
TOWNSHIP OF LUCAN-BIDDULPH

**DEVELOPMENT CHARGES
BACKGROUND STUDY**



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DEVELOPMENT CHARGES BACKGROUND STUDY

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TOWNSHIP OF LUCAN-BIDDULPH
DEVELOPMENT CHARGES BACKGROUND STUDY

1.0 BACKGROUND

The Township of Lucan-Biddulph is considering imposing, by bylaw, development charges against land to pay for increased capital costs required due to increased needs for services arising from development. This bylaw would be passed under the statutory authority of the Development Charges Act, 1997 and its accompanying Regulations. 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, further defines the content of the study. The purpose of this report then, is to satisfy the requirements of the Act and provide sufficient information for the Council of the Township of Lucan-Biddulph to make a decision on the size of any development charge amount to be imposed by bylaw.

2.0 CURRENT PRACTICE

The Township of Lucan-Biddulph was formed in January 1999 from the amalgamation of the former Village of Lucan and the Township of Biddulph. Prior to amalgamation, development charges had been collected in the former Village of Lucan since 1992. Following amalgamation, development charge bylaws were enacted for the former Lucan area and other areas of the Municipality. In 2002, the Township passed a separate Bylaw (72-2002) to impose development charges specific to the Granton Urban Area, following the completion of the Granton Urban Area Development Charges Background Study, prepared by B.M. Ross and Associates Limited. In 2005, the Township enacted Bylaw 20-2005, to collect development charges on residential development within the Township. Currently, as set out in Bylaw 20-2005, development charges are collected for three areas of the Township: the former Village of Lucan, Granton and rural Lucan-Biddulph.

The current bylaw was imposed after consideration of a Development Charges Background Report, December 2004, prepared by B.M. Ross and Associates Limited. This report analyzed potential growth and development across the entire Township and evaluated capital works necessary to service this growth. Bylaw 20-2005 was passed on March 31, 2005, imposing charges for service categories as identified in the 2004 Background Report. These are outlined in Table 2.1.

Table 2.1
Development Charge Amounts
From Bylaw 20-2005

Service Category	Lucan Urban Area	Granton Urban Area	Remainder of Township
Sanitary Sewage	\$1,708.35	\$2,0127.97	\$0.00
Water Service	\$753.25	\$1,037.03	\$0.00
Stormwater Management	\$192.50	\$0.00	\$0.00
Roads	\$1,149.16	\$0.00	\$0.00
Fire Protection	\$1,086.79	\$1,086.79	\$1,086.79
Parkland	\$246.74	\$0.00	\$0.00
Administration	\$363.21	\$363.21	\$363.21
Total	\$5,500.00¹	\$4,500.00¹	\$1,450.00¹

¹Charges are those for a single family residence. The charges vary for different residence types.

A total of \$25, 350 has been collected in development charges since the passing of the last development charges bylaw in 2005. An additional \$59,587.61 in interest has been earned in the same time period. Between 2005 and the end of 2009, \$316,173.02 has been expended from reserves towards the various projects named in this report. By Bylaw, the Township chose to exempt development charges between 2005 and 2007.

3.0 APPROACH

This report is essentially an update of the 2004 Background Study. The purpose of this study is to conform to the requirements of the Act and to support an amount that can be imposed 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 done as follows:

- Review with municipal staff the existing process, what projects were implemented during the life of the existing bylaw and to discuss new projects;

- Review historical and future growth in the Municipality. The Middlesex Planning and Economic Development Department provided recent growth projections. Municipal staff provided information on buildings/development activity since the previous report was prepared;
- Municipal staff and consulting engineers provided updated capital works forecasts and potential projects;
- BMROSS analyzed and evaluated the services collected for in the existing bylaw, 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;
 - Service areas of the proposed works.
- A presentation of the draft report was made to Council to explain the process and the works to be collected for.

The final steps in the process will involve:

- Council determining a development charge amount they intend to impose by bylaw;
- Preparation of a draft bylaw;
- A Public Meeting as required under the Act;
- Passage of the bylaw after any revisions to the report and bylaw that come out of the public meeting.

4.0 POPULATION AND GROWTH FORECAST

Appendix “A” of this report contains a detailed analysis of historic growth and development trends for the former Village of Lucan, Granton and rural Lucan-Biddulph. Population growth is tracked through Statistics Canada data every five years. Development is tracked through building permit records. The historic population and housing trends for the Municipality are shown in Tables 4.1 and 4.2

Table 4.1
Population Data and Growth Rates (1981-2006)

	Lucan	Rural	Lucan- Biddulph
1981	1616	2260	3876
1986	1728	2245	3973
1988 ¹	1740	2202	3942
1991	1847	2194	4041
1997 ¹	1896	2189	4085
2001	2010	2191	4201
2006	-	-	4187 ²
Population Change	394	-69	325
Population Change (%)	24.4	-3.1	8.4
Average Annual Growth Rate (%)	1.1	-0.2	0.3

¹Enumeration data

²2006 data is only available by incorporated Township and large urban area.

Table 4.2
Historic Number of Households in Lucan-Biddulph (1988-2006)

	Lucan	Rural	Lucan-Biddulph
1988	636	717	1353
1991	685	734	1419
1997	712	734	1446
2001	720	725	1445
2006	-	-	1556
Household Change	84	8	203
Household Change (%)	13.21	1.12	15.00
Average Annual Growth Rate (%)	0.96	0.09	0.78

Lucan-Biddulph has experienced moderate growth in the past 25 years, as shown in Tables 4.1 and 4.2. The population of Lucan-Biddulph has increased 8.4% (equivalent to 325 people), however this growth has primarily occurred in the former Village of Lucan. Population data shows that the rural population in Lucan-Biddulph is slowly declining, likely due to the decline in the 'family farm' and an aging population moving to urban centres.

Despite the low average annual population growth rate, the number of households in the Township has grown steadily in the past 25 years, as the average number of household occupants has decreased (from 2.9 to 2.7 persons per household). Again, the majority of new development

has occurred in the former Village of Lucan, but some development has also occurred in the rural areas of the Township.

Population and residential growth forecasts were developed for the former Village of Lucan and rural Lucan-Biddulph based on the annual average growth rates. Given the historic trends in the population of the two areas, it was deemed appropriate to develop forecasts for both areas. It is expected that the population of the former Village of Lucan will slowly increase while the population of rural Lucan-Biddulph will decrease, given the average annual growth rates of 1.1% and -0.2% respectively. Tables 4.3 and 4.4 summarize the projected population changes for the former Village of Lucan and rural Lucan-Biddulph. However, average household size is decreasing and new development is taking place. For this reason, residential development forecasts for the two areas were developed based on the 10-year average of the number of new homes constructed. The development forecasts are summarized in Table 4.5 and 4.6.

Table 4.3
Former Village of Lucan Population Forecast
(2006-2036)

Year	Population Change	Population
2006	111	2121
2011	117	2237
2016	123	2360
2021	130	2490
2026	137	2627
2031	144	2771
2036	152	2924

Table 4.4
Rural Lucan-Biddulph Population Forecast
(2006-2036)

Year	Population Change	Population
2006	-16	2175
2011	-16	2158
2016	-16	2142
2021	-16	2126
2026	-16	2110
2031	-16	2094
2036	-16	2079

Table 4.5
Former Village of Lucan Residential Development Forecast
(2011-2036)

Year	New Houses	Total Households
2011	75	870
2016	75	945
2021	75	1020
2026	75	1095
2031	75	1170
2036	75	1245

Table 4.6
Rural Lucan-Biddulph Residential Development Forecast
(2011-2036)

Year	New Houses	Total Households
2011	30	785
2016	30	815
2021	30	845
2026	30	875
2031	30	905
2036	30	935

5.0 REVIEW OF GROWTH RELATED CAPITAL COSTS

5.1 General

The review and evaluation of capital costs which was undertaken consisted of two parts:

- A review of projects/services contained in the 2004 Background Report, which was used to support the current Development Charges Bylaw;
- 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.

5.2 Review of Projects/Services from the 2004 Background Report

The capital works forecast contained in the 2004 report contained a number of works under four separate service categories. These works were reviewed with respect to:

- Applicability under the Act and any charges since the report was completed;
- Whether the service has been implemented as envisioned, at what costs, and whether expected subsidies were received, if any;
- Whether the service should continue to be included in the development charge calculation.

Table 5.1 provides a summary of the review of projects that were included in the previous Background Report.

