
MUNICIPALITY OF LAMBTON SHORES

**2017 DEVELOPMENT CHARGES
BACKGROUND STUDY**



BMROSS
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1.0 INTRODUCTION

The Municipality of Lambton Shores is considering establishing, by by-law, revised development charges to pay for capital costs required due to increased needs for services arising from development. The by-law may establish development charges against residential and non-residential development activities in the Municipality during the period of 2018-2022. This by-law would be passed under the statutory authority of the *Development Charges Act, 1997* (DCA) as amended and its accompanying Regulations. It will replace the existing Development Charges by-law (By-law 138 2012), passed on December 17, 2012.

Section 10 of the Act requires that a development charge background study be completed and specifies the contents of the study. *Ontario Regulation 82/98*, Section 8, as amended (O.Reg. 82/98) further defines the content of the study. This Development Charges Background Study (Background Study) has been prepared in order to provide Council with sufficient information to make a decision on the value of any development charge to adopt. This report includes the following major components:

- An outline of the framework for conducting the study;
- An overview of the local growth forecasts for residential and non-residential activities;
- A summary of growth-related projects and services;
- A synopsis of the methodology applied to establish a development charge;
- Asset management information for assets funded by the development charges;
- Presentation of the proposed development charge schedule; and
- Details on the process to implement a Development Charges By-law.

2.0 BACKGROUND

The Municipality currently administers a wide variety of public services and maintains an extensive inventory of facilities, infrastructure, equipment and land. Several major infrastructure projects have been initiated in recent years, or are being planned for implementation in the foreseeable future. Given the capital investment associated with the provision of these projects and other municipal activities, Council has expressed an interest in considering a new Development Charge By-law to recover applicable costs from new development activities.

B. M. Ross and Associates Limited (BMROSS) was engaged to conduct a Development Charges Background Study to consider the adoption of development charges applicable to new construction activities within the Municipality. Section 10 of the DCA specifies that the Background Study must include the following components:

- Forecasts for the anticipated amount, type and location of development for which development charges can be applied;
- An estimate of the increased level of service required to accommodate growth (for each service incorporated into the development charge);
- Forecasts of the average service levels for certain services over the 10-year period immediately preceding the preparation of the Background Study. The assessment of previous service levels must consider both the quality and quantity of service provided;
- Assessment of long-term capital and operating costs for infrastructure required for each applicable service;
- Consideration of the use of more than one development charge bylaw to reflect different service areas; and
- An evaluation of life cycle costs and financial sustainability over the lifetime of the asset.

3.0 CURRENT PRACTICE

In 2012, the Municipality enacted By-law 138 of 2012, to collect development charges on residential, commercial (including the commercial area of a greenhouse), institutional, industrial, and wind turbine development within the municipality. Currently, as set out in By-law 138 of 2012, the municipal wide charges include the following service categories: roads and related, other transportation services, fire protection, outdoor recreation, indoor recreation, library and administration. Within the water and wastewater service areas, as specified in Schedules C, C-1 and C-2 of the bylaw, there are water and wastewater service development charges. With respect to the water and wastewater services, if a property has already paid a water or wastewater capital contribution, it is exempt from the water and/or wastewater development charge.

The 2012 By-law was passed after consideration of a Development Charges Background Report, November 2012, prepared by Watson and Associates Economists Limited. This report analyzed potential growth and development across the municipality and evaluated capital works necessary to service the predicted growth. The Development Charges By-law was passed on December 17, 2012 and came into effect on January 1, 2013. The current Development Charges (as of January 2017) are outlined in Table 3.1.

Following direction from Council, a number of service categories were reduced to a set percentage of the full charge to keep the development charges at the same amount as set in the previous by-law. For residential development, the water charge was set at 82.6% of the calculated full charge. For non-residential development, all services were reduced to 33.4% of the full charge.

In the period between 2012 and the end of 2016, a total of \$1,547,413.62 was contributed to the development charge reserves. The amount contributed to each service category is shown below in Table 3.2, as well as the interest earned, expenditures and the remaining balance. The table does not include the 2017 budget allocations. The expenditures made using funds from the development charge reserves included debt repayment and contributions towards the projects as described in the 2012 Background Study.

Table 3.1: Lambton Shores Development Charges enacted under By-law 138 2012 (2017 rates)

Service	Residential				Non-Residential		
	Single & Semi-detached	Apartments 2+ bedroom	Apartments Bachelor & 1 bedroom	Other Multiples	Wind Turbine	Commercial/ Institutional (per m² of Gross Floor Area)	Industrial (per m² of Gross Floor Area)
Municipal Wide Services							
Roads and Related	\$1,410	\$1,000	\$759	\$1,247	\$1,410	\$3.99	\$3.99
Other Transportation	\$170	\$121	\$92	\$150	-	\$0.54	\$0.54
Fire	\$9	\$6	\$5	\$8	\$9	\$0.04	\$0.04
Outdoor Recreation	\$334	\$237	\$180	\$295	-	\$0.22	\$0.22
Indoor Recreation	\$440	\$312	\$237	\$389	-	\$0.32	\$0.32
Library	\$284	\$201	\$153	\$251	-	\$0.22	\$0.22
Administration	\$123	\$87	\$66	\$109	\$123	\$0.40	\$0.40
Total Municipal Wide -	\$2,770	\$1,964	\$1,492	\$2,449	\$1,542	\$5.72	\$5.72
Water and Wastewater Service Areas							
Water	\$4,918	\$3,489	\$2,648	\$4,351	-	\$13.05	\$13.05
Wastewater	\$2,295	\$1,628	\$1,236	\$2,030	-	\$5.03	\$5.03
Total Water and Wastewater	\$7,213	\$5,117	\$3,884	\$6,381	-	\$18.08	\$18.08
Total - All Services	\$9,983	\$7,081	\$5,376	\$8,830	\$1,542	\$23.80	\$23.80

Table 3.2: Development Charge Reserve Contributions and Expenditures, 2012 to 2016

Service Category	Contributions	Interest	Expenditures	Balance
Roads & Related	\$401,774.41	\$24,276.54	\$26,248.68	\$607,677.79
Other Transportation Services	\$24,183.30	\$2,478.85		\$57,150.17
Fire Protection Services	\$2,423.48	\$150.87		\$-7,299.13
Outdoor Recreation	\$70,757.11	\$4,756.48		\$157,148.26
Indoor Recreation	\$96,334.75	\$6,381.46	\$179,864.00	\$19,079.65
Library Services	\$29,516.01	\$2,936.9		\$32,452.91
Administration/ Consulting	\$30,312.44	\$1,950.06		\$33,940.77
Water	\$419,280.15	\$18,159.39	\$251,000.00	\$436,514.67
Wastewater	\$472,831.97	\$42,583.61	\$100,000.00	\$841,322.73
Total	\$1,547,413.62	\$103,674.16	\$557,112.68	\$2,177,987.82

4.0 APPROACH

This report is an update of the 2012 Background Study. The purpose of this study is to conform to the requirements of the DCA and to support an amount that can be collected as a development charge. It is also an opportunity to review how the assumptions and forecasts used in the previous report actually played out. Additionally, the process of implementing and collecting the development charges is reviewed to determine whether changes or improvements need to be made. The approach to conducting the review is as follows:

- Review with municipal staff and Council the existing process, what projects were implemented during the life of the existing by-law and to discuss new projects;
- Review historical and future growth in the Municipality. Municipal staff provided information on buildings/development activity since the previous report was prepared;
- Municipal staff and consulting engineers to provide updated capital works forecasts and potential projects;
- BMROSS analyzed and evaluated the services collected for in the existing by-law, and the proposed works to service new development, with respect to:
 - Applicability under the Act;
 - Benefit to existing development;
 - Allocation between different types of development;
 - Level of service in the community;
 - Potential impact of long-term capital and operating costs for the proposed works; and
 - Service areas of the proposed works.

The following represent the final components of the development charges process:

- Provide Council with an interim presentation to identify proposed services that could be collected for in a development charge;
- Council determines a development charge amount they intend to collect by by-law;

- Establish, by Council resolution, a development charge schedule which the Municipality intends to collect;
- Prepare a draft Development Charges By-law prescribing the proposed development charges schedule;
- Arrange a public meeting to present details on the study process and the proposed development charges schedule. The meeting is a requirement of the DCA. A minimum 20-day notice period must be provided prior to the meeting;
- Acknowledge and attempt to address concerns raised during the statutory public meeting, and document input received through consultation;
- Finalize the implementing By-law following consideration of comments received via consultation;
- Obtain, by Council resolution, approval of the proposed Development Charges By-law; and
- Circulate the Notice of Passage for the Development Charges By-law. The By-law will immediately come into effect. The By-law may be appealed to the Ontario Municipal Board in the 40-day period following the issuance of the Notice.

5.0 POPULATION AND GROWTH FORECAST

5.1 General

Forecasts have been prepared to project population and household growth for the Municipality of Lambton Shores over a 20-year planning period. The growth forecasts were established following an assessment of general growth and development trends in Lambton Shores as identified from statistical data, recent population projections, building permit data and other background research. The forecasts extrapolated from these analyses are considered to be reasonable projections of growth and development within the Municipality.

5.2 Current Population and Household Trends

In the last 15 years, the population of the Municipality of Lambton Shores has fluctuated between a low of 10, 571 (in 2001) and a high of 11,150 persons (in 2006). The 2016 census data estimates the population of the Municipality at 10,631 persons. This equates to a decline of 519 persons from the 2006 population, or a decline of -4.7%. The average annual rate of growth for Lambton Shores is -0.48%. The recent trend of declining population and depressed average annual growth is common in rural municipalities such as Lambton County and southwestern Ontario in general. It should be noted; however, the Census data does not include seasonal residents in the population counts.

The population of Lambton Shores between 2001 and 2016 is shown in Table 5.1.

Table 5.1 Population of Lambton Shores (2001 to 2016)

Year	Population
2001	10,571
2006	11,150
2011	10,656
2016	10,631
15-year change	60
10-year change	-519
% change over 10 years	-4.7%
Average annual growth rate	-0.48%

Population data, as recorded as part of the Statistics Canada Census program, is also available for the urban centres within Lambton Shores. The population data for the urban areas counted in the Census is shown in Table 5.2. Forest and Grand Bend are the largest urban areas in Lambton Shores, with 21% and 25% of the municipal population, respectively. It should be noted that the area designated as Forest in the 2016 Census excludes areas previously included in past censuses. This may account for a portion of the decline in population observed between 2011 and 2016.

Arkona and Grand Bend have experienced population growth over the past 10 years. In Arkona, growth has been slight, with 43 additional people or an annual rate of growth of 0.7%. The greatest amount of growth in the Municipality has been in Grand Bend, with an additional 658 residents and an average annual growth rate of 2.9%. In Thedford, the population has steadily decreased from 822 in 2006 to 749 in 2016. This equates to a decline of -0.93% annually.

Table 5.2 : Population of the Urban Communities in Lambton Shores (2006 to 2016)

Year	Arkona	Forest	Grand Bend	Thedford
2006	591	2,899	2,026	822
2011	579	2,876	2,564	804
2016	634	2,277 ¹	2,684	749
10-year change	43	-622	658	-73
% change over 10 years	7.3%	-21.5%	32.5%	-8.9%
Average annual growth rate	0.70%	-2.4%	2.9%	-0.93%
% of Lambton Shores population (2016)	6%	21%	25%	7%

¹The 2016 Census excludes areas previously included in the Population Centre area for Forest

The number of total private dwellings and dwellings typically occupied by usual residents, from Census data, for the Municipality and its urban centres are shown in Table 5.3 and Table 5.4. The data shows that despite an overall decline in the population, the total number of dwellings has increased over the past 10 years by 235 units. This equates to a total increase from 2016 of 3.5% or 0.34% annually.

Table 5.3 Dwelling Counts for Lambton Shores

	Year	Total Dwellings	Occupied by Usual Residents
	2006	6,773	4,790
	2011	6,880	4,690
	2016	7,008	4,783
	10-year change	235	-7
	% change over 10 years	3.5%	-0.1%
	Average annual growth rate	0.34%	-0.01%

Table 5.4: Dwelling Counts for Arkona, Forest, Grand Bend and Thedford

Year	Arkona		Forest		Grand Bend		Thedford	
	Total Dwellings	Dwellings Occupied by Usual Residents	Total Dwellings	Dwellings Occupied by Usual Residents	Total Dwellings	Dwellings Occupied by Usual Residents	Total Dwellings	Dwellings Occupied by Usual Residents
2006	254	-	1,255	-	1,739	-	344	-
2011	255	247	1,274	1,232	1,827	1143	349	331
2016	277	269	1,006 ¹	945	2,451	1454	345	311
5-year change	22	22	-268	-287	624	311	-4	-20
% change over 5 years	8.6%	8.9%	-21.0%	-23.3%	34.2%	27.2%	-1.1%	-6.0%
Avg. Annual Growth Rate	1.67%	1.72%	-4.61%	-5.17%	6.05%	4.93%	-0.23%	-1.24%

¹The 2016 Census excludes areas previously included in the Population Centre area for Forest which may account for the decline in the number of households.

