THE CORPORATION OF THE CITY OF
ST. THOMAS

City of St. Thomas
Official Plan Amendment No. 66 to the City of St. Thomas Official Plan

APPENDIX XIII

Proposed Urban Area Expansion Municipal Finance Analysis – Stage 1 Dated October 2007 Prepared by Watson & Associates

Watson & Associates ECONOMISTS LTD.

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MEMORANDUM

To:	Ron Shishido	Fax	☐
From:	Andrew Grunda	Courier	☐
Date:	October 19, 2007	Mail	☐
Re:	City of St. Thomas - Proposed Urban Area Expansion - Stage I	e-mail	☒

The City of St. Thomas has initiated a number of background studies to assess the areas most suitable for expansion of the current urban area as designated by the City's Official Plan. The evaluation process consists of two stages; Stage I considers 6 separate development areas for possible expansion and the preliminary servicing requirements for each, Stage II narrows the development area options with a more detailed assessment being undertaken to determine the preferred expansion area(s). Watson & Associates Economists Ltd. has been retained by the City to review the financial components of the Stage I background studies for input into the decision making process. The Stage II analysis will consist of a detailed fiscal impact review of the short-listed development areas.

The background studies reviewed for input into our Stage I assessment include:

- "City of St. Thomas Urban Area Expansion – Stage I – Sanitary, September 11, 2007" prepared by Dillon Consulting
- "City of St. Thomas Proposed Urban Area Expansion Phase I – Water Servicing Analysis, September 2007" prepared by Earth Tech Canada Inc.
- "Urban Area Expansion Areas – Transportation Assessment, September 24, 2007" prepared by Paradigm Transportation Solutions Limited
- "City of St. Thomas – Urban Area Expansion – Preliminary Scoping – Public Transit, September 24, 2007" prepared by IBI Group

The City provided site characteristics and anticipated population for the 6 development area, which have been utilized by the respective consultants to identify servicing needs. This information was prepared by Lapointe Consulting and is used in our analysis to assess the Development Charge and the per capita lifecycle cost impacts for the proposed developments. Table 1 summarizes the anticipated size, dwelling units and population for each development area.

Table 1
Anticipated Residential Growth Forecast by Development Area

Development Area	Area (acres)	Dwelling Units	Population
1	624.7	2,236	5,345
2	582.2	1,974	4,717
3	199.0	1,194	2,853
4	304.2	1,826	4,363
5	288.6	1,730	4,135
6	5.5	31	74

To assess the financial impacts associated with potentially expanding the urban area into the 6 identified development areas our analysis considered four areas of measurement. These measurements consist of the following:

1. Gross capital costs of servicing (Table A-1)
2. Existing benefit costs of servicing (Table A-1)
3. Development charge impacts (Table A-1)
4. Per capita lifecycle cost impacts (Table A-2)

It should be noted, that in reviewing the background reports no additional servicing costs were identified for Development Area 6. Therefore, this development area has not been included in the assessment as there would appear to be no significant fiscal impacts associated with its development.

Gross Capital Costs of Servicing

The gross capital costs of providing services to the potential expansion areas are an important measurement of affordability. While the majority of these costs are growth-related and eligible for recovery from development, the magnitude of the costs may have a fiscal impact for the City relating to the requirements for interim financing. With hard services requiring construction prior to development, and assuming constant rates of development for all potential development areas, the areas with higher gross capital costs will place greater demands on interim financing sources (i.e. internal borrowing or debt) and thereby consume municipal financial resources that could be utilized for other purposes. These interim financing costs may be lessened with the participation in front-ending agreements by developers, whereby the developers would assume the cashflow impacts of new infrastructure, but for the purposes of this assessment it is assumed that the City would be required to interim finance the works.

Table 2 summarizes the gross capital costs for all services by development area and ranks the development areas from preferred (1) to least preferred (6) based on this measurement. Based on this measurement, Development Area 3 would be preferred and Development Area 1 would be least preferred.