**Table 5.1
Review of Previous Projects**

Service Category	Capital Work	Summary of Review	Recommendation
Sanitary Sewage Service	Sewage Treatment (Lucan)	<ul style="list-style-type: none"> • Sewage Treatment Plant currently at capacity • Upgrades to plant will increase capacity (400 more units) 	<ul style="list-style-type: none"> • Recalculate charge to reflect expansion in capacity
	Trunk Sewers and Pumping Station (Lucan)	<ul style="list-style-type: none"> • Project completed • Project designed with capacity for future growth 	<ul style="list-style-type: none"> • Continue to collect for this service until capacity is expended
	Constructed Wetland (Lucan)	<ul style="list-style-type: none"> • Will treat and dispose of sludge from the Lucan Sewage Treatment Plant • Project designed with capacity for future growth 	<ul style="list-style-type: none"> • Continue to collect for this service until capacity is expended
	Stormwater Management (Lucan)	<ul style="list-style-type: none"> • 2 of 3 facilities constructed • Project services both existing and future growth 	<ul style="list-style-type: none"> • Recalculate charge to reflect updated cost estimate
	Sewage Treatment (Granton)	<ul style="list-style-type: none"> • Project completed in 2001 • Excess capacity built into facility to provide for future growth 	<ul style="list-style-type: none"> • Continue to collect for this service until capacity is expended
Water Services	Water Supply (Lucan)	<ul style="list-style-type: none"> • Major expansion and upgrading completed in mid-1990's • Effective capacity of 7,700 persons includes future growth 	<ul style="list-style-type: none"> • Continue to collect for capacity until it is expended
	Watermains (Lucan)	<ul style="list-style-type: none"> • Construction completed with the exception of two watermain loops • Services existing and future development 	<ul style="list-style-type: none"> • Recalculate charge to reflect updated cost estimates and continue to collect until capacity is expended
	Water Supply (Granton)	<ul style="list-style-type: none"> • New water supply system constructed in 2003 • Capacity built into the system for future growth 	<ul style="list-style-type: none"> • Continue to collect for excess capacity until it is expended
Transportation	Roads, Bridges and Sidewalks (Lucan)	<ul style="list-style-type: none"> • Work completed with exception of Community Drive and section of Walnut Street. • Two new sidewalk projects have been identified and 	<ul style="list-style-type: none"> • Recalculate charge to reflect updated cost estimates

Service Category	Capital Work	Summary of Review	Recommendation
		a proposed traffic signal at Saintsbury Line and Richmond Street. <ul style="list-style-type: none"> • Benefits existing and future development 	
Fire Protection	Station Space	<ul style="list-style-type: none"> • Project has been undertaken and is complete 	<ul style="list-style-type: none"> • Continue to collect for service across the Municipality
	Vehicles	<ul style="list-style-type: none"> • Township replaced an existing truck with an upgraded vehicle. The fleet size remained the same, although the new vehicle does provide for greater firefighting ability. 	<ul style="list-style-type: none"> • Remove this project from the calculation. Allocation between existing and future growth needs is difficult to quantify.
	Firefighter Outfitting	<ul style="list-style-type: none"> • Firefighters will be added as the Twp. grows 	<ul style="list-style-type: none"> • Continue to collect for service across the Municipality
Parks and Recreation	Parkland Development	<ul style="list-style-type: none"> • Twp. undertakes projects as required • Estimated cost is \$40,000 per acre 	<ul style="list-style-type: none"> • Continue to collect for this service • A 10% reduction in capital costs must be made in accordance with the Act
Administration	Capital Works Studies	<ul style="list-style-type: none"> • Service includes the Development Charge Background Study cost and funding towards other capital growth studies such as Official Plans 	<ul style="list-style-type: none"> • Apply a 10% reduction to these costs as set out in the Act • Cost should be maintained at \$100,000 over 10 years

5.3 Review of Additional Services

Additional services that are anticipated to be required as a result of growth in the Township were reviewed and evaluated as part of the study. Table 5.2 provides a summary of new service categories/projects that are proposed to be included in the development charge calculation. Detailed information is included in Appendix B.

Table 5.2
New Services Required to Support Growth

Service Category	Component	Description	Service Area
Water Service	Water Modeling Study – Lucan	<ul style="list-style-type: none"> • Study required in order to project supply and water main requirements for future growth 	Former Village of Lucan
Transportation	Public Works Facility	<ul style="list-style-type: none"> • Existing facility inadequate for proper operation of department • Proposed facility will have equivalent of six bays 	Entire Municipality
Sanitary Sewage Services	Stormwater Management Studies – Lucan	<ul style="list-style-type: none"> • Studies required to identify stormwater management strategies for two development areas 	Former Village of Lucan

5.4 Service Areas

Prior to amalgamation in 1999, residential development in the former Village of Lucan was subject to development charges. Following amalgamation, development charges set for the former Village of Lucan and the remainder of the Municipality. In 2003, a bylaw was passed to establish development charges for Granton, which included charges relating to the Granton sewer and water services. Bylaw 20-2005 stipulates development charges for three areas which encompass the Municipality: Lucan Urban Area, Granton Urban Area and rural Lucan-Biddulph. Given the spatial distribution of the services, this background study recommends development charges for the three previously identified areas of the Municipality.

6.0 CALCULATION OF THE DEVELOPMENT CHARGE

6.1 Methodology

The following method was used to calculate possible development charges, for each service category, identified as being required to accommodate future growth in the Municipality:

- Review the service description to determine if the proposed capital works exceed the average level of service in the municipality over the previous 10 year period.
- Determine the net cost of the service after a reduction for any anticipated grants or subsidies;
- Reduce the capital cost to be included in the calculation by the amount the increase in service would benefit existing development;
- Reduce the capital cost by 10%, as set out in the Act [Section 5(1)(8)], for service not set out in Section 5(5);
- Allocate the cost between the appropriate type of development that benefits from the service, residential and/or ICI (industrial, institutional, commercial);
- Calculate the development charge for each service based on the estimated amount of future growth it will provide for e.g. next 10 years, 20 years, or the design capacity of the facility;
- Determine the residential development charge for various type of development based upon the expected occupancy characteristics.

6.2 Assumptions Used in the Development Charge Calculation

(a) Spatial Applicability of Capital Costs

Some services that have been considered for inclusion in the development charges calculation are spatially unique. The costs for these services are then only attributed to growth in the specific areas that will benefit from them.

(b) 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 purpose of allocating project costs between future growth and existing development, design capacities have been reduced to single person equivalents. Then a cost per person can be calculated, which applies equally to both existing and the predicted development.

(c) Allocation of Costs Between Residential and Non-Residential Development

In instances where an included service benefits both residential and non-residential development, it is necessary to allocate costs between the sectors. The current bylaw does not impose a development charge on any type of development other than residential. We expect this will continue to be the case and have not developed charges for other sector types. Non-residential development in these areas is only a small component of total growth. For the simplification of calculations, we have used ratios of residential to non-residential development calculated from assessment data (see Appendix A). Using these ratios will ensure that residential development does not pay for non-residential developments. This meets the intent of the Act as set out in Section 5(6)(3).

(d) Occupancy Considerations

Different types of residential development contain different numbers of occupants. On a per unit basis, the smaller the average occupancy, the less demand is placed on service generally. The following occupancies are assumed for the various housing types and have been adjusted from the 2004 report to reflect a decreasing trend in the average household occupancy across the municipality from 2.9 persons per household to 2.7 persons per household.

Residential Unit Type	Persons Per Unit	Percentage of single Family Unit Charge
Single Family Residential, including semi-detached	3.0	100%
Apartments, 2 bedrooms +	1.5	50%
Apartments, bachelor or 1 bedroom	1.1	36.7%
Other multiples (not included above)	2.5	83.3%

(e) Reduction to Minimize Impact of Double Charging

In instances where there is a service that benefits both the present development and future growth, there is a possibility a property will have paid a development charge and then will pay taxes to support the same service. In order to reduce the impact of this occurrence, we have reduced the calculated development charge for all services by an arbitrary 10% reduction.

6.3 Calculated Development Charge

Table 6.1 provides a summary of the development charge calculations, based on the calculations outlined in Appendix B. With the distribution of projects and development within the Township, it is recommended that the development charges reflect the three distinct areas of the Township. We propose that separate development charges be applied to the Lucan Urban Area, Granton Urban Area and rural Lucan-Biddulph. These separate charge areas can be described in the bylaw. The summaries of the calculated development charges for each area of the Township are outlined in Table 6.2.

