41,920.1	41,920.1	41,920.1	41,920.1	41,920.1	335,361.0
Industrial	252,919	$ 0.29	$ 0.32	100%	31,614.9	31,614.9	31,614.9	31,614.9	31,614.9	31,614.9	31,614.9	31,614.9	252,919.0
Total Non-Res.	849,022				106,127.8	106,127.8	106,127.8	106,127.8	106,127.8	106,127.8	106,127.8	106,127.8	849,022.0
Reserve Fund Projections:													
Opening Surplus / <Deficit>					$917.6	$1,656.5	$2,413.1	-$6,425.2	-$5,691.0	-$4,933.9	-$4,153.3	-$3,348.6	$917.6
Revenues - Development Charge Collections													
Residential					$845.1	$845.1	$845.1	$845.1	$845.1	$845.1	$845.1	$845.1	$6,760.5
Non-Res.													
Commercial					$107.8	$107.8	$107.8	$107.8	$107.8	$107.8	$107.8	$107.8	$862.4
Institutional					$70.3	$70.3	$70.3	$70.3	$70.3	$70.3	$70.3	$70.3	$562.7
Industrial					$10.0	$10.0	$10.0	$10.0	$10.0	$10.0	$10.0	$10.0	$80.4
Total Non-Res.					$188.2	$188.2	$188.2	$188.2	$188.2	$188.2	$188.2	$188.2	$1,505.5
Total revenues					$1,033.2	$1,033.2	$1,033.2	$1,033.2	$1,033.2	$1,033.2	$1,033.2	$1,033.2	$8,266.0
Development Charge draws - calculated on separate page					$317.3	$312.9	$9,818.1	$137.7	$134.6	$131.6	$128.6	$125.6	$11,106.4
Closing surplus / <deficit> before interest					$1,633.5	$2,376.8	-$6,371.8	-$5,529.6	-$4,792.4	-$4,032.3	-$3,248.6	-$2,440.9	-$1,922.8
Non-inflationary interest revenue /<expense>													
on savings	1.80%				$23.0	$36.3							$59.3
on borrowings	2.70%						-$53.4	-$161.4	-$141.5	-$121.0	-$99.9	-$78.2	-$655.5
Closing surplus / <deficit>					$1,656.5	$2,413.1	-$6,425.2	-$5,691.0	-$4,933.9	-$4,153.3	-$3,348.6	-$2,519.0	-$2,519.0

Target which reflects growth costs incurred in the forecast period and recoverable from future -$2,519.0

Explanatory note

This worksheet projects future activity in this reserve fund. It ultimately determines the rates necessary to recover all costs intended for recovery from growth (including financing costs). The deficit in the fund at the end of the planning horizon reflects costs intended for recovery from future growth.

Other Information:	Pre	Post
Residential share	82%	82%
Non-residential		
Commercial	10%	10%
Institutional	7%	7%
Industrial	1%	1%

APPENDIX D:

Library Services

Library Services

Existing Service Levels

The London Public Library (LPL) provides library services to its citizens through a single Central Library and 15 branch libraries.

A comprehensive inventory and valuation of library facilities for each of the preceding ten years was completed. This valuation is necessary to facilitate an objective comparison of the historical service standard to the proposed needs with the intention of demonstrating that no improvement in the historical standard is being incorporated into the Development Charge (DC) rate calculations.

The inventory includes valuation of all existing facilities based on the size, quality and nature of construction, land value and building contents. A separate inventory of the value of existing collections was undertaken. Both inventories reflect current replacement value of the library assets to arrive at an average per capita historical service level.

By projecting this historical service level over the future population increase, a theoretical level of expenditure at which the City would be maintaining existing service levels has been established. By comparing this theoretical level with the calculated amounts eligible for the DC rate for this component, these rate calculations demonstrate that they exclude any increase to the existing library service standard. Refer to tables D-1 and D-2 for Service Standards related to Library Services.

Planning for Capital Needs

Each year, the LPL reviews its capital building projects in preparation for the capital budget submission, based on the factors identified below. As part of the library DC rate calculations, the library service areas and collections were reviewed to determine the growth needs for the growth period while maintaining a rate that would not result in an increase over the existing service standard as required under the *Development Charges Act*.

Growth Population

The LPL delineates service based on 16 service areas across the City which align with the City Planning Districts to be more responsive to the needs of the community. These service area boundaries were reviewed by the LPL and are displayed on MAP D-1. These boundaries reflect the construction of the Stoney Creek library as well as the new Bostwick library, which replaced the Westmount Branch. For the purposes of projecting capital needs, growth allocations were prepared for the LPL based on population and housing construction by library service area. The growth allocations were based on the 2018 Council endorsed Watson population and housing projections, as outlined in Appendix A. These allocations served as the basis for projecting growth needs.

Capital Needs Identified

The capital needs identified as part of the 2019 DC Study have now been fully funded and are therefore removed from the 2021 DC Study Update rate calculations. However, a portion of these projects will be financed through debt and is carried forward in the 2021 DC rate. Therefore, in order to provide context on these projects, the methodology used to identify these capital growth needs are described below.

Various factors affect the determination of need for new or redeveloped library branches including:

- anticipated population growth in an area;
- socio-economic and literacy needs of a specific community; and
- changing demographics.

Content of the collections is governed by size of population served and the borrowing needs of the patrons.

The LPL examined the population to sq. ft. ratios of its existing facilities, and projected future needs based on existing and projected populations in each library planning district. A straightforward projection of the existing space standard applied to forecast population growth suggested that at least two new branches (assuming approximate size of 13,000 – 17,000 sq. ft. per branch) were necessary within the former planning horizon to serve growth and maintain the existing facility standard.

The LPL established a population per square foot standard (2.6 population/sq. ft.) by reviewing existing libraries. This standard assists in determining service areas requiring library facilities, as well as informing the timing of project construction.

As part of the 2019 DC Study, based on a review of the population growth in each Library Service Area (LSA), the following needs were identified:

1. Sherwood Forest Northwest Branch (LSA 12): This facility was previously included in the 2014 DC Study. The new branch is required to replace or expand the existing space in LSA 12. A review of population projections indicates that the population/sq. ft. standard was exceeded in 2019. The new branch is anticipated to serve growing population needs in LSA 12 beyond the planning horizon of this rate study.

2. Pond Mills Southeast Branch (LSA 13): The Pond Mills library was previously included in the 2014 DC Study. The branch is required to replace or expand the existing space in LSA 13. A review of population projections indicated that the population/sq. ft. standard was exceeded in 2011. The new branch is anticipated to serve growing population needs in LSA 13 beyond the planning horizon of this rate study.

3. Collection costs were also identified for the Sherwood Forest and Pond Mills library branches. Each library is anticipated to require $250,000 in collections materials over the planning period. The collection materials are to meet incremental inventory needs to serve growth in the area and represent additional acquisitions beyond the existing collection materials contained at the present branches.

Design of Future Library Branches

Various elements were considered in the design of the new library branches as follows:

a) Design Standards

The Building Code in Ontario contains various standards for the design of Libraries. The City's Facility Accessibility Design Standard (FADS) and the *Accessibility for Ontarians with Disabilities Act* (AODA) as they relate to the Built Environment standard also have an impact on the library buildings being designed today. These standards require more space in buildings to accommodate the concept of universal design, accommodating through design features the needs of people with ambulatory, visual and other disabilities impairments, and enable them to access services and programs in an integrated manner with other users. All of these standards are incorporated into the design of the future facility needs. Additionally, future branch libraries will be constructed to Leadership in Energy and Environmental Design (LEED) standards, with the goal of a LEED designation for the facility.

b) Campus Design

Through previous Parks and Recreation Master Planning Studies, the desirability of a campus design for public facilities was identified. This design would see a number of distinct municipal services incorporated into multi-use facilities in the future. For example, aquatic facilities, ice pads, community meeting space, gymnasium and library might all be incorporated into the design of future municipal facilities. The recent completion of the Bostwick Community Centre and library was constructed based on this concept. Where possible, the LPL intends to incorporate future branches with other City of London community and recreational facilities, pending any new direction flowing from future Parks and Recreation Strategic Master Plan updates.

c) Library Size

The LPL presently leases several of its branches. As communities grow, research suggests it is most cost effective to construct and own facilities (beyond a size of 10,000 square feet), rather than continue to lease. Building designs of between 13,000-15,000 square feet represent the optimum size for both adequacy of space and geographic convenience of location. Buildings over 15,000 square feet may serve more patrons, but may also result in branches that are too far apart to provide a convenient level of service to the entire area being served.

Collections – Growth Needs Projected

The collections of new or replacement branches also require expansion to maintain service standards and provide adequate choice and variety to increasing number of patrons accessing the new branch. As with library facility calculations, collections from prior growth have been removed through recognition of the existing reserve fund balance, which represents contributions of earlier growth towards the projects which make up the rate calculations.

Allocation of Costs of Growth to Growth Types

The forecasted library service needs are presented in the attached tables.

The costs eligible for DC rate calculation purposes have been adjusted:

a) to remove the benefit to existing development. These deductions have been determined based on the proportion of developed area (at the time of collection for the identified growth related libraries began in 1999) in relation to the total service area of the new library.

b) for new libraries, an approximation of the benefit accruing to growth beyond the planning horizon for this service (i.e. post-period benefit) has also been made. The benefit calculation is based on the total service area that is expected to benefit beyond the planning horizon (i.e. beyond 2028) in relation to the total service area of the new branch. The post-period benefit will be recovered from future growth that will benefit in the construction of these new libraries.

The net growth cost of providing library services has been allocated 100% to residential growth, consistent with the previous DC Studies. This allocation recognizes the virtually exclusive use of

new libraries in growth areas of the City by residents of the surrounding community. This allocation approach is consistent with many other urban municipalities in the province.

Final Costs for DC Rate Calculation

The required LPL projects form the basis for determining DCs for the CSRF and represent the numerator in the rate calculation. The final total costs calculated for LPL projects are shown in Tables D-3 and D-4.

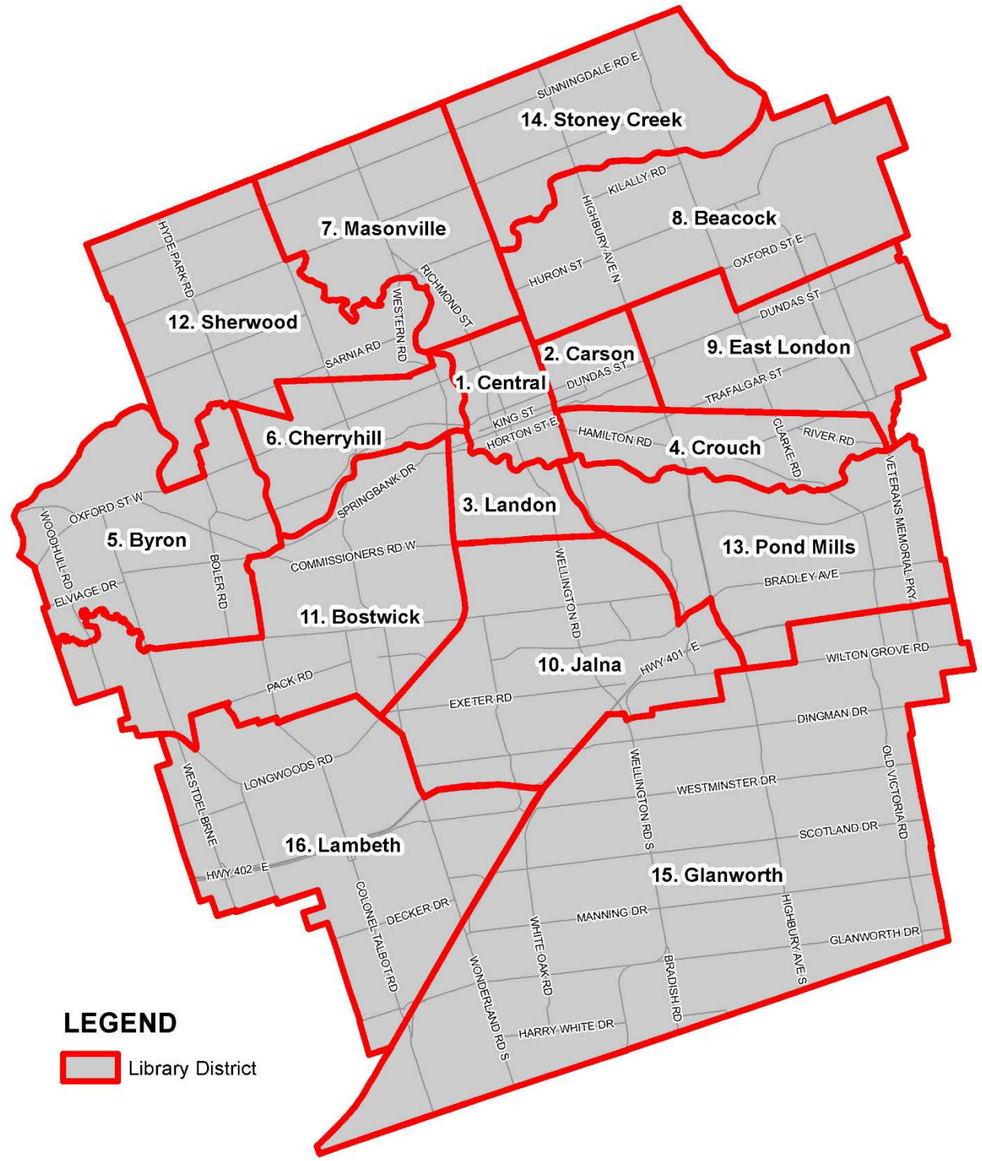
Financing Costs

Table D-5 was produced to simulate cash flows for CSRF funded LPL projects for the purpose of calculating the final DC rate inclusive of financing costs. Forecasting cash flow and financing costs involved:

a) Starting with the 2021 opening balance, which reflects accumulated uncommitted funds for growth projects identified in past DC studies;
b) Projecting DC revenues using the pre-finance rate;
c) Incorporating DC drawdowns in the cash flow projection based on the growth projects identified in the study period;
d) Incorporating provisions for debt payments for previously approved commitments on growth works funded by debt; and
e) Estimating annual interest revenues to be earned and/or financing costs to be incurred due to fund deficits throughout the planning horizon.

Any deficit in the cash flow analysis at the end of the planning period equates to the amounts of the expenditures incurred during the planning period to be recovered from growth in the future (i.e. post-period benefit). All figures are un-inflated and were determined for the period immediately preceding the DC Study. The rates generated from this cash flow analysis reflect the appropriate cost recovery from growth for the planning horizon.

Library Services
MAP D-1: London Public Library Districts



Library Services
TABLE D-1 Collections Service Standard

Contact Person(s) Emily Schinbein
Unit of Measure Collection Item
Type of Measure Quantity

Item Name	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020 $/Item
Catalogued Volumes	788,392	762,085	760,415	739,929	731,438	734,471	700,524	666,527	633,201	601,541	$29
Government Documents	3,803	1,374	1,382	1,382	1,375	1,382	1,383	1,131	1,080	1,032	$38
Magazines, Newspapers, Periodicals	26,189	26,395	27,261	25,336	24,700	24,916	23,764	22,341	21,224	20,163	$5
Vertical Files, Technical Reports, Pamphlets	201	161	98	98	84	75	75	73	72	72	$35
Micromaterials	467	469	471	471	469	470	446	439	432	426	$300
Sound Recordings (LP's & Cassettes)	6,688	1,965	1,156	1,144	646	202	337	267	214	171	$40
Compact Discs	62,633	66,978	69,960	67,790	67,904	69,144	68,470	67,747	67,070	66,399	$30
Talking Books	4,150	1,664	1,824	1,694	1,828	1,451	2,105	2,229	2,340	2,457	$48
Videos - VHS	17,649	9,657	7,921	7,359	6,222	4,402	938	834	667	534	$28
CD -ROMs	442	442	442								$15
DVDS	42,048	48,954	58,797	57,616	63,440	68,819	70,042	71,952	68,354	64,937	$29
Subscriptions - Electronic Resources	52	52	46	38	39	49	28	33	32	30	$10,221
Digital Holdings (E-Books, E-Audio, Digital Magazines)	7,593	12,496	16,334	18,866	21,497	23,531	32,503	36,942	46,178	57,722	$9
Access Workstations	396	477	477								$950
Equipment	1,606	1,660	1,598	559	602	652	336	357	321	289	$47
iPad Stations							30	30	30	30	$500
Total	962,309	934,829	948,182	922,282	920,244	929,564	900,981	870,902	841,215	815,801	

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	2.56	2.46	2.47	2.38	2.36	2.36	2.26	2.16	2.06	1.97

10 Year Average	
Quantity Standard per Capita	2.302812

NOTES:
Values and quantity of collections taken from Library inventory reports.

Library Services
TABLE D-1 Collections Service Standard Cont'd

Contact Person(s) Emily Schinbein
Unit of Measure 2020 Replacement Value ($000's)
Type of Measure Quality & Quantity

Item Name	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Catalogued Volumes	$22,863.4	$22,100.5	$22,052.0	$21,457.9	$21,211.7	$21,299.7	$20,315.2	$19,329.3	$18,362.8	$17,444.7
Government Documents	$144.5	$52.2	$52.5	$52.5	$52.3	$52.5	$52.6	$43.0	$41.0	$39.2
Magazines, Newspapers, Periodicals	$130.9	$132.0	$136.3	$126.7	$123.5	$124.6	$118.8	$111.7	$106.1	$100.8
Vertical Files, Technical Reports, Pamphlets	$7.0	$5.6	$3.4	$3.4	$2.9	$2.6	$2.6	$2.6	$2.5	$2.5
Micromaterials	$140.1	$140.7	$141.3	$141.3	$140.7	$141.0	$133.8	$131.7	$129.7	$127.8
Sound Recordings (LP's & Cassettes)	$267.5	$78.6	$46.2	$45.8	$25.8	$8.1	$13.5	$10.7	$8.5	$6.8
Compact Discs	$1,879.0	$2,009.3	$2,098.8	$2,033.7	$2,037.1	$2,074.3	$2,054.1	$2,032.4	$2,012.1	$1,992.0
Talking Books	$199.2	$79.9	$87.6	$81.3	$87.7	$69.6	$101.0	$107.0	$112.3	$118.0
Videos - VHS	$494.2	$270.4	$221.8	$206.1	$174.2	$123.3	$26.3	$23.4	$18.7	$14.9
CD -ROMs	$6.6	$6.6	$6.6							
DVDS	$1,219.4	$1,419.7	$1,705.1	$1,670.9	$1,839.8	$1,995.8	$2,031.2	$2,086.6	$1,982.3	$1,883.2
Subscriptions - Electronic Resources	$531.5	$531.5	$470.2	$388.4	$398.6	$500.8	$286.2	$337.3	$323.8	$310.8
Digital Holdings (E-Books, E-Audio, Digital Magazines)	$68.3	$112.5	$147.0	$169.8	$193.5	$211.8	$292.5	$332.5	$415.6	$519.5
Access Workstations	$376.2	$453.2	$453.2							
Equipment	$75.5	$78.0	$75.1	$26.3	$28.3	$30.6	$15.8	$16.8	$15.1	$13.6
iPad Stations							$15.0	$15.0	$15.0	$15.0
Total	$28,403.4	$27,470.6	$27,697.1	$26,404.0	$26,316.2	$26,634.7	$25,458.6	$24,579.8	$23,545.7	$22,588.8
Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	$75.50	$72.33	$72.24	$68.22	$67.36	$67.55	$63.77	$60.83	$57.57	$54.58

10 year average	
Level of Service per Capita	$65.99

DC Eligible amount (before adjustments)	
Net Forecast Population - 8 year	39,300
$ Per Capita	$65.99
DC Rate Eligible Amount (Gross)	$2,593,407

Library Services
TABLE D-2 Facilities Service Standard

Contact Person(s) Tim Wellhauser
Unit of Measure Square Feet of Buildings
Type of Measure Quantity

Facility Name	Location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020 $/sq.ft.
Beacock	1280 Huron St	13,232	13,232	13,232	13,232	13,232	13,232	13,232	13,232	13,232	13,232	$340
Bostwick (Note 2)	501 Southdale Rd W								16,598	16,598	16,598	$292
Byron	1295 Commissioners Rd W	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	$339
Carson	465 Quebec St	2,930	2,930	2,930	2,930	2,930	2,930	2,930	2,930	2,930	2,930	$355
Central Library	251 Dundas Street	188,179	188,179	188,179	188,179	188,179	188,179	188,179	188,179	188,179	188,179	$351
Cherryhill (Leased)	301 Oxford St W	10,225	10,225	10,225	10,225	10,225	10,225	10,225	10,225	10,225	10,225	$242
Crouch	550 Hamilton Rd	11,322	11,322	11,322	11,322	11,322	11,322	11,322	11,322	11,322	11,322	$323
East London (Note 3)	2016 Dundas St E	7,642	7,642	7,642	7,642	7,642	7,642	7,642	7,642	7,642	7,642	$401
Glanworth	2950 Glanworth Dr	320	320	320	320	320	320	320	320	320	320	$405
Jalna	1119 Jalna Blvd	10,590	10,590	10,590	10,590	10,590	10,590	10,590	10,590	10,590	10,590	$385
Lambeth	7112 Beattie Ave	3,394	3,394	3,394	3,394	3,394	3,394	3,394	3,394	3,394	3,394	$347
Landon	167 Wortley Rd	7,422	7,422	7,422	7,422	7,422	7,422	7,422	7,422	7,422	7,422	$335
Masonville	30 North Center	13,200	13,200	13,200	13,200	13,200	13,200	13,200	13,200	13,200	13,200	$382
Pond Mills (Leased)	1166 Commissioners Rd E	7,090	7,090	7,090	7,090	7,090	7,090	7,090	7,090	7,090	7,090	$198
Sherwood Forest (Leased)	1225 Wonderland Rd N	13,214	13,214	13,214	13,214	13,214	13,214	13,214	13,214	13,214	13,214	$242
Stoney Creek	920 Sunningdale Rd E	7,943	7,943	7,943	7,943	7,943	7,943	7,943	7,943	7,943	7,943	$333
Westmount	3200 Wonderland Rd	14,602	14,602	14,602	14,602	14,602	14,602	14,602				$391
	Total	323,305	323,305	323,305	323,305	323,305	323,305	323,305	325,301	325,301	325,301	

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	0.859442	0.851242	0.843196	0.835301	0.827553	0.819947	0.809882	0.805001	0.795357	0.785941

10 Year Average	
Quantity Standard per Capita	0.823286

NOTES:

1) Building measures provided by Facility Services division. Land values provided by Realty Services division.

2) Bostwick Library and Community Centre is a total of 175,286 sq. ft with the YMCA occupying 82,710 sq. ft. (Library portion is 16,598 sq.ft.)

3) East London Library and Community Centre is a total of 23,500 sq. ft with the YMCA occupying 10,500 sq. ft. (Library portion is 7,642 sq.ft.)

Library Services
TABLE D-2 Facilities Service Standard Cont'd

Contact Person(s) Tim Wellhauser
Unit of Measure 2020 Replacement Value ($000's)
Type of Measure Quality & Quantity

Facility Name	Location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Beacock	1280 Huron St	$4,499	$4,499	$4,499	$4,499	$4,499	$4,499	$4,499	$4,499	$4,499	$4,499
Bostwick	501 Southdale Rd W								$4,847	$4,847	$4,847
Byron	1295 Commissioners Rd W	$4,068	$4,068	$4,068	$4,068	$4,068	$4,068	$4,068	$4,068	$4,068	$4,068
Carson	465 Quebec St	$1,040	$1,040	$1,040	$1,040	$1,040	$1,040	$1,040	$1,040	$1,040	$1,040
Central Library	251 Dundas Street	$66,051	$66,051	$66,051	$66,051	$66,051	$66,051	$66,051	$66,051	$66,051	$66,051
Cherryhill (Leased)	301 Oxford St W	$2,474	$2,474	$2,474	$2,474	$2,474	$2,474	$2,474	$2,474	$2,474	$2,474
Crouch	550 Hamilton Rd	$3,657	$3,657	$3,657	$3,657	$3,657	$3,657	$3,657	$3,657	$3,657	$3,657
East London	2016 Dundas St E	$3,064	$3,064	$3,064	$3,064	$3,064	$3,064	$3,064	$3,064	$3,064	$3,064
Glanworth	2950 Glanworth Dr	$130	$130	$130	$130	$130	$130	$130	$130	$130	$130
Jalna	1119 Jalna Blvd	$4,077	$4,077	$4,077	$4,077	$4,077	$4,077	$4,077	$4,077	$4,077	$4,077
Lambeth	7112 Beattie Ave	$1,178	$1,178	$1,178	$1,178	$1,178	$1,178	$1,178	$1,178	$1,178	$1,178
Landon	167 Wortley Rd	$2,486	$2,486	$2,486	$2,486	$2,486	$2,486	$2,486	$2,486	$2,486	$2,486
Masonville	30 North Center	$5,042	$5,042	$5,042	$5,042	$5,042	$5,042	$5,042	$5,042	$5,042	$5,042
Pond Mills (Leased)	1166 Commissioners Rd E	$1,404	$1,404	$1,404	$1,404	$1,404	$1,404	$1,404	$1,404	$1,404	$1,404
Sherwood Forest (Leased)	1225 Wonderland Rd N	$3,198	$3,198	$3,198	$3,198	$3,198	$3,198	$3,198	$3,198	$3,198	$3,198
Stoney Creek	920 Sunningdale Rd E	$2,645	$2,645	$2,645	$2,645	$2,645	$2,645	$2,645	$2,645	$2,645	$2,645
Westmount	3200 Wonderland Rd	$5,709	$5,709	$5,709	$5,709	$5,709	$5,709	$5,709			
	Total	$110,723	$110,723	$110,723	$110,723	$110,723	$110,723	$110,723	$109,860	$109,860	$109,860

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	$294.34	$291.53	$288.77	$286.07	$283.41	$280.81	$277.36	$271.86	$268.61	$265.43

10 Year Average	
Level of Service per Capita	$280.82

DC Eligible Amount (before adjustments)	
Net Forecast Population - 8 year	39,300
$ per Capita	$280.82
DC Rate Eligible Amount (Gross)	$11,036,226

NOTES:
1) The valuations above include the 2020 replacement value of building, land, site improvements and building contents (excluding computers and collections[latter is valued separately])

Library Services
TABLE D-3 Collections Rate Calculation

Planning horizon for this component : **2021-2028**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)		Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																		Commercial		Institutional		Industrial	
										%	benefit					%	$	%	$	%	$	%	$
	(all $'s in ,000's)		(1)	(2)	(3)	(4) (1) - sum(2,3)	(5)	(6) (4) * (5)	(7) (4) - (6)	(8)	(9) (7) * (8)	(10) [(7) - (9)] * 10	(11) (7) - sum(9,10)	(12)	(13) (11) - (12)	(14)	(15) (13) * (14)	(16)	(17) (13) * (16)	(18)	(19) (13) * (18)	(20)	(21) (13) * (20)
	Collections																						
	n/a					$.0		$.0	$.0		$.0	$.0	$.0	$.0	$.0	100.0%	$.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
	SUBTOTAL		$.0	$.0	$.0	$.0	0.0%	$.0	$.0	0.0%	$.0	$.0	$.0	$.0	$.0	0.0%	$.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
	Debentures																						
	PORTION OF GROWTH PROJECTS FINANCED WITH DEBT (PRINCIPLE)		$.0			$.0			$.0				$.0	$.0	$.0	0.0%	$.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
TOTAL			**$.0**	**$.0**	**$.0**	**$.0**	**0.0%**	**$.0**	**$.0**	**0.0%**	**$.0**	**$.0**	**$.0**	**$.0**	**$.0**	**0.0%**	**$.0**	**0.0%**	**$.0**	**0.0%**	**$.0**	**0.0%**	**$.0**

Supplement A: Existing Service Standard Limitation		
Existing Service Standard Measure (per capita)	$	65.99
Net 8 year Growth Projection		39,300
Maximum Eligible Amount for DC Rate Calculation	$	2,593,407
Growth Needs	$	-
Total Excess of Growth Needs (Note 1)	$	-

Notes:

1) No eligible costs were identified within the planning period.
2) No service standard deduction is required, growth needs are within the allowable service standard limitation.
3) Residential share of growth costs 100% (consistent with 2014 and 2019 DC Studies).

Development Charge Rate Calculation (Pre-Financing Cost)								
			Residential		**Commercial**		**Institutional**		**Industrial**
Less: Uncommitted Reserve Fund Balance	$.0	100.0%	$.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
Total net cost eligible for DC rate calculation purposes	$.0	0.0%	$.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
Divided By: Total Gross Growth Projections			42,307		260,742		335,361		252,919
Calculated DC Rate - Pre-Financing			$ - /person		$ - /sq. m.		$ - /sq. m.		$ - /sq. m.

Pre- Financing Cost Residential Rates:

		Pre Financing
Single Family Dwelling	3.12	$ -
Multiple unit dwelling	2.11	$ -
Apartment - bach. & 1 bed	1.38	$ -
Apartment - ≥ 2 bedroom	1.87	$ -

Library Services
TABLE D-4 Facilities Rate Calculation

Planning horizon for this component : **2021-2028**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																	Commercial		Institutional		Industrial	
									%	benefit					%	$	%	$	%	$	%	$
			(1)	(2)	(3)	(4)	(5)	(6)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
	(all $'s in ,000's)					(1) - sum(2,3)		(4) * (5)		(7) * (8)	[(7) - (9)] * 10%	(7) - sum(9,10)		(11) - (12)		(13) * (14)		(13) * (16)		(13) * (18)		(13) * (20)
	Facilities																					
	n/a					$0		$0		$0	$0	$0	$0	$0	100.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0
	SUBTOTAL		$0	$0	$0	$0	0.0%	$0	0.0%	$0	$0	$0	$0	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0
	Debentures																					
	PORTION OF GROWTH PROJECTS FINANCED WITH DEBT (PRINCIPLE)		$2,718.2			$2,718.2						$2,718.2	$0	$2,718.2	100.0%	$2,718.2	0.0%	$0	0.0%	$0	0.0%	$0
TOTAL			**$2,718.2**	**$0**	**$0**	**$2,718.2**	**0.0%**	**$0**	**$2,718.2**	**0.0%**	**$0**	**$0**	**$2,718.2**	**$0**	**$2,718.2**	**100.0%**	**$2,718.2**	**0.0%**	**$0**	**0.0%**	**$0**	**0.0%**	**$0**

Supplement A: Existing Service Standard Limitation		
Existing Service Standard Measure (per capita)	$	280.82
Net 8 year Growth Projection		39,300
Maximum Eligible Amount for DC Rate Calculation	$	11,036,226
Growth Needs	$	2,718,171
Total Excess of Growth Needs (Note 1)	$	-

Notes:

1) No eligible costs were identified within the planning period.
2) No service standard deduction is required, growth needs are within the allowable service standard limitation.

Development Charge Rate Calculation (Pre-Financing Cost)								
			Residential		**Commercial**		**Institutional**		**Industrial**	
Less: Uncommitted Reserve Fund Balance	$2,718.2	100.0%	$2,718.2	0.0%	$0	0.0%	$0	0.0%	$0	
Total net cost eligible for DC rate calculation	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0	
Divided By: Total Gross Growth Projections			42,307		260,742		335,361		252,919	
Calculated DC Rate - Pre-Financing			**$** - /person		**$** - /sq. m.		**$** - /sq. m.		**$** - /sq. m.	

Pre- Financing Cost Residential Rates:

		Pre Financing
Single Family Dwelling	3.12	$ -
Multiple unit dwelling	2.11	$ -
Apartment - bach. & 1 bed	1.38	$ -
Apartment - ≥ 2 bedroom	1.87	$ -

Library Services
TABLE D-5 Cash Flow Analysis & Final Rate Calculation

($000's)

			FINAL RESULT		2021	2022	2023	2024	2025	2026	2027	2028	Total
		Pre-Financing DC Rate	Post-Financing DC Rate	% Collected assumption	Growth projection for each year of forecast period								
Planning Horizon - yrs	8												
Growth - Residential (Persons In New Housing)	42,307	$ -	$ -	100%	5,288.4	5,288.4	5,288.4	5,288.4	5,288.4	5,288.4	5,288.4	5,288.4	42,307.0
Growth - Non-Res. (sq. m.)													
Commercial	260,742	$ -	$ -	100%	32,592.8	32,592.8	32,592.8	32,592.8	32,592.8	32,592.8	32,592.8	32,592.8	260,742.0
Institutional	335,361	$ -	$ -	100%	41,920.1	41,920.1	41,920.1	41,920.1	41,920.1	41,920.1	41,920.1	41,920.1	335,361.0
Industrial	252,919	$ -	$ -	100%	31,614.9	31,614.9	31,614.9	31,614.9	31,614.9	31,614.9	31,614.9	31,614.9	252,919.0
Total Non-Res.	849,022				106,127.8	106,127.8	106,127.8	106,127.8	106,127.8	106,127.8	106,127.8	106,127.8	849,022.0
Reserve Fund Projections:													
Opening Surplus / <Deficit>					$2,718.2	$2,767.1	$2,816.9	$2,475.9	$1,858.9	$1,230.8	$591.4	-$59.5	$2,718.2
Revenues - Development Charge Collections													
Residential					$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0
Non-Res.													
Commercial					$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0
Institutional					$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0
Industrial					$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0
Total Non-Res.					$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0
Total revenues					$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0
Development Charge draws - calculated on separate page					$.0	$.0	$388.2	$655.7	$655.7	$655.7	$655.7	$655.7	$3,666.5
Closing surplus / <deficit> before interest					$2,718.2	$2,767.1	$2,428.7	$1,820.2	$1,203.2	$575.2	-$64.2	-$715.1	-$948.3
Non-inflationary interest revenue /<expense>													
on savings	1.80%				$48.9	$49.8	$47.2	$38.7	$27.6	$16.3	$4.7		$233.2
on borrowings	2.70%											-$16.7	-$16.7
Closing surplus / <deficit>					$2,767.1	$2,816.9	$2,475.9	$1,858.9	$1,230.8	$591.4	-$59.5	-$731.8	-$731.8

Target which reflects growth costs incurred in the forecast period and recoverable from future growth: $.0

Explanatory note

This worksheet projects future activity in this reserve fund. It ultimately determines the rates necessary to recover all costs intended for recovery from growth (including financing costs). The deficit in the fund at the end of the planning horizon reflects costs intended for recovery from future growth.

Other Information:	Pre	Post
Residential share	100%	100%
Non-residential		
Commercial	0%	0%
Institutional	0%	0%
Industrial	0%	0%

APPENDIX E:

Parks and Recreation Services

Parks & Recreation Services

Background

Under the 2021 Development Charges (DC) Study Update, the same methodologies were used to determine the Parks and Recreation projects as were applied under the 2019 DC Study. In November 2009 Council adopted the recommendations of the Parks and Recreation Strategic Master Plan subject to the budget review process. In early 2017, an Interim Update to the Master Plan was undertaken that reviewed and updated components of the 2009 Master Plan to reflect current conditions and ensure alignment with current priorities and strategies. In 2018, a new Parks and Recreation Master Plan was commenced to test community priorities and ensure that proposed directions remain relevant to current and future generations. Together, these documents inform the capital projects identified in this DC Study and provide direction and guidance for managing parks and recreation programs, infrastructure, and investment in a fiscally responsible manner.

Existing Service Standards

The City provides Parks and Recreation services to its residents through numerous facilities, sports fields and play structures throughout the municipality.

For both Parks and Recreational facilities, a valuation of the historical service standard has been prepared. It is substantiated by a comprehensive inventory and valuation of parkland development and recreation facilities for the preceding ten years. This valuation makes possible an objective comparison of the historical service standard with the proposed future needs. The comparison is necessary to demonstrate that no improvement in the future service standard is being incorporated into the DC rate calculations.

The inventories reflect an approximation of the current replacement value of nearly all Parks and Recreation assets. The inventory includes valuation of all existing recreation facilities and takes into account the size, quality and nature of construction and land value (lands ancillary to facility only).[2] Some non-parkland properties have been excluded from the inventory where the amenity or facility is unique or unlikely to be replicated (for example golf courses are excluded from the inventory). The inventories arrive at an average per capita historical service level.

By projecting the historical per capita service level using the future population increase, a ceiling level of expenditure at which the City would be maintaining existing service levels is calculated. This ceiling, or 'cap', is used to demonstrate that there is no increase to the existing service standard included in the DC rate calculation as required under the *Development Charges Act*. Refer to Tables E-1 to E-14 for Service Standards related to Parks and Recreation Services.

[2] The land valuation excludes the value of park land.

Population Growth Projected

As with other services, planning of Parks and Recreation service expansion first involves an estimate of the extent and location of growth. The projection of growth and location were presented to the DC External Stakeholder Committee at several meetings over the second half of 2017 and the projections for DC purposes formally endorsed by Council at its February 13, 2018 meeting. For the 2021 DC Study Update, Watson & Associates Economists Ltd. reviewed the growth projections and determined that they remain reasonable and appropriate.

Growth allocations were prepared to inform Parks and Recreation projects included in the DC Study:

- For parkland development projects, the population and housing projections were used to determine the quantum of parkland by category required for the planning horizon, based on standards established in the 2009 Parks and Recreation Master Plan and the Parks and Recreation chapter of the London Plan. Growth projections were also used to create a build-out of subdivisions and intensification lands throughout the City. Specific locations of anticipated future growth are necessary for parks planning, especially for localized parks (i.e. neighbourhood parks, urban parks, etc.).
- Projections by Planning District were prepared for evaluating recreation facility needs. The planning district allocations provided ten year growth at a scale conducive to examining future growth within recreation facility catchment areas.

Recreation

Recreation Facilities Needs

The capital needs listed include two multi-purpose recreational facilities with various components. These facilities are planned in the Southeast and Northwest. Also included are two smaller-scale Neighbourhood Community Centres planned in the North and Central areas of the urban area.

The 2017 Parks & Recreation Master Plan Interim Update identified a need for an indoor aquatic facility for the planning period that has been included as a component of the planned Northwest multi-purpose recreation facility. This aquatic facility will serve both existing populations and future growth. The Master Plan also identifies a need for new community centre/gymnasium space in each of the multi-purpose and Neighbourhood facilities it recommends.

The Master Plan Interim Update recommended new Field Houses and Spray Pads to serve growth areas.

Growth projections prepared for this DC Study were examined in comparison to the 2009 Master Plan and 2017 Interim Update to assess capital needs previously identified and the timing of facility construction. Additional information on the projects contained in the 2019 DC Study and the 2021 DC Study Update are as follows:

- **Southeast Recreation Centre**: The 2009 Parks and Recreation Master Plan and 2017 Interim Update identified the need for recreation facility components to be located in the southeast part of the City. A recreation centre including an arena[3], community centre and gymnasium is planned. Apart from refined cost estimates, this project remains consistent with the 2014 DC Study. At present a site for this facility is being sought, with construction anticipated to commence in 2023.
- **Northwest Recreation Centre**: The 2017 Master Plan Interim Update identified the need for a pool-anchored recreation facility over the planning period. The northwest portion of the urban area is developing and is not sufficiently served by a community centre, gymnasium or community pool. A multi-purpose facility with these components is planned in this area for 2023 based on population and housing projections, and standards established in the 2009 Parks and Recreation Master Plan.
- **North and Central Neighbourhood Community Centres**: The 2009 Parks and Recreation Master Plan and 2017 Interim Update identified a need for Neighbourhood Community Centres for the planning period. These facilities are intended to serve a smaller radius than multi-purpose recreation facilities. Based on the growth projections, two facilities are planned including one for the northern portion of the urban area (2025), and one for the central portion of the urban area (2027). These areas have been identified by City's Neighbourhood, Children & Fire Services Service Area based on a lack of existing and planned municipal gymnasiums and neighbourhood community centre space to accommodate the growth need.
- **Field Houses**: Several field houses have been identified for DC funding. These buildings generally provide washrooms, equipment storage and spray pad operations infrastructure for district parks and sports parks. As such, the need for field houses are associated with growth-related sports park and district park development.
- **Spray pads**: Four spray pads have been identified for DC funding. These spray pads were identified in the 2017 Master Plan Interim Update. They are linked with district park development, and their need reflects an examination of growth projections and demographics in relation to the 2009 Master Plan standard for spray pads (1 spray pad per 4,500 children aged 0-14). Spray pads provide an important recreational amenity for the City's children.

Determination of Growth Share of New Recreation Facilities

Growth/non-growth shares for projects identified in the 2014 and 2019 DC Studies were maintained. The growth share of these projects was determined by defining a geographic service area for each of the existing facilities in the City. From this point, the benefiting area that would be served by each new multi-purpose facility was approximated. In one instance (Southeast) it was considered appropriate to distinguish between the benefiting area of the pool in contrast to the benefiting area of the community centre and gymnasium.

For new projects identified under the 2019 DC Study, a similar method was applied as used in the 2014 DC Study. First, geographic service areas were identified outside of the boundaries of previously identified service areas. Second, the 2019 population for the new geographic service areas was compared to the total future build-out population for each new multi-purpose and neighbourhood recreation facility. This fraction is used in the calculations to represent the benefit to existing development (i.e., the non-growth share). As in previous DC studies, it was considered appropriate to distinguish between the benefiting area of the pool in contrast to the benefiting area of the community centre for the planned Northwest multi-use recreation centre.

One twin-pad arena is identified as part of the multi-purpose community centre in the Southeast. 100% of the cost of these is allocated to existing development. This allocation is based on the expectation that these ice surfaces will simply replace existing single-pad arenas intended for decommissioning in the future, and no arena needs related to growth are required.

The works needed to complete the multi-purpose facilities are what may be termed site development costs. These include land acquisition, design, site works, change rooms, architects fees and permits. The non-growth share of these works was determined in proportion to the non-growth share of the functional components (i.e. arena, community centre, gym and indoor pool), consistent with the method used in previous DC Studies.

With respect to Field Houses and Spray Pads, the benefit to existing development mirrors the district park or sports park where the facilities will be located. Five future field houses presently lack precise locations and as such they have been allocated a 1/3 non-growth share.

[3] The Southeast Recreation Facility double icepad arena is replacing existing older arenas in the southern part of the city. As a result, no costs related to the arena portion are attributable to growth.

Determination of Post-Period Benefit of Recreation Facilities

The new facilities are expected to serve growth beyond the planning horizon for this service component. As a consequence, it was necessary to estimate this post-period benefit and remove it from the rate calculations. Post-period benefit was approximated by looking at the portion of the future build-out population in the service area in the planning horizon. This portion was then removed from the rate calculation.

Other Deductions in Recreation Facilities DC Rate Calculations

Consistent with rate calculations for other soft services, the DC rate calculations for Recreation facilities also reflect:

- An estimate of the portion of the costs in question that were collected in prior years as represented by the uncommitted balance in the DC Parks and Recreation Reserve fund. This amount is removed from the rate calculation so as not to overstate the amount that should be collected from the growth horizon in question. For Recreation facilities, this deduction amounted to approximately $738,000.
- Any capital grants, subsidies or other contributions from other sources that are anticipated for this service were also considered. In this case, there were no such contributions anticipated.
- A calculation of the amount that would otherwise represent an improvement over the existing combined quantity/quality service standard (an improvement prohibited by legislation) is made. No service standard reductions are required for recreation facilities for the 2021 DC Study Update.

Parkland Development

In determining capital needs Parks Planning staff conducted a detailed analysis of numerous park development projects for each category completed in recent years, as well as replacement costs associated with sample parks. The survey included parks of varying sizes, project complexity and degree of amenities provided to establish a representative dollar per hectare valuation that is applied to both parks contained in the service standard inventory and future growth-related parks projects. This valuation approach is consistent with the methodology used in prior DC Studies.

Definitions and descriptions of parkland types, infrastructure components and inclusions in the service standard per hectare valuation and future growth project cost estimates are as follows:

- **Neighbourhood Parks** are intended to serve as a focal point of a neighbourhood and are designed to serve the needs of the local neighbourhood by supporting both unorganized and organized activities and programs. Typical service/grade/seeding costs for neighbourhood parks are not included in DC calculation as these costs are a Local Service incurred by the subdivision Owner as per the subdivision agreement. Installation of soccer field amenities has also been removed from DC calculation for the same reason because they form part of the typical service/grade/seed requirement. Infrastructure installed in neighbourhood parks includes asphalt pathways, fencing, parking lots, trees, benches, bike racks, playground equipment, baseball diamonds/basketball courts, and infrastructure installation costs.
- **District Parks** are intended to serve groups of neighbourhoods and are designed with an emphasis on facilities for organized sports and unorganized activities. Costs associated with the Thames Valley Parkway (TVP), spray pads and field houses have not been included in district park DC calculations. Typical service/grade/seeding costs for district parks are not included in DC calculation as these costs are considered a Local Service incurred by the subdivision Owner as per the subdivision agreement. Infrastructure installed in district parks includes asphalt pathways, parking lots, trees, benches, bike racks, playground equipment, soccer fields, ball diamonds, skate park infrastructure, and infrastructure installation costs.
- **Urban Parks** are relatively small spaces that provide a higher level of design quality and are intended to be focal points within neighbourhoods. The Urban Park category was recommended by the 2009 Parks and Recreation Master Plan Update and incorporated into the 1989 Official Plan and London Plan. These parks are designed to accommodate large public gatherings and evening use. Costs associated with increased hard surface areas and formal lighting have been included in the urban park DC calculation. Typical service/grade/seed requirements are not included in the urban park DC calculation as these costs are a Local Service incurred by the subdivision Owner as per the subdivision agreement.
- **Civic Spaces** are small parcels of municipally owned land in the Downtown core and along older main street areas that are designed to a high standard. They are meant to accommodate large public gatherings/events. These parks are typically composed of hard surfaces, seating areas, incorporate high end horticultural components and are fully lit.
- **Woodland Parks** have typically been established and protected for their environmental significance and may have been identified by the City through a previous study or have a development-related Environmental Impact Study (EIS) with recommendations for their protection, management and enhancement. Smaller woodlands may not meet the test for significance, but are retained for their aesthetics and as a recreational amenity. Infrastructure installed in Woodland Parks includes asphalt and woodchip trails, boardwalks, trees, strategic tree clearing, and infrastructure installation costs.
- **Major Open Space Networks** generally buffers and protects natural features and is often linear in nature following tributaries of the Thames River, upland corridors or utility easements.

Open space includes asphalt pathway systems, boardwalks and/or bridges, trees, and infrastructure installation costs. Costs associated with significant woodlands are not included in the Open Space DC rate calculation.

- **Open Space SWM** is a new category that reflects the parkland development portion of Stormwater Management Facilities. Costs associated with Open Space SWM include asphalt pathway links.
- **Sports Parks** are designed to accommodate multiple high-end sport fields and service larger areas in the City. These parks have Soccer fields and ball diamonds that are built to a higher standard. Athletic fields in sport parks are often irrigated and fully lit. Costs associated with the TVP, field houses and typical service/grade/seed conditions are not included in Sport Park DC calculation. Infrastructure installed in sports parks includes asphalt pathways, parking lots, benches, trees, playground equipment, ball diamonds, soccer fields, irrigation systems, lighting, volleyball courts, and infrastructure installation costs.
- **Thames Valley Parkway (TVP)** is the City's multi-use pathway system which generally follows the Thames River. Future extensions of the TVP will occur as lands along the branches of the Thames River come under urban development. The DC rate for the TVP is a linear metre calculation. This calculation takes into account costs associated with routine structures found along the pathway system (road underpasses, pedestrian bridges), as well as asphalt pathways, initial tree clearing, and tree planting. Costs associated with tunnels and large bridges are not included in the TVP DC calculation. These are captured under their own category.
- **Environmentally Significant Areas (ESAs)** are identified as components of the Natural Heritage System and include lands that are to be maintained in their natural state through appropriate management for the purposes for which they have been recognized. Costs associated with the TVP abutting ESAs have not been included in the ESA DC calculation. A higher percentage for consulting (based on anticipated construction costs) has been incorporated into DC calculation due to the level of review required for environmental approvals. Infrastructure installed in ESAs include asphalt and woodchip pathways, dirt trails, boardwalks, parking lots, bridges, benches, and infrastructure installation costs.
- **Bridges and Tunnels** are the City's major recreational bridge and tunnel infrastructure. Given the scale of these facilities, they are calculated separately from the parkland type where they are located. The DC rate for Bridges and Tunnels is a linear metre calculation.

Parkland Development – Capital Needs

The Parkland Development needs for the planning horizon are influenced by parkland additions as identified through current or anticipated site-specific development approval processes and by recommendations contained in the 2009 Parks and Recreation Master Plan and 2017 Interim Update. To ensure there is no increase to the existing service standard as required by the *Development Charges Act*, several park development projects needed to accommodate the projected population have been removed from the Capital program.

- The Master Plan identified amenities and additions to the development of park space in neighbourhoods and districts (skate parks, basketball hoops, play structures, tennis courts, soccer fields, baseball diamonds & sports field development), as well as additions and extensions to the City's inventory of natural open space and TVP. The park development projects identified for inclusion in the DC rate calculations are consistent with the Master Plan for Parks and Recreation Services and in conformity with the 1989 Official Plan and London Plan. Only those projects with a growth component are included in the list of Capital Needs.
- The **Neighbourhood Parks** program addresses the development of new parks in growing areas of London. Of the fifteen identified projects, eight relate to currently known or anticipated site-specific development approvals from 2021 to 2023. The seven remaining projects respond to future Neighbourhood Park needs from 2024 to 2028.
- The **District Parks** program services the development of new larger-scale parks in growing areas of the City. Projects identified in the Capital Needs list are consistent with the Master Plan. These future parks will be developed with a mix of amenities that are consistent with existing parks of this level. Two District Park projects relate to currently known or anticipated site-specific development approvals from 2021 to 2023. Two District Park projects respond to future District Park needs from 2025 to 2028.
- The 2009 Parks and Recreation Master Plan recommended the establishment of a new category of park: **Urban Parks**. This category was identified in the 2014 DC Study. These parks reflect emerging development patterns and a movement toward improved walkability and placemaking. The Urban Parks program includes nine projects, of which four relate to currently known or anticipated site-specific development approvals from 2021 to 2023. Five Urban Park projects respond to future Urban Park needs from 2024 to 2028.
- The need for **Civic Spaces** has been identified in Placemaking Design Guidelines, the Downtown Master Plan, the London Psychiatric Hospital Plan and the Old Victoria Hospital Secondary Plan. These projects provide city-wide benefits, while providing high-quality amenity space for populations in the immediate vicinity. Two projects are identified over the period.

- **Woodland Parks** were established as a new category of parkland in the 2009 DC Study. Historically, these parks were captured in the open space category. Woodlands have their own category due to environmental considerations affecting trail development and unique tree hazard/environmental restoration needs. The Woodland Parks program includes five projects, three of which relate to approved or under review site-specific development applications. Two projects respond to future needs from 2024 to 2028.
- The **Sports Parks** category reflects a park-type with a concentration of major sports-related activities. The sports parks included in the capital needs are consistent with the Parks and Recreation Master Plan recommendations related to sports infrastructure requirements. Of the two projects identified over the planning horizon, one reflects an identified site-specific project and one responds to needs from 2024 to 2028.
- The 1989 Official Plan and London Plan include numerous policies that speak to the importance of the city's natural heritage system, and its role as a significant environmental/ecological resource, recreational asset and framework of the City's structure. Within the Open Space, Environmental, Parks and Recreation, and Services and Utilities chapters of the 1989 Official Plan, policies that identify the importance of a linked and accessible natural heritage system are found. These policies direct that opportunities to enhance these linkages be pursued, and that these areas be protected.
- The capital needs in the **Major Open Space Network** and **Environmentally Significant Area** categories are also consistent with the existing policies and the recommendations of the Parks and Recreation Master Plan relating to the development of a linked natural heritage system. For open space areas that are not linked through the extension of the City's primary recreational pathway system (the TVP), the Master Plan recommends that a fully linked pathway system be developed. The projects identified in the Capital Needs include components of the natural heritage system within growth areas that will be linked to the City's existing system of pathways.
- The capital needs in the **TVP** category are also drawn from the recommendations of the Parks and Recreation Master Plan and Bicycle Master Plan, and reflect the priorities established for the City's multi-purpose pathway system. Through the public consultation process for the Master Plans, Londoners identified improving the pathway network as the top priority for parks development. The projects identified extend the City's existing linear parkway into growing areas of the City.
- Through the DC Study process, it was identified by Parks Planning that the TVP replacement cost identified in the 2014 DC Study was incorrect. The $327/m was unchanged from the value identified in the 2009 DC Study; the correct 2013 replacement cost was actually $557/m that was updated to $655/m in the 2019 DC Study and carried forward under the 2021 DC Study Update.
- The Capital Needs in the **Bridges and Tunnels** category mainly support the recreational bridge and tunnel infrastructure needed to connect growing areas of the City with the primary recreational pathway system. Six projects are identified, of which five relate to approved or under review site-specific development applications.

Parks & Recreation Studies

- Parks and Recreation (P&R) Master Plan (2021 & 2027): The purpose of the P&R Strategic Master Plan is to provide overall direction and guidance for making decisions about parks and recreation programming, public use facilities and infrastructure, and investment in the community. It identifies facility service standards and projects future needs based on Council approved population projections. A new 10 year Strategic Master Plan was initiated in 2017 and was adopted by Council on June 25, 2019. The 2021 study is an update of the 2019 P&R Strategic Master plan based on new census data, updated population projections and a review of emerging trends. The 2027 study is to develop with significant public engagement a new P&R Strategic Plan to replace the 2019 Master Plan.
- Urban Forestry Studies Impacted by Growth: Several Urban Forestry studies will be completed during the years identified. The studies will evaluate growth impacts and best management practices for new initiatives (i.e. street tree inventory) and updates of existing plans (i.e. urban forestry strategy). All studies will examine how future development can ensure that tree canopy cover targets are met. A minor growth share has been allocated for these studies.
- New ESA Conservation Master Plans: These studies are completed for the management of ESA lands acquired by the City due to growth, and were previously included within the cost of P&R ESA park projects. For the 2021 DC Study Update, these studies are identified as separate Parks & Recreation Studies.
- Subwatershed Studies; review and implementation update: The purpose of this study is to review subwatershed study recommendations and targets more comprehensively and document successes/challenges in meeting established targets. The findings will impact future environmental policies and natural heritage lands development.
- Post Development Environmental Impact Study (EIS) Monitoring: Beginning in 2021, it is anticipated that the City will undertake monitoring and studies to assess the efficacy of growth-related EIS recommendations and the City's environmental policies. The results will be used in considering future EIS requirements and determine if corrective actions are required to better protect environmental lands.

Rate Calculation Adjustments

Consistent with other rate calculations for soft services, the DC rate calculations for Parkland Development reflect:

- Gross cost of projects considered to benefit growth.
- Any capital grants, subsidies or other contributions from other sources that are anticipated for this service were also considered. In this case, there were no such grants anticipated.
- An estimate of the portion of the costs collected in prior years is represented by the uncommitted balance in the Parks and Recreation DC Reserve fund. This amount is removed from the rate calculation so as not to overstate the amount that should be collected over the growth horizon.
- As many of the areas targeted for new major facilities will grow over a number of years, a portion of the costs associated with district parks, sports parks, civic spaces and TVP projects beyond 2028 are also deferred for inclusion in future rate calculations. These post-period benefits are removed from the rate calculation. Estimates are inherent in the allocations. This meets the statutory objective that the increase in need for service be attributable to the anticipated development.
- The growth share for parks development projects is determined based on two categories:
  - Major future parks have the potential to draw users from locations across the city (i.e., district parks, ESAs, open space, sports parks, civic spaces and the TVP). Benefit to existing development for projects in this category reflects the additional capacity built into their design to serve more than the local growth needs and their probable use by residents of the existing city.
  - Local Parks are used by and benefit the local growth area (i.e., neighbourhood parks, urban parks, woodland parks and the majority of bridges and tunnels). Projects in this category do not have a benefit to existing development given that they are being constructed to service new subdivisions in the immediate area of the park. These parks are built primarily for the immediate, local growth area and the benefit to existing development of these local parks is remote. A calculation of the amount that would otherwise represent an improvement over the existing combined quantity/quality service standard (an improvement prohibited by legislation) is made. This amount (~$812,000) is also removed from the rate calculation, all in accordance with the underlying legislation.

Allocation of Net Costs of Growth to Growth Types

There is no compelling case for attribution of capital costs associated with expansion of Parks and Recreation amenities to any group other than Residential growth (generally, population growth impacts Parks and Recreation capital needs, rather than non-residential employment growth). For this reason, 100% of growth costs have been attributed to Residential growth. This is consistent with the practice of previous DC Studies and many other municipalities in the Province.

Final Costs for DC Rate Calculation

The required Parks and Recreation projects form the basis for determining DCs for the CSRF and represent the numerator in the rate calculation. The final total costs calculated for Parks and Recreation projects are shown in Table E-15 and E-16.