Table 2
Gross Capital Costs of Servicing Ranking

Description	Gross Capital Cost ($)	Ranking
Development Area 1	18,162,004	5
Development Area 2	17,561,753	4
Development Area 3	8,745,145	1
Development Area 4	10,340,325	2
Development Area 5	13,355,336	3

Existing Benefit Costs of Servicing

As noted previously the majority of the capital costs identified for servicing will be borne by development however, some of the capital works identified in the background studies will also provide benefits to the existing community. As an example, in the Paradigm Study there are a number of road widening projects that have been identified; at the time of widening of these roads the existing surface will be replaced thereby extending the useful life of the existing road. If the City was not undertaking to widen the road to facilitate development, tax-based funding would have to provide for the eventual resurfacing of the road. Therefore as requirement of the Development Charges Act capital costs that would provide benefits to existing development can not be included in Development Charges and must therefore be deducted from the calculation and funded by some other source (i.e. taxes, user fees). Moreover, the Development Charges Act also requires that capital costs for transit services must be discounted by 10% before being included in the charge.

The existing benefit deductions have been estimated based on standard industry practices. Where industry information is not available a general recognition of costs has been identified. These costs will be reviewed in further detail in the Stage II fiscal impact assessment. The implication of this measurement is that areas with higher existing benefit components will require greater municipal financial resources. The development timing for these projects may also accelerate the initiation of asset replacement.

Table 3 summarizes the existing benefit costs for all services by development area and ranks the development areas from preferred (1) to least preferred (6) based on this measurement. Based on this measurement, Development Area 5 would be preferred and Development Area 2 would be least preferred.

Table 3
Existing Benefit Costs of Servicing Ranking

Description	Existing Benefit Cost($)	Ranking
Development Area 1	1,699,758	4
Development Area 2	2,419,555	5
Development Area 3	1,458,049	2
Development Area 4	1,565,750	3
Development Area 5	1,313,587	1

Development Charge Impacts

In addition to reviewing the municipal fiscal impacts, this measurement considers the impact of the growth-related servicing costs on development. This is measure is important because, all else being equal (i.e. land costs, construction costs, market prices, etc.), higher development charges could potentially impact pricing/developer margins negatively. If the higher development charges are transferred directly to housing prices this may have an impact on the competitiveness of the development and therefore the pace of growth. This measure calculates the preliminary area-specific development charges that would be levied on development in the respective development areas. This area-specific development charge approach is consistent with existing policies of the City. These calculations represent preliminary estimates and will be developed in greater detail with the identification of a preferred expansion area. Moreover, the subsequent analysis will also consider if there are any impacts on existing area-specific DC bylaws where works identified therein may provide benefits to the proposed expansion development area, as well as the benefits conferred upon non-residential development.

Table 4 summarizes that estimated development charge per dwelling unit by development area and ranks the development areas from preferred (1) to least preferred (6) based on this measurement.

Based on this measurement, Development Area 4 would be preferred and Development Area 2 would be least preferred.

Table 4
Development Charge Impacts Ranking

Description	Preliminary DC ($ per Dwelling Unit)	Ranking
Development Area 1	7,362	4
Development Area 2	7,671	5
Development Area 3	6,103	2
Development Area 4	5,325	1
Development Area 5	6,961	3

Per Capita Lifecycle Cost Impacts

The last measure considered in the Stage I review is the anticipated lifecycle costs of servicing. This measure identifies the annual costs associated with the lifecycle replacement of the assets identified in the various background studies. While the initial emplacement of these assets will be predominately paid for by development, once constructed these works will have to be maintained and ultimately replaced by other municipal financial sources (i.e. taxes, user fees). To accurately measure the lifecycle impacts, these costs have been identified on a per capita basis to acknowledge the differences in the funding base due to the size of development. The calculations are based on a sinking fund approach earning 2% net interest annually over the estimated useful life of the asset. Industry useful life estimates have been applied for calculation purposes. Based on this measure development areas with higher lifecycle costs will impose greater financial demands on municipal sources than areas with lower lifecycle costs.