Table 6.1
Township of Lucan-Biddulph Summary of Development Charge Calculation

Service Category	Component	DC Amount	Applicable to:		
		Residential (per person)	Lucan Urban Area	Granton Urban Area	Remainder of Township
Sanitary Sewage	Sewage Treatment - Lucan	\$137.96	X		
	Constructed Wetlands - Lucan	\$101.54	X		
	Trunk Sewers - Lucan	\$349.58	X		
	Sewage Treatment - Granton	\$842.26		X	
Water Service	Water Supply - Lucan	\$98.70	X		
	Watermains - Lucan	\$334.88	X		
	Modelling Study - Lucan	\$26.40	X		
	Water Supply - Granton	\$448.96		X	
Roads, Bridges, S/W's	Roadwork	\$747.48	X		
	Public Works Facility	\$128.47	X	X	X
Stormwater Management	Land purchase	\$99.08	X		
	SW Management Studies	\$34.27	X		
Fire Protection	Fire Station	\$112.80	X	X	X
	Firefighter Equipment	\$25.44	X	X	X
Parkland	Parkland Development	\$108.00	X	X	X
Administration	Capital Growth Studies	\$149.21	X	X	X
Subtotals:	Lucan Urban Area	\$2,453.81			
	Granton Urban Area	\$1,815.14			
	Remainder of Township	\$523.92			
- less 10% reduction (see Section 6.2)	Lucan Urban Area	(\$245.38)			
	Granton Urban Area	(\$181.51)			
	Whole Township	(\$52.39)			
Totals:	Lucan Urban Area	\$2,208.43			
	Granton Urban Area	\$1,633.63			
	Remainder of Township	\$471.53			

**Table 6.2
Township of Lucan-Biddulph Summary of Development Charge Amounts**

Lucan Urban Area									
Residential Type:	Persons per Unit	Sanitary Sewage	Water Service	Stormwater Management	Roads	Fire Protection	Parkland	Admin.	Total
Single and semi detached	3.0	\$1,590.52	\$1,241.95	\$360.05	\$2,365.07	\$373.25	\$291.60	\$402.87	\$6,625.29
Apartments - 2 bedrooms +	1.5	\$795.26	\$620.97	\$180.02	\$1,182.53	\$186.62	\$145.80	\$201.43	\$3,312.64
Apartments - Bachelor & 1 bedroom	1.1	\$583.19	\$455.38	\$132.02	\$867.19	\$136.86	\$106.92	\$147.72	\$2,429.27
Other Multiples (not included above)	2.5	\$1,325.43	\$1,034.96	\$300.04	\$1970.89	\$311.04	\$243.00	\$335.72	\$5,521.07

Granton Urban Area									
Residential Type:	Persons per Unit	Sanitary Sewage	Water Service	Stormwater Management	Roads	Fire Protection	Parkland	Admin.	Total
Single and semi detached	3.0	\$2,274.10	\$1,212.19	\$0.00	\$346.87	\$373.25	\$291.60	\$402.87	\$4,900.88
Apartments - 2 bedrooms +	1.5	\$1,137.05	\$606.10	\$0.00	\$173.43	\$186.62	\$145.80	\$201.43	\$2,450.44
Apartments - Bachelor & 1 bedroom	1.1	\$833.84	\$444.47	\$0.00	\$127.19	\$136.86	\$106.92	\$147.72	\$1,796.99
Other Multiples (not included above)	2.5	\$1,895.09	\$1,010.16	\$0.00	\$289.06	\$311.04	\$243.00	\$335.72	\$4,084.07

Remainder of Township									
Residential Type:	Persons per Unit	Sanitary Sewage	Water Service	Stormwater Management	Roads	Fire Protection	Parkland	Admin.	Total
Single and semi detached	3.0	\$0.00	\$0.00	\$0.00	\$346.87	\$373.25	\$291.60	\$402.87	\$1,414.58
Apartments - 2 bedrooms +	1.5	\$0.00	\$0.00	\$0.00	\$173.43	\$186.62	\$145.80	\$201.43	\$707.29
Apartments - Bachelor & 1 bedroom	1.1	\$0.00	\$0.00	\$0.00	\$127.19	\$136.86	\$106.92	\$147.72	\$518.68
Other Multiples (not included above)	2.5	\$0.00	\$0.00	\$0.00	\$289.06	\$311.04	\$243.00	\$335.72	\$1,178.82

7.0 SUMMARY

This document presents the results of a Development Charges Background Study for the Township of Lucan-Biddulph. The Township is considering a new Development Charge Bylaw and the study is required under the Development Charges Act, 1997. This report presents possible charges for three distinct areas of the Township. From an assessment of recent development and planned projects, this study recommends development charges for the Lucan Urban Area, Granton Urban Area and rural Lucan-Biddulph.

The study that was carried out:

- Reviewed historic growth in the communities and developed growth and development forecasts by area.
- Reviewed and evaluated capital works projects that would be required to service the predicted growth.
- Calculated a recommended Development Charge amount for the proposed works in accordance with the Development Charges Act.

It is our opinion that the Development Charge Amount set out in Tables 6.1 and 6.2 of the report are supported in accordance with the Act. The charge used in the bylaw may differ, as it is set by Council after due consideration.

The next steps in the Development Charge process are:

- Council accepts this draft report and by resolution, agrees that the intent of the Township is to implement the capital works as required to service future growth.
- Council decides on a Development Charge amount that they wish to impose by bylaw.
- A draft bylaw is prepared.
- A Public Meeting is held in accordance with the Act with a minimum 20 days notice period, and at least a two week prior review for the draft report and bylaw.
- Council passes the bylaw.

All of which is respectfully submitted.

B. M. ROSS AND ASSOCIATES LIMITED

Per _____

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APPENDIX 'A'

POPULATION AND GROWTH FORECAST

APPENDIX A GROWTH AND DEVELOPMENT FORECAST

1.0 INTRODUCTION

In order to determine a development charge, it is necessary to first develop:

- A forecast of the future population of the Municipality
- A forecast of the number of new residential units that may be created
- A forecast of the amount of non-residential development that may be created

These forecasts are then used to identify the capital costs that may be expended to support the new growth and to allocate the identified capital costs appropriately between the different classes of development.

Previous development charges have taken into account the spatial variability of services in the Township of Lucan-Biddulph. Similar to previous background studies, this background study will determine where growth may take place in the Municipality and determine how that relates to required services.

The population and growth forecast for the Township of Lucan-Biddulph was determined by undertaking the following:

- An analysis of the historical growth and development trends for both residential and non-residential sectors in Lucan-Biddulph
- A review of population forecasts prepared by the County of Middlesex Planning and Economic Development Department
- A review of current development proposals

2.0 POPULATION AND HOUSEHOLD GROWTH TRENDS

2.1 Population

The historic population of the Township of Lucan-Biddulph is shown in Table 2.1. Since 1981, the population has increased by a total of 325 people, which represents an 8.4% increase in the total population. Within the Township, population growth has primarily occurred in the former Village of Lucan. In the period of time between 1981 and 2001, the population of Lucan increased by 24.4%, or 394 people. However, during the same period, the rural population decreased by 69 persons, or 3.1%. The decrease in rural population may be a result of a decrease in the number of family farms, due to the emergence of large

industrial farms. Additionally, the aging rural population may be retiring to urban centers, resulting in a decrease in the rural population. The average annual growth rate for the Township is 0.3%, slightly less than the Middlesex county average of 0.8%; suggesting that the changes in the rural and urban populations of Lucan-Biddulph have resulted in only a slight increase in population.

**Table 2.1
Historic Population of the Township of Lucan-Biddulph (1981-2006)**

	Lucan	Rural	Lucan- Biddulph
1981	1616	2260	3876
1986	1728	2245	3973
1988 ¹	1740	2202	3942
1991	1847	2194	4041
1997 ¹	1896	2189	4085
2001	2010	2191	4201
2006	-	-	4187 ²
Population Change	394	-69	325
Population Change (%)	24.4	-3.1	8.4
Average Annual Growth Rate (%)	1.1	-0.2	0.3

¹Enumeration data

²2006 data is only available by incorporated Township and large urban area.

2.2 Households

Table 2.2 shows the number of households in Lucan-Biddulph for the past 18 years. The number of households in Lucan-Biddulph has increased by 203, which represents a total increase in the number of households of 15.0%. Again, the majority of growth in the number of households has occurred in the village of Lucan, with an increase of 84 households (13.2%) observed between 1988 and 2001. A slight increase in the number of households was also observed for the rural areas of the Township, with 8 new households, representing an increase of 1.1%. The average annual growth rate for the number of households in the Township is 0.78%, slightly lower than the county average, suggesting a moderate trend in growth.

Table 2.2
Historic Number of Households in Lucan-Biddulph (1988-2006)

	Lucan	Rural	Lucan-Biddulph
1988	636	717	1353
1991	685	734	1419
1997	712	734	1446
2001	720	725	1445
2006	-	-	1556
Household Change	84	8	203
Household Change (%)	13.21	1.12	15.00
Average Annual Growth Rate (%)	0.96	0.09	0.78

The number of occupants per household is shown in Table 2.2. Generally, the data shows that household occupancy in Lucan-Biddulph has remained relatively constant between 1988 and 2001 at 2.9 persons per household. However between 2001 and 2006, the number of persons per household decreased to 2.7. This decrease in occupancy rates is consistent with County trends, however the occupancy rate in Lucan-Biddulph remains greater than the County average of 2.5 persons per household.

Table 2.3
Number of Persons per Households in Lucan-Biddulph (1988-2006)

Year	Persons/Household
1988	2.9
1991	2.9
1997	2.8
2001	2.9
2006	2.7

3.0 RESIDENTIAL GROWTH AND DEVELOPMENT

3.1 Residential Growth

Trends and patterns in residential development were analyzed using building permit data. An examination of residential growth provides a measure of the growth occurring within communities, which can then be related to infrastructure needs. Table 3.1 shows the number of building permits issued for new residential units in the community of Lucan from 1988-2008.