Financing Costs

Table E-17 was produced to simulate cash flows for CSRF funded Parks and Recreation projects for the purpose of calculating the final DC rate inclusive of financing costs. Forecasting cash flow and financing costs involved:

a) Starting with the 2021 opening balance, which reflects accumulated uncommitted funds for growth projects identified in past DC Studies (for both Park Development and Recreation Facilities combined);
b) Projecting DC revenues using the pre-finance rate;
c) Incorporating DC drawdowns in the cash flow projection based on the growth projects identified in the study period;
d) Incorporating provisions for debt payments for previously approved commitments on growth works funded by debt; and
e) Estimating annual interest revenues to be earned and/or financing costs to be incurred due to fund deficits throughout the planning horizon.

Any deficit in the cash flow analysis at the end of the planning period equates to the amounts of the expenditures incurred during the planning period to be recovered from growth in the future (i.e. the post-period benefit). All figures are un-inflated and were determined for the period immediately preceding the DC Study. The rates generated from this cash flow analysis reflect the appropriate cost recovery from growth for the planning horizon.

Parks & Recreation Services
TABLE E-1 Summary Service Standard

Unit of Measure 2020 Replacement Value ($000's)
Type of Measure Quality & Quantity

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Parkland Development	$215,975.2	$220,690.7	$225,826.9	$236,629.5	$240,633.4	$242,869.1	$247,138.0	$259,100.9	$260,531.3	$267,321.4
Recreation Facilities	$319,213.0	$319,692.4	$319,692.4	$319,692.4	$336,496.4	$339,540.5	$337,192.2	$330,046.0	$385,973.3	$406,476.2
Recreation Equipment	$1,105.0	$1,105.0	$1,105.0	$1,190.0	$1,190.0	$1,190.0	$1,190.0	$1,190.0	$1,105.0	$1,105.0
Total	$536,293.2	$541,488.1	$546,624.3	$557,511.8	$578,319.8	$583,599.6	$585,520.2	$590,336.9	$647,609.6	$674,902.6
Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	$1,425.63	$1,425.70	$1,425.62	$1,440.41	$1,480.31	$1,480.09	$1,466.73	$1,460.87	$1,583.40	$1,630.59

10 Year Average	
Level of Service per Capita	$1,481.94

DC Eligible Amount (before adjustments)	
Net Forecast Population - 8 Year	39,300
$ per Capita	$1,481.94
DC Rate Eligible Amount (gross)	$58,240,242

NOTES:

1) Building, site improvements and contents derived from information compiled by City of London - Facility Services Division. Land values from information provided by Realty Services Division.

2) The valuations above include the current (2020) replacement value of building, land, and site improvements.

Parks & Recreation Services
TABLE E-2 Parkland Development Summary Service Standard

Contact Person(s) Andrew Macpherson
Unit of Measure Hectares of Parkland
Type of Measure Quantity

Parkland Classification	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020 $/ha.
Neighbourhood Parks	302.0	311.7	313.7	310.7	313.9	312.7	315.7	317.1	320.7	324.0	$82,065
Environmentally Significant Areas	618.3	634.1	639.1	698.2	680.9	680.9	695.4	695.9	704.7	704.7	$7,541
Open Spaces	492.9	503.6	517.9	542.4	587.0	601.2	634.5	641.0	645.3	667.3	$57,826
District Parks	315.6	322.3	322.3	319.1	319.8	324.5	333.1	307.7	307.7	307.7	$156,723
Woodland Parks	64.4	64.5	79.5	117.0	125.6	134.5	138.0	138.0	144.1	164.1	$22,542
Urban Parks	2.8	4.0	5.4	6.4	6.4	6.4	6.4	6.5	6.5	7.7	$909,707
Sports Parks	110.2	110.2	110.2	113.0	115.0	115.0	115.0	115.0	115.3	115.3	$211,724
City Wide Parks Note 2	22.6	22.6	22.6	21.6	21.6	21.6	21.6	47.5	47.5	47.5	$524,231
Civic Spaces	2.2	2.2	2.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	$7,666,665
Total	1,931.0	1,975.2	2,012.9	2,131.4	2,173.3	2,200.0	2,262.9	2,271.8	2,294.9	2,341.4	
Springbank Park Note 2	70.9	70.9	70.9	70.9	70.9	70.9	70.9	70.9	70.9	70.9	
Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900	
Level of Service per Capita	0.0051332	0.0052005	0.0052498	0.0055068	0.0055629	0.0055795	0.0056686	0.0056219	0.0056110	0.0056569	
Persons per Hectare of Developed Parkland	194.81	192.29	190.48	181.59	179.76	179.23	176.41	177.88	178.22	176.78	

10 Year Average	
Quantity Standard per Capita	0.005479

NOTES:

1) The value of the development in these parks has been arrived at through a specific valuation of all Park Development amenities, including pathways, play structures, hard playing surfaces, parking facilities, at their 2020 replacement values.

2) City Wide Park inventory does not include Springbank Park (70.9 ha) as it is listed separately due to its size.

3) The parks listed above exclude the sq. footage of facilities located on park premises.

4) The parks listed above exclude the land associated with municipally owned golf courses.

Parks & Recreation Services
TABLE E-2 Parkland Development Summary Service Standard Cont'd

Contact Person(s) Andrew Macpherson
Unit of Measure 2020 Replacement Value ($000's)
Type of Measure Quality & Quantity

Parkland Classification	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Neighbourhood Parks Notes 1 & 2	$24,783.6	$25,579.7	$25,743.8	$25,493.5	$25,761.8	$25,663.4	$25,911.2	$26,026.1	$26,321.5	$26,589.9
Environmentally Significant Areas Notes 2 & 3	$4,662.2	$4,781.4	$4,819.5	$5,264.7	$5,134.3	$5,134.3	$5,243.7	$5,247.5	$5,313.8	$5,313.8
Open Spaces Notes 2 & 3	$28,502.4	$29,120.6	$29,947.5	$31,366.6	$33,945.8	$34,766.9	$36,692.5	$37,069.0	$37,315.9	$38,589.2
District Park Notes 1 & 2	$49,461.8	$50,508.7	$50,508.7	$50,007.2	$50,112.2	$50,861.3	$52,209.1	$48,215.8	$48,215.8	$48,215.8
Woodland Parks	$1,451.7	$1,454.0	$1,792.1	$2,637.0	$2,831.3	$3,032.8	$3,111.0	$3,111.0	$3,248.5	$3,699.4
Urban Parks Note 2	$2,547.2	$3,638.8	$4,912.4	$5,813.0	$5,813.0	$5,813.0	$5,813.0	$5,904.0	$5,904.0	$6,995.6
Sports Parks Notes 1 & 2	$23,332.0	$23,332.0	$23,332.0	$23,924.8	$24,348.3	$24,348.3	$24,348.3	$24,348.3	$24,411.8	$24,411.8
City Wide Park Note 2	$11,847.6	$11,847.6	$11,847.6	$11,323.4	$11,323.4	$11,323.4	$11,323.4	$24,890.5	$24,890.5	$24,890.5
Civic Spaces	$17,173.3	$17,173.3	$17,173.3	$24,073.3	$24,073.3	$24,073.3	$24,073.3	$24,073.3	$24,073.3	$24,073.3
Thames Valley Parkway Notes 2 & 3	$26,416.2	$26,897.6	$26,897.6	$27,313.5	$27,313.5	$27,313.5	$27,313.5	$27,313.5	$27,313.5	$30,459.5
Open Space SWM Block Pathways Note 8	$87.3	$87.3	$87.3	$87.3	$91.3	$93.7	$93.7	$93.7	$154.4	$154.4
Footbridges and Tunnels	$15,919.2	$15,919.2	$17,854.6	$17,854.6	$17,854.6	$17,854.6	$17,854.6	$19,097.6	$19,097.6	$19,097.6
Springbank Park Notes 1, 2, 6 & 7	$9,790.6	$10,350.62	$10,910.6	$11,470.62	$12,030.6	$12,590.6	$13,150.6	$13,710.62	$14,270.62	$14,830.62
Total	$215,975.2	$220,690.7	$225,826.9	$236,629.5	$240,633.4	$242,869.1	$247,138.0	$259,100.9	$260,531.3	$267,321.4
Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	$574.13	$581.06	$588.97	$611.36	$615.94	$615.95	$619.08	$641.18	$637.00	$645.86

10 Year Average	
Level of Service per Capita	$613.05

DC Eligible Amount (before adjustments)	
Net Forecast Population - 8 Year	39,300
$ per Capita	$613.05
DC Rate Eligible Amount (gross)	$24,092,865

NOTES:

1) Includes pathways, minor footbridges (creeks & streams), driveways, parking lots, boardwalks, stairs, benches, plantings, play equipment, sportsfields, hard playing surfaces, irrigations systems, lighting and signage.

2) Excludes enclosed structures, major footbridges, wading pools, spray pads.

3) Includes pathways, driveways, parking lots, boardwalks, minor footbridges (creeks & streams), stairs, benches, plantings and signage.

4) Valuations were determined using a representative sample of all the parks in this category. A weighted average per hectare (2020) value was calculated, and this value applied to all parks (which all have similar level of development) in this category.

5) Values were determined through an individual approximation of 2020 replacement cost for each location.

6) Excludes the Pumphouse and all waterworks facilities, Springbank Dam, Civic Garden Complex, Springbank footbridge, Storybook Gardens, boat dock/shelter, train station, concession, and washrooms. Includes 2 picnic pavilions and train tracks.

7) The valuation for Springbank Park represents a park-specific replacement cost, rather than a $/ha cost.

8) Includes non-SWMF pathways only; all SWM related works including structures, shared maintenance driveways/pathways, etc are excluded.

Parks & Recreation Services
TABLE E-3 Facilities Summary Service Standard

Contact Person(s) Tim Wellhauser
Unit of Measure Square Feet of Buildings
Type of Measure Quantity

Type of Facility	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Arenas	601,790	601,790	601,790	601,790	601,790	601,790	601,790	572,420	637,420	637,420
Community/Senior Centres	238,233	240,015	240,015	240,015	278,293	278,293	273,887	273,887	360,550	384,550
Aquatics	109,769	109,769	109,769	109,769	109,769	109,769	107,493	107,493	107,493	125,493
Wading Pools & Spray Pads										
Special Facilities	58,196	58,196	58,196	58,196	58,196	58,196	58,196	58,196	58,196	58,196
Fieldhouses, Washrooms, etc.										
Total	1,007,988	1,009,770	1,009,770	1,009,770	1,048,048	1,048,048	1,041,366	1,011,996	1,163,659	1,205,659
Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	2.68	2.66	2.63	2.61	2.68	2.66	2.61	2.50	2.85	2.91

10 Year Average	
Quantity Standard per Capita	2.68

NOTES:
Building, site improvements and contents derived from information compiled by City of London - Facility Services Division. Land values from information provided by Realty Services Division.

Contact Person(s) Tim Wellhauser
Unit of Measure 2020 Replacement Value ($000's)
Type of Measure Quality & Quantity

Type of Facility	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Arenas	$144,826.9	$144,826.9	$144,826.9	$144,826.9	$144,826.9	$144,826.9	$144,826.9	$137,161.4	$157,961.4	$157,961.4
Community/Senior Centres	$77,979.2	$78,458.5	$78,458.5	$78,458.5	$95,262.6	$95,262.6	$93,932.0	$93,932.0	$130,157.1	$142,709.1
Aquatics	$52,363.5	$52,363.5	$52,363.5	$52,363.5	$52,363.5	$52,363.5	$48,828.9	$48,828.9	$48,828.9	$58,242.9
Wading Pools & Spray Pads	$8,596.1	$8,596.1	$8,596.1	$8,596.1	$8,596.1	$9,545.9	$10,546.1	$11,065.5	$9,967.7	$10,366.7
Special Facilities	$16,101.2	$16,101.2	$16,101.2	$16,101.2	$16,101.2	$16,101.2	$16,101.2	$16,101.2	$16,101.2	$16,101.2
Fieldhouses, Washrooms, etc.	$19,346.1	$19,346.1	$19,346.1	$19,346.1	$19,346.1	$21,440.5	$22,957.1	$22,957.1	$22,957.1	$21,095.0
Total	$319,213.0	$319,692.4	$319,692.4	$319,692.4	$336,496.4	$339,540.5	$337,192.2	$330,046.0	$385,973.3	$406,476.2
Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	$848.56	$841.73	$833.77	$825.97	$861.32	$861.12	$844.67	$816.74	$943.70	$982.06

10 Year Average	
Level of Service per Capita	$865.96

DC Eligible Amount (before adjustments)	
Net Forecast Population - 8 Year	39,300
$ per Capita	$865.96
DC Rate Eligible Amount (gross)	$34,032,228

NOTES:
1) The valuations above reflect the current (2020) replacement value of building, land, and site improvements.

Parks & Recreation Services
TABLE E-4 Equipment Summary Service Standard

Contact Person(s) Duncan Sanders
Unit of Measure Number of Machines
Type of Measure Quantity

Facility Name	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020 $/machine
Ice Resurfacing Equipment (Conventional)	13	13	13	14	14	14	14	14	13	13	$85,000
Total	13	13	13	14	14	14	14	14	13	13	

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	0.0000346	0.0000342	0.0000339	0.0000362	0.0000358	0.0000355	0.0000351	0.0000346	0.0000318	0.0000314

10 Year Average	
Quantity Standard per Capita	0.0000343

NOTES:
1) Ice Resurfacing equipment is replaced on an 10 year cycle.

Contact Person(s) Duncan Sanders
Unit of Measure 2020 Replacement Value ($000's)
Type of Measure Quality & Quantity

Facility Name	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Ice Resurfacing Equipment (Conventional)	$1,105.0	$1,105.0	$1,105.0	$1,190.0	$1,190.0	$1,190.0	$1,190.0	$1,190.0	$1,105.0	$1,105.0
Total	$1,105.0	$1,105.0	$1,105.0	$1,190.0	$1,190.0	$1,190.0	$1,190.0	$1,190.0	$1,105.0	$1,105.0

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	$2.94	$2.91	$2.88	$3.07	$3.05	$3.02	$2.98	$2.94	$2.70	$2.67

10 Year Average	
Level of Service per Capita	$2.92

DC Eligible Amount (before adjustments)	
Net Forecast Population - 8 Year	39,300
$ per Capita	$2.92
DC Rate Eligible Amount (gross)	$114,756

Parks & Recreation Services
TABLE E-5 Parkland Development Service Standard

Contact Person(s) Andrew Macpherson
Unit of Measure Hectares of Parkland
Type of Measure Quantity

Parkland Classification	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Neighbourhood Parks Note 1										
A. L. Furanna Park	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Admiral Park	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Ambleside Park	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
Arthur Ford Park	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Ashley Oaks Park	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Bellwood Park - East	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Bellwood Park - West	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Belmont Park	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Belvedere Park	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Bevledere Place Park				0.6	0.6	0.6	0.6	0.6	0.6	0.6
Berkshire Park	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Blackacres Park				1.2	1.2	1.2	1.2	1.2	1.2	1.2
Blackfriars Park	2.5	2.5	2.5	2.5	2.5					
Blackwell Park									0.9	0.9
Boyle Park	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Brookside Park	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Broughdale Park	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Butler Park	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Byron Hills Park	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Camden Crescent Park	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Cantebury Park	2.6	2.6	2.6	2.6	2.4	2.4	2.4	2.4	2.4	2.4
Capulet Park	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Carling Park	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Carriage Hill Park	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Carroll Park	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Cayuga Park	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Cedar Hollow Park		2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Cheltenham Park	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Chelsea Green Park				3.8	3.8	3.8	3.8	3.8	3.8	3.8
Chesham Heights Park	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Cheswick Park	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Cleardale Park	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Cnra Park	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Colville Park	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Coronation Park North	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Coves - Elmwood Gateway				0.6	0.7	0.7	0.7	0.7	0.7	0.7
Creekside Park				0.2	0.2	0.2	0.2	0.2	0.2	0.2
Cresthaven Park	3.5	3.5	3.8	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Culver Park	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Dalkeith Park	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

Parks & Recreation Services
TABLE E-5 Parkland Development Service Standard Cont'd

Parkland Classification	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Neighbourhood Parks Cont'd										
Doidge Park	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Drew Street Park										0.4
Duchess Avenue Park	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Dunkirk Place Park	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Earl Nichols Park	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
East Lions Park	4.3	4.3	4.3							
Ebury Park	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Edge Valley Park										0.3
Empress Avenue Park	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Essex Park	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Evergreen Park				3.1	3.1	3.1	3.1	3.1	3.1	3.1
Fairmont Park	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
Fanshawe Optimist Little League Park	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Farnsborough Park	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Flanders Park	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Forest Hill Park			0.9	0.9	0.9	2.2	2.2	2.2	2.2	2.2
Forest View Park	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
Frederick Park			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Gainsborough Meadows	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Gartshore Park	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Genevive Park	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Glanworth Park	2.7	2.7	2.7							
Glass Avenue Park	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Grampian Woods	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Grand Oak Park									0.3	0.3
Grand View Park	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Gretna Green Park	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Griffith Street Park	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Halls Mills Park	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Hastings Park	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Hazelden Park	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
Helen Mott Shaw Park	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
Helen Mott Shaw Park - West	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Heritage Park	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Heron Haven Park	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Hill Street Park	1.0	1.0	1.0							
Huntington Park	0.8	0.8	0.8	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Huron Heights Park	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Huronview Park	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Hyde Park Village Green								0.6	0.6	0.6
Jaycee Park	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Jubilee Park	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Kelly Park	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Kensal Park	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
Kensington Park	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Lambeth Optimist Park	4.2	4.2	4.2	4.3	4.3	4.3	4.3	4.3	4.3	5.2
Lambeth Veterans Park	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Laurier Park	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Lorne Avenue Park								0.6	0.6	0.6
Lyngate Grove Park	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Maple Grove Park		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Mckillop Park	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6

Parks & Recreation Services
TABLE E-5 Parkland Development Service Standard Cont'd

Parkland Classification	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Neighbourhood Parks Cont'd										
Mcmahen Park	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Meander Creek Park	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Meredith Park	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Mildred Barons Park	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Mitchell Park	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Murray Park	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Naiomi Almedia Park	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Nelson Park	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Nicholas Wilson Park	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
Northbrook Park	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Northcrest Park	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Northeast Recreation Centre	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Norwest Optimist Park	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Oak Park	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Oakland Avenue Park	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Odessa Park	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Past Presidents Park	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Paul Haggis Park	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Pawnee Park	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Pebblecreek Park			0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Peppertree Park	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Powell Park					1.1	1.1	1.1	1.1	1.1	1.1
Ralph Hamlyn Park	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
Reservoir Park	17.6	17.6	17.6	18.2	18.2	18.2	18.2	18.2	18.2	18.2
Richard B. Harrison Park	3.5	3.5	3.5	3.8	3.8	3.8	3.8	3.8	3.8	3.8
Richardson Park										1.7
River East Optimist Park	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
River Forks Park	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Rollingwood Circle Park	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Rosecliffe Park	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Rosel Park	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Rowntree Park	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Ruskin Park	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Scenic View Park	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Sevilla Park	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Shaftesbury Park	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Sheffield Park									1.6	1.6
Sherwood Forest Park					2.2	2.2	2.2	2.2	2.2	2.2
Smith Park	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Southcrest Park	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Southeast Optimist Park	3.1	3.1	3.1							
Southwinds Park	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Springbank Flats	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
St. Anthony'S Park	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
St. Lawrence Park	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
St. Stephen'S Park	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Stanhope Park	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Stephen'S Farm Park	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Summercrest Park	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Sunrise Park	0.6	0.6	0.6	0.6	0.6	0.6	1.1	1.1	1.1	1.1
Talbot Park		3.1	3.1	3.2	3.2	3.2	3.2	3.2	3.2	3.2

TABLE E-5 Parkland Development Service Standard Cont'd

Parkland Classification	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Neighbourhood Parks Cont'd										
Thamesridge Park	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Thistledown Park	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Thornwood Park	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Tokala Woods Park								0.2	0.2	0.2
Trooper Mark Wilson Park	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
University Heights Park	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Village Green Park	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Vimy Ridge Park									0.8	0.8
Virginia Park	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
Vista Woods			0.1	0.1	0.1	0.1	1.6	1.6	1.6	1.6
Walnut Woods	3.6	3.6	3.6							
Water Oak Park							0.2	0.2	0.2	0.2
Wellingsboro Park	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Wenige Park	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Westdale Park	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Westbury Park							0.8	0.8	0.8	0.8
Westmount Lions Park	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
Westmount Park	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
Whetherfield Park		2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Whisperwood Park	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Wilton Grove Park	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Windblest Park	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Wood Street Park	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total	302.0	311.7	313.7	310.7	313.9	312.7	315.7	317.1	320.7	324.0
Number of Parks	138	142	146	147	149	148	150	153	157	160
Average Size (hectares)	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0

TABLE E-5 Parkland Development Service Standard Cont'd

Parkland Classification	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Woodland Parks										
Beaverbrook Woods	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Briscoe Woods	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Burnett Woods	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Cheddar Woods					4.7	4.7	4.7	4.7	4.7	4.7
Clara Brenton Woods	7.3	7.3	7.3	7.4	7.4	7.4	7.4	7.4	7.4	7.4
Cresthaven Woods				2.7	2.7	6.0	6.0	6.0	6.0	6.0
Crestwood Woods	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
Dragon Fly Woods						5.6	5.6	5.6	5.6	5.6
Egelton Woods	5.8	5.8	5.8	5.9	5.9	5.9	5.9	5.9	5.9	5.9
Fekete Woods			14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9
Forest Hill Woods	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
Foxfield Woods				3.2	3.2	3.2	3.2	3.2	3.2	3.2
Hickory Woods	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Highland Woods	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6
Huron Street Woods				14.0	14.0	14.0	14.0	14.0	14.0	14.0
Lord Nelson Woods				0.6	0.6	0.6	0.6	0.6	0.6	0.6
Maplegrove Woods									6.1	6.1
Northdale Woods	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
Powell Woods							3.6	3.6	3.6	3.6
Sandra Mcinnis Woods				6.4	6.4	6.4	6.4	6.4	6.4	6.4
Somerset Woods				6.5	6.5	6.5	6.5	6.5	6.5	6.5
Sovereign Woods	2.8	2.8	2.8	1.38	1.38	1.38	1.38	1.38	1.38	1.38
Summerside Woods										18.2
Talltree Park				1.7	1.7	1.7	1.7	1.7	1.7	1.7
Three Valley Park	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Tokala Woods					3.9	3.9	3.9	3.9	3.9	3.9
Trafalgar Woods	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Viscount Woods	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Walnut Woods		0.1	0.1	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Waubuno Creek Woods										1.8
Wonderland Road Park			0.1	0.1	0.1	0.1				
Total	64.4	64.5	79.5	117.0	125.6	134.5	138.0	138.0	144.1	164.1
Number of Parks	14	15	17	24	26	27	27	27	28	30
Average Size (hectares)	4.60	4.30	4.68	4.87	4.83	4.98	5.11	5.11	5.15	5.47

TABLE E-5 Parkland Development Service Standard Cont'd

Parkland Classification	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Environmentally Significant Areas										
Ballymote ESA	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Coves ESA	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Coves - East Pond Woods	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
Coves - West Pond Woods	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Euston Park ESA				13.2	13.2	13.2	13.2	13.2	13.2	13.2
Elsie Perrin Williams Estate	26.6	26.6	26.6	26.6	26.6	26.6	26.6	26.6	26.6	26.6
Felner Subdivision - Medway Valley			5.1							
Hyde Park Woods	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
Kains Woods ESA	25.0	25.0	25.0	25.9	25.9	25.9	25.9	25.9	25.9	25.9
Kains Woods ESA - South	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Kelly Stanton ESA - North				12.9	12.9	12.9	12.9	12.9	12.9	12.9
Kelly Stanton South ESA							5.6	5.6	5.6	5.6
Kilally Meadows ESA	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	127.8	127.8
Kilally Woods ESA	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
Kilally Woods ESA (Killarney)	3.3	3.3	3.3	3.3						
Lower Dingman ESA	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8	21.3	21.3
Meadowlily Woods ESA	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7
Meadowlily Woods ESA (Killarney)		15.8	15.8							
Medway Valley Heritage Forest ESA	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0
Medway Valley Heritage Forest ESA - East	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.4	5.4	5.4
Medway Valley Heritage Forest ESA - North	10.9	10.9	10.9	50.6	50.6	50.6	50.6	50.7	50.7	50.7
Medway Valley Heritage Forest ESA - South	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Miggsie Lawson Park	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1
Naomee Park	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Sifton Bog ESA	33.0	33.0	33.0	34.6	34.6	34.6	34.6	34.6	34.6	34.6
South Thames Terraced Forest				11.6	11.6	11.6	11.6	11.6	11.6	11.6
Warbler Woods ESA	28.9	28.9	28.9	28.9	29.1	29.1	38.0	38.0	38.0	38.0
Westminster Ponds - East - Pond Mills ESA	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2
Westminster Ponds - North East - Pond Mill	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6
Westminster Ponds - Pond Mills ESA	113.4	113.4	113.4	113.4	99.2	99.2	99.2	99.2	99.2	99.2
Westminster Ponds - South - Pond Mills ESA	29.6	29.6	29.6	29.6	29.6	29.6	29.6	29.6	29.6	29.6
Westminster Ponds - South East - Pond Mill	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Total	618.3	634.1	639.1	698.2	680.9	680.9	695.4	695.9	704.7	704.7
Number of Parks	26	27	28	29	28	28	29	29	29	29
Average Size (hectares)	23.8	23.5	22.8	24.1	24.3	24.3	24.0	24.0	24.3	24.3

Parks & Recreation Services
TABLE E-5 Parkland Development Service Standard Cont'd

Parkland Classification	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Open Space Note 1										
Adelaide Street Wells Park	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Ann Street Park	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
Ballymote Trail							0.5	0.5	0.5	0.5
Blackfriars Park - North	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Blackfriars Park						2.6	2.6	2.6	2.6	2.6
Boler Mountain Park					0.0	0.0	0.0	0.0	0.0	0.0
Boler Road Park	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Braemar Block	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Burr Reed Woods	2.8	2.8	2.8	2.8	2.5	2.5	2.5	2.5	2.5	2.5
Button Bush Wetland - South	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Button Bush Wetland - North	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	3.8	3.8
Byron Pits Open Space							8.1	8.1	8.1	8.1
Byron River Valley	9.5	9.5	9.5	9.5	9.5	10.1	10.1	10.1	10.1	10.1
Byron View Park	4.7	4.7	4.7	4.7	4.7	4.7	10.6	10.6	10.6	10.6
Campbell Woods									3.4	3.9
Carfrae Park East	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Carfrae Park West	1.1	1.1	1.1	1.1	1.1					
Carling Heights Optimist Community Center								0.1	0.1	0.1
Cavendish Park	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2
Cavendish Park - East	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Ceasar'S Park						1.7	1.7	1.7	1.7	1.7
Chelsea Green Park	3.8	3.8	3.8							
Charles Hunt Park						1.1	1.1	1.1	1.1	1.1
Chelsea Green - North	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Clarke Road Park	37.6	37.6	37.6	37.6	37.6	37.6	37.6	37.6	37.6	37.6
Clayton Walk Park							0.5	0.5	0.5	0.5
Cottonwood Flats									0.0	3.6
Coves - Elmwood Gateway	0.6	0.6	0.6							
Coves Lookout						0.2	0.2	0.2	0.2	0.2
Coves - Open Space	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Creekside Meadows				3.7	3.7	3.7	3.7	3.7	3.7	3.7
Cresthaven Woods	2.7	2.7	2.7							
Deer Ridge Park			0.3	0.3	0.3	0.5	0.5	0.5	0.5	0.5
Devon Park			2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Dingman Creek Open Space							13.3	13.3	13.3	13.3
Dingman Wetlands					29.3	29.3	29.3	29.3	29.3	29.3
Edge Valley Woods									3.2	3.2
Eldon House				0.8	0.8	0.8	0.8	0.8	0.8	0.8
Elron Park				1.7	1.7	1.7	1.7	1.7	1.7	1.7
Euston Park	13.2	13.2	13.2							
Evergreen Park	3.1	3.1	3.1							
Fairhaven Park							0.6	0.6	0.6	0.6

TABLE E-5 Parkland Development Service Standard Cont'd

Parkland Classification	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Open Space Cont'd										
Fairmont Trail	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.9	4.9
Falls View Park	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Forest Hill			0.1	0.1	0.1					
Forest Hill Pond						2.9	2.9	2.9	2.9	2.9
Fox Hollow Ravine - North	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Fox Hollow Ravine - South	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Gainsborough Valley Park	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Garden Plots	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Gibbons/Uwo Wetland	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Glen Cairn / Open Space	23.4	23.4	23.4	23.4	23.4	21.7	21.7	21.7	21.7	21.7
Gore Road Open Space	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Graham Place Park	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
Grosvenor Lodge				1.1	1.1	1.1	1.1	1.1	1.1	1.1
Hampton Valley	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
Herbert Park				0.3	0.3	0.3	0.3	0.3	0.3	0.3
Highbury Wetland	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
Highbury Woods	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
Highview Park	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Hillside Ravine	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Hill Street Park				1.0	1.0	1.0	1.0	1.0	1.1	1.1
Horton Park Central				0.3	0.3	0.3	0.3	0.3	0.3	0.3
Horton Park North				0.1	0.1	0.1	0.1	0.1	0.1	0.1
Horton Park South				1.0	1.0	1.0	1.0	1.0	1.0	1.0
Huron Street Woods	13.2	13.2	13.2							
Hunt Club Green								3.3	3.3	3.3
Hutton Park	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Jalna South Park	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Kains Woods Trail	1.5	1.5	1.5	3.8	3.8	3.8	3.8	3.8	3.8	3.8
Kains Woods Trail West										0.9
Kelly Stanton Esa - North	12.9	12.9	12.9							
Kilally Fields	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3
Kilally Valley Park	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3		
Kilally Woods (Killarney)					7.1	7.1	7.1	7.1	7.1	7.1
Krupp Park	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
London Hyde Park Rotary Link	14.2	14.2	14.2	14.2	14.3	14.3	14.3	14.3	14.3	14.3
Longview Park	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Lord Nelson Woods	0.6	0.6	0.6							
Ltc - Brydges Park	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Marr Drain				6.2	6.2	6.2	6.2	6.2	6.2	6.2
Mathers Stream	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	8.6
Mccormick Park	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
Mcgarrell Walk	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Mcnay Drain - North / Open Space	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Mcnay Drain - South / Open Space	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Mud Creek East - North	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Mud Creek East - Central	0.7	0.7	0.7	0.7	1.3	1.3	1.3	1.3	1.3	1.3
Mud Creek East - South	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Norlan Ave / Open Space	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Norlan Ave / Open Space - South	2.1	2.1	2.1	2.1	2.6	2.6	2.6	2.6	2.6	2.6
North Branch Park 1	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
North Mud Creek	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7

Parks & Recreation Services
TABLE E-5 Parkland Development Service Standard Cont'd

Parkland Classification	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Open Space Cont'd										
Northdale Tributary				0.6	0.6	0.6	0.6	0.6	0.6	0.6
Northbrook Valley			9.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2
Parkhurst Park North				0.2	0.2	0.2	0.2	0.2	0.2	0.2
Parkhurst Park South				0.6	0.6	0.6	0.6	0.6	0.6	0.6
Pebble Creek Park Central					1.3	1.3	1.3	1.3	1.3	1.3
Pebble Creek Park East							0.5	0.5	0.5	0.5
Pebble Creek Park West					0.9	0.9	0.9	0.9	0.9	0.9
Pibline Park							1.8	1.8	1.8	1.8
Pincombe Park - North			0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Pincombe Drain				0.8	0.8	6.1	6.1	6.2	6.2	6.2
Pinnacle Park - East	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Pinnacle Park - West	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Pottersburg Park				26.2	26.2	26.2	26.2	26.2	26.2	26.2
Pond Edge Berm	0.2	0.2	0.2	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Powell Woods								0.0	0.0	0.0
Proudfoot Park - East	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Proudfoot Park - West	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Remembrance Gardens						0.5	0.5	0.5	0.5	0.5
Richmond Trail	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Richardson Trail										3.4
River Forks Park - East	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
River Forks Park - West	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
River Road Park	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
Riverside Boat Launch	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Riverside Park				2.3	2.3	2.3	2.3	2.3	2.3	2.3
Riverside Walk	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Ross Park	7.0	7.0	7.0							
Salisbury Open Space	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Scanlan Drain				0.9	0.9	0.9	0.9	0.9	0.9	0.9
Scenic View Trail									0.6	1.2
Sandra Mcinnis Woods	6.4	6.4	6.4							
Shelborne Park - North	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Shelborne Park - South	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Snake Creek				6.9	6.9	6.9	7.0	7.0	7.0	7.3
Snake Hill Open Space	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Somerset Woods	6.5	6.5	6.5							
South Branch Park	15.2	15.2	15.2	15.2	15.3	15.3	15.3	15.3	15.3	15.3
South East Reservoir	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7
South Mud Creek	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
South River Valley	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Southcrest Ravine	6.1	6.1	6.1	6.1	6.6	6.6	6.6	6.6	6.6	6.6
Southcrest Ravine - North	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Southwinds Park - North	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Sovereign Woods East				5.2	5.2	5.2	5.2	5.2	5.2	5.2
Staffordshire Park							1.1	1.1	1.1	1.1
Stoney Creek Meadow Marsh							0.7	0.7	0.7	0.7
Stoney Creek Valley - Central (Inc. East & West)	16.7	16.7	16.7	16.7	16.7	18.7	18.7	18.7	19.5	19.5
Stoney Creek Valley - North	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Stoney Creek Valley - North Privet			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Stoney Creek Valley - South	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Stoney Creek Valley - South East	12.4	12.4	12.4	12.5	12.5	12.5	12.5	12.5	12.5	12.5
Stoneycreek Meadows	13.3	13.3	13.3	21.0	21.0	21.0	21.0	21.0	21.0	21.0

Parks & Recreation Services
TABLE E-5 Parkland Development Service Standard Cont'd

Parkland Classification	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Open Space Cont'd										
Sun Valley Park	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Sunninglea Woods										3.8
Talbot Village Wetland				14.5	14.5	14.5	14.5	17.5	17.5	17.5
Talltree Park	1.7	1.7	1.7							
Tallwood Valley	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Tetherwood Park	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Third Street Park	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Thompson Ravine	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.7	2.7
Thompson Road Park	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8
Uplands North Wetland		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Uplands Trail	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Upper Point Lookout										1.7
Valley Run Park		0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Waldorf Park	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
Walker Drain				2.2	2.2	2.2	2.2	2.2	2.2	2.2
Warbler Woods Walk										0.3
Watson Street Park	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8
Waubano Creek - South / Open Space	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Waubano Creek - North / Open Space	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Wellington Valley	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Western Counties H.O.C. Grounds					4.4	4.4	4.4	4.4	4.4	4.4
White Oaks Drain				4.4	4.4	4.4	4.4	4.4	4.4	4.4
White Oaks Drain South				2.1	2.1	2.1	2.1	2.1	2.1	2.1
Wonderland Road Park							0.1	0.1	0.1	0.1
Woodhull		5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
York Park					0.1	0.1	0.1	0.1	0.1	0.1
Total	492.9	503.6	517.9	542.4	587.0	601.2	634.5	641.0	645.3	667.3
Number of Parks	104	107	113	124	131	135	145	148	151	156
Average Size (hectares)	4.74	4.71	4.58	4.37	4.48	4.45	4.38	4.33	4.27	4.28

Parks & Recreation Services
TABLE E-5 Parkland Development Service Standard Cont'd

Parkland Classification	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
District Parks [Note 1]										
Basil Grover Park	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
Bonaventure Meadows Park	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Carling Heights Optimist Community Park	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
Constitution Park	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
East Lions Park				4.2	4.2	4.2	4.2	4.2	4.2	4.2
Ed Blake Park	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Foxfield District Park		4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Glen Cairn Park - West	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Glen Cairn Park - East	7.6	7.6	7.6	7.6	7.6	7.6	7.6	8.0	8.0	8.0
Glen Cairn Park - North	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Gibbons Park	23.8	25.9	25.9	25.9	25.9	25.9	25.9			
Greenway Park	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8
Jesse Davidson Park	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
Jorgenson Park	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Kiwanis Park - Central North	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3
Kiwanis Park - Central South (North Of CN)	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
Kiwanis Park - Central South (South Of CN)	17.8	17.8	17.8	17.8	17.8	17.8	26.3	26.3	26.3	26.3
Kiwanis Park - North	14.4	14.4	14.4	14.4	14.4	14.6	14.6	14.6	14.6	14.6
Kiwanis Park - South	3.7	3.7	3.7	3.7	3.7	3.7	3.8	3.8	3.8	3.8
Lambeth Centennial Park	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1
Meadowgate Park	9.1	9.1	9.1	14.8	14.8	14.8	14.8	14.8	14.8	14.8
Medway Park	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0
Mitches Park	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
Oakridge Optimist Community Park	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Osgoode Drive Park	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Plane Tree Park	8.0	8.0	8.0	8.0	8.1	8.1	8.1	8.1	8.1	8.1
Pottersburg Park	26.2	26.2	26.2							
River'S Edge Disc Golf Course	7.9	7.9	7.9	7.9	8.4	8.4	8.4	8.4	8.4	8.4
Riverbend Park	10.3	10.3	10.3	10.3	10.3	10.4	10.4	10.4	10.4	10.4
Ross Park				7.0	7.0	7.0	7.0	7.0	7.0	7.0
Silverwoods Park	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
Southwest Community Centre						4.5	4.5	4.5	4.5	4.5
Southeast Optimist Park				3.1	3.1	3.1	3.1	3.1	3.1	3.1
Southwest Optimist Park	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
Stoney Creek Community Centre				3.0	3.0	3.0	3.0	3.0	3.0	3.0
Thames Park	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9
West Lions Park And Kinsmen Recreation Centre	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Westminster Optimist Park	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
White Oaks Optimist Park	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
White Oaks Park	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5
Total	315.6	322.3	322.3	319.1	319.8	324.5	333.1	307.7	307.7	307.7
Number of Parks	34	35	35	38	38	39	39	38	38	38
Average Size (hectares)	9.28	9.21	9.21	8.40	8.41	8.32	8.54	8.10	8.10	8.10

Parks & Recreation Services
TABLE E-5 Parkland Development Service Standard Cont'd

Parkland Classification	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sports Parks										
City Wide Sports Park	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
Glanworth Park				2.7	2.7	2.7	2.7	2.7	2.7	2.7
Labatt Park	3.6	3.6	3.6	3.6	3.2	3.2	3.2	3.2	3.2	3.2
Mornington Park	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
North London Athletic Fields	28.1	28.1	28.1	28.1	28.1	28.1	28.1	28.1	28.1	28.1
St. Julien Park	16.9	16.9	16.9	16.9	17.2	17.2	17.2	17.2	17.2	17.2
Stoneybrook Recreation Field	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
Stronach Park	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.9	12.9
Ted Early Sports Complex	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
Vauxhall Park	11.8	11.8	11.8	11.8	13.9	13.9	13.9	13.9	13.9	13.9
Windermere Fields	10.6	10.6	10.6	10.7	10.7	10.7	10.7	10.7	10.7	10.7
Total	110.2	110.2	110.2	113.0	115.0	115.0	115.0	115.0	115.3	115.3
Number of Parks	10	10	10	11	11	11	11	11	11	11
Average Size (hectares)	11.02	11.02	11.02	10.27	10.45	10.45	10.45	10.45	10.48	10.48

Parkland Classification	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Urban Parks										
Applewood Park										0.4
Campbell Memorial Park	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
M A Barran Park		1.2	1.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Piccadilly Park	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5
Raleigh Parkette	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Silverleaf Park									0.0	0.5
Sugarcreek Park	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Sugarcreek Park - Sugarcreek			0.3							
The Green				1.0	1.0	1.0	1.0	1.0	1.0	1.0
Torrey Pines Park										0.1
Upper Point Urban Park										0.2
Vanderlinder Parkette			0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Village Walk Commons			0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Total	2.8	4.0	5.4	6.4	6.4	6.4	6.4	6.5	6.5	7.7
Number of Parks	4	5	8	8	8	8	8	8	9	12
Average Size (hectares)	0.70	0.80	0.68	0.80	0.80	0.80	0.80	0.81	0.72	0.64

Parks & Recreation Services
TABLE E-5 Parkland Development Service Standard Cont'd

Parkland Classification	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
City-wide Parks										
Civic Garden Centre Complex	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Covent Market Plaza	0.2	0.2	0.2							
Gibbons Park								25.9	25.9	25.9
Harris Park	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Ivey Park	2.8	2.8	2.8	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Queens Park	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Victoria Park	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Wonderland Park	0.1	0.1	0.1							
Total	22.6	22.6	22.6	21.6	21.6	21.6	21.6	47.5	47.5	47.5
Number of Parks	7	7	7	5	5	5	5	6	6	6
Average Size (hectares)	3.23	3.23	3.23	4.32	4.32	4.32	4.32	7.91	7.91	7.91

Parkland Classification	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Civic Spaces										
Covent Market Plaza				0.2	0.2	0.2	0.2	0.2	0.2	0.2
Golden Jubilee Square	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Ivey Park				0.7	0.7	0.7	0.7	0.7	0.7	0.7
R. H. Cooper Square	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Rotary Square	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Market Lane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	2.2	2.2	2.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Number of Parks	4	4	4	6	6	6	6	6	6	6
Average Size (hectares)	0.56	0.56	0.56	0.52	0.52	0.52	0.52	0.52	0.52	0.52

Grand Total (hectares)	1,931.0	1,975.2	2,012.9	2,131.4	2,173.3	2,200.0	2,262.9	2,271.8	2,294.9	2,341.4
Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita (hectares per person)	0.005133	0.005200	0.005250	0.005507	0.005563	0.005580	0.005669	0.005622	0.005611	0.005657
Persons per hectare of Park Space	194.81	192.29	190.48	181.59	179.76	179.23	176.41	177.88	178.22	176.78

10 Year Average	
Quantity Standard per Capita	0.005479

NOTES:

1) Portions of larger District and Neighbourhood Parks are reported under the "Open Space" category . This allows the assignment of different values to portions of the park, appropriate to its level of development.

Parks & Recreation Services
TABLE E-6 Parkland Development - Thames Valley Parkway Service Standard

Contact Person(s) Andrew Macpherson
Unit of Measure Metres of Linear Parkway
Type of Measure Quantity

Thames Valley Parkway	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020 $/m
Linear Parkway (length in metres)	40,330	41,065	41,065	41,700	41,700	41,700	41,700	41,700	41,700	46,503	$ 655
Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900	
Level of Service per Capita	0.1072	0.1081	0.1071	0.1077	0.1067	0.1058	0.1045	0.1032	0.1020	0.1124	
Persons per Linear Metre of Parkway	9.3275	9.2488	9.3371	9.2818	9.3687	9.4556	9.5731	9.6906	9.8082	8.9005	

10 Year Average	
Quantity Standard per Capita (m./person)	0.1065

Contact Person(s) Andrew Macpherson
Unit of Measure 2020 Replacement Value ($000's)
Type of Measure Quality & Quantity

Thames Valley Parkway	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Value of Linear Parkway	$ 26,416.2	$ 26,897.6	$ 26,897.6	$ 27,313.5	$ 27,313.5	$ 27,313.5	$ 27,313.5	$ 27,313.5	$ 27,313.5	$ 30,459.5

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	$70.22	$70.82	$70.15	$70.57	$69.91	$69.27	$68.42	$67.59	$66.78	$73.59
Persons per Linear Metre of Parkway	14.24	14.12	14.26	14.17	14.30	14.44	14.62	14.79	14.97	13.59

10 Year Average	
Level of Service per Capita	$69.73

NOTES:
1) Valuations were determined using a representative sample of all the projects in this category. A weighted average per metre value was calculated, and this value assigned to all parks with similar level of development in this category.

Parks & Recreation Services
TABLE E-7 Parkland Development - Open Space SWM Block Pathways Service Standard

Contact Person(s) Andrew Macpherson
Unit of Measure Metres of Linear Pathway
Type of Measure Quantity

Open Space SWM Block Pathways [Note 1]	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020 $/m
Cedar Hollow SWMF	0	0	0	0	0	0	0	0	0	0	$ 161
City Wide Sports Park SWMF	0	0	0	0	0	0	0	0	0	0	
Dingman Creek B4 SWMF									20	20	
Devos Drive SWMF	19	19	19	19	19	19	19	19	19	19	
Dyer Crescent SWMF				0	0	0	0	0	0	0	
Enterprise SWMF				0	0	0	0	0	0	0	
Fanshawe Ridge North SWMF					25	25	25	25	25	25	
Hamilton Road SWMF	0	0	0	0	0	0	0	0	0	0	
Hyde Park 1B1 SWMF	0	0	0	0	0	0	0	0	0	0	
Hyde Park North SWMF	237	237	237	237	237	237	237	237	237	237	
Kains Woods SWMF (Oxford/Commissioners)	0	0	0	0	0	0	0	0	0	0	
Kains Woods SWMF (Riverbend Road)	115	115	115	115	115	115	115	115	115	115	
Lambeth Centenial SWMF	94	94	94	94	94	94	94	94	94	94	
McNay Drain SWMF	0	0	0	0	0	0	0	0	0	0	
Mccormick SWMF	77	77	77	77	77	77	77	77	77	77	
Meander Creek Park SWMF						0	0	0	0	0	
Meander Creek SWMF						0	0	0	0	0	
Medway North SWMF		0	0	0	0	0	0	0	0	0	
Medway Valley SWMF	0	0	0	0	0	0	0	0	0	0	
Murray - Marr SWMF	0	0	0	0	0	0	0	0	0	0	
North Lambeth P9 SWMF									107	107	
Northdale SWMF						0	0	0	0	0	
Old Victoria 1 SWMF									0	0	
Paul Haggis SWMF	0	0	0	0	0	0	0	0	0	0	
Pincombe Drain SWMF #1						0	0	0	0	0	
Riverbend Trib C F SWMF									250	250	
Riverbend Trib C G SWMF									0	0	
River Road Swm	0	0	0	0	0	0	0	0	0	0	
Shelborne SWMF	0	0	0	0	0	0	0	0	0	0	
Southwest Optimist SWMF	0	0	0	0	0	0	0	0	0	0	
Summercrest SWMF	0	0	0	0	0	0	0	0	0	0	
Ted Early SWMF	0	0	0	0	0	0	0	0	0	0	
Trooper Mark Wilson SWMF	0	0	0	0	0	0	0	0	0	0	
Uplands North SWMF						15	15	15	15	15	
Uplands SWMF						0	0	0	0	0	
Walker Drain / SWMF	0	0	0	0	0	0	0	0	0	0	
Wenige SWMF	0	0	0	0	0	0	0	0	0	0	
White Oaks Drain	0	0	0	0	0	0	0	0	0	0	
Wickerson Road SWMF	0	0	0	0	0	0	0	0	0	0	
Wilton Grove SWMF - South	0	0	0	0	0	0	0	0	0	0	
Wiltongrove SWMF - North	0	0	0	0	0	0	0	0	0	0	
Total	542.0	542.0	542.0	542.0	567.0	582.0	582.0	582.0	959.0	959.0	
Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900	
Level of Service per Capita	0.0014	0.0014	0.0014	0.0014	0.0015	0.0015	0.0015	0.0014	0.0023	0.0023	
Persons per Linear Metre of Parkway	694.0590	700.7454	707.4317	714.1181	689.0229	677.4914	685.9107	694.3299	426.4859	431.5954	

10 Year Average	
Quantity Standard per Capita (m./person)	0.0016

NOTES:
1) Includes non-SWMF pathways only; all SWM related works including structures, shared maintenance driveways/pathways, etc are excluded.

TABLE E-7 Parkland Development - Open Space SWM Block Pathways Service Standard Cont'd

Contact Person(s)	Andrew Macpherson
Unit of Measure	2020 Replacement Value ($000's)
Type of Measure	Quality & Quantity

Open Space SWM Block Pathways	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Value of Open Space SWM Block Pathways	$ 87.3	$ 87.3	$ 87.3	$ 87.3	$ 91.3	$ 93.7	$ 93.7	$ 93.7	$ 154.4	$ 154.4

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	$0.23	$0.23	$0.23	$0.23	$0.23	$0.24	$0.23	$0.23	$0.38	$0.37
Persons per Linear Metre of Parkway	4,310.93	4,352.46	4,393.99	4,435.52	4,279.65	4,208.02	4,260.31	4,312.61	2,648.98	2,680.72

10 Year Average	
Level of Service per Capita	$0.26

Parks & Recreation Services
TABLE E-8 Parkland Development - Foot Bridges & Tunnels Service Standard

Facility name	Location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020 $sq.m.
Thames Valley Pathway System												
Spingbank Bridge	1-FB-02	495	495	495	495	495	495	495	495	495	495	$5,339
Gibbons Bridge	1-FB-01	420	420	420	420	420	420	420	420	420	420	$5,599
Meadowlilly Bridge	4-FB-02	225	225	405	405	405	405	405	405	405	405	$10,752
King Street Bridge	6-FB-02	375	375	375	375	375	375	375	375	375	375	$8,415
Kiwanis Park over CN Rail	4-FB-07								125	125	125	$9,944
Tunnels												
Horton Ave to Evergreen Under CN Rail Note 2	6-PT-01	158	158	158	158	158	158	158	158	158	158	$13,093
Commissioners Rd West Near Oxford Note 2	7-PT-01	85	85	85	85	85	85	85	85	85	85	$7,428
Riverside Drive Pedestrian Tunnel	1-PT-04	64	64	64	64	64	64	64	64	64	64	$25,627
Bradley Ave at White Oaks PS	6-PT-01	134	134	134	134	134	134	134	134	134	134	$7,536
Total		1,956	1,956	2,136	2,136	2,136	2,136	2,136	2,261	2,261	3,204	

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	0.005200	0.005150	0.005571	0.005519	0.005467	0.005417	0.005351	0.005595	0.005528	0.005463

10 Year Average	
Quantity Standard per Capita	0.0054

NOTES:

1) Bridge and tunnel sq. m. measures derived from AECOM "2017 Structure Inventory Inspection, Summary Report" and were provided by Transportation Design and Planning, City of London, updated by the 2019 Structure Inventory Summary Report. No land value associated with any of the above. Costs associated with minor pedestrian footbridges in various City parks are included with the costing for Thames Valley Parkway, Open Space and District Parks.

Parks & Recreation Services
TABLE E-8 Parkland Development - Foot Bridges & Tunnels Service Standard Cont'd

Contact Person(s) Karl Grabowski
Unit of Measure 2020 Replacement Value ($000's)
Type of Measure Quality & Quantity

Facility Name	Location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Thames Valley Pathway System											
Spingbank Bridge	1-FB-02	$2,642.8	$2,642.8	$2,642.8	$2,642.8	$2,642.8	$2,642.8	$2,642.8	$2,642.8	$2,642.8	$2,642.8
Gibbons Bridge	1-FB-01	$2,351.6	$2,351.6	$2,351.6	$2,351.6	$2,351.6	$2,351.6	$2,351.6	$2,351.6	$2,351.6	$2,351.6
Meadowlilly Bridge	4-FB-02	$2,419.2	$2,419.2	$4,354.6	$4,354.6	$4,354.6	$4,354.6	$4,354.6	$4,354.6	$4,354.6	$4,354.6
King Street Bridge	6-FB-02	$3,155.6	$3,155.6	$3,155.6	$3,155.6	$3,155.6	$3,155.6	$3,155.6	$3,155.6	$3,155.6	$3,155.6
Kiwanis Park over CN Rail	4-FB-07								$1,243.0	$1,243.0	$1,243.0
Tunnels											
Horton Ave to Evergreen Under CN Rail	6-PT-01	$2,068.7	$2,068.7	$2,068.7	$2,068.7	$2,068.7	$2,068.7	$2,068.7	$2,068.7	$2,068.7	$2,068.7
Commissioners Rd West Near Oxford	7-PT-01	$631.4	$631.4	$631.4	$631.4	$631.4	$631.4	$631.4	$631.4	$631.4	$631.4
Riverside Drive Pedestrian Tunnel	1-PT-04	$1,640.1	$1,640.1	$1,640.1	$1,640.1	$1,640.1	$1,640.1	$1,640.1	$1,640.1	$1,640.1	$1,640.1
Bradley Ave at White Oaks PS	6-PT-01	$1,009.8	$1,009.8	$1,009.8	$1,009.8	$1,009.8	$1,009.8	$1,009.8	$1,009.8	$1,009.8	$1,009.8
Total		$15,919.2	$15,919.2	$17,854.6	$17,854.6	$17,854.6	$17,854.6	$17,854.6	$19,097.6	$19,097.6	$19,097.6

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	$42.32	$41.91	$46.57	$46.13	$45.70	$45.28	$44.73	$47.26	$46.69	$46.14

10 Year Average	
Level of Service per Capita	$45.27

Parks & Recreation Services
TABLE E-9 Facilities - Arenas Service Standard

Facility name	Location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020 $/sq. ft.
Argyle	1948 Wavell St	49,260	49,260	49,260	49,260	49,260	49,260	49,260	49,260	49,260	49,260	$270
Bostwick CC (Arena)	501 Southdale Road West									65,000	65,000	$320
Carling (expanded)	675 Grosvenor St	52,390	52,390	52,390	52,390	52,390	52,390	52,390	52,390	52,390	52,390	$263
Farquharson	411 Tecumseh Ave	38,573	38,573	38,573	38,573	38,573	38,573	38,573	38,573	38,573	38,573	$262
Glen Cairn Note 1	370 Chippendale Cr	29,370	29,370	29,370	29,370	29,370	29,370	29,370				$261
Kinsmen (expanded)	20 Granville Ave	56,520	56,520	56,520	56,520	56,520	56,520	56,520	56,520	56,520	56,520	$261
Lambeth (expanded)	7112 Beattie St	38,519	38,519	38,519	38,519	38,519	38,519	38,519	38,519	38,519	38,519	$285
Medway	119 Sherwood Forest Sq	25,022	25,022	25,022	25,022	25,022	25,022	25,022	25,022	25,022	25,022	$273
Nichols (expanded)	799 Homeview Rd	75,560	75,560	75,560	75,560	75,560	75,560	75,560	75,560	75,560	75,560	$265
Oakridge Note 1	825 Valetta St	29,989	29,989	29,989	29,989	29,989	29,989	29,989	29,989	29,989	29,989	$266
Silverwood Note 2	50 Sycamore St	25,032	25,032	25,032	25,032	25,032	25,032	25,032	25,032	25,032	25,032	$258
Stronach (Gym) Expansion	1221 Sanford Ave	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	$267
Stronach (Arena/pool) Expansion	1221 Sanford Ave	61,888	61,888	61,888	61,888	61,888	61,888	61,888	61,888	61,888	61,888	$261
Western Fair Sportsplex Note 3	865 Florence St	106,667	106,667	106,667	106,667	106,667	106,667	106,667	106,667	106,667	106,667	$125
	Total	601,790	601,790	601,790	601,790	601,790	601,790	601,790	572,420	637,420	637,420	

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	1.599739	1.584474	1.569498	1.554803	1.540380	1.526223	1.507489	1.416530	1.558483	1.540033

10 Year Average	
Quantity Standard per Capita	1.5398

NOTES:

1) Facility with pool excludes the filter room associated with the pool.

2) Silverwood arena to be used as a dry pad only starting in 2018 - 2019 season

3) Land owned and contributed by Western Fair Association & is excluded from "2020 $/sq.ft." values. Due to partial, but not complete use agreement, only two-thirds of the facility (total sq. ft of 160,000) value incorporated into Quality & Quantity Calculations

4) Building square footage measures and total value provided by City of London Facility Services. Land value associated with facility provided by City of London Realty Services.