Table 5 summarizes that estimated per capita lifecycle cost impacts by development area and ranks the development areas from preferred (1) to least preferred (6) based on this measurement. Based on this measurement, Development Area 4 would be preferred and Development Area 2 would be least preferred.

Table 5
Per Capita Lifecycle Cost Impacts Ranking

Description	Annual Per Capita Lifecycle Costs ($)	Ranking
Development Area 1	87	2
Development Area 2	113	5
Development Area 3	104	4
Development Area 4	80	1
Development Area 5	92	3

Summary

Table 6 combines the above referenced measures and averages the rankings to provide an overall indication as to the preferred development area. Based on the cumulative results of the four measures considered, Development Area 4 and Development Area 3 would be the two most preferable areas for expansion of the urban area. Development Area 2 would be the least preferable.

Table 6
Summary of Financial Measures Ranking

Description	Gross Capital Cost ($)	Existing Benefit Cost($)	Preliminary DC ($ per Dwelling Unit)	Annual Per Capita Lifecycle Costs ($)	Overall Average Ranking
Development Costs					
Development Area 1	18,162,004	1,699,758	7,362	87	
Development Area 2	17,561,753	2,419,555	7,671	113	
Development Area 3	8,745,145	1,458,049	6,103	104	
Development Area 4	10,340,325	1,565,750	5,325	80	
Development Area 5	13,355,336	1,313,587	6,961	92	
Ranking					
Development Area 1	5	4	4	2	3.75
Development Area 2	4	5	5	5	4.75
Development Area 3	1	2	2	4	2.25
Development Area 4	2	3	1	1	1.75
Development Area 5	3	1	3	3	2.50

We trust that the foregoing is satisfactory for your purposes. We would be pleased to provide any additional information or answer any questions you may have on this matter.

Yours very truly,

WATSON & ASSOCIATES ECONOMISTS LTD.

