

Township of Russell 2016 Development Charges Background Study

Office Consolidation

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 Planning for growth

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List of Acronyms and Abbreviations

D.C.	Development Charge
D.C.A.	Development Charges Act
E.S.A.	Environmentally Safe Area
G.F.A.	Gross floor area
mm	Millimeters
N.F.P.O.W.	No fixed place of work
O.M.B.	Ontario Municipal Board
O.Reg.	Ontario Regulation
para.	Paragraph
P.P.U.	Persons per unit
R.S.O.	Revised Statute of Ontario
sq.ft.	Square foot
s.s.	Subsection

1. Introduction

1.1 Purpose of this Document

This background study has been prepared pursuant to the requirements of the Development Charges Act, 1997 (s.10), and accordingly, recommends new development charges and policies for the Township of Russell (Township).

The Township retained Watson & Associates Economists Ltd. (Watson) to undertake the development charges (D.C.) study process in June 2016. Watson worked with senior staff of the Township in preparing this development charge analysis and the policy recommendations.

This D.C. background study, containing the proposed D.C. by-law, will be distributed to members of the public in order to provide interested parties with sufficient background information on the legislation, the study's recommendations and an outline of the basis for these recommendations.

This report has been prepared, in the first instance, to meet the statutory requirements applicable to the Township's D.C. background study, as summarized in Chapter 4. It also addresses the forecast amount, type and location of growth (Chapter 3), the requirement for "rules" governing the imposition of the charges (Chapter 7) and the proposed by-law to be made available as part of the approval process (Appendix D).

In addition, the report is designed to set out sufficient background on the legislation, the Township's current D.C. policy (Chapter 2) and the policies underlying the proposed by-law, to make the exercise understandable to interested parties. Finally, the D.C. background study addresses post-adoption implementation requirements (Chapter 8) which are critical to the successful application of the new policy.

The chapters in the report are supported by Appendices containing the data required to explain and substantiate the calculation of the charge. A full discussion of the statutory requirements for the preparation of a background study and calculation of a development charge is provided herein.

1.2 Summary of the Process

The public meeting required under Section 12 of the Development Charges Act, 1997, will be scheduled for November, 2016. Its purpose is to present the study to the public and to solicit public input on the proposed D.C. by-law. The meeting is also being held

to answer any questions regarding the study's purpose, methodology and the proposed modifications to the Township's development charges by-law. Figure 1-1 outlines the proposed schedule to be followed with respect to the development charge by-law adoption process.

In accordance with the legislation, the DC Background Study has been posted on the Township's website on October 12, 2016 (i.e. no later than 60 days prior to by-law passage), along with the proposed DC by-law.

The process to be followed in finalizing the report and recommendations includes:

- consideration of responses received prior to, at or immediately following the public meeting; and
- finalization of the study and Council consideration of the by-law on December 12, 2016.

**Figure 1-1
Schedule of Key Development Charge Process Dates**

Process Steps		Dates
1.	Project initiation meetings with Township staff	June, 2016
2.	Data collection, staff interviews, preparation of D.C. calculations	July-August 2016
3.	Preparation of draft D.C. background study and review of draft findings with staff	September 7, 2016
4.	Statutory notice of Public Meeting advertisement placed in newspaper(s) by	20 clear days prior to Public Meeting
5.	Council Workshop Presentation	September 19, 2016
6.	D.C. background study and proposed D.C. by-law available to public	October 12, 2016
7.	Public Meeting of Council	November, 2016
8.	Council considers adoption of D.C. background study and passage of by-law	December 12, 2016
9.	Newspaper notice given of by-law passage	By 20 days after passage
10.	Last day for by-law appeal	40 days after passage
11.	Township makes available D.C. pamphlet	by 60 days after in force date

2. Current Township of Russell D.C. Policy

2.1 By-law Enactment

On January 20, 2014, the Township of Russell passed By-law 5-2014 under the Development Charges Act, 1997. The by-law came into effect on January 20, 2014 and imposes municipal-wide development charges by service.

2.2 Services Covered

The following services are included under By-law 5-2014:

- Roads and Related;
- Bylaw Enforcement;
- Fire Protection;
- Police;
- Parks and Recreation;
- Library;
- Administration;
- Water Services; and
- Wastewater Services.

The by-law provides for mandatory annual indexing of the charges. Table 2-1 provides the charges currently in effect, as well as a breakdown of the charges by service component.

**Table 2-1
Township of Russell Current Development Charges**

Service	RESIDENTIAL				NON-RESIDENTIAL
	Single and Semi-Detached Dwelling	Apartments - 2 Bedrooms +	Apartments - Bachelor and 1 Bedroom	Other Multiples	(per ft ² of Gross Floor Area)
Municipal Wide Services:					
Roads and Related	748	471	285	489	0.33
Bylaw Enforcement	19	11	7	12	0.01
Fire Protection Services	825	519	313	540	0.09
Police Services	16	10	6	10	0.01
Parks and Recreation Services	2,930	1,843	1,113	1,916	0.47
Library Services	632	398	240	413	0.10
Administration	199	125	76	131	0.10
Total Municipal Wide Services	5,370	3,378	2,041	3,511	1.12
Urban Services					
Wastewater Services	5,850	3,682	2,224	3,827	3.78
Water Services	7,980	5,022	3,033	5,221	5.18
Total Urban Services	13,830	8,704	5,257	9,048	8.96
GRAND TOTAL RURAL AREA	5,223	3,286	1,986	3,416	1.09
GRAND TOTAL URBAN AREA	19,200	12,082	7,298	12,559	10.09

2.3 Timing of D.C. Calculation and Payment

Development charges are due and payable in full to the Township on the date a building permit is issued for any land, buildings or structures affected by the applicable development charge. The by-law also allows the Township to enter into payment agreements with owners.

2.4 Redevelopment Credit

The by-law provides DC credits for residential and non-residential redevelopments and/or conversion, provided the demolition/conversion occurs on a development that pre-exists 60 months prior to date of payment of the development charge.

2.5 Exemptions

The Township's existing D.C. by-law includes statutory exemptions from payment of development charges with respect to:

- Industrial additions of up to and including 50% of the existing gross floor area of the building – for industrial additions which exceed 50% of the existing gross floor area, only the portion of the addition in excess of 50% is subject to development charges;
- Land used for Municipal or Board of Education purposes; and
- Residential development that results in only the enlargement of an existing dwelling unit, or that results only in the creation of up to two additional dwelling units (as specified by O.Reg. 82/98).

The D.C. by-law also provides non-statutory exemptions from payment of development charges with respect to:

- buildings or structures used as hospitals governed by the Public Hospitals Act, R.S.O. 1990, c.P.40;
- buildings or structures owned by and used for the purposes of a college of applied arts and technology established pursuant to the Ministry of Colleges and Universities Act, R.S.O. 1990, c. M.19;
- buildings or structures owned by and used for the purposes of a university established by an Act of the Legislative Assembly of Ontario;
- Every place of worship and the land used in connection therewith; and
- Water services rate is reduced by 24% for the properties legally described as Concession 1, Part of Lot A and Known as 4513 Gregoire Road and Concession

1, Part of Lot A and RP 50R-1437 Pt Part 1 (area located within the Village boundary).

3. Anticipated Development within the Township of Russell

3.1 Requirements of the Act

Chapter 4 provides the methodology for calculating a development charge as per the Development Charges Act, 1997. Figure 4-1 presents this methodology graphically. It is noted in the first box of the schematic that in order to determine the development charge that may be imposed, it is a requirement of Section 5 (1) of the Development Charges Act that “the anticipated amount, type and location of development, for which development charges can be imposed, must be estimated.”

The growth forecast contained in this chapter (with supplemental tables in Appendix A) provides for the anticipated development for which the Township of Russell will be required to provide services, over a 10-year, 20-year and buildout time horizon.

3.2 Basis of Population, Household, Employment, and Non-Residential Gross Floor Area Forecast

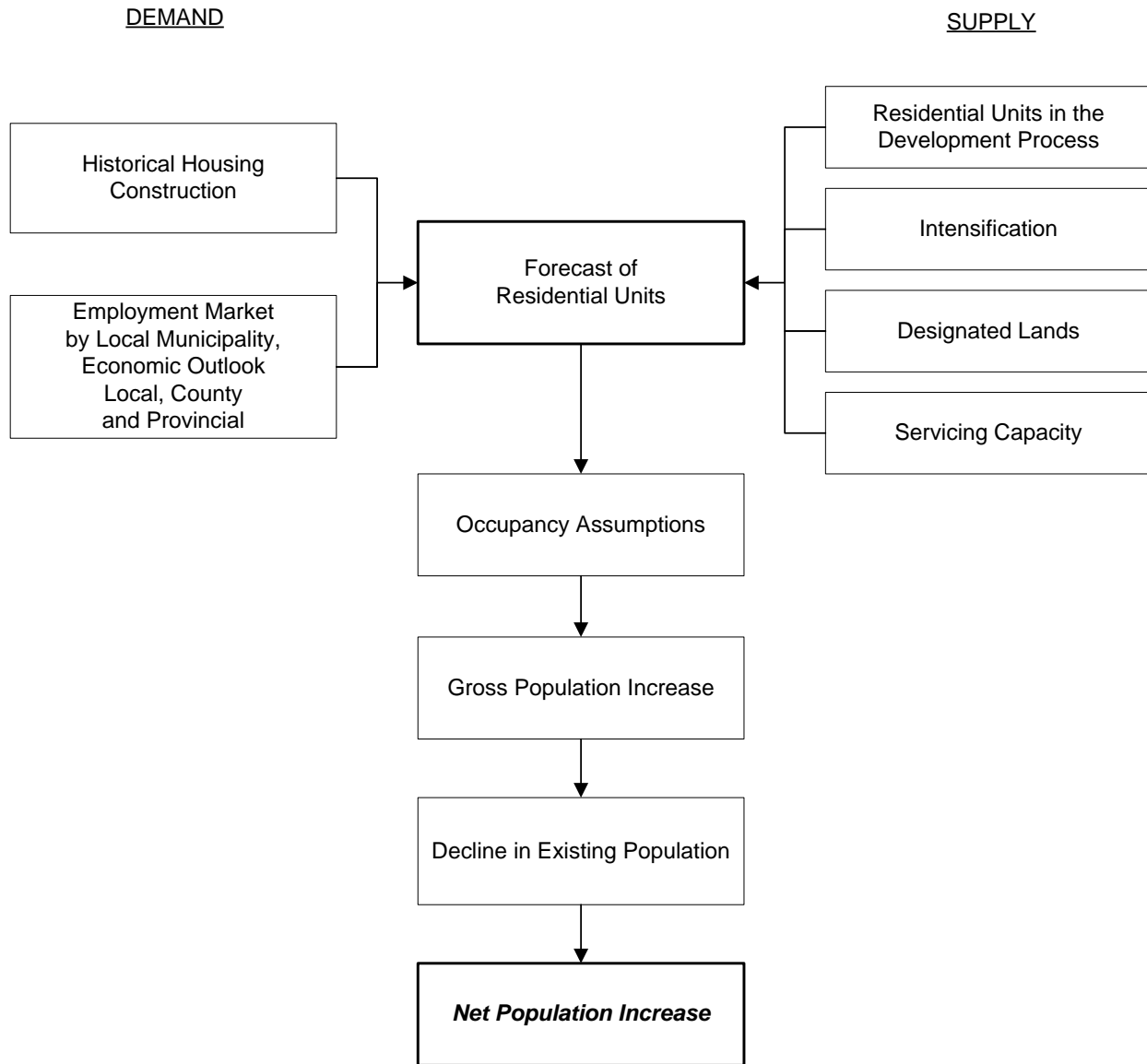
The D.C. growth forecast has been derived from the “Township of Russell Updated Growth Outlook and Employment Land Needs Analysis”, July 19, 2016. In compiling the growth forecast, the following information sources were also relied on to help assess residential and non-residential development potential for the Township over the forecast period; including:

- A review of historical development activity as well as the supply of housing units identified in the development approvals process; and
- Discussions with Township staff regarding the anticipated residential and non-residential development trends for the Township of Russell.

3.3 Summary of Growth Forecast

A detailed analysis of the residential and non-residential growth forecasts is provided in Appendix A. The discussion provided herein summarizes the anticipated growth for the Township and describes the basis for the forecast. The results of the residential growth forecast analysis are summarized in Figure 3-1 below, and Schedule 1 in Appendix A.