Parks & Recreation Services
TABLE E-9 Facilities - Arenas Service Standard Cont'd

Contact Person(s) Tim Wellhauser
Unit of Measure 2020 Replacement Value ($000's)
Type of Measure Quality & Quantity

Facility Name	Location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Argyle	1948 Wavell St	$13,300.2	$13,300.2	$13,300.2	$13,300.2	$13,300.2	$13,300.2	$13,300.2	$13,300.2	$13,300.2	$13,300.2
Bostwick CC (Arena)	501 Southdale Road West									$20,800.0	$20,800.0
Carling (expanded)	675 Grosvenor St	$13,778.6	$13,778.6	$13,778.6	$13,778.6	$13,778.6	$13,778.6	$13,778.6	$13,778.6	$13,778.6	$13,778.6
Farquharson	411 Tecumseh Ave	$10,106.1	$10,106.1	$10,106.1	$10,106.1	$10,106.1	$10,106.1	$10,106.1	$10,106.1	$10,106.1	$10,106.1
Glen Cairn	370 Chippendale Cr	$7,665.6	$7,665.6	$7,665.6	$7,665.6	$7,665.6	$7,665.6	$7,665.6			
Kinsmen (expanded)	20 Granville Ave	$14,751.7	$14,751.7	$14,751.7	$14,751.7	$14,751.7	$14,751.7	$14,751.7	$14,751.7	$14,751.7	$14,751.7
Lambeth (expanded)	7112 Beattie St	$10,977.9	$10,977.9	$10,977.9	$10,977.9	$10,977.9	$10,977.9	$10,977.9	$10,977.9	$10,977.9	$10,977.9
Medway	119 Sherwood Forest Sq	$6,831.0	$6,831.0	$6,831.0	$6,831.0	$6,831.0	$6,831.0	$6,831.0	$6,831.0	$6,831.0	$6,831.0
Nichols (expanded)	799 Homeview Rd	$20,023.4	$20,023.4	$20,023.4	$20,023.4	$20,023.4	$20,023.4	$20,023.4	$20,023.4	$20,023.4	$20,023.4
Oakridge	825 Valetta St	$7,977.1	$7,977.1	$7,977.1	$7,977.1	$7,977.1	$7,977.1	$7,977.1	$7,977.1	$7,977.1	$7,977.1
Silverwood	50 Sycamore St	$6,458.3	$6,458.3	$6,458.3	$6,458.3	$6,458.3	$6,458.3	$6,458.3	$6,458.3	$6,458.3	$6,458.3
Stronach (Gym) Expansion	1221 Sanford Ave	$3,471.0	$3,471.0	$3,471.0	$3,471.0	$3,471.0	$3,471.0	$3,471.0	$3,471.0	$3,471.0	$3,471.0
Stronach (Arena/pool) Expansion	1221 Sanford Ave	$16,152.8	$16,152.8	$16,152.8	$16,152.8	$16,152.8	$16,152.8	$16,152.8	$16,152.8	$16,152.8	$16,152.8
Western Fair Sportsplex [Note 2]	865 Florence St	$13,333.3	$13,333.3	$13,333.3	$13,333.3	$13,333.3	$13,333.3	$13,333.3	$13,333.3	$13,333.3	$13,333.3
Total		$144,826.9	$144,826.9	$144,826.9	$144,826.9	$144,826.9	$144,826.9	$144,826.9	$137,161.4	$157,961.4	$157,961.4
Population		376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita		$384.99	$381.32	$377.72	$374.18	$370.71	$367.30	$362.79	$339.42	$386.21	$381.64

10 Year Average	
Level of Service per Capita	$372.63

NOTES:

1) The valuations above include the current (2020) replacement value of building, land, and site improvements.

2) The City is a major contributor to the financing of the Western Fair Sportsplex (4 pad) when it was constructed in 2000 ($5 million grant, $12 million loan). The City has a joint venture agreement which assures access to prime time ice at the 4 pad facility (240 hours per week). The facility provides a significant contribution to the prime time ice needs of the City. The facility has been included to the extent of 2/3 of its total estimated replacement value to recognize the major tenancy position the City enjoys and as a conservative estimate of the value this facility amongst the City inventory of arenas.

Parks & Recreation Services
TABLE E-10 Facilities – Community / Seniors Centres Service Standard

Contact Person(s)	Tim Wellhauser
Unit of Measure	Square Feet of Building Space
Type of Measure	Quantity

Facility Name	Location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020 $/sq. ft
Senior Centers												
Hamilton Rd Senior's Annex	898 Trafalgar Rd	2,780	2,780	2,780	2,780	2,780	2,780	2,780	2,780	2,780	2,780	$367
Hamilton Rd Senior's Centre	525 Hamilton Rd	5,836	5,836	5,836	5,836	5,836	5,836	5,836	5,836	5,836	5,836	$452
Kiwanis Senior Community Centre	78 Riverside Dr.	18,283	18,283	18,283	18,283	18,283	18,283	18,283	18,283	18,283	18,283	$529
	Subtotal	26,899	26,899	26,899	26,899	26,899	26,899	26,899	26,899	26,899	26,899	
Community Centers												
Boyle Community Centre	530 Charlotte	6,740	8,522	8,522	8,522	8,522	8,522	8,522	8,522	8,522	8,522	$269
Bostwick Community Centre	501 Southdale Road W									86,663	86,663	$418
Byron Optimist	1308 Norman Ave	8,290	8,290	8,290	8,290	8,290	8,290	8,290	8,290	8,290	8,290	$288
Carling Heights Community Centre	656 Elizabeth St	43,030	43,030	43,030	43,030	43,030	43,030	43,030	43,030	43,030	43,030	$263
East Lions Artisans Community Centre	1731 Churchill Ave	4,406	4,406	4,406	4,406	4,406	4,406					$302
East Lions Community Centre (minus pool)	1731 Churchill Ave										24,000	$523
Lambeth Community Centre	7112 Beattie St	17,600	17,600	17,600	17,600	17,600	17,600	17,600	17,600	17,600	17,600	$350
North London Optimist Centre	1345 Cheapside St	55,200	55,200	55,200	55,200	55,200	55,200	55,200	55,200	55,200	55,200	$250
South London Community Centre	1119 Jalna Blvd	8,265	8,265	8,265	8,265	46,543	46,543	46,543	46,543	46,543	46,543	$439
Springbank Gardens Community Centre	205 Wonderland Rd S	2,422	2,422	2,422	2,422	2,422	2,422	2,422	2,422	2,422	2,422	$306
Stoney Creek Community Centre	920 Sunningdale Rd E	65,381	65,381	65,381	65,381	65,381	65,381	65,381	65,381	65,381	65,381	$359
	Subtotal	211,334	213,116	213,116	213,116	251,394	251,394	246,988	246,988	333,651	357,651	
	Grand Total	238,233	240,015	240,015	240,015	278,293	278,293	273,887	273,887	360,550	384,550	

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Senior's Center Level of Service per Capita	0.0715	0.0708	0.0702	0.0695	0.0689	0.0682	0.0674	0.0666	0.0658	0.0650
Community Centres Level of Service per Capita	0.5618	0.5611	0.5558	0.5506	0.6435	0.6376	0.6187	0.6112	0.8158	0.8641
Total Level of Service per Capita	0.6333	0.6319	0.6260	0.6201	0.7123	0.7058	0.6861	0.6778	0.8815	0.9291

10 Year Average	
Quantity Standard per Capita	0.7104

NOTES:

1) Building square footage measures and total value provided by City of London Facility Services. Land value associated with facility provided by City of London Realty Services.

2) Above list does not include community and programming space provided at various non-community centre facilities (including the Canada Games Aquatic Center, Civic Garden Center and space at various arenas - Carling, Kinsmen, Medway, Nichols, Oakridge). These community and programming spaces are accounted for in the square feet identified for the facility in question for service standard purposes.

Parks & Recreation Services
TABLE E-10 Facilities – Community / Seniors Centres Service Standard Cont'd

Contact Person(s) Tim Wellhauser
Unit of Measure 2020 Replacement Value ($000's)
Type of Measure Quality & Quantity

Facility Name	Location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Seniors Centers											
Hamilton Rd Seniors Annex	898 Trafalgar Rd	$1,020.3	$1,020.3	$1,020.3	$1,020.3	$1,020.3	$1,020.3	$1,020.3	$1,020.3	$1,020.3	$1,020.3
Hamilton Rd Seniors Centre	525 Hamilton Rd	$2,637.9	$2,637.9	$2,637.9	$2,637.9	$2,637.9	$2,637.9	$2,637.9	$2,637.9	$2,637.9	$2,637.9
Kiwanis Senior Community Centre	78 Riverside Dr.	$9,671.7	$9,671.7	$9,671.7	$9,671.7	$9,671.7	$9,671.7	$9,671.7	$9,671.7	$9,671.7	$9,671.7
	Subtotal	$13,329.8	$13,329.8	$13,329.8	$13,329.8	$13,329.8	$13,329.8	$13,329.8	$13,329.8	$13,329.8	$13,329.8
Community Centres											
Boyle Community Centre	530 Charlotte	$1,813.1	$2,292.4	$2,292.4	$2,292.4	$2,292.4	$2,292.4	$2,292.4	$2,292.4	$2,292.4	$2,292.4
Bostwick Community Centre	501 Southdale Road W									$36,225.1	$36,225.1
Byron Optimist	1308 Norman Ave	$2,387.5	$2,387.5	$2,387.5	$2,387.5	$2,387.5	$2,387.5	$2,387.5	$2,387.5	$2,387.5	$2,387.5
Carling Heights Community Centre	656 Elizabeth St	$11,316.9	$11,316.9	$11,316.9	$11,316.9	$11,316.9	$11,316.9	$11,316.9	$11,316.9	$11,316.9	$11,316.9
East Lions Artisans Community Centre	1731 Churchill Ave	$1,330.6	$1,330.6	$1,330.6	$1,330.6	$1,330.6	$1,330.6				
East Lions Community Centre	1731 Churchill Ave										$12,552.0
Lambeth Community Centre	7112 Beattie St	$6,160.0	$6,160.0	$6,160.0	$6,160.0	$6,160.0	$6,160.0	$6,160.0	$6,160.0	$6,160.0	$6,160.0
North London Optimist Centre	1345 Cheapside St	$13,800.0	$13,800.0	$13,800.0	$13,800.0	$13,800.0	$13,800.0	$13,800.0	$13,800.0	$13,800.0	$13,800.0
South London Community Centre	1119 Jalna Blvd	$3,628.3	$3,628.3	$3,628.3	$3,628.3	$20,432.4	$20,432.4	$20,432.4	$20,432.4	$20,432.4	$20,432.4
Springbank Gardens Community Centre	205 Wonderland Rd S	$741.1	$741.1	$741.1	$741.1	$741.1	$741.1	$741.1	$741.1	$741.1	$741.1
Stoney Creek Community Centre	920 Sunningdale Rd E	$23,471.8	$23,471.8	$23,471.8	$23,471.8	$23,471.8	$23,471.8	$23,471.8	$23,471.8	$23,471.8	$23,471.8
	Subtotal	$64,649.3	$65,128.7	$65,128.7	$65,128.7	$81,932.7	$81,932.7	$80,602.1	$80,602.1	$116,827.3	$129,379.3
	Grand Total	$77,979.2	$78,458.5	$78,458.5	$78,458.5	$95,262.6	$95,262.6	$93,932.0	$93,932.0	$130,157.1	$142,709.1

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Senior's Center Level of Service per Capita	$35.43	$35.10	$34.76	$34.44	$34.12	$33.81	$33.39	$32.99	$32.59	$32.21
Community Centres Level of Service per Capita	$171.86	$171.48	$169.86	$168.27	$209.72	$207.79	$201.91	$199.46	$285.64	$312.59
Total Level of Service per Capita	$207.29	$206.58	$204.62	$202.71	$243.84	$241.60	$235.30	$232.45	$318.23	$344.79

10 Year Average	
Level of Service per Capita	$243.74

NOTES:
1) The valuations above include the current (2020) replacement value of building, land, and site improvements.

Parks & Recreation Services
TABLE E-11 Facilities –Aquatics Service Standard

Contact Person(s) Tim Wellhauser
Unit of Measure Square Feet of Indoor Building Area
Type of Measure Quantity

Facility Name	Location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020$/sq.ft.
Byron Bathhouse & Pool	1308 Norman Ave	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	$1,254
Canada Games Aquatic Center	1045 Wonderland N	51,248	51,248	51,248	51,248	51,248	51,248	51,248	51,248	51,248	51,248	$315
Carling Heights	656 Elizabeth St	11,690	11,690	11,690	11,690	11,690	11,690	11,690	11,690	11,690	11,690	$326
East Lions Artisans Pool (DEMOLISHED)	1731 Churchill Ave	2,276	2,276	2,276	2,276	2,276	2,276					$1,553
East Lions Community Centre (Pool)	1731 Churchill Ave										18,000	$523
Gibbons Park Bathhouse / Pool	2 Grosvenor St.	3,746	3,746	3,746	3,746	3,746	3,746	3,746	3,746	3,746	3,746	$511
Glen Cairn Pool [Note 1]	370 Chippendale Cres	510	510	510	510	510	510	510	510	510	510	$2,483
Northeast Park Community Pool	1050 Victoria Drive	1,690	1,690	1,690	1,690	1,690	1,690	1,690	1,690	1,690	1,690	$1,198
Northridge Bathhouse & Pool	15 Mclean Drive	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	$1,494
Oakridge Pool [Note 1]	825 Valetta Street	340	340	340	340	340	340	340	340	340	340	$4,062
Silverwood Bathhouse & Pool	56 Sycamore Street	3,720	3,720	3,720	3,720	3,720	3,720	3,720	3,720	3,720	3,720	$663
South London Community Pool	565 Bradley Ave	18,116	18,116	18,116	18,116	18,116	18,116	18,116	18,116	18,116	18,116	$238
Southcrest Bathhouse & Pool	10 Hazelwood Ave	4,636	4,636	4,636	4,636	4,636	4,636	4,636	4,636	4,636	4,636	$610
Stronach Pool [Note 1]	1221 Sandford Street	1,650	1,650	1,650	1,650	1,650	1,650	1,650	1,650	1,650	1,650	$2,091
Thames Park Bathhouse & Pool	15 Ridout Street South	5,264	5,264	5,264	5,264	5,264	5,264	5,264	5,264	5,264	5,264	$592
Westminster Park Bathhouse & Pool	650 Osgoode Drive	1,803	1,803	1,803	1,803	1,803	1,803	1,803	1,803	1,803	1,803	$1,045
Total		109,769	109,769	109,769	109,769	109,769	109,769	107,493	107,493	107,493	125,493	

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	0.2918	0.2890	0.2863	0.2836	0.2810	0.2784	0.2693	0.2660	0.2628	0.3032

10 Year Average	
Quantity Standard per Capita	0.2811

NOTES:

1) Includes the filter & pump room only. Change room space is included in space for adjoining arena, and therefore not duplicated here. The resulting value/sq.ft. is not comparable and is therefore not provided.

Parks & Recreation Services
TABLE E-11 Facilities –Aquatics Service Standard Cont'd

Contact Person(s) Tim Wellhauser
Unit of Measure 2020 Replacement Value ($000's)
Type of Measure Quality & Quantity

Facility Name	Location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Byron Bathhouse & Pool	1308 Norman Ave	$1,931.2	$1,931.2	$1,931.2	$1,931.2	$1,931.2	$1,931.2	$1,931.2	$1,931.2	$1,931.2	$1,931.2
Canada Games Aquatic Center	1045 Wonderland N	$16,143.1	$16,143.1	$16,143.1	$16,143.1	$16,143.1	$16,143.1	$16,143.1	$16,143.1	$16,143.1	$16,143.1
Carling Heights	656 Elizabeth St	$3,810.9	$3,810.9	$3,810.9	$3,810.9	$3,810.9	$3,810.9	$3,810.9	$3,810.9	$3,810.9	$3,810.9
East Lions Artisans Pool (DEMOLISHED)	1741 Churchill Ave	$3,534.6	$3,534.6	$3,534.6	$3,534.6	$3,534.6	$3,534.6				
East Lions Community Centre (Pool)	1731 Churchill Ave										$9,414.0
Gibbons Park Bathhouse / Pool	2 Grosvenor St.	$1,914.2	$1,914.2	$1,914.2	$1,914.2	$1,914.2	$1,914.2	$1,914.2	$1,914.2	$1,914.2	$1,914.2
Glen Cairn Pool	370 Chippendale Cres	$1,266.5	$1,266.5	$1,266.5	$1,266.5	$1,266.5	$1,266.5	$1,266.5	$1,266.5	$1,266.5	$1,266.5
Northeast Park Community Pool	1050 Victoria Drive	$2,024.6	$2,024.6	$2,024.6	$2,024.6	$2,024.6	$2,024.6	$2,024.6	$2,024.6	$2,024.6	$2,024.6
Northridge Bathhouse & Pool	15 Mclean Drive	$2,300.8	$2,300.8	$2,300.8	$2,300.8	$2,300.8	$2,300.8	$2,300.8	$2,300.8	$2,300.8	$2,300.8
Oakridge Pool	825 Valetta Street	$1,381.2	$1,381.2	$1,381.2	$1,381.2	$1,381.2	$1,381.2	$1,381.2	$1,381.2	$1,381.2	$1,381.2
Silverwood Bathhouse & Pool	56 Sycamore Street	$2,466.4	$2,466.4	$2,466.4	$2,466.4	$2,466.4	$2,466.4	$2,466.4	$2,466.4	$2,466.4	$2,466.4
South London Community Pool	565 Bradley Ave	$4,311.6	$4,311.6	$4,311.6	$4,311.6	$4,311.6	$4,311.6	$4,311.6	$4,311.6	$4,311.6	$4,311.6
Southcrest Bathhouse & Pool	10 Hazelwood Ave	$2,828.0	$2,828.0	$2,828.0	$2,828.0	$2,828.0	$2,828.0	$2,828.0	$2,828.0	$2,828.0	$2,828.0
Stronach Pool	1221 Sandford Street	$3,450.0	$3,450.0	$3,450.0	$3,450.0	$3,450.0	$3,450.0	$3,450.0	$3,450.0	$3,450.0	$3,450.0
Thames Park Bathhouse & Pool	15 Ridout Street South	$3,116.3	$3,116.3	$3,116.3	$3,116.3	$3,116.3	$3,116.3	$3,116.3	$3,116.3	$3,116.3	$3,116.3
Westminster Park Bathhouse & Pool	650 Osgoode Drive	$1,884.1	$1,884.1	$1,884.1	$1,884.1	$1,884.1	$1,884.1	$1,884.1	$1,884.1	$1,884.1	$1,884.1
	Total	$52,363.5	$52,363.5	$52,363.5	$52,363.5	$52,363.5	$52,363.5	$48,828.9	$48,828.9	$48,828.9	$58,242.9

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	$139.20	$137.87	$136.57	$135.29	$134.03	$132.80	$122.32	$120.83	$119.39	$140.72

10 Year Average	
Level of Service per Capita	$131.90

NOTES:

1) Total value provided by City of London Facility Services.

2) The valuations above include the current (2020) replacement value of building, pool and site improvements.

3) Full replacement of concrete deck, pool tank, and all associated mechanical equipment/piping is included in overall cost.

Parks & Recreation Services
TABLE E-12 Facilities – Wading Pools & Spray Pads Service Standard

Contact Person(s) Tim Wellhauser
Unit of Measure Number of Facilities
Type of Measure Quantity

Facility Name	Location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020 $/Facility
Byron Wading Pool	Charlotte Street	1	1	1	1	1	1	1	1			$345,820
Bonaventure Park Spray Pad	141 Bonaventure Drive	1	1	1	1	1	1	1	1	1	1	$406,200
Constitution Spray Pad	725 Grenfell Dr							1	1	1	1	$480,900
East Lions Wading Pool	1731 Churchill Ave	1	1	1	1	1	1	1	1			$345,820
Forks of the Thames Spray Pad	King St. & Thames St.	1	1	1	1	1	1	1	1	1	1	$576,400
Gibbons Park Spray Pad	Victoria St	1	1	1	1	1	1	1	1	1	1	$406,200
Jesse Davidson Park Spray Pad	Monte Vista/Ensign Cr	1	1	1	1	1	1	1	1	1	1	$406,200
Kinsmen Rec Center Wading Pool	20 Granville Av	1	1	1	1	1	1	1	1			$406,200
Kiwanis Park Spray Pad	311 Kiwanis Pk Dr	1	1	1	1	1	1	1	1	1	1	$406,200
Lambeth Centennial Park Spray Pad	Beattie Steet	1	1	1	1	1	1	1	1	1	1	$406,200
McMahen Wading Pool	Adelaide Steet	1	1	1	1	1	1	1	1	1	1	$345,820
Meadowgate Spray Pad	1165 Darnley Blvd						1	1	1	1	1	$430,400
Meredith Wading Pool	Nelson/Maitland	1	1	1	1	1	1	1	1	1	1	$345,820
Murray Wading Pool	Cliftonvale Ave	1	1	1	1	1	1	1	1	1	1	$345,820
Oakridge Spray Pad	825 Valetta Street	1	1	1	1	1	1	1	1	1	1	$406,200
Queens Park Spray Pad	925 Dundas Street							1	1	1	1	$519,372
Ray Lanctin Park Spray Pad	1045 Wonderland Rd. N.	1	1	1	1	1	1	1	1	1	1	$439,100
Riverbend Spray Pad	Kains Road										1	$399,000
Rowntree Park Spray Pad	Whetter Ave/Trevithen St.	1	1	1	1	1	1	1	1	1	1	$406,200
Silverwood Wading Pool	56 Sycamore Street	1	1	1	1	1	1	1	1	1	1	$345,820
Smith Park Wading Pool	Brampton Rd	1	1	1	1	1	1	1	1	1	1	$345,820
South London Community Centre Spray	1119 Jalna Blvd								1	1	1	$519,372
SE Optimist Spray Pad	237 Deveron Crescent	1	1	1	1	1	1	1	1	1	1	$466,600
Springbank Wading Pool	Springbank Park	1	1	1	1	1	1	1	1	1	1	$345,820
Storybook Gardens Spray Pad	1958 Storybook Lane						1	1	1	1	1	$519,372
University Heights Wading Pool	Trott Drive	1	1	1	1	1	1	1	1	1	1	$345,820
West Lions Spray Pad	20 Granville Av	1	1	1	1	1	1	1	1	1	1	$406,200
White Oaks Wading Pool	1119 Jalna Blvd	1	1	1	1	1	1	1	1	1	1	$345,820
Total		22	22	22	22	22	24	26	27	24	25	

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	0.000058	0.000058	0.000057	0.000057	0.000056	0.000061	0.000065	0.000067	0.000059	0.000060

10 Year Average	
Quantity Standard per 1,000 persons	0.00005988

NOTES:

1) The following pools incorporate a wading pool, the value of which has been included in the value of the pool under the Aquatics section:

- Northeast Park Community Pool, Northridge Bathhouse & pool, Stronach Pool, Westminster Park Bathhouse and Pool

2) Spray Pads and Wading Pools are located in community parks acquired through Parkland Dedications

3) No land value included with these facilities. Most facilities are located in Neighbourhood Parks or are located on very minor land associated with each facility.

Parks & Recreation Services
TABLE E-12 Facilities – Wading Pools & Spray Pads Service Standard Cont'd

Contact Person(s) Tim Wellhauser
Unit of Measure 2020 Replacement Value ($000's)
Type of Measure Quality & Quantity

Facility Name	Location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Byron Wading Pool	Charlotte Street	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8		
Bonaventure Park Spray Pad	141 Bonaventure Drive	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2
Constitution Spray Pad	725 Grenfell Dr							$480.9	$480.9	$480.9	$480.9
East Lions Wading Pool	1731 Churchill Ave	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8		
Forks of the Thames Spray Pad	King St. & Thames St.	$576.4	$576.4	$576.4	$576.4	$576.4	$576.4	$576.4	$576.4	$576.4	$576.4
Gibbons Park Spray Pad	Victoria St	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2
Jesse Davidson Park Spray Pad	Monte Vista/Ensign Cr	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2
Kinsmen Rec Center Wading Pool	20 Granville Av	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2		
Kiwanis Park Spray Pad	311 Kiwanis Pk Dr	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2
Lambeth Centennial Park Spray Pad	Beattie Steet	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2
McMahen Wading Pool	Adelaide Steet	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8
Meadowgate Spray Pad	1165 Darnley Blvd						$430.4	$430.4	$430.4	$430.4	$430.4
Meredith Wading Pool	Nelson/Maitland	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8
Murray Wading Pool	Cliftonvale Ave	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8
Oakridge Spray Pad	825 Valetta Street	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2
Queens Park Spray Pad	925 Dundas Street							$519.4	$519.4	$519.4	$519.4
Ray Lanctin Park Spray Pad	1045 Wonderland Rd. N.	$439.1	$439.1	$439.1	$439.1	$439.1	$439.1	$439.1	$439.1	$439.1	$439.1
Riverbend Spray Pad	Kains Road										$399.0
Rowntree Park Spray Pad	Whetter Ave/Trevithen St.	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2
Silverwood Wading Pool	56 Sycamore Street	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8
Smith Park Wading Pool	Brampton Rd	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8
South London Community Centre Spray Pad	1119 Jalna Blvd								$519.4	$519.4	$519.4
SE Optimist Spray Pad	237 Deveron Crescent	$466.6	$466.6	$466.6	$466.6	$466.6	$466.6	$466.6	$466.6	$466.6	$466.6
Springbank Wading Pool	Springbank Park	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8
Storybook Gardens Spray Pad	1958 Storybook Lane						$519.4	$519.4	$519.4	$519.4	$519.4
University Heights Wading Pool	Trott Drive	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8
West Lions Spray Pad	20 Granville Av	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2	$406.2
White Oaks Wading Pool	1119 Jalna Blvd	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8	$345.8
Total		$8,596.1	$8,596.1	$8,596.1	$8,596.1	$8,596.1	$9,545.9	$10,546.1	$11,065.5	$9,967.7	$10,366.7

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	$22.85	$22.63	$22.42	$22.21	$22.00	$24.21	$26.42	$27.38	$24.37	$25.05

10 Year Average	
Level of Service per Capita	$23.95

Parks & Recreation Services
TABLE E-13 Facilities –Specialty Service Standard

Contact Person(s) Tim Wellhauser
Unit of Measure Square Feet
Type of Measure Quantity

Facility Name	Location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020 $/sq.ft.
Civic Garden Centre	625 Springbank Dr	6,276	6,276	6,276	6,276	6,276	6,276	6,276	6,276	6,276	6,276	$963
Civic Garden Greenhouse	645 Springbank Dr	13,036	13,036	13,036	13,036	13,036	13,036	13,036	13,036	13,036	13,036	$181
EW Curtis Gardens	605 Springbank Dr	6,240	6,240	6,240	6,240	6,240	6,240	6,240	6,240	6,240	6,240	$165
Labatts Park Grandstand	25 Wilson Ave	17,736	17,736	17,736	17,736	17,736	17,736	17,736	17,736	17,736	17,736	$223
Labatts Park Bleachers	25 Wilson Ave	2,850	2,850	2,850	2,850	2,850	2,850	2,850	2,850	2,850	2,850	$60
McManus Canoeing/Rowing Bldg	199 Wonderland Rd	6,127	6,127	6,127	6,127	6,127	6,127	6,127	6,127	6,127	6,127	$170
Springbank Gardens	295 Wonderland Rd	5,931	5,931	5,931	5,931	5,931	5,931	5,931	5,931	5,931	5,931	$253
Total		58,196	58,196	58,196	58,196	58,196	58,196	58,196	58,196	58,196	58,196	

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	0.15470	0.15320	0.15180	0.15040	0.14900	0.14760	0.14580	0.14400	0.14230	0.14060

10 Year Average	
Quantity Standard per 1,000 persons	0.14794

Contact Person(s) Tim Wellhauser
Unit of Measure 2020 Replacement Value ($000's)
Type of Measure Quality & Quantity

Facility Name	Location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Civic Garden Centre	625 Springbank Dr	$6,043.8	$6,043.8	$6,043.8	$6,043.8	$6,043.8	$6,043.8	$6,043.8	$6,043.8	$6,043.8	$6,043.8
Civic Garden Greenhouse	645 Springbank Dr	$2,359.5	$2,359.5	$2,359.5	$2,359.5	$2,359.5	$2,359.5	$2,359.5	$2,359.5	$2,359.5	$2,359.5
EW Curtis Gardens	605 Springbank Dr	$1,029.6	$1,029.6	$1,029.6	$1,029.6	$1,029.6	$1,029.6	$1,029.6	$1,029.6	$1,029.6	$1,029.6
Labatts Park Grandstand	25 Wilson Ave	$3,955.1	$3,955.1	$3,955.1	$3,955.1	$3,955.1	$3,955.1	$3,955.1	$3,955.1	$3,955.1	$3,955.1
Labatts Park Bleachers	25 Wilson Ave	$171.0	$171.0	$171.0	$171.0	$171.0	$171.0	$171.0	$171.0	$171.0	$171.0
McManus Canoeing/Rowing Bldg	199 Wonderland Rd	$1,041.6	$1,041.6	$1,041.6	$1,041.6	$1,041.6	$1,041.6	$1,041.6	$1,041.6	$1,041.6	$1,041.6
Springbank Gardens	295 Wonderland Rd	$1,500.5	$1,500.5	$1,500.5	$1,500.5	$1,500.5	$1,500.5	$1,500.5	$1,500.5	$1,500.5	$1,500.5
Total		$16,101.2	$16,101.2	$16,101.2	$16,101.2	$16,101.2	$16,101.2	$16,101.2	$16,101.2	$16,101.2	$16,101.2

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	$42.80	$42.39	$41.99	$41.60	$41.21	$40.83	$40.33	$39.84	$39.37	$38.90

10 Year Average	
Level of Service per Capita	$40.93

NOTES:
1) Total value provided by City of London Facility Services. Land value associated with facility provided by City of London Realty Services.

2) The valuations above include the current (2020) replacement value of building, but exclude land and site improvements.

Parks & Recreation Services
TABLE E-14 Facilities – Fieldhouses Service Standard

Contact Person(s) Tim Wellhauser
Unit of Measure 2020 Replacement Value ($000's)
Type of Measure Quality & Quantity

Facility Name	Location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Basil Grover Park Washroom	Wharncliffe/Commissioners	$296.8	$296.8	$296.8	$296.8	$296.8	$296.8	$296.8	$296.8	$296.8	$274.8
Citywide Fieldhouse	120 Meadowlily Rd S	$1,803.1	$1,803.1	$1,803.1	$1,803.1	$1,803.1	$3,260.6	$3,260.6	$3,260.6	$3,260.6	$3,019.1
Constitution Fieldhouse	725 Grenfell Dr							$330.8	$330.8	$330.8	$306.3
Covent Gardens Outdoor Rink	Covent Garden Market	$1,185.6	$1,185.6	$1,185.6	$1,185.6	$1,185.6	$1,185.6	$1,185.6	$1,185.6	$1,185.6	$1,097.8
Ed Blake Park	449 Barker St	$309.9	$309.9	$309.9	$309.9	$309.9	$592.8	$592.8	$592.8	$592.8	$286.9
Gibbons Park Picnic Shelter	15 Gibbons	$31.3	$31.3	$31.3	$31.3	$31.3	$69.6	$69.6	$69.6	$69.6	$29.0
Gibbons Park Washroom	15 Gibbons	$47.4	$47.4	$47.4	$47.4	$47.4	$47.4	$47.4	$47.4	$47.4	$43.9
Glanworth Fieldhouse	Bradish Rd	$551.9	$551.9	$551.9	$551.9	$551.9	$551.9	$551.9	$551.9	$551.9	$511.0
Greenway Park Washroom	S/W Riverside & Wonderland	$296.8	$296.8	$296.8	$296.8	$296.8	$296.8	$296.8	$296.8	$296.8	$274.8
Harris Park Pavilion	Harris Park							$756.6	$756.6	$756.6	$769.1
Jesse Davidson Park Fieldhouse	Monte Vista/Ensign Cr	$111.2	$111.2	$111.2	$111.2	$111.2	$111.2	$111.2	$111.2	$111.2	$103.0
Kiwanis Park Fieldhouse #1	Trafalgar St/Pottersburg Creek	$165.3	$165.3	$165.3	$165.3	$165.3	$165.3	$165.3	$165.3	$165.3	$153.1
Kiwanis Park New Fieldhouse	Trafalgar St/Pottersburg Creek	$296.8	$296.8	$296.8	$296.8	$296.8	$296.8	$296.8	$296.8	$296.8	$274.8
Lambeth Lawn Bowling Clubhouse	4326 Col Talbot Rd	$26.7	$26.7	$26.7	$26.7	$26.7	$26.7	$26.7	$26.7	$26.7	$24.7
Lambeth Optimist WR & Concession	Campbell St	$168.8	$168.8	$168.8	$168.8	$168.8	$168.8	$168.8	$168.8	$168.8	$156.3
Lambeth Park Washroom #3	7112 Beattie St	$40.9	$40.9	$40.9	$40.9	$40.9	$40.9	$40.9	$40.9	$40.9	$37.9
McKillop Pk Shelter / Washroom	Riverside/Wonderland	$138.7	$138.7	$138.7	$138.7	$138.7	$138.7	$138.7	$138.7	$138.7	$128.4
McMahon Park Bathhouse	Adelaide St N	$814.1	$814.1	$814.1	$814.1	$814.1	$814.1	$814.1	$814.1	$814.1	$753.8
Meadowgate Fieldhouse	1165 Darnley Blvd						$315.6	$315.6	$315.6	$315.6	$320.8
Meredith Park Fieldhouse	Nelson/Maitland	$160.1	$160.1	$160.1	$160.1	$160.1	$160.1	$160.1	$160.1	$160.1	$148.2
Mornington Fieldhouse	800 High Holborn St							$429.2	$429.2	$429.2	$436.3
Murray Playground Fieldhouse	Tecumseh/Wharncliffe	$160.1	$160.1	$160.1	$160.1	$160.1	$160.1	$160.1	$160.1	$160.1	$148.2
North London Fieldhouse	1225 Adelaide St N	$803.8	$803.8	$803.8	$803.8	$803.8	$803.8	$803.8	$803.8	$803.8	$744.3
Oakridge Acres Fieldhouse	Tarbutt/Valetta	$420.9	$420.9	$420.9	$420.9	$420.9	$420.9	$420.9	$420.9	$420.9	$389.7
Reservoir Park Washroom	Commissioners/Crestwood	$45.8	$45.8	$45.8	$45.8	$45.8	$45.8	$45.8	$45.8	$45.8	$42.4
Ralph Hamlyn Park Washroom #1	East End Dennis Ave	$225.2	$225.2	$225.2	$225.2	$225.2	$225.2	$225.2	$225.2	$225.2	$208.5
Rowntree Playground Fieldhouse	Whetter/Fairview	$159.4	$159.4	$159.4	$159.4	$159.4	$159.4	$159.4	$159.4	$159.4	$147.6
Smith Playground Service Building	Brampton/Cheapside	$160.1	$160.1	$160.1	$160.1	$160.1	$160.1	$160.1	$160.1	$160.1	$148.2
Southeast Optimist Fieldhouse	Deveron Cres	$236.2	$236.2	$236.2	$236.2	$236.2	$236.2	$236.2	$236.2	$236.2	$218.7
Southwest Optimist Fieldhouse	Deveron Cres	$359.6	$359.6	$359.6	$359.6	$359.6	$359.6	$359.6	$359.6	$359.6	$333.0
Springbank Park Concession # 1	Commissioners/Springbank	$180.4	$180.4	$180.4	$180.4	$180.4	$180.4	$180.4	$180.4	$180.4	$167.0
Springbank Park New Fieldhouse	Commissioners/Springbank	$415.5	$415.5	$415.5	$415.5	$415.5	$415.5	$415.5	$415.5	$415.5	$384.7
Springbank Park Old Pump House	Commissioners/Springbank	$3,238.7	$3,238.7	$3,238.7	$3,238.7	$3,238.7	$3,238.7	$3,238.7	$3,238.7	$3,238.7	$2,998.8
Springbank Park Washrooms	Commissioners/Springbank	$174.3	$174.3	$174.3	$174.3	$174.3	$174.3	$174.3	$174.3	$174.3	$161.4
St. Julien Park Fieldhouse	81 Sanders St	$99.6	$99.6	$99.6	$99.6	$99.6	$99.6	$99.6	$99.6	$99.6	$92.2
Stoneybrook Washrooms	747 Windermere Rd	$161.9	$161.9	$161.9	$161.9	$161.9	$161.9	$161.9	$161.9	$161.9	$149.9
Stronach Ball Diamond Service Building	Huron/Highbury/Sanford	$374.3	$374.3	$374.3	$374.3	$374.3	$374.3	$374.3	$374.3	$374.3	$346.6
Thames Park Fieldhouse	55 Ridout St S	$235.1	$235.1	$235.1	$235.1	$235.1	$235.1	$235.1	$235.1	$235.1	$217.7
Univ. Heights Fieldhouse	Trott Dr/Coombs	$160.1	$160.1	$160.1	$160.1	$160.1	$160.1	$160.1	$160.1	$160.1	$148.2
Vauxhaul Park Fieldhouse	59 Price St/Homan	$337.8	$337.8	$337.8	$337.8	$337.8	$337.8	$337.8	$337.8	$337.8	$312.8
Victoria Park Bandshell	580 Clarence St	$3,573.3	$3,573.3	$3,573.3	$3,573.3	$3,573.3	$3,573.3	$3,573.3	$3,573.3	$3,573.3	$3,308.6
Victoria Park Outdoor Rink	580 Clarence St	$1,378.8	$1,378.8	$1,378.8	$1,378.8	$1,378.8	$1,378.8	$1,378.8	$1,378.8	$1,378.8	$1,276.7
Total		$19,346.1	$19,346.1	$19,346.1	$19,346.1	$19,346.1	$21,440.5	$22,957.1	$22,957.1	$22,957.1	$21,095.0
Population		376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita		$51.43	$50.94	$50.46	$49.98	$49.52	$54.38	$57.51	$56.81	$56.13	$50.97

10 Year Average	
Level of Service per Capita	$52.81

NOTES:
1) The valuations above include the current (2020) replacement value of building only. Other site improvements are included in the value of the parkland. Values were determined through an individual approximation of the replacement value of each facility.

Parks & Recreation Services
TABLE E-15 Parkland Development Rate Calculation

Planning horizon for this component : **2021 - 2028**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																	Commercial		Institutional		Industrial	
									%	benefit					%	$	%	$	%	$	%	$
	(all $'s in ,000's)		(1)	(2)	(3)	(4) (1) - sum(2,3)	(5)	(6) (4) * (5)	(7) (4) - (6)	(8)	(9) (7) * (8)	(10) [(7) - (9)] * 10%	(11) (7) - sum(9,10)	(12)	(13) (11) - (12)	(14)	(15) (13) * (14)	(16)	(17) (13) * (16)	(18)	(19) (13) * (18)	(20)	(21) (13) * (20)
DC19PR0100	**Neighbourhood Parks**																					
DC14PR0023	Applewood (39T-09501)	2021	$82.1	$.0	$.0	$82.1	0.0%	$.0	$82.1	0.0%	$.0	$.0	$82.1	$2.7	$79.4	100.0%	$79.4	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5005	Sifton - Kilally Road (2023)	2023	$82.1	$.0	$.0	$82.1	0.0%	$.0	$82.1	0.0%	$.0	$.0	$82.1	$2.7	$79.4	100.0%	$79.4	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5006	Talbot Village-Southside (39T-14506)	2021	$102.6	$.0	$.0	$102.6	0.0%	$.0	$102.6	0.0%	$.0	$.0	$102.6	$3.3	$99.2	100.0%	$99.2	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5007	Lambeth - York (39T-17503)	2022	$114.9	$.0	$.0	$114.9	0.0%	$.0	$114.9	0.0%	$.0	$.0	$114.9	$3.7	$111.1	100.0%	$111.1	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC14PR0029	LPH Dundas	2023	$173.2	$.0	$.0	$173.2	0.0%	$.0	$173.2	0.0%	$.0	$.0	$173.2	$5.6	$167.5	100.0%	$167.5	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC14PR0020	Ross Lands North (39T-07502)	2023	$114.9	$.0	$.0	$114.9	0.0%	$.0	$114.9	0.0%	$.0	$.0	$114.9	$3.7	$111.1	100.0%	$111.1	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC14PR0021	Ross Lands South (39T-07502)	2023	$28.7	$.0	$.0	$28.7	0.0%	$.0	$28.7	0.0%	$.0	$.0	$28.7	$.9	$27.8	100.0%	$27.8	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5008	Copps - Lambeth	2023	$41.0	$.0	$.0	$41.0	0.0%	$.0	$41.0	0.0%	$.0	$.0	$41.0	$1.3	$39.7	100.0%	$39.7	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5009	Future Neighbourhood Parks (Central)	2024	$65.7	$.0	$.0	$65.7	0.0%	$.0	$65.7	0.0%	$.0	$.0	$65.7	$2.1	$63.5	100.0%	$63.5	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5010	Future Neighbourhood Parks (N/W)	2024	$90.3	$.0	$.0	$90.3	0.0%	$.0	$90.3	0.0%	$.0	$.0	$90.3	$2.9	$87.3	100.0%	$87.3	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5011	Future Neighbourhood Parks (N/E)	2024	$90.3	$.0	$.0	$90.3	0.0%	$.0	$90.3	0.0%	$.0	$.0	$90.3	$2.9	$87.3	100.0%	$87.3	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5012	Future Neighbourhood Parks (S/E)	2025	$90.3	$.0	$.0	$90.3	0.0%	$.0	$90.3	0.0%	$.0	$.0	$90.3	$2.9	$87.3	100.0%	$87.3	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5013	Future Neighbourhood Parks (S/W)	2025	$90.3	$.0	$.0	$90.3	0.0%	$.0	$90.3	0.0%	$.0	$.0	$90.3	$2.9	$87.3	100.0%	$87.3	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5014	Future Neighbourhood Parks (S/W)	2026	$90.3	$.0	$.0	$90.3	0.0%	$.0	$90.3	0.0%	$.0	$.0	$90.3	$2.9	$87.3	100.0%	$87.3	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5015	Future Neighbourhood Parks (Central)	2027	$65.7	$.0	$.0	$65.7	0.0%	$.0	$65.7	0.0%	$.0	$.0	$65.7	$2.1	$63.5	100.0%	$63.5	0.0%	$.0	0.0%	$.0	0.0%	$.0
	SUBTOTAL		$1,322.1	$.0	$.0	$1,322.1	0.0%	$.0	$1,322.1	0.0%	$.0	$.0	$1,322.1	$43.1	$1,279.0	100.0%	$1,279.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR0200	**District Parks**																					
DC14PR0036	Beaverbrook/Esam (39T-99502)	2022	$987.4	$.0	$.0	$987.4	0.0%	$.0	$987.4	33.0%	$325.8	$.0	$661.5	$21.6	$640.0	100.0%	$640.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC14PR0033	Clarke Subdivision (39T-05511)	2023	$203.7	$.0	$.0	$203.7	0.0%	$.0	$203.7	33.0%	$67.2	$.0	$136.5	$4.5	$132.1	100.0%	$132.1	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5017	Future District Parks (N/W or N/E)	2025	$783.6	$.0	$.0	$783.6	10.0%	$78.4	$705.3	33.0%	$232.7	$.0	$472.5	$15.4	$457.1	100.0%	$457.1	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5018	Future District Parks (S/W or S/E)	2028	$783.6	$.0	$.0	$783.6	20.0%	$156.7	$626.9	33.0%	$206.9	$.0	$420.0	$13.7	$406.3	100.0%	$406.3	0.0%	$.0	0.0%	$.0	0.0%	$.0
	SUBTOTAL		$2,758.3	$.0	$.0	$2,758.3	8.5%	$235.1	$2,523.2	33.0%	$832.7	$.0	$1,690.6	$55.1	$1,635.4	100.0%	$1,635.4	0.0%	$.0	0.0%	$.0	0.0%	$.0

Parks & Recreation Services
TABLE E-15 Parkland Development Rate Calculation Cont'd

Planning horizon for this component : **2021-2028**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - Improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																	Commercial		Institutional		Industrial	
									%	benefit					%	$	%	$	%	$	%	$
	(all $'s in ,000's)		(1)	(2)	(3)	(4) (1) - sum(2,3)	(5)	(6) (4) * (5)	(7) (4) - (6)	(8)	(9) (7) * (8)	(10) [(7) - (9)] * 10%	(11) (7) - sum(9,10)	(12)	(13) (11) - (12)	(14)	(15) (13) * (14)	(16)	(17) (13) * (16)	(18)	(19) (13) * (18)	(20)	(21) (13) * (20)
DC19PR0300	**Urban Parks**																					
DC19PR5024	Jackson (39T-06507)	2021	$909.7	$.0	$.0	$909.7	0.0%	$.0	$909.7	0.0%	$.0	$.0	$909.7	$29.7	$880.0	100.0%	$880.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5025	Riverbend - Kains TVP Trail Head (39T-17501)	2021	$181.9	$.0	$.0	$181.9	0.0%	$.0	$181.9	0.0%	$.0	$.0	$181.9	$5.9	$176.0	100.0%	$176.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC14PR0041	Applewood Urban Park (39T-09501)	2022	$618.6	$.0	$.0	$618.6	0.0%	$.0	$618.6	0.0%	$.0	$.0	$618.6	$20.2	$598.4	100.0%	$598.4	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5026	Tennant Hyde Park	2023	$363.9	$.0	$.0	$363.9	0.0%	$.0	$363.9	0.0%	$.0	$.0	$363.9	$11.9	$352.0	100.0%	$352.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5027	Future Urban Parks (N/W)	2024	$545.8	$.0	$.0	$545.8	0.0%	$.0	$545.8	0.0%	$.0	$.0	$545.8	$17.8	$528.0	100.0%	$528.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5028	Future Urban Parks (N/E)	2025	$545.8	$.0	$.0	$545.8	0.0%	$.0	$545.8	0.0%	$.0	$.0	$545.8	$17.8	$528.0	100.0%	$528.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5029	Future Urban Parks (S/W)	2026	$545.8	$.0	$.0	$545.8	0.0%	$.0	$545.8	0.0%	$.0	$.0	$545.8	$17.8	$528.0	100.0%	$528.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5030	Future Urban Parks (S/E)	2027	$545.8	$.0	$.0	$545.8	20.0%	$109.2	$436.7	0.0%	$.0	$.0	$436.7	$14.2	$422.4	100.0%	$422.4	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5031	Future Urban Parks (Central)	2028	$545.8	$.0	$.0	$545.8	20.0%	$109.2	$436.7	0.0%	$.0	$.0	$436.7	$14.2	$422.4	100.0%	$422.4	0.0%	$.0	0.0%	$.0	0.0%	$.0
	SUBTOTAL		$4,803.3	$.0	$.0	$4,803.3	4.5%	$218.3	$4,584.9	0.0%	$.0	$.0	$4,584.9	$149.5	$4,435.4	100.0%	$4,435.4	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR0400	**Civic Spaces**																					
DC19PR5032	Future Civic Spaces (Central)	2021	$1,533.3	$.0	$.0	$1,533.3	0.0%	$.0	$1,533.3	75.0%	$1,150.0	$.0	$383.3	$12.5	$370.8	100.0%	$370.8	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5033	Future Civic Spaces (Central)	2023	$3,066.7	$.0	$.0	$3,066.7	0.0%	$.0	$3,066.7	75.0%	$2,300.0	$.0	$766.7	$25.0	$741.7	100.0%	$741.7	0.0%	$.0	0.0%	$.0	0.0%	$.0
	SUBTOTAL		$4,600.0	$.0	$.0	$4,600.0	0.0%	$.0	$4,600.0	75.0%	$3,450.0	$.0	$1,150.0	$37.5	$1,112.5	100.0%	$1,112.5	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR0500	**Woodland Parks**																					
DC19PR5036	Talbot Village-Southside (39T-14506)	2021	$94.7	$.0	$.0	$94.7	0.0%	$.0	$94.7	0.0%	$.0	$.0	$94.7	$3.1	$91.6	100.0%	$91.6	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC14PR0052	Jackson 2 - Woodlots (39T-06507)	2022	$184.8	$.0	$.0	$184.8	0.0%	$.0	$184.8	0.0%	$.0	$.0	$184.8	$6.0	$178.8	100.0%	$178.8	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5037	Lambeth - York (39T-17503)	2023	$198.4	$.0	$.0	$198.4	0.0%	$.0	$198.4	0.0%	$.0	$.0	$198.4	$6.5	$191.9	100.0%	$191.9	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5038	Future Sigificant Woodlands	2024	$90.2	$.0	$.0	$90.2	0.0%	$.0	$90.2	0.0%	$.0	$.0	$90.2	$2.9	$87.2	100.0%	$87.2	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5039	Future Significant Woodlands	2025	$90.2	$.0	$.0	$90.2	0.0%	$.0	$90.2	0.0%	$.0	$.0	$90.2	$2.9	$87.2	100.0%	$87.2	0.0%	$.0	0.0%	$.0	0.0%	$.0
	SUBTOTAL		$658.2	$.0	$.0	$658.2	0.0%	$.0	$658.2	0.0%	$.0	$.0	$658.2	$21.5	$636.8	100.0%	$636.8	0.0%	$.0	0.0%	$.0	0.0%	$.0

Parks & Recreation Services
TABLE E-15 Parkland Development Rate Calculation Cont'd

Planning horizon for this component : **2021 - 2028**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																	Commercial		Institutional		Industrial	
									%	benefit					%	$	%	$	%	$	%	$
	(all $'s in ,000's)		(1)	(2)	(3)	(4) (1) - sum(2,3)	(5)	(6) (4) * (5)	(7) (4) - (6)	(8)	(9) (7) * (8)	(10) [(7) - (9)] * 10%	(11) (7) - sum(9,10)	(12)	(13) (11) - (12)	(14)	(15) (13) * (14)	(16)	(17) (13) * (16)	(18)	(19) (13) * (18)	(20)	(21) (13) * (20)
DC19PR0600	**Major Open Space Network**																					
DC14PR0076	Applewood (39T-09501)	2021	$289.1	$.0	$.0	$289.1	0.0%	$.0	$289.1	25.0%	$72.3	$.0	$216.8	$7.1	$209.8	100.0%	$209.8	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5046	Corlon Golf Course (39T-05508)	2021	$335.4	$.0	$.0	$335.4	0.0%	$.0	$335.4	25.0%	$83.8	$.0	$251.5	$8.2	$243.3	100.0%	$243.3	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5047	Jackson Woodland Buffers (39T-06507)	2021	$306.5	$.0	$.0	$306.5	0.0%	$.0	$306.5	25.0%	$76.6	$.0	$229.9	$7.5	$222.4	100.0%	$222.4	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5048	Sifton - Kilally Road (2023)	2023	$109.9	$.0	$.0	$109.9	0.0%	$.0	$109.9	25.0%	$27.5	$.0	$82.4	$2.7	$79.7	100.0%	$79.7	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5049	Beaverbrook/Esam (39T-99502)	2022	$306.5	$.0	$.0	$306.5	0.0%	$.0	$306.5	25.0%	$76.6	$.0	$229.9	$7.5	$222.4	100.0%	$222.4	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5050	Lambeth - York (39T-17503)	2022	$86.7	$.0	$.0	$86.7	0.0%	$.0	$86.7	25.0%	$21.7	$.0	$65.1	$2.1	$62.9	100.0%	$62.9	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5051	Tennant Hyde Park	2022	$40.5	$.0	$.0	$40.5	0.0%	$.0	$40.5	25.0%	$10.1	$.0	$30.4	$1.0	$29.4	100.0%	$29.4	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5052	Vista Woods -Southside (39T-03505)	2022	$92.5	$.0	$.0	$92.5	0.0%	$.0	$92.5	25.0%	$23.1	$.0	$69.4	$2.3	$67.1	100.0%	$67.1	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC14PR0077	Comfort Lands -Sergautis (39T-11502)	2023	$104.1	$.0	$.0	$104.1	0.0%	$.0	$104.1	25.0%	$26.0	$.0	$78.1	$2.5	$75.5	100.0%	$75.5	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5053	Hyman Development - east of Hamlyn Park	2023	$925.2	$.0	$.0	$925.2	0.0%	$.0	$925.2	25.0%	$231.3	$.0	$693.9	$22.6	$671.3	100.0%	$671.3	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC14PR0084	LPH Dundas	2023	$86.7	$.0	$.0	$86.7	0.0%	$.0	$86.7	25.0%	$21.7	$.0	$65.1	$2.1	$62.9	100.0%	$62.9	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC14PR0073	Ross Lands South (39T-07502)	2023	$34.1	$.0	$.0	$34.1	0.0%	$.0	$34.1	25.0%	$8.5	$.0	$25.6	$.8	$24.8	100.0%	$24.8	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5054	Copps - Lambeth	2023	$578.3	$.0	$.0	$578.3	0.0%	$.0	$578.3	25.0%	$144.6	$.0	$433.7	$14.1	$419.6	100.0%	$419.6	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC14PR0074	CPRI	2023	$1,619.1	$.0	$.0	$1,619.1	0.0%	$.0	$1,619.1	25.0%	$404.8	$.0	$1,214.3	$39.6	$1,174.7	100.0%	$1,174.7	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5055	Byron - Southside (39T-15503)	2023	$75.2	$.0	$.0	$75.2	0.0%	$.0	$75.2	25.0%	$18.8	$.0	$56.4	$1.8	$54.5	100.0%	$54.5	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5056	Open Space SWM Block Pathway Connections	2021-2028	$120.0	$.0	$.0	$120.0	0.0%	$.0	$120.0	25.0%	$30.0	$.0	$90.0	$2.9	$87.065	100.0%	$87.1	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5057	Future Open Space Parks	2024	$693.9	$.0	$.0	$693.9	0.0%	$.0	$693.9	25.0%	$173.5	$.0	$520.4	$17.0	$503.5	100.0%	$503.5	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5058	Future Open Space Parks (North)	2025	$693.9	$.0	$.0	$693.9	0.0%	$.0	$693.9	25.0%	$173.5	$.0	$520.4	$17.0	$503.5	100.0%	$503.5	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5059	Future Open Space Parks (South)	2026	$693.9	$.0	$.0	$693.9	0.0%	$.0	$693.9	25.0%	$173.5	$.0	$520.4	$17.0	$503.5	100.0%	$503.5	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5060	Future Open Space Parks	2027	$693.9	$.0	$.0	$693.9	0.0%	$.0	$693.9	25.0%	$173.5	$.0	$520.4	$17.0	$503.5	100.0%	$503.5	0.0%	$.0	0.0%	$.0	0.0%	$.0
	SUBTOTAL		$7,885.5	$.0	$.0	$7,885.5	0.0%	$.0	$7,885.5	25.0%	$1,971.4	$.0	$5,914.1	$192.9	$5,721.2	100.0%	$5,721.2	0.0%	$.0	0.0%	$.0	0.0%	$.0

Parks & Recreation Services
TABLE E-15 Parkland Development Rate Calculation Cont'd