Andrew Grunda, MBA, CMA
Associate Director

Table A-1 - Summary of Financial Calculations

Description	Gross Capital Cost ($)	Less: Existing Benefit($)	Net Capital Cost ($)	Preliminary DC per Dwelling Unit
Development Area 1				
Sanitary Sewer				
- Construction of new 450mm diameter trunk sanitary sewer (approx. 1700m)	620,000	-	620,000	
- Construction of 2 new PS (design flow of 350 l/s)	2,000,000	-	2,000,000	
- Upgrades to PS 6 (Walnut Street P.S.) (including new forcemain)	750,000	75,000	675,000	
Sanitary Sewer - Subtotal	***3,370,000***	***75,000***	***3,295,000***	***1,474***
Water				
- W1a 200mm watermain (1,730m)	1,518,075	-	1,518,075	
- W1a 200mm watermain creek crossing (1,770m)	3,106,350	-	3,106,350	
- Albert Robert Booster Station Upgrades (5,345/21,413)	272,579	27,258	245,321	
Water - Subtotal	***4,897,004***	***27,258***	***4,869,746***	***2,178***
Roads				
- Major Line - New 2 Lane Road (West Limits Area 1Sunset Road)	1,700,000	-	1,700,000	
- Major Line - Reconstruct 2 Lane Road (Sunset RoadFord Road)	3,000,000	750,000	2,250,000	
- Ford Road - Reconstruct 2 Lane Road (Major LineWellington Road)	800,000	200,000	600,000	
- Talbot Street - Widen - 2 to 4 Lanes (Stanley StreetFlora Street)	2,480,000	372,000	2,108,000	
- Wellington Road - Widen - 2 to 4 Lanes (Ford RoadHwy 3)	1,680,000	252,000	1,428,000	
Roads - Subtotal	***9,660,000***	***1,574,000***	***8,086,000***	***3,616***
Transit				
- One additional bus ($90,000-$380,000)	235,000	23,500	211,500	
Transit - Subtotal	***235,000***	***23,500***	***211,500***	***95***
TOTAL - DEVELOPMENT AREA 1	**18,162,004**	**1,699,758**	**16,462,246**	**7,362**
Development Area 2				
Sanitary Sewer				
- Construction of new 450mm diameter trunk sanitary sewer (approx. 500m)	150,000	-	150,000	
- Construction of new 525mm diameter trunk sanitary sewer (approx. 500m)	175,000	-	175,000	
- Construction of new PS (design flow of 320 l/s)	1,000,000	-	1,000,000	
Sanitary Sewer - Subtotal	***1,325,000***	***-***	***1,325,000***	***671***
Water				
- W2a 200mm watermain (2,950m)	2,588,625	-	2,588,625	
- W2b 200mm watermain creek crossing (765m)	1,342,575	-	1,342,575	
- Albert Robert Booster Station Upgrades (4,717/21,413)	240,553	24,055	216,498	
Water - Subtotal	***4,171,753***	***24,055***	***4,147,698***	***2,101***
Roads				
- Wellington Street - Widen - 2 to 4 Lanes (Stanley StreetFifth Avenue)	3,000,000	450,000	2,550,000	
- Wellington Street - Reconstruct 2 Lane Road (Manor RoadHighview Dr.)	450,000	112,500	337,500	
- Wellington Street - New 2 Lane Road (Extension to Centennial Ave.)	150,000	-	150,000	
- Talbot Street - Widen - 2 to 4 Lanes (Stanley StreetFlora Street)	2,480,000	372,000	2,108,000	
- Bush Line - Reconstruct 2 Lane Road (Rieger RoadSunset Road)	5,750,000	1,437,500	4,312,500	
Roads - Subtotal	***11,830,000***	***2,372,000***	***9,458,000***	***4,791***
Transit				
- One additional bus ($90,000-$380,000)	235,000	23,500	211,500	
Transit - Subtotal	***235,000***	***23,500***	***211,500***	***107***
TOTAL - DEVELOPMENT AREA 2	**17,561,753**	**2,419,555**	**15,142,198**	**7,671**
Development Area 3				
Sanitary Sewer				
- Upgrades required to PS 7 (Axford Parkway P.S.)	100,000	10,000	90,000	
Sanitary Sewer - Subtotal	***100,000***	***10,000***	***90,000***	***75***
Water				
- W3 150mm watermain (1,970m)	1,664,650	-	1,664,650	
- Albert Robert Booster Station Upgrades (2,853/21,413)	145,495	14,549	130,945	
Water - Subtotal	***1,810,145***	***14,549***	***1,795,595***	***1,504***
Roads				
- Southdale Line - Reconstruct 2 Lane Road (Sunset DriveFairview Road)	4,200,000	1,050,000	3,150,000	
- Fairview Avenue - Widen - 2 to 4 Lanes (Southdale LineElm Street)	2,400,000	360,000	2,040,000	
Roads - Subtotal	***6,600,000***	***1,410,000***	***5,190,000***	***4,347***
Transit				
- One additional bus ($90,000-$380,000)	235,000	23,500	211,500	
Transit - Subtotal	***235,000***	***23,500***	***211,500***	***177***
TOTAL - DEVELOPMENT AREA 3	**8,745,145**	**1,458,049**	**7,287,095**	**6,103**