**Figure 3-1
Household Formation-Based Population Forecast Model**



As identified in Table 3-1 and Schedule 1, the Township's population is anticipated to reach approximately 20,160 by 2026, 22,980 by 2036 and 29,170 by buildout. This represents an increase of approximately 3,350 persons, 6,180 persons and 12,370, respectively, over the 10-year, 20-year and buildout forecast periods. The population forecast summarized in Schedule 1 excludes the net Census undercount, which is estimated at approximately 3.69%. The Census undercount represents the net number of persons missed during Census enumeration. In calculating the D.C. for the Township of Russell, the net Census undercount has been excluded from the growth forecast. Accordingly, all references provided herein to the population forecast exclude the net Census undercount.

Provided below is a summary of the key assumptions and findings regarding the Township of Russell D.C. growth forecast.

1. Unit Mix (Appendix A – Schedules 1 through 6)

- The unit mix for the Township was derived from historical development activity (as per Schedule 6), the housing forecast in the Township of Russell Updated Growth Outlook and Employment Land Needs Analysis Report and discussions with planning staff regarding anticipated development trends for the Township.
- Based on the above, the long-term (2016-2036) household growth forecast is comprised of a housing unit mix of approximately 74% low density (single detached and semi-detached), 3% medium density (multiples except apartments) and 23% high density (bachelor, 1 bedroom and 2+ bedroom apartments).

**Table 3-1
Township of Russell
Residential Growth Forecast Summary**

	Year	Population (Excluding Census Undercount)	Population (Including Census Undercount) ¹	Housing Units					
				Singles & Semi- Detached	Multiple Dwellings ²	Apartments ³	Other	Total Households	Person Per Unit (PPU)
Historical	<i>Mid 2001</i>	12,412	12,870	3,595	140	285	20	4,040	3.07
	<i>Mid 2006</i>	13,883	14,400	4,095	170	385	75	4,725	2.94
	<i>Mid 2011</i>	15,247	15,810	4,640	220	405	15	5,280	2.89
Forecast	<i>Mid 2016</i>	16,803	17,420	5,142	237	557	15	5,951	2.82
	<i>Mid 2021</i>	18,615	19,300	5,660	258	709	15	6,641	2.80
	<i>Mid 2026</i>	20,157	20,900	6,102	275	839	15	7,231	2.79
	<i>Mid 2036</i>	22,983	23,830	6,850	311	1,084	15	8,260	2.78
	<i>Buildout⁴</i>	29,172	30,250	8,550	528	1,478	15	10,571	2.76
Incremental	Mid 2001 - Mid 2006	1,471	1,530	500	30	100	55	685	
	Mid 2006 - Mid 2011	1,364	1,410	545	50	20	-60	555	
	Mid 2011 - Mid 2016	1,556	1,610	502	17	152	0	671	
	Mid 2016 - Mid 2021	1,812	1,880	518	21	152	0	690	
	Mid 2016 - Mid 2026	3,354	3,480	960	38	282	0	1,280	
	Mid 2016 - Mid 2031	4,634	4,810	1,354	54	397	0	1,805	
	Mid 2016 - Mid 2036	6,180	6,410	1,708	74	527	0	2,309	
	Mid 2016 - Buildout⁴	12,369	12,830	3,408	291	921	0	4,620	

Sources: Derived from the Township of Russell Updated Growth Outlook and Employment Land Needs Analysis prepared by Hemson Consulting, July 19, 2016; and Discussions with Township of Russell Planning Department, July 2016.

1. Census Undercount estimated at approximately 3.69%. Note: Population Including the Undercount has been rounded.
2. Includes townhomes and apartments in duplexes.
3. Includes bachelor, 1 bedroom and 2 bedroom+ apartments.
4. Buildout forecast is derived from Updated Growth Outlook and Employment Land Needs Analysis prepared by Hemson Consulting, July 19, 2016, page 14; and discussions with Township Planning Staff, July 2016.

2. Planning Period

- Short- and longer-term time horizons are required for the D.C. process. The D.C.A. limits the planning horizon for certain services, such as parks and recreation and libraries, to a 10-year planning horizon. Roads and fire services utilize a 20-year forecast period. Water and wastewater services utilize a buildout forecast period.

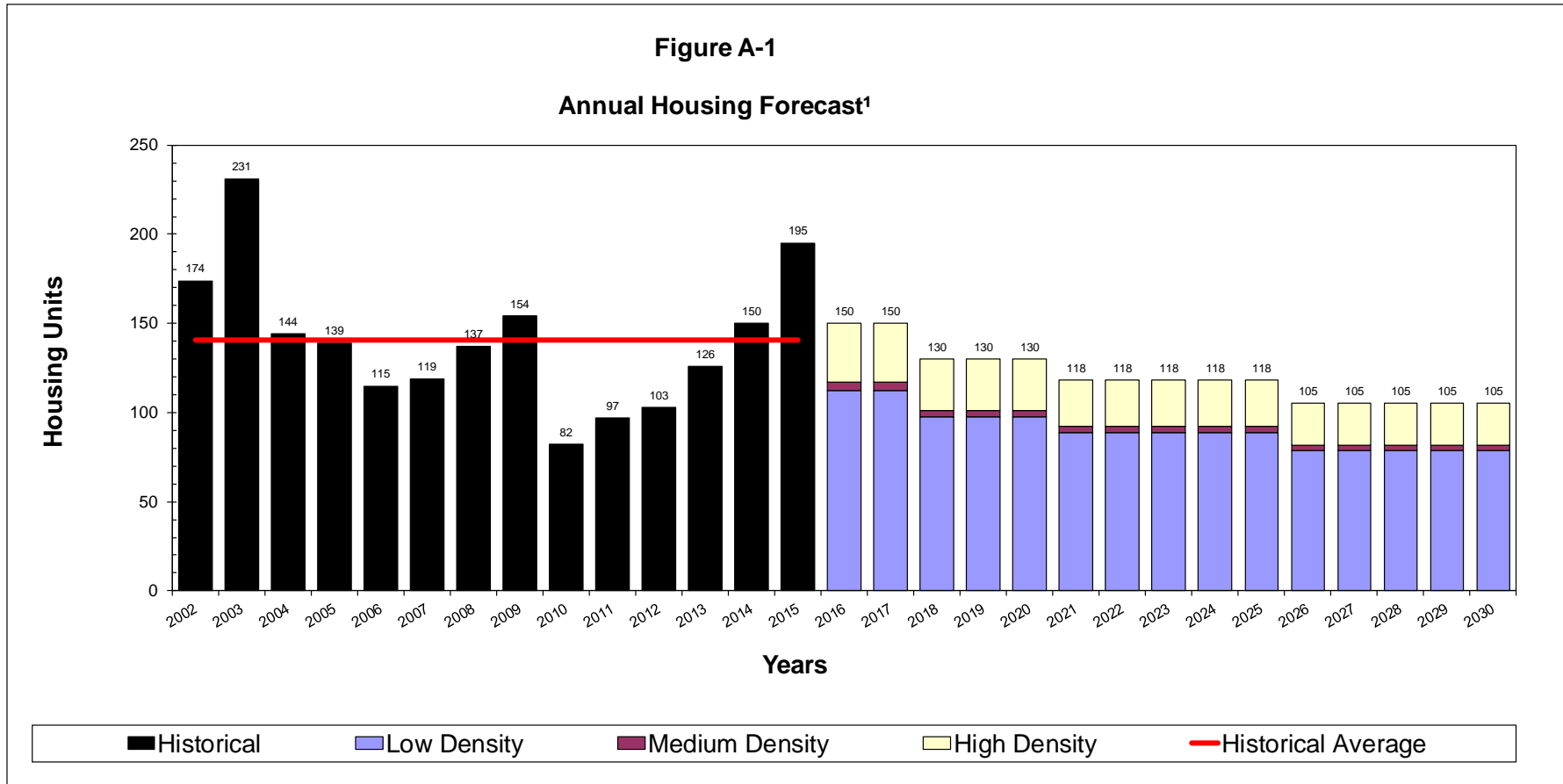
3. Population in New Units (Appendix A - Schedules 2 through 5)

- The number of housing units to be constructed in the Township of Russell during the short-term and long-term periods is presented on Figure 3-2. Over the 20-year forecast period, the Township is anticipated to average 115 new housing units per year.
- Population in new units is derived from Schedules 2, 3, 4 and 5, which incorporate historical development activity, anticipated units (see unit mix discussion) and average persons per unit by dwelling type for new units.
- Schedule 7a summarizes the average number of persons per unit (P.P.U.) for the new housing units by age and type of dwelling, based on 2011 custom Census data for the Township. Due to data limitations, P.P.U.'s for medium and high density were derived from the United Counties of Prescott and Russel as outlined in Schedule 7b. The total calculated P.P.U. for all density types has been adjusted to account for the downward P.P.U. trend which has been recently experienced in both new and older units, largely due to the aging of the population. Adjusted 20-year average P.P.U.'s by dwelling type are as follows:
 - Low density: 3.18
 - Medium density: 1.96
 - High density: 1.55

4. Existing Units and Population Change (Appendix A - Schedules 2, 3, 4 and 5)

- Existing households as of 2016 are based on the 2011 Census households, plus estimated residential units constructed between 2011 and 2016, assuming a 6-month lag between construction and occupancy (see Schedule 3).
- The decline in average occupancy levels for existing housing units is calculated in Schedules 3 through 5, by aging the existing population over the forecast period. The forecast population decline in existing households over the 2016 to 2036 forecast period is estimated at approximately 209.

**Figure 3-2
Township of Russell
2005-2035 Historical and Forecast Annual Housing Activity**



Source: Historical housing activity (2002-2015) based on Statistics Canada building permits, Catalogue 64-001-XIB.

1. Growth Forecast represents calendar year.

5. Employment (Appendix A, Schedules 9a, 9b and 9c)

- Employment projections are largely based on the activity rate method, which is defined as the number of jobs in the Township divided by the number of residents. Key employment sectors include primary, industrial, commercial/ population-related, institutional, and work at home, which are considered individually below.
- The Township's 2011¹ employment base by place of work is outlined in Schedule 9a. The 2011 employment base is comprised of the following sectors:
 - 125 primary (approx. 4%);
 - 685 work at home employment (approx. 20%);
 - 401 industrial (approx. 12%);
 - 1,256 commercial/population-related (approx. 38%); and
 - 880 institutional (approx. 26%).
- The 2011 employment base by usual place of work, including work at home, is 3,346 jobs. This figure is anticipated to reach approximately 4,350 by 2026, 4,750 by 2036 and 6,000 at buildout.
- Schedule 9b, Appendix A, summarizes the employment forecast, excluding work at home employment, which is the basis for the D.C.A. employment forecast. The impact on municipal services from work at home employees has already been included in the population forecast. Accordingly, work at home employees have been removed from the D.C.A. employment forecast and calculation.
- Total employment for the Township of Russell (excluding work at home employment) is anticipated to reach approximately 3,620 by 2026, 4,010 by 2036 and 5,060 at buildout. This represents an employment increase of 840, 1,230 and 2,280 additional jobs over the 10-year, 20-year and buildout forecast periods, respectively.

6. Non-Residential Square Footage Estimates (Gross Floor Area (G.F.A.)), Appendix A, Schedule 9b)

- Square footage estimates were calculated in Schedule 9b based on the following employee density assumptions:²
 - 1,300 sq.ft. per employee for industrial;

¹ 2011 Employment is based on Statistics Canada 2011 Places of Work Employment dataset.

² Based on Watson & Associates Economists Ltd. employment surveys.

- 500 sq.ft. per employee for commercial/population-related; and
- 700 sq.ft. per employee for institutional employment.
- The Township-wide incremental non-residential G.F.A. increase is anticipated to be approximately 980,100 sq.ft. over the 10-year forecast period, 1,375,200 sq.ft. over the 20-year forecast period, and 1,729,200 sq.ft. over the buildout forecast period.
- In terms of percentage growth, the 20-year incremental G.F.A. forecast by sector is broken down as follows:
 - industrial – approx. 86%;
 - commercial/population-related – approx. 10%; and
 - institutional – approx. 4%.

4. The Approach to the Calculation of the Charge

This chapter addresses the requirements of s.s.5(1) of the D.C.A., 1997 with respect to the establishment of the need for service which underpins the development charge calculation. These requirements are illustrated schematically in Figure 4-1.

4.1 Services Potentially Involved

Table 4-1 lists the full range of municipal service categories which are provided within the Township.