The number of residences in Arkona and Grand Bend has increased over by the past 10 years, while decreases were observed in Thedford and Forest. It should be noted however, the decline in Forest as reported by the Census may be a result of a change in the area identified as 'Forest' between census periods. The 2016 Census excludes areas previously included in the Forest counts (Park Lane, Stanley St., Frances Drive, Maple St. and Beechwood Ave.). The greatest increase in the total number of dwellings occurred in Grand Bend, with an additional 624 dwellings over the last 5 years. This equates to an annual average growth rate of 6.05%. In Arkona, the increase over 10 years was 22 residences or 1.67% annually.

The difference between the number of total dwellings and dwellings occupied by usual residents gives an approximation of the number of seasonal homes. In 2016, the percentage of homes in the Municipality normally occupied was 68.3%, leaving 31.7% not occupied or occupied temporarily. In the urban communities located away from the lakeshore (Arkona, Forest, and Thedford), the number of unoccupied or seasonal homes ranges from 3% in Arkona to 10% in Thedford. In Grand Bend, the portion of homes that are unoccupied or seasonal increases to

41%. Given this, it is reasonable to assume the population of Grand Bend increases with the arrival of seasonal residents in the summer months. The number of seasonal occupied dwellings within the Municipality has increased over the past 20 years, from 1,734 seasonal homes in 2001 to 2,225 in 2016.

The Building Department of the Municipality of Lambton Shores provided building permit data for residential development from 2012 to 2016. Table 5.5 summarizes the number of new residential units by building permit for the different communities within the municipality. In total, 193 new residential units were issued building permits over the past 5 years. This equates to an average of 38.6 units per year. The majority of new residential development occurred in Grand Bend, which averages 20.6 new units per year; however, in 2016, 30 building permits were issued for new residential units in Grand Bend. In East and West Bosanquet, 16 and 15 new residential units were issued building permits over the past 5 years. In Forest, 14 residential building permits were issued, including one permit for a 2-unit residential dwelling and a 4-unit dwelling. Northville and Thedford had the fewest number of new residential units with annual averages of 0.8 and 0.6 units issued building permits annually.

*Table 5.5 : Number of New Residential Units from
Building Permit Data (2012 to 2016)*

Area	2012	2013	2014	2015	2016	Total	Annual Average
Grand Bend	20	14	21	18	30	103	20.6
Ipperwash	3	2	1	0	4	10	2
Northville	0	1	0	2	1	4	0.8
Port Franks	5	0	2	2	1	10	2
West Bosanquet	4	4	3	3	1	15	3
East Bosanquet	4	3	3	3	3	16	3.2
Arkona	2	3	0	2	2	9	1.8
Forest	2	1	1	7	3	14	2.8
Thedford	2	0	0	0	1	3	0.6
Rural	2	2	0	3	2	9	1.8
Total	44	30	31	40	48	193	38.6

The number of building permits issues for new residential development over the last 10-years is shown in Table 5.6. The 10-year average number of new residential units is 46.5.

Table 5.6: New Residential Building Permits in Lambton Shores, 2006-2016

Year	Number of Building Permits
2006	62
2007	55
2008	54
2009	55
2010	54
2011	39
2012	44
2013	30
2014	31
2015	40
2016	48
Total	512
Average	46.5

5.3 Population and Household Forecast

7.2.1 Forecast Methodology

For the purposes of this study, a population forecast to 2037 for Lambton Shores was developed. The forecast was extrapolated based on the increase in the number of households in the Municipality in recent years, from building permit data. This approach is seen as a reasonable strategy for estimating growth within the municipality, as there has been a relatively steady number of building permits issued for new dwelling units. This trend reflects recent changes in population characteristics, such as an aging population and decrease in family size.

The forecast incorporated the following methodological components:

- The 2016 population and household counts, as determined by the 2016 Census, were used as a starting point for the projections;
- From this base estimate, household growth was calculated based on the 10-year annual average of residential units constructed (from building permit data). For the purposes of this forecast, the annual average number of residential dwellings constructed is 46.5 units;
- The proportion of residential units that are occupied seasonally is expected to continue to increase at a very modest rate over the 20-year forecast period. Over the forecast period, the percentage of seasonal homes in the Municipality will increase from 31.7% to 32.1%;
- Given historic trends favouring construction of single family and semi-detached units, future development is expected to follow a similar trend, with 95% of new permanent units being single family or semi-detached units, 4% multiples, and 1% apartments; and

- The population density of seasonal homes is assumed to be 3.5 persons per unit. For usually occupied residences, the following densities were used to estimate population growth related to new construction: 2.22 persons per unit for single and semi-detached units; 2.00 persons per unit for multiples and 1.5 person per unit for apartments.

5.4 Residential and Population Forecasts

A residential and population growth forecast was developed for Lambton Shores based upon the previously discussed methodology. Tables 5.7 and 5.8 show the gross residential units and population forecasts.

Table 5.7 : Residential Growth Forecast for Lambton Shores (2017 to 2037)

Year	Usually Occupied Units			Seasonal Units	Total Units
	Single and Semi Detached	Multiples	Apartments		
2017	4,155	276	390	2,233	7,054
2022	4,306	283	392	2,306	7,287
2027	4,457	289	393	2,380	7,519
2032	4,607	295	395	2,454	7,751
2037	4,757	302	397	2,529	7,985
5-year change	151	7	2	73	233
10-year change	302	13	3	147	465
20-year change	602	26	7	296	931

Table 5.8 : Forecasted Population Growth in Lambton Shores (2017 to 2037)

Year	Seasonal Population	Permanent Population	Total
2017	7,815	10,700	18,515
2022	8,073	11,047	19,120
2027	8,383	11,394	19,777
2032	8,591	11,740	20,331
2037	8,851	12,086	20,937
5-year change	258	347	605
10-year change	568	694	1,262
20-year change	1,036	1,386	2,422

5.5 Non-Residential Development Forecast

Between 2010 and 2015, there have been 7 building permits issued for new, non-residential developments and 6 permits for additions. For both new construction and additions, the annual average number of permits issued is 2. The average size of new non-residential developments is 419 m² and additions are approximately half of that, with an average size of 224 m². This amounted to an additional 3,855.4 m² of non-residential development, or an annual average of 642.6 m².

It is forecasted that non-residential development will occur at an average rate of 642.6 m² per year. Given past trends, it is estimated that 59.4% of future non-residential development will be commercial, 34.6% institutional and 6% industrial. The forecasted future non-residential growth, by gross floor area, is summarized in Table 5.9. Non-residential development is expected to continue to develop in the Municipality of Lambton Shores at a similar pace as what has been experienced in recent years. It is forecasted that an additional 3,214 m² of non-residential development will occur over the next five years, with the majority of that being commercial. Over the next 20 years, the total non-residential growth is forecasted to add an additional 12,852 m² of floor area.

*Table 5.9 : Forecasted Non-Residential Growth
by Additional Floor Area (2017 to 2037)*

Year	Industrial (m ²)	Commercial (m ²)	Institutional (m ²)	Net Total Non-Residential Space Added (m ²)
2017-2022	193	1,909	1,112	3,214
2017-2027	386	3,817	2,223	6,426
2017-2037	771	7,634	4,447	12,852

To determine the number of additional employees associated with the forecasted growth, the following assumptions of employees per square meter were used for the different types of non-residential growth. The number of new employees is shown in Table 5.10

Table 5.10: Number of New Employees Resulting From Growth

Year	Industrial 1 per 116.13 m ²	Commercial 1 per 51.10 m ²	Institutional 1 per 65.03 m ²	Total Employees Added
2017-2022	1.7	37.4	17.1	56.2
2017-2027	3.3	74.7	34.2	112.2
2017-2037	6.6	149.4	68.4	224.4

6.0 REVIEW OF GROWTH RELATED CAPITAL COSTS

6.1 General Considerations

Projects and services that are anticipated to be required as a result of growth throughout Lambton Shores were reviewed and evaluated. The following factors and evaluation steps were considered during this process:

- Identification of municipal services required to permit occupancy for new development (e.g., water, sanitary, stormwater management, roads, fire protection);
- Identification of municipal services which are required to provide social benefits for new development (e.g., libraries, recreational facilities);
- A review of projects/services contained in the 2012 Background Report, which was used support the current Development Charges By-law;
- A review of new projects/services that were proposed to be collected for in a development charge because they will be required as a result of growth;
- Assessment of the applicability of services and projects under the DCA, taking the following factors into consideration:
 - Eligible Services: Development charges can generally be applied to each of the following services to recover the growth-related capital costs for facility construction and improvement, land acquisition and improvement, equipment and furnishings:
 - Water and wastewater services;
 - Stormwater infrastructure;
 - Transportation infrastructure (e.g., sidewalks, streetlights)
 - Public works activities;
 - Fire protection services;
 - Library services;
 - Indoor and outdoor recreation;
 - Transit services;
 - Airport infrastructure; and
 - General administration, including growth-related studies.
 - Ineligible Services: Development charges cannot be applied to:
 - Cultural, tourism, or entertainment facilities;
 - Landfill sites and services, facilities and services for waste incineration;
 - Hospitals;
 - Municipal administrative buildings;
 - Land acquisition for parks;
 - Rolling stock with a lifespan of less than seven years; and
 - Computer equipment.
- Identification of completed projects and services which benefit future development and included allocations specifically for growth (i.e., additionally capacity);
- Identification of proposed projects and services which will provide benefit to further development within the next ten years; and
- Assessment of the probable capital costs which will be incurred for those projects or services determined to be DCA-eligible.

6.2 Review of Projects/Services from the 2012 Background Report

The evaluation process included a review of growth-related projects that were included in the 2012 Development Charges. The projects were reviewed in terms of their status, cost and grant estimates, and continued applicability. The review is summarized in Table 6.1.

6.3 Review of Additional Services

Additional services that are anticipated to be required as a result of growth in the Municipality were reviewed and evaluated as part of the study. Table 6.2 provides a summary of new service categories/projects that are proposed to be included in the development charge calculation. Additional information on the projects included in Table 6.2 is also included in Appendix B.

6.4 Services Areas

There are a number of projects that benefit on a municipal-wide basis and some projects that benefit defined areas. The projects included in the following service categories are considered to have municipal wide benefits: administration, indoor recreation, roads and related, and outdoor recreation. The development charge for water is collected within the water service areas. There are two service areas for the two wastewater projects, one in the Grand Bend and West Bosanquet service area and the other in the Forest service area. Figure 6.1 (identified as Schedule B) shows the service areas.

6.5 Asset Management

Recent amendments to the Development Charges Act and Ontario Regulation 82/98 require that Development Charge Background Studies include an asset management plan. This plan must include all assets with capital costs funded by development charges and demonstrate that the assets are financially sustainable over their full life cycle.

The Municipality of Lambton Shores completed an initial iteration of an Asset Management Plan (AMP) in March 2014. The intent of the AMP is to serve as a strategic, tactical, and financial document to allow the Municipality to follow sound asset management practices while optimizing available resources and achieving a desired level of service. The initial AMP included consideration of the following asset categories: roads, bridges and culverts, water infrastructure, sanitary sewage infrastructure, storm sewer facilities, facilities, land improvements, equipment and rolling stock. The 2014 AMP includes revenue options to fund infrastructure needs but recognized that completion of a condition rating analysis will provide a more accurate picture of financial requirements. Presently, the Municipality is preparing an update to the 2014 AMP, including further assessment of asset conditions and risk ratings, recording maintenance and repairs, and further assessing levels of services. Updating the AMP will allow the Municipality to establish long range infrastructure needs and financial plan requirements.

A number of the projects proposed for funding through Development Charges have been built or are upgrades to existing infrastructure and were evaluated as part of the Municipality's AMP process. These projects include: Shores Recreation Centre, Grand Bend Arterial Upgrades, Klondyke Road Upgrades, Grand Bend Water Pollution Control Plant and Pumping Station, and Lakeshore Water System. Additionally, studies included under the Administrative category of development charges are not considered assets.