Planning horizon for this component : **2021-2028**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this Service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - Improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																	Commercial		Institutional		Industrial	
									%	benefit					%	$	%	$	%	$	%	$
	(all $'s in ,000's)		(1)	(2)	(3)	(4) (1) - sum(2,3)	(5)	(6) (4) * (5)	(7) (4) - (6)	(8)	(9) (7) * (8)	(10) [(7) - (9)] * 10%	(11) (7) - sum(9,10)	(12)	(13) (11) - (12)	(14)	(15) (13) * (14)	(16)	(17) (13) * (16)	(18)	(19) (13) * (18)	(20)	(21) (13) * (20)
DC19PR0700	**Sports Parks**																					
DC19PR5061	Expand Ralph Hamlyn Park (Hyman Dev)	2021	$1,905.5	$0.0	$0.0	$1,905.5	0.0%	$0.0	$1,905.5	25.0%	$476.4	$0.0	$1,429.1	$46.6	$1,382.5	100.0%	$1,382.5	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0
DC19PR5062	Future Sports Parks	2022	$1,482.1	$0.0	$0.0	$1,482.1	0.0%	$0.0	$1,482.1	25.0%	$370.5	$0.0	$1,111.6	$36.2	$1,075.3	100.0%	$1,075.3	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0
	SUBTOTAL		$3,387.6	$0.0	$0.0	$3,387.6	0.0%	$0.0	$3,387.6	25.0%	$846.9	$0.0	$2,540.7	$82.9	$2,457.8	100.0%	$2,457.8	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0
DC19PR0800	**Thames Valley Parkway**																					
DC19PR5066	Riverbend - Kains TVP (39T-17501)	2021	$1,177.2	$0.0	$0.0	$1,177.2	0.0%	$0.0	$1,177.2	25.0%	$294.3	$0.0	$882.9	$28.8	$854.1	100.0%	$854.1	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0
DC19PR5067	South Branch Meadowlily/VoR/Jackson	2022	$1,177.2	$0.0	$0.0	$1,177.2	0.0%	$0.0	$1,177.2	25.0%	$294.3	$0.0	$882.9	$28.8	$854.1	100.0%	$854.1	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0
DC19PR5068	South Branch Tridon (East Hamilton 39T-17502)	2023	$784.8	$0.0	$0.0	$784.8	0.0%	$0.0	$784.8	25.0%	$196.2	$0.0	$588.6	$19.2	$569.4	100.0%	$569.4	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0
DC19PR5069	Future TVP (North Branch)	2025	$327.0	$0.0	$0.0	$327.0	20.0%	$65.4	$261.6	25.0%	$65.4	$0.0	$196.2	$6.4	$189.8	100.0%	$189.8	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0
	SUBTOTAL		$3,466.2	$0.0	$0.0	$3,466.2	1.9%	$65.4	$3,400.8	25.0%	$850.2	$0.0	$2,550.6	$83.2	$2,467.4	100.0%	$2,467.4	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0
DC19PR0900	**Environmentally Significant Areas**																					
DC14PR0106	CPRI	2021	$67.3	$0.0	$0.0	$67.3	0.0%	$0.0	$67.3	33.0%	$22.2	$0.0	$45.1	$1.5	$43.6	100.0%	$43.6	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0
DC19PR5071	Woodhull	2022	$163.4	$0.0	$0.0	$163.4	0.0%	$0.0	$163.4	33.0%	$53.9	$0.0	$109.5	$3.6	$105.9	100.0%	$105.9	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0
DC19PR5072	Comfort Lands -Sergautis (39T-11502)	2023	$69.2	$0.0	$0.0	$69.2	0.0%	$0.0	$69.2	33.0%	$22.8	$0.0	$46.4	$1.5	$44.8	100.0%	$44.8	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0
DC19PR5073	Hyman Development - East of Hamlyn Park	2023	$67.3	$0.0	$0.0	$67.3	0.0%	$0.0	$67.3	33.0%	$22.2	$0.0	$45.1	$1.5	$43.6	100.0%	$43.6	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0
DC14PR0107	Ross Lands North (39T-07502)	2023	$24.0	$0.0	$0.0	$24.0	0.0%	$0.0	$24.0	33.0%	$7.9	$0.0	$16.1	$.5	$15.6	100.0%	$15.6	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0
DC19PR5074	Crich/Applewood Wetland	2023	$50.5	$0.0	$0.0	$50.5	0.0%	$0.0	$50.5	33.0%	$16.6	$0.0	$33.8	$1.1	$32.7	100.0%	$32.7	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0
DC19PR5075	Future ESAs (N/W)	2025	$48.1	$0.0	$0.0	$48.1	0.0%	$0.0	$48.1	33.0%	$15.9	$0.0	$32.2	$1.0	$31.1	100.0%	$31.1	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0
DC19PR5076	Future ESAs (N/E)	2026	$48.1	$0.0	$0.0	$48.1	0.0%	$0.0	$48.1	33.0%	$15.9	$0.0	$32.2	$1.0	$31.1	100.0%	$31.1	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0
DC19PR5077	Future ESAs (S/W)	2027	$48.1	$0.0	$0.0	$48.1	0.0%	$0.0	$48.1	33.0%	$15.9	$0.0	$32.2	$1.0	$31.1	100.0%	$31.1	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0
DC19PR5078	Future ESAs (S/E)	2028	$48.1	$0.0	$0.0	$48.1	0.0%	$0.0	$48.1	33.0%	$15.9	$0.0	$32.2	$1.0	$31.1	100.0%	$31.1	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0
	SUBTOTAL		$633.8	$0.0	$0.0	$633.8	0.0%	$0.0	$633.8	33.0%	$209.1	$0.0	$424.6	$13.8	$410.8	100.0%	$410.8	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0

Parks & Recreation Services
TABLE E-15 Parkland Development Rate Calculation Cont'd

Planning horizon for this component : **2021-2028**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - Improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																	Commercial		Institutional		Industrial	
									%	benefit					%	$	%	$	%	$	%	$
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
	(all $'s in ,000's)					(1) - sum(2,3)		(4) * (5)	(4) - (6)		(7) * (8)	[(7) - (9)] * 10%	(7) - sum(9,10)		(11) - (12)		(13) * (14)		(13) * (16)		(13) * (18)		(13) * (20)
DC19PR1000	**Bridges and Tunnels**																					
DC19PR5080	Corlon Sunningdale Underpass (39T-16504)	2023	$600.0	$.0	$.0	$600.0	0.0%	$.0	$600.0	0.0%	$.0	$.0	$600.0	$19.6	$580.4	100.0%	$580.4	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5082	South Branch Tridon (east Hamilton 39T-17502)	2021	$525.0	$.0	$.0	$525.0	0.0%	$.0	$525.0	0.0%	$.0	$.0	$525.0	$17.1	$507.9	100.0%	$507.9	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5083	Beaverbrook/Esam - CP Tunnel upgrade (39T-99502)	2022	$500.0	$.0	$.0	$500.0	0.0%	$.0	$500.0	25.0%	$125.0	$.0	$375.0	$12.2	$362.8	100.0%	$362.8	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5084	Victoria on River Ravine Crossing (39T-13502)	2023	$600.0	$.0	$.0	$600.0	0.0%	$.0	$600.0	0.0%	$.0	$.0	$600.0	$19.6	$580.4	100.0%	$580.4	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5085	S/W Community Center Pedestrian Bridge	2023	$375.0	$.0	$.0	$375.0	30.0%	$112.5	$262.5	0.0%	$.0	$.0	$262.5	$8.6	$253.9	100.0%	$253.9	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR5086	Future Bridges	2024	$525.0	$.0	$.0	$525.0	0.0%	$.0	$525.0	0.0%	$.0	$.0	$525.0	$17.1	$507.9	100.0%	$507.9	0.0%	$.0	0.0%	$.0	0.0%	$.0
	SUBTOTAL		$3,125.0	$.0	$.0	$3,125.0	3.6%	$112.5	$3,012.5	4.1%	$125.0	$.0	$2,887.5	$94.2	$2,793.3	100.0%	$2,793.3	0.0%	$.0	0.0%	$.0	0.0%	$.0
	Parks and Recreation Studies																					
DC19GS0022	Master Plan Update (2021)	2021	$150.0	$.0	$.0	$150.0	0.0%	$.0	$150.0	25.0%	$37.5	$.0	$112.5	$3.7	$108.8	100.0%	$108.8	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19GS0023	Master Plan Update (2027)	2027	$350.0	$.0	$.0	$350.0	50.0%	$175.0	$175.0	25.0%	$43.8	$.0	$131.3	$4.3	$127.0	100.0%	$127.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19GS0024	New ESA Conservation Master Plans	2023, 2026	$716.8	$.0	$.0	$716.8	0.0%	$.0	$716.8	33.0%	$236.5	$.0	$480.3	$15.7	$464.6	100.0%	$464.6	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19GS0025	Subwatershed Studies, review and implementation update (Parks & Recreation)	2021-2023	$120.0	$.0	$.0	$120.0	25.0%	$30.0	$90.0	20.0%	$18.0	$.0	$72.0	$2.3	$69.7	73.1%	$50.9	12.2%	$8.5	9.6%	$6.7	5.1%	$3.6
DC19GS0026	Urban Forestry Studies Impacted by Growth	2021, 2022, 2023, 2025, 2026	$500.0	$.0	$.0	$500.0	0.0%	$.0	$500.0	72.0%	$360.0	$.0	$140.0	$4.6	$135.4	73.1%	$99.0	12.2%	$16.5	9.6%	$13.0	5.1%	$6.9
DC19GS0027	Post Development EIS Monitoring	2021-2026	$245.8	$.0	$.0	$245.8	0.0%	$.0	$245.8	0.0%	$.0	$.0	$245.8	$8.0	$237.7	73.1%	$173.8	12.2%	$29.0	9.6%	$22.8	5.1%	$12.1
	SUBTOTAL		$2,082.6	$.0	$.0	$2,082.6	9.8%	$205.0	$1,877.6	37.1%	$695.8	$.0	$1,181.8	$38.5	$1,143.2	89.6%	$1,024.1	4.7%	$54.0	3.7%	$42.5	2.0%	$22.6

Parks & Recreation Services
TABLE E-15 Parkland Development Rate Calculation Cont'd

Planning horizon for this component : **2021-2028**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																	Commercial		Institutional		Industrial	
									%	benefit					%	$	%	$	%	$	%	$
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	
	(all $'s in ,000's)					*(1) - sum(2,3)*		*(4) * (5)*	*(4) - (6)*		*(7) * (8)*	*[(7) - (9)] * 10%*	*(7) - sum(9,10)*		*(11) - (12)*		*(13) * (14)*		*(13) * (16)*		*(13) * (18)*		*(13) * (20)*
	Debentures																					
	PORTION OF GROWTH PROJECTS FINANCED WITH DEBT (PRINCIPLE)		$.0			$.0			$.0				$.0	$.0	$.0	100.0%	$.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
TOTAL			**$34,722.4**	**$.0**	**$.0**	**$34,722.4**	**2.4%**	**$836.3**	**$33,886.1**	**26.5%**	**$8,981.1**	**$.0**	**$24,905.1**	**$812.2**	**$24,092.9**	**99.5%**	**$23,973.7**	**0.2%**	**$54.0**	**0.2%**	**$42.5**	**0.1%**	**$22.6**

Supplement A: Existing Service Standard Limitation	
Existing Service Standard Measure (per capita)	$ 613.05
Net 8 year Growth Projection	39,300
Maximum Eligible Amount for DC Rate Calculation	$ 24,092,865
Growth Needs	$ 24,905,064
Total Excess of Growth Needs	$ 812,199

Development Charge Rate Calculation (Pre-Financing Cost)								
		Residential		**Commercial**		**Institutional**		**Industrial**
Less: Uncommitted Reserve Fund Balance	$673.8	100.0%	$673.8	0.0%	$.0	0.0%	$.0	0.0%	$.0
Total net cost eligible for DC rate calculation purposes	$23,419.0	99.5%	$23,299.9	0.2%	$54.0	0.2%	$42.5	0.1%	$22.6
Divided By: Total Gross Growth Projections			42,307		260,742		335,361		252,919
Calculated DC Rate - Pre-Financing			**$ 550.73** /person		**$ 0.21** /sq. m.		**$ 0.13** /sq. m.		**$ 0.09** /sq. m.

1) Non-growth share for Neighbourhood Parks, Urban Parks and Woodland Parks is 0% as these benefit and serve the immediate growth area and are typically located in new growth neighbourhoods. Open Space, ESAs, and the Thames Valley Parkway are allocated a non-growth share reflective of these projects being routinely used by residents from other areas of the City due to parkland purpose or additions to an existing network that extends well beyond growing neighbourhoods. The non-growth share for District Parks reflects a gross estimate of the benefit and usage of the individual district park by persons in new developments and by existing residents. Due to the location and nature of Civic Spaces, a high non-growth share has been allocated reflecting the benefit to existing residents. These park type non-growth shares are consistent with the 2014 and 2019 DC Studies.

2) Amounts otherwise included in the DC rate calculations for this component are reduced based on limitations of the historical standard of service, as calculated in 'Supplement A' above.

Pre- Financing Cost Residential Rates:		*Pre Financing*
Single Family Dwelling	3.12	$ 1,718.29
Multiple unit dwelling	2.11	$ 1,162.05
Apartment - bach. & 1 bed	1.38	$ 760.01
Apartment - ≥ 2 bedroom	1.87	$ 1,029.87

Parks & Recreation Services
TABLE E-16 Facilities Rate Calculation

Planning horizon for this component : **2021-2028**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																	Commercial		Institutional		Industrial	
	(all $'s in ,000's)		*(1)*	*(2)*	*(3)*	*(4)* *(1) - sum(2,3)*	*(5)*	*(6)* *(4) * (5)*	*(7)* *(4) - (6)*	*(8)* %	*(9)* benefit *(7) * (8)*	*(10)* *[(7) - (9)] * 10%*	*(11)* *(7) - sum(9,10)*	*(12)*	*(13)* *(11) - (12)*	*(14)* %	*(15)* $ *(13) * (14)*	*(16)* %	*(17)* $ *(13) * (16)*	*(18)* %	*(19)* $ *(13) * (18)*	*(20)* %	*(21)* $ *(13) * (20)*
	Multi Purpose Recreation Centre (Southeast)																					
DC14PR0002	Double Icepad Arena	2023	$10,956.7	$.0	$7,575.8	$3,381.0	0.0%	$.0	$3,381.0	100.0%	$3,381.0	$.0	$.0	$.0	$.0	100.0%	$.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC14PR0002	Community Centre / Gymnasium	2023	$11,800.4	$.0	$8,159.1	$3,641.3	15.8%	$575.3	$3,066.0	69.4%	$2,127.8	$.0	$938.2	$.0	$938.2	100.0%	$938.2	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC14PR0002	Change Rooms	2023	$1,958.1	$.0	$1,353.9	$604.2	15.8%	$95.5	$508.8	88.3%	$449.2	$.0	$59.5	$.0	$59.5	100.0%	$59.5	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC14PR0002	Furniture / Fittings / Equipment	2023	$592.1	$.0	$409.4	$182.7	15.8%	$28.9	$153.8	88.3%	$135.8	$.0	$18.0	$.0	$18.0	100.0%	$18.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC14PR0002	Land / Site Works / Professional Fees	2023	$12,232.2	$.0	$8,457.6	$3,774.6	15.8%	$596.4	$3,178.2	88.3%	$2,806.3	$.0	$371.8	$.0	$371.8	100.0%	$371.8	0.0%	$.0	0.0%	$.0	0.0%	$.0
	SUBTOTAL		$37,539.5	$.0	$25,955.7	$11,583.8	11.2%	$1,296.0	$10,287.7	86.5%	$8,900.2	$.0	$1,387.6	$.0	$1,387.6	100.0%	$1,387.6	0.0%	$.0	0.0%	$.0	0.0%	$.0
	Multi Purpose Recreation Centre (Northwest)																					
DC19PR2001	Indoor Swimming Pool	2023	$8,275.1	$.0	$.0	$8,275.1	16.3%	$1,348.8	$6,926.3	72.4%	$5,014.6	$.0	$1,911.7	$.0	$1,911.7	100.0%	$1,911.7	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR2001	Community Centre / Gymnasium	2023	$13,083.6	$.0	$.0	$13,083.6	17.9%	$2,342.0	$10,741.7	70.5%	$7,572.9	$.0	$3,168.8	$.0	$3,168.8	100.0%	$3,168.8	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR2001	Change Rooms	2023	$3,802.1	$.0	$.0	$3,802.1	17.3%	$657.8	$3,144.3	71.2%	$2,238.8	$.0	$905.6	$.0	$905.6	100.0%	$905.6	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR2001	Furniture / Fittings / Equipment	2023	$693.5	$.0	$.0	$693.5	17.3%	$120.0	$573.5	71.2%	$408.3	$.0	$165.2	$.0	$165.2	100.0%	$165.2	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR2001	Land / Site Works / Professional Fees	2023	$6,130.9	$.0	$.0	$6,130.9	17.3%	$1,060.6	$5,070.2	71.2%	$3,610.0	$.0	$1,460.2	$.0	$1,460.2	100.0%	$1,460.2	0.0%	$.0	0.0%	$.0	0.0%	$.0
	SUBTOTAL		$31,985.1	$.0	$.0	$31,985.1	17.3%	$5,529.2	$26,455.9	71.2%	$18,844.6	$.0	$7,611.4	$.0	$7,611.4	100.0%	$7,611.4	0.0%	$.0	0.0%	$.0	0.0%	$.0
	Neighbourhood Community Centre (North)																					
DC19PR2002	Community Centre / Gymnasium	2025	$10,004.3	$.0	$.0	$10,004.3	11.3%	$1,130.5	$8,873.8	78.4%	$6,957.1	$.0	$1,916.8	$.0	$1,916.8	100.0%	$1,916.8	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR2002	Furniture / Fittings / Equipment	2025	$279.1	$.0	$.0	$279.1	11.3%	$31.5	$247.6	78.4%	$194.1	$.0	$53.5	$.0	$53.5	100.0%	$53.5	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR2002	Land / Site Works / Professional Fees	2025	$3,168.0	$.0	$.0	$3,168.0	11.3%	$358.0	$2,810.1	78.4%	$2,203.1	$.0	$607.0	$.0	$607.0	100.0%	$607.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
	SUBTOTAL		$13,451.5	$.0	$.0	$13,451.5	11.3%	$1,520.0	$11,931.5	78.4%	$9,354.3	$.0	$2,577.2	$.0	$2,577.2	100.0%	$2,577.2	0.0%	$.0	0.0%	$.0	0.0%	$.0
	Neighbourhood Community Centre (Central)																					
DC19PR2003	Community Centre / Gymnasium	2027	$10,004.3	$.0	$.0	$10,004.3	9.1%	$910.4	$9,093.9	83.9%	$7,629.8	$.0	$1,464.1	$.0	$1,464.1	100.0%	$1,464.1	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR2003	Furniture / Fittings / Equipment	2027	$279.1	$.0	$.0	$279.1	9.1%	$25.4	$253.7	83.9%	$212.9	$.0	$40.8	$.0	$40.8	100.0%	$40.8	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR2003	Land / Site Works / Professional Fees	2027	$3,168.0	$.0	$.0	$3,168.0	9.1%	$288.3	$2,879.7	83.9%	$2,416.1	$.0	$463.6	$.0	$463.6	100.0%	$463.6	0.0%	$.0	0.0%	$.0	0.0%	$.0
	SUBTOTAL		$13,451.5	$.0	$.0	$13,451.5	9.1%	$1,224.1	$12,227.4	83.9%	$10,258.8	$.0	$1,968.6	$.0	$1,968.6	100.0%	$1,968.6	0.0%	$.0	0.0%	$.0	0.0%	$.0

Parks & Recreation Services
TABLE E-16 Facilities Rate Calculation Cont'd

Planning horizon for this component : **2021-2028**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share %	Non-growth share benefit	Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - Improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL %	RESIDENTIAL $	NON - RESIDENTIAL Commercial %	NON - RESIDENTIAL Commercial $	NON - RESIDENTIAL Institutional %	NON - RESIDENTIAL Institutional $	NON - RESIDENTIAL Industrial %	NON - RESIDENTIAL Industrial $
	(all $'s in ,000's)		*(1)*	*(2)*	*(3)*	*(4) (1) - sum(2,3)*	*(5)*	*(6) (4) * (5)*	*(7) (4) - (6)*	*(8)*	*(9) (7) * (8)*	*[(7) - (9)] * 10%*	*(10)*	*(11) (7) - sum(9,10)*	*(12)*	*(13) (11) - (12)*	*(14)*	*(15) (13) * (14)*	*(16)*	*(17) (13) * (16)*	*(18)*	*(19) (13) * (18)*	*(20)*	*(21) (13) * (20)*
DC19PR1100	**Field Houses**																						
DC19PR2004	Future Field House (North)	2021	$500.0	$.0	$.0	$500.0	0.0%	$.0	$500.0	33.0%	$165.0	$.0	$335.0	$.0	$335.0	100.0%	$335.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR2005	Future Field House (South)	2022	$500.0	$.0	$.0	$500.0	0.0%	$.0	$500.0	33.0%	$165.0	$.0	$335.0	$.0	$335.0	100.0%	$335.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR2006	Future Field House (West)	2024	$500.0	$.0	$.0	$500.0	0.0%	$.0	$500.0	33.0%	$165.0	$.0	$335.0	$.0	$335.0	100.0%	$335.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR2007	Future Field House (East)	2026	$500.0	$.0	$.0	$500.0	50.0%	$250.0	$250.0	33.0%	$82.5	$.0	$167.5	$.0	$167.5	100.0%	$167.5	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR2008	Future Field House (West)	2028	$500.0	$.0	$.0	$500.0	50.0%	$250.0	$250.0	33.0%	$82.5	$.0	$167.5	$.0	$167.5	100.0%	$167.5	0.0%	$.0	0.0%	$.0	0.0%	$.0
	SUBTOTAL		$2,500.0	$.0	$.0	$2,500.0	20.0%	$500.0	$2,000.0	33.0%	$660.0	$.0	$1,340.0	$.0	$1,340.0	100.0%	$1,340.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR1200	**Spray Pads**																						
DC14PR0011	Growth-related Spray Pad (Riverbend)	2022	$500.0	$.0	$.0	$500.0	0.0%	$.0	$500.0	0.0%	$.0	$.0	$500.0	$.0	$500.0	100.0%	$500.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR2009	Growth-related Spray Pad (South)	2023	$500.0	$.0	$.0	$500.0	0.0%	$.0	$500.0	0.0%	$.0	$.0	$500.0	$.0	$500.0	100.0%	$500.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR2010	Growth-related Spray Pad (North)	2025	$500.0	$.0	$.0	$500.0	0.0%	$.0	$500.0	0.0%	$.0	$.0	$500.0	$.0	$500.0	100.0%	$500.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
DC19PR2011	Growth-related Spray Pad (South)	2027	$500.0	$.0	$.0	$500.0	0.0%	$.0	$500.0	0.0%	$.0	$.0	$500.0	$.0	$500.0	100.0%	$500.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
	SUBTOTAL		$2,000.0	$.0	$.0	$2,000.0	0.0%	$.0	$2,000.0	0.0%	$.0	$.0	$2,000.0	$.0	$2,000.0	100.0%	$2,000.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
	Debentures																						
	PORTION OF GROWTH PROJECTS FINANCED WITH DEBT (PRINCIPLE)		$11,497.1			$11,497.1			$11,497.1				$11,497.1	$.0	$11,497.1	100.0%	$11,497.1	0.0%	$.0	0.0%	$.0	0.0%	$.0
TOTAL			**$112,424.7**	**$.0**	**$25,955.7**	**$86,469.0**	**11.6%**	**$10,069.3**	**$76,399.7**	**62.9%**	**$48,017.8**	**$.0**	**$28,381.9**	**$.0**	**$28,381.9**	**100.0%**	**$28,381.9**	**0.0%**	**$.0**	**0.0%**	**$.0**	**0.0%**	**$.0**

Supplement A: Existing Service Standard Limitation		
Existing Service Standard Measure (per capita)	$	865.96
Net 8 year Growth Projection		39,300
Maximum Eligible Amount for DC Rate Calculation	$	34,032,228
Growth Needs	$	28,381,894
Total Excess of Growth Needs	$	-

Development Charge Rate Calculation (Pre-Financing Cost)

		Residential		Commercial		Institutional		Industrial	
Less: Uncommitted Reserve Fund Balance	$738.1	100.0%	$738.1	0.0%	$.0	0.0%	$.0	0.0%	$.0
Total net cost eligible for DC rate calculation purposes	$27,643.8	100.0%	$27,643.8	0.0%	$.0	0.0%	$.0	0.0%	$.0
Divided By: Total Gross Growth Projections			42,307		260,742		335,361		252,919
Calculated DC Rate - Pre-Financing			$ 653.41 /person		$ - /sq. m.		$ - /sq. m.		$ - /sq. m.

Notes:

1) The double ice pad for the Southeast Multi-Purpose Recreation Centre is classified as 100% non-growth as it is assumed these ice surfaces will replace facilities being decommissioned (Farqharson, Glen Cairn). That is, these parts of the new facilities will not provide new capacity but rather replace existing capacity.

2) Allocation of benefit to future growth has been based on the percentage of population in the Neighbourhood Community Centre service area beyond 2028 to the estimated Neighbourhood Community Centre service area population in 2028.

3) Non-growth share reflects the percentage of population in the Neighbourhood Community Centre service area at the initiation of collection of DC's in relation to the population in the Neighbourhood Community Centre service area estimated at full build-out.

4) The cost of furniture/fittings/equipment, change rooms and land/infrastructure/site works/architectural fees has been allocated among the three components (arena, community centre, pool) that benefit from these 'common' expenses. The growth/non-growth splits for these components of the facility are based on the growth share of the double ice pad arena, community centre and gymnasium in relation to the gross cost of all three components.

Pre- Financing Cost Residential Rates:		*Pre Financing*
Single Family Dwelling	3.12	$ 2,038.64
Multiple unit dwelling	2.11	$ 1,378.69
Apartment - bach. & 1 bed	1.38	$ 901.70
Apartment - ≥ 2 bedroom	1.87	$ 1,221.87

Parks & Recreation Services
TABLE E-17 Cash Flow Analysis & Final Rate Calculation

($000's)

			FINAL RESULT		2021	2022	2023	2024	2025	2026	2027	2028	Total
		Pre-Financing DC Rate	Post-Financing DC Rate	% Collected assumption									
Planning Horizon - yrs	8												
Growth - Residential (Persons In New Housing)	42,307	$ 1,204.14	$ 1,275.85	100%	5,288.4	5,288.4	5,288.4	5,288.4	5,288.4	5,288.4	5,288.4	5,288.4	42,307.0
Growth - Non-Res. (sq. m.)													
Commercial	260,742	$ 0.21	$ 0.22	0%	32,592.8	32,592.8	32,592.8	32,592.8	32,592.8	32,592.8	32,592.8	32,592.8	260,742.0
Institutional	335,361	$ 0.13	$ 0.13	0%	41,920.1	41,920.1	41,920.1	41,920.1	41,920.1	41,920.1	41,920.1	41,920.1	335,361.0
Industrial	252,919	$ 0.09	$ 0.09	0%	31,614.9	31,614.9	31,614.9	31,614.9	31,614.9	31,614.9	31,614.9	31,614.9	252,919.0
Total Non-Res.	849,022				106,127.8	106,127.8	106,127.8	106,127.8	106,127.8	106,127.8	106,127.8	106,127.8	849,022.0
Reserve Fund Projections:													
Opening Surplus / <Deficit>					$1,411.9	$577.2	$196.4	-$13,051.4	-$10,356.4	-$11,034.5	-$7,917.7	-$7,015.8	$1,411.9
Revenues - Development Charge Collections													
Residential					$6,747.2	$6,747.2	$6,747.2	$6,747.2	$6,747.2	$6,747.2	$6,747.2	$6,747.2	$53,977.5
Non-Res.													
Commercial					$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0
Institutional					$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0
Industrial					$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0
Total Non-Res.					$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0
Total revenues					$6,747.2	$6,747.2	$6,747.2	$6,747.2	$6,747.2	$6,747.2	$6,747.2	$6,747.2	$53,977.5
Development Charge draws - calculated on separate page					$7,599.7	$7,134.9	$19,823.7	$3,740.4	$7,140.4	$3,377.9	$5,646.4	$2,998.5	$57,461.9
Closing surplus / <deficit> before interest					$559.5	$189.5	-$12,880.1	-$10,044.6	-$10,749.6	-$7,665.3	-$6,816.9	-$3,267.2	-$2,072.5
Non-inflationary interest revenue /<expense>													
on savings	1.80%				$17.7	$6.9							$24.6
on borrowings	2.70%						-$171.2	-$311.8	-$284.9	-$252.4	-$198.9	-$138.8	-$1,358.1
Closing surplus / <deficit>					$577.2	$196.4	-$13,051.4	-$10,356.4	-$11,034.5	-$7,917.7	-$7,015.8	-$3,406.0	-$3,406.0

Target which reflects growth costs incurred in the forecast period and recoverable from future growth -$3,406.0

Explanatory note

This worksheet projects future activity in this reserve fund. It ultimately determines the rates necessary to recover all costs intended for recovery from growth (including financing costs). The deficit in the fund at the end of the planning horizon reflects costs intended for recovery from future growth.

Other Information:	Pre	Post
Residential share	100%	100%
Non-residential		
Commercial	0%	0%
Institutional	0%	0%
Industrial	0%	0%

APPENDIX F:

Transit Services

Transit Services

Background

Under the 2021 DC Study Update, the same methodologies were used to determine the Transit Service projects as were applied under the 2019 DC Study. The London Transit Commission (LTC) is charged with the delivery of public transit services for the citizens of London. The present conventional service is a fixed route modified radial service. There are 41 routes plus one community bus operation with 4 routings defined by day. While service levels vary by route, by time of day and by day of week, overall service periods cover 18 hours a day on Monday to Saturday, and 15.5 hours a day on Sundays and Statutory Holidays. In 2019, a total of 627,500 revenue service hours were provided annually to accommodate the 22.9 million annual passenger trips.

Efficient high quality public transit services contribute to the environmental health and economic competitiveness of a City, which benefits the entire community. Public transit services:

- provide Londoners with opportunity, choice and access to the community and employment opportunities;
- have a positive impact on the environment in terms of air quality;
- enable city-building by linking growth nodes and activity/employment centres;
- support the retention of natural green space that would otherwise be used to build new roads and/or parking lots in concert with effective land use planning;
- are a critical part of the solution to mitigate the negative economic and environmental impact of traffic congestion whether the negative impact be on business or on the environment; and
- are supportive of building and maintaining a healthy downtown.

Rapid Transit (RT)

In 2012, Council approved a Transportation Master Plan (TMP) for the City of London. The 2012 TMP was an integrated plan that sought to improve mobility for residents of the City by providing viable choices through all modes of travel. The findings suggested that investments in transit infrastructure could significantly increase the share of non-automobile trip making and support a viable rapid transit system in the City. The approved TMP also established an intensification target for future residential growth to support investments in transit infrastructure and to defer a large number of arterial road projects that would be required without a rapid transit system.

The identified RT network is located along major employment areas, nodes and activity centres across the city, including shopping centres, post-secondary institutions, hospitals and other medical centres and the downtown. The network builds upon the London Plan adopted by Council in June 2016, the Rapid Transit Master Plan approved by Council in July 2017, and the recommended design for the RT project as outlined in the draft Environmental Project Report that was approved by Council in May 2018.

The LTC will purchase and operate future transit vehicles, buildings and structures associated with the RT system. Over the planning period, it is anticipated that the RT project will be constructed and in service.

Level of Service

Amendments to the *Development Charges Act*, which came into force on January 1, 2016, have several implications for the treatment of transit services. In particular, capital costs for transit services are no longer subject to a 10% statutory deduction, and transit capital programs are no longer constrained by a ten year historical level of service. In accordance with the Act, the Transportation Background Study prepared by IBI Group and Transit Services Technical Appendix prepared by Hemson Consulting present the following:

- the calculations that were used to prepare the estimate for the planned level of service for the Transit Services;
- an identification of the portion of the total estimated capital cost relating to the transit service that would benefit the anticipated development over the planning period immediately following the preparation of the Development Charge (DC) Study;
- an identification of the anticipated excess capacity that would exist at the end of the planning period immediately following the preparation of the DC Study;
- an assessment of ridership forecasts for all modes of transit services proposed to be funded by the DC over the planning period immediately following the preparation of the DC Study, categorized by development types, and whether the forecasted ridership will be from existing or planned development; and
- an assessment of the ridership capacity for all modes of transit services proposed to be funded by the DC over the planning period immediately following the preparation of the DC Study.

Growth Allocations

As part of the 2019 London DC Transportation Background Study, population and employment growth was allocated to traffic zones throughout the City. This information was used to estimate existing and future transit ridership demand. The capital needs projections are based on the recommendations contained in the Rapid Transit Master Plan and draft Environmental Project Report.

Growth Needs Projections

a) Fleet

Over the planning period, the RT will be completed and in service. A total of 28 articulated buses will be purchased to accommodate growth for RT purposes. It is anticipated that 73.3% of the $29 million cost of these buses will be paid for from federal and provincial grants. The conventional fleet is also planning for an increase in buses to accommodate growth.

Based on planned transit ridership growth over the planning horizon, a benefit to existing development of 60% is allocated that reflects the amount of additional transit trips attributed to the existing population. The remaining 40% are attributed to the City's ten year growth in population and employment. As planned bus fleet additions within the planning horizon have an immediate relationship to service needs when placed into service, and as the City will continue to add to its transit fleet as ridership grows, it is unnecessary to attribute a Future Growth Benefit share to transit fleet items.

b) Facilities

To accommodate the increase in transit fleet for the RT and conventional bus networks, the LTC has determined that a new transit facility or expansion of an existing maintenance facility will be required. A total of $13 million is allocated to this project that is timed for 2026. It is anticipated that 73.3% of the cost of facilities, including the maintenance facility and RT stops noted below, will be paid for from federal and provincial grants.

The costs of RT stops to support the expansion of the transit network are also included in the Transit program. These stops are required to provide access and accommodate transfers between transit routes. Thirty-eight accessible transit stops are proposed with enclosed areas and real-time information.

Using the ridership-based approach, the change in mode share between 2019 and 2039 equates to an additional 57,300 daily transit trips. Of these, 32,400 trips (57%) will be made by existing residents and workers. As such, a Non-Growth share of 57% was applied to the cost of the maintenance facility and RT stops.

The future growth benefit for the 2021 DC Study Update is consistent with the 2019 DC Study since the end of the planning period has remained unchanged. For the 2019 DC Study, a future growth benefit of 18% was applied to the cost of the maintenance facility and RT stops.

Allocation of Growth Costs - Residential / Non–Residential

Transit service demands have been allocated to Residential and Non-Residential growth on the basis of population growth vs. employment growth for the time horizon of this DC Study.

Final Costs for DC Rate Calculation

The required Transit projects form the basis for determining DCs for the CSRF and represent the numerator in the rate calculation. The final total costs calculated for Transit projects are shown in Tables F-1 and F-2.

Financing Costs

Table F-3 was produced to simulate cash flows for CSRF funded Transit projects for the purpose of calculating the final DC rate inclusive of financing costs. Forecasting cash flow and financing costs involved:

a) Starting with the 2021 opening balance, which reflects accumulated uncommitted funds for growth projects identified in past DC Studies;
b) Projecting DC revenues using the pre-finance rate;
c) Incorporating DC drawdowns in the cash flow projection based on the growth projects identified in the DC Study period;
d) Incorporating provisions for debt payments for previously approved commitments on growth works funded by debt; and
e) Estimating annual interest revenues to be earned and/or financing costs to be incurred due to fund deficits throughout the planning horizon.

Any deficit in the cash flow analysis at the end of the planning period equates to the amounts of the expenditures incurred during the planning period to be recovered from growth in the future (i.e. the post-period benefit). All figures are un-inflated and were determined for the period immediately preceding the DC Study. The rates generated from this cash flow analysis reflect the appropriate cost recovery from growth for the planning horizon.

DC TRANSPORTATION BACKGROUND STUDY: TRANSIT SERVICES TECHNICAL APPENDIX

HEMSON Consulting Ltd.

September 2018

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I INTRODUCTION

The City of London is currently planning for a new Bus Rapid Transit (BRT) network, with construction slated to begin in 2020. Costs associated with this planned transit network were previously included within the City's 2014 Development Charges Background Study. However, in light of recent *Development Charges Act* (DCA) amendments as well as recent refinements to cost estimations associated with this new infrastructure, the City has undertaken a process to re-examine its approach to the calculation of Transit DCs. Hemson Consulting Ltd. was retained to assist the City and IBI Group in determining an appropriate approach.

This Technical Appendix to the City of London's Transportation Development Charges (DC) Background Study (as prepared by IBI Group) provides background information related to the approach and methodologies used in the calculation of development charges for Transit services. It outlines recent changes to the *Development Charges Act* and their implications with respect to Transit services, as well as Hemson's recommended approach to the calculation of Transit DCs, particularly in regards to the calculation of service levels, benefit-to-existing shares, and post-period shares.

II RECENT *DEVELOPMENT CHARGES ACT* AMENDMENTS

This section provides a brief overview of recent changes to the DCA that have implications for the treatment of Transit services DCs in the City of London.

A. OVERVIEW OF RELEVANT POLICY CHANGES

Amendments to the DCA and *Ontario Regulation 82/98*, which came into force on January 1, 2016, have several implications for the treatment of Transit services. The following amendments are intended to assist municipalities in funding improvements to their transit networks:

- Capital costs for Transit services are no longer subject to a 10% legislated discount; and
- The Transit capital program is no longer constrained by a 10-year historical level of service. Rather, the increase in the need for the service is restricted by a *planned level of service* over the 10-year period following preparation of the DC background study.

B. IMPLICATIONS FOR THE CITY OF LONDON

While the recent amendments to the DCA have lifted some restrictions around the recovery of Transit-related capital costs, municipalities face new restrictions in the calculation of the in-period DC recoverable share of costs. Most importantly, a ridership-based approach is often necessary in calculating the 10-year planned level of service. A ridership-based approach is particularly suitable where a new rapid transit network is planned, as these investments typically contribute to changing travel behaviours in both the existing and future population.

A number of municipalities have implemented a ridership-based approach to their Transit DC calculations to achieve compliance with the new DCA. In Hemson's experience, ridership forecasts can lead to relatively high calculated benefit-to-

existing (BTE) shares, particularly where rapid transit networks are proposed within developed urban areas with a significant existing population, similar to the City of London's planned BRT network.

Further, under the DCA the planned level of service calculation must also account for any excess capacity or benefit to development that is expected to occur beyond the legislated 10-year benefitting horizon. This share of costs must be allocated to the post-period share and will not be recovered through the City's 2019 DC by-law. Due to the forward-looking, long-term nature of most rapid transit projects, it is common for a significant share of the costs to be allocated for post-period recovery.

III APPROACH TO THE CALCULATION OF TRANSIT DEVELOPMENT CHARGES

This section details the approach recommended by Hemson and adopted by the City of London in the calculation of Transit DCs, including the allocation of BRT-related costs between Roads and Transit services as well as the calculation of DC-eligible shares for Transit services.

A. SERVICE ALLOCATION

The City of London's 2014 DC Background Study included all BRT-related road works within the Roads service category, while new buses and related equipment, bus storage facilities, and transit terminals were considered under the Transit service category. Hemson reviewed this approach for its suitability as part of the 2019 DC Transportation Background Study.

In Hemson's view, it is appropriate to continue to fund the BRT-related road works through the Roads capital program. This approach continues to be relatively common among comparable municipalities (e.g. Durham Region, York Region, Oakville, Mississauga, Ottawa). It is recommended that BRT stops be included under the Transit capital program, along with the planned maintenance facility and bus fleet additions.

It is noted that in addition to the Roads and Transit service categories, the City of London has established a new category, Operation Centres, under the 2019 DC Transportation Background Study. The Operation Centres service category is to include the cost of the Transportation Management Centre associated with the City's planned Transportation Intelligent Mobility Management System (TIMMS), while associated equipment and installation costs will fall under the Roads service category.

B. CALCULATION OF DC-ELIGIBLE SHARES FOR TRANSIT SERVICES

The City's planned BRT network is intended to lead to significant long-term service improvements for both existing and future development. As such, in Hemson's view a ridership-based approach to the calculation of benefit-to-existing (BTE) and post-

period benefit (PPB) shares is encouraged for transit investments with long-term benefits (e.g. maintenance facilities, terminals). A number of municipalities have adopted such an approach following the recent DCA amendments, including the Region of Waterloo, the City of Ottawa, York Region, and the City of Toronto.

The ridership-based approach recommended for the City of London considers the overall anticipated growth in transit ridership over an appropriate timeframe. For example, it is anticipated that the City's transit mode share will grow from an estimated 8.6% in 2019 to 11.5% in 2039. The DC calculation would consider:

1. The share of this ridership growth attributed to existing development. This would become to BTE share and be excluded from the DC calculation, as described below:

1.1 ***A growth in transit ridership from 8.6% in 2019 to 11.5% in 2039 translates to approximately 32,400 additional transit trips from the existing (2019) population. This represents approximately 57% of the total 2019-2039 growth in ridership of approximately 57,300. The remaining 43%, or 24,900 trips, are attributed to the City's 2019-2039 growth in population and employment. The BTE share is therefore calculated at 57%.***

2. The share of ridership growth attributed to development anticipated within the legislated 10-year benefitting horizon for Transit services, or from 2019 to 2028 in the case of London's 2019 Transportation DC Background Study. This share would become the amount eligible for recovery through the 2019 DC by- law.

1.2 ***Of the total forecast growth in population and jobs from 2019 to 2039, approximately 57% is anticipated to occur within the first 10-year period. This would translate to approximately 14,300 transit trips of the 24,900 total transit trips attributed to 2019-2039 population and employment growth. Of total growth in ridership to 2039 (57,300), the 14,300 transit trips represent approximately 25%. Therefore the share eligible for recovery through the 2019 DC by-law would be 25%.***

3. The share of ridership growth attributed to development anticipated beyond the 10-year benefitting horizon (e.g. from 2029 to 2039 as per the mode share forecast). This share would become the PPB share and would be made eligible for recovery through future DC bylaws.

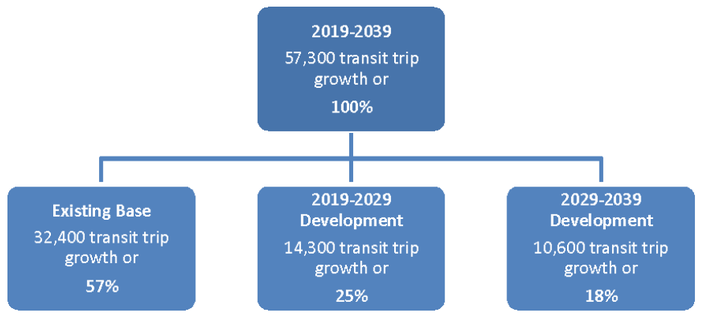
1.3 ***Of the total forecast growth in population and jobs from 2019 to 2039, 43% is anticipated to occur from 2029 to 2039. This would translate to 10,600 transit trips of the 24,900 total transit trips attributed to 2019-2039 population and employment growth. Of total 2039 ridership (57,300), the 10,600 transit trips represent approximately 18%. Therefore the PPB share is calculated at 18%.***

This analysis is shown in Table 1 and summarized in Figure 1.

Table 1: Transit Cost Allocations – BRT Facilities and Stops

	2019	2039	2019 to 2039
London total trips (all modes)	1,125,200	1,342,500	
Transit Trips	96,800	154,100	57,300
Transit Mode Share	8.6%	11.5%	
Existing development transit trips based on future transit mode share	129,200 (1,125,200 x 11.5%)		
Increase in existing development transit trips	32,400 (129,200 – 96,800)		
Pre-2019 share (BTE) of total new transit trips	57% (32,400 / 57,300)		
2019 to 2029 share (DC-eligible)	25% [(57,300 – 32,400)/57,300] x 57%		
2029 to 2039 share (PPB)	18% [(57,300 – 32,400)/57,300] x 43%		

Figure 1: Demonstration of Ridership Allocations



C. TREATMENT OF TRANSIT FLEET ADDITIONS

It is noted that while the long-term, forward looking approach described above under Section B is appropriate for items such as BRT stops, transit terminals and maintenance facilities, a modified approach is often appropriate for bus fleet additions. Planned bus fleet additions within the 10-year benefitting horizon are more likely to have an immediate relationship with growing service level requirements over the same 10-year period. Accordingly, the City is likely to continue to add to its transit fleet as ridership continues to grow beyond 2029. As such, in Hemson's view it is unnecessary to attribute a PPB share to transit fleet items, and as a result a larger proportion of the costs for transit fleet additions may be considered DC-eligible as compared with that of BRT stops, terminals, and maintenance facilities.

As these fleet additions are critical to the BRT network, they are likely to benefit the existing population to a significant extent. A similar approach to the calculation of a BTE shares as described above (Section B) is recommended. It is noted that the calculated BTE share for fleet additions differs slightly from the share calculated in Section B. This is due to the shorter overall time period considered for the ridership forecast used in the calculation (i.e. to 2029 rather than to 2039). The fleet BTE share of 60% is calculated as follows:

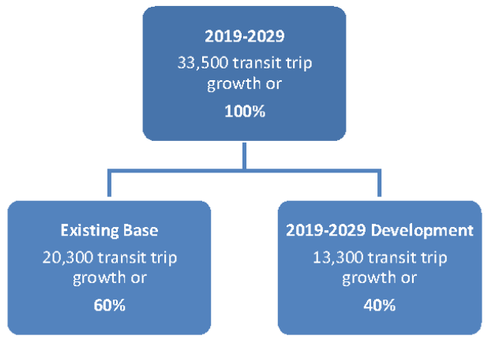
1.4 ***A growth in transit ridership from 8.6% in 2019 to 10.4% in 2029 translates to approximately 20,300 additional transit trips from the existing (2019) population. This represents approximately 60% of the total 2019-2029 growth in ridership of approximately 33,500. The remaining 40%, or13,300 trips, are attributed to the City's 2019-2029 growth in population and employment. The BTE share is therefore calculated at 60% and the DC- eligible share is calculated at 40%.***

This analysis is shown in Table 2 and summarized in Figure 2.

Table 2: Transit Cost Allocations – Transit Fleet

	2019	2029	2019 to 2029
London total trips (all modes)	1,125,200	1,252,700	
Transit Trips	96,800	130,300	33,500
Transit Mode Share	8.6%	10.4%	
Existing development transit trips based on future transit mode share	117,000 (1,125,200 x 10.4%)		
Increase in existing development transit trips	20,300 (117,000 – 96,800)		
Pre-2019 share (BTE) of total new transit trips	60% (20,300 / 33,500)		
2019 to 2029 share (DC-eligible)	40% (13,300 / 33,500)		
Post-2029 share (PPB)	0%		

Figure 2: Demonstration of Ridership Allocations



Transit Services
TABLE F-1 Facilities Rate Calculation

Planning horizon for this component : **2021-2028**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share %	Non-growth share benefit	Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL %	RESIDENTIAL $	NON - RESIDENTIAL Commercial %	Commercial $	Institutional %	Institutional $	Industrial %	Industrial $
	(all $'s in ,000's)		(1)	(2)	(3)	(4) (1) - sum(2,3)	(5)	(6) (4) * (5)	(7) (4) - (6)	(8)	(9) (7) * (8)	(10) [(7) - (9)] * 10%	(11) (7) - sum(9,10)	(12)	(13) (11) - (12)	(14)	(15) (13) * (14)	(16)	(17) (13) * (16)	(18)	(19) (13) * (18)	(20)	(21) (13) * (20)
	Facilities																					
DC19TS1001	RT Maintenance Facility	2026	$13,005.0	$9,536.6	$.0	$3,468.4	18.0%	$624.3	$2,844.1	57.0%	$1,621.1	$.0	$1,223.0	$.0	$1,223.0	73.1%	$894.0	12.2%	$149.2	9.6%	$117.4	5.1%	$62.4
DC19TS1002	RT- Downtown Loop - Stops	2021	$4,064.1	$2,980.2	$.0	$1,083.9	18.0%	$195.1	$888.8	57.0%	$506.6	$.0	$382.2	$.0	$382.2	73.1%	$279.4	12.2%	$46.6	9.6%	$36.7	5.1%	$19.5
DC19TS1003	RT - East London Link - Stops	2022	$8,323.2	$6,103.4	$.0	$2,219.8	18.0%	$399.6	$1,820.2	57.0%	$1,037.5	$.0	$782.7	$.0	$782.7	73.1%	$572.2	12.2%	$95.5	9.6%	$75.1	5.1%	$39.9
DC19TS1004	RT - North Connection - Stops	2026	$8,534.5	$6,258.4	$.0	$2,276.2	18.0%	$409.7	$1,866.5	57.0%	$1,063.9	$.0	$802.6	$.0	$802.6	73.1%	$586.7	12.2%	$97.9	9.6%	$77.0	5.1%	$40.9
DC19TS1005	RT - Wellington Gateway - Stops	2023	$9,347.3	$6,854.4	$.0	$2,492.9	18.0%	$448.7	$2,044.2	57.0%	$1,165.2	$.0	$879.0	$.0	$879.0	73.1%	$642.6	12.2%	$107.2	9.6%	$84.4	5.1%	$44.8
DC19TS1006	RT - West Connection - Stops	2025	$5,283.3	$3,874.2	$.0	$1,409.1	18.0%	$253.6	$1,155.4	57.0%	$658.6	$.0	$496.8	$.0	$496.8	73.1%	$363.2	12.2%	$60.6	9.6%	$47.7	5.1%	$25.3
	SUBTOTAL		$48,557.4	$35,607.2	$.0	$12,950.3	18.0%	$2,331.0	$10,619.2	57.0%	$6,053.0	$.0	$4,566.3	$.0	$4,566.3	73.1%	$3,337.9	12.2%	$557.1	9.6%	$438.4	5.1%	$232.9
	Debentures																					
	PORTION OF GROWTH PROJECTS FINANCED WITH DEBT (PRINCIPLE)		$.0			$.0			$.0				$.0		$.0	73.1%	$.0	12.2%	$.0	9.6%	$.0	5.1%	$.0
TOTAL			**$48,557.4**	**$35,607.2**	**$.0**	**$12,950.3**	**18.0%**	**$2,331.0**	**$10,619.2**	**57.0%**	**$6,053.0**	**$.0**	**$4,566.3**	**$.0**	**$4,566.3**	**73.1%**	**$3,337.9**	**12.2%**	**$557.1**	**9.6%**	**$438.4**	**5.1%**	**$232.9**

1) Rate calculations assume committed funding from Provincial/Federal sources.

2) Allocation of benefit to future growth has been based on the portion of ridership beyond 2028 attributed to population and employment growth.

3) Non-growth share based on relative change in mode share for existing development. Calculation considers transit mode share growth for 20 year period (consistent with the 2019 DC Study).

4) Residential/Institutional/Commercial/Industrial splits based on ratio of Population to Employment growth for the planning horizon for this service.

Development Charge Rate Calculation (Pre-Financing Cost)		**Residential**		**Commercial**		**Institutional**		**Industrial**
Less: Uncommitted Reserve Fund Balance	$2,561.9	72.7%	$1,862.0	11.8%	$301.8	9.2%	$235.2	6.4%	$162.8
Total net cost eligible for DC rate calculation purposes	$2,004.4	73.6%	$1,475.9	12.7%	$255.3	10.1%	$203.1	3.5%	$70.0
Divided By: Total Gross Growth Projections			42,307		260,742		335,361		252,919
Calculated DC Rate - Pre-Financing			**$ 34.89** /person		**$ 0.98** /sq. m.		**$ 0.61** /sq. m.		**$ 0.28** /sq. m.

Pre- Financing Cost Residential Rates:

		Pre Financing
Single Family Dwelling	3.12	$ 108.85
Multiple unit dwelling	2.11	$ 73.61
Apartment - bach. & 1 bed	1.38	$ 48.14
Apartment - ≥ 2 bedroom	1.87	$ 65.24

Transit Services
TABLE F-2 Vehicles Rate Calculation

Planning horizon for this component : **2021-2028**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																	Commercial		Institutional		Industrial	
									%	benefit					%	$	%	$	%	$	%	$
	(all $'s in ,000's)		(1)	(2)	(3)	(4) (1) - sum(2,3)	(5)	(6) (4) * (5)	(7) (4) - (6)	(8)	(9) (7) * (8)	(10) [(7) - (9)] * 10%	(11) (7) - sum(9,10)	(12)	(13) (11) - (12)	(14)	(15) (13) * (14)	(16)	(17) (13) * (16)	(18)	(19) (13) * (18)	(20)	(21) (13) * (20)
	Vehicles																					
DC19TS2001	RT Transit	2023-2026	$29,131.2	$21,361.9	$.0	$7,769.3	0.0%	$.0	$7,769.3	60.0%	$4,661.6	$.0	$3,107.7	$.0	$3,107.7	73.1%	$2,271.7	12.2%	$379.1	9.6%	$298.3	5.1%	$158.5
DC19TS2002	Conventional Transit	2021-2028	$21,948.4	$16,094.8	$.0	$5,853.6	0.0%	$.0	$5,853.6	60.0%	$3,512.2	$.0	$2,341.5	$.0	$2,341.5	73.1%	$1,711.6	12.2%	$285.7	9.6%	$224.8	5.1%	$119.4
	SUBTOTAL		$51,079.6	$37,456.7	$.0	$13,622.9	0.0%	$.0	$13,622.9	60.0%	$8,173.8	$.0	$5,449.2	$.0	$5,449.2	73.1%	$3,983.3	12.2%	$664.8	9.6%	$523.1	5.1%	$277.9
	Debentures																					
	PORTION OF GROWTH PROJECTS FINANCED WITH DEBT (PRINCIPLE)		$.0			$.0			$.0				$.0	$.0	$.0	73.1%	$.0	12.2%	$.0	9.6%	$.0	5.1%	$.0
	TOTAL		**$51,079.6**	**$37,456.7**	**$.0**	**$13,622.9**	**0.0%**	**$.0**	**$13,622.9**	**60.0%**	**$8,173.8**	**$.0**	**$5,449.2**	**$.0**	**$5,449.2**	**73.1%**	**$3,983.3**	**12.2%**	**$664.8**	**9.6%**	**$523.1**	**5.1%**	**$277.9**

1) A total of 28 RT Transit vehicles are required from 2023-2026.
2) The total cost for Conventional Transit contained in the business case submitted to the Federal/Provincial government was $25.2m, representing 31 buses. The total costs contained in this DC Study reflects the costs over the planning horizon (2021-2028).
3) Rate calculations assume committed funding from Provincial/Federal sources.
4) No benefit to future growth identified as bus fleet additions would have an immediate relationship to service needs at the time of deployment, and the City will likely continue to add to its transit fleet as ridership grows beyond 2028.
5) Non-growth share based on relative change in mode share for existing development. Calculation considers transit mode share growth for 10 year period (consistent with the 2019 DC Study).
6) Residential/Institutional/Commercial/Industrial splits based on ratio of Population to Employment growth for the planning horizon for this service.

Development Charge Rate Calculation (Pre-Financing Cost)		Residential		Commercial		Institutional		Industrial
Less: Uncommitted Reserve Fund Balance	$4,372.4	72.7%	$3,177.9	11.8%	$515.1	9.2%	$401.4	6.4%	$277.9
Total net cost eligible for DC rate calculation purposes	$1,076.8	74.8%	$805.4	13.9%	$149.7	11.3%	$121.7	0.0%	$.0
Divided By: Total Gross Growth Projections			42,307		260,742		335,361		252,919
Calculated DC Rate - Pre-Financing			**$ 19.04**		**$ 0.57**		**$ 0.36**		**$ -**
			/person		/sq. m.		/sq. m.		/sq. m.

Pre- Financing Cost Residential Rates:		*Pre Financing*
Single Family Dwelling	3.12	$ 59.40
Multiple unit dwelling	2.11	$ 40.17
Apartment - bach. & 1 bed	1.38	$ 26.27
Apartment - ≥ 2 bedroom	1.87	$ 35.60

Transit Services
TABLE F-3 Cash Flow Analysis & Final Rate Calculation

($000's)

			FINAL RESULT		2021	2022	2023	2024	2025	2026	2027	2028	Total
	8	Pre-Financing DC Rate	Post-Financing DC Rate	% Collected assumption									
Planning Horizon - yrs													
Growth - Residential (Persons In New Housing)	42,307	$ 53.92	$ 47.03	100%	5,288.4	5,288.4	5,288.4	5,288.4	5,288.4	5,288.4	5,288.4	5,288.4	42,307.0
Growth - Non-Res. (sq. m.)													
Commercial	260,742	$ 1.55	$ 1.35	100%	32,592.8	32,592.8	32,592.8	32,592.8	32,592.8	32,592.8	32,592.8	32,592.8	260,742.0
Institutional	335,361	$ 0.97	$ 0.84	100%	41,920.1	41,920.1	41,920.1	41,920.1	41,920.1	41,920.1	41,920.1	41,920.1	335,361.0
Industrial	252,919	$ 0.28	$ 0.24	100%	31,614.9	31,614.9	31,614.9	31,614.9	31,614.9	31,614.9	31,614.9	31,614.9	252,919.0
Total Non-Res.	849,022				106,127.8	106,127.8	106,127.8	106,127.8	106,127.8	106,127.8	106,127.8	106,127.8	849,022.0
Reserve Fund Projections:													
Opening Surplus / <Deficit>					$6,934.3	$6,632.4	$5,832.3	$4,115.3	$3,449.0	$2,159.4	-$1,034.5	-$1,018.6	$6,934.3
Revenues - Development Charge Collections													
Residential					$248.7	$248.7	$248.7	$248.7	$248.7	$248.7	$248.7	$248.7	$1,989.5
Non-Res.													
Commercial					$44.1	$44.1	$44.1	$44.1	$44.1	$44.1	$44.1	$44.1	$353.1
Institutional					$35.4	$35.4	$35.4	$35.4	$35.4	$35.4	$35.4	$35.4	$283.3
Industrial					$7.6	$7.6	$7.6	$7.6	$7.6	$7.6	$7.6	$7.6	$61.1
Total Non-Res.					$87.2	$87.2	$87.2	$87.2	$87.2	$87.2	$87.2	$87.2	$697.5
Total revenues					$335.9	$335.9	$335.9	$335.9	$335.9	$335.9	$335.9	$335.9	$2,687.0
Development Charge draws - calculated on separate page					$758.8	$1,247.2	$2,141.6	$1,069.6	$1,675.5	$3,539.8	$292.7	$292.7	$11,017.8
Closing surplus / <deficit> before interest					$6,511.4	$5,721.1	$4,026.6	$3,381.5	$2,109.4	-$1,044.5	-$991.3	-$975.4	-$1,396.5
Non-inflationary interest revenue /<expense>													
on savings	1.80%				$121.0	$111.2	$88.7	$67.5	$50.0	$10.0			$448.5
on borrowings	2.70%										-$27.3	-$26.9	-$54.3
Closing surplus / <deficit>					$6,632.4	$5,832.3	$4,115.3	$3,449.0	$2,159.4	-$1,034.5	-$1,018.6	-$1,002.4	-$1,002.4

Target which reflects growth costs incurred in the forecast period and recoverable from future growth -$1,002.4

Explanatory note

This worksheet projects future activity in this reserve fund. It ultimately determines the rates necessary to recover all costs intended for recovery from growth (including financing costs). The deficit in the fund at the end of the planning horizon reflects costs intended for recovery from future growth.