A number of these services are defined in s.s.2(4) of the D.C.A., 1997 as being ineligible for inclusion in development charges. These are shown as “ineligible” on Table 4-1. In addition, two ineligible costs defined in s.s.5(3) of the D.C.A. are “computer equipment” and “rolling stock with an estimated useful life of [less than] seven years...” In addition, local roads are covered separately under subdivision agreements and related means (as are other local services). Services which are potentially eligible for inclusion in the Township’s development charge are indicated with a “Yes.”

4.2 Increase in Need for Service and Local Service Policy

The development charge calculation commences with an estimate of “the increase in the need for service attributable to the anticipated development,” for each service to be covered by the by-law. There must be some form of link or attribution between the anticipated development and the estimated increase in the need for service. While the need could conceivably be expressed generally in terms of units of capacity, s.s.5(1)3, which requires that Municipal Council indicate that it intends to ensure that such an increase in need will be met, suggests that a project-specific expression of need would be most appropriate.

Some of the need for services generated by additional development consists of local services related to a plan of subdivision. As such, they will be required as a condition of subdivision agreements or consent conditions.

Figure 4-1
The Process of Calculating a Development Charge under the Act

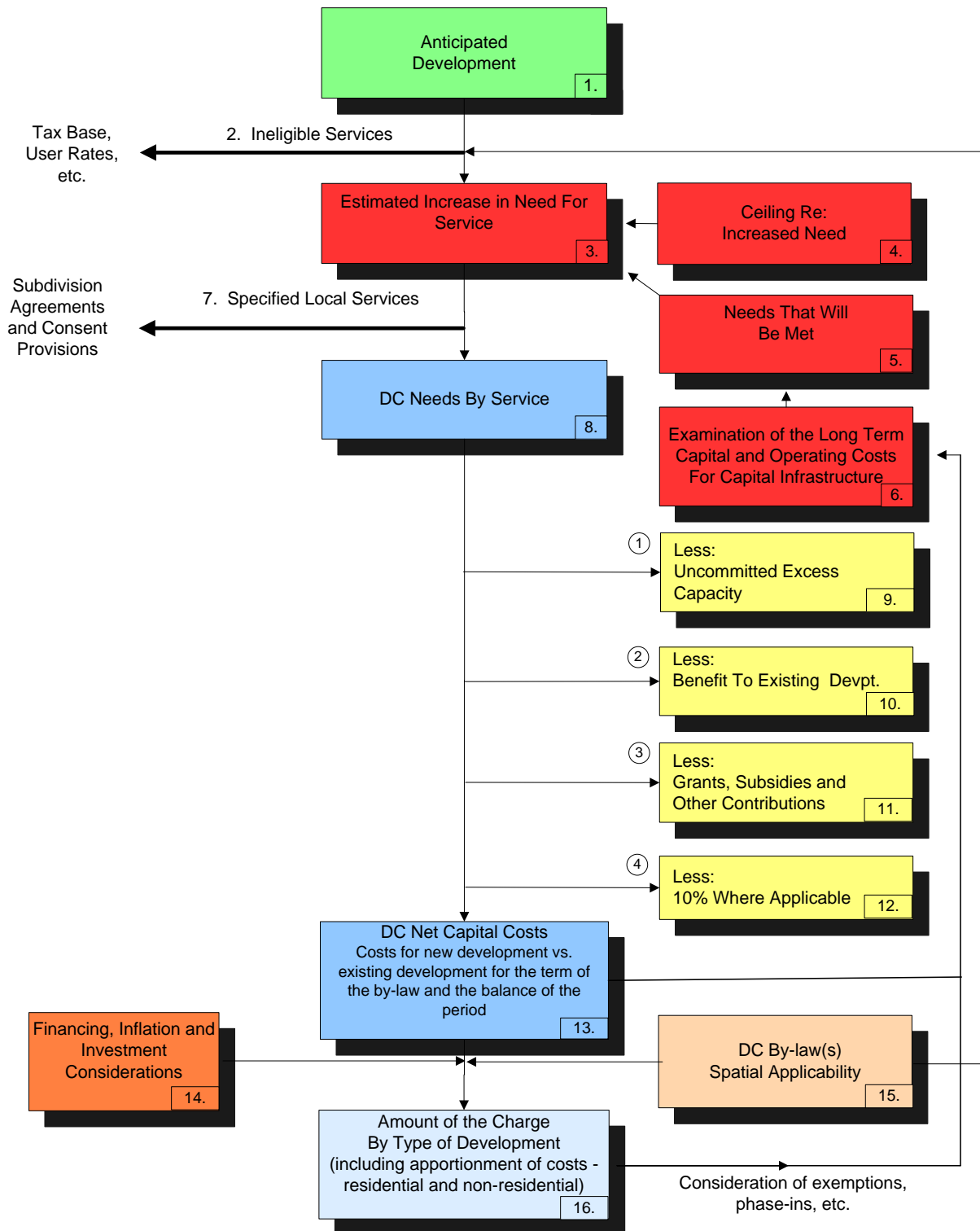


Table 4-1
Categories of Municipal Services
To Be Addressed as Part of the Calculation

Categories of Municipal Services	Eligibility for Inclusion in the D.C. Calculation	Service Components	Maximum Potential D.C. Recovery %
1. Services Related to a Highway	Yes	1.1 Arterial roads	100
	Yes	1.2 Collector roads	100
	Local Service	1.3 Local roads	100
	Yes	1.4 Intersections and Traffic signals	100
	Yes	1.5 Sidewalks and streetlights	100
2. Other Transportation Services	n/a	2.1 Transit vehicles	100
	n/a	2.2 Other transit infrastructure	100
	n/a	2.3 Municipal parking spaces - indoor	90
	n/a	2.4 Municipal parking spaces - outdoor	90
	Yes	2.5 Works Yards	100
	Yes	2.6 Rolling stock ¹	100
	n/a	2.7 Ferries	90
	n/a	2.8 Airport facilities	90
3. Storm Water Drainage and Control Services	No	3.1 Main channels and drainage trunks	100
	No	3.2 Channel connections	100
	Local Service	3.3 Retention/detention ponds	100
4. Fire Protection Services	Yes	4.1 Fire stations	100
	Yes	4.2 Fire pumpers, aerials and rescue vehicles	100
	Yes	4.3 Small equipment and gear	100
5. Outdoor Recreation Services (i.e. Parks and Open Space)	Ineligible	5.1 Acquisition of land for parks, woodlots and E.S.A.s	0
	Yes	5.2 Development of area municipal parks	90
	Yes	5.3 Development of district parks	90
	Yes	5.5 Development of special purpose parks	90
	Yes	5.6 Parks rolling stock ¹ and yards	90

¹with 7+ year life time

²same percentage as service component to which it pertains
computer equipment excluded throughout

Categories of Municipal Services	Eligibility for Inclusion in the D.C. Calculation	Service Components	Maximum Potential D.C. Recovery %
6. Indoor Recreation Services	Yes	6.1 Arenas, indoor pools, fitness facilities, community centres, etc. (including land)	90
	Yes	6.2 Recreation vehicles and equipment ¹	90
7. Library Services	Yes	7.1 Public library space (incl. furniture and equipment)	90
	Yes	7.2 Library materials	90
8. Electrical Power Services	Ineligible	8.1 Electrical substations	0
	Ineligible	8.2 Electrical distribution system	0
	Ineligible	8.3 Electrical system rolling stock ¹	0
9. Provision of Cultural, Entertainment and Tourism Facilities and Convention Centres	Ineligible	9.1 Cultural space (e.g. art galleries, museums and theatres)	0
	Ineligible	9.2 Tourism facilities and convention centres	0
10. Waste Water Services	Yes	10.1 Treatment plants	100
	Yes	10.2 Sewage trunks	100
	Local Service	10.3 Local systems	100
11. Water Supply Services	Yes	11.1 Supply and Treatment plants	100
	Yes	11.2 Distribution systems	100
	Local Service	11.3 Local systems	100
12. Waste Management Services	Ineligible	12.1 Collection, transfer vehicles and equipment	0
	Ineligible	12.3 Landfills and other disposal facilities	0
	n/a	12.3 Other waste diversion facilities	100
13. Police Services	n/a	13.1 Police detachments	100
	n/a	13.2 Police rolling stock ¹	100
	n/a	13.3 Small equipment and gear	100
	Yes	13.4 Policing Contract	100
14. Homes for the Aged	n/a	14.1 Homes for the aged space	90
15. Day Care	n/a	15.1 Day care space	90

Categories of Municipal Services	Eligibility for Inclusion in the D.C. Calculation	Service Components	Maximum Potential D.C. Recovery %
16. Health	n/a	16.1 Health department space	90
17. Social Services	n/a	17.1 Social service space	90
18. Ambulance	n/a n/a	18.1 Ambulance station space	90
		18.2 Vehicles ¹	90
19. Hospital Provision	Ineligible	19.1 Hospital capital contributions	0
20. Provision of Headquarters for the General Administration of Municipalities and Area Municipal Boards	Ineligible Ineligible Ineligible	20.1 Office space (all services)	0
		20.2 Office furniture	0
		20.3 Computer equipment	0
21. Other Services	Yes	21.1 Studies in connection with acquiring buildings, rolling stock, materials and equipment, and improving land ² and facilities, including the D.C. background study cost	0-100
	Yes	21.2 Interest on money borrowed to pay for growth-related capital	0-100

Eligibility for Inclusion in the DC Calculation	Description
Yes	Municipality provides the service - service has been included in the DC Calculation
No	Municipality provides the service - service has not been included in the DC Calculation
n/a	Municipality does not provide the service
Ineligible	Service is ineligible for inclusion in the DC calculation

¹with 7+ year life time

²same percentage as service component to which it pertains
computer equipment excluded throughout

Local Service guidelines are summarized as follows:

1. Roads and Related

- 1.1 Collector roads internal to development are a direct developer responsibility under s.59 of the D.C.A. as a local service;
- 1.2 Arterial and collector roads external to a new development are a local service if the works are within the area to which the plan relates and, therefore, a direct development responsibility under s.59 of the D.C.A.; otherwise the works are included in the D.C. calculation to the extent permitted under s.5(1) of the D.C.A.

2. Intersection and Traffic Signals

- 2.1 New Arterial/Collector Roads and Arterial/Collector Road Improvements – Included as part of road costing funded through D.C.s
- 2.2 Local Streets/Private Entrances/Entrances to Specific Developments – Direct developer responsibility under s.59 of the D.C.A. (as a local service)

3. Land Acquisition for Road Allowances

- 3.1 Land Acquisition for Arterial/Collector Roads – Dedication under the Planning Act subdivision provisions (s.51) through development lands; in areas with limited or no development, include in area municipal DC (to the extent eligible)

4. Storm Water Management

- 4.1 Quality and Quantity Works – be direct developer responsibility through local service provisions (s.59 of the D.C.A.)

4.3 Capital Forecast

Paragraph 7 of s.s.5(1) of the D.C.A. requires that, “the capital costs necessary to provide the increased services must be estimated.” The Act goes on to require two potential cost reductions and the Regulation sets out the way in which such costs are to be presented. These requirements are outlined below.

These estimates involve capital costing of the increased services discussed above. This entails costing actual projects or the provision of service units, depending on how each service has been addressed.

The capital costs include:

- a) costs to acquire land or an interest therein (including a leasehold interest);
- b) costs to improve land;
- c) costs to acquire, lease, construct or improve buildings and structures;
- d) costs to acquire, lease or improve facilities including rolling stock (with a useful life of 7 or more years), furniture and equipment (other than computer equipment), materials acquired for library circulation, reference or information purposes;
- e) interest on money borrowed to pay for the above-referenced costs;
- f) costs to undertake studies in connection with the above-referenced matters; and
- g) costs of the development charge background study.

In order for an increase in need for service to be included in the D.C. calculation, Municipal Council must indicate "...that it intends to ensure that such an increase in need will be met" (s.s.5(1)3). This can be done if the increase in service forms part of a Council-approved Official Plan, capital forecast or similar expression of the intention of Council (O.Reg. 82/98 s.3). The capital program contained herein reflects the Township's approved and proposed capital budgets and master servicing/needs studies.

4.4 Treatment of Credits

Section 8 para. 5 of O.Reg. 82/98 indicates that a development charge background study must set out, "the estimated value of credits that are being carried forward relating to the service." s.s.17 para. 4 of the same Regulation indicates that, "...the value of the credit cannot be recovered from future development charges," if the credit pertains to an ineligible service. This implies that a credit for eligible services can be recovered from future development charges. As a result, this provision should be made in the calculation, in order to avoid a funding shortfall with respect to future service needs.