Table 3.1
Residential Growth (1988-2008)
Lucan

Year	Residential Units
1988	40
1989	0
1990	2
1991	0
1992	3
1993	45
1994	11
1995	7
1996	3
1997	6
1998	15
1999	-
2000	10
2001	13
2002	14
2003	11
2004	2
2005	7
2006	3
2007	35 ¹
2008	42 ²
Total	269
20 Year Average	13.5
Last 10 Years Average	15.2
Last 5 Years Average	17.8

¹ includes 4 townhouse style condominiums

² includes 15 townhouse style condominiums

Since 1988, 269 new residences have been constructed in Lucan, which equates to an average of 13.5 new dwellings per year. Examination of recent trends, through the 10 year and 5 year averages, shows the average number of residences built per year is increasing. The average number of building permits issued has increased from 15.2 in the last 10 years to 17.8 in the last 5 years. This increase in residences reflects changes in the population and residency trends. In Lucan-Biddulph, as with many other rural areas, the aging population and decline of the family farm has resulted in the movement of residents from rural areas to urban centers and the construction of new residential units.

Residential development in the rural areas of Lucan-Biddulph has been relatively stable over the last 18 years. Building permit data, summarized in Table 3.2, shows a total of 108 building permits for new residences have been issued since 1990. A slight increase was observed from the 10 year to 5 year averages; however, residential development in the rural area continues to be relatively low.

Table 3.2
Residential Development (1990-2008)
Rural Lucan-Biddulph

Year	Residential Units
1990	7
1991	6
1992	8
1993	3
1994	9
1995	5
1996	11
1997	3
1998	4
1999	-
2000	1
2001	4
2002	6
2003	1
2004	10
2005	11
2006	7
2007	6
2008	6
Total	108
18 Year Average	6.0
Last 10 Years Average	5.8
Last 5 Years Average	8.0

3.2 Recent Residential Developments

A number of developments have recently been approved in Lucan-Biddulph. The sizes of these developments are summarized in Table 3.3. These developments will be located in

Lucan and if current population trends continue, these developments represent a 15 year inventory of residential units.

Table 3.3
Recent Residential Developments in Lucan-Biddulph

Developer	Units
Radcliffe	<ul style="list-style-type: none"> ▪ 42 Single family homes ▪ 8 Townhouse units
Loyens	<ul style="list-style-type: none"> ▪ 70 Single family homes
Reliance Financial	<ul style="list-style-type: none"> ▪ 71 Single family homes
Nelson-Wolfe Developments	<ul style="list-style-type: none"> ▪ 32 Condominium units
Lucan Estates Inc	<ul style="list-style-type: none"> ▪ 50 Single family homes
Total	273 new units

4.0 NON-RESIDENTIAL DEVELOPMENT TRENDS

In the past, non-residential development has not been charged under the Development Charges Bylaw in Lucan-Biddulph. Patterns and trends in non-residential development, however, are important factors to consider when calculating development charges, as it influences the need for services. Table 4.1 summarizes the amount of non-residential development (in square feet) that has occurred in Lucan-Biddulph recently. New non-residential development has been minimal in Lucan-Biddulph since the last report. This trend is expected to continue.

Table 4.1
Non-Residential Development in Lucan-Biddulph
(in square feet)

Year	Commercial	Institutional	Industrial
2004	7,808	0	0
2005	0	0	0
2006	9,000	0	0
2007	630	3,150	0
2008	0	0	0

5.0 GROWTH PROJECTIONS

5.1 Methodology

For the purposes of calculating development charges, forecasts of population and residential growth in Lucan-Biddulph were developed. Separate forecasts were developed for the Lucan Urban Area and the rural areas of the Township. Historically, development charges have been calculated to reflect the different levels of service in the two areas. Given this and the differing population trends, it was deemed appropriate to develop separate forecasts.

The population forecasts for the two areas, Lucan and rural Lucan-Biddulph, are based on the annual growth rates, calculated from the population data in Table 2.1. Additionally, the forecasts were compared to the Lucan-Biddulph population forecasts developed by the County of Middlesex. Two of the three scenarios for population growth developed by the County suggest a decline in the population of Lucan-Biddulph over the next 25 years. This is consistent with the population forecast developed for rural Lucan-Biddulph, however it is expected that the population of Lucan will continue to increase given the current trends. For the purposes of the forecasts, we have assumed, based on trends and County projections, that the current occupancy rate of 2.7 persons per household will remain relatively stable.

The residential forecast developed for the two areas was calculated on the basis of the 10-year average of building permits issued for new residential development. Residential trends in Lucan-Biddulph show steady residential growth and a decline in the occupancy rate, which suggests that residential development will continue despite a slow decline in the rural population.

5.2 Household and Population Growth Forecast

The population forecast for Lucan is shown in Table 5.1. An average annual growth rate of 1.1% was used to extrapolate population growth at 5 year intervals. A moderate increase in the population of Lucan is expected in the next 25 years. It is expected that the population of Lucan will continue to grow, whereas the rest of the Township will decrease in population. Coinciding with the increase in population, it is expected that construction of new houses will continue. Table 5.2 shows the residential development forecast, based on a 10-year average of 15 new units per year. Development in Lucan will be dependent on other factors, such as municipal servicing, available land and affordability

Table 5.1
Former Village of Lucan Population Forecast
(2006-2036)

Year	Population Change	Population
2006	111	2121
2011	117	2238
2016	123	2360
2021	130	2490
2026	137	2627
2031	144	2771
2036	152	2924

Table 5.2
Former Village of Lucan Residential Development Forecast
(2011-2036)

Year	New Houses	Total Households
2011	75	870
2016	75	945
2021	75	1020
2026	75	1095
2031	75	1170
2036	75	1245

For the rural areas of Lucan-Biddulph, an average annual growth rate of -0.2% was used in the calculation of the population and development forecast. The forecast is summarized in Table 5.2. It is expected that the rural areas will experience a slow decline in population as a result of the aging population and migration to urban centres. This is consistent with County projections. Despite the decrease in population, recent development trends indicate that some new development is occurring in the rural areas of Lucan-Biddulph.

Additionally, the average occupancy levels have decreased in the last five years, which results in an increased number of homes needed to support the population. Table 5.4 summarizes the forecast of residential development in rural Lucan-Biddulph, based on a 10-year average of 6 new homes per year.

**Table 5.3
Rural Lucan-Biddulph Population Forecast
(2006-2036)**

Year	Population Change	Population
2006	-16	2175
2011	-16	2158
2016	-16	2142
2021	-16	2126
2026	-16	2110
2031	-16	2094
2036	-16	2079

**Table 5.4
Rural Lucan-Biddulph Residential Development Forecast
(2011-2036)**

Year	New Houses	Total Households
2011	30	785
2016	30	815
2021	30	845
2026	30	875
2031	30	905
2036	30	935

5.3 Non-Residential Growth Forecast

Non-residential development in Lucan-Biddulph has been minimal since the last report. Currently, there are no indications that any significant changes will occur with regards to non-residential development. Given the current trends and that development charges have not historically been applied to non-residential development, non-residential growth was not forecasted.

However, the ratio of residential and non-residential development in Lucan-Biddulph has been calculated. The ratios were calculated for Lucan, Granton and rural Lucan-Biddulph from recent assessment data. Table 5.3 contains the proportions of residential and non-residential development.

Table 5.3
Ratio of Residential and Non-Residential Development

	Rural Lucan-Biddulph	Granton	Lucan
Residential	6%	8%	6%
Non-Residential	94%	92%	94%

APPENDIX 'B'

ANALYSIS OF GROWTH RELATED PROJECTS

ANALYSIS OF GROWTH RELATED CAPITAL COSTS

SERVICE CATEGORY: **Sanitary Sewage Service** SERVICE COMPONENT: **Sewage Treatment - Lucan**

Details of Service

Description:

Lucan constructed a new sewage treatment facility in the mid 1990's. This project included an upgrading and expansion of an existing facility, a new pumping station, forcemain and sewer. The facility was designed for a capacity of 2,400 person equivalents based on 450 litres per capital per day. Lucan implemented a project to reduce extraneous flows to the treatment facility. The average per capital flow to the facility, based on the past 4 year monitoring period, was 326 litres per person per day. The new standard for sewage treatment capacity, based on this data, is 350 litres per person per day. Based on this standard, the facility has an effective capacity of 3,086 person equivalents. Development charges have been collected for the facility since its inception,

The facility has reached capacity and a new upgrading project is being undertaken that will add an additional 400 households of capacity. Key components of the upgrading will enable this additional capacity, other components are maintenance related. Some of the costs of the new filter, UV equipment and SCADA equipment will be assessed against both existing and new development.

Analysis of Long Term Capital and Operating Costs:

The project has received two thirds grant funding from upper level governments. The remainder of the capital costs will be paid by the existing user base through reserves and rates, and through a development charge to new growth. Operating costs will be borne by the users of the facility.

Costs

Project Costs (related to growth):	\$1,833,775.00
Received or Expected Capital Grants, Subsidies or Contributions:	\$1,222,528.00
Net Cost:	\$ 611,447.00

Allocation of Costs

Benefit to Existing	The net cost above is related to projects which increase the capacity at the facility, but also represent a replacement of existing facilities used by the present population. This project will benefit existing and future development equally on a per capita basis. Based on 4,166 person equivalents of capacity, 3086 previous equiv. plus the new expansion of 400 hh @ 2.7 pph.
Residential/ Non-Residential Cost Allocation:	Capacity at the facility will be allocated as development occurs. There is no non-residential share. Capacity is expressed as person equivalents, which includes all uses. The non-residential cost allocation is based on the current assessment split for Lucan of 94% residential/6% non-residential.