Table 6.1 Review of Projects in the 2012 Development Charges

Service Category	Project	Description	Recommendation
Administration	Development Charge Background Study (2012, 2017)	<ul style="list-style-type: none"> Collect for current and subsequent development charges background studies 	<ul style="list-style-type: none"> Update costs and continue to collect
Administration	Strategic Plan update (2014, 2019)	<ul style="list-style-type: none"> Collect for 5-year strategic plan updates. 	<ul style="list-style-type: none"> Update costs and continue to collect
Administration	Transportation impact and design study	<ul style="list-style-type: none"> Collect for study to review transportation impacts from increased traffic 	<ul style="list-style-type: none"> Study not completed This study is no longer in capital works plan over the next years Remove from development charges
Library	Provision for library facilities (2012-2016 and 2017-2021)	<ul style="list-style-type: none"> In 2012, there was consideration of additional library space through expansion or new construction 	<ul style="list-style-type: none"> Review of library facilities, materials and use suggests facilities are adequately sized for existing and some future population, based on information from the County. It is unlikely the library facilities will be expanded within the next 5 years. Remove from development charges
Indoor Recreation	Shores Recreation Centre debt - principal	<ul style="list-style-type: none"> Collect for the principal of the debt for the 2009 construction of the Shores Recreation Centre 25 year loan Significant benefit to the existing population Future benefit extends to future population beyond 2027. 	<ul style="list-style-type: none"> Review loan schedule amounts and adjust to net out post 2027 benefits Continue to collect
Indoor Recreation	Shores Recreation Centre debt - interest	<ul style="list-style-type: none"> Collect for the interest associated with the debenture for the construction of the Shores Recreation Centre 25-year loan Future benefit extends to future population beyond 2027. 	<ul style="list-style-type: none"> Review loan schedule and calculate interest for current DC period, net out benefit beyond 2027. Continue to collect
Outdoor Recreation	South Bend River trail	<ul style="list-style-type: none"> Extend trail to service future development in South Bend area Benefit to existing and future development 	<ul style="list-style-type: none"> Update costs Continue to collect

Service Category	Project	Description	Recommendation
Outdoor Recreation	Grand Bend Rotary Trail extension	<ul style="list-style-type: none"> Extend the multi-use trail from Pinery Provincial Park to Cut Bridge Benefit to existing and future development 	<ul style="list-style-type: none"> Update costs Continue to collect
Outdoor Recreation	Forest Rotary Trail extension	<ul style="list-style-type: none"> Extend the rotary trail in Forest Benefit to existing and future development 	<ul style="list-style-type: none"> Update costs Continue to collect
Outdoor Recreation	Multi-use tractor	<ul style="list-style-type: none"> Included in the 2012 10-year forecast to service additional trails and recreation facilities resulting from additional growth 	<ul style="list-style-type: none"> Reviewed with staff, purchase of multi-use tractor is no longer in the 10-year forecast Remove from development charges
Outdoor Recreation	Multi-use tractor	<ul style="list-style-type: none"> Included in the 2012 10-year forecast to service additional trails and recreation facilities resulting from additional growth 	<ul style="list-style-type: none"> Reviewed with staff, purchase of multi-use tractor is no longer in the 10-year forecast Remove from development charges
Parking	Klondyke Park – upgrade to paved	<ul style="list-style-type: none"> Upgrade the Klondyke parking area from gravel to a paved surface 	<ul style="list-style-type: none"> Reviewed project with staff. Project is no longer within the 10-year forecast. Remove from development charges
Parking	Additional parking spaces	<ul style="list-style-type: none"> \$235,100 estimated cost for the provision of additional parking spots between 2012 and 2021. 	<ul style="list-style-type: none"> Reviewed costs and project timeline with staff – provision of additional parking is no longer identified within the 10-year forecast. Remove from the development charges
Transportation	Tandem with plow	<ul style="list-style-type: none"> Purchase of a tandem truck with a plow 	<ul style="list-style-type: none"> Reviewed project with staff. Project is still in 10-year forecast Update costs and continue to collect
Transportation	Upgrade single axle to tandem with plow	<ul style="list-style-type: none"> Replace single axle with a tandem and plow 	<ul style="list-style-type: none"> Reviewed project with staff. Project is no longer identified within the 10-year forecast. Remove from the development charges
Transportation	Grand Bend arterial upgrades	<ul style="list-style-type: none"> Project includes bridge widening, work on approaches, traffic signals, street lights and addition of multi-use lanes 	<ul style="list-style-type: none"> Updates costs and allocation between existing and future use Continue to collect
Transportation	Highway 81 – widening and street lights	<ul style="list-style-type: none"> Project includes roadwork, sidewalks, street lights and signage to support increased traffic resulting from development 	<ul style="list-style-type: none"> Review cost and continue to collect

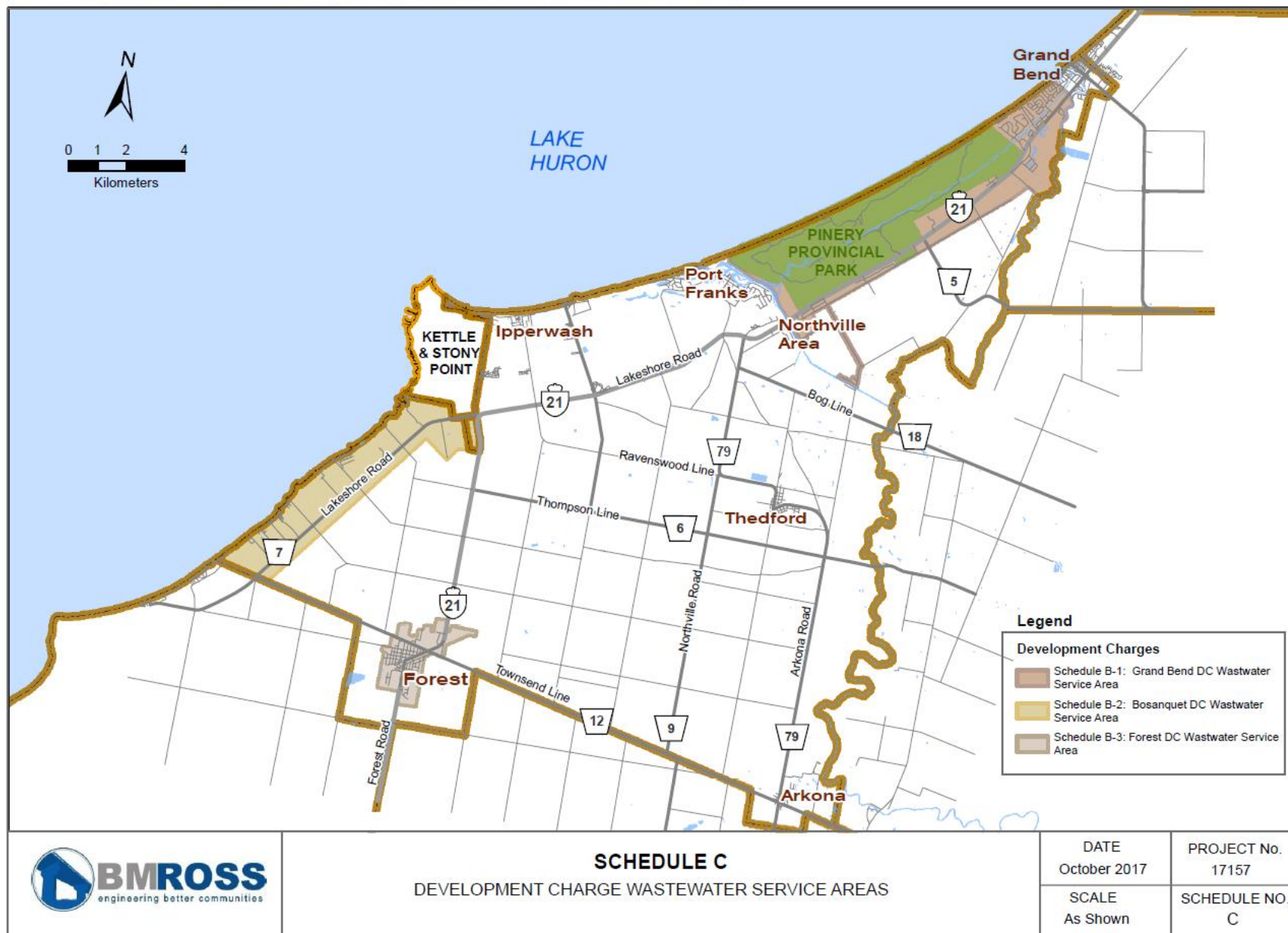
Service Category	Project	Description	Recommendation
Transportation	Klondyke Road – upgrade to paved from tar and chip	<ul style="list-style-type: none"> Upgrade Klondyke Road to support increased traffic resulting from growth 	<ul style="list-style-type: none"> Review cost and continue to collect
Transportation	Fuller Road – upgrade to tar and chip and asphalt	<ul style="list-style-type: none"> Upgrade Fuller Road to support increased traffic resulting from growth 	<ul style="list-style-type: none"> Reviewed with staff. Project is a maintenance issue and not driven by future development. Remove from the development charge
Wastewater	Grand Bend Water Pollution Control Plant and pumping station	<ul style="list-style-type: none"> Construction of a wastewater treatment plant and upgrading a pumping station 	<ul style="list-style-type: none"> Reviewed benefiting areas of this project. Arkona and Thedford do not benefit, so a development charge cannot be collected in those service areas; however, a capital contribution will be collected in Thedford and Arkona as set out in the Connection Fee By-law. Review of the Forest wastewater system identified a project specific to that service area (see Table 6.2). Review costs and continue to collect in Grand Bend and West Bosanquet until the capacity is allocated Include study for West Bosanquet to determine infrastructure costs
Water	Water System	<ul style="list-style-type: none"> Construction of the water system 	<ul style="list-style-type: none"> Review costs and continue to collect until design flows are met

Table 6.2 New Services Required to Support Growth

Service Category	Component	Description	Service Area
Outdoor Recreation	Ipperwash Trail	<ul style="list-style-type: none"> • The Municipality is planning to develop a multi-use trail in the Ipperwash area. • Expected to benefit existing and future residents throughout the Municipality • Cost is \$2,000,000 	Municipal-wide
Outdoor Recreation	Cut Pedestrian Bridge	<ul style="list-style-type: none"> • The Municipality is planning to construct a pedestrian bridge across the Ausable River. This will link trails from Pinery Provincial Park into a future trail network in Port Franks • Expected to benefit existing and future residents throughout the Municipality • Cost is \$500,000 	Municipal-wide
Outdoor Recreation	Ipperwash Community Park	<ul style="list-style-type: none"> • The Municipality is planning to develop a community park in the Ipperwash area. The park is expected to include a small community centre, parking lot, and playground. • Expected to benefit existing and future residents throughout the Municipality • Cost is estimated at \$1,000,000. 	Municipal-wide
Transportation	One-Ton Truck	<ul style="list-style-type: none"> • The Municipality is planning on purchasing a one-ton truck to add to the fleet • The additional vehicle is necessary to provide service resulting from development • Cost is estimated at \$80,000 	Municipal-wide
Transportation	Grand Bend Works Depot	<ul style="list-style-type: none"> • The Municipality is planning to construct a new 2,800 sqft public works depot near Grand Bend • The additional depot is required to provide services to existing development and future development • Benefits existing and future development • Cost is estimated at \$617,500 	Municipal-wide`
Wastewater	Forest Wastewater Treatment Plant Upgrades and Rerating	<ul style="list-style-type: none"> • The Municipality is planning to add a sand filter and rerate the Forest Sewage Treatment Plant. This will increase capacity by 400 m³/day. • The estimated cost is \$250,000 	Forest Sewage Service Area

Figure 6.1 – Lambton Shores Development Charge Service Areas

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The remaining projects, which have yet to be purchased or built, represent new assets. It is expected that as these projects are built or bought, they will be incorporated into future updates of the AMP. Given the estimated life cycle of the assets (based on life cycle estimates used in the current AMP) and the expected replacement cost, assuming 2% annual inflation, the additional projects have a life-cycle cost totaling \$13,733,730.89. It is noted that the life-cycle of the projects range from 12 years to 95 years. Assuming 3.5% annual interest, the Municipality will require an additional \$370,465.53 per year to fund the lifecycle costs of these additional projects. This amount does not factor in potential grants or other contributions.

The number of residences (seasonal and permanent) is expected to continue to increase over the next 10 years. The forecasted addition of 465 residential units will contribute to the existing assessment base and offset the costs associated with these additional assets. Given this, and the Municipality's continued efforts towards establishing long-term funding strategies, the projects included in the development charges are considered financially sustainable over their life cycles.

7.0 CALCULATION OF THE DEVELOPMENT CHARGE

7.1 Methodology

The DCA and O. Reg. 82/98 prescribe the methodology which must be applied to calculate the growth-related capital costs for those projects and services being considered for inclusion into the development charge (i.e., DCA-recoverable capital costs). The following outlines the methodology used to calculate possible development charges for each service category:

Preliminary Capital Cost Assessment

- Establish the total estimated capital costs for those project or services with growth related components which will be implemented within ten years (i.e., gross growth-related capital costs). Exclude costs for local services installed or paid for by property owners as a condition of approval under Section 51 of the Planning Act (subdivision of land);
- Define the benefiting area for the proposed works and estimate the total capacity of the growth-related project or service. Exclude the proportion of the service that can be met by the excess capacity of existing facilities, unless Council has indicated, at the time the excess capacity was created, that it would be paid for by new development;
- Reduce the net growth-related capital costs of the project or service by the value of any anticipated grants or subsidies.

Service Level and Benefit Adjustments

- Review the service description to determine if the proposed works exceed the average level of service (service standard) in the Municipality over the previous 10-year period. The determination of average service level must take into account the quantity of service (i.e., number or size) and the quality of service (i.e., value or cost). Reduce the net cost of the works by any anticipated increase in the service standard.
- Review the service description to determine if the proposed works will benefit development occurring after the 10-year period following preparation of the Background Study. Reduce the net capital costs by the identified future benefit. Services set out in

Section 5(5) of the DCA are excluded from this requirement (e.g., water and wastewater facilities, road infrastructure, fire and police services);

- Reduce the net capital cost by the amount the increase in service would benefit existing development;
- Allocate the net capital costs for project or service between residential and non-residential development (i.e., industrial, institutional, commercial activities), based upon anticipated benefit;
- Reduce the capital cost for the project or service by 10%, as set out in the DCA (section 5(1)(8)), for services not set out in Section 5(5).

Development Charge Calculation and Cash Flow Adjustments

- Calculate the development charge for each service based upon the estimated amount of future growth it will facilitate during the applicable planning period;
- Determine the residential development charge for various types of dwellings based upon the expected occupancy characteristics. Establish area-specific charges for localized projects and services, as required;
- Establish the non-residential development charge based upon a building standard (i.e., cost per square metre of development). Establish area-specific charges for localized projects and services, as required.