The Township has no outstanding DC credit obligations for services that have been emplaced by developers on its behalf. There are, however, prepaid wastewater development charges for 1,107 units (415 in Russell and 692 in Embrun) under agreement which have been accounted for in the development charge calculations. This

adjustment of \$5.3 million has been provided to accurately allocate the costs of the project to the forecast development.

4.5 Eligible Debt and Committed Excess Capacity

Section 66 of the D.C.A., 1997 states that for the purposes of developing a development charge by-law, a debt incurred with respect to an eligible service may be included as a capital cost, subject to any limitations or reductions in the Act. Similarly, s.18 of O.Reg. 82/98 indicates that debt with respect to an ineligible service may be included as a capital cost, subject to several restrictions.

In order for such costs to be eligible, two conditions must apply. First, they must have funded excess capacity which is able to meet service needs attributable to the anticipated development. Second, the excess capacity must be “committed,” that is, either before or at the time it was created, Council must have expressed a clear intention that it would be paid for by development charges or other similar charges. For example, this may have been done as part of previous development charge processes.

4.6 Existing Reserve Funds

Section 35 of the D.C.A. states that:

“The money in a reserve fund established for a service may be spent only for capital costs determined under paragraphs 2 to 8 of subsection 5(1).”

There is no explicit requirement under the D.C.A. calculation method set out in s.s.5(1) to net the outstanding reserve fund balance as part of making the D.C. calculation; however, s.35 does restrict the way in which the funds are used in future.

The Township’s uncommitted Development Charge Reserve Funds balances, by service, as at December 31, 2015, are presented in Table 4-2 below. These balances have been applied against future spending requirements for all services.

Table 4-2
Township of Russell
D.C. Reserve Funds Balances (as at December 31, 2015)

Service	Totals
Roads & Related	\$ 257,440
Fire Protection Services	\$ (1,278,241)
Police Services	\$ (6,366)
Parks & Recreation	\$ 3,994,193
Library Services	\$ 71,930
Administration	\$ (62,853)
By-law	\$ 18,146
Wastewater Services	\$ (4,740,301)
Water Services	\$ (1,866,690)
Total	\$ (3,612,742)

4.7 Deductions

The D.C.A., 1997 potentially requires that five deductions be made to the increase in the need for service. These relate to:

- the level of service ceiling;
- uncommitted excess capacity;
- benefit to existing development;
- anticipated grants, subsidies and other contributions; and
- a 10% reduction for certain services.

The requirements behind each of these reductions are addressed as follows:

4.7.1 Reduction Required by Level of Service Ceiling

This is designed to ensure that the increase in need included in 4.2 does "...not include an increase that would result in the level of service (for the additional development increment) exceeding the average level of the service provided in the Township over the 10-year period immediately preceding the preparation of the background study..." O.Reg. 82.98 (s.4) goes further to indicate that, "...both the quantity and quality of a service shall be taken into account in determining the level of service and the average level of service."

In many cases, this can be done by establishing a quantity measure in terms of units as floor area, land area or road length per capita, and a quality measure in terms of the average cost of providing such units based on replacement costs, engineering

standards or recognized performance measurement systems, depending on circumstances. When the quantity and quality factor are multiplied together, they produce a measure of the level of service, which meets the requirements of the Act, i.e. cost per unit.

The average service level calculation sheets for each service component in the D.C. calculation are set out in Appendix B.

4.7.2 Reduction for Uncommitted Excess Capacity

Paragraph 5 of s.s.5(1) requires a deduction from the increase in the need for service attributable to the anticipated development that can be met using the Township's "excess capacity," other than excess capacity which is "committed" (discussed above in 4.6).

"Excess capacity" is undefined, but in this case must be able to meet some or all of the increase in need for service, in order to potentially represent a deduction. The deduction of uncommitted excess capacity from the future increase in the need for service would normally occur as part of the conceptual planning and feasibility work associated with justifying and sizing new facilities, e.g. if a road widening to accommodate increased traffic is not required because sufficient excess capacity is already available, then widening would not be included as an increase in need, in the first instance.

4.7.3 Reduction for Benefit to Existing Development

This step involves a further reduction to the need, by the extent to which such an increase in service would benefit existing development. The level of services cap in section 4.4 is related, but is not the identical requirement. Wastewater (sanitary), stormwater and water trunks are highly localized to growth areas and can be more readily allocated in this regard than other services such as roads which do not have a fixed service area.

Where existing development has an adequate service level which will not be tangibly increased by an increase in service, no benefit would appear to be involved. For example, where expanding existing library facilities simply replicates what existing residents are receiving, they receive very limited (or no) benefit as a result. On the other hand, where a clear existing service problem is to be remedied, a deduction should be made accordingly.

In the case of services such as recreation facilities, community parks, libraries, etc., the service is typically provided on a municipal-wide system basis. For example, facilities of the same type may provide different services (i.e. leisure pool vs. competitive pool), different programs (i.e. hockey vs. figure skating) and different time availability for the same service (i.e. leisure skating available on Wednesday in one arena and Thursday in another). As a result, residents will travel to different facilities to access the services they want at the times they wish to use them, and facility location generally does not correlate directly with residence location. Even where it does, displacing users from an existing facility to a new facility frees up capacity for use by others and generally results in only a very limited benefit to existing development. Further, where an increase in demand is not met for a number of years, a negative service impact to existing development is involved for a portion of the planning period.

4.7.4 Reduction for Anticipated Grants, Subsidies and Other Contributions

This step involves reducing the capital costs necessary to provide the increased services by capital grants, subsidies and other contributions made or anticipated by Council and in accordance with various rules such as the attribution between the share related to new vs. existing development O.Reg. 82.98, s.6. Where grant programs do not allow funds to be applied to growth-related capital needs, the proceeds can be applied to the non-growth share of the project exclusively. Moreover, Gas Tax revenues are typically used to fund non-growth-related works or the non-growth share of D.C. projects, given that the contribution is not being made in respect of particular growth-related capital projects.

4.7.5 The 10% Reduction

Paragraph 8 of s.s.(1) of the D.C.A. requires that, “the capital costs must be reduced by 10 percent.” This paragraph does not apply to water supply services, wastewater services, stormwater drainage and control services, services related to a highway, police, fire protection and transit services. The primary services that the 10% reduction does apply to include services such as parks and recreation, libraries, childcare/social services, ambulance, homes for the aged and health.

The 10% is to be netted from the capital costs necessary to provide the increased services, once the other deductions have been made, as per the infrastructure cost sheets in Chapter 5.

4.8 D.C. By-Law Spatial Applicability

There are four basic choices to be addressed when considering the geographic application of a development charge:

1. the entire municipality for all services (which is the most commonly-used approach);
2. part of the municipality for all services with the balance of the municipality exempt (because it is outside the service's coverage area or can be served at little or no incremental cost);
3. different by-laws, and charges, in different municipal service areas (in order to recognize distinct servicing situations); and
4. a uniform municipal-wide charge with separate charge covering additional area-specific services (e.g. the coverage area for specific works).

The D.C.A. may prescribe services for which a development charge by-law must apply on an area-specific basis. For prescribed services Council shall pass different development charge by-laws for different parts of the municipality, and shall be identified in accordance with the prescribed criteria. Currently the Province has not prescribed services under subsection 2(9) of the D.C.A.

For services that are not prescribed under subsection 2(9) of the D.C.A., the background study must give consideration to the use of more than one development charge by-law to reflect different needs for services in different areas.

For water and wastewater services consideration was given to applying D.C.s on an area-specific basis, as well as a municipal service-wide basis. Two separate municipal service areas were considered for calculating the area-specific charges, i.e. Embrun and Russell. Details of the area-specific and municipal-wide D.C. calculations are provided in Chapter 6.

5. Development Charge Eligible Cost Analysis by Service

This chapter outlines the basis for calculating development charge eligible costs for the development charges to be applied on a municipal-wide uniform basis. The required calculation process set out in s.5(1) paragraphs 2 to 8 in the D.C.A., 1997, and described in Chapter 4, was followed in determining D.C. eligible costs.

The nature of the capital projects and timing identified in this chapter reflects Council's current intention. However, over time, municipal projects and Council priorities change and, accordingly, Council's intentions may alter and different capital projects (and timing) may be required to meet the need for services required by new growth.

5.1 Service Levels and 20-Year Capital Costs for Municipal-wide D.C. Calculation

This section evaluates the development-related capital requirements for select services over the 20-year planning period (2016-2036). Each service component is evaluated on two format sheets: the average historical 10-year level of service calculation (see Appendix B), which "caps" the D.C. amounts; and the infrastructure cost calculation, which determines the potential D.C. recoverable cost.

5.1.1 Roads and Related Services

The Township has a current inventory of 139 kilometres of roads and 27 km of sidewalks. The Township also looks after a number of bridges, culverts, street lights, and street signs in providing transportation services to its residents. This historical level of infrastructure investment equates to a level of service of \$4,388 per capita. When applied to the forecast population growth to 2036 (i.e. 6,179 population), a maximum D.C.-eligible cost of approximately \$27.11 million could be expected to meet the future increase in needs for service.

Review of the Township's Transportation Master Plan and related roads needs for the forecast period identified \$9.12 million in gross capital costs. These capital needs include road widening and reconstruction projects, as well as intersection improvements and signalization, to facilitate future development. Recognizing the benefit to existing development through the resurfacing and replacement of existing infrastructure at the time of addressing growth needs, \$5.90 million has been deducted. Additionally,

\$257,440 has been included for previously unfunded expenditures. As a result, \$2.96 million in capital needs have been included in the DC calculation.

In addition to road requirements, the Township's public works department utilizes 19,528 square feet of facility space and operates a fleet consisting of vehicles and equipment totalling 34 items. In this regard, a historical average level of service of \$315 per capita has been provided, resulting in a D.C. eligible cap of approximately \$1.95 million.

The Township's capital forecast identifies the need for a municipal garage expansion and additional vehicle/equipment items. In total, the capital program for public works services totals approximately \$1.11 million, all of which has been included in the calculation of the charge.

The net growth-related costs for roads and related services have been allocated between future residential and non-residential development on the basis of incremental population to employment growth over the 20-year forecast period (i.e. 83% residential/17% non-residential).

5.1.2 Fire Protection Services

The Township currently has two fire stations, which together provide 17,039 square feet of floor space. The fire department also has a current inventory of nine vehicles and provides various items of firefighter outfitting equipment and specialty equipment. In total, the inventory of fire protection assets provides a historical average level of service of approximately \$423 per capita. The historical level of investment in fire services provides for a D.C. eligible amount over the forecast period of approximately \$2.61 million.

Based on discussions with staff, the Township will require funds for a new training facility, a ladder truck, and eight additional firefighters. The gross capital cost estimates for these growth-related items total approximately \$1.25 million. Additionally, \$1.28 million of previously unfunded capital has been included in the calculation.

The allocation of net growth-related costs for fire protection services between residential and non-residential development is 83% residential and 17% non-residential, based on incremental population to employment growth over the 20-year forecast period.

5.1.3 Police Services

The Township currently has a Police Services Agreement with the Ontario Provincial Police (O.P.P.), which provides a historical average level of service of approximately \$10 per capita. The historical level of investment in police services provides for a D.C. eligible amount over the forecast period of \$63,891.

The 20-year capital contributions to the O.P.P. to accommodate growth in the Township have been estimated at \$63,891. Additionally, \$6,366 of previously unfunded capital has been included in the calculation. The allocation of net growth-related costs for O.P.P. services between residential and non-residential development is 83% residential and 17% non-residential, based on incremental population to employment growth over the 20-year forecast period.