Development Charge Calculation

Residential:	The residential development charge = $\$611,447 \times 94\% / 4,166 = \137.96 per person.
Non-Residential:	n/a

ANALYSIS OF GROWTH RELATED CAPITAL COSTS

SERVICE CATEGORY: **Sanitary Sewage Service**

SERVICE COMPONENT: **Constructed Wetlands –
Lucan**

Details of Service

Description:

The Municipality intends to construct a “Constructed Wetlands” at its Sewage Treatment Plant to treat and dispose of sludge from the plant. New regulations will prohibit land application of human waste materials, which is the current practice.

Analysis of Long Term Capital and Operating Costs:

There will be an associated operating cost for the new works, which should be somewhat offset by the current costs of land application.

Any additional costs will be supported by the municipal rate charge structure.

Costs:

Total cost:	\$450,000
Received or expected capital grants, subsidies or contributions:	--
Net cost:	\$450,000

Allocation of Costs

Benefit to Existing Development: This project will benefit existing and future development equally on a per capita basis. Based on 4,166 person equivalents of capacity, 3086 previous equiv. plus the new expansion of 400 hh @ 2.7 pph.

Residential/ Non-Residential Cost Allocation: Capacity will be allocated as development occurs. There is no predetermined residential or non-residential share. Capacity is expressed as person equivalents, which includes all uses. The non-residential cost allocation is based on the current assessment split for Lucan of 94% residential/6% non-residential.

Development Charge Calculation

Residential: The residential development charge = $\$450,000 \times 94\% / 4,166 = \101.54 .

Non-residential: n/a

ANALYSIS OF GROWTH RELATED CAPITAL COSTS

SERVICE CATEGORY: **Sanitary Sewage Service** SERVICE COMPONENT: **Trunk Sewers & Pumping Stations - Lucan**

Details of Service

Description:

The requirements for pumping stations and trunk sewers to complete development in all undeveloped/ unserved areas of the former Village of Lucan (excluding the western area) are shown on the attached Map B-1. These sewers will receive flow from future development. Developers will be responsible for constructing sewers within their development areas and to delivering the sewage to the nearest gravity sewer.

The sanitary trunk sewers as shown on Map B-1 have been included in the development charge calculation. The cost related to a pumping station and forcemain along Queen Street, which specifically services the development area south of William Street, are not included. These facilities are required only for a defined area and at the time of proposed development, a front ending agreement or a site specific development charge bylaw will be required.

This service was included in previous Bylaws. The estimated cost for the trunk sewers was \$630,000 in 1992. The work is complete.

Analysis of Long Term Capital and Operating Costs:

The trunk sewers will be paid for through development charges. Developers will be responsible for services within the development and local servicing costs to connect to the nearest gravity sewer. Extra operating costs to the municipality will be offset by the increased number of serviced properties.

Costs:

Total cost:	\$688,000
Received or expected capital grants, subsidies or contributions:	\$0
Net cost:	\$688,000

Allocation of Costs

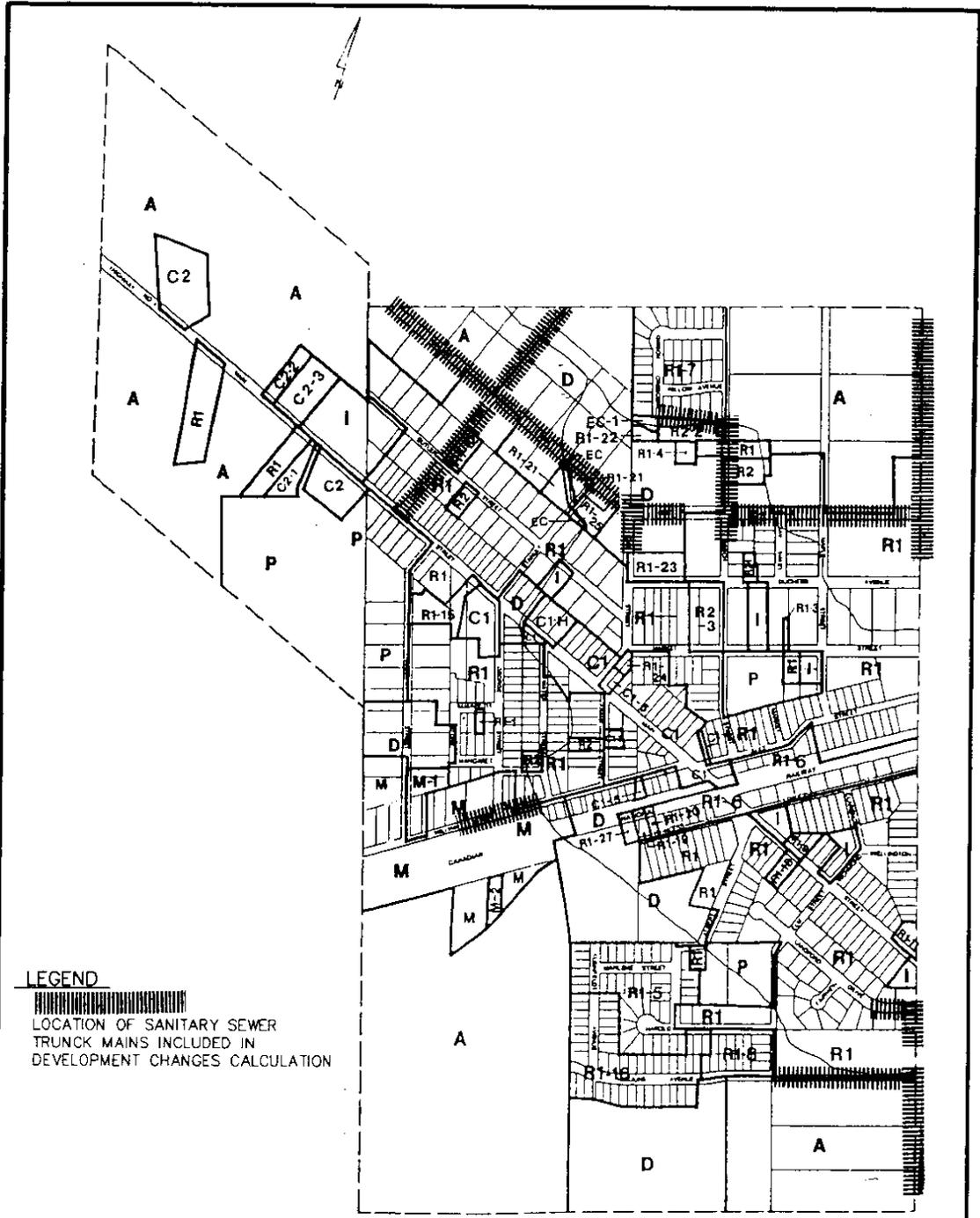
Benefit to Existing Development: This project provides a benefit only to future development. The unit potential of the land that will be provided with this service is 700 units. Based on an average 2.7 persons per new unit of development, this will service an additional 1890 persons beyond the 1992 estimated population of 1,850 persons.

Residential/ Non-Residential Cost Allocation: The residential/non-residential allocation of this service has been proportioned based on the development forecast in Appendix A. The ratio is 94% / 6%, residential/ non-residential.
The residential share = \$688,000 x 94% = \$646,720.

Development Charge Calculation

Residential: The residential development charge = \$646,720 divided by the ultimate serviced growth of 1,850 persons = \$349.58 per person.

Non-residential: n/a



B.M.ROSS AND ASSOCIATES LIMITED
 CONSULTING ENGINEERS
 GODERICH AND MOUNT FOREST

DATE: JUNE 22, 1988
 DRAWN: G.D.H.
 CHECKED: M.J.P.

SCALE: N.T.S.

SOURCE: 1982 G.N. WATSON REPORT



TWP. OF LUCAN BIDDULPH

ILLUSTRATIVE MAP SHOWING LOCATION OF
 PROPOSED SANITARY SEWER TRUNK MAINS

FILE No.
 98126

DWG No.
 B-1

ANALYSIS OF GROWTH RELATED CAPITAL COSTS

SERVICE CATEGORY: **Sanitary Sewage Service** SERVICE COMPONENT: **Sewage Treatment & Collection - Granton**

Details of Service

Description:

The Township of Lucan-Biddulph constructed a communal sewage disposal system in the Granton Area in the late-1990's/early-2000's. The plant became operational in 2001. The project included the construction of a new treatment plant, pumping station, and collection system. The facility was designed for a capacity of 600 person equivalents based on 450 litres per capital per day.

The sanitary trunk sewers constructed as part of the project are required to service existing and future development within the defined service area. Developers proposing projects outside of the service area will be responsible for constructing sewer facilities within their development areas and delivering the sewage to the nearest gravity sewer.

Analysis of Long Term Capital and Operating Costs:

The sewer facilities were paid by the existing property owners through capital rate charges under the Municipal Act. New development will pay for the facilities through development charges. Operating and maintenance costs for sewer facilities are paid by the users.