7.2 Assumptions Used in the Development Charge Calculation

7.2.2 Spatial Applicability of Capital Costs

The projects included in the following service categories benefit development on a municipal-wide basis: Administration, Indoor Recreation, Outdoor Recreation, and Transportation. The wastewater projects benefit defined areas as shown previously in Figure 6.1 and charges should be collected only within the applicable service areas. The water project benefits the existing water service areas.

7.2.3 Allocation of Costs Between Growth and Existing Development

Where a proposed service provides a benefit to existing development, the capital costs must be reduced by the amount of the benefit. Where applicable, for purposes of allocating project costs between future growth and existing development, design capacities have been converted to single person equivalents. This permits a cost per person value to be calculated, which applies equally to both existing development and predicted growth.

7.2.4 Allocation of Costs Between Residential and Non-Residential Development

For the purposes of this study, a series of ratios were established to calculate the relative benefit of projects and services to residential and non-residential activities. The ratios were established based upon the current assessment data. Table 7.1 shows the percentage of residential and non-residential development in Lambton Shores.

Table 7.1 Ratio of Residential and Non-Residential Development in Lambton Shores

Residential (%)	Non-Residential (%)
88.9	11.1

7.2.5 Occupancy Considerations

The average occupancy rate in Lambton Shores, based on the number of usually occupied residences, is 2.22 persons per dwelling unit. This average includes all types of permanent residential units, from detached single dwellings to apartments. It excludes seasonal occupancy. Different types of residential development contain different numbers of occupants. On a per unit basis, the smaller the average occupancy, the less demand is generally placed on services. For purposes of this report, the occupancies defined in Table 7.2 are assumed for various housing types.

Table 7.2 Residential Occupancies for Various Dwelling Types

Residential Unit Type	Persons Per Unit	Percentage of Single Family Unit Charge
Single Family Residential, including semi-detached	2.34	100%
Multiples	2.07	88%
Apartments (2 bedrooms +)	1.66	71%
Apartments (Bachelor and 1 bedroom)	1.26	54%

7.3 Calculated Development Charge

Appendix B provides information on each service category and service component, as well as the key considerations for the calculation of development charges. Based upon the calculations presented in Appendix B, development charge schedules have been prepared for residential and non-residential activities. Table 7.3 provides a summary of the development charge calculations, based on the calculations outlined in Appendix B. The summaries of the calculated development charges for residential and non-residential development are outlined in Tables 7.4.

It is recommended that development charges schedules, selected by Council using this Report as a guide, be collected by by-law in the Municipality for the period 2018-22.

Table 7.3 Calculated Development Charges, per capita

Service Category	Residential Charge (per person)	Non-Residential (per sqm)
Municipal Wide Services		
Administration	\$ 52.48	\$ 1.29
Indoor Recreation	\$ 239.41	\$ 2.47
Outdoor Recreation	\$ 826.82	\$ 8.55
Transportation	\$ 1,411.34	\$ 25.13
Municipal Wide Total	\$ 2,530.05	\$ 37.44
Wastewater – Forest Service Area	\$ 200.00	\$ 3.49
Wastewater - Grand Bend, West Bosanquet Service Area	\$ 872.37	\$ 15.23
Water Service Area	\$ 2,225.15	\$ 38.86

Table 7.4 Calculated Development Charges per unit

Service Category	Residential Charge (per unit)				Non-Residential		
	Single & Semi-Detached	Apartments - 2 Bedrooms +	Apartments - Bachelor and 1 Bedroom	Other Multiples	Wind Turbine (per turbine)	Commercial/ Institutional (per sqm of gross floor area)	Industrial (per sqm of gross floor area)
Municipal Wide Services							
Administration	\$ 122.80	\$ 87.12	\$ 66.12	\$ 108.63	\$ 122.80	\$ 1.29	\$ 1.29
Indoor Recreation	\$ 560.22	\$ 397.42	\$ 301.66	\$ 495.58	--	\$ 2.47	\$ 2.47
Outdoor Recreation	\$ 1,934.76	\$ 1,372.52	\$ 1,041.79	\$ 1,711.52	--	\$ 8.55	\$ 8.55
Transportation	\$ 3,302.54	\$ 2,342.82	\$ 1,778.29	\$ 2,921.47	\$ 3,302.54	\$ 25.13	\$ 25.13
Municipal Wide Total	\$ 5,920.32	\$ 4,199.88	\$ 3,187.86	\$ 5,237.20	\$ 3,425.34	\$ 37.44	\$ 37.44
Wastewater – Forest Service Area	\$ 468.00	\$ 332.00	\$ 252.00	\$ 414.00	--	\$ 3.49	\$ 3.49
Wastewater - Grand Bend, West Bosanquet Service Area	\$ 2,041.35	\$ 1,448.13	\$ 1,099.19	\$ 1,805.81	--	\$ 15.23	\$ 15.23
Water Service Area	\$ 5,206.85	\$ 3,693.75	\$ 2,803.69	\$ 4,606.06	--	\$ 38.86	\$ 38.86

8.0 IMPLEMENTATION

8.1 General Considerations

As discussed, a Development Charges By-law must be adopted to implement a development charges schedule and the associated collection policies. Section 5(1)(9) of the DCA prescribes that the Municipality must establish rules within the implementing by-law to set out how development charges will be applied at the local level.

This section of the report outlines certain components of the DCA which will need to be considered during the preparation of the Development Charges By-law.

8.2 Applicable Development

Section 2(2) of the DCA prescribes that development charges can be collected against development activities requiring one or more of the following:

- Issuance of a building permit;
- Condominium Act approval;
- Certain Planning Act approvals (i.e., minor variances, re-zonings, severances, plans of subdivision).

Development charges cannot be applied to development activities which:

- Enlarge an existing dwelling unit;
- Create two or less additional dwelling units in existing residential dwelling (subject to regulations);
- Increase the gross floor area of an industrial development by less than 50%.

Section 3 of the DCA further prescribes that lands owned, and used by, municipal governments and school boards are not subject to the provisions of the by-law. However, Council is also permitted to include provisions in the by-law which exempt specific types of development from development charges. In this respect, local municipalities commonly exempt places of worship, public hospitals and farm buildings from the development charges specified in the by-law.

8.3 Charge Ceilings

Development charges to be collected against new development must not exceed the values defined in Tables 7.3 and 7.4 of this study. Council can establish Development Charges Schedules in the by-law which prescribe charges which are less than those calculated in the aforementioned tables for the entire municipality, specific areas of the municipality, or specific categories of development.

8.4 Phasing-in

Council is permitted to phase-in development charges over the five-year lifespan of the by-law. Phasing-in of development charges is occasionally implemented by local municipalities concerned with the financial burden placed upon new development, particularly in areas where these fees have not previously been applied. The phasing in of development charges will be outlined in the Development Charge By-law.

8.5 Inflation Adjustments

The DCA permits development charges to be adjusted to inflation, on an annual basis, using an index specified in the by-law. This measure is commonly employed by local municipalities to ensure that the fees collected reflect the real cost of the projects and services.

8.6 Front-Ending Agreements

The Development Charges By-law may contain policies which permit the Municipality to enter into front-ending agreements with land developers for infrastructure activities specified in the by-law (e.g., watermain installation, road extensions). Front-ending agreements allow developers to finance all, or a portion of the capital costs of a project in order to permit the work to proceed in advance of a municipal capital works schedule. The agreement is required to stipulate, at a minimum, the nature and cost of the work, a cost-sharing program, a collection system and the specific benefiting area.

Under front-ending agreements, the Municipality typically assumes the following general responsibilities:

- Collecting development charges from subsequent development activities in the defined service area;
- Reimbursing the other parties in the agreement for a share of the development charge (corresponding to the work completed).

Front-ending agreements are subject to public review. Affected property owners may appeal the terms of an agreement to the Ontario Municipal Board.

8.7 Credits

The Development Charges By-law may contain provisions which allow the Municipality to permit works specified in the by-law to be carried out by an individual in exchange for credit towards the applicable development charge. The amount of the credit established must reflect the reasonable cost for the doing the work, as agreed upon by the involved parties. The credit provided by the Municipality can only be applied to the service category, or categories, which are directly related to the work undertaken.

9.0 SUMMARY

This report presents the results of a Development Charges Background Study for the Municipality of Lambton Shores. Council of the Municipality of Lambton Shores is considering a new Development Charges By-law for the Municipality and the study is required under the *Development Charges Act, 1997*.

The study incorporated the primary key activities:

- Review of historic growth in Lambton Shores and extrapolation of growth and development forecasts for that study area;
- Review and evaluation of capital works projects that would be required to service the predicted growth;
- Calculation of a recommended Development Charge Amount for the proposed projects and services in accordance with the DCA.

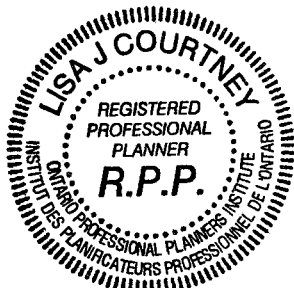
It is our opinion that the Development Charge Amounts set out in Tables 7.3 and 7.4 of the report are in compliance with the provisions of the DCA and O. Reg. 82/98. However, the charge that is used in the implementing by-law will be set by Council after due consideration.

10.0 FUTURE ACTION

The following represent the final activities required to adopt a Development Charges program:

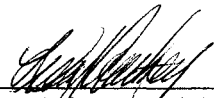
- Council reviews the Background Study. Following due consideration and any required revisions, Council accepts this draft report and by resolution, agrees that the intent of the Municipality is to implement the growth-related capital works itemized in Appendix B;
- Council considers a Development Charge Amount to establish, and specific implementation policies to be incorporated into the implementing by-law;
- A draft by-law is prepared in accordance with the recommendations of Council;
- The statutory public meeting is held with a minimum 20-day notice period. The Background Study and the draft By-law will be made available for public review during the notice period;
- Council must pass the implementing by-law within one year of the completion of Background Study. A 40-day review period must be provided after the Notice of Passing is issued. Any individual or organization may appeal the provisions of the Development Charges By-law to the Ontario Municipal Board during the review period.

All of which is respectfully submitted.



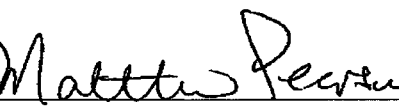
B. M. ROSS AND ASSOCIATES LIMITED

Per


Lisa J. Courtney M.Sc., RPP, MCIP
Environmental Planner



Per


Matthew J. Pearson RPP, MCIP
Senior Planner

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APPENDIX A

**GROWTH AND DEVELOPMENT
FORECAST**

1.0 INTRODUCTION

1.1. General

Section 5(1) of the Development Charges Act, S.O. 1997 (DCA) stipulates that for the purposes of developing a development charge, “The anticipated amount, type and location of development, for which development charges can be imposed, must be estimated” and that the estimates are included within the development charge background study document. This appendix summarizes growth and development projections utilized for the purposes of the development charge background study, and the process undertaken in their calculation.

Development forecasts have been prepared in conjunction with the Development Charges Background Study to project a population for Lambton Shores over 10-year (2017 to 2027) and 20-year (2017 to 2037) planning periods. The growth projections were calculated following an assessment of general growth and development trends evident in the Municipality, as identified from statistical data, recent population projections and other background research. The forecasts extrapolated from this analysis are considered to be realistic predictions of population and household growth in Lambton Shores. An estimate of non-residential development has also been prepared through an analysis of available property assessment data and building permit information.

The growth projections established in this study provide a basis for determining the level of service required to accommodate future development activities. In this regard, the growth forecasts provide a framework to estimate: (1) the capital expenditures needed to finance additional services; and (2) an appropriate development charge to recover growth related capital costs.

1.2. Background

A series of reports were reviewed to gather background information on population growth and general development trends in the study area. The following are among the key sources of information examined during this review:

- Statistics Canada Census of Canada and National Household Survey data for the period 1991 to 2016 (data is collected in 5-year intervals);
- Ministry of Finance population projections for the County of Lambton. The future population of Lambton County is forecasted for the period 2014-2042 using several growth scenarios;
- Building permit records compiled by the Municipality of Lambton Shores for the period 2010-2016. The records detail the type (e.g., residential, non-residential), value and size (gross floor area in m²) of development;
- The Municipality of Lambton Shores Official Plan (last revised February 2016). This document examines development patterns and defines policies to guide land use activities in the municipality;
- Municipality of Lambton Shores Development Charges Background Study, November 16, 2012 by Watson and Associates Economists Ltd.;
- An assessment of current development projects and proposals; and
- Canadian Mortgage and Housing Corporation Housing Market Information Portal for information on new housing construction.

2.0 RESEARCH FINDINGS

2.1. Residential Growth Trends

2.1.1. Population

In the last 15 years, the population of the Municipality of Lambton Shores has fluctuated between a low of 10,571 (in 2001) and a high of 11,150 persons (in 2006). The 2016 census data estimates the population of the Municipality at 10,631 persons. This equates to a decline of 519 persons from the 2006 population, or a decline of -4.7%. The average annual rate of growth for Lambton Shores is -0.48%. The recent trend of declining population and depressed average annual growth is common in rural municipalities such as Lambton County and southwestern Ontario in general. It should be noted; however, the Census data does not include seasonal residents in the population counts.