Infrastructure Costs Covered in the D.C. Calculation – Roads and Related Services

Prj. No	Increased Service Needs Attributable to Anticipated Development 2016-2036	Timing (year)	Gross Capital Cost Estimate (2016\$)	Post Period Benefit	Net Capital Cost	Less:		Potential DC Recoverable Cost		
						Benefit to Existing Development	Grants, Subsidies and Other Contributions Attributable to New Development	Total	Residential Share 83%	Non-Residential Share 17%
1	Valoris Rd and Notre-Dame Intersection Improvements	2016	50,000	-	50,000	-	-	50,000	41,520	8,480
2	Intersection Signalization - Notre-Dame, St-Joseph and St-Thomas	2016	83,900	-	83,900	-	-	83,900	69,670	14,230
3	Route 400, Gregoire to Limoges Rd	2016/2018	403,000	-	403,000	302,250	-	100,750	83,663	17,087
4	St-Joseph, Notre-Dame to Route 400 (1.1 km)	2022	229,700	-	229,700	172,275	-	57,425	47,686	9,739
5	St-Jacques, Notre-Dame to Route 400 (1.5 km)	2017	313,300	-	313,300	234,975	-	78,325	65,041	13,284
6	Route 500, Gregoire Rd to South Russell Rd (2.8 km)	2021	584,800	-	584,800	438,600	-	146,200	121,404	24,796
7	Route 300, St-Guillaume to Limoges Rd (8.9 km)	2017/2021	1,459,700	-	1,459,700	729,850	-	729,850	606,067	123,783
8	Route 200, Boundary to St-Guillaume (8.9 km)	2020	1,858,700	-	1,858,700	1,394,025	-	464,675	385,866	78,809
9	Concession/North Russell, Craig to Route 200 (2.6 km)	2023	543,000	-	543,000	407,250	-	135,750	112,727	23,023
10	Reroute of St-Pierre Road (1.4 km)	2020	980,000	-	980,000	490,000	-	490,000	406,896	83,104
11	Route 300 and St. Pierre Intersection Improvements	2021	200,000	-	200,000	-	-	200,000	166,080	33,920
12	Craig St. sidewalk	2018	60,000	-	60,000	-	-	60,000	49,824	10,176
13	St. Pierre and Notre-Dame Intersection Improvements	2017	40,000	-	40,000	-	-	40,000	33,216	6,784
14	St-Thomas, Notre-Dame to Route 200 (4.8 km)	2020	816,000	-	816,000	612,000	-	204,000	169,401	34,599
15	St-Augustin, Notre-Dame to Route 200 (4.5 km)	2018	765,000	-	765,000	573,750	-	191,250	158,814	32,436
16	Route 200, St-Guillaume to St-Thomas (4.3 km)	2021	731,000	-	731,000	548,250	-	182,750	151,755	30,995
17	Municipal Garage Expansion	2017	531,000	-	531,000	-	-	531,000	440,942	90,058
18	Roads Maintenance Equipment	2021	279,700	-	279,700	-	-	279,700	232,263	47,437
19	Sidewalk Machine (rental)	2017-2035	91,740	-	91,740	-	-	91,740	76,181	15,559
20	Salt Loader (rental)	2017-2035	91,740	-	91,740	-	-	91,740	76,181	15,559
21	Snow Dump Land	2019	120,000	-	120,000	-	-	120,000	99,648	20,352
	Reserve Fund Adjustment		(257,440)	-	(257,440)	-	-	(257,440)	(213,778)	(43,662)
	Total		9,974,840	-	9,974,840	5,903,225	-	4,071,615	3,381,066	690,549

Infrastructure Costs Covered in the D.C. Calculation – Fire Protection Services

Prj .No	Increased Service Needs Attributable to Anticipated Development 2016-2036	Timing (year)	Gross Capital Cost Estimate (2016\$)	Post Period Benefit	Net Capital Cost	Less:		Potential DC Recoverable Cost		
						Benefit to Existing Development	Grants, Subsidies and Other Contributions Attributable to New Development	Total	Residential Share 83%	Non- Residential Share 17%
1	Training Facility	2018	57,400		57,400	-		57,400	47,665	9,735
2	Ladder Truck	2017	1,148,600		1,148,600	-		1,148,600	953,796	194,804
4	8 Additional Fire Fighters	2017-2035	48,512		48,512	-		48,512	40,284	8,228
	Reserve Fund Adjustment		1,278,241		1,278,241	-		1,278,241	1,061,450	216,791
	Total		2,532,753	-	2,532,753	-	-	2,532,753	2,103,196	429,557

Infrastructure Costs Covered in the D.C. Calculation – Police Services

Prj .No	Increased Service Needs Attributable to Anticipated Development 2016-2036	Timing (year)	Gross Capital Cost Estimate (2016\$)	Post Period Benefit	Net Capital Cost	Less:		Potential DC Recoverable Cost		
						Benefit to Existing Development	Grants, Subsidies and Other Contributions Attributable to New Development	Total	Residential Share 83%	Non-Residential Share 17%
1	Additional Police Officer Equipment	2016-2035	63,891	-	63,891	-		63,891	53,055	10,836
	Reserve Fund Adjustment		6,366	-	6,366	-		6,366	5,286	1,080
	Total		70,257	-	70,257	-	-	70,257	58,341	11,916

5.2 Service Levels and 10-Year Capital Costs for Municipal-wide D.C. Calculation

This section evaluates the development-related capital requirements for select services over the 10-year planning period (2016-2026). Each service component is evaluated on two format sheets: the average historical 10-year level of service calculation (see Appendix B), which “caps” the D.C. amounts; and the infrastructure cost calculation, which determines the potential D.C. recoverable cost.

5.2.1 By-law Enforcement Services

The Township has 240 square feet of animal shelter space, 3 vehicles, 2 bicycles, and various pieces of equipment. The Township’s level of service over the historical 10-year period averaged \$21 per capita. As a result, the maximum D.C. eligible amount for by-law enforcement services over the 10-year forecast period is \$71,574 based on the established level of service standards.

Through discussions with Township staff it was determined that 1 additional truck, 1 bike, and 3 animal traps will be required over the 10-year forecast period. The statutory 10% deduction applicable for by-law enforcement services totals \$3,860 and a further \$18,146 has been deducted in recognition of existing reserve fund balances resulting in net growth-related capital costs for inclusion in the calculation of \$16,594.

The allocation of net growth-related costs for by-law enforcement services between residential and non-residential development is 79% residential and 21% non-residential, based on incremental population to employment growth over the 10-year forecast period.

5.2.2 Parks and Recreation Services

The Township currently maintains 21 parks and 9.2 kilometers of trails within its jurisdiction. Furthermore, the Township also operates five indoor recreation facilities with a total of 80,187 square feet of indoor recreation facility space. Additionally, the Township maintains a number of vehicles and equipment in providing parks and recreation services to the public. The Township’s level of service over the historical 10-year period averaged \$1,478 per capita. In total, the maximum D.C. eligible amount for parks and recreation services over the 10-year forecast period is \$4,96 million based on the established level of service standards.

Review of the Township’s Parks & Recreation Master Plan (2015) and related needs identified gross capital costs of \$27.67 million to accommodate growth over the 10-year

forecast period. These capital needs include a new recreational complex/facility, sports dome, additional parkland development, and expansion of the Richelieu Park and the Bike Trail. The identified projects provide a benefit-to-existing population of \$11.52 million and post period benefit of \$7.20 million which were both deducted from the gross capital cost. The statutory 10% deduction applicable for parks and recreation services totals \$895,201 and a further \$3.99 million has been deducted in recognition of existing reserve fund balances, resulting in net growth-related capital costs for inclusion in the calculation of \$4.06 million.

As the predominant users of parks and recreation services tend to be residents of the Township, the forecast growth-related costs have been allocated 95% to residential and 5% to non-residential.

5.2.3 Library Services

The Township provides library services to its residents through the Russell and Embrun branches where library services, collection materials, and databases can be accessed. The library also utilizes 100 square feet of external storage space. The Township's level of service over the historical 10-year period averaged \$288 per capita. In total, the maximum D.C. eligible amount for library services over the 10-year forecast period is \$221,934 based on the established level of service standards.

The gross capital cost included in the development charge calculation is \$967,897, reflective of additional collection materials and provision for facility expansion that will need to be acquired to maintain existing service levels over the 10 year forecast period in light of a growing population. Deductions of \$103,983 for the required 10% deduction and \$71,930 for existing reserve fund balances have been applied. The resulting net capital cost of \$863,915 has been included in the calculation.

As the predominant users of library services tend to be residents of the Township, the forecast growth-related costs have been allocated 95% to residential and 5% to non-residential.

5.2.4 Administration Services (Growth-Related Studies)

The D.C.A. permits the inclusion of studies undertaken to facilitate the completion of the Township's capital works program. The Township has made provision for the inclusion of a new study undertaken to facilitate this D.C. process, as well as other studies which benefit growth, including economic development strategy plan, various master plans (including transportation plan update, water and sewer, fire services, and parks and recreation services), an official plan and zoning review, and a traffic impact study.

The cost of these projects totals \$427,200 over the 10-year forecast period. Deductions of \$118,600 in recognition of the studies' benefits to the existing population and \$17,360 for the 10% statutory deduction have been applied. Furthermore, \$62,853 of previously unfunded capital has been included, resulting in the net growth-related capital costs of \$354,093.

These costs have been allocated 79% residential and 21% non-residential based on the incremental growth in population to employment for the 10-year forecast period.

Infrastructure Costs Covered in the D.C. Calculation – By-Law Enforcement Services

Prj.No	Increased Service Needs Attributable to Anticipated Development 2016-2026	Timing (year)	Gross Capital Cost Estimate (2016\$)	Post Period Benefit	Net Capital Cost	Less:		Subtotal	Less: Other (e.g. 10% Statutory Deduction)	Potential DC Recoverable Cost		
						Benefit to Existing Development	Grants, Subsidies and Other Contributions Attributable to New Development			Total	Residential Share 79%	Non- Residential Share 21%
1	Truck	2017	35,000		35,000	-		35,000	3,500	31,500	25,018	6,482
2	Bike	2021	1,800		1,800	-		1,800	180	1,620	1,287	333
3	Animal Traps	2021	1,800		1,800	-		1,800	180	1,620	1,287	333
	Reserve Fund Adjustment		(18,146)		(18,146)	-		(18,146)		(18,146)	(14,412)	(3,734)
	Total		20,454	-	20,454	-	-	20,454	3,860	16,594	13,180	3,415

Infrastructure Costs Covered in the D.C. Calculation – Parks and Recreation Services

Prj.No	Increased Service Needs Attributable to Anticipated Development	Timing (year)	Gross Capital Cost Estimate (2016\$)	Post Period Benefit	Net Capital Cost	Less:		Subtotal	Less: Other (e.g. 10% Statutory Deduction)	Potential DC Recoverable Cost		
						Benefit to Existing Development	Grants, Subsidies and Other Contributions Attributable to New Development			Total	Residential Share	Non-Residential Share
	2016-2026										95%	5%
1	Recreational Complex/Facility	2023	22,000,000	7,200,700	14,799,300	10,780,764		4,018,536	401,854	3,616,682	3,435,848	180,834
2	Sports Dome	2017	3,000,000	-	3,000,000	300,000		2,700,000	270,000	2,430,000	2,308,500	121,500
3	Richelieu Park Expansion	2021	2,155,593	-	2,155,593	431,119		1,724,474	172,447	1,552,027	1,474,425	77,601
4	Bike Trail Expansion	2021	36,623	-	36,623	7,325		29,298	2,930	26,369	25,050	1,318
5	Additional Parkland Development	2017-2021	479,700	-	479,700	-		479,700	47,970	431,730	410,144	21,587
	Reserve Fund Adjustment		(3,994,193)	-	(3,994,193)	-		(3,994,193)		(3,994,193)	(3,794,484)	(199,710)
	Total		23,677,722	7,200,700	16,477,022	11,519,207	-	4,957,815	895,201	4,062,614	3,859,484	203,131

Infrastructure Costs Covered in the D.C. Calculation – Library Services

Prj.No	Increased Service Needs Attributable to Anticipated Development 2016-2026	Timing (year)	Gross Capital Cost Estimate (2016\$)	Post Period Benefit	Net Capital Cost	Less:		Subtotal	Less: Other (e.g. 10% Statutory Deduction)	Potential DC Recoverable Cost		
						Benefit to Existing Development	Grants, Subsidies and Other Contributions Attributable to New Development			Total	Residential Share 95%	Non-Residential Share 5%
1	Collection Materials	2016-2025	221,934		221,934	-		221,934	22,193	199,741	189,754	9,987
2	Facility Expansion (max cap)	2017	817,893		817,893	-		817,893	81,789	736,104	699,298	36,805
	Reserve Fund Adjustment		(71,930)		(71,930)	-		(71,930)		(71,930)	(68,333)	(3,596)
	Total		967,897	-	967,897	-	-	967,897	103,983	863,915	820,719	43,196

Infrastructure Costs Covered in the D.C. Calculation – Administration Services

Prj.No	Increased Service Needs Attributable to Anticipated Development 2016-2026	Timing (year)	Gross Capital Cost Estimate (2016\$)	Post Period Benefit	Net Capital Cost	Less:		Subtotal	Less: Other (e.g. 10% Statutory Deduction)	Potential DC Recoverable Cost		
						Benefit to Existing Development	Grants, Subsidies and Other Contributions Attributable to New Development			Total	Residential Share 79%	Non-Residential Share 21%
1	Official Plan & Zoning Review	2016	52,200	-	52,200	26,100		26,100	2,610	23,490	18,656	4,834
2	Development Charges Study	2016/2021	65,000	-	65,000	-		65,000	6,500	58,500	46,462	12,038
3	Fire Master Plan	2018	40,000		40,000	10,000		30,000		30,000	23,827	6,173
4	Transportation Master Plan update	2022	50,000		50,000	12,500		37,500		37,500	29,783	7,717
5	Community Traffic Impact Study	2016	30,000		30,000	-		30,000		30,000	23,827	6,173
6	Economic Dev. Strategy Plan	2017	60,000		60,000	30,000		30,000	3,000	27,000	21,444	5,556
7	Parks & Rec. Master Plan	2022	50,000		50,000	12,500		37,500	3,750	33,750	26,805	6,945
8	Water & Sewer Master Plan	2022	50,000		50,000	12,500		37,500		37,500	29,783	7,717
9	Bylaw Services Review	2018	30,000		30,000	15,000		15,000	1,500	13,500	10,722	2,778
	Reserve Fud Adjustment		62,853	-	62,853	-		62,853		62,853	49,919	12,934
	Total		490,053	-	490,053	118,600	-	371,453	17,360	354,093	281,228	72,864

5.3 Build-out Capital Costs for Municipal Service Area D.C. Calculation

The Township's current development charges by-law imposes charges for wastewater services uniformly over the municipal service area. The increases in capital needs for water and wastewater services do not include the lands contained within the Highway 417 Industrial Park (as this area will be addressed separately in the future as servicing needs arise), but do include anticipated developments within the serviced communities of the Township, as well as water only serviced development in Marionville.