Other Information:	Pre	Post
Residential share	74%	74%
Non-residential		
Commercial	13%	13%
Institutional	11%	11%
Industrial	2%	2%

APPENDIX G:

Waste Diversion Services

Waste Diversion Services

Existing Service Levels

The City provides waste diversion services to its citizens through curbside recycling, multi-residential recycling, four drop-off EnviroDepots and a two stream recycling facility.

To measure the existing service standard, a comprehensive inventory and valuation of waste diversion facilities for each of the preceding ten years was completed. This valuation is necessary to provide an objective comparison of the historical service standard with the proposed needs to demonstrate that no improvement in the historical standard is being incorporated into the Development Charge (DC) rate calculations.

The inventory includes valuation of existing facilities based on the size, quality and nature of construction, land value and building contents and reflects current replacement value of Waste Diversion assets to arrive at an average per capita historical service level.

By applying this historical service level to the projected population increase, a cap on the maximum amount of money recoverable through a DC is established. The estimated capital growth costs for waste diversion exceed this historical service standard, therefore, approximately $228,000 has been removed from the rate calculation in accordance with the DCA legislation.

Approach to Planning Waste Diversion

Under the 2021 DC Study Update, the same methodologies were used to determine the Waste Diversion projects as were applied under the 2019 DC Study. In waste diversion matters, the City is guided by a Resource Recovery Strategy to maximize waste reduction, reuse, recycling and resource recovery in an economically viable and environmentally responsible manner. In September 2018, Council approved an element of this strategy, the 60% Waste Diversion Action Plan, that identifies a set of actions to achieve 60% diversion of residential waste including reducing food waste, implementing a Green Bin program and increasing recycling options for furniture and textiles.

Capital Needs

To accommodate the organic waste diversion program, the need for a processing program for organics has been identified that may result in a stand-alone organics or mixed waste processing facility. As such, Council approved a capital budget of $20 million for advanced waste diversion and/or resource recovery technologies. This is identified on Table G-2 as an Organic Waste Diversion Facility timed for 2027.

Allocation of Costs of Growth

The costs eligible for DC rate calculation purposes have been adjusted:

a) to remove the benefit to existing development. These reductions have been determined based on the portion of existing population as of 2019 in relation to the total build-out population; and
b) a portion of the costs have been deferred for inclusion in future rate calculations. These post-period benefits reflect the portion of the estimated population beyond the planning period.

Allocation of Net Costs of Growth to Growth Types

Identified capital needs are intended to solely service residential waste diversion. For this reason, 100% of growth costs have been attributed to residential growth.

Final Costs for DC Rate Calculation

The required Waste Diversion projects form the basis for determining DCs for the CSRF and represent the numerator in the rate calculation. The final total costs calculated for Waste Diversion projects are shown in Table G-2.

Financing Costs

Table G-3 was produced to simulate cash flows for CSRF funded Waste Diversion projects for the purpose of calculating the final DC rate inclusive of financing costs. Forecasting cash flow and financing costs involved:

a) Starting with projecting DC revenues using the pre-finance rate;
b) Incorporating DC drawdowns in the cash flow projection based on the growth projects identified in the planning period;
c) Incorporating provisions for debt payments for previously approved commitments on growth works funded by debt; and
d) Estimating annual interest revenues to be earned and/or financing costs to be incurred due to fund deficits throughout the planning horizon.

Any deficit in the cash flow analysis at the end of the planning period equates to the amounts of the expenditures incurred during the planning period to be recovered from growth in the future (i.e. the post-period benefit). All figures are un-inflated and were determined for the period immediately preceding the DC Study. The rates generated from this cash flow analysis reflect the appropriate cost recovery from growth for the planning horizon.

Waste Diversion Services
TABLE G-1 Facilities Service Standard

Contact Person(s) Tim Wellhauser
Unit of Measure Square Feet of Buildings
Type of Measure Quantity

Facility Name	Location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020 $/sq.ft.
Site 1 - Material Recovery Facility	3438 Manning Drive											
Materials Recycling Centre		93,657	93,657	93,657	93,657	93,657	93,657	93,657	93,657	93,657	93,657	$331
Site 2 - Oxford Street EnviroDepot	1450 Oxford Street West											
Operations Building		1176	1176	1176	1176	1176	1176	1176	1176	1176	1176	$265
Green Bin Storage Bunkers		6770	6770	6770	6770	6770	6770	6770	6770	6770	6770	$356
Site 3 - Clarke Road EnviroDepot	28 Clarke Road											
Operations Building		710	710	710	710	710	710	710	710	710	710	$200
Green Bin Storage Bunkers		6770	6770	6770	6770	6770	6770	6770	6770	6770	6770	$148
Site 4 - Hazardous and Special Waste	3502 Manning Drive											
Hazardous or Special Waste Building		3485	3485	3485	3485	3485	3485	3485	3485	3485	3485	$233
Administration Building		3049	3049	3049	3049	3049	3049	3049	3049	3049	3049	$342
Weigh Scales		436	436	436	436	436	436	436	436	436	436	$601
Equipment Services Building		1742	1742	1742	1742	1742	1742	1742	1742	1742	1742	$183
Covered Building		3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	$150
Total		121,195	121,195	121,195	121,195	121,195	121,195	121,195	121,195	121,195	121,195	

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	0.32217	0.31910	0.31608	0.31312	0.31022	0.30737	0.30359	0.29991	0.29632	0.29281

10 Year Average	
Quantity Standard per Capita	0.30810

NOTES:

Building measures provided by Facility Services division. Land values provided by Realty Services division.

Waste Diversion Services
TABLE G-1 Facilities Service Standard Cont'd

Contact Person(s) Tim Wellhauser
Unit of Measure 2020 Replacement Value ($000's)
Type of Measure Quality & Quantity

Facility Name	Location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Site 1 - Material Recovery Facility	3438 Manning Drive										
Land		$1,500.0	$1,500.0	$1,500.0	$1,500.0	$1,500.0	$1,500.0	$1,500.0	$1,500.0	$1,500.0	$1,500.0
Materials Recycling Centre		$31,000.5	$31,000.5	$31,000.5	$31,000.5	$31,000.5	$31,000.5	$31,000.5	$31,000.5	$31,000.5	$31,000.5
Site 2 - Oxford Street EnviroDepot	1450 Oxford Street West										
Land		$2,300.0	$2,300.0	$2,300.0	$2,300.0	$2,300.0	$2,300.0	$2,300.0	$2,300.0	$2,300.0	$2,300.0
Operations Building		$311.6	$311.6	$311.6	$311.6	$311.6	$311.6	$311.6	$311.6	$311.6	$311.6
Green Bin Storage Bunkers		$2,410.1	$2,410.1	$2,410.1	$2,410.1	$2,410.1	$2,410.1	$2,410.1	$2,410.1	$2,410.1	$2,410.1
Site 3 - Clarke Road EnviroDepot	28 Clarke Road										
Land		$500.0	$500.0	$500.0	$500.0	$500.0	$500.0	$500.0	$500.0	$500.0	$500.0
Operations Building		$142.0	$142.0	$142.0	$142.0	$142.0	$142.0	$142.0	$142.0	$142.0	$142.0
Green Bin Storage Bunkers		$1,002.0	$1,002.0	$1,002.0	$1,002.0	$1,002.0	$1,002.0	$1,002.0	$1,002.0	$1,002.0	$1,002.0
Site 4 - Hazardous and Special Waste	3502 Manning Drive										
Land		$1,500.0	$1,500.0	$1,500.0	$1,500.0	$1,500.0	$1,500.0	$1,500.0	$1,500.0	$1,500.0	$1,500.0
Hazardous or Special Waste Building		$812.0	$812.0	$812.0	$812.0	$812.0	$812.0	$812.0	$812.0	$812.0	$812.0
Administration Building		$1,042.8	$1,042.8	$1,042.8	$1,042.8	$1,042.8	$1,042.8	$1,042.8	$1,042.8	$1,042.8	$1,042.8
Weigh Scales		$262.0	$262.0	$262.0	$262.0	$262.0	$262.0	$262.0	$262.0	$262.0	$262.0
Equipment Services Building		$318.8	$318.8	$318.8	$318.8	$318.8	$318.8	$318.8	$318.8	$318.8	$318.8
Covered Building		$510.0	$510.0	$510.0	$510.0	$510.0	$510.0	$510.0	$510.0	$510.0	$510.0
Total		$43,611.8	$43,611.8	$43,611.8	$43,611.8	$43,611.8	$43,611.8	$43,611.8	$43,611.8	$43,611.8	$43,611.8

Population	376,180	379,804	383,428	387,052	390,676	394,300	399,200	404,100	409,000	413,900
Level of Service per Capita	$115.93	$114.83	$113.74	$112.68	$111.63	$110.61	$109.25	$107.92	$106.63	$105.37

10 Year Average	
Level of Service per Capita	$110.86

DC Eligible Amount (before adjustments)	
Net Forecast Population - 8 Year	39,300
$ per Capita	$110.86
DC Rate Eligible Amount (gross)	$4,356,798

Waste Diversion Services
TABLE G-2 Facilities Rate Calculation

Planning horizon for this component : **2021-2028**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																	Commercial		Institutional		Industrial	
									%	benefit					%	$	%	$	%	$	%	$
	(all $'s in ,000's)		(1)	(2)	(3)	(4) (1) - sum(2,3)	(5)	(6) (4) * (5)	(7) (4) - (6)	(8)	(9) (7) * (8)	(10) [(7) - (9)] * 10%	(11) (7) - sum(9,10)	(12)	(13) (11) - (12)	(14)	(15) (13) * (14)	(16)	(17) (13) * (16)	(18)	(19) (13) * (18)	(20)	(21) (13) * (20)
	Waste Diversion Facility																					
DC19WT1001	Organic Waste Diversion Facility	2027	$20,000.0	$.0	$.0	$20,000.0	20.4%	$4,080.0	$15,920.0	71.2%	$11,335.0	$.0	$4,585.0	$228.2	$4,356.8	100.0%	$4,356.8	0.0%	$.0	0.0%	$.0	0.0%	$.0
	SUBTOTAL		$20,000.0	$.0	$.0	$20,000.0	20.4%	$4,080.0	$15,920.0	71.2%	$11,335.0	$.0	$4,585.0	$228.2	$4,356.8	100.0%	$4,356.8	0.0%	$.0	0.0%	$.0	0.0%	$.0
	Debentures																					
	PORTION OF GROWTH PROJECTS FINANCED WITH DEBT (PRINCIPLE)		$.0			$.0			$.0				$.0	$.0	$.0	100.0%	$.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
TOTAL			**$20,000.0**	**$.0**	**$.0**	**$20,000.0**	**20.4%**	**$4,080.0**	**$15,920.0**	**71.2%**	**$11,335.0**	**$.0**	**$4,585.0**	**$228.2**	**$4,356.8**	**100.0%**	**$4,356.8**	**0.0%**	**$.0**	**0.0%**	**$.0**	**0.0%**	**$.0**

Supplement A: Existing Service Standard Limitation	
Existing Service Standard Measure (per capita)	$ 110.86
Net 8 year Growth Projection	39,300
Maximum Eligible Amount for DC Rate Calculation	$ 4,356,798
Growth Needs	$ 4,584,960
Total Excess of Growth Needs	$ 228,162

NOTES:
1) Estimated costs include building fees, construction, land, furniture and equipment.
2) Allocation of benefit to future growth has been based on the percentage of City population beyond 2028 to the estimated City population in 2028.
3)Non-growth share reflects the percentage of population at the initiation of collection of DC's in relation to the population estimated at full build-out.
4) Residential share of growth costs 100%. Benefit to ICI sector considered inappropriate as facility would service residential organics only.

Development Charge Rate Calculation (Pre-Financing Cost)								
			Residential		**Commercial**		**Institutional**	**Industrial**
Less: Uncommitted Reserve Fund Balance	$620.6	100.0%	$620.6	0.0%	$.0	0.0%	$.0	0.0% $.0
Total net cost eligible for DC rate calculation purposes	$3,736.2	100.0%	$3,736.2	0.0%	$.0	0.0%	$.0	0.0% $.0
Divided By: Total Gross Growth Projections			42,307		260,742		335,361	252,919
Calculated DC Rate - Pre-Financing			**$ 88.31** /person		**$ -** /sq. m.		**$ -** /sq. m.	**$ -** /sq. m.

Pre- Financing Cost Residential Rates:

		Pre Financing	*Post Financing*
Single Family Dwelling	3.12	$ 275.53	$ 260.95
Multiple unit dwelling	2.11	$ 186.34	$ 176.48
Apartment - bach. & 1 bed	1.38	$ 121.87	$ 115.42
Apartment - ≥ 2 bedroom	1.87	$ 165.14	$ 156.40

Waste Diversion Services
TABLE G-3 Cash Flow Analysis & Final Rate Calculation

($000's)

			FINAL RESULT		2021	2022	2023	2024	2025	2026	2027	2028	Total
Planning Horizon - yrs	8	Pre-Financing DC Rate	Post-Financing DC Rate	% Collected assumption									
Growth - Residential (Persons In New Housing)	42,307	$ 88.31	$ 83.64	100%	5,288.4	5,288.4	5,288.4	5,288.4	5,288.4	5,288.4	5,288.4	5,288.4	42,307.0
Growth - Non-Res. (sq. m.)													
Commercial	260,742	$ -	$ -	100%	32,592.8	32,592.8	32,592.8	32,592.8	32,592.8	32,592.8	32,592.8	32,592.8	260,742.0
Institutional	335,361	$ -	$ -	100%	41,920.1	41,920.1	41,920.1	41,920.1	41,920.1	41,920.1	41,920.1	41,920.1	335,361.0
Industrial	252,919	$ -	$ -	100%	31,614.9	31,614.9	31,614.9	31,614.9	31,614.9	31,614.9	31,614.9	31,614.9	252,919.0
Total Non-Res.	849,022				106,127.8	106,127.8	106,127.8	106,127.8	106,127.8	106,127.8	106,127.8	106,127.8	849,022.0
Reserve Fund Projections:													
Opening Surplus / <Deficit>					$620.6	$1,078.0	$1,543.7	$2,017.8	$2,500.4	$2,991.7	$3,491.8	-$1,580.6	$620.6
Revenues - Development Charge Collections													
Residential					$442.3	$442.3	$442.3	$442.3	$442.3	$442.3	$442.3	$442.3	$3,538.4
Non-Res.													
Commercial					$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0
Institutional					$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0
Industrial					$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0
Total Non-Res.					$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0	$.0
Total revenues					$442.3	$442.3	$442.3	$442.3	$442.3	$442.3	$442.3	$442.3	$3,538.4
Development Charge draws - calculated on separate page					$.0	$.0	$.0	$.0	$.0	$.0	$5,531.8	$.0	$5,531.8
Closing surplus / <deficit> before interest					$1,062.9	$1,520.3	$1,986.0	$2,460.1	$2,942.7	$3,434.0	-$1,597.7	-$1,138.3	-$1,372.8
Non-inflationary interest revenue /<expense>													
on savings	1.80%				$15.2	$23.4	$31.8	$40.3	$49.0	$57.8	$17.0		$234.5
on borrowings	2.70%											-$36.7	-$36.7
Closing surplus / <deficit>					$1,078.0	$1,543.7	$2,017.8	$2,500.4	$2,991.7	$3,491.8	-$1,580.6	-$1,175.0	-$1,175.0

Target which reflects growth costs incurred in the forecast period and recoverable from future growth: -$1,175.0

Explanatory note

This worksheet projects future activity in this reserve fund. It ultimately determines the rates necessary to recover all costs intended for recovery from growth (including financing costs). The deficit in the fund at the end of the planning horizon reflects costs intended for recovery from future growth.

Other Information:	Pre	Post
Residential share	100%	100%
Non-residential		
Commercial	0%	0%
Institutional	0%	0%
Industrial	0%	0%

APPENDIX H:

Roads and Related Services

Roads and Related Services

The 2019 London Development Charge (DC) Transportation Background Study prepared by IBI Group, in association with Hemson Consulting, formed the basis for determining the transportation growth works and eligible growth costs used in the DC rate calculation for the 2019 DC Study. For the 2021 DC Study Update, this foundational document has been reconfirmed by IBI Consulting to ensure that there were no fundamental changes to growth roads infrastructure over the planning period.

Due to legislative changes to the *Development Charges Act* that were proclaimed through the *More Homes, More Choices Act*, the Operations Centre service component has been incorporated into Roads and Related Services as it is a transportation growth need. Corporate Growth Studies service component contained in the 2019 DC Study have been removed from the 2021 DC Study Update as a standalone service component. However, transportation servicing studies have been transferred to the Roads and Related Service component. Growth related corporate studies that benefit all eligible service components have been accounted for in Roads and Related Services since this service component accounts for the largest percentage of the DC rate.

Strategic documents that provided context and direction for the City of London's long-term transportation system include:

- Complete Streets Design Manual (2018)
- Rapid Transit Master Plan (2017)
- The London Plan (2016)
- LTC Transit Network – Rapid Transit Integrated Framework (2016)
- London 2030 Transportation Master Plan (2012)

The outputs of this work drove the needs incorporated into the 2021 DC Study Update.

Policy Considerations

The following policies were used to establish the quantum of works included in the Roads and Related Services DC:

(a) Major Road Works

Major transportation road works typically consist of large-scale road expansion projects or two lane road upgrades triggered by increased traffic volumes associated with growth across the City. All major transportation road works are constructed by the City and the growth related cost is eligible for a claim from the CSRF.

The costs of the following items are incorporated into road projects and are required as a result of growth:

- Structures to be widened or replaced;
- Noise barrier and retaining wall where required; and
- Land acquisition (raw land cost, appraisals, surveying, legal, etc.) but only where lands cannot be acquired through dedications under the *Planning Act* on a timely basis.

(b) Minor Road Works

Minor road works that would be constructed as part of the major road project are eligible to be claimed from the CSRF. These works include but are not limited to: new traffic signals, channelization, sidewalks, and streetlights. Where a multi-use pathway is constructed in lieu of a sidewalk within an Arterial road allowance, the sidewalk equivalent cost is considered claimable. In some cases, these works are done in advance of the road capacity expansion project as a means of addressing a network wide benefit to growth, without completing the entire road expansion. It is noted that 'Arterial' refers to street classifications of Rapid Transit Boulevard, Urban Thoroughfare, Civic Boulevard, Main Street and Rural Thoroughfare.

Channelization on an arterial road into a new public street is eligible for a claim from the CSRF. The following subsections list the various additional components of the channelization which are considered claimable:

- *Tree Plantings*
  When replacement trees are planted as part of external road works to compensate for removed trees, other than those removed to facilitate an access, the cost of the removal and replacement is claimable. All other tree plantings are not claimable.

- *Ditching*
  When ditching and/or the installation of catchbasins is required to facilitate claimable external road work the drainage works may be incorporated in the minor road works claim to the CSRF.

- *Utility Relocations*
  Utility relocations necessitated by the claimable road works can be claimed upon providing a copy of the invoices from the utility and proof of payment in full. The City shall issue a letter to the utility company stating that this work is required by the City under the *Public Service Works on Highways Act* and will pay for 50% of cost of labor and trucking.

This 50% share is claimable from the CSRF; the other 50% is the utility's share and is not claimable. Should the utility refuse to pay these costs, the 50% "utility share" shall be the responsibility of the proponent Owner. Engineering fees associated with these relocations are not claimable.

(c) Road Oversizing

Where a new arterial is to be constructed in whole or in part through or adjacent to a development, the Owner is responsible for the cost of constructing a Neighbourhood Connector as defined in the City of London's Design Specifications & Requirements Manual and Complete Streets Design Manual. If the required road is wider or at a higher standard, the Owner is responsible for the cost of a standard road, including sidewalks, street lights, etc., and is eligible for a claim to the CSRF for the difference in cost of granular and asphalt between a standard road and the road actually constructed. The construction responsibilities shall be defined by the conditions of an agreement between the City and the Owner. If the Owner wishes to construct the road at an enhanced standard beyond that acceptable to the City Engineer (or designate), then the Owner shall pay for the additional costs of enhancement with no eligibility for a claim from any Fund.

(d) Strategic Links

Portions of proposed Neighbourhood Connectors or Neighbourhood Streets that are required for transportation network connectivity, are not implementable in a timely manner due to reasons beyond the control of the surrounding Owners and are identified as a strategic need by the City Engineer (or designate), may be constructed by the City and the cost is eligible for a claim from the CSRF.

(e) Active Transportation

Where on-road cycling lanes are identified through development areas in the Cycling Master Plan, on Neighbourhood Connectors or Neighbourhood Streets, the Owner shall be responsible to construct the cycling lanes. If the required road is wider or at a higher standard, the Owner is responsible for the cost of a standard road, including sidewalks, street lights, etc., and is eligible for a claim to the CSRF for the difference in cost between a standard road and the road actually constructed. The construction responsibilities shall be defined by the conditions of an agreement between the City and the Owner.

(f) Local Service Costs

The following subsections list the various road components which are considered a local service cost and therefore completed at the expense of the Owner:

- *Connections*
  Connections of all public and private new streets, ramps or entrances (including features and design details such as: roundabouts, culverts, signage, gateway treatments, noise wall alterations, sidewalks, cycling lanes, multi-use pathways, directional traffic islands, road re-profiling, decorative features) to the existing road infrastructure;

- *Placing Fill*
  Re-grading, cutting and placing fill on lands beyond the road allowance along their frontage in accordance with City standards. In addition, all grading and restoration of road allowance along the development frontage if no claimable road works are required;

- *Topsoil and Sod*
  Topsoil and sod to the edge of any existing sidewalk fronting the development;

- *Tree Planting*
  Planting of new trees fronting the development, except as provided in the Minor Road Works Channelization policies;

- *Sidewalk Reinforcement*
  Any upgrade or reinforcement from a standard 100mm thickness sidewalk across the development's new access;

- *Retaining Walls*
  Retaining walls along the development frontage, where acceptable to the City Engineer (or designate);

- *Temporary Works*
  100% of the cost of temporary sidewalks, roads, paths, swales along the frontage abutting arterials where installation in ultimate location is deemed premature;

- *Traffic Signals at Private Streets*
  Traffic signal installations at all private entrances, and at public entrances which do not meet MTO warrants;

- *Other Works*
  Any other services, removals, relocations, etc., required including but not limited to, utility relocation, sidewalk alterations, and curb cuts

- *Restoration and Damage*
  Restoration of any utility cuts, and or damage created by construction activities and /or construction traffic in and out of the development, including but not limited to daily removal of mud tracking, daily dust suppression, milling and paving of deteriorated asphalt caused by construction traffic, grading of gravel shoulders to remove rutting caused by construction traffic;

- *Noise Attenuation Measures*
  All noise berms, window streets, fences and privately maintained noise walls;

- *Grading and BMPs*
  Grading elements such as: swales, ditches, best management practices, (BMPs) and any other feature to address over land flow route needs created by the development's grading;

- *Paths and Walkways*
  Pedestrian paths, walkways, bridges, tunnels, including the related lighting and signage, except as provided in the Minor Road Works policies; (Note: Parkways are constructed by the City and are specifically provided in the DC Study);

- *Utility Upgrades*
  The costs related to the upgrading of any utility plant, or the relocation of the same, except as provided in the Channelization policies;

- *Relocation and Replacement Costs*
  The relocation and/or replacement costs of any encroachment on the City's road allowance or easement including but not limited to hedges, sprinklers systems and fences;

- *Street Lighting*
  Street lighting at intersections with existing roads where required by the development agreement.

Types of DC Eligible Road Works

Road projects that are fully or partially driven by growth are eligible for DC funding. DC eligible road works include:

- Major road works, such as new arterial roads, extending an arterial road, widening an arterial road, and major intersection improvements;
- Two lane arterial upgrades;
- Minor road works, such as traffic signals, channelization, sidewalks, and street lighting;
- Rapid Transit (RT) related arterial road works; and
- Additional transportation programs, such as urban and rural intersections, active transportation, advance purchase of land, the City's share of road class oversizing, strategic links, and Transportation Intelligent Mobility Management System (TIMMS).

Establishing Cost Estimates

The estimated costs for the roads program (major road works, two-lane arterial upgrade, RT related arterial road works, and minor road works) were developed and assembled from various sources as described below.

a) Major Road Works

Per metre roadway construction costs were developed for this DC update. These roadway unit costs assumed a typical cross-section, in line with examples in the City's Complete Street Design Manual that included vehicular travel lanes, bike lanes, sidewalks, environmental mitigation, street lighting and traffic signals and incorporated cost information from recent road construction bids received by the City of London.

The roadway unit cost (per metre) was used as the basis for the roadway construction cost. Additional costs that were incorporated in the development of the total project included:

- New or widened structures (culverts, bridges, interchanges);
- Traffic signal modifications;
- Environmental mitigation;
- Retaining walls, noise walls or other barriers and fencing;
- Landscaping;
- Lighting;
- Utility relocation (10% of construction cost);

- Engineering (15% of construction cost);
- Contingency (10% of construction cost);
- Property (including raw land cost, on-site alterations, appraisals, surveying
- and legal); and
- Additional complexities on a project-specific basis (i.e. railway diversions, environmentally sensitive areas, fill, poor soil conditions, hydro towers, etc.).

Where recent Environmental Assessment studies or other more detailed cost estimates undertaken by the City were available, those cost estimates were used.

b) 2-Lane Arterial Upgrades

The cost of two-lane arterial upgrades are based on the per metre roadway cost. Additional costs that were incorporated in the development of the total project included:

- New or widened structures (culverts, bridges, interchanges);
- Utility relocation (10% of construction cost);
- Engineering (15% of construction cost);
- Contingency (10% of construction cost); and
- Additional complexities on a project-specific basis (i.e. environmentally sensitive areas, fill, poor soil conditions, hydro towers, etc.).

Where recent Environmental Assessment studies or other more detailed cost estimates undertaken by the City were available, those cost estimates were used.

(c) RT Related Arterial Road Works

The cost for all RT related arterial road works are consistent with the cost estimates developed for the draft Environmental Project Report (April 2018) for the RT project. The RT related arterial road works includes costs for the following elements:

- General traffic lanes, RT lanes, intersection turn lanes, and any related road widenings required to accommodate the RT lanes;
- Traffic signal modifications;
- Environmental mitigation;
- Retaining walls, noise walls or other barriers and fencing;
- Bridge structures;
- Landscaping;
- Lighting;
- Modifications to municipal services (storm sewers, sanitary sewers, and watermains) due to conflict and Rapid Transit infrastructure;
- Property (including raw land cost, on-site alterations, appraisals, surveying
- and legal); and
- Utilities, due to conflict and RT infrastructure and in accordance with applicable cost sharing agreements.

The RT costs used in the DC program are costs in real dollars (current values) which is consistent with values assigned to all other DC eligible projects. The RT related Arterial road works cost excludes all costs related to stops, platforms, vehicles and maintenance facilities. These components of the RT project are included under the Transit Program.

(d) Minor Road Works

Costs for minor road works are based on the average recent actual costs in the City of London. The unit costs are presented below:

Minor Road Work	Unit	Cost
Channelization	each	$419,430
Sidewalks	m	$180
Streetlights	m	$420
Traffic Signals	each	$340,790

Post-Period Benefit: Major Road Works

A future growth benefit or post-period benefit (PPB) is applied where there is anticipated excess capacity at the end of the DC period. For the 2021 DC Study Update, the PPB's that were established in the 2019 DC Study have remained unchanged since the end of the planning period (i.e. 2038) has been maintained.

Post-Period Benefit: 2-Lane Arterial Upgrades

The program of infrastructure improvements includes two-lane arterial upgrades located outside of the urban growth boundary. Along these arterials on or near the urban boundary, the improvement of intersections can lead to improvement of intersection approaches at or near future residential or commercial entrances. While these will not occur until the future, it is cost effective to include these

improvements as part of the arterial upgrade construction. As there is no immediate need for these intersection improvements within the planning period, the cost of the intersection improvement is allocated to future growth.

Post-Period Benefit Considerations for Minor Road Works

Due to the immediate nature of the need for minor road works to support imminent adjacent development the benefiting period for minor road works has been considered to align with the benefitting period outlined in the DC Study. As such, no post-period benefit exists for minor road works.

Allocation Splits

(a) Growth/Non-Growth

Consistent with the previous DC Study and By-law, the benefit to existing (allocation to non-growth) determination for major road works is described below:

- For arterial road works and two-lane arterial upgrades required to address traffic growth and safety concerns, the benefit to existing development was calculated using rehabilitation costs aligned with the planning period for the existing roadway. The benefit to existing for major intersection improvements was calculated using the average rehabilitation cost for major road works excluding intersections and structures.
- For arterial road works related to RT, the non-growth share has been updated for the 2021 DC Study Update. Consistent with the 2014 and 2019 DC Studies, a road rehabilitation approach has been used. However, the non-growth share has increased from an average of 8.5% to 8.7% due to shifted project costs and reallocation of senior government funding that has been committed by both the Federal and Provincial governments.
- New roads and road extensions are considered to be a 100% growth need and 0% is allocated to non-growth. Improvements at existing intersections and conversions of one-way streets to two way streets address traffic operations, network circulation and access required to accommodate increasing traffic demands. These improvements are considered primarily a growth need and 10% is allocated to non-growth.
- For the replacement of freeway interchanges, the ratio of the existing interchange footprint / proposed footprint is identified as the non-growth share (including gore areas for ramps on the structure). The non-growth share for each freeway interchange in the 2021 DC Study Update is consistent with the 2019 DC Study.
- For new grade separations required for railway crossings where a bridge does not currently exist, the ratio of the delay attributed to growth is taken as the growth share. The non-growth share for each new rail grade separations is consistent with the 2019 DC Study.
- For the reconstruction of existing rail grade separations the ratio of the existing footprint / proposed footprint of the structure is identified as the non-growth share. The non-growth share for each reconstructed rail grade separation is consistent with the 2019 DC Study.

(b) Residential / Institutional, Commercial, Industrial (ICI)

Net growth costs for identified transportation growth projects must also be apportioned to the various benefiting land uses (i.e. Residential / ICI). The Residential / ICI split for arterial road network improvements is based on the relative proportion of projected growth in population and jobs of the planning period for which transportation needs were determined. The resulting major road works Residential / ICI split is as follows:

Residential	Institutional	Commercial	Industrial
69.7%	10.2%	14.5%	5.6%

This allocation was globally applied to the growth share of the roads program.

Final Costs for DC Rate Calculation

The required road works form the basis for determining DCs for the CSRF and represents the numerator in the rate calculation. The final net costs for these works attributable to the growth period are shown in Table H-1.

Contributions by Others

The costs related to RT are anticipated to be partially funded by both the provincial and federal governments. The anticipated funding is included in the column titled “Less: future capital grants, subsidies or other contributions anticipated” which provides for a lower DC estimate.

Financing Costs

Table H-2 was produced to simulate cash flows for CSRF funded Road Works for the purpose of calculating the final DC rate inclusive of financing costs. Forecasting cash flow and financing costs involved:

a) Starting with the 2021 opening balance which reflects accumulated funds for growth projects identified in past DC studies;
b) Projecting DC revenues using the “pre-finance” rate;
c) Incorporating DC drawdowns in the cash flow projection based on the growth projects identified in the study period; and
d) Estimating annual interest revenues to be earned and/or financing costs to be incurred due to fund deficits throughout the planning horizon.

The deficit at the end of the planning period for the cash flow equates to the amounts of the expenditures incurred during the planning period to be recovered from growth in the future (i.e. the post-period benefit). All figures are un-inflated and were determined for the period immediately preceding the DC Study. The rates generated from this cash flow analysis reflect the appropriate cost recovery from growth for the planning horizon.

Roads and Related Services
TABLE H-1 Rate Calculation

Planning horizon for this component : **2021-2038**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																	Commercial		Institutional		Industrial	
									%	benefit					%	$	%	$	%	$	%	$
	(all $'s in ,000's)		(1)	(2)	(3)	(4) (1) - sum(2,3)	(5)	(6) (4) * (5)	(7) (4) - (6)	(8)	(9) (7) * (8)	(10) [(7) - (9)] * 10%	(11) (7) - sum(9,10)	(12)	(13) (11) - (12)	(14)	(15) (13) * (14)	(16)	(17) (13) * (16)	(18)	(19) (13) * (18)	(20)	(21) (13) * (20)
	Arterial Road Works																					
DC14RS0019	Adelaide Street North - Fanshawe to Sunningdale (2 to 4 through lanes)	2029	$6,555.9	$.0	$357.6	$6,198.3	30.0%	$1,859.5	$4,338.8	13.2%	$573.5	$.0	$3,765.3	$.0	$3,765.3	69.7%	$2,624.4	14.5%	$546.0	10.2%	$384.1	5.6%	$210.9
DC19RS0019	Boler Road / Sanatorium Road - Oxford to Commissioners (2 to 4 through lanes) (formally DC14-RS00029 & DC14-RS00040)	2034	$22,487.7	$.0	$.0	$22,487.7	45.0%	$10,119.5	$12,368.3	9.5%	$1,170.3	$.0	$11,198.0	$.0	$11,198.0	69.7%	$7,805.0	14.5%	$1,623.7	10.2%	$1,142.2	5.6%	$627.1
DC19RS0016	Bostwick Road - Pack to Wharncliffe (2 to 4 through lanes with realignment)	2026	$18,997.4	$.0	$.0	$18,997.4	20.0%	$3,799.5	$15,198.0	6.4%	$976.3	$.0	$14,221.7	$.0	$14,221.7	69.7%	$9,912.5	14.5%	$2,062.1	10.2%	$1,450.6	5.6%	$796.4
DC14RS0027	Bradley Avenue - Dearness to Pond Mills (2 to 4 through lanes)	2029	$19,873.0	$.0	$.0	$19,873.0	30.0%	$5,961.9	$13,911.1	10.3%	$1,435.7	$.0	$12,475.4	$.0	$12,475.4	69.7%	$8,695.4	14.5%	$1,808.9	10.2%	$1,272.5	5.6%	$698.6
DC14RS0031	Bradley Avenue - Pond Mills to Highbury (2 to 4 through lanes)	2036	$14,901.7	$.0	$.0	$14,901.7	45.0%	$6,705.8	$8,196.0	6.8%	$559.1	$.0	$7,636.9	$.0	$7,636.9	69.7%	$5,322.9	14.5%	$1,107.3	10.2%	$779.0	5.6%	$427.7
DC14RS0022	Bradley Avenue Extension - Jalna to Wharncliffe (New 4 through lanes)	2023	$11,720.0	$.0	$2,567.1	$9,152.9	10.0%	$915.3	$8,237.6	0.0%	$.0	$.0	$8,237.6	$.0	$8,237.6	69.7%	$5,741.6	14.5%	$1,194.5	10.2%	$840.2	5.6%	$461.3
DC14RS0047	Bradley Avenue Extension - Wonderland to Bostwick (New 4 through lanes)	2028	$8,283.5	$.0	$.0	$8,283.5	20.0%	$1,656.7	$6,626.8	0.0%	$.0	$.0	$6,626.8	$.0	$6,626.8	69.7%	$4,618.9	14.5%	$960.9	10.2%	$675.9	5.6%	$371.1
DC14RS0025	Clarke Road - Veterans Memorial Parkway Extension to Fanshawe Park Road (2 to 4 through lanes)	2033	$26,004.5	$.0	$593.1	$25,411.5	30.0%	$7,623.4	$17,788.0	4.4%	$787.1	$.0	$17,000.9	$.0	$17,000.9	69.7%	$11,849.6	14.5%	$2,465.1	10.2%	$1,734.1	5.6%	$952.1
DC14RS0013	Colonel Talbot Interchange - Highway 401 (City's share)	2024	$5,000.0	$.0	$.0	$5,000.0	10.0%	$500.0	$4,500.0	50.0%	$2,250.0	$.0	$2,250.0	$.0	$2,250.0	69.7%	$1,568.3	14.5%	$326.3	10.2%	$229.5	5.6%	$126.0
DC14RS0044	Commissioners Road East - Highbury Ave to Jackson Rd (2 to 4 through lanes)	2036	$7,769.3	$.0	$.0	$7,769.3	45.0%	$3,496.2	$4,273.1	22.1%	$946.1	$.0	$3,327.0	$.0	$3,327.0	69.7%	$2,318.9	14.5%	$482.4	10.2%	$339.4	5.6%	$186.3
DC14RS0059	Commissioners Road West - Wonderland Road to Cranbrook Road (2 to 4 through lanes with centre turn lane)	2033	$7,399.9	$.0	$.0	$7,399.9	30.0%	$2,220.0	$5,180.0	14.1%	$731.3	$.0	$4,448.7	$.0	$4,448.7	69.7%	$3,100.7	14.5%	$645.1	10.2%	$453.8	5.6%	$249.1
DC14RS0055	Commissioners Road West - Cranbrook Road to Springbank Drive - new alignment (3 through lanes)	2037	$21,090.4	$.0	$300.0	$20,790.4	45.0%	$9,355.7	$11,434.7	5.5%	$629.8	$.0	$10,804.9	$.0	$10,804.9	69.7%	$7,531.0	14.5%	$1,566.7	10.2%	$1,102.1	5.6%	$605.1
DC19RS0001	Dingman Drive - Eastern approach of Dingman/Hwy 401 bridge to 150m east of Wellington (2 to 4 through lanes)	2021	$10,966.3	$.0	$2,325.0	$8,641.3	10.0%	$864.1	$7,777.2	8.1%	$626.1	$.0	$7,151.0	$.0	$7,151.0	69.7%	$4,984.3	14.5%	$1,036.9	10.2%	$729.4	5.6%	$400.5
DC19RS0002	Dingman Drive - Hwy 401 Bridge (City's share) (Hwy 401 Bridge Expansion)	2021	$4,194.3	$.0	$.0	$4,194.3	20.0%	$838.9	$3,355.4	55.0%	$1,845.5	$.0	$1,509.9	$.0	$1,509.9	69.7%	$1,052.4	14.5%	$218.9	10.2%	$154.0	5.6%	$84.6
DC14RS0048	Hamilton Road - Old Victoria to Veterans Memorial Parkway (2 to 4 through lanes with centre turn lane)	2028	$6,906.8	$.0	$.0	$6,906.8	20.0%	$1,381.4	$5,525.4	9.6%	$530.7	$.0	$4,994.8	$.0	$4,994.8	69.7%	$3,481.3	14.5%	$724.2	10.2%	$509.5	5.6%	$279.7
DC14RS0052	Oxford Street West - Commissioners to Westdel Bourne (2 to 4 through lanes)	2025	$8,919.7	$.0	$.0	$8,919.7	20.0%	$1,783.9	$7,135.7	8.0%	$573.4	$.0	$6,562.4	$.0	$6,562.4	69.7%	$4,574.0	14.5%	$951.5	10.2%	$669.4	5.6%	$367.5
DC14RS0036	Oxford Street West - Sanatorium to Commissioners (2 to 4 through lanes)	2031	$17,398.0	$.0	$.0	$17,398.0	30.0%	$5,219.4	$12,178.6	8.6%	$1,047.0	$.0	$11,131.6	$.0	$11,131.6	69.7%	$7,758.7	14.5%	$1,614.1	10.2%	$1,135.4	5.6%	$623.4
DC14RS076a	Philip Aziz - Western Intersection to the Thames River	2022	$2,578.1	$.0	$2,490.0	$88.1	10.0%	$8.8	$79.3	10.0%	$7.9	$.0	$71.4	$.0	$71.4	69.7%	$49.8	14.5%	$10.4	10.2%	$7.3	5.6%	$4.0
DC14RS0020	Pond Mills Underpass - Hwy 401 (City's share) (Hwy 401 Bridge Expansion)	2023	$1,500.0	$.0	$.0	$1,500.0	45.0%	$675.0	$825.0	50.0%	$412.5	$.0	$412.5	$.0	$412.5	69.7%	$287.5	14.5%	$59.8	10.2%	$42.1	5.6%	$23.1
DC14RS0038	Southdale Road West - Bostwick to Colonel Talbot (2 to 4 through lanes with centre turn lane)	2031	$12,247.2	$.0	$111.2	$12,136.0	30.0%	$3,640.8	$8,495.2	13.5%	$1,148.4	$.0	$7,346.8	$.0	$7,346.8	69.7%	$5,120.7	14.5%	$1,065.3	10.2%	$749.4	5.6%	$411.4
DC14RS0030	Southdale Road West - Bostwick to Pine Valley (2 to 4 through lanes with centre turn lane)	2022	$4,885.1	$.0	$923.3	$3,961.8	10.0%	$396.2	$3,565.6	8.4%	$298.0	$.0	$3,267.7	$.0	$3,267.7	69.7%	$2,277.6	14.5%	$473.8	10.2%	$333.3	5.6%	$183.0

Roads and Related Services
TABLE H-1 Rate Calculation Cont'd

Planning horizon for this component : **2021-2038**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Non-growth share		Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																			Commercial		Institutional		Industrial	
	(all $'s in ,000's)		(1)	(2)	(3)	(4) (1) - sum(2,3)	(5)	(6) (4) * (5)	(7) (4) - (6)	(8)	(9) (7) * (8)	[(7) - (9)] * 10%	(10)	(11) (7) - sum(9,10)	(12)	(13) (11) - (12)	% (14)	$ (15) (13) * (14)	% (16)	$ (17) (13) * (16)	% (18)	$ (19) (13) * (18)	% (20)	$ (21) (13) * (20)
	Arterial Road Works Cont'd																							
DC14RS0017	Sunningdale Road – Wonderland to 150m west of Richmond (2 to 4 through lanes)	2023	$21,839.7	$.0	$2,028.4	$19,811.3	10.0%	$1,981.1	$17,830.1	7.2%	$1,281.0	$.0	$16,549.1	$.0	$16,549.1	69.7%	$11,534.7	14.5%	$2,399.6	10.2%	$1,688.0	5.6%	$926.8
DC14RS0016	Sunningdale Road – 150m west of Richmond to 150m east of Richmond (2 to 4 through lanes)	2023	$4,794.1	$.0	$.0	$4,794.1	10.0%	$479.4	$4,314.7	4.0%	$171.8	$.0	$4,142.9	$.0	$4,142.9	69.7%	$2,887.6	14.5%	$600.7	10.2%	$422.6	5.6%	$232.0
DC14RS0033	Sunningdale Road - 150m east of Richmond to Bluebell (2 to 4 through lanes)	2025	$8,954.2	$.0	$.0	$8,954.2	20.0%	$1,790.8	$7,163.3	9.2%	$660.8	$.0	$6,502.5	$.0	$6,502.5	69.7%	$4,532.3	14.5%	$942.9	10.2%	$663.3	5.6%	$364.1
DC14RS0021	Sunningdale Road - Adelaide to Bluebell (2 to 4 through lanes)	2025	$16,347.2	$.0	$.0	$16,347.2	20.0%	$3,269.4	$13,077.8	4.8%	$631.1	$.0	$12,446.7	$.0	$12,446.7	69.7%	$8,675.3	14.5%	$1,804.8	10.2%	$1,269.6	5.6%	$697.0
DC19RS0003	Veterans Memorial Parkway - Huron Street to Clarke Road (2 to 4 through lanes)	2037	$10,114.5	$.0	$.0	$10,114.5	45.0%	$4,551.5	$5,563.0	0.0%	$.0	$.0	$5,563.0	$.0	$5,563.0	69.7%	$3,877.4	14.5%	$806.6	10.2%	$567.4	5.6%	$311.5
DC14RS0043	Veterans Memorial Parkway - Oxford Street to Huron Street (2 to 4 through lanes)	2034	$12,289.6	$.0	$.0	$12,289.6	45.0%	$5,530.3	$6,759.3	15.3%	$1,031.2	$.0	$5,728.1	$.0	$5,728.1	69.7%	$3,992.5	14.5%	$830.6	10.2%	$584.3	5.6%	$320.8
DC14RS0061	Veterans Memorial Parkway - Bradley Avenue Interchange	2035	$31,467.9	$.0	$.0	$31,467.9	45.0%	$14,160.5	$17,307.3	0.0%	$.0	$.0	$17,307.3	$.0	$17,307.3	69.7%	$12,063.2	14.5%	$2,509.6	10.2%	$1,765.3	5.6%	$969.2
DC19RS0004	Victoria Bridge Bike Lanes - (prorated share of bridge widening) (Bridge widening)	2022	$3,300.0	$.0	$.0	$3,300.0	10.0%	$330.0	$2,970.0	50.0%	$1,485.0	$.0	$1,485.0	$.0	$1,485.0	69.7%	$1,035.0	14.5%	$215.3	10.2%	$151.5	5.6%	$83.2
DC19RS0005	Windermere Road - Western Road to 150m east of Richmond (2 to 4 through lanes)	2024	$3,719.1	$.0	$353.9	$3,365.3	20.0%	$673.1	$2,692.2	10.7%	$289.4	$.0	$2,402.8	$.0	$2,402.8	69.7%	$1,674.8	14.5%	$348.4	10.2%	$245.1	5.6%	$134.6
DC14RS0034	Wonderland Road North - Sunningdale Road to Fanshawe Park Road (2 to 4 through lanes)	2032	$11,310.3	$.0	$.0	$11,310.3	30.0%	$3,393.1	$7,917.2	9.4%	$745.6	$.0	$7,171.6	$.0	$7,171.6	69.7%	$4,998.6	14.5%	$1,039.9	10.2%	$731.5	5.6%	$401.6
DC14RS024a	Wonderland Road - Oxford to Beaverbrook (4 to 6 through lanes)	2031	$3,298.2	$.0	$.0	$3,298.2	30.0%	$989.5	$2,308.7	32.9%	$760.3	$.0	$1,548.5	$.0	$1,548.5	69.7%	$1,079.3	14.5%	$224.5	10.2%	$157.9	5.6%	$86.7
DC14RS024b	Wonderland Road - Beaverbrook to Sarnia (4 to 6 through lanes & CP Structure)	2034	$12,378.6	$.0	$.0	$12,378.6	45.0%	$5,570.4	$6,808.2	11.8%	$802.8	$.0	$6,005.5	$.0	$6,005.5	69.7%	$4,185.8	14.5%	$870.8	10.2%	$612.6	5.6%	$336.3
DC14RS028a	Wonderland Road - Oxford to Riverside (4 to 6 through lanes)	2030	$4,907.3	$.0	$.0	$4,907.3	30.0%	$1,472.2	$3,435.1	23.0%	$790.1	$.0	$2,645.0	$.0	$2,645.0	69.7%	$1,843.6	14.5%	$383.5	10.2%	$269.8	5.6%	$148.1
DC14RS028b	Wonderland Road - CN Structure between Riverside and Oxford (Widening CN Structure)	2038	$58,858.5	$900.0	$.0	$57,958.5	45.0%	$26,081.3	$31,877.2	41.9%	$13,356.5	$.0	$18,520.6	$.0	$18,520.6	69.7%	$12,908.9	14.5%	$2,685.5	10.2%	$1,889.1	5.6%	$1,037.2
DC14RS0023	Wonderland Road - Riverside to Springbank (4 to 6 through lanes)	2030	$37,749.5	$.0	$1,009.5	$36,740.0	30.0%	$11,022.0	$25,718.0	5.3%	$1,364.0	$.0	$24,354.0	$.0	$24,354.0	69.7%	$16,974.7	14.5%	$3,531.3	10.2%	$2,484.1	5.6%	$1,363.8
DC14RS026a	Wonderland Road - Springbank to Commissioners (4 to 6 through lanes)	2027	$5,078.3	$.0	$.0	$5,078.3	20.0%	$1,015.7	$4,062.6	25.4%	$1,032.8	$.0	$3,029.8	$.0	$3,029.8	69.7%	$2,111.8	14.5%	$439.3	10.2%	$309.0	5.6%	$169.7
DC14RS026b	Wonderland Road - Commissioners to Southdale (4 to 6 through lanes)	2028	$17,606.9	$.0	$.0	$17,606.9	20.0%	$3,521.4	$14,085.5	20.4%	$2,871.6	$.0	$11,213.9	$.0	$11,213.9	69.7%	$7,816.1	14.5%	$1,626.0	10.2%	$1,143.8	5.6%	$628.0
DC14RS0032	Wonderland Road - Exeter to Hwy 402 (2 to 4 through lanes)	2026	$20,545.6	$.0	$.0	$20,545.6	20.0%	$4,109.1	$16,436.4	7.0%	$1,148.9	$.0	$15,287.6	$.0	$15,287.6	69.7%	$10,655.4	14.5%	$2,216.7	10.2%	$1,559.3	5.6%	$856.1
DC19RS0006	Intersection - Dingman / White Oak (Roundabout)	2027	$5,321.8	$.0	$113.8	$5,208.1	20.0%	$1,041.6	$4,166.4	12.5%	$520.8	$.0	$3,645.6	$.0	$3,645.6	69.7%	$2,541.0	14.5%	$528.6	10.2%	$371.9	5.6%	$204.2
DC19RS0007	Intersection - Exeter / Wellington - (Intersection)	2030	$5,582.5	$.0	$3,590.0	$1,992.5	30.0%	$597.8	$1,394.8	12.5%	$174.3	$.0	$1,220.4	$.0	$1,220.4	69.7%	$850.6	14.5%	$177.0	10.2%	$124.5	5.6%	$68.3
DC14RS0077	Intersection - Fanshawe / Richmond - (Intersection)	2022	$12,595.1	$.0	$5,850.0	$6,745.1	10.0%	$674.5	$6,070.6	12.5%	$758.8	$.0	$5,311.8	$.0	$5,311.8	69.7%	$3,702.3	14.5%	$770.2	10.2%	$541.8	5.6%	$297.5

Roads and Related Services
TABLE H-1 Rate Calculation Cont'd

Planning horizon for this component : **2021-2038**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share %	Non-growth share benefit	Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL %	RESIDENTIAL $	NON - RESIDENTIAL Commercial %	Commercial $	Institutional %	Institutional $	Industrial %	Industrial $
	(all $'s in ,000's)		*(1)*	*(2)*	*(3)*	*(4)* (1) - sum(2,3)	*(5)*	*(6)* (4) * (5)	*(7)* (4) - (6)	*(8)*	*(9)* (7) * (8)	*(10)* [(7) - (9)] * 10%	*(11)* (7) - sum(9,10)	*(12)*	*(13)* (11) - (12)	*(14)*	*(15)* (13) * (14)	*(16)*	*(17)* (13) * (16)	*(18)*	*(19)* (13) * (18)	*(20)*	*(21)* (13) * (20)
	Arterial Road Works Cont'd																					
DC14RS0075	Intersection - Hamilton / Highbury - (Intersection)	2029	$10,942.1	$.0	$990.0	$9,952.1	30.0%	$2,985.6	$6,966.5	12.5%	$870.8	$.0	$6,095.7	$.0	$6,095.7	69.7%	$4,248.7	14.5%	$883.9	10.2%	$621.8	5.6%	$341.4
DC19RS0008	Intersection - Hamilton / Commissioners - (Roundabout)	2029	$7,625.4	$.0	$.0	$7,625.4	30.0%	$2,287.6	$5,337.8	12.5%	$667.2	$.0	$4,670.6	$.0	$4,670.6	69.7%	$3,255.4	14.5%	$677.2	10.2%	$476.4	5.6%	$261.6
DC19RS0009	Intersection - Hamilton / Gore - (Roundabout)	2024	$4,284.4	$.0	$.0	$4,284.4	20.0%	$856.9	$3,427.6	12.5%	$428.4	$.0	$2,999.1	$.0	$2,999.1	69.7%	$2,090.4	14.5%	$434.9	10.2%	$305.9	5.6%	$168.0
DC19RS0010	Intersection - Oxford / Gideon - (Roundabout)	2024	$3,589.9	$.0	$.0	$3,589.9	20.0%	$718.0	$2,871.9	12.5%	$359.0	$.0	$2,512.9	$.0	$2,512.9	69.7%	$1,751.5	14.5%	$364.4	10.2%	$256.3	5.6%	$140.7
DC14RS0015	Intersection - Oxford / Hyde Park - (Intersection)	2026	$3,084.0	$.0	$310.0	$2,774.0	20.0%	$554.8	$2,219.2	12.5%	$277.4	$.0	$1,941.8	$.0	$1,941.8	69.7%	$1,353.4	14.5%	$281.6	10.2%	$198.1	5.6%	$108.7
DC19RS0011	Intersection - Oxford / Wharncliffe - (Intersection)	2025	$3,437.5	$2,520.7	$.0	$916.8	20.0%	$183.4	$733.4	12.5%	$91.7	$.0	$641.7	$.0	$641.7	69.7%	$447.3	14.5%	$93.1	10.2%	$65.5	5.6%	$35.9
DC19RS0012	Intersection - Oxford / Wonderland (Intersection)	2028	$3,964.9	$.0	$.0	$3,964.9	20.0%	$793.0	$3,171.9	12.5%	$396.5	$.0	$2,775.4	$.0	$2,775.4	69.7%	$1,934.5	14.5%	$402.4	10.2%	$283.1	5.6%	$155.4
DC19RS0017	Intersection - Pack / Colonel Talbot (Intersection)	2021	$2,406.3	$.0	$463.8	$1,942.5	10.0%	$194.3	$1,748.3	12.5%	$218.5	$.0	$1,529.7	$.0	$1,529.7	69.7%	$1,066.2	14.5%	$221.8	10.2%	$156.0	5.6%	$85.7
DC19RS0013	Intersection - Riverside / Wonderland (Intersection)	2025	$11,460.5	$.0	$500.0	$10,960.5	10.0%	$1,096.1	$9,864.5	12.5%	$1,233.1	$.0	$8,631.4	$.0	$8,631.4	69.7%	$6,016.1	14.5%	$1,251.6	10.2%	$880.4	5.6%	$483.4
DC14RS076b	Intersection - Sarnia / Philip Aziz / Western (Intersection)	2023	$8,065.0	$.0	$.0	$8,065.0	10.0%	$806.5	$7,258.5	12.5%	$907.3	$.0	$6,351.2	$.0	$6,351.2	69.7%	$4,426.8	14.5%	$920.9	10.2%	$647.8	5.6%	$355.7
DC19RS0018	Intersection - Southdale / Colonel Talbot (Roundabout)	2024	$3,917.6	$.0	$.0	$3,917.6	20.0%	$783.5	$3,134.1	12.5%	$391.8	$.0	$2,742.3	$.0	$2,742.3	69.7%	$1,911.4	14.5%	$397.6	10.2%	$279.7	5.6%	$153.6
DC19RS0014	Intersection - Springbank / Wonderland (Intersection)	2027	$8,642.7	$.0	$.0	$8,642.7	20.0%	$1,728.5	$6,914.1	12.5%	$864.3	$.0	$6,049.9	$.0	$6,049.9	69.7%	$4,216.8	14.5%	$877.2	10.2%	$617.1	5.6%	$338.8
DC19RS0015	Intersection - Sunningdale / Hyde Park - (Roundabout)	2021	$4,037.5	$.0	$1,262.5	$2,775.0	10.0%	$277.5	$2,497.5	12.5%	$312.2	$.0	$2,185.3	$.0	$2,185.3	69.7%	$1,523.2	14.5%	$316.9	10.2%	$222.9	5.6%	$122.4
	SUBTOTAL		$623,195.7	$3,420.7	$26,139.1	$593,636.0	29.4%	$174,542.3	$419,093.7	12.8%	$53,443.8	$.0	$365,649.9	$.0	$365,649.9	69.7%	$254,858.0	14.5%	$53,019.2	10.2%	$37,296.3	5.6%	$20,476.4
	Two-Lane Arterial Upgrades																					
DC14RS0210	Bostwick - Pack to Southdale (2 Lane Upgrade)	2025	$3,061.7	$.0	$.0	$3,061.7	0.0%	$.0	$3,061.7	13.9%	$424.7	$.0	$2,637.0	$.0	$2,637.0	69.7%	$1,838.0	14.5%	$382.4	10.2%	$269.0	5.6%	$147.7
DC14RS0212	Colonel Talbot - 300m South of Southdale to James Street (2 Lane Upgrade)	2023	$12,162.0	$.0	$700.0	$11,462.0	3.9%	$442.0	$11,020.0	14.3%	$1,574.3	$.0	$9,445.7	$.0	$9,445.7	69.7%	$6,583.7	14.5%	$1,369.6	10.2%	$963.5	5.6%	$529.0
DC19RS0202	Dingman Drive - White Oak Rd to Western approach of Dingman/Hwy 401 bridge (2 Lane Upgrade)	2035	$6,652.8	$.0	$.0	$6,652.8	7.1%	$469.2	$6,183.6	14.8%	$914.3	$.0	$5,269.3	$.0	$5,269.3	69.7%	$3,672.7	14.5%	$764.0	10.2%	$537.5	5.6%	$295.1
DC14RS0222	Kilally - Webster to Clarke (2 Lane Upgrade)	2030	$10,071.3	$.0	$.0	$10,071.3	0.0%	$.0	$10,071.3	11.4%	$1,146.8	$.0	$8,924.5	$.0	$8,924.5	69.7%	$6,220.4	14.5%	$1,294.1	10.2%	$910.3	5.6%	$499.8
DC14RS0211	Pack Rd - Colonel Talbot to Bostwick (2 Lane Upgrade)	2032	$10,089.7	$.0	$.0	$10,089.7	0.0%	$.0	$10,089.7	11.4%	$1,148.9	$.0	$8,940.8	$.0	$8,940.8	69.7%	$6,231.7	14.5%	$1,296.4	10.2%	$912.0	5.6%	$500.7
DC19RS0203	South Street & Grey Street - (2 way conversion)	2027	$629.1	$.0	$.0	$629.1	0.0%	$.0	$629.1	10.0%	$62.9	$.0	$566.2	$.0	$566.2	69.7%	$394.7	14.5%	$82.1	10.2%	$57.8	5.6%	$31.7
DC19RS0207	Southdale - Wickerson to Byronhills (2 Lane Upgrade) (formally DC14-RS00207 & DC14-RS00208)	2022	$11,289.9	$.0	$7,492.5	$3,797.4	14.6%	$553.8	$3,243.6	14.3%	$465.3	$.0	$2,778.3	$.0	$2,778.3	69.7%	$1,936.5	14.5%	$402.9	10.2%	$283.4	5.6%	$155.6
DC14RS0204	Sunningdale - South Wenige to Highbury (2 Lane Upgrade)	2028	$4,768.1	$.0	$437.2	$4,330.9	0.0%	$.0	$4,330.9	12.6%	$545.3	$.0	$3,785.6	$.0	$3,785.6	69.7%	$2,638.6	14.5%	$548.9	10.2%	$386.1	5.6%	$212.0