The population of Lambton Shores between 2001 and 2016 is shown in Table 2.1.

Table 2.1 Population of Lambton Shores (2001 to 2016)

Year	Population
2001	10,571
2006	11,150
2011	10,656
2016	10,631
15-year change	60
10-year change	-519
% change over 10 years	-4.7%
Average annual growth rate	-0.48%

The 2011 National Household Survey was consulted to examine movement of people within and to the Municipality. In 2010, 780 people, or 7.6% of the population, moved within or to Lambton Shores. Of those, approximately 49% lived in the Municipality and moved to another location within Lambton Shores. The other 51% of persons (400 people) moved to it from outside the municipality. The majority of these, 310 people, moved to Lambton Shores from within Ontario. There were 90 people who moved from another province. The number of persons moving into the Municipality suggests that it is a desired place to retire to.

The average age of residents in Lambton Shores is 49 years old. This is somewhat higher than the average for Lambton County, 44 years old, and the provincial average of 41 years old. A significant portion of the Municipal population is aged 65 and over. In Lambton Shores, seniors make up 29% of the population, compared to the province, where seniors are approximately 16% of the total population. The portions of the population composed of those aged 0-19 (16%) and 20-44 (17%) are smaller overall than what is observed at the provincial scale 22% and 25%, respectively. This is likely due to the migration of young adults from Lambton Shores to larger urban centres for education and employment opportunities.

Population data, as recorded as part of the Statistics Canada Census program, is also available for the urban centres within Lambton Shores. The population data for the urban areas counted in the Census is shown in Table 2.2. Forest and Grand Bend are the largest urban areas in Lambton

Shores, with 21% and 25% of the municipal population, respectively. It should be noted that the area designated as Forest in the 2016 Census excludes areas previously included in past censuses. This may account for a portion of the decline in population observed between 2011 and 2016.

Arkona and Grand Bend have experienced population growth over the past 10 years. In Arkona, growth has been slight, with 43 additional people or an annual rate of growth of 0.7%. The greatest amount of growth in the Municipality has been in Grand Bend, with an additional 658 residents and an average annual growth rate of 2.9%. In Thedford, the population has steadily decreased from 822 in 2006 to 749 in 2016. This equates to a decline of -0.93% annually.

*Table 2.2 : Population of the Urban Communities in Lambton Shores
(2006 to 2016)*

	Year	Arkona	Forest	Grand Bend	Thedford
	2006	591	2,899	2,026	822
	2011	579	2,876	2,564	804
	2016	634	2,277 ¹	2,684	749
10-year change		43	-622	658	-73
% change over 10 years		7.3%	-21.5%	32.5%	-8.9%
Average annual growth rate		0.70%	-2.4%	2.9%	-0.93%
% of Lambton Shores population (2016)		6%	21%	25%	7%

¹The 2016 Census excludes areas previously included in the Population Centre area for Forest

2.1.2. Residential Development

The numbers of total private dwellings and dwellings typically occupied by usual residents, from Census data, for the Municipality and its urban centres are shown in Table 2.3 and Table 2.4. The data shows that despite an overall decline in the population, the total number of dwellings has increased over the past 10 years by 235 units. This equates to a total increase from 2016 of 3.5% or 0.34% annually.

Table 2.3 Dwelling Counts for Lambton Shores

	Year	Total Dwellings	Occupied by Usual Residents
	2006	6,773	4,790
	2011	6,880	4,690
	2016	7,008	4,783
10-year change		235	-7
% change over 10 years		3.5%	-0.1%
Average annual growth rate		0.34%	-0.01%

Table 2.4: Dwelling Counts for Arkona, Forest, Grand Bend and Thedford

Year	Arkona		Forest		Grand Bend		Thedford	
	Total Dwellings	Dwellings Occupied by Usual Residents	Total Dwellings	Dwellings Occupied by Usual Residents	Total Dwellings	Dwellings Occupied by Usual Residents	Total Dwellings	Dwellings Occupied by Usual Residents
2006	254	-	1,255	-	1,739	-	344	-
2011	255	247	1,274	1,232	1,827	1143	349	331
2016	277	269	1,006 ¹	945	2,451	1454	345	311
5-year change	22	22	-268	-287	624	311	-4	-20
% change over 5 years	8.6%	8.9%	-21.0%	-23.3%	34.2%	27.2%	-1.1%	-6.0%
Avg. Annual Growth Rate	1.67%	1.72%	-4.61%	-5.17%	6.05%	4.93%	-0.23%	-1.24%

¹The 2016 Census excludes areas previously included in the Population Centre area for Forest which may account for the decline in the number of households.

The number of residences in Arkona and Grand Bend has increased over by the past 10 years, while decreases were observed in Thedford and Forest. It should be noted however, the decline in Forest as reported by the Census may be a result of a change in the area identified as 'Forest' between census periods. In 2016, the census area for Forest excluded areas previous included in the 2011 census (Park Lane, Stanley St., Frances Drive, Maple St. and Beechwood Ave.). The greatest increase in the total number of dwellings occurred in Grand Bend, with an additional 624 dwellings over the last 5 years. This equates to an annual average growth rate of 6.05%. In Arkona, the increase over 10 years was 22 residences or 1.67% annually.

The difference between the number of total dwellings and dwellings occupied by usual residents gives an approximation of the number of seasonal homes. In 2016, the percentage of homes in the Municipality normally occupied was 68.3%, leaving 31.7% not occupied or occupied temporarily. In the urban communities located away from the lakeshore (Arkona, Forest, and Thedford), the number of unoccupied or seasonal homes ranges from 3% in Arkona to 10% in Thedford. In Grand Bend, the portion of homes that are unoccupied or seasonal increases to 41%. Given this, it is reasonable to assume the population of Grand Bend increases with the arrival of seasonal residents in the summer months. The number of seasonal occupied dwellings within the Municipality has increased over the past 20 years, from 1,734 seasonal homes in 2001 to 2,225 in 2016.

The Building Department of the Municipality of Lambton Shores provided building permit data for residential development from 2012 to 2016. Table 2.5 summarizes the number of new residential units by building permit for the different communities within the municipality. In total, 193 new residential units were issued building permits over the past 5 years. This equates to an average of 38.6 units per year. The majority of new residential development occurred in Grand Bend, which averages 20.6 new units per year; however, in 2016, 30 building permits were issued for new residential units in Grand Bend. In East and West Bosanquet, 16 and 15 new residential units were issued building permits over the past 5 years. In Forest, 14 residential building permits were issued, including one permit for a 2-unit residential dwelling and a 4-unit dwelling. Northville and Thedford had the fewest number of new residential units with annual averages of 0.8 and 0.6 units issued building permits annually.

Table 2.5 : Number of New Residential Units from Building Permit Data (2012 to 2016)

Area	2012	2013	2014	2015	2016	Total	Annual Average
Grand Bend	20	14	21	18	30	103	20.6
Ipperwash	3	2	1	0	4	10	2
Northville	0	1	0	2	1	4	0.8
Port Franks	5	0	2	2	1	10	2
West Bosanquet	4	4	3	3	1	15	3
East Bosanquet	4	3	3	3	3	16	3.2
Arkona	2	3	0	2	2	9	1.8
Forest	2	1	1	7	3	14	2.8
Thedford	2	0	0	0	1	3	0.6
Rural	2	2	0	3	2	9	1.8
Total	44	30	31	40	48	193	38.6

The number of building permits issues for new residential development over the last 10-years is shown in Table 2.6. The 10-year average number of new residential units is 46.5.

Table 2.6: New Residential Building Permits in Lambton Shores, 2006-2016

Year	Number of Building Permits
2006	62
2007	55
2008	54
2009	55
2010	54
2011	39
2012	44
2013	30
2014	31
2015	40
2016	48
Total	512
Average	46.5

The majority of residential building permits issued throughout the Municipality in the past five years have been for single, detached homes. Only two permits for multi-unit residential dwellings have been issued in the last five years; one for a duplex and another for a 4-unit dwelling, both in Forest.

The Canadian Housing and Mortgage Corporation (CHMC) collects data on housing starts by dwelling type in the Municipality of Lambton Shores. This data reflects actual housing construction activities in the municipality. Housing construction starts by dwelling type for the Municipality are shown in Table 2.7. This data suggests a lull in building activity between 2013 and 2014, however construction activities have resumed recently.

Table 2.7 : Housing Starts in Lambton Shores (2012 to 2016)

Year	Single	Semi-Detached	Row	Apartment	All
2012	18	0	0	49	67
2013	0	0	0	0	0
2014	0	0	0	0	0
2015	36	0	0	0	36
2016	48	0	4	0	52
Total	102	0	4	49	155
Average	20.4	0	0.8	9.8	31

2.1.3. Occupancy

For the Municipality of Lambton Shores, the average household density or occupancy, is calculated from the population and number of dwellings occupied by usual residents. The number of usually occupied dwellings was used in the calculation to minimize the impact of seasonal dwellings on the average occupancy. For Lambton Shores, the average number of people per usually occupied unit is 2.2 persons per units (ppu). For Thedford, Forest and Arkona the average increases to 2.4, 2.4 and 2.3 respectively. In Grand Bend, the average occupancy is 1.8 persons per unit.

Similar to many other municipalities in Southwestern Ontario, Lambton Shores has experienced a steady decline in the average household density. The decline can be attributed to a number of factors, including a population with a significant proportion of seniors, smaller family sizes, and an increase in the number of single-person households. In Grand Bend, the significant senior population is driving the trend in household density.

2.1.4. Housing Stock

Past residential development in Lambton Shores has primarily been in the form of single detached units. This trend has continued more recently, with only two building permits issued for multi-unit type dwellings. Currently, single detached residences make up 84.6% of the housing stock in Lambton Shores, as reported in the 2016 Census and shown in Table 2.8. The remainder of the housing stock is comprised of apartments in a building with less than 5 stories (7.9%); row houses (3.7%) and moveable dwellings (1.4%).

Table 2.8 : Housing Stock by Dwelling Type, Lambton Shores (2016)

Residential Unit Type	Percent of Housing Stock
Single Detached	84.6%
Apartment (5+ storeys)	0.2%
Semi-detached	1.0%
Row	3.7%
Apartment in flat or duplex	0.7%
Apartment (< 5 storeys)	7.9%
Other single detached	0.5%
Movable dwelling	1.4%

2.1.5. Recent Residential Developments

There are a number of registered and unregistered Plans of Subdivision in Lambton Shores. The recent registered Plans of Subdivision with the number of approved units and current number of vacant lots are summarized in Table 2.9, by location. The unregistered Plans of Subdivision are summarized by location in Table 2.10. There are also development applications currently going through the approval process. These proposals are summarized in Table 2.11. Across Lambton Shores, there are 350 vacant lots to be developed as part of a registered Plan of Subdivision and a further 991 lots that are in unregistered developments. Given the past 5-year average of 38.6 building permits per year for new residences, the current number of vacant, planned lots represents a 34-year inventory of residential lots. Additionally, throughout the Municipality there is approximately 337 ha of residentially designated lands that are not currently subject to a development application (Table 2.12). At 12 units per hectare, that equates to an additional 3,392 potential future residential lots in the Municipality.

Table 2.9 : Registered Developments in Lambton Shores

Location	Lots/Units		Vacant Lots
	Single	Multi	
Grand Bend	247	2 blocks	126
North Bosanquet	60	0	42
Forest	157	93	173
Arkona	25	0	9
Total	489	93 + 2 blocks	350

Table 2.10 : Unregistered Developments in Lambton Shores

Location	Lots/Units		Total
	Single	Multi	
Grand Bend	494	186	680
West Bosanquet	90	0	90
Thedford	58	0	58
Forest	100	24	124
Arkona	39	0	39
Total	781	210	991

Table 2.11 : Current Development Applications

Location	Units
Grand Bend	2 Mixed Residential Blocks
Thedford	33 Single Detached Units 8 Semi Detached Units

Table 2.12 : Vacant, Residential-Designated Lands not Subject to a Development Application

Area	Area in Ha	Lots at 12 Units per Hectare	Lots at 4.5 Units per Hectare
Grand Bend	54.3	600	225
North Bosanquest	193	2,316	925
Northville	30.3	363	163
Thedford	11.4	136	51
Forest	17.5	210	78
Arkona	30.7	367	137
Total	337.2	3,392	1,354

2.2. Non-Residential Growth Trends

2.2.1. Labour Force

In Lambton Shores, as of the 2011 Census, the population aged 15 and over was 9,130 persons. Of those people, 5,120 were considered in the labour force (either employed or unemployed) and 4,015 people identified themselves as not in the labour force (retired, etc.). This amounts to a 56% participation rate in employment in the Municipality, compared to the County (60%) and provincial rates (66%). The lower participation rate in Lambton Shores reflects the high number of retired seniors that live in the municipality. Of those employed in Lambton Shores, 18.6% are self-employed. The majority of employees in the Municipality are employed in sales and services (23%), followed by trades, transport and equipment operators (19%) and in the management sector (16%).

2.2.2. Non-Residential Development

The number, value and size of new industrial, commercial and institutional developments from building permit data for 2010 to 2015 is shown in Table 2.13. It also includes the size and value of additions to existing non-residential developments. Between 2010 and 2015, there have been 7 building permits issued for new, non-residential developments and 6 permits for additions. For both new construction and additions, the annual average number of permits issued is 2. The average size of new non-residential developments is 419 m² and additions are approximately half of that, with an average size of 224 m². The permits summarized in Table 2.13 represent building activity throughout the municipality – no one area of the municipality experienced a majority of the non-residential growth.