Based on the growth forecast for Granton and the surplus capacity available at the treatment facility, it will be over 25 years before an expansion is required. Future expansion will be subject to changes in the rate of growth or changes in per capital flows.

Costs:

Total Cost:	\$2,528,466
Received or expected capital grants, subsidies or contributions:	\$853,476
Net cost:	\$1,674,990
Less Collection Cost:	\$1,126,342
Net Chargeable Cost:	\$548,648

Allocation of Costs

Benefit to Existing Development:	This project benefitted existing and future development equally on a per capita basis. Based on 600 persons equivalents of capacity, the cost per person equivalent is \$914.41.
Residential/ Non-Residential Cost Allocation:	Capacity at the facility will be allocated as development occurs. This is no predetermined residential or non-residential share. Capacity is expressed as person equivalents, which includes all users. The non-residential cost allocation is based on the current assessment split for Granton of 92% residential/8% non-residential.

Development Charge Calculation

Residential:	The residential development charge = $\$914.41 \times 92\% = \841.26 per person.
Non-residential:	n/a

ANALYSIS OF GROWTH RELATED CAPITAL COSTS

SERVICE CATEGORY: **Water Services**

SERVICE COMPONENT: **Water Supply - Lucan**

Details of Service

Description:

Lucan constructed new water supply facilities in the early 1990's. This project included a watermain from the Lake Huron supply pipeline, a booster pumping station, and an elevated storage tank. The system was designed to accommodate a population of 6,000 person equivalents based on 450 litres per capita per day.

The average per capita flow from the system, based on a 4 year monitoring period, is 298 litres per person per day. Lucan set a new standard for water supply capacity, based on this data, of 350 litres per person per day. Based on this standard, the system has an effective capacity of 7,700 person equivalents.

Analysis of Long Term Capital and Operating Costs:

This facility was paid for by the existing property owners through capital rate charges under the Municipal Act. There is a 10 year debenture of \$170,000 which expired in 2002. This project was included in previous Development Charges Bylaws, as Council intended to recover the cost of surplus capacity from future development. Operating costs of the facility are paid by the users.

Based on the growth forecast for Lucan and the surplus capacity available in the system, it will be many years before an expansion is required. This is subject to changes in the rate of growth or changes in per capita flows.

Costs:

Total cost:	\$3,969,250
Received or expected capital grants, subsidies or contributions:	\$3,160,715
Net cost:	\$808,535

Allocation of Costs

Benefit to Existing Development: This project benefitted existing and future development equally on a per capita basis. Based on 7,700 person equivalents of capacity, the cost per person equivalent is \$105.

Residential./ Non-Residential Cost Allocation: Capacity at the facility will be allocated as development occurs. There is no predetermined residential or non-residential share. Capacity is expressed as person equivalents, which includes all uses. The non-residential cost allocation is based on the current assessment split for Lucan of 94% residential/6% non-residential.

Development Charge Calculation

Residential: The residential development charge = \$105 x 94% = \$98.70.

Non-residential: n/a

ANALYSIS OF GROWTH RELATED CAPITAL COSTS

SERVICE CATEGORY: **Water Service**

SERVICE COMPONENT: **Watermains - Lucan**

Details of Service

Description:

The requirements for trunk watermains to complete development in all undeveloped/unserved areas of the former Village of Lucan (excluding the western area) were reviewed in 1992 as part of the previous Policy Report. The need for a watermain loop upgrade to equalize pressures and provide adequate fire flows was identified.

This service was included in the previous Bylaw. The estimated cost for the trunk sewers was \$1,300,000 in 1992. Most of the watermain has been installed with the exception of two sections, Walnut St., Stanley to Chesnut, value \$102,000 and Saintsbury Line, Duchess to Wellington, value \$135,000. A revised cost estimate was prepared for the 2004 Report, taking into account the watermain that had been constructed and inflation since 1992, was \$1,425,000. This number will be continue to be carried forward for this calculation.

Analysis of Long Term Capital and Operating Costs:

The watermain loop will serve all the former Village population, both existing and future. Costs will be paid for through development charges and through the general tax base and water service rate charges. Operating costs will be minimal.

Costs:

Total cost:	\$1,425,000
Received or expected capital grants, subsidies or contributions:	\$0
Net cost:	\$1,425,000

Allocation of Costs

Benefit to Existing Development: This project provides a benefit to existing and future development. The projected ultimate population of the former Village area is approximately 4,000 persons.

Residential/
Non-Residential Cost Allocation: The residential/non-residential cost allocation is based on the current assessment split for Lucan of 94% residential/6% non-residential.
The residential share = \$1,425,000 x 94% = \$1,339,500.
The non-residential share = \$1,425,000 x 6% = \$85,500.

Development Charge Calculation

Residential: The residential development charge = \$1,339,500 divided by the ultimate serviced population of 4,000 persons = \$334.88 per person.

Non-residential: n/a

ANALYSIS OF GROWTH RELATED CAPITAL COSTS

SERVICE CATEGORY: **Water Service**

SERVICE COMPONENT: **Water Modelling Study - Lucan**

Details of Service

Description:

A Water Modelling Study of the Lucan system is required in order to project supply and water main requirements for future growth. The estimated cost is \$50,000.

Analysis of Long Term Capital and Operating Costs:

n/a

Costs:

Total cost:	\$ 50,000
Received or expected capital grants, subsidies or contributions:	\$0
Net cost:	\$50,000

Allocation of Costs

Benefit to Existing Development:

This project only benefits future development. The study should be assessed against the projected ultimate population of the former Village area, 4000 persons, less the current population of 2220 persons = 1,780 persons.

Residential/ Non-Residential Cost Allocation:

The residential/non-residential cost allocation is based on the current assessment split for Lucan of 94% residential/6% non-residential.
The residential share = \$50,000 x 94% = \$47,000.
The non-residential share = \$50,000 x 6% = \$ 3,000.

Development Charge Calculation

Residential: The residential development charge = \$ 47,000 divided by 1,780 persons
= \$26.40 per person.

Non-residential: n/a

ANALYSIS OF GROWTH RELATED CAPITAL COSTS

SERVICE CATEGORY: **Water Service**

SERVICE COMPONENT: **Water Supply - Granton**

Details of Service

Description:

The Township of Lucan-Biddulph has constructed new water supply facilities in the Granton Urban Area. This project involved the construction of a transmission watermain from Lucan. The system is designed to accommodate a population of 600 person equivalents based on 450 litres per capita per day.

Analysis of Long Term Capital and Operating Costs:

The proposed facility will be paid for by the existing property owners through capital rate charges under the Municipal Act. Project financing will be managed by the Township through a debenture. New development will pay for the proposed facilities through development charges. Operating and maintenance costs of the facility will be paid by the users.

Based on the growth forecast for Granton and the surplus capacity available in the system, it will be many years before an expansion is required. Future expansion will be subject to changes in the rate of growth or changes in per capita flows.

Costs:

Total cost:	\$879,661.22
Received or expected capital grants, subsidies or contributions:	\$586,440.81
Net cost:	\$293,220.41

Allocation of Costs

Benefit to Existing Development: This project will benefit existing and future development equally on a per capita basis. Based on 600 person equivalents of capacity, the cost per person equivalent is \$488.70.

Residential/ Non-Residential Cost Allocation: Capacity at the facility will be allocated as development occurs. There is no predetermined residential or non-residential share. Capacity is expressed as person equivalents, which includes all uses. The non-residential cost allocation is based on the current assessment split for Granton of 92% residential/8% non-residential.

Development Charge Calculation

Residential: The residential development charge = $488.70 \times 92\% = 448.96$

Non-residential: n/a

ANALYSIS OF GROWTH RELATED CAPITAL COSTS

SERVICE CATEGORY: **Transportation**

SERVICE COMPONENT: **Roads, Bridges & Sidewalks**

Details of Service

Description:

The projected road, bridge and sidewalk requirements to complete development of all vacant lands within the former Village area (with the exception of the western area) is set out in Table B-1. The information was originally presented in the 1992 Background Study, with the addition of Walnut Street to the 2005 Report. All of the work has been completed with the exception of Community Drive (formerly Queen St.) and Walnut St. Updated costs have been added to these sections. Additionally two new sidewalk projects have been identified and proposed traffic signals at Saintsbury Line and Richmond Street. These have been added to Table B-1.

The works included in Table B-1 provide for a full build out of residential lands within the former Village area (with the exception of the western area). There is a potential for 700 new units of development or 1,890 persons based on an average of 2.7 persons per unit.

Analysis of Long Term Capital and Operating Costs:

A proportion of the cost of the road projects have been allocated to existing development depending on the type of project, need, proximity to growth areas, function of the road as a link to development areas, etc. The cost of this portion will be paid for through the tax base of the municipality. The expected additional residential units will add to the tax base which will also fund long term maintenance and operation.

Costs:

Total cost:	\$2,320,500
Received or expected capital grants, subsidies or contributions:	\$0
Net cost:	\$2,320,500

Allocation of Costs

Benefit to Existing Development: This project provides a benefit to existing and future development, as set out in Table B-1. The new costs to future development after considering the benefit to existing development is \$1,487,100.