Roads and Related Services
TABLE H-1 Rate Calculation Cont'd

Planning horizon for this component : **2021-2038**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																	Commercial		Institutional		Industrial	
									%	benefit					%	$	%	$	%	$	%	$
	(all $'s in ,000's)		(1)	(2)	(3)	(4) (1) - sum(2,3)	(5)	(6) (4) * (5)	(7) (4) - (6)	(8)	(9) (7) * (8)	(10) [(7) - (9)] * 10%	(11) (7) - sum(9,10)	(12)	(13) (11) - (12)	(14)	(15) (13) * (14)	(16)	(17) (13) * (16)	(18)	(19) (13) * (18)	(20)	(21) (13) * (20)
	Two-Lane Arterial Upgrades Cont'd																					
DC19RS0204	Sunningdale - Highbury to Clarke (2 Lane Upgrade)	2024	$10,219.6	$.0	$.0	$10,219.6	9.2%	$941.5	$9,278.2	15.1%	$1,404.5	$.0	$7,873.7	$.0	$7,873.7	69.7%	$5,488.0	14.5%	$1,141.7	10.2%	$803.1	5.6%	$440.9
DC19RS0205	Sunningdale - Hyde Park Road to Wonderland Road North (2 Lane Upgrade)	2025	$12,288.6	$.0	$.0	$12,288.6	0.0%	$.0	$12,288.6	11.4%	$1,399.3	$.0	$10,889.3	$.0	$10,889.3	69.7%	$7,589.8	14.5%	$1,578.9	10.2%	$1,110.7	5.6%	$609.8
DC19RS0206	White Oak Road - Exeter Road to 400 m south (2 Lane Upgrade)	2022	$2,220.0	$.0	$.0	$2,220.0	0.0%	$.0	$2,220.0	9.9%	$219.2	$.0	$2,000.8	$.0	$2,000.8	69.7%	$1,394.6	14.5%	$290.1	10.2%	$204.1	5.6%	$112.0
DC14RS0206	Wickerson - Southdale to 650 m North (2 Lane Upgrade)	2022	$3,545.1	$.0	$2,633.1	$912.1	0.0%	$.0	$912.1	36.9%	$336.4	$.0	$575.6	$.0	$575.6	69.7%	$401.2	14.5%	$83.5	10.2%	$58.7	5.6%	$32.2
	SUBTOTAL		$86,998.1	$.0	$11,262.8	$75,735.3	3.2%	$2,406.5	$73,328.9	13.1%	$9,642.0	$.0	$63,686.9	$.0	$63,686.9	69.7%	$44,389.7	14.5%	$9,234.6	10.2%	$6,496.1	5.6%	$3,566.5
	RT Related Arterial Road Works																					
DC19RS0301	Downtown Loop	2021-2023	$24,189.9	$17,247.4	$1,503.1	$5,439.4	10.0%	$543.9	$4,895.5	7.6%	$371.1	$.0	$4,524.3	$.0	$4,524.3	69.7%	$3,153.4	14.5%	$656.0	10.2%	$461.5	5.6%	$253.4
DC19RS0302	East London Link	2022-2024	$98,046.4	$59,416.1	$3,682.3	$34,948.0	10.0%	$3,494.8	$31,453.2	6.5%	$2,029.6	$.0	$29,423.7	$.0	$29,423.7	69.7%	$20,508.3	14.5%	$4,266.4	10.2%	$3,001.2	5.6%	$1,647.7
DC19RS0303	North Connection	2026-2028	$97,140.7	$58,770.1	$3,158.4	$35,212.2	20.0%	$7,042.4	$28,169.7	8.4%	$2,356.2	$.0	$25,813.5	$.0	$25,813.5	69.7%	$17,992.0	14.5%	$3,743.0	10.2%	$2,633.0	5.6%	$1,445.6
DC19RS0304	Wellington Gateway	2023-2026	$105,084.1	$51,701.4	$10,242.2	$43,140.5	20.0%	$8,628.1	$34,512.4	10.6%	$3,649.6	$.0	$30,862.8	$.0	$30,862.8	69.7%	$21,511.4	14.5%	$4,475.1	10.2%	$3,148.0	5.6%	$1,728.3
DC19RS0305	West Connection	2025-2027	$52,992.4	$30,470.7	$2,905.0	$19,616.7	20.0%	$3,923.3	$15,693.4	10.3%	$1,614.4	$.0	$14,079.0	$.0	$14,079.0	69.7%	$9,813.1	14.5%	$2,041.5	10.2%	$1,436.1	5.6%	$788.4
	SUBTOTAL		$377,453.7	$217,605.7	$21,491.0	$138,356.9	17.1%	$23,632.6	$114,724.2	8.7%	$10,020.9	$.0	$104,703.3	$.0	$104,703.3	69.7%	$72,978.2	14.5%	$15,182.0	10.2%	$10,679.7	5.6%	$5,863.4
	Minor Road Works																					
DC19RS1001	Channelization	2021-2038	$6,963.7	$.0	$.0	$6,963.7	0.0%	$.0	$6,963.7	0.0%	$.0	$.0	$6,963.7	$.0	$6,963.7	69.7%	$4,853.7	14.5%	$1,009.7	10.2%	$710.3	5.6%	$390.0
DC19RS1002	Sidewalks	2021-2038	$3,678.9	$.0	$.0	$3,678.9	0.0%	$.0	$3,678.9	0.0%	$.0	$.0	$3,678.9	$.0	$3,678.9	69.7%	$2,564.2	14.5%	$533.4	10.2%	$375.2	5.6%	$206.0
DC19RS1003	Streetlights	2021-2038	$5,116.8	$.0	$.0	$5,116.8	0.0%	$.0	$5,116.8	0.0%	$.0	$.0	$5,116.8	$.0	$5,116.8	69.7%	$3,566.4	14.5%	$741.9	10.2%	$521.9	5.6%	$286.5
DC19RS1004	Traffic Signals	2021-2038	$7,792.7	$.0	$.0	$7,792.7	0.0%	$.0	$7,792.7	0.0%	$.0	$.0	$7,792.7	$.0	$7,792.7	69.7%	$5,431.5	14.5%	$1,129.9	10.2%	$794.9	5.6%	$436.4
	SUBTOTAL		$23,552.0	$.0	$.0	$23,552.0	0.0%	$.0	$23,552.0	0.0%	$.0	$.0	$23,552.0	$.0	$23,552.0	69.7%	$16,415.8	14.5%	$3,415.0	10.2%	$2,402.3	5.6%	$1,318.9
	Additional Programs																					
DC19RS1005	Urban Intersections	2021-2038	$16,549.9	$.0	$.0	$16,549.9	0.0%	$.0	$16,549.9	0.0%	$.0	$.0	$16,549.9	$.0	$16,549.9	69.7%	$11,535.3	14.5%	$2,399.7	10.2%	$1,688.1	5.6%	$926.8
DC19RS1006	Rural Intersections	2021-2038	$3,660.3	$.0	$.0	$3,660.3	0.0%	$.0	$3,660.3	0.0%	$.0	$.0	$3,660.3	$.0	$3,660.3	69.7%	$2,551.2	14.5%	$530.7	10.2%	$373.4	5.6%	$205.0
DC19RS1007	Active Transportation	2021-2038	$22,170.3	$.0	$.0	$22,170.3	0.0%	$.0	$22,170.3	50.0%	$11,085.2	$.0	$11,085.2	$.0	$11,085.2	69.7%	$7,726.4	14.5%	$1,607.3	10.2%	$1,130.7	5.6%	$620.8
DC19RS1008	Advance Purchase of Land	2021-2038	$3,648.2	$.0	$.0	$3,648.2	0.0%	$.0	$3,648.2	0.0%	$.0	$.0	$3,648.2	$.0	$3,648.2	69.7%	$2,542.8	14.5%	$529.0	10.2%	$372.1	5.6%	$204.3
DC19RS1009	Road Class Oversizing / City Share	2021-2038	$1,652.8	$.0	$.0	$1,652.8	0.0%	$.0	$1,652.8	0.0%	$.0	$.0	$1,652.8	$.0	$1,652.8	69.7%	$1,152.0	14.5%	$239.7	10.2%	$168.6	5.6%	$92.6
DC19RS1010	Strategic Links	2021-2038	$11,094.0	$.0	$.0	$11,094.0	0.0%	$.0	$11,094.0	0.0%	$.0	$.0	$11,094.0	$.0	$11,094.0	69.7%	$7,732.5	14.5%	$1,608.6	10.2%	$1,131.6	5.6%	$621.3
DC19RS1011	Transportation Intelligent Mobility Management System	2021-2028	$12,117.6	$6,858.6	$.0	$5,259.0	0.0%	$.0	$5,259.0	10.0%	$525.9	$.0	$4,733.1	$.0	$4,733.1	69.7%	$3,299.0	14.5%	$686.3	10.2%	$482.8	5.6%	$265.1
	SUBTOTAL		$70,893.1	$6,858.6	$.0	$64,034.5	0.0%	$.0	$64,034.5	18.1%	$11,611.1	$.0	$52,423.5	$.0	$52,423.5	69.7%	$36,539.2	14.5%	$7,601.4	10.2%	$5,347.2	5.6%	$2,935.7

Roads and Related Services
TABLE H-1 Rate Calculation Cont'd

Planning horizon for this component : **2021-2038**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																	Commercial		Institutional		Industrial	
									%	benefit					%	$	%	$	%	$	%	$
	(all $'s in ,000's)		(1)	(2)	(3)	(4) (1) - sum(2,3)	(5)	(6) (4) * (5)	(7) (4) - (6)	(8)	(9) (7) * (8)	(10) [(7) - (9)] * 10%	(11) (7) - sum(9,10)	(12)	(13) (11) - (12)	(14)	(15) (13) * (14)	(16)	(17) (13) * (16)	(18)	(19) (13) * (18)	(20)	(21) (13) * (20)
	Operations Centre (North)																					
DC19OC1001	Administration and Garage Building	2025	$10,440.0	$.0	$.0	$10,440.0	50.0%	$5,220.0	$5,220.0	55.4%	$2,891.9	$.0	$2,328.1	$.0	$2,328.1	73.1%	$1,701.4	12.2%	$284.6	9.6%	$224.0	5.1%	$118.1
DC19OC1001	Salt Storage Building	2025	$1,495.0	$.0	$.0	$1,495.0	50.0%	$747.5	$747.5	11.5%	$86.0	$.0	$661.5	$.0	$661.5	73.1%	$483.5	12.2%	$80.9	9.6%	$63.7	5.1%	$33.5
DC19OC1001	Vehicle Wash Building	2025	$1,000.0	$.0	$.0	$1,000.0	50.0%	$500.0	$500.0	25.0%	$125.0	$.0	$375.0	$.0	$375.0	73.1%	$274.1	12.2%	$45.8	9.6%	$36.1	5.1%	$19.0
DC19OC1001	Fueling Station Building	2025	$500.0	$.0	$.0	$500.0	50.0%	$250.0	$250.0	25.0%	$62.5	$.0	$187.5	$.0	$187.5	73.1%	$137.0	12.2%	$22.9	9.6%	$18.0	5.1%	$9.5
DC19OC1001	Gate House/Guard Shack	2025	$75.0	$.0	$.0	$75.0	50.0%	$37.5	$37.5	25.0%	$9.4	$.0	$28.1	$.0	$28.1	73.1%	$20.6	12.2%	$3.4	9.6%	$2.7	5.1%	$1.4
DC19OC1001	Storage Building	2025	$506.3	$.0	$.0	$506.3	50.0%	$253.1	$253.1	25.0%	$63.3	$.0	$189.8	$.0	$189.8	73.1%	$138.7	12.2%	$23.2	9.6%	$18.3	5.1%	$9.6
DC19OC1001	Coverall Equipment Building	2025	$1,000.0	$.0	$.0	$1,000.0	50.0%	$500.0	$500.0	25.0%	$125.0	$.0	$375.0	$.0	$375.0	73.1%	$274.1	12.2%	$45.8	9.6%	$36.1	5.1%	$19.0
DC19OC1001	Land	2025	$6,460.0	$.0	$.0	$6,460.0	50.0%	$3,230.0	$3,230.0	50.0%	$1,615.0	$.0	$1,615.0	$.0	$1,615.0	73.1%	$1,180.3	12.2%	$197.4	9.6%	$155.4	5.1%	$81.9
	SUBTOTAL		$21,476.3	$.0	$.0	$21,476.3	50.0%	$10,738.1	$10,738.1	46.4%	$4,978.0	$.0	$5,760.1	$.0	$5,760.1	73.1%	$4,209.5	12.2%	$704.2	9.6%	$554.3	5.1%	$292.1
	Traffic Management Centre																					
DC19OC1003	Traffic Management Centre - Phase 2	2024	$310.0	$.0	$.0	$310.0	100.0%	$310.0	$.0	10.0%	$.0	$.0	$.0	$.0	$.0	73.1%	$.0	12.2%	$.0	9.6%	$.0	5.1%	$.0
	SUBTOTAL		$310.0	$.0	$.0	$310.0	100.0%	$310.0	$.0	0.0%	$.0	$.0	$.0	$.0	$.0	0.0%	$.0	0.0%	$.0	0.0%	$.0	0.0%	$.0
	Transportation Servicing Studies																					
DC19GS0006	Cycling Master Plan	2021	$200.0	$.0	$.0	$200.0	0.0%	$.0	$200.0	50.0%	$100.0	$.0	$100.0	$.0	$100.0	73.1%	$73.1	12.2%	$12.2	9.6%	$9.6	5.1%	$5.1
DC14GS0018	Transportation Future Development Charge Studies 2024	2022	$300.0	$.0	$.0	$300.0	0.0%	$.0	$300.0	0.0%	$.0	$.0	$300.0	$.0	$300.0	73.1%	$219.2	12.2%	$36.7	9.6%	$28.9	5.1%	$15.2
DC19GS0007	Transportation Development Charge Studies 2029	2027	$300.0	$.0	$.0	$300.0	100.0%	$300.0	$.0	0.0%	$.0	$.0	$.0	$.0	$.0	73.1%	$.0	12.2%	$.0	9.6%	$.0	5.1%	$.0
DC19GS1002	Long Term Corridor Protection - EA Studies	2021-2028	$991.0	$.0	$.0	$991.0	50.0%	$495.5	$495.5	0.0%	$.0	$.0	$495.5	$.0	$495.5	73.1%	$362.1	12.2%	$60.6	9.6%	$47.7	5.1%	$25.1
DC19GS1003	Traffic Impact Studies	2021-2028	$810.8	$.0	$.0	$810.8	0.0%	$.0	$810.8	0.0%	$.0	$.0	$810.8	$.0	$810.8	73.1%	$592.5	12.2%	$99.1	9.6%	$78.0	5.1%	$41.1
DC19GS1004	Transportation Master Plan Monitoring	2021-2028	$283.8	$.0	$.0	$283.8	0.0%	$.0	$283.8	0.0%	$.0	$.0	$283.8	$.0	$283.8	73.1%	$207.4	12.2%	$34.7	9.6%	$27.3	5.1%	$14.4
	SUBTOTAL		$2,885.5	$.0	$.0	$2,885.5	27.6%	$795.5	$2,090.0	4.8%	$100.0	$.0	$1,990.0	$.0	$1,990.0	73.1%	$1,454.3	12.2%	$243.3	9.6%	$191.5	5.1%	$100.9

Roads and Related Services
TABLE H-1 Rate Calculation Cont'd

Planning horizon for this component : **2021-2038**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																	Commercial		Institutional		Industrial	
									%	benefit					%	$	%	$	%	$	%	$
	(all $'s in ,000's)		(1)	(2)	(3)	(4) (1) - sum(2,3)	(5)	(6) (4) * (5)	(7) (4) - (6)	(8)	(9) (7) * (8)	(10) [(7) - (9)] * 10%	(11) (7) - sum(9,10)	(12)	(13) (11) - (12)	(14)	(15) (13) * (14)	(16)	(17) (13) * (16)	(18)	(19) (13) * (18)	(20)	(21) (13) * (20)
	Corporate Growth Studies																					
DC19GS0013	Community Improvement Plans	2024	$400.0	$.0	$200.0	$200.0	25.0%	$50.0	$150.0	50.0%	$75.0	$.0	$75.0	$.0	$75.0	73.1%	$54.8	12.2%	$9.2	9.6%	$7.2	5.1%	$3.8
DC19GS0014	Growth-related Secondary Plans	2022, 2024, 2026, 2028	$750.0	$.0	$375.0	$375.0	25.0%	$93.8	$281.3	20.0%	$56.3	$.0	$225.0	$.0	$225.0	73.1%	$164.4	12.2%	$27.5	9.6%	$21.7	5.1%	$11.4
DC19GS0015	Rapid Transit Village Plans	2021-2023	$168.8	$.0	$.0	$168.8	50.0%	$84.4	$84.4	20.0%	$16.9	$.0	$67.5	$.0	$67.5	73.1%	$49.3	12.2%	$8.3	9.6%	$6.5	5.1%	$3.4
DC19GS0016	Rapid Transit Corridor Plans	2021-2023	$384.0	$.0	$.0	$384.0	50.0%	$192.0	$192.0	20.0%	$38.4	$.0	$153.6	$.0	$153.6	73.1%	$112.3	12.2%	$18.8	9.6%	$14.8	5.1%	$7.8
DC19GS0017	Urban Design Guidelines - subdivisions and infill	2021	$153.6	$.0	$.0	$153.6	0.0%	$.0	$153.6	10.0%	$15.4	$.0	$138.2	$.0	$138.2	73.1%	$101.0	12.2%	$16.9	9.6%	$13.3	5.1%	$7.0
DC19GS0018	Industrial Development Strategy	2022	$150.0	$.0	$.0	$150.0	50.0%	$75.0	$75.0	0.0%	$.0	$.0	$75.0	$.0	$75.0	0.0%	$.0	0.0%	$.0	0.0%	$.0	100.0%	$75.0
DC19GS0019	Official Plan Review	2022	$409.6	$.0	$.0	$409.6	0.0%	$.0	$409.6	50.0%	$204.8	$.0	$204.8	$.0	$204.8	73.1%	$149.7	12.2%	$25.0	9.6%	$19.7	5.1%	$10.4
DC19GS0020	Zoning By-law Update	2026	$307.2	$.0	$.0	$307.2	50.0%	$153.6	$153.6	20.0%	$30.7	$.0	$122.9	$.0	$122.9	73.1%	$89.8	12.2%	$15.0	9.6%	$11.8	5.1%	$6.2
DC19GS0028	DC Process Consultant - DC 2024	2022	$500.0	$.0	$50.0	$450.0	50.0%	$225.0	$225.0	0.0%	$.0	$.0	$225.0	$.0	$225.0	73.1%	$164.4	12.2%	$27.5	9.6%	$21.7	5.1%	$11.4
DC19GS0029	DC Process Consultant - DC 2029	2027	$500.0	$.0	$.0	$500.0	100.0%	$500.0	$.0	0.0%	$.0	$.0	$.0	$.0	$.0	73.1%	$.0	12.2%	$.0	9.6%	$.0	5.1%	$.0
	SUBTOTAL		$3,723.2	$.0	$625.0	$3,098.2	44.3%	$1,373.7	$1,724.4	25.4%	$437.4	$.0	$1,287.0	$.0	$1,287.0	68.8%	$885.8	11.5%	$148.2	9.1%	$116.6	10.6%	$136.5
	PORTION OF GROWTH PROJECTS FINANCED WITH DEBT (PRINCIPLE)		$30,126.2			$30,126.2			$30,126.2				$30,126.2		$30,126.2	69.7%	$20,992.0	14.3%	$4,317.9	10.1%	$3,044.4	5.9%	$1,771.9
TOTAL			**$1,240,613.8**	**$227,885.0**	**$59,517.9**	**$953,210.9**	**22.4%**	**$213,798.7**	**$739,412.2**	**12.2%**	**$90,233.1**	**$.0**	**$649,179.0**	**$.0**	**$649,179.0**	**69.7%**	**$452,722.5**	**14.5%**	**$93,865.8**	**10.2%**	**$66,128.4**	**5.6%**	**$36,462.3**

Note:

1) Project estimates and assumptions from the 2019 London Development Charges Transportation Background Study have been updated to reflect growth needs in 2021 and beyond.

Development Charge Rate Calculation (Pre-Financing Cost)

	Residential		Commercial		Institutional		Industrial	
Less: Uncommitted Reserve Fund Balance	$4,525.5	69.7%	$3,153.4	14.3%	$648.6	10.1%	$457.3	5.9%	$266.2
Total net cost eligible for DC rate calculation purposes	$644,653.5	69.7%	$449,569.1	14.5%	$93,217.2	10.2%	$65,671.1	5.6%	$36,196.1
Divided By: Total Gross Growth Projections			90,930		600,943		681,100		532,975
Calculated DC Rate - Pre-Financing			**$4,944.12** /person		**$155.12** /sq. m.		**$96.42** /sq. m.		**$67.91** /sq. m.

Pre- Financing Cost Residential Rates:

		Pre Financing	*Post Financing*
Single Family Dwelling	3.12	$ 15,425.66	$ 16,990.07
Multiple unit dwelling	2.11	$ 10,432.10	$ 11,490.08
Apartment - bach. & 1 bed	1.38	$ 6,822.89	$ 7,514.84
Apartment - ≥ 2 bedroom	1.87	$ 9,245.51	$ 10,183.15

Roads and Related Services
TABLE H-2 Final Rate Calculation & Cash Flow

($000's)

			FINAL RESULT		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Planning Horizon - yrs	18	Pre-Financing DC Rate	Post-Financing DC Rate	% Collected assumption																			
Growth - Res. (Persons In New Housing)	90,930	$ 4,944.12	$ 5,445.54	100%	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	90,930.0
Growth - Non-Res. (sq. m.)																							
Commercial	600,943	$ 155.12	$ 170.85	100%	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	600,943.0
Institutional	681,100	$ 96.42	$ 106.20	100%	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	681,100.0
Industrial	532,975	$ 67.91	$ 74.80	100%	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	532,975.0
Total Non-Res.	1,815,018				100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	1,815,018.0
Reserve Fund Projections:																							
Opening Surplus / <Deficit>					$4,525.5	$14,810.7	$10,102.4	-$26,472.8	-$40,977.9	-$93,647.3	-$130,488.8	-$145,174.1	-$162,296.4	-$171,122.0	-$190,643.8	-$188,425.3	-$176,595.8	-$176,057.9	-$185,983.7	-$191,559.4	-$179,850.8	-$177,784.1	$4,525.5
Revenues - Development Charge Collections																							
Residential					$27,509.0	$27,509.0	$27,509.0	$27,509.0	$27,509.0	$27,509.0	$27,509.0	$27,509.0	$27,509.0	$27,509.0	$27,509.0	$27,509.0	$27,509.0	$27,509.0	$27,509.0	$27,509.0	$27,509.0	$27,509.0	$495,162.6
Non-Res.																							
Commercial					$5,703.9	$5,703.9	$5,703.9	$5,703.9	$5,703.9	$5,703.9	$5,703.9	$5,703.9	$5,703.9	$5,703.9	$5,703.9	$5,703.9	$5,703.9	$5,703.9	$5,703.9	$5,703.9	$5,703.9	$5,703.9	$102,670.9
Institutional					$4,018.4	$4,018.4	$4,018.4	$4,018.4	$4,018.4	$4,018.4	$4,018.4	$4,018.4	$4,018.4	$4,018.4	$4,018.4	$4,018.4	$4,018.4	$4,018.4	$4,018.4	$4,018.4	$4,018.4	$4,018.4	$72,331.2
Industrial					$2,214.8	$2,214.8	$2,214.8	$2,214.8	$2,214.8	$2,214.8	$2,214.8	$2,214.8	$2,214.8	$2,214.8	$2,214.8	$2,214.8	$2,214.8	$2,214.8	$2,214.8	$2,214.8	$2,214.8	$2,214.8	$39,866.9
Total Non-Res.					$11,937.2	$11,937.2	$11,937.2	$11,937.2	$11,937.2	$11,937.2	$11,937.2	$11,937.2	$11,937.2	$11,937.2	$11,937.2	$11,937.2	$11,937.2	$11,937.2	$11,937.2	$11,937.2	$11,937.2	$11,937.2	$214,869.1
Total revenues					$39,446.2	$39,446.2	$39,446.2	$39,446.2	$39,446.2	$39,446.2	$39,446.2	$39,446.2	$39,446.2	$39,446.2	$39,446.2	$39,446.2	$39,446.2	$39,446.2	$39,446.2	$39,446.2	$39,446.2	$39,446.2	$710,031.7
Development Charge draws - calculated on separate page					$29,333.5	$44,376.7	$75,803.3	$53,052.9	$90,322.4	$73,302.2	$50,459.6	$52,473.0	$43,830.6	$54,149.3	$32,178.4	$22,754.5	$34,210.9	$44,549.6	$39,993.0	$22,790.3	$32,615.8	$38,252.4	$834,448.3
Closing surplus / <deficit> before interest					$14,638.2	$9,880.2	-$26,254.7	-$40,079.5	-$91,854.1	-$127,503.3	-$141,502.2	-$158,200.9	-$166,680.8	-$185,825.0	-$183,376.1	-$171,733.7	-$171,360.5	-$181,161.2	-$186,530.5	-$174,903.5	-$173,020.4	-$176,590.3	-$119,891.1
Non-inflationary interest revenue /<expense>																							
on savings	1.80%				$172.5	$222.2																	$394.7
on borrowings	2.70%						-$218.1	-$898.5	-$1,793.2	-$2,985.5	-$3,671.9	-$4,095.6	-$4,441.2	-$4,818.8	-$5,049.3	-$4,862.1	-$4,697.4	-$4,822.5	-$5,028.9	-$4,947.2	-$4,763.8	-$4,784.1	-$61,878.0
Closing surplus / <deficit>					$14,810.7	$10,102.4	-$26,472.8	-$40,977.9	-$93,647.3	-$130,488.8	-$145,174.1	-$162,296.4	-$171,122.0	-$190,643.8	-$188,425.3	-$176,595.8	-$176,057.9	-$185,983.7	-$191,559.4	-$179,850.8	-$177,784.1	-$181,374.4	-$181,374.4

Target which reflects growth costs incurred in the forecast period and recoverable from future growth -$181,374.4

Explanatory note

This worksheet projects future activity in this reserve fund. It ultimately determines the rates necessary to recover all costs intended for recovery from growth (including financing costs). The deficit in the fund at the end of the planning horizon reflects costs intended for recovery from future growth.

Other Information:	Pre	Post
Residential share	70%	70%
Non-residential		
Commercial	14%	14%
Institutional	10%	10%
Industrial	6%	6%

APPENDIX I:

Wastewater Services

Wastewater Services

The 2014 Wastewater Servicing Master Plan Update and Development Charge (DC) Background Study prepared by AECOM was used as a foundational document in the development of the 2019 One Water DC Update Study. The 2019 One Water DC Update Study prepared by in-house City of London staff provides an updated 20 year plan for Water, Wastewater and Stormwater servicing to support development related growth within the City of London. For Wastewater, the update looked at the full system including wastewater collection system, pumping station and pollution control facilities. The 2019 One Water DC Update Study reached its conclusions by:

- Updating the City of London 2014 Wastewater Servicing DC Background Study to address 20 year growth, on a 5 year incremental basis, with consideration of the ultimate system requirements over 50 years.
- Confirming existing system operating conditions, related regulatory requirements and service level needs and reconfirm/identify any new growth related requirements.
- Updating costs for required growth works, growth/non-growth components and appropriate residential, institutional, commercial and industrial allocations for trunk sewer upsizing, new collection works required, including pumping station/forcemain and pollution control plant facilities.
- Considering ultimate build-out requirements to ensure appropriate Wastewater system components and facilities are identified and post 2038 development can be determined.
- Incorporating outputs from more recently completed works, Environmental Assessments (EA), and/or community plans; when possible ensure consistency with the City's updated DC Transportation Background Study, and update project timing in accordance with the most recent Growth Management Implementation Strategy (GMIS).

More detailed information is available in the AECOM 2014 Wastewater Servicing DC Background Study and 2019 One Water DC Update Study.

For the 2021 DC Study Update, City of London staff have reconfirmed the growth capital works to ensure that there were no fundamental changes to wastewater infrastructure over the planning period. Due to legislative changes to the *Development Charges Act* wastewater servicing studies previously included under Corporate Growth Studies, have been transferred to the Wastewater Service component.

Policy Considerations

The following policies were used to establish the quantum of works included in the Wastewater DC:

(a) Regional Trunk Sewers

All sewers required to service future development with a diameter greater than 450mm are considered to satisfy a regional benefit to growth and are to be identified as separate projects in the DC Study and are eligible for a claim from the CSRF.

In order to be eligible for a claim as a regional trunk sewer, the sewer must have no Private Drain Connections to individual residential units otherwise the "Sewer Oversizing" policy applies.

(b) Sewer Oversizing

Sewers, which are not regional trunk sewers, with the following attributes are eligible for a subsidy from the CSRF:

- The sewer services external developable areas; and
- The sewer is greater than 250mm in diameter.

The oversized portion (>250mm) is eligible for a subsidy payable based on the diameter of pipe and the average depth of sewer between maintenance holes. The subsidy unit cost is determined by rounding the average depth of sewer between maintenance holes to the nearest depth correlating to the dollar values reflected in the DC By-law.

The subsidy unit cost per metre of pipe is applied to each segment length of oversized sewer to determine the total oversizing subsidy.

Where oversized Box and Elliptical sewers are constructed, an additional non-circular subsidy percentage is applied to the subsidy unit cost per metre.

If the total oversizing subsidy exceeds the actual cost to construct the oversized sewer, the upset claim limit shall not exceed the actual construction cost.

The oversizing subsidy amounts cover the cost per metre of all associated eligible costs including engineering, manholes, restoration, etc.

(c) Pumping Stations

The upgrading or construction of new regional pumping stations are to be identified as separate projects in the DC Background Study and are eligible for a claim from the CSRF.

(d) Wastewater Treatment Upgrades

All wastewater treatment upgrades are considered to satisfy a regional benefit to growth and are to be identified as separate projects in the DC Study and are eligible for a claim from the CSRF.

(e) Strategic Links

All sewers of any diameter required to service future development that are identified as a strategic link by the City Engineer (or designate) and are considered to satisfy a regional benefit to growth are eligible for a claim from the CSRF.

(f) Built Area Works

Infill and intensification servicing needs that meet the following requirements will be classified as Built Area Works:

- Service lands inside the Built Area;
- Provide a regional benefit to growth;
- Replace existing infrastructure; and
- Are located within the municipal right-of-way or easement.

Built Area Works are eligible for a claim from the CSRF. For a determination of the eligible growth portion of the Built Area Work, refer to the DC By-law.

(g) Temporary Pumping Stations

The cost of any temporary pumping stations or forcemains is borne by the Owner. Approval of temporary works is at the discretion of the City Engineer (or designate). Where a temporary facility precedes the construction of a permanent facility, the Owner that requires the temporary facility will be required to also assist in making provision for the permanent facility (i.e. provide land for permanent facility) as a condition of approval for the temporary facility. In order for a temporary work to proceed there must first be provisions for the permanent work within the current DC Study.

(h) Temporary Wastewater Systems

Costs of all Wastewater systems that are temporary or are not defined in the DC Study shall be borne by the Owner. Approval of temporary works is at the discretion of the City Engineer (or designate). Where temporary works precedes the construction of permanent works, the Owner that requires the temporary works will be required to also assist in making provision for the permanent works (i.e. secure land) as a condition of approval for the temporary works. In order for a temporary work to proceed there must first be provisions for the permanent work within the current DC Study.

(i) Local Service Costs

The following subsections list the various Wastewater components which are considered a local service cost and are therefore constructed at the expense of the Owner:

- Any pipe or portion of a larger pipe that is less than or equal to 250mm in diameter are referred to as local works; and
- Connections from a local sewer to existing external infrastructure.

DC Update Methodology

Pollution control plant facilities and pumping station expansions and improvements will be needed to handle future sewage flows, in addition to more stringent effluent requirements. Given the size of the pollution control plant facilities involved and the fact that sewage flows are conveyed to these facilities under varying conditions, expansion needs were driven by the following:

- Average existing and future sewage flows (i.e. not peaked);
- An inflow and infiltration (I&I) allowance of 8,640 L/ha/day per the standard design parameter;
- Expansion needs being closely matched to the 2038 sewage flow requirements with minimal oversizing; and
- Sewage flows being balanced, wherever possible, among the pollution control plants to maximize the utilization of available sewage treatment capacity and minimize the need for added expansions unless absolutely necessary.

Establishing Costing Estimates

For the 2019 DC Study, a number of tools and analysis were used including a review of past cost estimating methodologies, a review of inflationary pressures and market adjustments in the London area, a review of recent EA estimates and tender results. The unit cost estimates provided in the 2014 Water, Wastewater and Stormwater DC studies were updated with the support provided by a professional cost estimator employed at one of London's major heavy construction contractors.

Costs for engineering studies, EAs, design and construction administration along with the inclusion of a contingency amount for capital projects are included in the calculation of the cost of each growth project. Since many of the projects in this DC Study have not been considered through an EA process or gone through a preliminary design, a 20% contingency and 15% engineering allowance have been applied. These values mirror those used in previous DC studies.

The 2019 DC Study cost estimates were used as the foundation for the 2021 DC Study Update. Construction cost index factors were used to arrive at 2021 values that are required in the 2021 DC Study Update.

Post-Period Benefit Adjustments

The *Development Charges Act* requires that adjustments be applied to costs attributable to the rate calculations for works considered to benefit post-period growth. Only those costs attributable to servicing the defined growth period are to be included in the establishment of a DC rate. In some cases, the total calculated cost of the works have been adjusted to represent the proportion of costs attributable to the defined growth period. Remaining costs are identified in the DC Study as post-period benefits. The 2021 DC Study Update carried forward the 2019 DC Study post period benefit calculations since the end of the planning period has remained unchanged.

Allocation Splits

(a) Growth/Non-Growth

The growth and non-growth allocations for Wastewater works vary by project. Growth/non-growth splits for Wastewater works were determined as follows:

- City allocated the growth forecast for Residential / Institutional, Commercial and Industrial across the City's transportation planning zones based on the Watson & Associates Economists Ltd. (Watson) growth forecasts which were endorsed by Council in 2018. These growth forecasts were reconfirmed by Watson in 2020.
- Sub-divided the transportation zones by Wastewater service areas and tied to existing or new nodes in the Wastewater model.
- For new works added as part of the 2019 DC Study, existing Wastewater demands were determined based on current flow information within the GMIS Boundary and then non-growth/growth and residential/ICI splits were determined based on applying design criteria for residential and ICI Wastewater demands.

(b) Residential/ICI

Net eligible DC costs are allocated to residential and non-residential growth (i.e. ICI). The residential and ICI allocations were generated using Watson's growth forecasts.

Three types of allocation splits were used based on the particular project. Projects that provide servicing primarily to non-industrial areas have been applied a "Community Growth" value that exclude industrial related growth. An "Industrial Growth" allocation is applied to infrastructure that strictly services industrial lands and projects that service city-wide growth have been allocated using a city-wide residential and ICI allocation.

Final Costs for DC Rate Calculation

The required Wastewater works form the basis for determining DCs for the CSRF and represent the numerator in the rate calculation. The final total costs calculated for Wastewater works are shown in Table I-1.

Financing Costs

Table I-2 was produced to simulate cash flows for CSRF funded Wastewater works for the purpose of calculating the final DC rate inclusive of financing costs. Forecasting cash flow and financing costs involved:

a) Starting with the 2021 opening balance, which reflects accumulated uncommitted funds for growth projects identified in past DC studies;
b) Projecting DC revenues using the "pre-finance" rate;
c) Incorporating DC drawdowns in the cash flow projection based on the growth projects identified in the study period;
d) Incorporating provisions for debt payments for previously approved commitments on growth works funded by debt; and
e) Estimating annual interest revenues to be earned and/or financing costs to be incurred due to fund deficits throughout the planning horizon.

Any deficit in the cash flow analysis at the end of the planning period equates to the amounts of the expenditures incurred during the planning period to be recovered from growth in the future (i.e. the post-period benefit). All figures are un-inflated and were determined for the period immediately preceding the DC Study. The rates generated from this cash flow analysis reflect the appropriate cost recovery from growth for the planning horizon.

Wastewater Services
TABLE I-1 Rate Calculation

Planning horizon for this component : **2021-2038**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - Improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																	Commercial		Institutional		Industrial	
									%	benefit					%	$	%	$	%	$	%	$
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
	(all $'s in ,000's)					(1) - sum(2,3)		(4) * (5)	(4) - (6)		(7) * (8)	[(7) - (9)] * 10%	(7) - sum(9,10)		(11) - (12)		(13) * (14)		(13) * (16)		(13) * (18)		(13) * (20)
	Wastewater Trunk Sewers																					
DC14WW0010	SS15B - Talbot Growth Area Greenway PCP Sewershed	2025	$3,036.0	$.0	$.0	$3,036.0	0.0%	$.0	$3,036.0	0.0%	$.0	$.0	$3,036.0	$.0	$3,036.0	73.8%	$2,240.6	15.4%	$467.6	10.8%	$327.9	0.0%	$.0
	SUBTOTAL		$3,036.0	$.0	$.0	$3,036.0	0.0%	$.0	$3,036.0	0.0%	$.0	$.0	$3,036.0	$.0	$3,036.0	73.8%	$2,240.6	15.4%	$467.6	10.8%	$327.9	0.0%	$.0
	Wastewater Internal Oversizing Subsidy																					
DC19WW1001	Wastewater Internal Oversizing Subsidy	2021-2038	$4,092.8	$.0	$.0	$4,092.8	0.0%	$.0	$4,092.8	0.0%	$.0	$.0	$4,092.8	$.0	$4,092.8	73.8%	$3,020.5	15.4%	$630.3	10.8%	$442.0	0.0%	$.0
	SUBTOTAL		$4,092.8	$.0	$.0	$4,092.8	0.0%	$.0	$4,092.8	0.0%	$.0	$.0	$4,092.8	$.0	$4,092.8	73.8%	$3,020.5	15.4%	$630.3	10.8%	$442.0	0.0%	$.0
	Wastewater Servicing - Built Area Works																					
DC19WW1002	Wastewater Servicing - Built Area Works	2021-2038	$29,521.7	$.0	$.0	$29,521.7	5.0%	$1,476.1	$28,045.6	62.4%	$17,488.6	$.0	$10,557.0	$.0	$10,557.0	73.8%	$7,791.1	15.4%	$1,625.8	10.8%	$1,140.2	0.0%	$.0
	SUBTOTAL		$29,521.7	$.0	$.0	$29,521.7	5.0%	$1,476.1	$28,045.6	62.4%	$17,488.6	$.0	$10,557.0	$.0	$10,557.0	73.8%	$7,791.1	15.4%	$1,625.8	10.8%	$1,140.2	0.0%	$.0
	Wastewater Servicing - Strategic Links																					
DC19WW1003	Wastewater Servicing - Strategic Links	2021-2038	$6,748.4	$.0	$.0	$6,748.4	0.0%	$.0	$6,748.4	10.0%	$674.8	$.0	$6,073.5	$.0	$6,073.5	73.8%	$4,482.3	15.4%	$935.3	10.8%	$655.9	0.0%	$.0
	SUBTOTAL		$6,748.4	$.0	$.0	$6,748.4	0.0%	$.0	$6,748.4	10.0%	$674.8	$.0	$6,073.5	$.0	$6,073.5	73.8%	$4,482.3	15.4%	$935.3	10.8%	$655.9	0.0%	$.0
	Wastewater Treatment Plant Upgrades																					
DC19WW0001	Adelaide Expansion Studies	2026	$512.0	$.0	$.0	$512.0	0.0%	$.0	$512.0	19.0%	$97.3	$.0	$414.7	$.0	$414.7	69.7%	$289.1	14.5%	$60.1	10.2%	$42.3	5.6%	$23.2
DC19WW0002	Greenway Expansion Studies	2024	$813.2	$.0	$250.0	$563.2	0.0%	$.0	$563.2	29.0%	$163.3	$.0	$399.9	$.0	$399.9	69.7%	$278.7	14.5%	$58.0	10.2%	$40.8	5.6%	$22.4
DC19WW0003	Greenway Incinerator Upgrade	2035	$76,800.0	$.0	$.0	$76,800.0	94.0%	$72,192.0	$4,608.0	72.4%	$3,336.2	$.0	$1,271.8	$.0	$1,271.8	69.7%	$886.5	14.5%	$184.4	10.2%	$129.7	5.6%	$71.2
DC19WW0004	Oxford Expansion	2032	$10,740.0	$.0	$500.0	$10,240.0	81.0%	$8,294.4	$1,945.6	0.0%	$.0	$.0	$1,945.6	$.0	$1,945.6	69.7%	$1,356.1	14.5%	$282.1	10.2%	$198.5	5.6%	$109.0
DC14WW1002	Vauxhall Expansion	2021	$6,144.0	$.0	$.0	$6,144.0	19.0%	$1,167.4	$4,976.6	50.0%	$2,488.3	$.0	$2,488.3	$.0	$2,488.3	73.8%	$1,836.4	15.4%	$383.2	10.8%	$268.7	0.0%	$.0
	SUBTOTAL		$95,009.2	$.0	$750.0	$94,259.2	86.6%	$81,653.8	$12,605.4	48.3%	$6,085.1	$.0	$6,520.3	$.0	$6,520.3	71.3%	$4,646.7	14.8%	$967.8	10.4%	$680.0	3.5%	$225.8
	Wastewater Pumping Station Works																					
DC19WW0006	Byron PS Upgrade	2023	$3,558.8	$.0	$1,050.0	$2,508.8	12.4%	$311.1	$2,197.7	0.0%	$.0	$.0	$2,197.7	$.0	$2,197.7	69.7%	$1,531.8	14.5%	$318.7	10.2%	$224.2	5.6%	$123.1
DC19WW0007	Colonel Talbot PS Upgrade	2028	$512.0	$.0	$.0	$512.0	46.2%	$236.5	$275.5	0.0%	$.0	$.0	$275.5	$.0	$275.5	69.7%	$192.0	14.5%	$39.9	10.2%	$28.1	5.6%	$15.4
DC19WW0008	Dingman Creek PS Peak Shaving	2025	$7,471.6	$.0	$150.0	$7,321.6	0.0%	$.0	$7,321.6	0.0%	$.0	$.0	$7,321.6	$.0	$7,321.6	69.7%	$5,103.2	14.5%	$1,061.6	10.2%	$746.8	5.6%	$410.0
DC14WW1005	East Park PS Upgrade	2021	$4,056.3	$.0	$1,653.0	$2,403.3	0.0%	$.0	$2,403.3	0.0%	$.0	$.0	$2,403.3	$.0	$2,403.3	69.7%	$1,675.1	14.5%	$348.5	10.2%	$245.1	5.6%	$134.6
	SUBTOTAL		$15,598.7	$.0	$2,853.0	$12,745.7	4.3%	$547.6	$12,198.1	0.0%	$.0	$.0	$12,198.1	$.0	$12,198.1	69.7%	$8,502.1	14.5%	$1,768.7	10.2%	$1,244.2	5.6%	$683.1

Wastewater Services
TABLE I-1 Rate Calculation Cont'd

Planning horizon for this component : **2021-2038**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share %	Non-growth share benefit	Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL %	RESIDENTIAL $	NON - RESIDENTIAL Commercial %	Commercial $	Institutional %	Institutional $	Industrial %	Industrial $
	(all $'s in ,000's)		(1)	(2)	(3)	(4) (1) - sum(2,3)	(5)	(6) (4) * (5)	(7) (4) - (6)	(8)	(9) (7) * (8)	(10) [(7) - (9)] * 10%	(11) (7) - sum(9,10)	(12)	(13) (11) - (12)	(14)	(15) (13) * (14)	(16)	(17) (13) * (16)	(18)	(19) (13) * (18)	(20)	(21) (13) * (20)
DC19WW1000	**Industrial Wastewater Servicing Works**																					
DC19WW1004	Industrial Wastewater Servicing Internal Oversizing (250ha)	2021-2028	$472.5	$0.0	$0.0	$472.5	0.0%	$0.0	$472.5	0.0%	$0.0	$0.0	$472.5	$0.0	$472.5	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0	100.0%	$472.5
DC19WW1005	Industrial Wastewater Servicing (250ha)	2021-2028	$5,924.9	$0.0	$0.0	$5,924.9	0.0%	$0.0	$5,924.9	0.0%	$0.0	$0.0	$5,924.9	$0.0	$5,924.9	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0	100.0%	$5,924.9
DC19WW1006	Industrial Wastewater Servicing (300ha)	2029-2038	$10,080.0	$0.0	$0.0	$10,080.0	97.0%	$9,777.6	$302.4	0.0%	$0.0	$0.0	$302.4	$0.0	$302.4	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0	100.0%	$302.4
DC19WW1007	Industrial Wastewater Servicing Internal Oversizing (300ha)	2029-2038	$210.0	$0.0	$0.0	$210.0	97.0%	$203.7	$6.3	0.0%	$0.0	$0.0	$6.3	$0.0	$6.3	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0	100.0%	$6.3
	SUBTOTAL		$16,687.4	$0.0	$0.0	$16,687.4	59.8%	$9,981.3	$6,706.1	0.0%	$0.0	$0.0	$6,706.1	$0.0	$6,706.1	0.0%	$0.0	0.0%	$0.0	0.0%	$0.0	100.0%	$6,706.1
	Wastewater Servicing Studies																					
DC19GS0003	Built Area Specific Studies	2021-2023	$184.3	$0.0	$0.0	$184.3	0.0%	$0.0	$184.3	0.0%	$0.0	$0.0	$184.3	$0.0	$184.3	73.1%	$134.7	12.2%	$22.5	9.6%	$17.7	5.1%	$9.4
DC14GS0009	Wastewater Future Development Charge Studies 2024	2022	$307.2	$0.0	$0.0	$307.2	0.0%	$0.0	$307.2	0.0%	$0.0	$0.0	$307.2	$0.0	$307.2	73.1%	$224.6	12.2%	$37.5	9.6%	$29.5	5.1%	$15.7
DC19GS0005	Wastewater Future Development Charge Studies 2029	2027	$307.2	$0.0	$0.0	$307.2	100.0%	$307.2	$0.0	0.0%	$0.0	$0.0	$0.0	$0.0	$0.0	73.1%	$0.0	12.2%	$0.0	9.6%	$0.0	5.1%	$0.0
	SUBTOTAL		$798.7	$0.0	$0.0	$798.7	38.5%	$307.2	$491.5	0.0%	$0.0	$0.0	$491.5	$0.0	$491.5	73.1%	$359.3	12.2%	$60.0	9.6%	$47.2	5.1%	$25.1
	PORTION OF GROWTH PROJECTS FINANCED WITH DEBT (PRINCIPLE)		$76,800.7			$76,800.7			$76,800.7				$76,800.7		$76,800.7	69.4%	$53,287.7	9.0%	$6,889.6	5.8%	$4,477.1	15.8%	$12,146.3
TOTAL			**$248,293.7**	**$0.0**	**$3,603.0**	**$244,690.7**	**38.4%**	**$93,966.0**	**$150,724.7**	**16.1%**	**$24,248.5**	**$0.0**	**$126,476.1**	**$0.0**	**$126,476.1**	**66.7%**	**$84,330.2**	**10.6%**	**$13,345.0**	**7.1%**	**$9,014.5**	**15.6%**	**$19,786.4**

Note:
Project estimates and assumptions from the 2019 One Water Development Charge Update Study have been updated to reflect growth needs in 2021 and beyond.

Development Charge Rate Calculation (Pre-Financing Cost)

		Residential		Commercial		Institutional		Industrial
Less: Uncommitted Reserve Fund Balance	$1,106.0	69.4%	$767.4	9.0%	$99.2	5.8%	$64.5	15.8%	$174.9
Total net cost eligible for DC rate calculation purposes	$125,370.2	66.7%	$83,562.8	10.6%	$13,245.8	7.1%	$8,950.1	15.6%	$19,611.5
Divided By: Total Gross Growth Projections			90,930		600,943		681,100		532,975
Calculated DC Rate - Pre-Financing			**$918.98** /person		**$22.04** /sq. m.		**$13.14** /sq. m.		**$36.80** /sq. m.

Pre- Financing Cost Residential Rates:

		Pre Financing	*Post Financing*
Single Family Dwelling	3.12	$ 2,867.22	$ 3,488.31
Multiple unit dwelling	2.11	$ 1,939.05	$ 2,359.08
Apartment - bach. & 1 bed	1.38	$ 1,268.19	$ 1,542.90
Apartment - ≥ 2 bedroom	1.87	$ 1,718.49	$ 2,090.75

Wastewater Services
TABLE I-2 Cash Flow Analysis & Final Rate Calculation

($000's)

			FINAL RESULT		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Planning Horizon - yrs	18	Pre-Financing DC Rate	Post-Financing DC Rate	% Collected assumption	Growth projection for each year of forecast period																		
Growth - Res. (Persons In New Housing)	90,930	$ 918.98	$ 1,118.05	100%	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	90,930.0
Growth - Non-Res. (sq. m.)																							
Commercial	600,943	$ 22.04	$ 26.82	100%	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	600,943.0
Institutional	681,100	$ 13.14	$ 15.99	100%	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	681,100.0
Industrial	532,975	$ 36.80	$ 44.77	100%	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	532,975.0
Total Non-Res.	1,815,018				100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	1,815,018.0
Reserve Fund Projections:																							
Opening Surplus / <Deficit>					$1,106.0	-$3,160.5	-$5,008.0	-$11,014.4	-$15,038.3	-$29,089.6	-$33,254.2	-$37,418.3	-$41,635.6	-$43,308.1	-$43,831.0	-$43,904.5	-$50,925.8	-$45,677.6	-$40,229.2	-$56,116.7	-$50,950.2	-$45,644.1	$1,106.0
Revenues - Development Charge Collections																							
Residential					$5,648.0	$5,648.0	$5,648.0	$5,648.0	$5,648.0	$5,648.0	$5,648.0	$5,648.0	$5,648.0	$5,648.0	$5,648.0	$5,648.0	$5,648.0	$5,648.0	$5,648.0	$5,648.0	$5,648.0	$5,648.0	$101,664.0
Non-Res.																							
Commercial					$895.3	$895.3	$895.3	$895.3	$895.3	$895.3	$895.3	$895.3	$895.3	$895.3	$895.3	$895.3	$895.3	$895.3	$895.3	$895.3	$895.3	$895.3	$16,115.1
Institutional					$604.9	$604.9	$604.9	$604.9	$604.9	$604.9	$604.9	$604.9	$604.9	$604.9	$604.9	$604.9	$604.9	$604.9	$604.9	$604.9	$604.9	$604.9	$10,888.8
Industrial					$1,325.5	$1,325.5	$1,325.5	$1,325.5	$1,325.5	$1,325.5	$1,325.5	$1,325.5	$1,325.5	$1,325.5	$1,325.5	$1,325.5	$1,325.5	$1,325.5	$1,325.5	$1,325.5	$1,325.5	$1,325.5	$23,859.7
Total Non-Res.					$2,825.8	$2,825.8	$2,825.8	$2,825.8	$2,825.8	$2,825.8	$2,825.8	$2,825.8	$2,825.8	$2,825.8	$2,825.8	$2,825.8	$2,825.8	$2,825.8	$2,825.8	$2,825.8	$2,825.8	$2,825.8	$50,863.5
Total revenues					$8,473.8	$8,473.8	$8,473.8	$8,473.8	$8,473.8	$8,473.8	$8,473.8	$8,473.8	$8,473.8	$8,473.8	$8,473.8	$8,473.8	$8,473.8	$8,473.8	$8,473.8	$8,473.8	$8,473.8	$8,473.8	$152,527.6
Development Charge draws - calculated on separate page					$12,712.8	$10,212.5	$14,266.7	$12,150.6	$21,937.3	$11,807.9	$11,696.5	$11,638.1	$9,014.7	$7,836.0	$7,378.6	$14,231.9	$1,938.8	$1,881.1	$23,077.9	$1,881.1	$1,881.1	$1,881.1	$177,424.6
Closing surplus / <deficit> before interest					-$3,133.1	-$4,899.2	-$10,801.0	-$14,691.2	-$28,501.8	-$32,423.8	-$36,476.9	-$40,582.6	-$42,176.6	-$42,670.3	-$42,735.9	-$49,662.6	-$44,390.8	-$39,084.9	-$54,833.3	-$49,524.0	-$44,357.5	-$39,051.4	-$23,791.0
Non-inflationary interest revenue /<expense>																							$.0
on savings	1.80%				-$27.4	-$108.8	-$213.4	-$347.0	-$587.8	-$830.4	-$941.4	-$1,053.0	-$1,131.5	-$1,160.7	-$1,168.7	-$1,263.2	-$1,286.8	-$1,144.3	-$1,283.3	-$1,426.1	-$1,286.7	-$1,143.4	-$16,403.8
on borrowings	2.70%																						
Closing surplus / <deficit>					-$3,160.5	-$5,008.0	-$11,014.4	-$15,038.3	-$29,089.6	-$33,254.2	-$37,418.3	-$41,635.6	-$43,308.1	-$43,831.0	-$43,904.5	-$50,925.8	-$45,677.6	-$40,229.2	-$56,116.7	-$50,950.2	-$45,644.1	-$40,194.8	-$40,194.8

Target which reflects growth costs incurred in the forecast period and recoverable from future growth -$40,194.8

Explanatory note

This worksheet projects future activity in this reserve fund. It ultimately determines the rates necessary to recover all costs intended for recovery from growth (including financing costs). The deficit in the fund at the end of the planning horizon reflects costs intended for recovery from future growth.

Other Information:	Pre	Post
Residential share	67%	67%
Non-residential		
Commercial	11%	11%
Institutional	7%	7%
Industrial	16%	16%

APPENDIX J:

Stormwater Management Services

Stormwater Management Services

The 2014 Stormwater and Drainage Development Charge (DC) Update Study prepared by Delcan was used as a foundational document in the development of the 2019 One Water DC Update Study. The 2019 One Water DC Update Study prepared by in-house City of London staff provides the 20 year plan for Water, Wastewater and Stormwater servicing to support development related growth within the City of London. For Stormwater, the update looked at the full system including Stormwater Management (SWM) Facilities, trunk storm sewers, Stormwater conveyance and oversizing, Low Impact Development (LID) and open watercourse works. The DC update reached its conclusions by:

- Updating the City of London 2014 Stormwater and Drainage DC Update Study for Stormwater to address 20 year growth, on a 5 year incremental basis, with consideration of the ultimate system requirements over 50 years.
- Confirming existing system operating conditions, related regulatory requirements and service level needs and reconfirm/identify any new growth related requirements.
- Updating costs for required growth works, growth/non-growth components and appropriate residential, institutional, commercial and industrial allocations for Stormwater management works.
- Considering ultimate build-out requirements to ensure appropriate Stormwater works are identified and post 2038 development can be determined.
- Incorporating outputs from more recently completed works, Environmental Assessments (EA), and/or community plans; ensuring consistency with the City's updated DC Transportation Background Study, and update project timing in accordance with the most recent Growth Management Implementation Strategy (GMIS).