*Table 2.13 : Non-Residential Development
based on Building Permit Data (2010 to 2015)*

	New			Additions		
	Count	Value	Size (m ²)	Count	Value	Size (m ²)
2010	4	\$ 595,000	977	2	\$ 375,000	185
2011	0	\$ 0	0	1	\$ 437,000	472
2012	1	\$ 250,000	571	0	\$ 0	0
2013	1	\$ 10,000	221	2	\$ 985,000	595
2014	0	\$ 0	0	0	\$ 0	0
2015	1	\$ 1,800,000	743	1	\$ 25,000	91
Total	7	\$ 2,655,000	2,512	6	\$ 1,822,000	1,343
Average	2	\$ 442,500	419	2	\$ 520,571	224

The majority of the permits issued for non-residential development were for institutional uses (46%), followed by commercial (38%). From 2010 to 2015, only two permits associated with industrial uses were issued.

2.3. Development Patterns in the Study Area

A number of factors could influence growth trends in Lambton Shores. Of relevance to this study are the following:

- Age distribution data suggests that younger people (19-34) tend to leave the municipality for education and employment opportunities;
- The growth in the number of households is expected to outstrip population growth in Lambton Shores, given the general overall aging of the population (resulting from lower death and birth rates) and attraction of the area as a retirement location. The aging population is expected to increase demands for services and housing designed to accommodate the needs of the 'young old', 'old', and 'old old' seniors;
- The lakeshore area will continue to be a desired location for seasonal residents, specifically the Grand Bend area;
- There is a significant number of lots available for residential development as part of approved and registered Plans of Subdivision and unregistered plans;
- The urban areas in Lambton Shores consist primarily of low-density residential homes, with the majority being single, detached units. It is expected that the overall residential development trends will continue to favour single detached units; and
- Growth in the non-residential sector has been moderate in Lambton Shores in recent year and is not expected to increase significantly in the future.

2.4. Residential and Non-Residential Allocation

The allocation between residential and non-residential development for the purpose of calculating development charges is determined from tax assessment data. The tax assessment data is used to determine the percentage of the tax base that is residential and non-residential. The non-residential percentage includes commercial and industrial development and excludes agricultural, managed forest, and pipeline assessment data. The percentages of residential and non-residential development for Lambton Shores are summarized in Table 2.14.

Table 2.14 : Residential and Non-Residential Tax Allocation for Lambton Shores (2016)

Tax Allocation (%)	
Residential	88.9
Commercial	6.6
Industrial	0.9
Institutional	3.6

3.0 RESIDENTIAL GROWTH PROJECTIONS

3.1.1. Forecast Methodology

For the purposes of this study, a population forecast to 2042 for Lambton Shores was developed. The forecast was extrapolated based on the increase in the number of households in the Municipality in recent years, from building permit data. This approach is seen as a reasonable strategy for estimating growth within the Municipality, as there has been a relatively steady number of building permits issued for new dwelling units. This trend reflects recent changes in population characteristics, such as an aging population and decrease in family size.

The forecast incorporated the following methodological components:

- The 2016 population and household counts, as determined by the 2016 Census, were used as a starting point for the projections;
- From this base estimate, household growth was calculated based on the 10-year annual average of residential units constructed (from building permit data). For the purposes of this forecast, the annual average number of residential dwellings constructed is 46.5 units;
- The proportion of residential units that are occupied seasonally is expected to continue to increase at a very modest rate over the 20-year forecast period. Over the forecast period, the percentage of seasonal homes in the Municipality will increase from 31.7% to 32.1%;
- Given historic trends favouring construction of single family and semi-detached units, future development is expected to follow a similar trend, with 95% of new permanent units being single family or semi-detached units, 5% multiples, and 1% apartments; and
- The population density of seasonal homes is assumed to be 3.5 persons per unit. For usually occupied residences, the following densities were used to estimate population growth related to new construction: 2.22 persons per unit for single and semi-detached units; 2.00 persons per unit for multiples and 1.5 person per unit for apartments.

Several major assumptions were also made to substantiate the use of the aforementioned methodology as the basis for a population forecast. They are as follows:

- The nature of the local economy and role of each urban area is expected to remain unchanged throughout the planning period; and
- Population growth will be accommodated through the development of registered and unregistered lots.

3.2. Residential and Population Forecasts

A residential and population growth forecast was developed for Lambton Shores based upon the previously discussed methodology. Tables 3.1 and 3.2 show the gross residential units and population forecasts.

Table 3.1 : Residential Growth Forecast for Lambton Shores (2017 to 2037)

Year	Usually Occupied Units			Seasonal Units	Total Units
	Single and Semi Detached	Multiples	Apartments		
2016	4,125	275	390	2,218	7,008
2017	4,155	276	390	2,233	7,054
2022	4,306	283	392	2,306	7,287
2027	4,457	289	393	2,380	7,519
2032	4,607	295	395	2,454	7,751
2037	4,757	302	397	2,529	7,985
5-year change	151	7	2	73	233
10-year change	302	13	3	147	465
20-year change	602	26	7	296	931

Table 3.2 : Forecasted Population Growth in Lambton Shores (2017 to 2037)

Year	Seasonal Population	Permanent Population	Total
2016	7,763	10,631	18,394
2017	7,815	10,700	18,515
2022	8,073	11,047	19,120
2027	8,383	11,394	19,777
2032	8,591	11,740	20,331
2037	8,851	12,086	20,937
5-year change	258	347	605
10-year change	568	694	1,262
20-year change	1,036	1,386	2,422

3.3. Forecast Assessment

The following represents the key findings of the population and residential development forecasts for the Municipality of Lambton Shores:

- The number of residential units in Lambton Shores is expected to continue to increase over the next 20 years. The majority of the development is expected to be single detached and semi-detached homes. The number of seasonal homes is also expected to increase over the forecast period. The number of permanent homes is expected to increase by 635 units over the next 20 years and the number of seasonal homes is expected to increase by 296 over the same period.
- Given the forecasted increase in residential units, it is forecasted that the population of Lambton Shores will also increase. It is expected the seasonal population will increase by 1,036 persons over the next 20 years and the permanent population will increase by 1,386.
- The increase forecasted in the number of households in Lambton Shores is consistent with demographic trends evident throughout southwestern Ontario (i.e., aging population, smaller households and sustained construction of new dwellings).

3.4. Conclusions

The forecasts presented in Section 3.2 appear to be reasonable and appropriate forecasts for the Municipality of Lambton Shores, given historic growth rates and the factors previously discussed. In this regard, the forecasts defined in Tables 3.1 and 3.2 should be adopted as the basis for calculating the residential development charges for the municipality.

4.0 NON-RESIDENTIAL GROWTH FORECAST

4.1. Forecast Methodology

For the purposes of the Development Charges Background Study, a forecast of non-residential development was undertaken. An assessment of recent building permit data, as previously presented in Section 2.2.2, indicates that non-residential development in Lambton Shores is variable on a year-to-year basis and includes many additions or expansions of existing facilities. In the last 6 years, an average of 2.2 permits for new or additions to existing non-residential developments were issued. This amounted to an additional 3,855.4 m² of non-residential development, or an annual average of 642.6 m².

It is forecasted that non-residential development will occur at an average rate of 642.6 m² per year. Given past trends, it is estimated that 59.4% of future non-residential development will be commercial, 34.6% institutional and 6% industrial.

4.2. Forecasted Non-Residential Growth

The forecasted future non-residential growth, by gross floor area, is summarized in Table 4.1 Non-residential development is expected to continue to develop in the Municipality of Lambton Shores at a similar pace as what has been experienced in recent years. It is forecasted that an additional 3,214 m² of non-residential development will occur over the next five years, with the majority of that being commercial. Over the next 20 years, the total non-residential growth is forecasted to add an additional 12,852 m² of floor area.

Table 4.1 : Forecasted Non-Residential Growth by Additional Floor Area (2017 to 2037)

Year	Industrial (m ²)	Commercial (m ²)	Institutional (m ²)	Net Total Non-Residential Space Added (m ²)
2017-2022	193	1,909	1,112	3,214
2017-2027	386	3,817	2,223	6,426
2017-2037	771	7,634	4,447	12,852

To determine the number of additional employees associated with the forecasted growth, the following assumptions of employees per square meter were used for the different types of non-residential growth. The number of new employees is shown in Table 4.2

Table 4.2: Number of New Employees Resulting From Growth

Year	Industrial	Commercial	Institutional	Total Employees Added
	1 per 116.13 m ²	1 per 51.10 m ²	1 per 65.03 m ²	
2017-2022	1.7	37.4	17.1	56.2
2017-2027	3.3	74.7	34.2	112.2
2017-2037	6.6	149.4	68.4	224.4

APPENDIX B

**CALCULATION OF
DEVELOPMENT CHARGES**

Calculation of Development Charges

Project: Development Charge Studies**Service Category:** Administration

Project Description

Municipalities can collect development charges on studies that relate to capital growth, including development charge background studies. Development charges may be collected for growth-related studies expected to be completed over the next 10-year capital forecast period. Development charges will be collected for the 2017 and 2022 development charge background studies.

Analysis of Long Term Capital and Operating Costs

Not applicable

Costs

Total Cost – 2019 Development Charge Background Study	\$ 25,000.00
Total Cost – 2024 Development Charge Background Study	\$ 27,778.00
Deduct any grants/subsidies	- \$ 0.00
Subtotal	\$ 52,778.00

Allocation of Costs

Benefit to Existing Development (0%)	\$ 0
Benefit to Future Development (100%)	\$ 52,778.00
10% reduction, as required by the Act	- \$ 5,277.80
Amount recoverable through Development Charges	\$ 47,500.20

Residential/Non-Residential Cost Allocation: Cost is allocated based on the tax allocation across the entire municipality: residential = 88.9%, non-residential = 11.1%

Development Charge Calculation

Residential Allocation (Per Capita)

\$47,500.20 x 88.9%	\$ 42,227.68
Divided by the 10-year forecasted population growth (1,262)	\$ 33.46
Residential development charge (per person)	\$ 33.46

Non-Residential Allocation (Per Square Meter)

\$47,500.20 x 11.1%	\$ 5,272.52
Divided by the 10-year forecasted growth (6,426 sq.m)	\$ 0.82
Non-Residential development charge (per sq.m)	\$ 0.82

Project: Strategic Plan Studies**Service Category:** Administration**Project Description**

Municipalities can collect development charges on studies that relate to capital growth, including strategic plans. Development charges may be collected for growth-related studies expected to be completed over the next 10-year capital forecast period. Development charges will be collected for the 2019 and 2024 strategic plan studies.

Analysis of Long Term Capital and Operating Costs

Not applicable

Costs

Total Cost – 2019 Strategic Plan Study	\$ 30,000.00
Total Cost – 2024 Strategic Plan Study	\$ 30,000.00
Deduct any grants/subsidies	- \$ 0.00
Subtotal	\$ 60,000.00

Allocation of Costs

Benefit to Existing Development (50%)	\$ 30,000.00
Benefit to Future Development (50%)	\$ 30,000.00
10% reduction, as required by the Act	- \$ 3,000.00
Amount recoverable through Development Charges	\$ 27,000.00

Residential/Non-Residential Cost Allocation: Cost is allocated based on the tax allocation across the entire municipality: residential = 88.9%, non-residential = 11.1%

Development Charge Calculation**Residential Allocation (Per Capita)**

\$ 27,000 x 88.9%	\$ 24,003.00
Divided by the 10-year forecasted population growth (1,262)	\$ 19.02
Residential development charge (per person)	\$ 19.02

Non-Residential Allocation (Per Square Meter)

\$27,000 x 11.1%	\$ 2,997.00
Divided by the 10-year forecasted growth (6,426 sq.m)	\$ 0.46
Non-Residential development charge (per sq.m)	\$ 0.46

Project: Shores Recreation Debt - Principal

Service Category: Indoor Recreation
Services

Project Description

The Shores Recreation and Wellness Centre was renovated and expanded in 2009. The total cost of constructing the facility was \$7,721,439.00, of which \$4,750,000 was paid for through grants and fundraising. The remaining \$2,971,439 was debentured over 25 years. This project will benefit existing development as well as future development over the next 25 years. Given the benefits will extend to growth beyond the 10-year scope of this Background Report, the post-2027 benefits should be considered in a subsequent Development Charge. The benefit to existing equates to 85% of the net cost.

Analysis of Long Term Capital and Operating Costs

The facility has been in operation since 2009. The operating costs have been included and assessed in the annual budget process since that time.