The anticipated development-related capital requirements for these services have been considered over the buildout forecast period. The capital needs are based on the Township's current Master Plans for Water and Wastewater Services.

5.3.1 Water Services

The capital needs included in the D.C. calculation reflect the unfunded portions of the reservoir and source water projects which have been completed. These costs have been allocated 86% to residential and 14% to non-residential growth. Capital costs identified for inclusion in the D.C. calculation over the buildout forecast period total \$12.72 million.

5.3.2 Wastewater Services

The capital needs included in the D.C. calculation for wastewater services include an upgrade to the Pumping Station 1, Pumping Station 7, and outstanding prepayment agreement amounts. The gross capital costs included in the D.C. calculation total approximately \$3.66 million and are allocated 86% to residential growth and 14% to non-residential growth.

Infrastructure Costs Covered in the Municipal Service Area D.C. Calculation – Wastewater Services

Prj.No	Increased Service Needs Attributable to Anticipated Development 2016-Buildout (Russell)	Timing (year)	Gross Capital Cost Estimate (2016\$)	Post Period Benefit	Other Deductions	Net Capital Cost	Less:		Potential DC Recoverable Cost		
							Benefit to Existing Development	Grants, Subsidies and Other Contributions Attributable to New Development	Total	Residential Share 86%	Non-Residential Share 14%
1	Russell SPS 1 Upgrade	2021	297,000	-		297,000	-		297,000	255,129	41,871
2	Pumping Station 7		196,706	-		196,706	-		196,706	168,974	27,732
	Outstanding Prepayment Agreements		1,986,284	-		1,986,284	-		1,986,284	1,706,258	280,026
	Reserve Fund Adjustment		1,182,125	-		1,182,125	-		1,182,125	1,015,469	166,656
	Total		3,662,115	-	-	3,662,115	-	-	3,662,115	3,145,830	516,285

5.4 Build-out Capital Costs for Area Specific D.C. Calculation

The Township's current D.C. policy imposes all water and wastewater services on a municipal service area basis, i.e. the average cost charges across all developments with municipal water and wastewater services. As noted in Section 4.6, for services that are not prescribed under subsection 2(9) of the D.C.A., the background study must give consideration to the use of more than one development charge by-law to reflect different needs for services in different areas. As such, this D.C. Background Study provides for the calculation of area specific charges for water and wastewater services for Embrun and Russell service areas. These charges would be in addition to the municipal service area charges and capital needs summarized in Section 5.3.

5.4.1 Water Services (Embrun Service Area)

The capital needs included in the Embrun Area Specific DC calculation mainly reflect the needs identified in the Township's Water and Wastewater Master Plan Update (April 2016). The capital projects identified include unfunded portions of projects already complete, such as the 2006 Reservoir Project and the Source Water Project. Moreover, the Township anticipates a secondary watermain loop in Embrun, as well as Ste-Marie Oversizing. The growth-related capital costs total approximately \$308,000 and have been allocated to residential (86%) and non-residential (14%) based on the forecast population to employment within the water service area over the buildout.

5.4.2 Wastewater Services (Embrun and Russel Service Areas)

The capital needs included in the Embrun and Russell Area Specific DC calculations for wastewater services mainly reflect the needs identified in the Township's Water and Wastewater Master Plan Update (April 2016).

For the Embrun Service Area, the capital projects identified include unfunded portions of projects already complete, i.e. Embrun Lagoon and Pumping Stations 3 and 8, outstanding prepayment agreements, a number of pumping station upgrades, and Ste-Marie oversizing. Incorporating a \$3.5 million reserve fund deficit, the growth-related capital costs for these works total approximately \$11.0 million. These costs have been allocated 86%/14% based on the respective population to employment forecast over the buildout period.

The Township also anticipates a number of works within Russell Service Area, including upgrades to Pumping Station 1 and a new Pumping Station #7. These works in addition to outstanding prepayment agreement and current reserve fund deficit total approximately \$3.7 million to be recovered for development over the buildout forecast

period. These costs have been allocated 86%/14% based on the respective population to employment forecast over the buildout period.

Infrastructure Costs Covered in the Area-Specific D.C. Calculation – Water Services (Embrun)

Prj.No	Increased Service Needs Attributable to Anticipated Development	Timing (year)	Gross Capital Cost Estimate (2016\$)	Post Period Benefit	Net Capital Cost	Less:		Potential DC Recoverable Cost		
						Benefit to Existing Development	Grants, Subsidies and Other Contributions Attributable to New Development	Total	Residential Share 86%	Non-Residential Share 14%
	2016-Buildout (Embrun)									
1	Secondary Watermain Loop - Embrun	2021-2026	230,000	-	230,000	-		230,000	197,575	32,425
2	Ste-Marie Oversizing		78,068	-	78,068	-		78,068	67,062	11,006
	Total		308,068	-	308,068	-	-	308,068	264,636	43,431

5.4 Annual Operating Costs and Asset Management Plan

5.3.1 Operating Cost Examination

As a requirement of the Development Charges Act, 1997 under subsection 10(2)(c), an analysis must be undertaken to assess the long-term capital and operating cost impacts for the capital infrastructure projects identified within the development charge. As part of this analysis, it was deemed necessary to isolate the incremental operating expenditures directly associated with these capital projects, factor in cost savings attributable to economies of scale or cost sharing where applicable, and prorate the cost on a per unit basis (i.e. square foot of building space, per vehicle, etc.). This was undertaken through a review of the Township's 2015 Financial Information Return.

**Table 5-1
Operating Expenditure Impacts for Future Capital Expenditures**

SERVICE	GROSS COST LESS BENEFIT TO EXISTING	ANNUAL OPERATING EXPENDITURES
1. Wastewater Services	\$ 9,944,720	\$ 243,983
2. Water Services	\$ 308,068	\$ 17,022
3. Roads and Related	\$ 3,768,135	\$ 233,715
4. Fire Protection Services	\$ 1,254,512	\$ 37,550
5. Police Services	\$ 63,891	\$ 836,753
6. Parks & Recreation Services	\$ 12,158,515	\$ 108,641
7. Library Services	\$ 150,004	\$ 9,474
8. Administration	\$ 371,453	\$ -
9. By-law Enforcement	\$ 20,454	\$ 463
Total	\$ 28,039,752	\$ 1,487,602

Table 5-1 depicts the annual operating impact resulting from the proposed gross capital projects at the time they are all in place. It is important to note that, while municipal program expenditures will increase with growth in population, the costs associated with

the new infrastructure (i.e. facilities) would be delayed until the time these works are in place.

5.3.2 Asset Management Plan

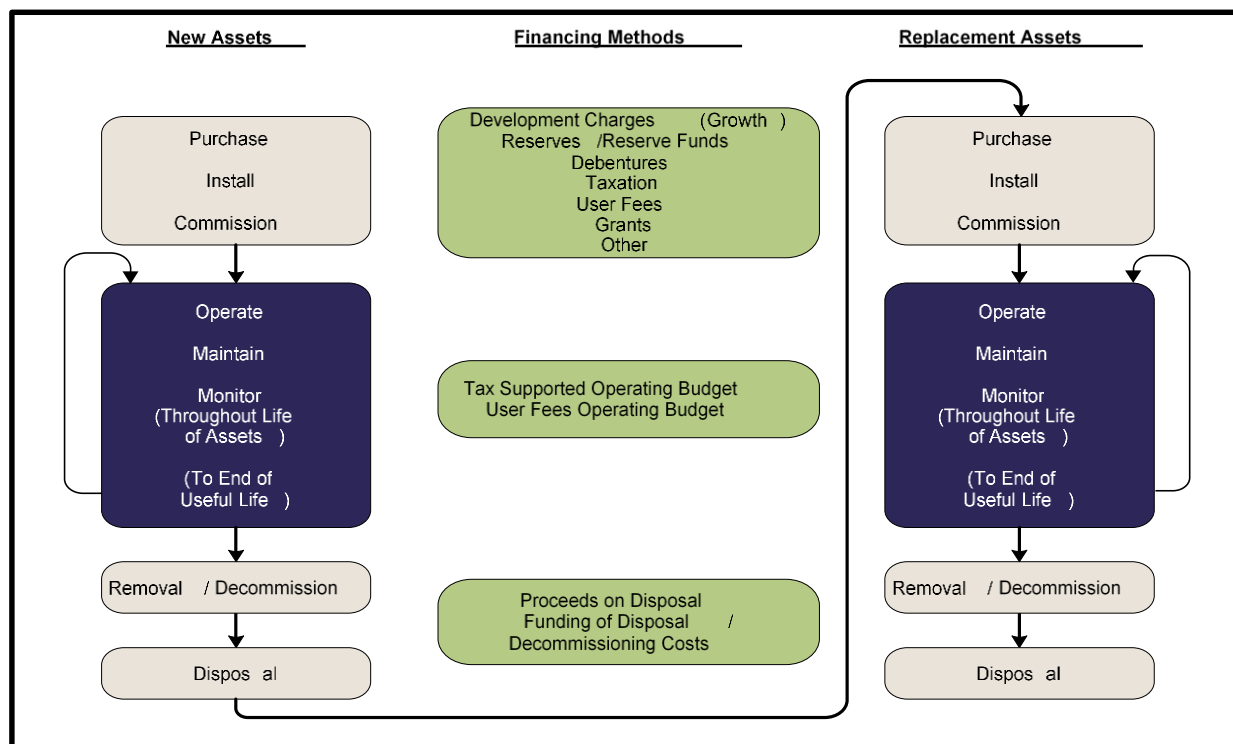
The recent changes to the D.C.A. (new section 10(c.2)) require that the Background Study must include an asset management plan related to new infrastructure. Section 10 (3) of the D.C.A. provides:

The asset management plan shall,

- (a) deal with all assets whose capital costs are proposed to be funded under the development charge by-law;**
- (b) demonstrate that all the assets mentioned in clause (a) are financially sustainable over their full life cycle;**
- (c) contain any other information that is prescribed; and**
- (d) be prepared in the prescribed manner.**

In regard to the above, section 8 of the Regulations was amended to include subsections (2), (3) and (4) which set out for specific detailed requirements for transit (only). For all services except transit, there are no prescribed requirements at this time thus requiring the municipality to define the approach to include within the Background Study.

At a broad level, the Asset Management Plan provides for the long term investment in an asset over its entire useful life along with the funding. The schematic below identifies the costs for an asset through its entire lifecycle. For growth related works, the majority of capital costs will be funded by the D.C. Non-growth related expenditures will then be funded from non-D.C. revenues as noted below. During the useful life of the asset, there will be minor maintenance costs to extend the life of the asset along with additional program related expenditures to provide the full services to the residents. At the end of the life of the asset, it will be replaced by non-D.C. financing sources.



The Township of Russell has undertaken an Asset Management Plan which covers the following asset classes: Road network, Bridges & Culverts, Sanitary Sewer network, Water network, and Storm Sewer network. The Asset Management Plan identified an annual cumulative infrastructure deficit of \$3.5 million, with approximately \$1.5 million attributable to tax-supported services (i.e. road network, bridges & culverts, and storm sewer), and approximately \$2 million attributable to water and sanitary sewer services. The Asset Management Plan does not address growth related needs for any of the services covered. As a result, the asset management requirement for the D.C. must be undertaken in the absence of this information. This section covers the growth component of the works contained within this study.