Description	Gross Capital Cost ($)	Less: Existing Benefit($)	Net Capital Cost ($)	Preliminary DC per Dwelling Unit
Development Area 4				
Sanitary Sewer				
- Upgrades required to PS 7 (Axford Parkway P.S.)	100,000	10,000	90,000	
- New PS located at Elm St.	150,000	-	150,000	
- New 150mm forcemain along Elm St. to Rhonda Crt. (approx. 1200m)	240,000	-	240,000	
Sanitary Sewer - Subtotal	***490,000***	***10,000***	***480,000***	***263***
Water				
- W4 150mm watermain (1,885m)	1,592,825	-	1,592,825	
- Albert Robert Booster Station Upgrades (4,363/21,413)	222,500	22,250	200,250	
Water - Subtotal	***1,815,325***	***22,250***	***1,793,075***	***1,502***
Roads				
- Fairview Avenue - Widen - 2 to 4 Lanes (Southdale LineElm Street)	2,400,000	360,000	2,040,000	
- Elm Street - Widen - 2 to 4 Lanes (Manor RoadCentennial Avenue)	2,000,000	300,000	1,700,000	
- Centennial Avenue - Reconstruct 2 Lane Road (Elm StreetTalbot Street)	3,400,000	850,000	2,550,000	
Roads - Subtotal	***7,800,000***	***1,510,000***	***6,290,000***	***3,445***
Transit				
- One additional bus ($90,000-$380,000)	235,000	23,500	211,500	
Transit - Subtotal	***235,000***	***23,500***	***211,500***	***116***
TOTAL - DEVELOPMENT AREA 4	**10,340,325**	**1,565,750**	**8,774,575**	**5,325**
Development Area 5				
Sanitary Sewer				
- Upgrades required to PS 1 (Burwell Road P.S.) (incl. 3000m of 250mm forcemain)	1,000,000	100,000	900,000	
- Extention of Dennis Road trunk sewer (350m of 375mm)	225,000	-	225,000	
- Extention of Edgeware Road trunk sewer (750m of 375mm)	105,000	-	105,000	
- Upgrades required to PS 8 (Harper Road P.S.)	250,000	25,000	225,000	
- Upgrades required to trunk sewer 9 (approx. 1800m)	540,000	54,000	486,000	
Sanitary Sewer - Subtotal	***2,120,000***	***179,000***	***1,941,000***	***1,122***
Water				
- W5b 200mm watermain (1,230m)	1,079,325	-	1,079,325	
- W5a 300mm watermain (1,615m)	1,522,138	-	1,522,138	
- Albert Robert Booster Station Upgrades (4,135/21,413)	210,873	21,087	189,786	
Water - Subtotal	***2,812,336***	***21,087***	***2,791,249***	***1,613***
Roads				
- Burwell Road - Widen - 2 to 4 Lanes (South Edgware Road Talbot Street)	3,100,000	465,000	2,635,000	
- Burwell Road - New 4 Lane Bridge (Widen Hwy 3 Overpass)	2,400,000	-	2,400,000	
- Edgeware Line - Reconstruct 2 Lane Road (Highbury AvenueEast Limits Area 5)	2,500,000	625,000	1,875,000	
- South Boundary Road - New Road (Centennial Avenue East Limits Area 5)	188,000	-	188,000	
Roads - Subtotal	***8,188,000***	***1,090,000***	***7,098,000***	***4,103***
Transit				
- One additional bus ($90,000-$380,000)	235,000	23,500	211,500	
Transit - Subtotal	***235,000***	***23,500***	***211,500***	***122***
TOTAL - DEVELOPMENT AREA 5	**13,355,336**	**1,313,587**	**12,041,749**	**6,961**

Existing Benefit Deductions calcuated based on the following assumptions:
- Sanitary sewer PS and trunk sewer upgrades assumed to predominatley benefit growth with 10% benefit to existing
- Water booster station upgrades assumed to predominatley benefit growth with 10% benefit to existing
- Road widening projects 15% existing benefit to reflect cost of resurfacing the existing roadway
- Road reconstruction projects 25% existing benefit to reflect cost of increasing existing asset service life
- Transit services 10% statutory deduction under the Development Charges Act

Development Charge calculations based on the following dwelling unit assumptions:
- Development Area 1 - 2,236
- Development Area 2 - 1,974
- Development Area 3 - 1,194
- Development Area 4 - 1,826
- Development Area 5 - 1,730