Residential/ Non-Residential Cost Allocation: The residential/non-residential allocation of this service has been proportioned based on the projected use of the lands being serviced. This assumption was used in previous Background Reports and is considered valid, based on a review of planning documents. The ratio is 95% / 5% residential/ non-residential.

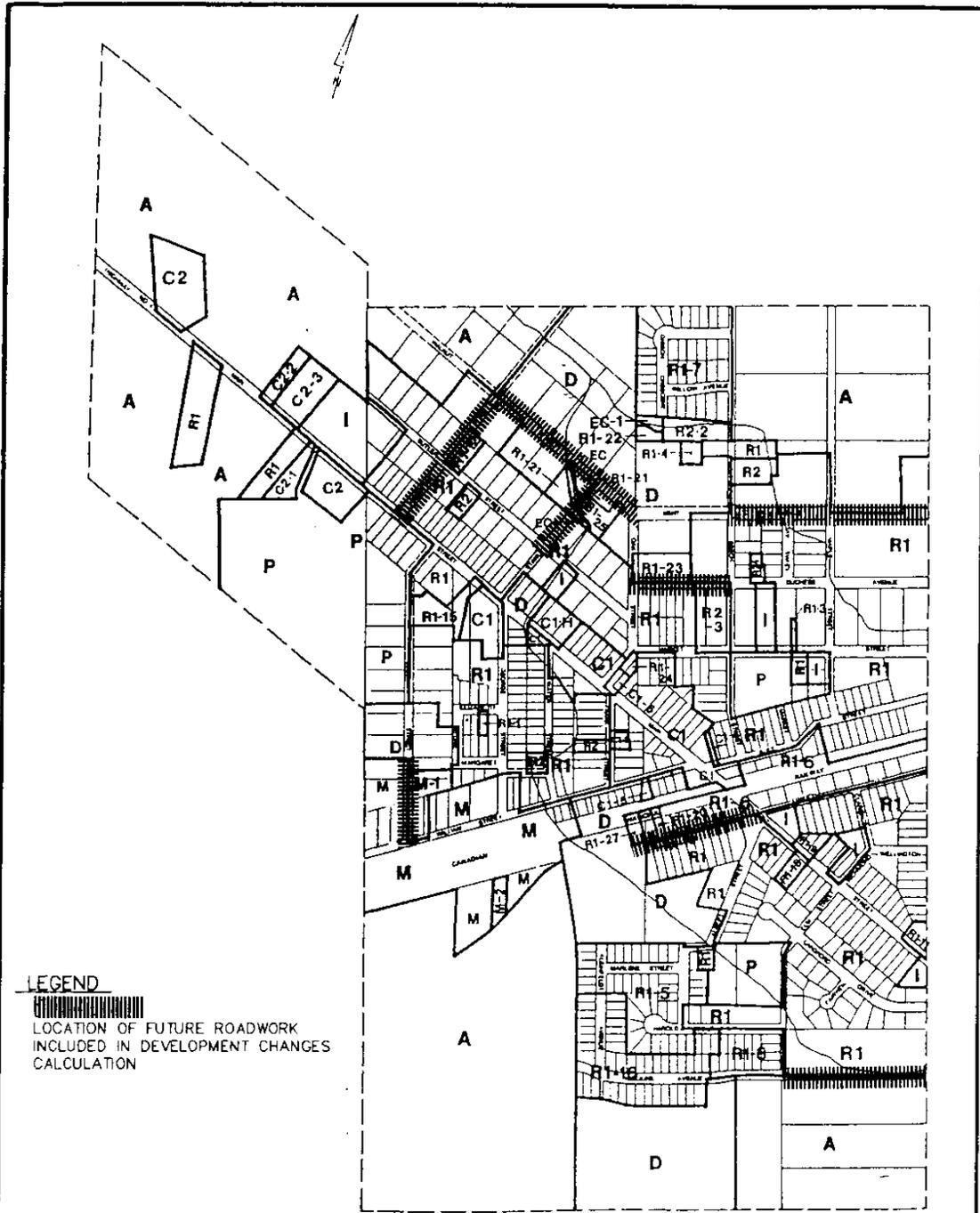
Development Charge Calculation

Residential: Residential share is 95% of \$1,487,100 = \$1,412,745. Based on a serviced population of 1,890 persons, the cost per person = \$747.48.

Non-residential: n/a

Table B-1
Former Village of Lucan
Projected Future Growth Related Road, Bridge and Sidewalk Requirements

Street	From	To	Estimated Construction Costs	Benefit Allocation			
				Existing Development		Future Development	
				%	\$	%	\$
Nicoline	Elm	Fourth	\$255,000	10	\$25,500	90	\$229,500
Princess	W. Limit	Albert	\$170,000	10	\$17,000	90	\$153,000
Kent	Beech	Fourth	\$295,000	50	\$147,500	50	\$147,500
Duchess	Oak	Beech	\$255,000	50	\$127,500	50	\$127,500
Stanley	Butler	Walnut	\$185,000	50	\$92,500	50	\$92,500
Chesnut	Main	Walnut	\$235,000	50	\$117,500	50	\$117,500
Community Drive	William	S. Limit	\$ 84,000	10	\$ 8,400	90	\$ 75,600
Walnut	Chesnut	Stanley	\$394,000	50	\$197,000	50	\$197,000
SW – Saintsbury Line North			\$139,500	0	0	100	\$139,000
SW - Richmond	East of Saintsbury Line		\$108,000	0	0	100	\$108,000
Traffic signals – Richmond and Sainstbury			\$200,000	0	0	100	\$100,000
Totals			\$2,320,500		\$732,900		\$1,487,100



B.M.ROSS AND ASSOCIATES LIMITED
 CONSULTING ENGINEERS
 GODERICH AND MOUNT FOREST



TWP. OF LUCAN BIDDULPH

FILE No.

98126

ILLUSTRATIVE MAP SHOWING LOCATION
 OF FUTURE ROADWORK

DWG No.

B-2

DATE	DRWN - G.O.H.	SCALE
JUNE 22, 1998	CHRD - M.J.P.	N.T.S.

ANALYSIS OF GROWTH RELATED CAPITAL COSTS

SERVICE CATEGORY: **Transportation**

SERVICE COMPONENT: **Public Works Facility**

Details of Service

Description:

The existing Public Works garage and shop is inadequate for the proper operation of the department, with working equivalent of 3.5 bays. There is a need for additional work bays, vehicle and equipment storage. The proposed facility will have the equivalent of six bays at an estimated cost of \$1,000,000. Under the DCA, the quantity and quality levels of service should not exceed the past 10 year average service level. The average service level is 3.5 bays serving a population of 4,273 persons, which equates to 1 bay for every 1221 persons or 0.00082 bays/capita.

Analysis of Long Term Capital and Operating Costs:

A new facility may have added operating costs as it is larger, although new technology could reduce the impact of some of the costs (such as heating, maintenance).

Costs:

Total cost:	\$1,000,000
Received or expected capital grants, subsidies or contributions:	\$0
Net cost:	\$1,000,000

Allocation of Costs

Benefit to Existing Development:

Not applicable as costs are being determined based on providing the equivalent level of service that is standard in the municipality.

Residential/ Non-Residential Cost

The residential/non-residential allocation of this service has been proportioned based on the projected current assessment split. The ratio is 94% / 6% residential/non-residential. The allocation to residential = \$940,000. The cost per bay residential is \$156,667.

Development Charge Calculation

Residential:	The residential development charge is $\$156,667 \times 0.00082 \text{ bays/capita} = \$128.47 / \text{person}$.
Non-residential:	n/a

ANALYSIS OF GROWTH RELATED CAPITAL COSTS

SERVICE CATEGORY: **Sanitary Sewage Service** SERVICE COMPONENT: **Stormwater Management
- Lucan**

Details of Service

Description:

The Benn/Whitfield Drainage Area Master Drainage flow defines a plan with four regional stormwater management facilities. Three of these service lands within the former Village of Lucan. The Municipality plans to purchase lands for these facilities and have stormwater management ponds constructed by developers. The facilities will service both new and existing development. Two of these facilities have been constructed in the past 5 years,

Analysis of Long Term Capital and Operating Costs:

There is an operating cost for these facilities. They require maintenance to remove silt and sludge. This cost will have to be incorporated into the municipal public works budget.

Costs:

Total cost:	\$260,000
Received or expected capital grants, subsidies or contributions:	--
Net cost:	\$260,000

Allocation of Costs

Benefit to Existing Development:	The regional stormwater management facilities provide a benefit to both existing and future development in terms of flood control. There is a greater benefit to future development as regulations require stormwater management control. For purposes of this calculation, the benefit is allocated 25% existing, 75% future development. At the time of the 2004 DC Report the estimated population of the Lucan urban area was 2,150 persons and the build out population is estimated to be 4,000 persons. Therefore, the next 1,850 persons of development will contribute \$195,000 (75%) of the cost of the land.
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Residential/ Non-Residential Cost Allocation:	Based on a 94 / 6% residential/non-residential split the residential share = \$195,000 x 94% = \$183,300; the non-residential share = \$195,000 x 6% = \$16,700.
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Development Charge Calculation

Residential:	The residential development charge = \$183,300 divided by the estimated future growth of 1,850 persons = \$99.08 per person.
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Non-residential:	n/a
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ANALYSIS OF GROWTH RELATED CAPITAL COSTS

SERVICE CATEGORY: **Sanitary Sewage Service** SERVICE COMPONENT: **Stormwater Management Studies- Lucan**

Details of Service

Description:

Additional sub-watershed studies are required to identify stormwater management strategies for development areas. These are: the Haskett SWM Study at an estimated cost of \$50,000 with 80% of the cost attributed to new development, and the Hardy SWM Study at an estimated cost of \$50,000 with 50% of the cost attributed to new development.