In recognition to the schematic above, the following table (presented in 2016\$) has been developed to provide the annualized expenditures and revenues associated with new growth. Note that the D.C.A. does not require an analysis of the non-D.C. capital needs or their associated operating costs so these are omitted from the table below. Furthermore, as all existing assets for the categories of assets included in the D.C. eligible capital costs are not included in the Township's Asset Management Plan, the present infrastructure gap and associated funding plan has not been considered at this time. Hence the following does not represent a fiscal impact assessment (including future tax/rate increases) but provides insight into the potential affordability of the new assets:

1. The non-D.C. recoverable portion of the projects will require financing from the Township's financial resources (i.e. taxation, rates, fees, etc.). This amount has been presented on an annual debt charge amount based on 20-year financing. It is noted that some of these non-growth costs may already be reflected in the \$3.5 million deficit identified in the Township's Asset Management Plan.
2. Lifecycle costs for the 2016 D.C. capital works have been presented based on a sinking fund basis. The assets have been considered over their estimated useful lives.
3. Incremental operating costs for the D.C. services (only) have been included.
4. The resultant total annualized expenditures are \$4.3 million.
5. Consideration was given to the potential new taxation and user fee revenues which will be generated as a result of new growth. These revenues will be available to finance the expenditures above. The new operating revenues are \$9.02 million. This amount, totalled with the existing operating revenues of \$25.6 million, will provide annual revenues of \$34.61 million by the end of the forecast period.
6. In consideration of the above, the capital plan is deemed to be financially sustainable.

Table 5-2
Township of Russell
Asset Management – Future Expenditures and Associated Revenues (2016\$)

	Sub-Total	2036 (Total)
Expenditures (Annualized)		
Annual Debt Payment on Non-Growth Related Capital ¹ (2014 DC and 2016 updates)		1,349,761
Annual Debt Payment on Post Period Capital ²		529,840
Lifecycle:		
Annual Lifecycle - Town Wide Services	\$1,452,948	
Annual Lifecycle - Area Specific Services ³		
Sub-Total - Annual Lifecycle	\$1,452,948	\$1,452,948
Incremental Operating Costs (for D.C. Services)		\$1,487,602
Total Expenditures		\$4,290,310
Revenue (Annualized)		
Total Existing Revenue ⁴		\$25,593,328
Incremental Tax and Non-Tax Revenue (User Fees, Fines, Licences, etc.)		\$9,015,291
Total Revenues		\$34,608,619

6. Development Charge Calculation

The calculated development charges for water and wastewater services are shown in **Error! Reference source not found.**1 and Table 6-2 respectively. Tables 6-1 and 6-2 maintain the calculation of water and wastewater services on a municipal service area basis, consistent with the Township's current practice. Calculations on an area-specific basis for water and wastewater charges for Embrun and Russell Service Areas are provided in Tables 6-3 through 6-6. Table 6-7 calculates the proposed development charge for roads and related services, fire protection services, and police services to be imposed on anticipated development in the Township over the 20-year forecast period. Table 6-8 calculates the proposed development charges to be imposed on anticipated development in the Township over the 10-year planning horizon for parks and recreation, library, by-law enforcement, and administration services. All calculations have been undertaken on a cash flow basis to estimate the financing costs of the capital plan. The cash flow analysis is contained in Tables 6-9 through 6-24.

The calculation for residential development is generated on a per capita basis and is based upon four forms of housing types (single and semi-detached, apartments 2+ bedrooms, bachelor and 1 bedroom apartments, and other multiples). The non-residential development charge has been calculated on a per square foot of gross floor area basis for commercial, industrial and institutional development.

The D.C. eligible costs for each service component are provided in Chapter 5 for all municipal services, based on their proposed capital programs.

For the residential calculations, the total cost is divided by the "gross" (new resident) population to determine the per capita amount. The eligible D.C. cost calculations are based on the net anticipated population increase (the forecast new unit population less the anticipated decline in existing units). The cost per capita is then multiplied by the average occupancy of the new units (Appendix A) to calculate the charge.

With respect to non-residential development, the total costs (based on need for service) have been divided by the anticipated development over the planning period to calculate a cost per square foot of gross floor area.

Table 6-25 summarizes the calculated maximum development charges that could be imposed by Council by residential dwelling type and non-residential gross floor area under the uniform approach. Calculated maximum development charges based on an area-specific approach are shown in Table 6-26. Tables 6-27 and 6-28 compare the Township's existing charges, calculated uniform D.C. approach, and calculated area-

specific D.C. approach for single detached residential development and non-residential development respectively.

**Table 6-1
Development Charge Calculation
Municipal Wastewater Service Area
2016-Buildout**

SERVICE	2016 \$ DC Eligible Cost		2016 \$ DC Eligible Cost	
	Residential	Non-Residential	SDU	per ft ²
1. Wastewater Services	\$ 12,614,726	\$ 2,070,295	\$ 3,929	\$ 1.42
TOTAL	\$ 12,614,726	\$ 2,070,295	\$ 3,929	\$ 1.42
Financing Costs	\$ 2,525,515	\$ 385,169		
DC ELIGIBLE CAPITAL COST	\$ 15,140,241	\$ 2,455,464		
Build out Gross Population / GFA Growth (ft ² .)	12,254	1,729,200		
Cost Per Capita / Non-Residential GFA (ft ² .)	\$ 1,235.53	\$ 1.42		
By Residential Unit Type	<u>p.p.u</u>			
Single and Semi-Detached Dwelling	3.18	\$ 3,929		
Apartments - 2 Bedrooms +	1.73	\$ 2,137		
Apartments - Bachelor and 1 Bedroom	1.25	\$ 1,544		
Other Multiples	1.96	\$ 2,422		

**Table 6-2
Development Charge Calculation
Municipal Water Service Area
2016-Buildout (Water Area)**

SERVICE	2016 \$ DC Eligible Cost		2016 \$ DC Eligible Cost	
	Residential	Non-Residential	SDU	per ft ²
2. Water Services	\$ 11,191,138	\$ 1,836,659	\$ 4,269	\$ 1.57
TOTAL	\$ 11,191,138	\$ 1,836,659	\$ 4,269	\$ 1.57
Financing Costs	\$ 5,515,687	\$ 878,185		
DC ELIGIBLE CAPITAL COST	\$ 16,706,825	\$ 2,714,844		
Build out Gross Population / GFA Growth (ft ² .)	12,445	1,729,200		
Cost Per Capita / Non-Residential GFA (ft ² .)	\$ 1,342.45	\$ 1.57		
By Residential Unit Type	<u>p.p.u</u>			
Single and Semi-Detached Dwelling	3.18	\$ 4,269		
Apartments - 2 Bedrooms +	1.73	\$ 2,322		
Apartments - Bachelor and 1 Bedroom	1.25	\$ 1,678		
Other Multiples	1.96	\$ 2,631		

**Table 6-3
Development Charge Calculation (Area-Specific Approach)
Municipal Wastewater Service Area
2016-Buildout**

SERVICE	2016 \$ DC Eligible Cost		2016 \$ DC Eligible Cost	
	Residential	Non-Residential	SDU	per ft ²
1. Wastewater Services	\$ -	\$ -	\$ -	\$ -
TOTAL	\$ -	\$ -	\$ -	\$ -
Financing Costs	\$ -	\$ -		
DC ELIGIBLE CAPITAL COST	\$ -	\$ -		
Build out Gross Population / GFA Growth (ft ² .)	12,254	1,729,200		
Cost Per Capita / Non-Residential GFA (ft ² .)	\$ -	\$ -		
<u>By Residential Unit Type</u>	<u>p.p.u</u>			
Single and Semi-Detached Dwelling	3.18	\$ -		
Apartments - 2 Bedrooms +	1.73	\$ -		
Apartments - Bachelor and 1 Bedroom	1.25	\$ -		
Other Multiples	1.96	\$ -		

**Table 6-4
Development Charge Calculation (Area-Specific Approach)
Municipal Water Service Area
2016-Buildout (Water Area)**

SERVICE	2016 \$ DC Eligible Cost		2016 \$ DC Eligible Cost	
	Residential	Non-Residential	SDU	per ft ²
2. Water Services	\$ 10,926,502	\$ 1,793,228	\$ 4,192	\$ 1.54
TOTAL	\$ 10,926,502	\$ 1,793,228	\$ 4,192	\$ 1.54
Financing Costs	\$ 5,478,982	\$ 869,740		
DC ELIGIBLE CAPITAL COST	\$ 16,405,484	\$ 2,662,968		
Build out Gross Population / GFA Growth (ft ² .)	12,445	1,729,200		
Cost Per Capita / Non-Residential GFA (ft ² .)	\$ 1,318.24	\$ 1.54		
<u>By Residential Unit Type</u>	<u>p.p.u</u>			
Single and Semi-Detached Dwelling	3.18	\$ 4,192		
Apartments - 2 Bedrooms +	1.73	\$ 2,281		
Apartments - Bachelor and 1 Bedroom	1.25	\$ 1,648		
Other Multiples	1.96	\$ 2,584		

**Table 6-5
Development Charge Calculation (Area-Specific Approach)
Area Specific Services
2016-Buildout (Embrun)**

SERVICE	2016 \$ DC Eligible Cost		2016 \$ DC Eligible Cost	
	Residential	Non-Residential	SDU	per ft ²
1b. Wastewater Services	\$ 9,468,896	\$ 1,554,010	\$ 4,503	\$ 1.21
2b. Water Services	\$ 264,636	\$ 43,431	\$ 120	\$ 0.03
TOTAL	\$ 9,733,533	\$ 1,597,441	\$ 4,623	\$ 1.24
Financing Costs	\$ (580,574)	\$ (292,688)		
DC ELIGIBLE CAPITAL COST	\$ 9,152,958	\$ 1,304,753		
Build out Gross Population / GFA Growth (ft ² .)	6,296	1,052,220		
Cost Per Capita / Non-Residential GFA (ft ² .)	\$ 1,453.77	\$ 1.24		
By Residential Unit Type	p.p.u			
Single and Semi-Detached Dwelling	3.18	\$ 4,623		
Apartments - 2 Bedrooms +	1.73	\$ 2,515		
Apartments - Bachelor and 1 Bedroom	1.25	\$ 1,817		
Other Multiples	1.96	\$ 2,849		

**Table 6-6
Development Charge Calculation (Area-Specific Approach)
Area Specific Services
2016-Buildout (Russell)**

SERVICE	2016 \$ DC Eligible Cost		2016 \$ DC Eligible Cost	
	Residential	Non-Residential	SDU	per ft ²
1c. Wastewater Services	\$ 3,145,830	\$ 516,285	\$ 2,842	\$ 2.92
TOTAL	\$ 3,145,830	\$ 516,285	\$ 2,842	\$ 2.92
Financing Costs	\$ 762,367	\$ 145,971		
DC ELIGIBLE CAPITAL COST	\$ 3,908,197	\$ 662,256		
Build out Gross Population / GFA Growth (ft ² .)	4,373	226,800		
Cost Per Capita / Non-Residential GFA (ft ² .)	\$ 893.71	\$ 2.92		
By Residential Unit Type	p.p.u			
Single and Semi-Detached Dwelling	3.18	\$ 2,842		
Apartments - 2 Bedrooms +	1.73	\$ 1,546		
Apartments - Bachelor and 1 Bedroom	1.25	\$ 1,117		
Other Multiples	1.96	\$ 1,752		

**Table 6-7
Development Charge Calculation
Township-wide Services
2016-2036**

SERVICE	2016 \$ DC Eligible Cost		2016 \$ DC Eligible Cost	
	Residential	Non-Residential	SDU	per ft ²
3. Roads and Related	\$ 3,381,066	\$ 690,549	\$ 2,248	\$ 0.66
4. Fire Protection Services	\$ 2,103,196	\$ 429,557	\$ 652	\$ 0.19
5. Police Services	\$ 58,341	\$ 11,916	\$ 33	\$ 0.01
TOTAL	\$ 5,542,603	\$ 1,132,022	\$ 2,933	\$ 0.86
Financing Costs	\$ 349,222	\$ 51,166		
DC ELIGIBLE CAPITAL COST	\$ 5,891,825	\$ 1,183,188		
20 Year Gross Population / GFA Growth (ft ² .)	6,388	1,375,800		
Cost Per Capita / Non-Residential GFA (ft ² .)	\$ 922.33	\$ 0.86		
By Residential Unit Type	p.p.u			
Single and Semi-Detached Dwelling	3.18	\$ 2,933		
Apartments - 2 Bedrooms +	1.73	\$ 1,596		
Apartments - Bachelor and 1 Bedroom	1.25	\$ 1,153		
Other Multiples	1.96	\$ 1,808		