Table A-2 - Summary of Lifecycle Financial Calculations

Description	Gross Capital Cost ($)	Estimated Useful Life (yrs.)	Lifecycle Sinking Fund Factor	Annual Lifecycle Costs	Annual Per Capita Lifecycle Costs
Development Area 1					
Sanitary Sewer					
- Construction of new 450mm diameter trunk sanitary sewer (approx. 1700m)	620,000	80	0.00516	3,200	
- Construction of 2 new PS (design flow of 350 l/s)	2,000,000	60	0.00877	17,536	
- Upgrades to PS 6 (Walnut Street P.S.) (including new forcemain)	750,000	60	0.00877	6,576	
Sanitary Sewer - Subtotal	***3,370,000***			***27,312***	
Water					
- W1a 200mm watermain (1,730m)	1,518,075	80	0.00516	7,834	
- W1a 200mm watermain creek crossing (1,770m)	3,106,350	80	0.00516	16,031	
- Albert Robert Booster Station Upgrades (5,345/21,413)	272,579	60	0.00877	2,390	
Water - Subtotal	***4,897,004***			***26,255***	
Roads					
- Major Line - New 2 Lane Road (West Limits Area 1Sunset Road)	1,700,000	20	0.04116	69,966	
- Major Line - Reconstruct 2 Lane Road (Sunset RoadFord Road)	3,000,000	20	0.04116	123,470	
- Ford Road - Reconstruct 2 Lane Road (Major LineWellington Road)	800,000	20	0.04116	32,925	
- Talbot Street - Widen - 2 to 4 Lanes (Stanley StreetFlora Street)	2,480,000	20	0.04116	102,069	
- Wellington Road - Widen - 2 to 4 Lanes (Ford RoadHwy 3)	1,680,000	20	0.04116	69,143	
Roads - Subtotal	***9,660,000***			***397,574***	
Transit					
- One additional bus ($90,000-$380,000)	235,000	15	0.05783	13,589	
Transit - Subtotal	***235,000***			***13,589***	
TOTAL - DEVELOPMENT AREA 1	**18,162,004**			**464,730**	**87**
Development Area 2					
Sanitary Sewer					
- Construction of new 450mm diameter trunk sanitary sewer (approx. 500m)	150,000	80	0.00516	774	
- Construction of new 525mm diameter trunk sanitary sewer (approx. 500m)	175,000	80	0.00516	903	
- Construction of new PS (design flow of 320 l/s)	1,000,000	60	0.00877	8,768	
Sanitary Sewer - Subtotal	***1,325,000***			***10,445***	
Water					
- W2a 200mm watermain (2,950m)	2,588,625	80	0.00516	13,359	
- W2b 200mm watermain creek crossing (765m)	1,342,575	80	0.00516	6,929	
- Albert Robert Booster Station Upgrades (4,717/21,413)	240,553	60	0.00877	2,109	
Water - Subtotal	***4,171,753***			***22,397***	
Roads					
- Wellington Street - Widen - 2 to 4 Lanes (Stanley StreetFifth Avenue)	3,000,000	20	0.04116	123,470	
- Wellington Street - Reconstruct 2 Lane Road (Manor RoadHighview Dr.)	450,000	20	0.04116	18,521	
- Wellington Street - New 2 Lane Road (Extension to Centennial Ave.)	150,000	20	0.04116	6,174	
- Talbot Street - Widen - 2 to 4 Lanes (Stanley StreetFlora Street)	2,480,000	20	0.04116	102,069	
- Bush Line - Reconstruct 2 Lane Road (Rieger RoadSunset Road)	5,750,000	20	0.04116	236,651	
Roads - Subtotal	***11,830,000***			***486,884***	
Transit					
- One additional bus ($90,000-$380,000)	235,000	15	0.05783	13,589	
Transit - Subtotal	***235,000***			***13,589***	
TOTAL - DEVELOPMENT AREA 2	**17,561,753**			**533,315**	**113**
Development Area 3					
Sanitary Sewer					
- Upgrades required to PS 7 (Axford Parkway P.S.)	100,000	60	0.00877	877	
Sanitary Sewer - Subtotal	***100,000***			***877***	
Water					
- W3 150mm watermain (1,970m)	1,664,650	80	0.00516	8,591	
- Albert Robert Booster Station Upgrades (2,853/21,413)	145,495	60	0.00877	1,276	
Water - Subtotal	***1,810,145***			***9,866***	
Roads					
- Southdale Line - Reconstruct 2 Lane Road (Sunset DriveFairview Road)	4,200,000	20	0.04116	172,858	
- Fairview Avenue - Widen - 2 to 4 Lanes (Southdale LineElm Street)	2,400,000	20	0.04116	98,776	
Roads - Subtotal	***6,600,000***			***271,634***	
Transit					
- One additional bus ($90,000-$380,000)	235,000	15	0.05783	13,589	
Transit - Subtotal	***235,000***			***13,589***	
TOTAL - DEVELOPMENT AREA 3	**8,745,145**			**295,967**	**104**