Analysis of Long Term Capital and Operating Costs:

n/a

Costs:

Total cost:	\$100,000
Received or expected capital grants, subsidies or contributions:	--
Net cost:	\$100,000

Allocation of Costs

Benefit to Existing Development

The benefit to existing development is $\$50,000 \times 20\%$ and $\$50,000 \times 50\% = \$35,000$. The estimated population of the Lucan urban area is 2,220 persons and the build out population is estimated to be 4,000 persons. Therefore, the next 1,780 persons of development will contribute to the \$65,000 attributed to new development.

Residential/ Non-Residential Cost Allocation:

Based on a 94 / 6% residential/non-residential split
the residential share = $\$65,000 \times 94\% = \$61,100$;
the non-residential share = $\$65,000 \times 6\% = \$4,900$.

Development Charge Calculation

Residential: The residential development charge = $\$61,100$ divided by the estimated future growth of 1,780 persons = $\$34.27$ per person.

Non-residential: n/a

ANALYSIS OF GROWTH RELATED CAPITAL COSTS

SERVICE CATEGORY: **Fire**

SERVICE COMPONENT: **Fire Stations**

Details of Service

Description:

There are two fire stations in the municipality. The Lucan fire station, located at 216 Main Street, consists of 6 bays, 1 office and other facilities totalling approximately 2,000 square feet. The municipality also has a 51% ownership of the Granton station, which is approximately 2,500 square feet. An expansion of the existing Lucan fire station was undertaken in 2003. A 2000 square foot addition was added at a cost of \$300,000. Under the DCA, the quality and quantity levels of service should not exceed the past 10-year average service level. The average quantity level of service is calculated by dividing the square footage of the current facilities (2,000 sq. ft + 51% of 2,500 sq. ft = 3,275 sq.ft) by the average past ten year population (4100 persons) = 0.80 sq ft/capita. The average quality level of service is not easily quantifiable. It is assumed that any new facility will be built to community standards and to meet prescribed regulations.

The expansion of the fire station cost \$300,000, which equates to \$150 per square foot.

Analysis of Long Term Capital and Operating Costs:

The operating cost of the fire service, including maintenance of building, is funded through the general tax base. The expanded building should be capable of serving the needs of the municipality for many years.

Costs:

Total cost:	\$300,000
Received or expected capital grants, subsidies or contributions:	\$0
Net cost:	\$300,000

Allocation of Costs

Benefit to Existing Development:	Not applicable as the costs are being determined based on providing the equivalent level of service as is the standard in the Municipality at this time.
Residential/	The residential/non-residential cost of the works should be allocated based on current assessment, which 94%/6%. Therefore \$141.00 of the \$150.00 cost per square foot is used in the residential calculation.

Development Charge Calculation

Residential:	The residential development charge is based on the per person cost of \$141.00 x 0.80 sq. feet = \$112.80.
Non-residential:	n/a

ANALYSIS OF GROWTH RELATED CAPITAL COSTS

SERVICE CATEGORY: **Fire**

SERVICE COMPONENT: **Firefighter Outfitting**

Details of Service

Description:

This project was introduced in the 2004 Report and is being carried over for the next 5 yr period. In 2004 the Township had 25 part time firefighters in Lucan. And there were 24 firefighters in Granton (51% Lucan Biddulph). This equates to 37 firefighter equivalents for the municipality. Additional firefighters would be hired in response to growth. The cost to outfit an additional firefighter is \$3,000.

The 37 firefighters serve a 2004 population of 4,100 persons over the entire Municipality. This equates to a service level of 1 firefighter to every 110 persons. Over the next ten years the population is expected to increase by 510 persons, which would require 4.6 additional firefighters.

Analysis of Long Term Capital and Operating Costs:

N/A

Costs:

Total cost:	\$13,800
Received or expected capital grants, subsidies or contributions:	\$0
Net cost:	\$13,800

Allocation of Costs

Benefit to Existing Development: Not applicable as the costs are being determined based on providing the equivalent level of service as is the standard in the Municipality at this time.

Residential/
Non-Residential Cost Allocation: The residential/non-residential allocation of this service has been proportioned based on the relationship between the existing residential and non-residential municipal assessment, 94% / 6%.
The residential allocation is $\$13,800 \times 94\% = \$12,972.00$.
The non-residential allocation is $\$13,800 \times 6\% = \828.00

Development Charge Calculation

Residential: The residential development charge = $\$12,972$ divided by the expected population increase over 10 years, 510 persons = $\$25.44$

Non-residential: n/a

ANALYSIS OF GROWTH RELATED CAPITAL COSTS

SERVICE CATEGORY: **Parks and Recreation**

SERVICE COMPONENT: **Parkland Development**

Details of Service

Description:

This is a carryover project from the 2004 Report. There approximately 18 acres of parkland within the former area of Lucan. This equates to a standard of 0.0097 acres per person within the former Lucan area.

The Township anticipates equipping new parkland that is obtained through the development process (either land or cash in lieu). The cost to develop new parkland is approximately \$40,000 per acre based on experience in other Municipalities. New parkland would be developed as it is obtained through the development process (at a rate of approx. 0.003 acres per person, which is less than the existing standard).

Analysis of Long Term Capital and Operating Costs:

Operating costs for a new park will be paid out of the general tax base. The increase in the tax base from new development should offset any increase in operating cost.

Costs:

Total cost:	N/A
Received or expected capital grants, subsidies or contributions:	\$0
Net cost:	N/A

Allocation of Costs

Benefit to Existing Development: Not applicable as the costs are being determined based on providing the equivalent level of service as is the standard in the Municipality at this time.

Residential/
Non-Residential Cost Allocation: This service is primarily residential so no allocation has been assigned to non-residential growth.

Development Charge Calculation

Residential: The residential development charge is based on the per person cost of \$40,000 x 0.003 acres per person = \$120. There is a mandatory 10% reduction in the capital cost of this service, as per Section 5(1)(8) of the Development Charges Act 1997. Therefore, the residential charge for this service is \$108.00.

Non-residential: N/A

ANALYSIS OF GROWTH RELATED CAPITAL COSTS

SERVICE CATEGORY: **Parks and Recreation**

SERVICE COMPONENT: **Parkland Development - Granton & remainder of Township**

Details of Service

Description:

There is approximately 6 acres of parkland within that area of the township excluding Lucan. This equates to a standard of 0.003 acres per person within that area.

The Township anticipates equipping new parkland that is obtained through the development process (either land or cash in lieu). The cost to develop new parkland is approximately \$40,000 per acre based on experience in other Municipalities. New parkland would be developed as it is obtained through the development process (at a rate of approx. 0.003 acres per person).

Analysis of Long Term Capital and Operating Costs:

Operating costs for a new park will be paid out of the general tax base. The increase in the tax base from new development should offset any increase in operating cost.

Costs:

Total cost:	N/A
Received or expected capital grants, subsidies or contributions:	\$0
Net cost:	N/A

Allocation of Costs

Benefit to Existing Development: Not applicable as the costs are being determined based on providing the equivalent level of service as is the standard in the Municipality at this time.

Residential/ Non-Residential Cost Allocation: This service is primarily residential so no allocation has been assigned to non-residential growth.

Development Charge Calculation

Residential: The residential development charge is based on the per person cost of \$40,000 x 0.003 acres per person = \$120. There is a mandatory 10% reduction in the capital cost of this service, as per Section 5(1)(8) of the Development Charges Act 1997. Therefore, the residential charge for this service is \$108.00.

Non-residential: N/A

ANALYSIS OF GROWTH RELATED CAPITAL COSTS

SERVICE CATEGORY: **Administration & General** SERVICE COMPONENT: **Capital Growth Studies**

Details of Service

Description:

Studies related to capital growth.

Provision has been made for a Township cost of \$10,000 per annum based on past experience.

Analysis of Long Term Capital and Operating Costs:

N/A

Costs:

Total cost:	\$100,000	over 10 years
Received or expected capital grants, subsidies or contributions:	\$10,000	mandatory 10% reduction as per the Act
Net cost:	\$90,000	

Allocation of Costs

Benefit to Existing
Development: None

Residential/
Non-Residential Cost
Allocation: Based on existing assessment base of 94% residential vs. 6% non-residential. The residential allocation = \$90,000 x 94% = \$84,600. The non-residential allocation = \$90,000 x 6% = \$5,400.

Development Charge Calculation

Residential: The residential development charge = \$84,600 divided by the expected additional population (210 new units at 2.7 persons per unit) = \$149.21 per person.

Non-residential: n/a