Costs

Total Cost – Principal of Shores Recreation Debt	\$ 7,721,439.15
Deduct any grants/subsidies	- \$ 4,750,000.00
Deduct pre 2017 and post 2027 benefits	- \$ 1,668,360.86
Subtotal	\$ 1,303,078.49

Allocation of Costs

Benefit to Existing Development (85%)	\$ 1,107,616.72
Benefit to Future Development (15%)	\$ 195,461.77
10% reduction, as required by the Act	- \$ 19,546.18
Amount recoverable through Development Charges	\$ 175,915.60

Residential/Non-Residential Cost Allocation: Cost is residential = 95%, non-residential = 5%

Development Charge Calculation

Residential Allocation (Per Capita)

\$175,915.60 x 95%	\$ 167,119.82
Divided by the 10-year forecasted population growth (1,262)	\$ 132.42
Residential development charge (per person)	\$ 132.42

Non-Residential Allocation (Per Square Meter)

\$175,915.60 x 5%	\$ 8,795.78
Divided by the 10-year forecasted growth (6,426 sq.m)	\$ 1.37
Non-Residential development charge (per sq.m)	\$ 1.37

Project: Shores Recreation Debt - Interest

Service Category: Indoor Recreation
Services

Project Description

The Shores Recreation and Wellness Centre was renovated and expanded in 2009. The total cost of constructing the facility was \$7,721,439.00, of which \$4,750,000 was paid for through grants and fundraising. The remaining \$2,971,439 was debentured over 25 years. The costs associated with the interest of the debenture can be collected for through Development Charges. The total interest of the debenture is \$2,382,691.15 over the 25-year loan period. The portion of the interest attributed to 2017-2027 is \$1,052,738.93. Similar to the principal cost, there is benefit to future growth beyond the 10-year scope of this Development Charge Study that could be collected in a future study.

Analysis of Long Term Capital and Operating Costs

The facility has been in operation since 2009. The operating costs have been included and assessed in the annual budget process since that time.

Costs

Total Cost – Total Interest	\$ 2,382,691.15
Deduct pre 2017 and post 2027 benefits	- \$ 1,329,952.22
Subtotal	\$ 1,052,738.93

Allocation of Costs

Benefit to Existing Development (85%)	\$ 894,828.09
Benefit to Future Development (15%)	\$ 157,910.84
10% reduction, as required by the Act	- \$ 15,791.08
Amount recoverable through Development Charges	\$ 142,119.76

Residential/Non-Residential Cost Allocation: residential = 95%, non-residential = 11.1%

Development Charge Calculation

Residential Allocation (Per Capita)

\$ 142,119.76 x 95%	\$ 135,013.77
Divided by the 10-year forecasted population growth (1,262)	\$ 106.98
Residential development charge (per person)	\$ 106.98

Non-Residential Allocation (Per Square Meter)

\$142,119.76 x 5%	\$ 7,105.99
Divided by the 10-year forecasted growth (6,426 sq.m)	\$ 1.11
Non-Residential development charge (per sq.m)	\$ 1.11

Project: South Bend River Trail

Service Category: Outdoor Recreation
Services

Project Description

The Municipality provides outdoor recreation services for existing and future development, including the provision of numerous pedestrian trails. The trail projects included in the development charges reflect the community's desire for active recreation opportunities. Given the future development expected in the South Bend area, the Municipality is planning an expansion of the South Bend Trail along Parkhill Creek. This project will benefit both future and existing development.

Analysis of Long Term Capital and Operating Costs

Operating costs associated with additional trails are primarily related to annual maintenance activities. The use and type of trail can impact the amount of annual maintenance required. Additionally, the municipality may partner with service or volunteer groups to reduce maintenance costs. The Municipality of Lambton Shores has forecasted increases in the projected budget related to trails, sidewalks and walkways over the next 5 years.

Costs

Total Cost – South Bend Trail	\$ 438,000.00
Deduct any grants/subsidies	- \$ 0.00
Subtotal	\$ 438,000.00

Allocation of Costs

Benefit to Existing Development (70%)	\$ 306,600.00
Benefit to Future Development (30%)	\$ 131,400.00
10% reduction, as required by the Act	- \$ 13,140.00
Amount recoverable through Development Charges	\$ 118,260.00

Residential/Non-Residential Cost Allocation: residential = 95%, non-residential = 5%

Development Charge Calculation

Residential Allocation (Per Capita)

\$ 118,0260 x 95%	\$ 112,347.00
Divided by the 10-year forecasted population growth (1,262)	\$ 89.02
Residential development charge (per person)	\$ 89.02

Non-Residential Allocation (Per Square Meter)

\$118,0260 x 5%	\$ 5,913.00
Divided by the 10-year forecasted growth (6,426 sq.m)	\$ 0.92

Project: Grand Bend Rotary Trail Extension

Service Category: Outdoor Recreation Services

Project Description

The Grand Bend Rotary Trail is currently a 10-km multi-use trail that runs along Highway 21 from Grand Bend to the entrance of Pinery Provincial Park. The trail projects included in the development charges reflect the community's desire for active recreation opportunities. The Municipality has proposed to extend the trail to the south, from Pinery Provincial Park to Cut Bridge. This project will have benefits for existing and future development.

Analysis of Long Term Capital and Operating Costs

Operating costs associated with additional trails are primarily related to annual maintenance activities. The use and type of trail can impact the amount of annual maintenance required. Additionally, the municipality may partner with service or volunteer groups to reduce maintenance costs. The Municipality of Lambton Shores has forecasted increases in the projected budget related to trails, sidewalks and walkways over the next 5 years.

Costs

Total Cost – Grand Bend Rotary Trail Extension	\$ 414,000.00
Deduct any grants/subsidies	- \$ 0.00
Subtotal	\$ 414,000.00

Allocation of Costs

Benefit to Existing Development (70%)	\$ 289,800.00
Benefit to Future Development (30%)	\$ 124,200.00
10% reduction, as required by the Act	- \$ 12,420.00
Amount recoverable through Development Charges	\$ 111,780.00

Residential/Non-Residential Cost Allocation: residential = 95%, non-residential = 5%

Development Charge Calculation

Residential Allocation (Per Capita)

\$ 111,780.00 x 95%	\$ 106,191.00
Divided by the 10-year forecasted population growth (1,262)	\$ 84.15
Residential development charge (per person)	\$ 84.15

Non-Residential Allocation (Per Square Meter)

\$ 111,780.00 x 5%	\$ 5,589.00
Divided by the 10-year forecasted growth (6,426 sq.m)	\$ 0.87
Non-Residential development charge (per sq.m)	\$ 0.87

Project: Forest Rotary Trail Extension

Service Category: Outdoor Recreation Services

Project Description

The existing Forest Rotary Trail is a 2.8 km paved multi-use trail that links the Rotary Civic Square and Elsi Dodge Conservation Area in Forest. The trail projects included in the development charges reflect the community's desire for active recreation opportunities. The Town is planning an extension of the Forest Rotary Trail through a naturalized lagoon property along the former CN railway. This project will benefit future and existing development.

Analysis of Long Term Capital and Operating Costs

Operating costs associated with additional trails are primarily related to annual maintenance activities. The use and type of trail can impact the amount of annual maintenance required. Additionally, the municipality may partner with service or volunteer groups to reduce maintenance costs. The Municipality of Lambton Shores has forecasted increases in the projected budget related to trails, sidewalks and walkways over the next 5 years.

Costs

Total Cost – Forest Rotary Trail Extension	\$ 216,000.00
Deduct any grants/subsidies	- \$ 0.00
Subtotal	\$ 216,000.00

Allocation of Costs

Benefit to Existing Development (70%)	\$ 151,200.00
Benefit to Future Development (30%)	\$ 64,800.00
10% reduction, as required by the Act	- \$ 6,480.00
Amount recoverable through Development Charges	\$ 58,320.00

Residential/Non-Residential Cost Allocation: residential = 95%, non-residential = 5%

Development Charge Calculation

Residential Allocation (Per Capita)

\$ 58,320.00 x 95%	\$ 55,404.00
Divided by the 10-year forecasted population growth (1,262)	\$ 43.90
Residential development charge (per person)	\$ 43.90

Non-Residential Allocation (Per Square Meter)

\$ 58,320.00 x 5%	\$2,916.00
Divided by the 10-year forecasted growth (6,426 sq.m)	\$ 0.45
Non-Residential development charge (per sq.m)	\$ 0.45

Project: Ipperwash Trail

Service Category: Outdoor Recreation
Services

Project Description

The Municipality is planning to pave the shoulders on West Ipperwash Road, Ipperwash Road, Army Camp Road, London Road, Outer Drive, and Port Franks Road for use as pedestrian and cycling lanes. This project is expected to benefit existing and future residents throughout the Municipality. The estimated cost of this project is \$2,000,000. The trail projects included in the development charges reflect the community's desire for active recreation opportunities.

Analysis of Long Term Capital and Operating Costs

Operating costs associated with additional trails are primarily related to annual maintenance activities. The use and type of trail can impact the amount of annual maintenance required. Additionally, the municipality may partner with service or volunteer groups to reduce maintenance costs. The Municipality of Lambton Shores has forecasted increases in the projected budget related to trails, sidewalks and walkways over the next 5 years.

Costs

Total Cost – Ipperwash Trail	\$ 2,000,000.00
Deduct any grants/subsidies	- \$ 0.00
Subtotal	\$ 2,000,000.00

Allocation of Costs

Benefit to Existing Development (70%)	\$ 1,400,000.00
Benefit to Future Development (30%)	\$ 600,000.00
10% reduction, as required by the Act	- \$ 60,000.00
Amount recoverable through Development Charges	\$ 540,000.00

Residential/Non-Residential Cost Allocation: residential = 95%, non-residential = 5%

Development Charge Calculation

Residential Allocation (Per Capita)

\$ 540,000.00 x 95%	\$ 513,000.00
Divided by the 10-year forecasted population growth (1,262)	\$ 406.50
Residential development charge (per person)	\$ 406.50

Non-Residential Allocation (Per Square Meter)

\$540,000 x 5%	\$ 27,000.00
Divided by the 10-year forecasted growth (6,426 sq.m)	\$ 4.20
Non-Residential development charge (per sq.m)	\$ 4.20

Project: Cut Pedestrian Bridge

Service Category: Outdoor Recreation
Services

Project Description

The Municipality is planning to construct a pedestrian bridge across the Ausable River. The Cut Pedestrian Bridge will link trails from Pinery Provincial Park to a future trail network into Port Franks. This project will benefit future and existing development. The trail projects included in the development charges reflect the community's desire for active recreation opportunities.

Analysis of Long Term Capital and Operating Costs

Pedestrian bridges have low annual operating costs outside of maintenance. The level of use of the bridge may impact the amount of annual maintenance required. Additionally, the municipality may partner with service or volunteer groups to reduce maintenance costs. The Municipality of Lambton Shores has forecasted increases in the projected budget related to trails, sidewalks and walkways over the next 5 years.

Costs

Total Cost – Cut Pedestrian Bridge	\$ 500,000.00
Deduct any grants/subsidies	- \$ 0.00
Subtotal	\$ 500,000.00

Allocation of Costs

Benefit to Existing Development (70%)	\$ 350,000.00
Benefit to Future Development (30%)	\$ 150,000.00
10% reduction, as required by the Act	- \$ 15,000.00
Amount recoverable through Development Charges	\$ 135,000.00

Residential/Non-Residential Cost Allocation: residential = 95%, non-residential = 5%

Development Charge Calculation

Residential Allocation (Per Capita)

\$ 135,000 x 95%	\$ 128,250.00
Divided by the 10-year forecasted population growth (1,262)	\$ 101.62
Residential development charge (per person)	\$ 101.62

Non-Residential Allocation (Per Square Meter)

\$ 135,000 x 5%	\$ 6,750.00
Divided by the 10-year forecasted growth (6,426 sq.m)	\$ 1.05
Non-Residential development charge (per sq.m)	\$ 1.05

Project: Ipperwash Community Park

Service Category: Outdoor Recreation

Project Description

The Municipality is planning to develop a community park in the Ipperwash area. The park is expected to include a small community centre, parking lot, and playground. The project is expected to benefit existing and future residents throughout the Municipality. The cost is estimated at \$1,000,000.

Analysis of Long Term Capital and Operating Costs

There are operational costs associated with an additional park, including grass cutting and garbage collection. The Municipality may offset operational costs by collecting rental fees for use of the small community centre. Tax revenue from future development is also expected to contribute to the operations funding.

Costs

Total Cost – Ipperwash Community Park	\$ 1,000,000.00
Deduct any grants/subsidies	- \$ 0.00
Subtotal	\$ 1,000,000.00

Allocation of Costs

Benefit to Existing Development (85%)	\$ 850,000.00
Benefit to Future Development (15%)	\$ 150,000.00
10% reduction, as required by the Act	- \$ 15,000.00
Amount recoverable through Development Charges	\$ 135,000.00

Residential/Non-Residential Cost Allocation: Cost is allocated based on the tax allocation across the entire municipality: residential = 95%, non-residential = 5%

Development Charge Calculation

Residential Allocation (Per Capita)

\$ 135,000 x 95%	\$ 128,250.00
Divided by the 10-year forecasted population growth (1,262)	\$ 101.62
Residential development charge (per person)	\$ 101.62

Non-Residential Allocation (Per Square Meter)

\$135,000 x 5%	\$ 6,750.00
Divided by the 10-year forecasted growth (6,426 sq.m)	\$ 1.05
Non-Residential development charge (per sq.m)	\$ 1.05

Project: One-Ton Truck**Service Category:** Roads and Related**Project Description**

The Municipality is planning to purchase a one-ton truck within the next 10 years to add to the existing vehicle fleet. The truck is necessary for the provision of services across the Municipality resulting from increased need related to growth. It is expected that the purchase of the truck will also benefit the existing population.