Description	Gross Capital Cost ($)	Estimated Useful Life (yrs.)	Lifecycle Sinking Fund Factor	Annual Lifecycle Costs	Annual Per Capita Lifecycle Costs
Development Area 4					
Sanitary Sewer					
- Upgrades required to PS 7 (Axford Parkway P.S.)	100,000	60	0.00877	877	
- New PS located at Elm St.	150,000	60	0.00877	1,315	
- New 150mm forcemain along Elm St. to Rhonda Crt. (approx. 1200m)	240,000	80	0.00516	1,239	
Sanitary Sewer - Subtotal	***490,000***			***3,431***	
Water					
- W4 150mm watermain (1,885m)	1,592,825	80	0.00516	8,220	
- Albert Robert Booster Station Upgrades (4,363/21,413)	222,500	60	0.00877	1,951	
Water - Subtotal	***1,815,325***			***10,171***	
Roads					
- Fairview Avenue - Widen - 2 to 4 Lanes (Southdale LineElm Street)	2,400,000	20	0.04116	98,776	
- Elm Street - Widen - 2 to 4 Lanes (Manor RoadCentennial Avenue)	2,000,000	20	0.04116	82,313	
- Centennial Avenue - Reconstruct 2 Lane Road (Elm StreetTalbot Street)	3,400,000	20	0.04116	139,933	
Roads - Subtotal	***7,800,000***			***321,022***	
Transit					
- One additional bus ($90,000-$380,000)	235,000	15	0.05783	13,589	
Transit - Subtotal	***235,000***			***13,589***	
TOTAL - DEVELOPMENT AREA 4	10,340,325			348,213	80
Development Area 5					
Sanitary Sewer					
- Upgrades required to PS 1 (Burwell Road P.S.) (incl. 3000m of 250mm forcemain)	1,000,000	60	0.00877	8,768	
- Extention of Dennis Road trunk sewer (350m of 375mm)	225,000	80	0.00516	1,161	
- Extention of Edgeware Road trunk sewer (750m of 375mm)	105,000	80	0.00516	542	
- Upgrades required to PS 8 (Harper Road P.S.)	250,000	60	0.00877	2,192	
- Upgrades required to trunk sewer 9 (approx. 1800m)	540,000	80	0.00516	2,787	
Sanitary Sewer - Subtotal	***2,120,000***			***15,450***	
Water					
- W5b 200mm watermain (1,230m)	1,079,325	80	0.00516	5,570	
- W5a 300mm watermain (1,615m)	1,522,138	80	0.00516	7,855	
- Albert Robert Booster Station Upgrades (4,135/21,413)	210,873	60	0.00877	1,849	
Water - Subtotal	***2,812,336***			***15,274***	
Roads					
- Burwell Road - Widen - 2 to 4 Lanes (South Edgware Road Talbot Street)	3,100,000	20	0.04116	127,586	
- Burwell Road - New 4 Lane Bridge (Widen Hwy 3 Overpass)	2,400,000	20	0.04116	98,776	
- Edgeware Line - Reconstruct 2 Lane Road (Highbury AvenueEast Limits Area 5)	2,500,000	20	0.04116	102,892	
- South Boundary Road - New Road (Centennial Avenue East Limits Area 5)	188,000	20	0.04116	7,737	
Roads - Subtotal	***8,188,000***			***336,991***	
Transit					
- One additional bus ($90,000-$380,000)	235,000	15	0.05783	13,589	
Transit - Subtotal	***235,000***			***13,589***	
TOTAL - DEVELOPMENT AREA 5	13,355,336			381,304	92

Sinking fund calculation based on assumed net annual interest of 2%