More detailed information is available in the Delcan 2014 Stormwater and Drainage DC Update Study and 2019 One Water DC Update Study.

For the 2021 DC Study Update, City of London staff have reconfirmed the stormwater growth capital works needed over the planning period. A key change identified was the impacts of the completion of the phase 1 Dingman Creek EA. The 2021 DC Study Update reflects the servicing solution for the phase 1 area. Due to legislative changes to the *Development Charges Act* stormwater servicing studies previously included under Corporate Growth Studies have been transferred to the Stormwater Service component.

Policy Considerations

The following policies were used to establish the quantum of works included in the Stormwater Management DC:

(a) Regional Trunk Sewers

All sewers to be constructed within existing City owned lands that service multiple new development areas are considered to satisfy a regional benefit to growth and are to be identified as separate projects in the DC Study are eligible for a claim from the CSRF.

(b) Regional Open Channels

Any open channel works identified through the EA process that are considered to satisfy a regional benefit to growth are to be identified as separate projects in the DC Study and are eligible for a claim from the CSRF.

(c) Storm Sewer Oversizing

Storm Sewers with the following attributes are eligible for a subsidy from the CSRF:

- The sewer services external developable areas; and
- The sewer is greater than 1050mm in diameter.

The oversized portion (>1050mm) is eligible for a subsidy payable based on the diameter of pipe and the average depth of sewer between maintenance holes. The subsidy unit cost is determined by rounding the average depth of sewer between maintenance holes to the nearest depth correlating to the dollar values reflected in the DC By-law.

The subsidy unit cost per metre of pipe is applied to each segment length of oversized sewer to determine the total oversizing subsidy.

Where oversized Box and Elliptical sewers are constructed, an additional non-circular subsidy percentage is applied to the subsidy unit cost per metre.

If the total oversizing subsidy exceeds the actual cost to construct the oversized sewer, the upset claim limit shall not exceed the actual construction cost.

The oversizing subsidy amounts cover the cost per metre of all associated eligible costs including engineering, manholes, restoration, etc.

(d) Open Channel Oversizing

Open Channels with all of the following attributes are eligible for a subsidy from the CSRF:

- An open channel design is required for the reason of inherent site drainage constraints and the design has been accepted by the City Engineer (or designate);
- The open channel services external developable areas; and the open channel has a 2-year storm design flow cross-sectional area greater than a 1050mm sewer using the City's minimum design standards.

The oversized portion represents the cross-sectional area required in excess of a 1050mm sewer for a 2-year storm design. The oversizing subsidy will be calculated based on the additional cost of oversizing beyond an area equivalent to a 1050mm pipe size using the City's minimum design standards for a 2-year storm design flow. The oversizing subsidy is payable based on an average oversizing cost in the form of a $/m of channel constructed as calculated by the Owner's professional engineer and as accepted by the City Engineer (or designate). An allowance of 15% will be added to the calculated oversizing amount to cover applicable engineering costs.

(e) Stormwater Management Works

EA Complete

Any municipally owned or operated Stormwater management works designed to provide capacity to facilitate growth that are identified through the EA process and are considered to satisfy a regional benefit to growth are to be identified as separate projects in the DC Study and are eligible for a claim from the CSRF.

EA Not Complete

Stormwater Management Works for which an EA has not been completed that are anticipated to satisfy a regional benefit to growth are to be identified as separate area specific contingencies in the DC Study and are eligible for a claim from the CSRF.

Upon completion of the applicable EA (i.e. no outstanding Part 2 orders), a review of the related area specific contingency and the DC rate will be undertaken and, if required, an amendment to the DC By-law will be made.

(f) Stormwater Management Facility Land Policies

With respect to land acquisition for SWM Facilities, the value of the land shall align with the CP-9 By-law for Conveyance of Land and Cash in Lieu Thereof Park and Other Purposes. Land will be reimbursed at a specific rate, with different land values assigned to different categories as outlined in the DC By-law.

(g) Major SWM Facility Inlet and Outlet Sewers within the SWM Block

Any storm sewers or engineered channels within a Major SWM Facility block that are either upstream or downstream of a facility are considered to satisfy a regional benefit to growth and are eligible for a claim from the CSRF.

(h) Major SWM Facility Outlet Sewers Outside the SWM Block

Any major SWM Facility outlet system, including storm sewers or engineered channels, that extend outside of the SWM Facility is considered to satisfy a regional benefit to growth and is eligible for a claim from the CSRF if it is a dedicated outlet system to convey flow from the SWM Facility to the allocated downstream storm sewer or watercourse.

(i) Low Impact Development Subsidy – Linear Works

Linear LID works with all of the following attributes are eligible for a subsidy from the CSRF:

- The LID works are infiltration systems designed to improve water quality or the water balance within the new development;
- The LID works are constructed in conjunction with local Stormwater servicing on City-owned lands or within a dedicated municipal easement; and,
- The design has been accepted by the City Engineer (or designate).

Linear LID infiltration works are considered to satisfy a regional benefit to growth and are eligible for a subsidy payable in terms of a $/m of pipe constructed.

The subsidy payable for LID pipe systems is based on the average depth of pipe between maintenance holes. The subsidy unit cost is determined by rounding the average pipe depth between maintenance holes to the nearest depth correlating to the dollar values reflected in the DC By-law. The subsidy unit cost per metre of pipe is applied to each segment length of pipe to determine the total LID subsidy.

For other LIDs, such as rain gardens or infiltration swales, the subsidy payable is based on a 5 m depth for the length of the LID feature.

The subsidy amounts cover the cost per metre of all associated eligible costs including engineering, construction, etc. LID works constructed within a site plan are not eligible for subsidy.

(j) Built Area Works

Infill and intensification servicing needs that meet the following requirements will be classified as Built Area Works:

- Service lands inside the Built Area;
- Provide a regional benefit to growth;
- Replace existing infrastructure; and
- Are located within the municipal right-of-way or easement.

Built Area Works are eligible for a claim from the CSRF. For a determination of the eligible growth portion of the Built Area Work, refer to the DC By-law.

(k) Local Service Costs

The following subsections list the various Stormwater components which are considered a local service cost and are therefore constructed at the expense of the Owner:

- Any pipe or portion of a larger pipe that is less than or equal to 1050mm in diameter are referred to as local works;
- Connections from a local sewer to existing external infrastructure;
- Mitigation/compensation works recommended by an Environmental Impact Study (EIS) that are related to the subdivision; and
- Construction of road side ditches, swales without an infiltration component, and overland flow routes.

(l) Temporary Storm Sewers

Costs of all storm sewer systems that are temporary or not defined in the DC Study shall be borne by the Owner. In order for a temporary work to proceed there must first be provisions for the permanent work within the current DC Study. Approval of temporary works is at the discretion of the City Engineer (or designate).

(m) Temporary Stormwater Management Works

Any temporary works or works not included in the approved DC Study are at the sole expense of the Owner including operation, maintenance and decommissioning. Approval of temporary works is at the discretion of the City Engineer (or designate). Where temporary works precedes the construction of permanent works, the Owner that requires the temporary works will be required to also assist in making provision for the permanent works (i.e. secure land) as a condition of approval for the temporary works. In order for a temporary work to proceed there must first be provisions for the permanent work within the current DC Background Study.

DC Update Methodology

The DC project list is comprised of eligible Stormwater servicing projects required for lands scheduled for development within the growth period. The starting point for updating the list of projects was to remove all works that have been completed since the adoption of the 2019 DC Study and then updating the list of projects based on information derived from Stormwater studies that have been completed. In addition, timing of projects were reviewed and adjusted, if necessary, to align with Transportation, Wastewater, and Water Distribution works and GMIS.

Establishing Cost Estimates

For the 2019 DC Study, a number of tools and analyses were used including a review of past cost estimating methodologies, a review of inflationary pressures and market adjustments in the London area, a review of recent EA estimates and tender results. The unit cost estimates provided in the 2014 Water, Wastewater and Stormwater DC studies were updated with the support provided by a professional cost estimator employed at one of London's major heavy construction contractors.

Costs for engineering studies, EAs, design and construction administration along with the inclusion of a contingency amount for capital projects are included in the calculation of the cost of each growth project. Since many of the projects in this DC Study have not been considered through an EA process or advanced through a preliminary design, a 20% contingency and 15%-20% engineering allowance have been applied. These values mirror those used in previous DC studies.

The 2019 DC Study cost estimates were used as the foundation for the 2021 DC Study Update. Construction cost index factors were used to arrive at 2021 values that are required in the 2021 DC Study Update.

Post-Period Benefit Adjustments

The *Development Charges Act* requires that adjustments be applied to costs attributable to the rate calculations for works considered to benefit post-period growth. Only those costs attributable to servicing the defined growth period are to be included in the establishment of a DC rate. In some cases, the total calculated cost of the works have been adjusted to represent the proportion of costs attributable to the defined growth period. Remaining costs are identified in the DC Study as post-period benefits. The 2021 DC Study Update carried forward the 2019 DC Study post period benefit calculations since the end of the planning period has remained unchanged. Any new projects to the 2021 DC Study Update have been analyzed and a post-period benefit applied where appropriate.

Allocation Splits

(a) Growth/Non-Growth

SWM Facilities and their related components are generally considered to be 100% growth driven due the nature of these facilities being required to service new development. However, where a non-growth component is deemed appropriate, it has been calculated using a ratio of the growth area to developed area.

(b) Residential/ICI

Net eligible DC costs are allocated to residential and non-residential growth (i.e. ICI). The residential and ICI allocations were generated using Watson & Associates Economists Ltd. (Watson) growth forecasts which were endorsed by Council in 2018. These growth forecasts were reconfirmed by Watson in 2020.

Three types of allocation splits were used based on the particular project. Projects that provide servicing primarily to non-industrial areas have been applied a “Community Growth” value that exclude industrial related growth. An “Industrial Growth” allocation is applied to infrastructure that strictly services industrial lands and projects that service city-wide growth have been allocated using a city-wide residential and ICI allocation.

Final Costs for DC Rate Calculation

The required Stormwater servicing works form the basis for determining DCs for the CSRF and represent the numerator in the rate calculation. The final total costs calculated for Stormwater works are listed in Table J-1.

Financing Costs

Table J-2 was produced to simulate cash flows for CSRF funded Stormwater works for the purpose of calculating the final DC rate inclusive of financing costs. Forecasting cash flow and financing costs involved:

a) Starting with the 2021 opening balance, which reflects accumulated uncommitted funds for growth projects identified in past DC studies;
b) Projecting DC revenues using the "pre-finance" rate;
c) Incorporating DC drawdowns in the cash flow projection based on the growth projects identified in the study period;
d) Incorporating provisions for debt payments for previously approved commitments on growth works funded by debt; and
e) Estimating annual interest revenues to be earned and/or financing costs to be incurred due to fund deficits throughout the planning horizon.

Any deficit in the cash flow analysis at the end of the planning period equates to the amounts of the expenditures incurred during the planning period to be recovered from growth in the future (i.e. the post-period benefit). All figures are un-inflated and were determined for the period immediately preceding the DC Study. The rates generated from this cash flow analysis reflect the appropriate cost recovery from growth for the planning horizon.

Stormwater Management Services
TABLE J-1 Rate Calculation

Planning horizon for this component : **2021-2038**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - Improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																	Commercial		Institutional		Industrial	
									%	benefit					%	$	%	$	%	$	%	$
	(all $'s in ,000's)		(1)	(2)	(3)	(4) (1) - sum(2,3)	(5)	(6) (4) * (5)	(7) (4) - (6)	(8)	(9) (7) * (8)	[(7) - (9)] * 10%	(11) (7) - sum(9,10)	(12)	(13) (11) - (12)	(14)	(15) (13) * (14)	(16)	(17) (13) * (16)	(18)	(19) (13) * (18)	(20)	(21) (13) * (20)
	Community Growth SWM Works																					
DC14MS0009	Kilally South, East Basin, SWMF 1	2022	$5,542.0	$.0	$250.0	$5,292.0	0.0%	$.0	$5,292.0	0.0%	$.0	$.0	$5,292.0	$.0	$5,292.0	73.8%	$3,905.5	15.4%	$815.0	10.8%	$571.5	0.0%	$.0
DC21MS0001	Kilally South, East Basin, SWMF 2	2026	$5,628.0	$.0	$.0	$5,628.0	22.9%	$1,288.8	$4,339.2	0.0%	$.0	$.0	$4,339.2	$.0	$4,339.2	73.8%	$3,202.3	15.4%	$668.2	10.8%	$468.6	0.0%	$.0
DC21MS0002	Kilally South, East Basin, SWMF 3	2031	$2,587.0	$.0	$.0	$2,587.0	50.4%	$1,303.8	$1,283.2	0.0%	$.0	$.0	$1,283.2	$.0	$1,283.2	73.8%	$947.0	15.4%	$197.6	10.8%	$138.6	0.0%	$.0
DC14MS0033	Stoney Creek 7.1	2023	$1,799.6	$.0	$.0	$1,799.6	11.1%	$199.8	$1,599.8	0.0%	$.0	$.0	$1,599.8	$.0	$1,599.8	73.8%	$1,180.7	15.4%	$246.4	10.8%	$172.8	0.0%	$.0
DC14MS0034	Stoney Creek SWMF 10	2025	$2,715.4	$.0	$.0	$2,715.4	12.5%	$339.4	$2,376.0	0.0%	$.0	$.0	$2,376.0	$.0	$2,376.0	73.8%	$1,753.5	15.4%	$365.9	10.8%	$256.6	0.0%	$.0
DC14MS0038	Sunningdale SWMF E1	2022	$3,249.4	$.0	$420.0	$2,829.4	0.0%	$.0	$2,829.4	0.0%	$.0	$.0	$2,829.4	$.0	$2,829.4	73.8%	$2,088.1	15.4%	$435.7	10.8%	$305.6	0.0%	$.0
DC14MS0001	Dingman Creek Channel Remediation Works	2026	$10,316.0	$.0	$1,100.0	$9,216.0	0.0%	$.0	$9,216.0	86.0%	$7,925.8	$.0	$1,290.2	$.0	$1,290.2	69.7%	$899.3	14.5%	$187.1	10.2%	$131.6	5.6%	$72.3
DC21MS0003	North Lambeth Tributary 12 Downstream Channel Reconstruction	2021	$3,606.6	$.0	$885.7	$2,720.9	0.0%	$.0	$2,720.9	87.0%	$2,367.2	$.0	$353.7	$.0	$353.7	73.8%	$261.0	15.4%	$54.5	10.8%	$38.2	0.0%	$.0
DC21MS0004	Pincombe Drain P3 - West	2025	$2,918.0	$.0	$.0	$2,918.0	0.0%	$.0	$2,918.0	0.0%	$.0	$.0	$2,918.0	$.0	$2,918.0	73.8%	$2,153.5	15.4%	$449.4	10.8%	$315.1	0.0%	$.0
DC21MS0005	Pincombe Drain P4 - West	2022	$2,315.7	$.0	$.0	$2,315.7	0.0%	$.0	$2,315.7	0.0%	$.0	$.0	$2,315.7	$.0	$2,315.7	73.8%	$1,709.0	15.4%	$356.6	10.8%	$250.1	0.0%	$.0
DC14MS0031	Pincombe Drain SWMF 5	2027	$1,945.6	$.0	$.0	$1,945.6	0.0%	$.0	$1,945.6	0.0%	$.0	$.0	$1,945.6	$.0	$1,945.6	73.8%	$1,435.9	15.4%	$299.6	10.8%	$210.1	0.0%	$.0
DC21MS0006	Pincombe Drain P6	2021	$2,250.9	$.0	$.0	$2,250.9	0.0%	$.0	$2,250.9	0.0%	$.0	$.0	$2,250.9	$.0	$2,250.9	73.8%	$1,661.1	15.4%	$346.6	10.8%	$243.1	0.0%	$.0
DC14MS0039	White Oaks SWMF 3 - West	2022	$3,006.8	$.0	$.0	$3,006.8	5.6%	$168.4	$2,838.4	0.0%	$.0	$.0	$2,838.4	$.0	$2,838.4	73.8%	$2,094.7	15.4%	$437.1	10.8%	$306.5	0.0%	$.0
DC21MS0007	White Oaks SWMF 3 - East	2025	$2,193.6	$.0	$.0	$2,193.6	5.6%	$122.8	$2,070.7	0.0%	$.0	$.0	$2,070.7	$.0	$2,070.7	73.8%	$1,528.2	15.4%	$318.9	10.8%	$223.6	0.0%	$.0
DC21MS0008	White Oaks Channel Complete Corridor (Wharncliffe to White Oaks 3E)	2025	$7,749.4	$.0	$.0	$7,749.4	5.6%	$434.0	$7,315.5	31.9%	$2,335.8	$.0	$4,979.6	$.0	$4,979.6	73.8%	$3,675.0	15.4%	$766.9	10.8%	$537.8	0.0%	$.0
DC14MS0040	White Oaks SWMF 4	2027	$4,505.6	$.0	$.0	$4,505.6	33.3%	$1,500.4	$3,005.2	0.0%	$.0	$.0	$3,005.2	$.0	$3,005.2	73.8%	$2,217.9	15.4%	$462.8	10.8%	$324.6	0.0%	$.0
DC19MS0005	Old Oak SWM 2 (formally DC14-MS00059 & DC14-MS00061)	2027	$2,982.3	$.0	$890.0	$2,092.3	25.0%	$523.1	$1,569.2	0.0%	$.0	$.0	$1,569.2	$.0	$1,569.2	73.8%	$1,158.1	15.4%	$241.7	10.8%	$169.5	0.0%	$.0
DC14MS0014	Murray Marr SWMF 1	2029	$3,174.4	$.0	$.0	$3,174.4	34.8%	$1,104.7	$2,069.7	0.0%	$.0	$.0	$2,069.7	$.0	$2,069.7	69.7%	$1,442.6	14.5%	$300.1	10.2%	$211.1	5.6%	$115.9
DC14MS0017	North Lambeth P1 - North	2033	$2,328.7	$.0	$.0	$2,328.7	61.0%	$1,420.5	$908.2	0.0%	$.0	$.0	$908.2	$.0	$908.2	73.8%	$670.2	15.4%	$139.9	10.8%	$98.1	0.0%	$.0
DC21MS0009	North Lambeth P1 - South	2033	$2,328.7	$.0	$.0	$2,328.7	61.0%	$1,420.5	$908.2	0.0%	$.0	$.0	$908.2	$.0	$908.2	73.8%	$670.2	15.4%	$139.9	10.8%	$98.1	0.0%	$.0

Stormwater Management Services
TABLE J-1 Rate Calculation Cont'd

Planning horizon for this component : **2021-2038**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																	Commercial		Institutional		Industrial	
									%	benefit					%	$	%	$	%	$	%	$
	(all $'s in ,000's)		(1)	(2)	(3)	(4) (1) - sum(2,3)	(5)	(6) (4) * (5)	(7) (4) - (6)	(8)	(9) (7) * (8)	(10) [(7) - (9)] * 10%	(11) (7) - sum(9,10)	(12)	(13) (11) - (12)	(14)	(15) (13) * (14)	(16)	(17) (13) * (16)	(18)	(19) (13) * (18)	(20)	(21) (13) * (20)
	Community Growth SWM Works Cont'd																					
DC21MS0010	North Lambeth P2 - North	2025	$2,548.4	$.0	$.0	$2,548.4	0.0%	$.0	$2,548.4	0.0%	$.0	$.0	$2,548.4	$.0	$2,548.4	73.8%	$1,880.7	15.4%	$392.4	10.8%	$275.2	0.0%	$.0
DC14MS0020	North Lambeth P2 - South	2023	$2,385.7	$.0	$.0	$2,385.7	0.0%	$.0	$2,385.7	0.0%	$.0	$.0	$2,385.7	$.0	$2,385.7	73.8%	$1,760.7	15.4%	$367.4	10.8%	$257.7	0.0%	$.0
DC14MS0019	North Lambeth P3 (Dingman Tributary D4)	2026	$4,204.4	$.0	$.0	$4,204.4	36.3%	$1,526.2	$2,678.2	0.0%	$.0	$.0	$2,678.2	$.0	$2,678.2	73.8%	$1,976.5	15.4%	$412.4	10.8%	$289.2	0.0%	$.0
DC14MS0022	North Lambeth P6 - South	2030	$2,666.7	$.0	$.0	$2,666.7	0.0%	$.0	$2,666.7	0.0%	$.0	$.0	$2,666.7	$.0	$2,666.7	73.8%	$1,968.0	15.4%	$410.7	10.8%	$288.0	0.0%	$.0
DC21MS0012	Thornicroft Drain Natural Channel Improvements	2026	$4,272.7	$.0	$.0	$4,272.7	0.0%	$.0	$4,272.7	58.0%	$2,478.2	$.0	$1,794.6	$.0	$1,794.6	73.8%	$1,324.4	15.4%	$276.4	10.8%	$193.8	0.0%	$.0
DC19MS0002	Mud Creek East Branch Phase 3 (Oxford St to CP Rail)	2022	$3,869.1	$.0	$.0	$3,869.1	0.0%	$.0	$3,869.1	0.0%	$.0	$.0	$3,869.1	$.0	$3,869.1	73.8%	$2,855.4	15.4%	$595.8	10.8%	$417.9	0.0%	$.0
DC14MS0036	Stoney Creek SWMF 8	2022	$1,851.2	$.0	$.0	$1,851.2	0.0%	$.0	$1,851.2	0.0%	$.0	$.0	$1,851.2	$.0	$1,851.2	73.8%	$1,366.2	15.4%	$285.1	10.8%	$199.9	0.0%	$.0
DC19MS0063	Interim Works As Identified In EAs	2021-2028	$1,638.4	$.0	$.0	$1,638.4	0.0%	$.0	$1,638.4	0.0%	$.0	$.0	$1,638.4	$.0	$1,638.4	69.7%	$1,142.0	14.5%	$237.6	10.2%	$167.1	5.6%	$91.8
DC19MS0065	Pre-Assumption Monitoring	2021-2028	$1,638.4	$.0	$.0	$1,638.4	0.0%	$.0	$1,638.4	0.0%	$.0	$.0	$1,638.4	$.0	$1,638.4	73.8%	$1,209.1	15.4%	$252.3	10.8%	$176.9	0.0%	$.0
DC19MS0003	Subwatershed Impact Monitoring	2021-2038	$4,608.0	$.0	$.0	$4,608.0	0.0%	$.0	$4,608.0	0.0%	$.0	$.0	$4,608.0	$.0	$4,608.0	73.8%	$3,400.7	15.4%	$709.6	10.8%	$497.7	0.0%	$.0
DC19MS0004	Contingency Facility	2023	$5,632.0	$.0	$.0	$5,632.0	0.0%	$.0	$5,632.0	0.0%	$.0	$.0	$5,632.0	$.0	$5,632.0	73.8%	$4,156.4	15.4%	$867.3	10.8%	$608.3	0.0%	$.0
	SUBTOTAL		$108,458.8	$.0	$3,545.8	$104,913.0	10.8%	$11,352.4	$93,560.6	16.1%	$15,107.0	$.0	$78,453.7	$.0	$78,453.7	73.5%	$57,693.9	15.3%	$12,036.9	10.8%	$8,443.0	0.4%	$279.9
	Community Growth Trunk Storm Sewer Works																					
DC19MS1000	Community Growth Trunk Storm Sewer Works	2021-2038	$2,719.7	$.0	$.0	$2,719.7	10.5%	$285.3	$2,434.4	0.0%	$.0	$.0	$2,434.4	$.0	$2,434.4	73.8%	$1,796.6	15.4%	$374.9	10.8%	$262.9	0.0%	$.0
	SUBTOTAL		$2,719.7	$.0	$.0	$2,719.7	10.5%	$285.3	$2,434.4	0.0%	$.0	$.0	$2,434.4	$.0	$2,434.4	73.8%	$1,796.6	15.4%	$374.9	10.8%	$262.9	0.0%	$.0
	Storm Sewer Internal Oversizing Subsidy																					
DC19MS1001	Storm Sewer Internal Oversizing Subsidy	2021-2038	$29,645.7	$.0	$.0	$29,645.7	0.0%	$.0	$29,645.7	0.0%	$.0	$.0	$29,645.7	$.0	$29,645.7	73.8%	$21,878.5	15.4%	$4,565.4	10.8%	$3,201.7	0.0%	$.0
	SUBTOTAL		$29,645.7	$.0	$.0	$29,645.7	0.0%	$.0	$29,645.7	0.0%	$.0	$.0	$29,645.7	$.0	$29,645.7	73.8%	$21,878.5	15.4%	$4,565.4	10.8%	$3,201.7	0.0%	$.0
	Storm Sewer - Built Area Works																					
DC19MS1002	Storm Sewer - Built Area Works	2021-2038	$61,445.8	$.0	$.0	$61,445.8	5.0%	$3,072.3	$58,373.5	44.5%	$25,970.4	$.0	$32,403.1	$.0	$32,403.1	73.8%	$23,913.5	15.4%	$4,990.1	10.8%	$3,499.5	0.0%	$.0
	SUBTOTAL		$61,445.8	$.0	$.0	$61,445.8	5.0%	$3,072.3	$58,373.5	44.5%	$25,970.4	$.0	$32,403.1	$.0	$32,403.1	73.8%	$23,913.5	15.4%	$4,990.1	10.8%	$3,499.5	0.0%	$.0
	Low Impact Development																					
DC19MS1003	Low Impact Development	2021-2038	$34,090.4	$.0	$.0	$34,090.4	0.0%	$.0	$34,090.4	0.0%	$.0	$.0	$34,090.4	$.0	$34,090.4	73.8%	$25,158.7	15.4%	$5,249.9	10.8%	$3,681.8	0.0%	$.0
	SUBTOTAL		$34,090.4	$.0	$.0	$34,090.4	0.0%	$.0	$34,090.4	0.0%	$.0	$.0	$34,090.4	$.0	$34,090.4	73.8%	$25,158.7	15.4%	$5,249.9	10.8%	$3,681.8	0.0%	$.0

Stormwater Management Services
TABLE J-1 Rate Calculation Cont'd

Planning horizon for this component : **2021-2038**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)		Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - Improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																		Commercial		Institutional		Industrial	
										%	benefit					%	$	%	$	%	$	%	$
	(all $'s in ,000's)		(1)	(2)	(3)	(4) (1) - sum(2,3)	(5)	(6) (4) * (5)	(7) (4) - (6)	(8)	(9) (7) * (8)	(10) [(7) - (9)] * 10%	(11) (7) - sum(9,10)	(12)	(13) (11) - (12)	(14)	(15) (13) * (14)	(16)	(17) (13) * (16)	(18)	(19) (13) * (18)	(20)	(21) (13) * (20)
DC19MS0100	**Industrial SWM Ponds**																						
DC14MS0054	Industrial Facility 2	2022	$5,252.0	$.0	$.0	$5,252.0	10.5%	$551.5	$4,700.5	0.0%	$.0	$.0	$4,700.5	$.0	$4,700.5	0.0%	$.0	0.0%	$.0	0.0%	$.0	100.0%	$4,700.5
DC14MS0055	Industrial Facility 3	2024	$5,252.0	$.0	$.0	$5,252.0	6.3%	$330.9	$4,921.1	0.0%	$.0	$.0	$4,921.1	$.0	$4,921.1	0.0%	$.0	0.0%	$.0	0.0%	$.0	100.0%	$4,921.1
DC14MS0056	Industrial Facility 4	2028	$5,252.0	$.0	$.0	$5,252.0	31.3%	$1,643.9	$3,608.1	0.0%	$.0	$.0	$3,608.1	$.0	$3,608.1	0.0%	$.0	0.0%	$.0	0.0%	$.0	100.0%	$3,608.1
DC14MS0057	Industrial Facility 5	2030	$5,252.0	$.0	$.0	$5,252.0	44.9%	$2,358.1	$2,893.8	0.0%	$.0	$.0	$2,893.8	$.0	$2,893.8	0.0%	$.0	0.0%	$.0	0.0%	$.0	100.0%	$2,893.8
DC14MS0060	Pottersburg Channel	2024	$3,533.4	$.0	$.0	$3,533.4	0.0%	$.0	$3,533.4	0.0%	$.0	$.0	$3,533.4	$.0	$3,533.4	0.0%	$.0	0.0%	$.0	0.0%	$.0	100.0%	$3,533.4
	SUBTOTAL		$24,541.3	$.0	$.0	$24,541.3	19.9%	$4,884.4	$19,657.0	0.0%	$.0	$.0	$19,657.0	$.0	$19,657.0	0.0%	$.0	0.0%	$.0	0.0%	$.0	100.0%	$19,657.0
DC19MS0200	**Industrial Trunk Storm Sewer Works**																						
DC19MS1004	Industrial Storm Trunk Sewers (250ha)	2021-2028	$566.6	$.0	$.0	$566.6	0.0%	$.0	$566.6	0.0%	$.0	$.0	$566.6	$.0	$566.6	0.0%	$.0	0.0%	$.0	0.0%	$.0	100.0%	$566.6
DC19MS1005	Industrial Storm Trunk Sewers (300ha)	2029-2038	$2,200.0	$.0	$.0	$2,200.0	97.0%	$2,134.0	$66.0	0.0%	$.0	$.0	$66.0	$.0	$66.0	0.0%	$.0	0.0%	$.0	0.0%	$.0	100.0%	$66.0
DC19MS1006	Industrial Storm Servicing Internal Oversizing (250ha)	2021-2028	$2,050.0	$.0	$.0	$2,050.0	0.0%	$.0	$2,050.0	0.0%	$.0	$.0	$2,050.0	$.0	$2,050.0	0.0%	$.0	0.0%	$.0	0.0%	$.0	100.0%	$2,050.0
DC19MS1007	Industrial Storm Servicing Internal Oversizing (300ha)	2029-2038	$4,400.0	$.0	$.0	$4,400.0	97.0%	$4,268.0	$132.0	0.0%	$.0	$.0	$132.0	$.0	$132.0	0.0%	$.0	0.0%	$.0	0.0%	$.0	100.0%	$132.0
	SUBTOTAL		$9,216.6	$.0	$.0	$9,216.6	69.5%	$6,402.0	$2,814.6	0.0%	$.0	$.0	$2,814.6	$.0	$2,814.6	0.0%	$.0	0.0%	$.0	0.0%	$.0	100.0%	$2,814.6
	Stormwater Servicing Studies																						
DC14GS0006	Southeast Area Environmental Assessments	2022	$512.0	$.0	$.0	$512.0	50.0%	$256.0	$256.0	0.0%	$.0	$.0	$256.0	$.0	$256.0	73.1%	$187.1	12.2%	$31.2	9.6%	$24.6	5.1%	$13.1
DC14GS0002	Stormwater Future Development Charge Studies 2024	2022	$307.2	$.0	$.0	$307.2	0.0%	$.0	$307.2	0.0%	$.0	$.0	$307.2	$.0	$307.2	73.1%	$224.6	12.2%	$37.5	9.6%	$29.5	5.1%	$15.7
DC19GS0002	Stormwater Future Development Charge Studies 2029	2027	$307.2	$.0	$.0	$307.2	100.0%	$307.2	$.0	0.0%	$.0	$.0	$.0	$.0	$.0	73.1%	$.0	12.2%	$.0	9.6%	$.0	5.1%	$.0
DC19GS1001	Stormwater Unidentified EA Addendums	2021-2028	$983.0	$.0	$.0	$983.0	0.0%	$.0	$983.0	0.0%	$.0	$.0	$983.0	$.0	$983.0	73.1%	$718.6	12.2%	$119.9	9.6%	$94.4	5.1%	$50.1
	SUBTOTAL		$2,109.4	$.0	$.0	$2,109.4	26.7%	$563.2	$1,546.2	0.0%	$.0	$.0	$1,546.2	$.0	$1,546.2	73.1%	$1,130.3	12.2%	$188.6	9.6%	$148.4	5.1%	$78.9
	PORTION OF GROWTH PROJECTS FINANCED WITH DEBT (PRINCIPLE)		$69,396.9			$69,396.9			$69,396.9				$69,396.9		$69,396.9	66.7%	$46,298.0	12.4%	$8,624.9	8.7%	$6,021.2	12.2%	$8,452.8
TOTAL			**$341,624.6**	**$.0**	**$3,545.8**	**$338,078.8**	**7.9%**	**$26,559.5**	**$311,519.3**	**13.2%**	**$41,077.3**	**$.0**	**$270,441.9**	**$.0**	**$270,441.9**	**65.8%**	**$177,869.4**	**13.3%**	**$36,030.8**	**9.3%**	**$25,258.6**	**11.6%**	**$31,283.1**

Project estimates and assumptions from the 2019 One Water Development Charge Update Study have been updated to reflect growth needs in 2021 and beyond.

Development Charge Rate Calculation (Pre-Financing Cost)

			Residential		Commercial		Institutional		Industrial
Less: Uncommitted Reserve Fund Balance	$3,589.4	66.7%	$2,394.6	12.4%	$446.1	8.7%	$311.4	12.2%	$437.2
Total net cost eligible for DC rate calculation purposes	$266,852.6	65.8%	$175,474.8	13.3%	$35,584.7	9.3%	$24,947.2	11.6%	$30,845.9
Divided By: Total Gross Growth Projections			90,930		600,943		681,100		532,975
Calculated DC Rate - Pre-Financing			**$1,929.78** /person		**$59.21** /sq. m.		**$36.63** /sq. m.		**$57.88** /sq. m.

Pre- Financing Cost Residential Rates:

		Pre Financing	*Post Financing*
Single Family Dwelling	3.12	$ 6,020.91	$ 6,917.61
Multiple unit dwelling	2.11	$ 4,071.83	$ 4,678.26
Apartment - bach. & 1 bed	1.38	$ 2,663.09	$ 3,059.71
Apartment - ≥ 2 bedroom	1.87	$ 3,608.69	$ 4,146.13

Stormwater Management Services
TABLE J-2 Cash Flow Analysis & Final Rate Calculation

($000's)

			FINAL RESULT		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
		Pre-Financing DC Rate	Post-Financing DC Rate	% Collected assumption																			
Planning Horizon - yrs	18																						
Growth - Res. (Persons In New Housing)	90,930	$ 1,929.78	$ 2,217.18	100%	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	90,930.0
Growth - Non-Res. (sq. m.)																							
Commercial	600,943	$ 59.21	$ 68.03	100%	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	600,943.0
Institutional	681,100	$ 36.63	$ 42.08	100%	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	681,100.0
Industrial	532,975	$ 57.88	$ 66.49	100%	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	532,975.0
Total Non-Res.	1,815,018				100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	1,815,018.0
Reserve Fund Projections:																							
Opening Surplus / <Deficit>					$3,589.4	$1,158.2	-$24,366.9	-$36,296.3	-$47,966.0	-$66,380.8	-$81,797.6	-$93,240.8	-$101,339.0	-$100,699.1	-$103,624.5	-$98,567.5	-$90,038.0	-$84,531.6	-$73,250.0	-$61,669.6	-$49,782.2	-$37,579.8	$3,589.4
Revenues - Development Charge Collections																							
Residential					$11,200.5	$11,200.5	$11,200.5	$11,200.5	$11,200.5	$11,200.5	$11,200.5	$11,200.5	$11,200.5	$11,200.5	$11,200.5	$11,200.5	$11,200.5	$11,200.5	$11,200.5	$11,200.5	$11,200.5	$11,200.5	$201,608.5
Non-Res.																							
Commercial					$2,271.4	$2,271.4	$2,271.4	$2,271.4	$2,271.4	$2,271.4	$2,271.4	$2,271.4	$2,271.4	$2,271.4	$2,271.4	$2,271.4	$2,271.4	$2,271.4	$2,271.4	$2,271.4	$2,271.4	$2,271.4	$40,884.3
Institutional					$1,592.4	$1,592.4	$1,592.4	$1,592.4	$1,592.4	$1,592.4	$1,592.4	$1,592.4	$1,592.4	$1,592.4	$1,592.4	$1,592.4	$1,592.4	$1,592.4	$1,592.4	$1,592.4	$1,592.4	$1,592.4	$28,662.6
Industrial					$1,968.9	$1,968.9	$1,968.9	$1,968.9	$1,968.9	$1,968.9	$1,968.9	$1,968.9	$1,968.9	$1,968.9	$1,968.9	$1,968.9	$1,968.9	$1,968.9	$1,968.9	$1,968.9	$1,968.9	$1,968.9	$35,439.9
Total Non-Res.					$5,832.6	$5,832.6	$5,832.6	$5,832.6	$5,832.6	$5,832.6	$5,832.6	$5,832.6	$5,832.6	$5,832.6	$5,832.6	$5,832.6	$5,832.6	$5,832.6	$5,832.6	$5,832.6	$5,832.6	$5,832.6	$104,986.8
Total revenues					$17,033.1	$17,033.1	$17,033.1	$17,033.1	$17,033.1	$17,033.1	$17,033.1	$17,033.1	$17,033.1	$17,033.1	$17,033.1	$17,033.1	$17,033.1	$17,033.1	$17,033.1	$17,033.1	$17,033.1	$17,033.1	$306,595.3
Development Charge draws - calculated on separate page					$19,506.6	$42,254.7	$28,169.2	$27,600.9	$33,952.6	$30,512.2	$26,187.3	$22,586.8	$13,751.1	$17,286.6	$9,332.1	$6,037.2	$9,243.8	$3,688.3	$3,688.3	$3,688.3	$3,688.3	$3,688.3	$304,862.6
Closing surplus / <deficit> before interest					$1,115.9	-$24,063.4	-$35,503.0	-$46,864.2	-$64,885.5	-$79,859.9	-$90,951.9	-$98,794.6	-$98,057.1	-$100,952.6	-$95,923.5	-$87,571.7	-$82,248.8	-$71,186.8	-$59,905.3	-$48,324.8	-$36,437.4	-$24,235.0	$5,322.1
Non-inflationary interest revenue /<expense>																							
on savings	1.8%				$42.3																		$42.3
on borrowings	2.7%					-$303.5	-$793.3	-$1,101.9	-$1,495.3	-$1,937.7	-$2,288.9	-$2,544.5	-$2,642.0	-$2,671.9	-$2,644.0	-$2,466.3	-$2,282.8	-$2,063.3	-$1,764.3	-$1,457.4	-$1,142.4	-$819.0	-$30,418.5
Closing surplus / <deficit>					$1,158.2	-$24,366.9	-$36,296.3	-$47,966.0	-$66,380.8	-$81,797.6	-$93,240.8	-$101,339.0	-$100,699.1	-$103,624.5	-$98,567.5	-$90,038.0	-$84,531.6	-$73,250.0	-$61,669.6	-$49,782.2	-$37,579.8	-$25,054.1	-$25,054.1

Target which reflects growth costs incurred in the forecast period and recoverable from future growth -$25,054.1

Explanatory note

This worksheet projects future activity in this reserve fund. It ultimately determines the rates necessary to recover all costs intended for recovery from growth (including financing costs). The deficit in the fund at the end of the planning horizon reflects costs intended for recovery from future growth.

Other Information:	Pre	Post
Residential share	66%	66%
Non-residential		
Commercial	13%	13%
Institutional	9%	9%
Industrial	12%	11%

APPENDIX K:

Water Distribution Services

Water Distribution Services

The 2014 Water Servicing Development Charge (DC) Background Study prepared by AECOM was used as a foundational document in the development of the 2019 One Water DC Update Study. The 2019 One Water DC Update Study prepared by in-house City of London staff provides the 20 year plan for Water, Wastewater and Stormwater servicing to support development related growth within the City of London. For Water, the update looked at the full system including the Southeast, low and high pressure systems, pumping and storage systems. The DC update reached its conclusions by:

- Updating the City of London 2014 Water Servicing DC Background Study for water distribution to address 20 year growth, on a 5 year incremental basis, with consideration of the ultimate system requirements over 50 years.

- Confirming existing system operating conditions, related regulatory requirements and service level needs and reconfirm/identify any new growth related requirements.

- Updating costs for required growth works, growth/non-growth components and appropriate residential, institutional, commercial and industrial allocations for both the City's water distribution system and facilities.

- Considering ultimate build-out requirements to ensure appropriate water distribution system components and facilities are identified and post 2038 development can be determined.

- Incorporating outputs from more recently completed works, Environmental Assessments (EA), and/or community plans; ensure consistency with the City's updated DC Transportation Background Study, and update project timing in accordance with the most recent Growth Management Implementation Strategy (GMIS).

More detailed information is available in the AECOM 2014 Water Servicing DC Background Study and 2019 One Water DC Update Study.

For the 2021 DC Study Update, City of London staff have reconfirmed the growth capital works to ensure that there were no fundamental changes to water infrastructure over the planning period. Due to legislative changes to the *Development Charges Act* water servicing studies that were previously included under Corporate Growth Studies, have been transferred to the Water Service component.

Policy Considerations

The following policies were used to establish the quantum of works included in the Water Distribution DC:

(a) Major Watermains

All watermains required to service future development greater than or equal to 400mm in diameter are considered to satisfy a network wide benefit to growth and are to be identified separately as projects in the DC Study and are eligible for a claim from the CSRF.

(b) Watermain Oversizing

Watermains with the following attributes are eligible for a subsidy from the CSRF:

- The watermain services external developable areas, and
- The watermain is greater than 250mm in diameter.

The oversized portion (>250mm) is eligible for a subsidy payable based on an average oversizing cost and is stated in terms of a $/m of pipe constructed. The oversizing subsidy amounts will be identified in a schedule provided in the approved DC By-law

If the total oversizing subsidy exceeds the actual cost to construct the oversized watermain, the upset claim limit shall not exceed the actual construction cost.

The oversizing subsidy amounts cover the cost per metre of all associated eligible costs including engineering, appurtenances, restoration, etc.

(c) Water Facilities

Where the upgrading or construction of new public water booster pumping stations and reservoir projects are designed to increase capacity or improve service to acceptable standards and as a result of growth, these works are eligible for a claim from the CSRF. These projects must also be identified in the DC Study.

(d) Temporary Water Works

Where temporary works precedes the construction of permanent works, the Owner that requires the temporary works will be required to also assist in making provision for the permanent works (i.e. secure land) as a condition of approval for the temporary works. Approval of temporary works is at the discretion of the City Engineer (or designate). In order for a temporary work to proceed there must first be provisions for the permanent work within the current DC Study.

(e) Strategic Links

All watermains of any diameter required to service future development that are identified as a strategic link by the City Engineer (or designate) are considered to satisfy a regional benefit to growth and are eligible for a claim from the CSRF.

(f) Built Area Works

Infill and intensification servicing needs that meet the following requirements will be classified as Built Area Works:

- Service lands inside the Built Area;
- Provide a regional benefit to growth;
- Replace existing infrastructure; and
- Are located within the municipal right-of-way or easement.

Built Area Works are eligible for a claim from the CSRF. For a determination of the eligible growth portion of the Built Area Work, refer to the DC By-law.

(g) Local Service Costs

The following subsections list the various water components which are considered a local service cost and are therefore constructed at the expense of the Owner:

- Any watermain or portion of a larger watermain that is less than or equal to 250mm in diameter is referred to as local works; and
- Connections from a local watermain to existing external infrastructure.

DC Update Methodology

To update the DC project list, an analysis was done of current growth projections, hydraulic modeling, Supervisory Control and Data Acquisition (SCADA) to assess actual existing flows and water demand projections. Timing of the work was informed by the GMIS. A modeling assignment was carried out by a consultant to determine a strategy for servicing a small, high elevation area within the Southwest Area Secondary Plan (SWAP). The recommendation from this assignment was added to the Strategic Links program.

Establishing Costing Estimates

The DC rate setting process requires the estimated costs of the identified growth works be reasonable and defensible. For the 2019 DC Study, a number of tools and analysis were used including a review of past cost estimating methodologies, a review of inflationary pressures and market adjustments in the London area, a review of recent EA estimates and tender results. The unit cost estimates provided in the 2014 Water, Wastewater and Stormwater DC studies were updated with the support provided by a professional cost estimator employed at one of London's major heavy construction contractors.

Costs for engineering studies, EAs, design and construction administration along with the inclusion of a contingency amount for capital projects are included in the calculation of the cost of each growth project. Since many of the projects in this DC Study have not been considered through an EA process or advanced through a preliminary design, a 20% contingency and 15% engineering allowance have been applied. These values mirror those used in previous DC studies.

The 2019 DC Study cost estimates were used as the foundation for the 2021 DC Study Update. Construction cost index factors were used to arrive at 2021 values that are required in the 2021 DC Study Update.

Post-Period Benefit Adjustments

The *Development Charges Act* requires that adjustments be applied to costs attributable to the rate calculations for works considered to benefit post-period growth. Only those costs attributable to servicing the defined growth period are to be included in the establishment of a DC rate. In some cases, the total calculated cost of the works have been adjusted to represent the proportion of costs attributable to the defined growth period. Remaining costs are identified in the DC Study as post-period benefits. The 2021 DC Study Update carried forward the 2019 DC Study post period benefit calculations since the end of the planning period has remained unchanged.

Allocation Splits

(a) Growth/Non-Growth

The growth and non-growth allocations for water servicing works vary by project. Growth/Non-Growth splits for watermains were determined as follows:

- City allocated the growth forecast for Residential / Institutional, Commercial and Industrial across the City's transportation planning zones based on the Watson & Associates Economists Ltd. (Watson) growth forecasts which were endorsed by Council in 2018. These growth forecasts were reconfirmed by Watson in 2020.
- Sub-divided the transportation zones by water service areas and tied to existing or new watermain nodes in the water model.
- For new works added as part of the 2019 DC Study, existing water demands were determined based on current flow information within the GMIS Boundary and then non-growth/growth and residential/ICI splits were determined based on applying design criteria for residential and ICI water demands.

(b) Residential/ICI

Net eligible DC costs are allocated to residential and non-residential growth (i.e. ICI). The residential and ICI allocations were generated using Watson's growth forecasts.

Three types of allocation splits were used based on the particular project. Projects that provide servicing primarily to non-industrial areas have been applied a "Community Growth" value that exclude industrial related growth. An "Industrial Growth" allocation is applied to infrastructure that strictly services industrial lands and projects that service city-wide growth have been allocated using a city-wide residential and ICI allocation.

Final Costs for DC Rate Calculation

The required Water Distribution Works form the basis for determining DCs for the CSRF and represent the numerator in the rate calculation. The final total net costs incorporated into the DC rate calculation for Water Distribution works is shown in Table K-1.

Financing Costs

Table K-2 was produced to simulate cash flows for CSRF funded Water Distribution works for the purpose of calculating the final DC rate inclusive of financing costs. Forecasting cash flow and financing costs involved:

a) Starting with the 2021 opening balance (if any), which reflects accumulated uncommitted funds for growth projects identified in past DC studies;
b) Projecting DC revenues using the "pre-finance" rate;
c) Incorporating DC drawdowns in the cash flow projection based on the growth projects identified in the study period;
d) Incorporating provisions for debt payments for previously approved commitments on growth works funded by debt; and
e) Estimating annual interest revenues to be earned and/or financing costs to be incurred due to fund deficits throughout the planning horizon.

Any deficit in the cash flow analysis at the end of the planning period equates to the amounts of the expenditures incurred during the planning period to be recovered from growth in the future (i.e. the post-period benefit). All figures are un-inflated and were determined for the period immediately preceding the DC Study. The rates generated from this cash flow analysis reflect the appropriate cost recovery from growth for the planning horizon.

Water Distribution Services
TABLE K-1 Rate Calculation

Planning horizon for this component : **2021-2038**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - Improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
																	Commercial		Institutional		Industrial	
									%	benefit					%	$	%	$	%	$	%	$
			(1)	(2)	(3)	(4)	(5)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
	(all $'s in ,000's)					(1) - sum(2,3)		(4) - (6)		(7) * (8)	[(7) - (9)] * 10%	(7) - sum(9,10)		(11) - (12)		(13) * (14)		(13) * (16)		(13) * (18)		(13) * (20)
	Watermain – Low Level System																					
DC14WD0001	Growth Needs (A1) - New Pipe - Medway Rd. (Arva PS to Wonderland Rd.)	2024	$5,584.9	$.0	$.0	$5,584.9	24.2%	$4,233.4	0.0%	$.0	$.0	$4,233.4	$.0	$4,233.4	73.8%	$3,124.2	15.4%	$651.9	10.8%	$457.2	0.0%	$.0
DC14WD0002	Growth Needs (A2) - New Pipe - Wonderland Rd. (Medway Rd. to City Limit)	2024	$5,578.8	$.0	$.0	$5,578.8	24.2%	$4,228.7	0.0%	$.0	$.0	$4,228.7	$.0	$4,228.7	73.8%	$3,120.8	15.4%	$651.2	10.8%	$456.7	0.0%	$.0
DC14WD0003	Growth Needs (A3) - New Pipe - Wonderland Rd. (City Limit to Sunningdale Rd.)	2024	$4,899.8	$.0	$.0	$4,899.8	24.2%	$3,714.1	0.0%	$.0	$.0	$3,714.1	$.0	$3,714.1	73.8%	$2,741.0	15.4%	$572.0	10.8%	$401.1	0.0%	$.0
DC14WD0004	Growth Needs (A8) - Upsizing - Wonderland Rd. (Sunningdale Rd. to Fanshawe Park Rd.)	2032	$4,386.2	$.0	$.0	$4,386.2	30.0%	$3,070.3	55.0%	$1,688.7	$.0	$1,381.7	$.0	$1,381.7	73.8%	$1,019.7	15.4%	$212.8	10.8%	$149.2	0.0%	$.0
DC14WD0006	Growth Needs (ADD 2) - Wonderland Rd. (Gainsborough Rd. to Lawson Rd.)	2032	$3,665.7	$.0	$.0	$3,665.7	0.0%	$3,665.7	54.1%	$1,983.3	$.0	$1,682.3	$.0	$1,682.3	73.8%	$1,241.6	15.4%	$259.1	10.8%	$181.7	0.0%	$.0
DC14WD0007	Growth Needs (ADD 3) - Wonderland Rd. (Lawson Rd. to Sarnia Rd.)	2032	$2,960.0	$.0	$.0	$2,960.0	0.0%	$2,960.0	54.1%	$1,601.5	$.0	$1,358.5	$.0	$1,358.5	73.8%	$1,002.5	15.4%	$209.2	10.8%	$146.7	0.0%	$.0
DC14WD0009	Longwoods (A20) - Dingman Dr. (Wonderland Rd. to White Oak Rd.)	2026	$6,856.9	$.0	$.0	$6,856.9	0.0%	$6,856.9	0.0%	$.0	$.0	$6,856.9	$.0	$6,856.9	73.8%	$5,060.4	15.4%	$1,056.0	10.8%	$740.5	0.0%	$.0
DC14WD010a	Lambeth Phase 1 (A21a) - Wonderland Rd. (Exeter Rd to Hamlyn St)	2021	$1,744.4	$.0	$170.7	$1,573.6	0.0%	$1,573.6	5.0%	$78.7	$.0	$1,494.9	$.0	$1,494.9	73.8%	$1,103.3	15.4%	$230.2	10.8%	$161.5	0.0%	$.0
DC14WD010b	Lambeth Phase 2 (A21b) - Wonderland Rd. (Hamlyn St. to Dingman Dr.)	2026	$1,045.4	$.0	$.0	$1,045.4	0.0%	$1,045.4	5.0%	$52.3	$.0	$993.1	$.0	$993.1	73.8%	$732.9	15.4%	$152.9	10.8%	$107.3	0.0%	$.0
DC14WD0032	Growth Needs (A8a) - Upsizing - Wonderland Rd. (Fanshawe Park Rd. to Gainsborough Rd.)	2029	$7,071.6	$.0	$.0	$7,071.6	0.0%	$7,071.6	55.0%	$3,889.4	$.0	$3,182.2	$.0	$3,182.2	73.8%	$2,348.5	15.4%	$490.1	10.8%	$343.7	0.0%	$.0
DC14WD033a	Growth Needs (New-14a) - Wonderland Rd. (Sarnia Rd. to Beaverbrook Ave.)	2034	$1,291.9	$.0	$.0	$1,291.9	0.0%	$1,291.9	54.0%	$697.6	$.0	$594.3	$.0	$594.3	73.8%	$438.6	15.4%	$91.5	10.8%	$64.2	0.0%	$.0
DC14WD033b	Growth Needs (New-14b) - Wonderland Rd. (Beaverbrook Ave. to Oxford St. W)	2031	$978.7	$.0	$.0	$978.7	0.0%	$978.7	54.0%	$528.5	$.0	$450.2	$.0	$450.2	73.8%	$332.3	15.4%	$69.3	10.8%	$48.6	0.0%	$.0
DC14WD033c	Growth Needs (New-14c) - Wonderland Rd. (Oxford St. Intersection)	2028	$783.0	$.0	$.0	$783.0	0.0%	$783.0	54.0%	$422.8	$.0	$360.2	$.0	$360.2	73.8%	$265.8	15.4%	$55.5	10.8%	$38.9	0.0%	$.0
DC14WD033d	Growth Needs (New-14d) - Wonderland Rd. (Oxford St. W to 150m N of Riverside Dr.)	2030	$1,164.7	$.0	$.0	$1,164.7	0.0%	$1,164.7	54.0%	$628.9	$.0	$535.8	$.0	$535.8	73.8%	$395.4	15.4%	$82.5	10.8%	$57.9	0.0%	$.0
DC14WD033e	Growth Needs (New-14e) - Hutton Pl/Thames (150m N of Riverside Dr. to Greenway Park)	2033	$3,163.5	$.0	$.0	$3,163.5	0.0%	$3,163.5	54.0%	$1,708.3	$.0	$1,455.2	$.0	$1,455.2	73.8%	$1,073.9	15.4%	$224.1	10.8%	$157.2	0.0%	$.0
DC14WD0040	Kilally Rd. (A30) Phase 2 - Kilally Rd. (Webster St. to Clarke Rd.)	2022	$7,031.2	$.0	$830.0	$6,201.2	0.0%	$6,201.2	0.0%	$.0	$.0	$6,201.2	$.0	$6,201.2	73.8%	$4,576.5	15.4%	$955.0	10.8%	$669.7	0.0%	$.0
DC19WD0001	Growth Needs (New-7) - Upsizing - Western Rd. (Platt's Lane to Sarnia Rd.)	2021	$1,893.3	$.0	$185.3	$1,708.0	0.0%	$1,708.0	90.0%	$1,537.2	$.0	$170.8	$.0	$170.8	73.8%	$126.0	15.4%	$26.3	10.8%	$18.4	0.0%	$.0
	SUBTOTAL		$60,099.9	$.0	$1,186.1	$58,913.8	8.8%	$53,710.6	27.6%	$14,817.2	$.0	$38,893.4	$.0	$38,893.4	73.8%	$28,703.3	15.4%	$5,989.6	10.8%	$4,200.5	0.0%	$.0