Analysis of Long Term Capital and Operating Costs

There are operational costs associated with the addition of another vehicle to the fleet, including regular maintenance, gas, and insurance. These costs will add to the municipal transportation budget; however, these operational costs have been forecasted and included in operational budget forecasts. Tax revenue from future development is expected to contribute to the operations funding.

Costs

Total Cost – One Ton Truck	\$ 80,000.00
Deduct any grants/subsidies	- \$ 0.00
Subtotal	\$ 80,000.00

Allocation of Costs

Benefit to Existing Development (15%)	\$ 12,000.00
Benefit to Future Development (85%)	\$ 68,000.00
Amount recoverable through Development Charges	\$ 68,000.00

Residential/Non-Residential Cost Allocation: Cost is allocated based on the tax allocation across the entire municipality: residential = 88.9%, non-residential = 11.1%

Development Charge Calculation**Residential Allocation (Per Capita)**

\$ 68,000.00 x 88.9%	\$ 60,452.00
Divided by the 10-year forecasted population growth (1,262)	\$ 47.90
Residential development charge (per person)	\$ 47.90

Non-Residential Allocation (Per Square Meter)

\$68,000.00 x 11.1%	\$ 7,548.00
Divided by the 10-year forecasted growth (6,426 sq.m)	\$ 1.17
Non-Residential development charge (per sq.m)	\$ 1.17

Project: Tandem with Plow**Service Category:** Roads and Related**Project Description**

The Municipality is planning to purchase a tandem with a plow within the next 10 years to add to the existing vehicle fleet. The truck is necessary for the provision of snow removal services across the Municipality resulting from increased need related to growth. It is expected that the purchase of the truck will also benefit the existing population.

Analysis of Long Term Capital and Operating Costs

There are operational costs associated with the addition of another vehicle to the fleet, including regular maintenance, gas, and insurance. These costs will add to the municipal transportation budget; however, these operational costs have been forecasted and included in operational budget forecasts. Tax revenue from future development is expected to contribute to the operations funding.

Costs

Total Cost – Tandem and Plow	\$ 300,000.00
Deduct any grants/subsidies	- \$ 0.00
Subtotal	\$ 300,000.00

Allocation of Costs

Benefit to Existing Development (15%)	\$ 45,000.00
Benefit to Future Development (85%)	\$ 255,000.00
Amount recoverable through Development Charges	\$ 255,000.00

Residential/Non-Residential Cost Allocation: Cost is allocated based on the tax allocation across the entire municipality: residential = 88.9%, non-residential = 11.1%

Development Charge Calculation**Residential Allocation (Per Capita)**

\$ 255,000.00 x 88.9%	\$ 226,695.00
Divided by the 10-year forecasted population growth (1,262)	\$ 179.63
Residential development charge (per person)	\$ 179.63

Non-Residential Allocation (Per Square Meter)

\$ 255,000.00 x 11.1%	\$ 28,305.00
Divided by the 10-year forecasted growth (6,426 sq.m)	\$ 4.40
Non-Residential development charge (per sq.m)	\$ 4.40

Project: Grand Bend Arterial Upgrades

Service Category: Roads and Related

Project Description

The Municipality is planning to widen the bridge on Ontario Street (Highway 21), south of Main Street. The project includes widening the bridge, traffic signals, street lighting, and reconstruction of a 1.5 km length of Ontario Street with the addition of multi-use lanes (for pedestrians and cyclists) on both sides of the road. It is anticipated that funding will be received for this project. It will also benefit existing and future development over the next 20 years.

Analysis of Long Term Capital and Operating Costs

This project will upgrade and expand existing infrastructure. It replaces an existing asset with new infrastructure. The operating costs are expected to be in line with the existing infrastructure.

Costs

Total Cost – Grand Bend Arterial Upgrades	\$ 8,808,000.00
Deduct any grants/subsidies	- \$ 6,000,000.00
Subtotal	\$ 2,808,000.00

Allocation of Costs

Benefit to Existing Development (60%)	\$ 1,684,800.00
Benefit to Future Development (40%)	\$ 1,123,200.00
Amount recoverable through Development Charges	\$ 1,123,200.00

Residential/Non-Residential Cost Allocation: Cost is allocated based on the tax allocation across the entire municipality: residential = 88.9%, non-residential = 11.1%

Development Charge Calculation

Residential Allocation (Per Capita)

\$ 1,123,200.00 x 88.9%	\$ 998,524.80
Divided by the 20-year forecasted population growth (2,421)	\$ 412.44
Residential development charge (per person)	\$ 412.44

Non-Residential Allocation (Per Square Meter)

\$ 1,123,200.00 x 11.1%	\$ 124,675.20
Divided by the 20-year forecasted growth (12,852 sq.m)	\$ 9.70
Non-Residential development charge (per sq.m)	\$ 9.70

Project: Main Street East Urbanization

Service Category: Roads and Related

Project Description

The Municipality is planning to urbanize Main Street East in Grand Bend. The work includes road improvements and the provision of sidewalks, appropriate drainage, signals and street lights. These works are necessary to support increased traffic as a result of growth; however, the project will also benefit existing development.

Analysis of Long Term Capital and Operating Costs

This project will see an existing section of road improved. There are new operating costs associated with the addition of traffic signals and street lights, however, the majority of the project is associated with upgrading existing infrastructure that is currently regularly maintained

Costs

Total Cost – Main Street Urbanization	\$ 720,000.00
Deduct any grants/subsidies	- \$ 0.00
Subtotal	\$ 720,000.00

Allocation of Costs

Benefit to Existing Development (50%)	\$ 360,000.00
Benefit to Future Development (50%)	\$ 360,000.00
Amount recoverable through Development Charges	\$ 360,000.00

Residential/Non-Residential Cost Allocation: Cost is allocated based on the tax allocation across the entire municipality: residential = 88.9%, non-residential = 11.1%

Development Charge Calculation

Residential Allocation (Per Capita)

\$ 360,000.00 x 88.9%	\$ 320,040.00
Divided by the 10-year forecasted population growth (1,262)	\$ 253.60
Residential development charge (per person)	\$ 253.60

Non-Residential Allocation (Per Square Meter)

\$ 320,040.00 x 11.1%	\$ 39,960.00
Divided by the 10-year forecasted growth (6,426 sq.m)	\$ 6.22
Non-Residential development charge (per sq.m)	\$ 6.22

Project: Klondyke Road Upgrades**Service Category:** Roads and Related**Project Description**

The Municipality is planning to upgrade Klondyke Road. The work includes road improvements and the provision of appropriate drainage and street lights. These works are necessary to support increased traffic as a result of growth; however, the project will also benefit existing development.

Analysis of Long Term Capital and Operating Costs

This project will see an existing section of road improved. There are new operating costs associated with the addition of traffic signals and street lights, however, the majority of the project is associated with upgrading existing infrastructure that is currently regularly maintained.

Costs

Total Cost – Klondyke Road Upgrades	\$ 1,175,000.00
Deduct any grants/subsidies	- \$ 0.00
Subtotal	\$ 1,175,000.00

Allocation of Costs

Benefit to Existing Development (90%)	\$ 1,057,500.00
Benefit to Future Development (10%)	\$ 117,500.00
Amount recoverable through Development Charges	\$ 117,500.00

Residential/Non-Residential Cost Allocation: Cost is allocated based on the tax allocation across the entire municipality: residential = 88.9%, non-residential = 11.1%

Development Charge Calculation**Residential Allocation (Per Capita)**

\$ 117,500.00 x 88.9%	\$ 104,457.50
Divided by the 10-year forecasted population growth (1,262)	\$ 82.77
Residential development charge (per person)	\$ 82.77

Non-Residential Allocation (Per Square Meter)

\$ 117,500.00 x 11.1%	\$ 13,042.50
Divided by the 10-year forecasted growth (6,426 sq.m)	\$ 2.03
Non-Residential development charge (per sq.m)	\$ 2.03

Project: Grand Bend Works Depot**Service Category:** Roads and Related**Project Description**

The Municipality is planning to construct a new Public Works Depot near Grand Bend. The new facility will be 2,800 square feet. For residential development the 10-year average level for depots is 2.87 square feet per person. For non-residential development, it is assumed that 15% of the new works depot is attributable to future growth.

Analysis of Long Term Capital and Operating Costs

There are operating costs associated with a new works depot, including maintenance and operation. These costs will be borne through the general municipal budget and It is anticipated that increased tax revenue associated with growth will offset these costs.

Costs

Total Cost – Public Works Depot	\$ 617,500.00
Deduct any grants/subsidies	- \$ 0.00
Subtotal	\$ 617,500.00

Allocation of Costs

Residential/Non-Residential Cost Allocation: Cost is allocated based on the tax allocation across the entire municipality: residential = 88.9%, non-residential = 11.1%

Development Charge Calculation

Residential Allocation (Per Capita based on 10-year average level of service)

\$ 617,500.00 x 88.9%	\$ 548,957.50
10-year LOS (2.87 sqft/person) x (548,957.50/2,800 sqft)	\$ 434.99
Residential development charge (per person)	\$ 434.99

Non-Residential Allocation (Per Square Meter)

\$ 617,500.00 x 11.1%	\$ 68,542.50
15% Allocated to Future Growth	\$ 10,281.38
Divided by the 10-year forecasted growth (6,426 sq.m)	\$ 1.60
Non-Residential development charge (per sq.m)	\$ 1.60

Project: Expansion of Wastewater Plant**Service Category:** Wastewater**Project Description**

In 2013, the Municipality expanded the Grand Bend Sewage Treatment Plant and upgraded Sewage Pumping Station 2. The work included building the capacity to accommodate future growth within the municipality. The cost derived for this project applies to the Grand Bend Service Area and West Bosanquet Service Area at this time. With respect to West Bosanquet, the Municipality is going to undertake a feasibility study for wastewater servicing to define the required infrastructure costs. For the calculation of the development charge, the per capita allocation is determined and for the non-residential component the charge per square meter is calculated using the average non-residential space per employee.

Analysis of Long Term Capital and Operating Costs

The operating costs of the wastewater system are recovered through wastewater rates.

Costs

Total Cost – Expansion of Wastewater Plant	\$ 18,644,035.18
Deduct any grants/subsidies	- \$ 11,902,276.39
Subtotal	\$ 6,741,758.79

Development Charge Calculation

Design Capacity (persons) = $2,473 \text{ m}^3/\text{d} \div 0.32 \text{ m}^3/\text{d}/\text{person}$	7,728.13 persons
Cost per capita = $\$6,741,758.79 \div 7,728.13 \text{ persons}$	\$ 872.37

Residential development charge (per person)	\$ 872.37
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Non-Residential Allocation (Per Square Meter)

Average non-residential space per employee 20-year forecasted growth ($12,852 \text{ m}^2 \div 224.42 \text{ new employees}$)	\$ 57.27 m^2/person
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Cost per m^2 = $\$ 872.37/\text{person} \div 57.27 \text{ m}^2/\text{person}$	\$15.23/ m^2
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Non-Residential development charge (per sq.m)	\$ 15.23
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Project: Forest WWTP Upgrade and Rerating **Service Category:** Wastewater

Project Description

The Municipality is planning on upgrading the sand filter and rerating the Forest Wastewater Treatment Plant. It is expected that the sand filter and rerating will add an additional 400 m³/d of capacity.

Analysis of Long Term Capital and Operating Costs

The operating costs of the wastewater system are recovered through wastewater rates.

Costs

Total Cost – Expansion of Wastewater Plant	\$ 250,000.00
Deduct any grants/subsidies	- \$ 0.00
Subtotal	\$ 250,000.00

Development Charge Calculation

Design Capacity (persons) = 400 m ³ /d ÷ 0.32 m ³ /d/person	1,250 persons
Cost per capita = \$250,000 ÷ 1,250 persons	\$ 200.00

Residential development charge (per person)	\$ 200.00
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Non-Residential Allocation (Per Square Meter)

Average non-residential space per employee 20-year forecasted growth (12,852 m ² ÷ 224.42 new employees)	57.27 m ² /person
Cost per m ² = \$ 200.00/person ÷ 57.27 m ² /person	\$3.49/m ²
Non-Residential development charge (per sq.m)	\$ 3.49

Project: Water System**Service Category:** Water**Project Description**

This project is being carried forward from the 2012 Background Charges Study done by Watson and Associates. The design capacity of the water system is 4,678.65 m³/day, with a flow per person of 0.72 m³/day. For the calculation of the development charge, the per capita allocation is determined and for the non-residential component the charge per square meter is calculated using the average non-residential space per employee.

Analysis of Long Term Capital and Operating Costs

The operating costs of the water system are recovered through water rates.

Costs

Total Cost – Water System	\$ 26,613,565.00
Deduct any grants/subsidies	\$ 12,154,254.00
Subtotal	\$ 14,549,311.00

Development Charge Calculation

Design Capacity (persons) = 4678.65 m ³ /d ÷ 0.72 m ³ /d/person	6498.13 persons
Cost per capita = \$14,459,311 ÷ 6,498.13 persons	\$ 2,225.15

Residential development charge (per person)	\$ 2,225.15
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Non-Residential Allocation (Per Square Meter)

Average non-residential space per employee 20-year forecasted growth (12,852 m ² ÷ 224.42 new employees)	57.27 m ² /person
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Cost per m ² = \$2,225.15/person ÷ 57.27 m ² /person	\$38.86/m ²
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Non-Residential development charge (per sq.m)	\$ 38.86
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