Water Distribution Services
TABLE K-1 Rate Calculation Cont'd

Planning horizon for this component : **2021-2038**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share		Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL		NON - RESIDENTIAL					
															Commercial		Institutional		Industrial			
									%	benefit					%	$	%	$	%	$	%	$
	(all $'s in ,000's)		(1)	(2)	(3)	(4) (1) - sum(2,3)	(5) (6) (4) * (5)	(7) (4) - (6)	(8)	(9) (7) * (8)	(10) [(7) - (9)] * 10%	(11) (7) - sum(9,10)	(12)	(13) (11) - (12)	(14)	(15) (13) * (14)	(16)	(17) (13) * (16)	(18)	(19) (13) * (18)	(20)	(21) (13) * (20)
	Watermain – Southeast Pressure Zone																					
DC14WD0013	Existing System (B3) (New additional pipe) - Highbury Ave. (Southeast PS to Dingman Dr.)	2033	$10,038.7	$.0	$.0	$10,038.7	0.0% $.0	$10,038.7	0.0%	$.0	$.0	$10,038.7	$.0	$10,038.7	73.8%	$7,408.5	15.4%	$1,546.0	10.8%	$1,084.2	0.0%	$.0
DC14WD0019	Wilton Grove (New-4) - Wilton Grove Rd. (Hubrey Rd. to Pond Mills Rd.)	2029	$1,999.9	$.0	$.0	$1,999.9	0.0% $.0	$1,999.9	0.0%	$.0	$.0	$1,999.9	$.0	$1,999.9	73.8%	$1,476.0	15.4%	$308.0	10.8%	$216.0	0.0%	$.0
DC14WD020b	Pond Mills (New-5b) - Pond Mills Rd. (Hwy 401 to Southdale Rd.)	2029	$5,521.7	$.0	$.0	$5,521.7	0.0% $.0	$5,521.7	0.0%	$.0	$.0	$5,521.7	$.0	$5,521.7	73.8%	$4,075.1	15.4%	$850.3	10.8%	$596.3	0.0%	$.0
DC14WD020c	Pond Mills (New-5c) - Pond Mills Rd. (Wilton Grove Rd. to Hwy 401)	2029	$2,164.2	$.0	$.0	$2,164.2	0.0% $.0	$2,164.2	0.0%	$.0	$.0	$2,164.2	$.0	$2,164.2	73.8%	$1,597.2	15.4%	$333.3	10.8%	$233.7	0.0%	$.0
	SUBTOTAL		$19,724.5	$.0	$.0	$19,724.5	0.0% $.0	$19,724.5	0.0%	$.0	$.0	$19,724.5	$.0	$19,724.5	73.8%	$14,556.7	15.4%	$3,037.6	10.8%	$2,130.3	0.0%	$.0
	Watermain – High Level System																					
DC14WD0026	Westmount (3000) - Wonderland Rd. (Commissioners Rd. to Viscount Rd.)	2022	$3,144.2	$.0	$307.8	$2,836.4	0.0% $.0	$2,836.4	0.0%	$.0	$.0	$2,836.4	$.0	$2,836.4	73.8%	$2,093.3	15.4%	$436.8	10.8%	$306.3	0.0%	$.0
DC14WD0027	Westmount (3001/3002) - Viscount Rd. (Wonderland to Andover Dr.)	2024	$4,393.4	$.0	$.0	$4,393.4	0.0% $.0	$4,393.4	0.0%	$.0	$.0	$4,393.4	$.0	$4,393.4	73.8%	$3,242.4	15.4%	$676.6	10.8%	$474.5	0.0%	$.0
DC14WD0028	Westmount (3004) - Andover Dr. (Viscount to Ensign Dr.)	2029	$755.5	$.0	$.0	$755.5	0.0% $.0	$755.5	0.0%	$.0	$.0	$755.5	$.0	$755.5	73.8%	$557.5	15.4%	$116.3	10.8%	$81.6	0.0%	$.0
DC14WD0029	Westmount (3005) - Ensign Dr. (Andover Dr. to Notre Dame Dr.)	2029	$1,489.0	$.0	$.0	$1,489.0	0.0% $.0	$1,489.0	0.0%	$.0	$.0	$1,489.0	$.0	$1,489.0	73.8%	$1,098.9	15.4%	$229.3	10.8%	$160.8	0.0%	$.0
DC14WD0030	Westmount (3006) - Notre Dame Dr. (Ensign Dr. to Belmont Dr.)	2029	$624.1	$.0	$.0	$624.1	0.0% $.0	$624.1	0.0%	$.0	$.0	$624.1	$.0	$624.1	73.8%	$460.6	15.4%	$96.1	10.8%	$67.4	0.0%	$.0
	SUBTOTAL		$10,406.2	$.0	$307.8	$10,098.4	0.0% $.0	$10,098.4	0.0%	$.0	$.0	$10,098.4	$.0	$10,098.4	73.8%	$7,452.6	15.4%	$1,555.2	10.8%	$1,090.6	0.0%	$.0
	Watermain – Internal Oversizing Subsidy																					
DC19WD1001	Watermain Internal Oversizing Subsidy	2021-2038	$1,637.3	$.0	$.0	$1,637.3	0.0% $.0	$1,637.3	0.0%	$.0	$.0	$1,637.3	$.0	$1,637.3	73.8%	$1,208.3	15.4%	$252.1	10.8%	$176.8	0.0%	$.0
	SUBTOTAL		$1,637.3	$.0	$.0	$1,637.3	0.0% $.0	$1,637.3	0.0%	$.0	$.0	$1,637.3	$.0	$1,637.3	73.8%	$1,208.3	15.4%	$252.1	10.8%	$176.8	0.0%	$.0
	Watermain – Built Area Works																					
DC19WD1002	Watermain – Built Area Works	2021-2038	$724.0	$.0	$.0	$724.0	5.0% $36.2	$687.8	44.0%	$302.6	$.0	$385.1	$.0	$385.1	73.8%	$284.2	15.4%	$59.3	10.8%	$41.6	0.0%	$.0
	SUBTOTAL		$724.0	$.0	$.0	$724.0	5.0% $36.2	$687.8	44.0%	$302.6	$.0	$385.1	$.0	$385.1	73.8%	$284.2	15.4%	$59.3	10.8%	$41.6	0.0%	$.0
	Watermain – Strategic Links																					
DC19WD1003	Watermain – Strategic Links	2021-2038	$1,874.9	$.0	$.0	$1,874.9	0.0% $.0	$1,874.9	10.0%	$187.5	$.0	$1,687.5	$.0	$1,687.5	73.8%	$1,245.3	15.4%	$259.9	10.8%	$182.2	0.0%	$.0
	SUBTOTAL		$1,874.9	$.0	$.0	$1,874.9	0.0% $.0	$1,874.9	10.0%	$187.5	$.0	$1,687.5	$.0	$1,687.5	73.8%	$1,245.3	15.4%	$259.9	10.8%	$182.2	0.0%	$.0
DC19WD1000	**Watermain – Industrial**																					
DC19WD1004	Industrial Water Servicing Internal Oversizing (250ha)	2021-2028	$104.0	$.0	$.0	$104.0	0.0% $.0	$104.0	0.0%	$.0	$.0	$104.0	$.0	$104.0	0.0%	$.0	0.0%	$.0	0.0%	$.0	100.0%	$104.0
DC19WD1005	Industrial Water Servicing Internal Oversizing (300ha)	2029-2038	$207.9	$.0	$.0	$207.9	97.0% $201.7	$6.2	0.0%	$.0	$.0	$6.2	$.0	$6.2	0.0%	$.0	0.0%	$.0	0.0%	$.0	100.0%	$6.2
DC19WD1006	Industrial Water Servicing (250ha)	2021-2028	$10,736.6	$.0	$.0	$10,736.6	0.0% $.0	$10,736.6	0.0%	$.0	$.0	$10,736.6	$.0	$10,736.6	0.0%	$.0	0.0%	$.0	0.0%	$.0	100.0%	$10,736.6
DC19WD1007	Industrial Water Servicing (300ha)	2029-2038	$15,436.6	$.0	$.0	$15,436.6	97.0% $14,973.5	$463.1	0.0%	$.0	$.0	$463.1	$.0	$463.1	0.0%	$.0	0.0%	$.0	0.0%	$.0	100.0%	$463.1
	SUBTOTAL		$26,485.0	$.0	$.0	$26,485.0	57.3% $15,175.1	$11,309.9	0.0%	$.0	$.0	$11,309.9	$.0	$11,309.9	0.0%	$.0	0.0%	$.0	0.0%	$.0	100.0%	$11,309.9

Water Distribution Services
TABLE K-1 Rate Calculation Cont'd

Planning horizon for this component : **2021-2038**

DC ID #	Project Description	Expected Year	Total Estimated Cost	Less: future capital grants, subsidies or other contributions anticipated	Less: Portion of Gross Project Cost Funded In Prior Years	Subtotal	Less: Future growth benefits (portion of growth costs attributable to growth expected to occur beyond planning horizon for this service)	Subtotal	Non-growth share %	Non-growth share benefit	Less: 10% statutory deduction (if applicable)	Subtotal	Less: Amount ineligible for rate calculation - improvement over existing standard (see Supplement A if applicable)	Net Amount Eligible for DC rate calculation	RESIDENTIAL %	RESIDENTIAL $	NON - RESIDENTIAL Commercial %	NON - RESIDENTIAL Commercial $	NON - RESIDENTIAL Institutional %	NON - RESIDENTIAL Institutional $	NON - RESIDENTIAL Industrial %	NON - RESIDENTIAL Industrial $
	(all $'s in ,000's)		(1)	(2)	(3)	(4) (1) - sum(2,3)	(5)	(6) (4) * (5)	(7) (4) - (6)	(8)	(9) (7) * (8)	(10) [(7) - (9)] * 10%	(11) (7) - sum(9,10)	(12)	(13) (11) - (12)	(14)	(15) (13) * (14)	(16)	(17) (13) * (16)	(18)	(19) (13) * (18)	(20)	(21) (13) * (20)
	Watermains - Water Distribution Facilities																						
DC14WD2003	Hyde Park PS	2021	$816.8	$0.0	$100.0	$716.8	5.3%	$38.0	$678.8	0.0%	$0.0	$0.0	$678.8	$0.0	$678.8	69.7%	$473.1	14.5%	$98.4	10.2%	$69.2	5.6%	$38.0
DC14WD2006	Arva PS	2022	$3,399.7	$0.0	$0.0	$3,399.7	0.0%	$0.0	$3,399.7	50.0%	$1,699.8	$0.0	$1,699.8	$0.0	$1,699.8	69.7%	$1,184.8	14.5%	$246.5	10.2%	$173.4	5.6%	$95.2
	SUBTOTAL		$4,216.5	$0.0	$100.0	$4,116.5	0.9%	$38.0	$4,078.5	41.7%	$1,699.8	$0.0	$2,378.6	$0.0	$2,378.6	69.7%	$1,657.9	14.5%	$344.9	10.2%	$242.6	5.6%	$133.2
	Water Servicing Studies																						
DC19GS0009	Trunk Watermain and Pumping Station Growth Study	2021	$512.0	$0.0	$0.0	$512.0	0.0%	$0.0	$512.0	0.0%	$0.0	$0.0	$512.0	$0.0	$512.0	73.1%	$374.3	12.2%	$62.5	9.6%	$49.2	5.1%	$26.1
DC14GS0013	Water Future Development Charge Studies 2024	2022	$307.2	$0.0	$0.0	$307.2	0.0%	$0.0	$307.2	0.0%	$0.0	$0.0	$307.2	$0.0	$307.2	73.1%	$224.6	12.2%	$37.5	9.6%	$29.5	5.1%	$15.7
DC19GS0010	Water Future Development Charge Studies 2029	2027	$307.2	$0.0	$0.0	$307.2	100.0%	$307.2	$0.0	0.0%	$0.0	$0.0	$0.0	$0.0	$0.0	73.1%	$0.0	12.2%	$0.0	9.6%	$0.0	5.1%	$0.0
DC19GS0011	Water Efficiency Program/Investigations	2021-2023	$1,904.6	$0.0	$0.0	$1,904.6	0.0%	$0.0	$1,904.6	92.0%	$1,752.3	$0.0	$152.4	$0.0	$152.4	73.1%	$111.4	12.2%	$18.6	9.6%	$14.6	5.1%	$7.8
	SUBTOTAL		$3,031.0	$0.0	$0.0	$3,031.0	10.1%	$307.2	$2,723.8	64.3%	$1,752.3	$0.0	$971.6	$0.0	$971.6	73.1%	$710.2	12.2%	$118.5	9.6%	$93.3	5.1%	$49.6
	PORTION OF GROWTH PROJECTS FINANCED WITH DEBT (PRINCIPLE)		$0.0			$0.0			$0.0				$0.0		$0.0	61.8%	$0.0	12.9%	$0.0	9.1%	$0.0	16.2%	$0.0
TOTAL			**$128,199.4**	**$0.0**	**$1,593.8**	**$126,605.5**	**16.4%**	**$20,759.8**	**$105,845.8**	**17.7%**	**$18,759.5**	**$0.0**	**$87,086.3**	**$0.0**	**$87,086.3**	**64.1%**	**$55,818.7**	**13.3%**	**$11,617.1**	**9.4%**	**$8,157.9**	**13.2%**	**$11,492.6**

Project estimates and assumptions from the 2019 One Water Development Charge Update Study have been updated to reflect growth needs in 2021 and beyond.

Development Charge Rate Calculation (Pre-Financing Cost)

			Residential		Commercial		Institutional		Industrial
Less: Uncommitted Reserve Fund Balance	$12,088.1	61.8%	$7,475.8	12.9%	$1,559.8	9.1%	$1,094.0	16.2%	$1,958.5
Total net cost eligible for DC rate calculation purposes	$74,998.2	64.5%	$48,342.9	13.4%	$10,057.2	9.4%	$7,063.9	12.7%	$9,534.2
Divided By: Total Gross Growth Projections			90,930		600,943		681,100		532,975
Calculated DC Rate - Pre-Financing			**$531.65** /person		**$16.74** /sq. m.		**$10.37** /sq. m.		**$17.89** /sq. m.

Pre- Financing Cost Residential Rates:

		Pre Financing	*Post Financing*
Single Family Dwelling	3.12	$ 1,658.75	$ 1,807.71
Multiple unit dwelling	2.11	$ 1,121.78	$ 1,222.52
Apartment - bach. & 1 bed	1.38	$ 733.68	$ 799.56
Apartment - ≥ 2 bedroom	1.87	$ 994.19	$ 1,083.47

Water Distribution Services
TABLE K-2 Cash Flow Analysis & Final Rate Calculation

($000's)

			FINAL RESULT		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
		Pre-Financing DC Rate	Post-Financing DC Rate	% Collected assumption	Growth projection for each year of forecast period																		
Planning Horizon - yrs	18																						
Growth - Res. (Persons In New Housing)	90,930	$ 531.65	$ 579.39	100%	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	5,051.7	90,930.0
Growth - Non-Res. (sq. m.)																							
Commercial	600,943	$ 16.74	$ 18.24	100%	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	33,385.7	600,943.0
Institutional	681,100	$ 10.37	$ 11.30	100%	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	37,838.9	681,100.0
Industrial	532,975	$ 17.89	$ 19.50	100%	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	29,609.7	532,975.0
Total Non-Res.	1,815,018				100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	100,834.3	1,815,018.0
Reserve Fund Projections:																							
Opening Surplus / <Deficit>					$12,088.1	$11,962.6	$3,695.5	$6,757.8	-$10,732.3	-$7,961.4	-$13,071.7	-$10,675.3	-$8,267.9	-$21,591.8	-$19,869.3	-$18,013.6	-$20,733.8	-$30,094.3	-$28,660.7	-$26,586.1	-$24,455.5	-$22,267.3	$12,088.1
Revenues - Development Charge Collections																							
Residential					$2,926.9	$2,926.9	$2,926.9	$2,926.9	$2,926.9	$2,926.9	$2,926.9	$2,926.9	$2,926.9	$2,926.9	$2,926.9	$2,926.9	$2,926.9	$2,926.9	$2,926.9	$2,926.9	$2,926.9	$2,926.9	$52,684.3
Non-Res.																							
Commercial					$608.9	$608.9	$608.9	$608.9	$608.9	$608.9	$608.9	$608.9	$608.9	$608.9	$608.9	$608.9	$608.9	$608.9	$608.9	$608.9	$608.9	$608.9	$10,960.4
Institutional					$427.7	$427.7	$427.7	$427.7	$427.7	$427.7	$427.7	$427.7	$427.7	$427.7	$427.7	$427.7	$427.7	$427.7	$427.7	$427.7	$427.7	$427.7	$7,698.3
Industrial					$577.2	$577.2	$577.2	$577.2	$577.2	$577.2	$577.2	$577.2	$577.2	$577.2	$577.2	$577.2	$577.2	$577.2	$577.2	$577.2	$577.2	$577.2	$10,390.4
Total Non-Res.					$1,613.8	$1,613.8	$1,613.8	$1,613.8	$1,613.8	$1,613.8	$1,613.8	$1,613.8	$1,613.8	$1,613.8	$1,613.8	$1,613.8	$1,613.8	$1,613.8	$1,613.8	$1,613.8	$1,613.8	$1,613.8	$29,049.0
Total revenues					$4,540.7	$4,540.7	$4,540.7	$4,540.7	$4,540.7	$4,540.7	$4,540.7	$4,540.7	$4,540.7	$4,540.7	$4,540.7	$4,540.7	$4,540.7	$4,540.7	$4,540.7	$4,540.7	$4,540.7	$4,540.7	$81,733.3
Development Charge draws - calculated on separate page					$4,880.8	$12,947.5	$1,571.7	$21,977.9	$1,520.9	$9,370.8	$1,828.1	$1,881.0	$17,466.9	$2,266.0	$2,180.5	$6,744.8	$13,224.1	$2,324.5	$1,730.2	$1,730.2	$1,730.2	$1,730.2	$107,106.4
Closing surplus / <deficit> before interest					$11,748.0	$3,555.8	$6,664.6	-$10,679.3	-$7,712.4	-$12,791.5	-$10,359.0	-$8,015.6	-$21,194.0	-$19,317.0	-$17,509.0	-$20,217.7	-$29,417.2	-$27,878.1	-$25,850.2	-$23,775.6	-$21,645.0	-$19,456.8	-$13,285.0
Non-inflationary interest revenue /<expense>																							
on savings	1.80%				$214.5	$139.7	$93.2																$447.4
on borrowings	2.70%							-$52.9	-$249.0	-$280.2	-$316.3	-$252.3	-$397.7	-$552.3	-$504.6	-$516.1	-$677.0	-$782.6	-$735.9	-$679.9	-$622.4	-$563.3	-$7,182.6
Closing surplus / <deficit>					$11,962.6	$3,695.5	$6,757.8	-$10,732.3	-$7,961.4	-$13,071.7	-$10,675.3	-$8,267.9	-$21,591.8	-$19,869.3	-$18,013.6	-$20,733.8	-$30,094.3	-$28,660.7	-$26,586.1	-$24,455.5	-$22,267.3	-$20,020.1	-$20,020.1

Target which reflects growth costs incurred in the forecast period and recoverable from future growth -$20,020.1

Explanatory note

This worksheet projects future activity in this reserve fund. It ultimately determines the rates necessary to recover all costs intended for recovery from growth (including financing costs). The deficit in the fund at the end of the planning horizon reflects costs intended for recovery from future growth.

Other Information:	Pre	Post
Residential share	64%	64%
Non-residential		
Commercial	13%	13%
Institutional	9%	9%
Industrial	13%	13%

APPENDIX L:

Urban Works Reserve Funds Retirement

Urban Works Reserve Funds

Background

The Urban Works Reserve Funds (UWRF) have been used by the City as the Development Charge (DC) fund to finance works (road works, storm water management facilities, sanitary and storm sewers) where these works are triggered by, or necessary as a direct result of development. One of the attributes of the UWRF is that claims are only paid when a sufficient balance exists to finance the works.

In 2007, Council created a "Blue Ribbon Panel" to review the workings of the Funds, based in part, on its concerns about a persistent and growing backlog of claims. The "Blue Ribbon Panel" observed the uniqueness of the UWRF in Ontario, and recommended a reduction in the scope of works for which the funds were being used. Accordingly, in the 2009 DC Study, steps were introduced to reduce the scope of UWRF works.

As part of the 2014 DC Study, Council approved the retirement of the UWRF and the consolidation of UWRF funding under the various City Services Reserve Funds (CSRF). The 2014 DC By-law established clear rules related to claimability from both "families" of reserve funds and recognized that no future claims to the UWRF would occur for agreements entered into following the in-force date of the 2014 DC By-law. Although the DC By-law formalized the intent to retire the UWRF, the logistics of the retirement were still an outstanding matter.

In July 2018, Staff brought forward a report seeking endorsement for the implementation process to wind-up the UWRF. Council ultimately resolved the following:

> *"the implementation process for full retirement of the Urban Works Reserve Fund with the adoption of the 2019 Development Charges By-law BE ENDORSED"*

UWRF Wind-up

Upon the adoption of the 2019 DC By-Law, the following actions were taken to facilitate the wind-up of the UWRF:

- All outstanding UWRF obligations where no claim has been submitted prior to the adoption of the 2019 DC By-Law will be transferred to the respective CSRF. Claims submitted for eligible works will be paid from the respective CSRF. This approach is simply shifting payment from one fund to another with no impact to the Owner's claim submission.

- Prior approved claims that were subject to payment cap restrictions that were outlined in the 2014 DC Study and are a currently waiting in the "queue" will be paid out in full.

- All revenues and uncommitted UWRF balances were transferred to the respective CSRF.

A revised list for the 2021 DC Study Update of the outstanding obligations are detailed in Table L-1.

APPENDIX L - Urban Works Reserve Funds
TABLE L-1 Outstanding UWRF Obligations

Capital Works	Estimated Amount
Outstanding Obligations Subject to Review/Approval	
UWRF General	
M-603 – Meadowlilly • Sanitary sewer oversizing • Storm sewer oversizing • Internal road widening, pavement markings and sidewalk	 $14,000 $4,000 $200,000
M-652 – Creekview • Internal road widening	 $10,000
UWRF Stormwater Management Facilities	
M-394 – Crestwood Phase 1 • SWMF landscaping	 $40,000
M-583 – Uplands Crossing Phase 2 • SWMF construction • SWMF land	 $232,000 $118,000
M-701 – Stoney Creek South • SWMF earth berm • SWMF landscaping	 $10,000 $142,000
M-757 – Edgevalley • SWMF construction	 $34,000
SWM Facility Remediation Contingency	$1,400,000
TOTAL	**$2,204,000**

APPENDIX M:

Lifecycle & Operating Costs Impacts

Lifecycle & Operating Costs Impacts

The *Development Charge Act* (DCA) as amended by *Bill 73, Smart Growth for Our Communities Act, 2015* requires the Development Charges (DC) Background Study to include an Asset Management Plan for all growth capital projects identified. Subsection 10 (2) & (3) of the DCA provides that the following:

10. (2) The development charge background study shall include,

(c) an examination, for each service to which the development charge by-law would relate, of the long term capital and operating costs for capital infrastructure required for the service;
(c.2) an asset management plan prepared in accordance with subsection (3);

(3) The asset management plan shall,

(a) deal with all assets whose capital costs are proposed to be funded under the development charge by-law;
(b) demonstrate that all the assets mentioned in clause (a) are financially sustainable over their full life cycle;
(c) contain any other information that is prescribed; and
(d) be prepared in the prescribed manner.

At this time, there is no prescribed approach for municipalities to implement these requirements of the DCA, except for Transit. O. Reg. 428/15 amends O. Reg. 82/92 Section 8, to include subsections (2), (3) & (4) which set out detailed requirements for Transit asset management plans. For the purposes of Transit related infrastructure, the proposed Rapid Transit (RT) and Conventional Transit will be analyzed and discussed separately.

The requirements of (2) & (3) are met by identifying the incremental operating costs associated with each growth related project or project category and the long term capital cost. Where facilities or amenities are being expanded, only the incremental cost is reported. Where a network is expanded (e.g. watermains or sewers), the incremental operating costs may be derived from application of the average costs of operating the existing system to the total linear length of operating the present system.

The second part of the examination involves what the DCA refers to as 'the long term capital costs' of the infrastructure required for the service. This has been interpreted to mean 'the eventual cost of replacement of the asset' which is consistent with previous DC Studies. For the purpose of this analysis, we employ a sinking fund method. This method determines the equal annual contribution required to a sinking fund, such that at the end of the asset's useful life, there is sufficient capital available to replace the asset. The assumed growth rate of the sinking fund is 2.5% (net of inflation).

The table below reflects the assumed average estimated useful lives of the growth related assets. The "sinking fund factor" is applied to the original capital cost to determine the contribution that would be required for replacement of the asset at the end of its useful life.

2021 DEVELOPMENT CHARGES BACKGROUND STUDY UPDATE

ASSET	LIFECYCLE COST FACTORS		
	AVERAGE USEFUL LIFE (YEARS)	SINKING FUND FACTOR	RATE
Facilities, Buildings	40	0.014836	2.5%
Fire & Police Vehicles	15	0.055766	2.5%
Transit Vehicles	12	0.072487	2.5%
Fire and Police Equipment	8	0.114467	2.5%
Wastewater & Storm Sewers	80	0.004026	2.5%
Watermains and Related Works	70	0.005397	2.5%
Pumping Stations	30	0.022778	2.5%
Reservoirs	40	0.014836	2.5%
Facilities	40	0.014836	2.5%
Roads	40	0.014836	2.5%
Library Collection Materials	7	0.132495	2.5%
Parkland Development, Spray Pads	20	0.039147	2.5%

The sinking fund factor is a ratio used to calculate the future value of a series of equal annual cash flows. The equation for the sinking fund factor is:

$$\mathrm{SFF}(i,N) = \frac{i}{(1+i)^N - 1}$$

Refer to Tables M-1 and M-2 for a complete list of Lifecycle and Operating Cost Impacts related to the projects included in the 2021 DC Study Update.

Transit Services

Capital needs incorporated in the DC Study for Transit includes facilities for the proposed RT program, as well as vehicles for RT and conventional transit. The London Transit Commission as a Board and Commission of the City of London, prepares an Asset Management Plan externally to the City. A key strategic objective of this plan is *"effective utilization of infrastructure".* The strategy calls for acquisition and maintenance of required infrastructure supporting service reliability, noting that infrastructure includes fleet, facility, technology and other fixed assets. Strict adherence to the strategy over the past 10 years has resulted in the elimination of the infrastructure deficit.

For a snapshot of the 2017 year end depreciation schedule for Transit services see below:

10. Tangible capital assets:

The historical cost, accumulated amortization and net book value of tangible capital assets employed by the Commission at December 31 is as follows:

Cost	Balance December 31, 2016	Additions	Disposals	Balance December 31, 2017
Land	$ 2,804,632	$ -	$ -	$ 2,804,632
Site work	2,703,791	269,233	-	2,973,024
Buildings	43,613,465	1,757,347	-	45,370,812
Shelters, pads, and terminals	1,101,216	1,173,094	-	2,274,310
Rolling stock	109,590,537	17,512,181	(13,409,335)	113,693,383
Fare and data collection equipment	5,534,160	797,006	-	6,331,166
Radio/communication equipment	8,259,511	704,743	-	8,964,254
Bike racks on buses	158,878	-	-	158,878
Service fleet	416,551	37,314	(102,368)	351,497
Shop equipment	3,033,180	655,004	(35,830)	3,652,354
Small tools	173,220	114,309	(58,450)	229,079
Computer hardware	594,785	74,722	-	669,507
Computer software	1, 172,168	687,200	-	1,859,368
	$ 179,156,094	$ 23,782,153	$ (13,605,983)	$ 189,332,264

The asset management requirements for Transit services have been amended under the DCA. The reference sources for these requirements can be found from various published documents as outlined below:

Ontario Regulation 82/98, as amended subsection 8(3) Requirements O.Reg. 428/15	Compliance
1. A section that sets out the state of local infrastructure and that sets out,	
i. the types of assets and their quantity or extent;	LTC – 2017 Annual Report Section "Effective Utilization of Infrastructure"
ii. the financial accounting valuation and replacement cost valuation for all assets;	LTC 2015 – 2018 Asset Management Plan Section - "Asset Maintenance, Servicing and Investment" 2017 LTC Audited Financial Statements (see above)
iii. the asset age distribution and asset age as a proportion of expected useful life for all assets; and	LTC 2015 – 2018 Asset Management Plan Section - "Asset Administration" Subsection – "Fixed Asset Inventory Management"
iv. the asset condition based on standard engineering practices for all assets.	LTC 2015 – 2018 Asset Management Plan Section - "Asset Maintenance, Servicing and Investment"

2. A section that sets out the proposed level of service and that, i. defines the proposed level of service through timeframes and performance measures;	LTC 2015 – 2018 Business Plan Section "Demonstrated Fiscal Accountability" & "Effective Utilization of Infrastructure" Subsection – "Operating Expenditure Investment – Vehicle Maintenance and Servicing"
ii. discusses any external trends or issues that may affect the proposed level of service or the municipality's ability to meet it; and	LTC 2015 – 2018 Asset Management Plan Section - "Asset Administration" Subsection – Risk Management
iii. shows current performance relative to the targets set out.	2017 LTC Annual Report Section – "Effective Utilization of Infrastructure"

Lifecycle & Operating Costs Impacts

Ontario Regulation 82/98, as amended subsection 8(3) Requirements O.Reg. 428/15	Compliance
3. An asset management strategy that,	
i. sets out planned actions that will enable the assets to provide the proposed level of service in a sustainable way, while managing risk, at the lowest life cycle cost;	LTC 2015 – 2018 Asset Management Plan Section – "Asset Management Plan and 2015 – 2018 Business Plan"
ii. is based on an assessment of potential options to achieve the proposed level of service, which assessment compares,	LTC 2015 – 2018 Asset Management Plan Section – "Asset Administration"
A. life cycle costs, B. all other relevant direct and indirect costs and benefits, and C. the risks associated with the potential options;	
iii. contains a summary of, in relation to achieving the proposed level of service, (not defined clearly) A. non-infrastructure solutions, B. maintenance activities, C. renewal and rehabilitation activities, D. replacement activities, E. disposal activities, and F. expansion activities;	LTC 2015 – 2018 Asset Management Plan Section – "Asset Administration"
iv. discusses the procurement measures that are intended to achieve the proposed level of service; and	LTC 2015 – 2018 Asset Management Plan Section – "Asset Administration" Subsection – "Acquisition and Disposition of Fixed (Capita) Assets
v. includes an overview of the risks associated with the strategy and any actions that will be taken in response to those risks.	LTC 2015 – 2018 Asset Management Plan Section – "Asset Administration" Subsection – "Risk Management"

Ontario Regulation 82/98, as amended subsection 8(3) Requirements O.Reg. 428/15	Compliance
4. A financial strategy that,	
i. shows the yearly expenditure forecasts that are proposed to achieve the proposed level of service, categorized by, A. non-infrastructure solutions, B. maintenance activities, C. renewal and rehabilitation activities, D. replacement activities, E. disposal activities, and F. expansion activities;	LTC 2015 – 2018 Asset Management Plan Section – "Going Forward"
ii. provides actual expenditures in respect of the categories set out in sub-subparagraphs i A to F from the previous two years, if available, for comparison purposes;	2015 – 2018 Financial Plan Section – "Overall Expenditure Investment"
iii. gives a breakdown of yearly revenues by source;	2017 LTC Audited Financial Statements - Statement of Operations & of Change in Net Financial Assets
iv. discusses key assumptions and alternative scenarios where appropriate, (see associated text); and	2015 -2018 LTC Financial Plan Section "Sources of Capital Investment"
v. identifies any funding shortfall relative to financial requirements that cannot be eliminated by revising service levels, asset management or financing strategies, and discusses the impact of the shortfall and how the impact will be managed.	LTC 2015 – 2018 Asset Management Plan Section – "Going Forward"

Reference Sources:

http://www.londontransit.ca/annual-reports/2016-annual-report/

http://www.londontransit.ca/annual-reports/2016-audit-report-and-financial-statements/

http://www.londontransit.ca/business-plans/2015-2018-asset-management-plan/

http://www.londontransit.ca/business-plans/2015-2018-business-plan/

http://www.londontransit.ca/business-plans/2015-2018-financial-plan/

TABLE M-1: Hard Services

PROJECT INFORMATION	DC COST AND TIMING		ANNUAL IMPACT ($)					TOTAL
	PLANNING HORIZON (18 years)	TOTAL ESTIMATED COST	AVERAGE USEFUL LIFE	SINKING FUND FACTOR	LIFE CYCLE COST	OPERATING COST (% of Total Estimated Cost)	OPERATING COST	OPERATING + LIFECYCLE COST
ROADS AND RELATED PROJECTS								
Arterial Road Works	2021-2038	$623,195,735	40	0.014836	$9,245,877	4.00%	$24,927,829	$34,173,707
Two-Lane Arterial Upgrades	2021-2038	$86,998,092	40	0.014836	$1,290,724	4.00%	$3,479,924	$4,770,648
BRT Related Arterial Road Works	2021-2038	$377,453,656	40	0.014836	$5,599,990	4.00%	$15,098,146	$20,698,137
Minor Road Works	2021-2038	$23,552,022	40	0.014836	$349,423	4.00%	$942,081	$1,291,504
Additional Programs	2021-2038	$70,893,104	40	0.014836	$1,051,787	4.00%	$2,835,724	$3,887,511
Operations Centre (North)	2021-2038	$21,476,250	40	0.014836	$318,627	4.00%	$859,050	$1,177,677
Traffic Management Centre	2021-2038	$310,000	40	0.014836	$4,599	4.00%	$12,400	$16,999
TOTAL		**$1,203,878,859**			**$17,861,027**		**$48,155,154**	**$66,016,182**
WASTEWATER SERVICING PROJECTS								
Wastewater Trunk Sewers	2021-2038	$3,036,040	80	0.004026	$12,223	0.70%	$21,252	$33,476
Wastewater Internal Oversizing Subsidy	2021-2038	$4,092,769	80	0.004026	$16,478	0.70%	$28,649	$45,127
Wastewater Servicing - Built Area Works	2021-2038	$29,521,695	80	0.004026	$118,856	0.70%	$206,652	$325,508
Wastewater Servicing - Strategic Links	2021-2038	$6,748,371	80	0.004026	$27,169	0.70%	$47,239	$74,408
Wastewater Treatment Plant Upgrades	2021-2038	$95,009,200	40	0.014836	$1,409,579	0.70%	$665,064	$2,074,643
Wastewater Pumping Station Works	2021-2038	$15,598,728	30	0.022778	$355,302	3.00%	$467,962	$823,264
Industrial Wastewater Servicing Works	2021-2038	$16,687,400	80	0.004026	$67,184	0.70%	$116,812	$183,996
TOTAL		**$170,694,203**			**$2,006,791**		**$1,553,630**	**$3,560,421**
STORMWATER MANAGEMENT PROJECTS								
Community Growth SWM Works	2021-2038	$108,458,776	40	0.014836	$1,609,120	2.00%	$2,169,176	$3,778,295
Community Growth Trunk Storm Sewer Works	2021-2038	$2,719,666	80	0.004026	$10,949	1.60%	$43,515	$54,464
Storm Sewer Internal Oversizing Subsidy	2021-2038	$29,645,653	80	0.004026	$119,355	1.60%	$474,330	$593,685
Storm Sewer - Built Area Works	2021-2038	$61,445,826	80	0.004026	$247,384	1.60%	$983,133	$1,230,517
Low Impact Development	2021-2038	$34,090,397	80	0.004026	$137,249	2.00%	$681,808	$819,057
Industrial SWM Ponds	2021-2038	$24,541,335	40	0.014836	$364,101	2.00%	$490,827	$854,928
Industrial Trunk Storm Sewer Works	2021-2038	$9,216,600	80	0.004026	$37,106	1.60%	$147,466	$184,572
TOTAL		**$270,118,252**			**$2,525,264**		**$4,990,254**	**$7,515,519**
WATER DISTRIBUTION PROJECTS								
Watermain – Low Level System	2021-2038	$60,099,918	70	0.005397	$324,366	1.00%	$600,999	$925,365
Watermain – Southeast Pressure Zone	2021-2038	$19,724,548	70	0.005397	$106,456	1.00%	$197,245	$303,701
Watermain – High Level System	2021-2038	$10,406,194	70	0.005397	$56,163	1.00%	$104,062	$160,225
Watermain – Internal Oversizing Subsidy	2021-2038	$1,637,298	70	0.005397	$8,837	1.00%	$16,373	$25,210
Watermain – Built Area Works	2021-2038	$723,965	70	0.005397	$3,907	1.00%	$7,240	$11,147
Watermain – Strategic Links	2021-2038	$1,874,947	70	0.005397	$10,119	1.00%	$18,749	$28,869
Watermain – Industrial	2021-2038	$26,485,000	70	0.005397	$142,943	1.00%	$264,850	$407,793
Watermains - Water Distribution Facilities	2021-2038	$4,216,480	30	0.022778	$96,041	3.00%	$126,494	$222,536
TOTAL		**$125,168,350**			**$748,833**		**$1,336,013**	**$2,084,846**
HARD SERVICE GRAND TOTAL		**$1,769,859,664**			**$23,141,916**		**$56,035,052**	**$79,176,967**

Lifecycle & Operating Costs Impacts
TABLE M-2: Soft Services

DC ID #	Project Description	Expected Year	Total Estimated Cost	Annual Impact ($)[7] Average Useful Life(years)	Sinking Fund Factor	Life Cycle Cost	Operating Cost	Total cost
	Fire Services [1]							
	Facility							
DC14FS0001	Fire Station 15 - New Station	2022	$ 3,856,600	40	0.014836	$ 57,217	$ 42,467	$ 99,684
	Outfitting							
DC14FS0005	Fire Fighter Outfitting - Station 15	2022	$ 121,086	8	0.114467	$ 13,860	$ 2,614,958	$ 2,628,819
	Vehicles							
DC14FS0003	Quint - Station 15 Vehicle	2022	$ 899,900	15	0.055766	$ 50,184	$ 25,530	$ 75,714
DC14FS0004	Aerial Company - Cental London	2022	$ 1,805,000	15	0.055766	$ 100,658	$ 25,530	$ 126,188
	Subtotal		$ 6,682,586			$ 221,920	$ 2,708,484	$ 2,930,405
	Police Services [2,3]							
	Facility Expansion							
DC19PS1001	Police Headquarters Expansion	2023	$ 80,000,000	40	0.014836	$ 1,186,899	$ 4,000,000	$ 5,186,899
	Outfitting							
DC19PS2001	Officer Outfitting (due to growth)	2021-2028	$ 412,116	8	0.114467	$ 47,174	$ 9,329,912	$ 9,377,086
	Subtotal		$ 80,412,116			$ 1,234,072	$ 13,329,912	$ 14,563,984
	Library							
	Facility							
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Collections							
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Subtotal		$ -			$ -	$ -	$ -
	Parks & Recreation							
	Facilities [3]							
	Multi Purpose Recreation Centre (Southeast)							
DC14PR0002	Double Icepad Arena	2023	$ 10,956,750	40	0.0148362	$ 162,557	$ 547,837	$ 710,394
DC14PR0002	Community Centre / Gymnasium	2023	$ 11,800,380	40	0.0148362	$ 175,073	$ 590,019	$ 765,092
DC14PR0002	Change Rooms	2023	$ 1,958,133	40	0.0148362	$ 29,051	$ 97,907	$ 126,958
DC14PR0002	Furniture / Fittings / Equipment	2023	$ 592,051	40	0.0148362	$ 8,784	$ 29,603	$ 38,386
DC14PR0002	Land / Site Works / Professional Fees	2023	$ 12,232,177	40	0.0148362	$ 181,479	$ -	$ 181,479
	Multi Purpose Recreation Centre (Northwest)							
DC19PR2001	Indoor Swimming Pool	2023	$ 8,275,112	40	0.0148362	$ 122,771	$ 413,756	$ 536,527
DC19PR2001	Community Centre / Gymnasium	2023	$ 13,083,623	40	0.0148362	$ 194,112	$ 654,181	$ 848,293
DC19PR2001	Change Rooms	2023	$ 3,802,078	40	0.0148362	$ 56,409	$ 190,104	$ 246,512
DC19PR2001	Furniture / Fittings / Equipment	2023	$ 693,460	40	0.0148362	$ 10,288	$ 34,673	$ 44,961
DC19PR2001	Land / Site Works / Professional Fees	2023	$ 6,130,852	40	0.0148362	$ 90,959	$ -	$ 90,959
	Neighbourhood Community Centre (North)							
DC19PR2002	Community Centre / Gymnasium	2025	$ 10,004,340	40	0.0148362	$ 148,427	$ 500,217	$ 648,644
DC19PR2002	Furniture / Fittings / Equipment	2025	$ 279,119	40	0.0148362	$ 4,141	$ 13,956	$ 18,097
DC19PR2002	Land / Site Works / Professional Fees	2025	$ 3,168,041	40	0.0148362	$ 47,002	$ -	$ 47,002
	Neighbourhood Community Centre (Central)							
DC19PR2003	Community Centre / Gymnasium	2027	$ 10,004,340	40	0.0148362	$ 148,427	$ 500,217	$ 648,644
DC19PR2003	Furniture / Fittings / Equipment	2027	$ 279,119	40	0.0148362	$ 4,141	$ 13,956	$ 18,097
DC19PR2003	Land / Site Works / Professional Fees	2027	$ 3,168,041	40	0.0148362	$ 47,002	$ -	$ 47,002
	Field Houses							
DC19PR2004	Future Field House (North)	2021	$ 500,000	20	0.0391471	$ 19,574	$ 25,000	$ 44,574
DC19PR2005	Future Field House (South)	2022	$ 500,000	20	0.0391471	$ 19,574	$ 25,000	$ 44,574
DC19PR2006	Future Field House (West)	2024	$ 500,000	20	0.0391471	$ 19,574	$ 25,000	$ 44,574
DC19PR2007	Future Field House (East)	2026	$ 500,000	20	0.0391471	$ 19,574	$ 25,000	$ 44,574
DC19PR2008	Future Field House (West)	2028	$ 500,000	20	0.0391471	$ 19,574	$ 25,000	$ 44,574
	Spray Pads							
DC14PR0011	Growth-related Spray Pad (Riverbend)	2022	$ 500,000	20	0.0391471	$ 19,574	$ 25,000	$ 44,574
DC19PR2009	Growth-related Spray Pad (South)	2023	$ 500,000	20	0.0391471	$ 19,574	$ 25,000	$ 44,574
DC19PR2010	Growth-related Spray Pad (North)	2025	$ 500,000	20	0.0391471	$ 19,574	$ 25,000	$ 44,574
DC19PR2011	Growth-related Spray Pad (South)	2027	$ 500,000	20	0.0391471	$ 19,574	$ 25,000	$ 44,574
	Subtotal		$ 100,927,616			$ 1,606,785	$ 3,811,425	$ 5,418,210
	Parkland Development [5]							
	Neighbourhood Parks							
DC14PR0023	Applewood (39T-09501)	2021	$ 82,065	20	0.0391471	$ 3,213	$ 10,000	$ 13,213
DC19PR5005	Sifton - Kilally Road (2023)	2023	$ 82,065	20	0.0391471	$ 3,213	$ 10,000	$ 13,213
DC19PR5006	Talbot Village-Southside (39T-14506)	2021	$ 102,581	20	0.0391471	$ 4,016	$ 12,500	$ 16,516
DC19PR5007	Lambeth - York (39T-17503)	2022	$ 114,891	20	0.0391471	$ 4,498	$ 14,000	$ 18,498
DC14PR0029	LPH Dundas	2023	$ 173,157	20	0.0391471	$ 6,779	$ 21,100	$ 27,879
DC14PR0020	Ross Lands North (39T-07502)	2023	$ 114,891	20	0.0391471	$ 4,498	$ 14,000	$ 18,498
DC14PR0021	Ross Lands South (39T-07502)	2023	$ 28,723	20	0.0391471	$ 1,124	$ 3,500	$ 4,624
DC19PR5008	Copps - Lambeth	2023	$ 41,033	20	0.0391471	$ 1,606	$ 5,000	$ 6,606
DC19PR5009	Future Neighbourhood Parks (Central)	2024	$ 65,652	20	0.0391471	$ 2,570	$ 8,000	$ 10,570
DC19PR5010	Future Neighbourhood Parks (N/W)	2024	$ 90,272	20	0.0391471	$ 3,534	$ 8,000	$ 11,534
DC19PR5011	Future Neighbourhood Parks (N/E)	2024	$ 90,272	20	0.0391471	$ 3,534	$ 11,000	$ 14,534
DC19PR5012	Future Neighbourhood Parks (S/E)	2025	$ 90,272	20	0.0391471	$ 3,534	$ 11,000	$ 14,534
DC19PR5013	Future Neighbourhood Parks (S/W)	2025	$ 90,272	20	0.0391471	$ 3,534	$ 11,000	$ 14,534
DC19PR5014	Future Neighbourhood Parks (S/W)	2026	$ 90,272	20	0.0391471	$ 3,534	$ 11,000	$ 14,534
DC19PR5015	Future Neighbourhood Parks (Central)	2027	$ 65,652	20	0.0391471	$ 2,570	$ 11,000	$ 13,570
	District Parks							
DC14PR0036	Beaverbrook/Esam (39T-99502)	2022	$ 987,355	20	0.0391471	$ 38,652	$ 63,000	$ 101,652
DC14PR0033	Clarke Subdivision (39T-05511)	2023	$ 203,740	20	0.0391471	$ 7,976	$ 13,000	$ 20,976
DC19PR5017	Future District Parks (N/W or N/E)	2025	$ 783,615	20	0.0391471	$ 30,676	$ 50,000	$ 80,676
DC19PR5018	Future District Parks (S/W or S/E)	2028	$ 783,615	20	0.0391471	$ 30,676	$ 50,000	$ 80,676

Lifecycle & Operating Costs Impacts
TABLE M-2: Soft Services Cont'd

DC ID #	Project Description	Expected Year	Total Estimated Cost	Annual Impact ($)[7] Average Useful Life(years)	Sinking Fund Factor	Life Cycle Cost	Operating Cost	Total cost
	Urban Parks							
DC19PR5024	Jackson (39T-06507)	2021	$ 909,707	20	0.0391471	$ 35,612	$ 20,000	$ 55,612
DC19PR5025	Riverbend - Kains TVP Trail Head (39T-17501)	2021	$ 181,941	20	0.0391471	$ 7,122	$ 4,000	$ 11,122
DC14PR0041	Applewood Urban Park (39T-09501)	2022	$ 618,601	20	0.0391471	$ 24,216	$ 13,600	$ 37,816
DC19PR5026	Tennant Hyde Park	2023	$ 363,883	20	0.0391471	$ 14,245	$ 8,000	$ 22,245
DC19PR5027	Future Urban Parks (N/W)	2024	$ 545,824	20	0.0391471	$ 21,367	$ 12,000	$ 33,367
DC19PR5028	Future Urban Parks (N/E)	2025	$ 545,824	20	0.0391471	$ 21,367	$ 12,000	$ 33,367
DC19PR5029	Future Urban Parks (S/W)	2026	$ 545,824	20	0.0391471	$ 21,367	$ 12,000	$ 33,367
DC19PR5030	Future Urban Parks (S/E)	2027	$ 545,824	20	0.0391471	$ 21,367	$ 12,000	$ 33,367
DC19PR5031	Future Urban Parks (Central)	2028	$ 545,824	20	0.0391471	$ 21,367	$ 12,000	$ 33,367
	Civic Spaces							
DC19PR5032	Future Civic Spaces (Central)	2021	$ 1,533,333	20	0.0391471	$ 60,026	$ 5,000	$ 65,026
DC19PR5033	Future Civic Spaces (Central)	2023	$ 3,066,666	20	0.0391471	$ 120,051	$ 10,000	$ 130,051
	Woodland Parks							
DC19PR5036	Talbot Village-Southside (39T-14506)	2021	$ 94,676	20	0.0391471	$ 3,706	$ 2,100	$ 5,806
DC14PR0052	Jackson 2 - Woodlots (39T-06507)	2022	$ 184,844	20	0.0391471	$ 7,236	$ 4,100	$ 11,336
DC19PR5037	Lambeth - York (39T-17503)	2023	$ 198,370	20	0.0391471	$ 7,766	$ 4,400	$ 12,166
DC19PR5038	Future Sigificant Woodlands	2024	$ 90,168	20	0.0391471	$ 3,530	$ 2,000	$ 5,530
DC19PR5039	Future Significant Woodlands	2025	$ 90,168	20	0.0391471	$ 3,530	$ 2,000	$ 5,530
	Major Open Space Network							
DC14PR0076	Applewood (39T-09501)	2021	$ 289,130	20	0.0391471	$ 11,319	$ 10,000	$ 21,319
DC19PR5046	Corlon Golf Course (39T-05508)	2021	$ 335,391	20	0.0391471	$ 13,130	$ 11,600	$ 24,730
DC19PR5047	Jackson Woodland Buffers (39T-06507)	2021	$ 306,478	20	0.0391471	$ 11,998	$ 10,600	$ 22,598
DC19PR5048	Sifton - Kilally Road (2023)	2023	$ 109,869	20	0.0391471	$ 4,301	$ 3,800	$ 8,101
DC19PR5049	Beaverbrook/Esam (39T-99502)	2022	$ 306,478	20	0.0391471	$ 11,998	$ 10,600	$ 22,598
DC19PR5050	Lambeth - York (39T-17503)	2022	$ 86,739	20	0.0391471	$ 3,396	$ 3,000	$ 6,396
DC19PR5051	Tennant Hyde Park	2022	$ 40,478	20	0.0391471	$ 1,585	$ 1,400	$ 2,985
DC19PR5052	Vista Woods -Southside (39T-03505)	2022	$ 92,522	20	0.0391471	$ 3,622	$ 3,200	$ 6,822
DC14PR0077	Comfort Lands -Sergautis (39T-11502)	2023	$ 104,087	20	0.0391471	$ 4,075	$ 3,600	$ 7,675
DC19PR5053	Hyman Development - east of Hamlyn Park	2023	$ 925,216	20	0.0391471	$ 36,220	$ 32,000	$ 68,220
DC14PR0084	LPH Dundas	2023	$ 86,739	20	0.0391471	$ 3,396	$ 3,000	$ 6,396
DC14PR0073	Ross Lands South (39T-07502)	2023	$ 34,117	20	0.0391471	$ 1,336	$ 1,180	$ 2,516
DC19PR5054	Copps - Lambeth	2023	$ 578,260	20	0.0391471	$ 22,637	$ 20,000	$ 42,637
DC14PR0074	CPRI	2023	$ 1,619,128	20	0.0391471	$ 63,384	$ 56,000	$ 119,384
DC19PR5055	Byron - Southside (39T-15503)	2023	$ 75,174	20	0.0391471	$ 2,943	$ 2,600	$ 5,543
DC19PR5056	Open Space SWM Block Pathway Connections	2021-2028	$ 120,000	20	0.0391471	$ 4,697.66	$ 2,000	$ 6,698
DC19PR5057	Future Open Space Parks	2024	$ 693,912	20	0.0391471	$ 27,165	$ 24,000	$ 51,165
DC19PR5058	Future Open Space Parks (North)	2025	$ 693,912	20	0.0391471	$ 27,165	$ 24,000	$ 51,165
DC19PR5059	Future Open Space Parks (South)	2026	$ 693,912	20	0.0391471	$ 27,165	$ 24,000	$ 51,165
DC19PR5060	Future Open Space Parks	2027	$ 693,912	20	0.0391471	$ 27,165	$ 24,000	$ 51,165
	Sports Parks							
DC19PR5061	Expand Ralph Hamlyn Park (Hyman Dev)	2021	$ 1,905,516	20	0.0391471	$ 74,595	$ 180,000	$ 254,595
DC19PR5062	Future Sports Parks	2022	$ 1,482,068	20	0.0391471	$ 58,019	$ 140,000	$ 198,019
	Thames Valley Parkway							
DC19PR5066	Riverbend - Kains TVP (39T-17501)	2021	$ 1,177,200	20	0.0391471	$ 46,084	$ 36,000	$ 82,084
DC19PR5067	South Branch Meadowlily/VoR/Jackson	2022	$ 1,177,200	20	0.0391471	$ 46,084	$ 36,000	$ 82,084
DC19PR5068	South Branch Tridon (East Hamilton 39T-17502)	2023	$ 784,800	20	0.0391471	$ 30,723	$ 24,000	$ 54,723
DC19PR5069	Future TVP (North Branch)	2025	$ 327,000	20	0.0391471	$ 12,801	$ 10,000	$ 22,801
	Environmentally Significant Areas							
DC14PR0106	CPRI	2021	$ 67,270	20	0.0391471	$ 2,633	$ 5,355	$ 7,988
DC19PR5071	Woodhull	2022	$ 163,370	20	0.0391471	$ 6,395	$ 13,005	$ 19,400
DC19PR5072	Comfort Lands -Sergautis (39T-11502)	2023	$ 69,192	20	0.0391471	$ 2,709	$ 5,508	$ 8,217
DC19PR5073	Hyman Development - East of Hamlyn Park	2023	$ 67,270	20	0.0391471	$ 2,633	$ 5,355	$ 7,988
DC14PR0107	Ross Lands North (39T-07502)	2023	$ 24,025	20	0.0391471	$ 941	$ 1,913	$ 2,853
DC19PR5074	Crich/Applewood Wetland	2023	$ 50,453	20	0.0391471	$ 1,975	$ 4,016	$ 5,991
DC19PR5075	Future ESAs (N/W)	2025	$ 48,050	20	0.0391471	$ 1,881	$ 3,825	$ 5,706
DC19PR5076	Future ESAs (N/E)	2026	$ 48,050	20	0.0391471	$ 1,881	$ 3,825	$ 5,706
DC19PR5077	Future ESAs (S/W)	2027	$ 48,050	20	0.0391471	$ 1,881	$ 3,825	$ 5,706
DC19PR5078	Future ESAs (S/E)	2028	$ 48,050	20	0.0391471	$ 1,881	$ 3,825	$ 5,706
	Bridges and Tunnels							
DC19PR5080	Corlon Sunningdale Underpass (39T-16504)	2023	$ 600,000	20	0.0391471	$ 23,488	n/a	n/a
DC19PR5082	South Branch Tridon (east Hamilton 39T-17502)	2021	$ 525,000	20	0.0391471	$ 20,552	n/a	n/a
DC19PR5083	Beaverbrook/Esam - CP Tunnel upgrade (39T-99502)	2022	$ 500,000	20	0.0391471	$ 19,574	n/a	n/a
DC19PR5084	Victoria on River Ravine Crossing (39T-13502)	2023	$ 600,000	20	0.0391471	$ 23,488	n/a	n/a
DC19PR5085	S/W Community Center Pedestrian Bridge	2023	$ 375,000	20	0.0391471	$ 14,680	n/a	n/a
DC19PR5086	Future Bridges	2024	$ 525,000	20	0.0391471	$ 20,552	n/a	n/a
	Parks and Recreation Studies							
DC19GS0022	Master Plan Update (2021)	2021	$ 150,000	n/a	n/a	n/a	n/a	n/a
DC19GS0023	Master Plan Update (2027)	2027	$ 350,000	n/a	n/a	n/a	n/a	n/a
DC19GS0024	New ESA Conservation Master Plans	2023, 2026	$ 716,800	n/a	n/a	n/a	n/a	n/a
DC19GS0025	Subwatershed Studies, review and implementation update (Parks & Re	2021-2023	$ 120,000	n/a	n/a	n/a	n/a	n/a
DC19GS0026	Urban Forestry Studies Impacted by Growth	2021, 2022, 2023, 2025, 2026	$ 500,000	n/a	n/a	n/a	n/a	n/a
DC19GS0027	Post Development EIS Monitoring	2021-2026	$ 245,760	n/a	n/a	n/a	n/a	n/a
	Subtotal		$ 34,722,447			$ 1,277,758	$ 1,219,332	$ 2,374,755
	Transit[5]							
	Facilities							
DC19TS1001	RT Maintenance Facility	2026	$ 13,005,000	40	0.0148362	$ 192,945		
DC19TS1002	RT- Downtown Loop - Stops	2021	$ 4,064,063	40	0.0148362	$ 60,295		
DC19TS1003	RT - East London Link - Stops	2022	$ 8,323,200	40	0.0148362	$ 123,485		

Lifecycle & Operating Costs Impacts
TABLE M-2: Soft Services Cont'd

DC ID #	Project Description		Expected Year	Total Estimated Cost	Annual Impact ($)[7] Average Useful Life(years)	Sinking Fund Factor	Life Cycle Cost	Operating Cost	Total cost
DC19TS1004	RT - North Connection - Stops		2026	$ 8,534,531	40	0.0148362	$ 126,620	$ 12,866,000	$ 14,018,606
DC19TS1005	RT - Wellington Gateway - Stops		2023	$ 9,347,344	40	0.0148362	$ 138,679		
DC19TS1006	RT - West Connection - Stops		2025	$ 5,283,281	40	0.0148362	$ 78,384		
	Vehicles								
DC19TS2001	RT Transit (28 Buses)		2023-2026	$ 29,131,200	40	0.0148362	$ 432,197		
DC19TS2002	Conventional Transit		2021-2028	$ 21,948,400	40	0.0148362	$ 325,632	$ 1,365,000	$ 1,690,632
		Subtotal		$ 99,637,019			$ 1,478,238	$ 14,231,000	$ 15,709,238
	Waste Diversion [3]								
	Facility								
DC19WT1001	Organic Waste Diversion Facility		2027	$ 20,000,000	40	0.0148362	$ 296,725	$ 1,000,000	$ 1,296,725
		Subtotal		$ 20,000,000			$ 296,725	$ 1,000,000	$ 1,296,725
TOTAL SOFT SERVICE - OPERATING IMPACTS				$ 342,381,784			$ 6,115,498	$ 36,300,153	$ 42,293,317

Note

(1) Fire facility operating costs do not include vehicles as these are listed separately. Firefighter outfitting annual operating costs reflect twenty (20) firefighters associated with Station 15.
(2) Seventy six (76) new officers at approximate annual cost of $122,762 per officer.
(3) Yearly operating costs estimated at 5% of capital cost of facility.
(4) Estimated annual parkland operating costs: Neighbourhoods Park, $10,000/ha; Civic Spaces, $25,000/ha; Urban Parks, $20,000/ha; District Parks, $10,000/ha; Woodland Parks, $500/ha; ESAs, $765/ha; Open Space, $2000/ha; Sports Parks, $20,000/ha; and TVP, $20/m. Bridges and Tunnels excluded.
(5) Direct annual operating & maintenance costs for BRT based on July 17, 2018 Business Case. Annual Operating cost for conventional transit buses used a rate of $65,000 per bus as outlined in the LTC 2015-2018 Asset Management Plan.
(6) All operating cost figures based on a rough approximation