**Table 6-8
Development Charge Calculation
Township-wide Services
2016-2026**

SERVICE	2016 \$ DC Eligible Cost		2016 \$ DC Eligible Cost	
	Residential	Non-Residential	SDU	per ft ²
6. <u>Parks & Recreation Services</u>	\$	\$	\$	\$
6.1 Parks and Recreation	3,859,484	203,131	3,445	0.21
	3,859,484	203,131	3,445	0.21
7. <u>Library Services</u>				
7.1 Library	820,719	43,196	733	0.04
	820,719	43,196	733	0.04
8. <u>Administration</u>				
8.1 Studies	281,228	72,864	251	0.07
9. <u>By-law Enforcement</u>				
9.1 By-law Enforcement	13,180	3,415	12	0.01
	13,180	3,415	12	0.01
TOTAL	\$4,974,610	\$322,606	\$4,441	\$0.33
DC ELIGIBLE CAPITAL COST	\$4,974,610	\$322,606		
10 Year Gross Population / GFA Growth (ft ² .)	3,562	980,100		
Cost Per Capita / Non-Residential GFA (ft ² .)	\$1,397	\$0.33		
By Residential Unit Type	p.p.u			
Single and Semi-Detached Dwelling	3.18	\$4,441		
Apartments - 2 Bedrooms +	1.73	\$2,416		
Apartments - Bachelor and 1 Bedroom	1.25	\$1,746		
Other Multiples	1.96	\$2,737		

TABLE 6-9
Township of Russell - 2016 Development Charges
Cash Flow Analysis
Buildout Wastewater Services - Residential

Year	Reserve Fund Opening Balance	Dev't Related Expenditures		Debt Carrying Costs (P&I) 3%; 20 Yr Term	SDE per Year	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	Revenues minus Expenditures	Debtenture Financing Requirement	Interest Earnings (1.5%) / Costs (3%)	DC Reserve Fund Closing Balance after Financing
		Nominal	Inflated (2%/Yr)								
2016	\$ (4,072,013)	\$ (6,889,099)	\$ (6,889,099)		101	\$ 3,929	\$ 397,185	\$ (6,491,914)		\$ (219,539)	\$ (10,783,467)
2017	\$ (10,783,467)	\$ -	\$ -		101	\$ 4,008	\$ 405,129	\$ 405,129		\$ (317,427)	\$ (10,695,765)
2018	\$ (10,695,765)	\$ -	\$ -		101	\$ 4,088	\$ 413,231	\$ 413,231		\$ (314,674)	\$ (10,597,208)
2019	\$ (10,597,208)	\$ -	\$ -		101	\$ 4,170	\$ 421,496	\$ 421,496		\$ (311,594)	\$ (10,487,306)
2020	\$ (10,487,306)	\$ -	\$ -		101	\$ 4,253	\$ 429,926	\$ 429,926		\$ (308,170)	\$ (10,365,551)
2021	\$ (10,365,551)	\$ (1,653,613)	\$ (1,825,723)		101	\$ 4,338	\$ 438,524	\$ (1,387,198)		\$ (331,774)	\$ (12,084,524)
2022	\$ (12,084,524)	\$ -	\$ -		101	\$ 4,425	\$ 447,295	\$ 447,295		\$ (355,826)	\$ (11,993,055)
2023	\$ (11,993,055)	\$ -	\$ -		101	\$ 4,513	\$ 456,241	\$ 456,241		\$ (352,948)	\$ (11,889,762)
2024	\$ (11,889,762)	\$ -	\$ -		101	\$ 4,604	\$ 465,366	\$ 465,366		\$ (349,712)	\$ (11,774,109)
2025	\$ (11,774,109)	\$ -	\$ -		101	\$ 4,696	\$ 474,673	\$ 474,673		\$ (346,103)	\$ (11,645,539)
2026	\$ (11,645,539)	\$ -	\$ -		86	\$ 4,790	\$ 411,716	\$ 411,716		\$ (343,190)	\$ (11,577,014)
2027	\$ (11,577,014)	\$ -	\$ -		86	\$ 4,885	\$ 419,950	\$ 419,950		\$ (341,011)	\$ (11,498,076)
2028	\$ (11,498,076)	\$ -	\$ -		86	\$ 4,983	\$ 428,349	\$ 428,349		\$ (338,517)	\$ (11,408,244)
2029	\$ (11,408,244)	\$ -	\$ -		86	\$ 5,083	\$ 436,916	\$ 436,916		\$ (335,694)	\$ (11,307,021)
2030	\$ (11,307,021)	\$ -	\$ -		86	\$ 5,184	\$ 445,654	\$ 445,654		\$ (332,526)	\$ (11,193,893)
2031	\$ (11,193,893)	\$ -	\$ -		86	\$ 5,288	\$ 454,567	\$ 454,567		\$ (328,998)	\$ (11,068,324)
2032	\$ (11,068,324)	\$ -	\$ -		86	\$ 5,394	\$ 463,659	\$ 463,659		\$ (325,095)	\$ (10,929,760)
2033	\$ (10,929,760)	\$ -	\$ -		86	\$ 5,502	\$ 472,932	\$ 472,932		\$ (320,799)	\$ (10,777,627)
2034	\$ (10,777,627)	\$ -	\$ -		86	\$ 5,612	\$ 482,390	\$ 482,390		\$ (316,093)	\$ (10,611,329)
2035	\$ (10,611,329)	\$ -	\$ -		86	\$ 5,724	\$ 492,038	\$ 492,038		\$ (310,959)	\$ (10,430,250)
2036	\$ (10,430,250)	\$ -	\$ -		99	\$ 5,838	\$ 579,700	\$ 579,700		\$ (304,212)	\$ (10,154,763)
2037	\$ (10,154,763)	\$ -	\$ -		99	\$ 5,955	\$ 591,294	\$ 591,294		\$ (295,773)	\$ (9,859,242)
2038	\$ (9,859,242)	\$ -	\$ -		99	\$ 6,074	\$ 603,120	\$ 603,120		\$ (286,730)	\$ (9,542,853)
2039	\$ (9,542,853)	\$ -	\$ -		99	\$ 6,196	\$ 615,182	\$ 615,182		\$ (277,058)	\$ (9,204,729)
2040	\$ (9,204,729)	\$ -	\$ -		99	\$ 6,320	\$ 627,486	\$ 627,486		\$ (266,730)	\$ (8,843,973)
2041	\$ (8,843,973)	\$ -	\$ -		99	\$ 6,446	\$ 640,035	\$ 640,035		\$ (255,719)	\$ (8,459,657)
2042	\$ (8,459,657)	\$ -	\$ -		99	\$ 6,575	\$ 652,836	\$ 652,836		\$ (243,997)	\$ (8,050,818)
2043	\$ (8,050,818)	\$ -	\$ -		99	\$ 6,707	\$ 665,893	\$ 665,893		\$ (231,536)	\$ (7,616,461)
2044	\$ (7,616,461)	\$ -	\$ -		99	\$ 6,841	\$ 679,211	\$ 679,211		\$ (218,306)	\$ (7,155,557)
2045	\$ (7,155,557)	\$ -	\$ -		99	\$ 6,978	\$ 692,795	\$ 692,795		\$ (204,275)	\$ (6,667,037)
2046	\$ (6,667,037)	\$ -	\$ -		99	\$ 7,117	\$ 706,651	\$ 706,651		\$ (189,411)	\$ (6,149,797)
2047	\$ (6,149,797)	\$ -	\$ -		99	\$ 7,259	\$ 720,784	\$ 720,784		\$ (173,682)	\$ (5,602,696)
2048	\$ (5,602,696)	\$ -	\$ -		99	\$ 7,405	\$ 735,199	\$ 735,199		\$ (157,053)	\$ (5,024,549)
2049	\$ (5,024,549)	\$ -	\$ -		99	\$ 7,553	\$ 749,903	\$ 749,903		\$ (139,488)	\$ (4,414,134)
2050	\$ (4,414,134)	\$ -	\$ -		99	\$ 7,704	\$ 764,901	\$ 764,901		\$ (120,950)	\$ (3,770,183)
2051	\$ (3,770,183)	\$ -	\$ -		99	\$ 7,858	\$ 780,199	\$ 780,199		\$ (101,403)	\$ (3,091,386)
2052	\$ (3,091,386)	\$ -	\$ -		99	\$ 8,015	\$ 795,803	\$ 795,803		\$ (80,805)	\$ (2,376,387)
2053	\$ (2,376,387)	\$ -	\$ -		99	\$ 8,175	\$ 811,719	\$ 811,719		\$ (59,116)	\$ (1,623,784)
2054	\$ (1,623,784)	\$ -	\$ -		99	\$ 8,339	\$ 827,954	\$ 827,954		\$ (36,294)	\$ (832,124)
2055	\$ (832,124)	\$ -	\$ -		99	\$ 8,506	\$ 844,513	\$ 844,513		\$ (12,389)	\$ 0

Notes:
P&I - Principal and Interest
SDE - Single Detached Equivalents

TABLE 6-10
Township of Russell - 2016 Development Charges
Cash Flow Analysis
Buildout Wastewater Services - Non-Residential

Year	Reserve Fund Opening Balance	Dev't Related Expenditures		Debt Carrying Costs (P&I) 3%; 20 Yr Term	Non-Residential GFA (sq.ft.)	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	Revenues minus Expenditures	Debtenture Financing Requirement	Interest Earnings (1.5%) / Costs (3%)	DC Reserve Fund Closing Balance after Financing
		Nominal	Inflated (2%/Yr)								
2016	\$ (668,288)	\$ (1,130,620)	\$ (1,130,620)		55,320	\$ 1.42	\$ 78,522	\$ (1,052,099)		\$ (35,830)	\$ (1,756,216)
2017	\$ (1,756,216)	\$ -	\$ -		55,320	\$ 1.45	\$ 80,092	\$ 80,092		\$ (51,485)	\$ (1,727,609)
2018	\$ (1,727,609)	\$ -	\$ -		55,320	\$ 1.48	\$ 81,694	\$ 81,694		\$ (50,603)	\$ (1,696,518)
2019	\$ (1,696,518)	\$ -	\$ -		55,320	\$ 1.51	\$ 83,328	\$ 83,328		\$ (49,646)	\$ (1,662,836)
2020	\$ (1,662,836)	\$ -	\$ -		55,320	\$ 1.54	\$ 84,995	\$ 84,995		\$ (48,610)	\$ (1,626,451)
2021	\$ (1,626,451)	\$ (271,387)	\$ (299,633)		55,320	\$ 1.57	\$ 86,694	\$ (212,938)		\$ (51,988)	\$ (1,891,377)
2022	\$ (1,891,377)	\$ -	\$ -		55,320	\$ 1.60	\$ 88,428	\$ 88,428		\$ (55,415)	\$ (1,858,363)
2023	\$ (1,858,363)	\$ -	\$ -		55,320	\$ 1.63	\$ 90,197	\$ 90,197		\$ (54,398)	\$ (1,822,564)
2024	\$ (1,822,564)	\$ -	\$ -		55,320	\$ 1.66	\$ 92,001	\$ 92,001		\$ (53,297)	\$ (1,783,860)
2025	\$ (1,783,860)	\$ -	\$ -		55,320	\$ 1.70	\$ 93,841	\$ 93,841		\$ (52,108)	\$ (1,742,128)
2026	\$ (1,742,128)	\$ -	\$ -		37,060	\$ 1.73	\$ 64,123	\$ 64,123		\$ (51,302)	\$ (1,729,306)
2027	\$ (1,729,306)	\$ -	\$ -		37,060	\$ 1.76	\$ 65,406	\$ 65,406		\$ (50,898)	\$ (1,714,799)
2028	\$ (1,714,799)	\$ -	\$ -		37,060	\$ 1.80	\$ 66,714	\$ 66,714		\$ (50,443)	\$ (1,698,528)
2029	\$ (1,698,528)	\$ -	\$ -		37,060	\$ 1.84	\$ 68,048	\$ 68,048		\$ (49,935)	\$ (1,680,415)
2030	\$ (1,680,415)	\$ -	\$ -		37,060	\$ 1.87	\$ 69,409	\$ 69,409		\$ (49,371)	\$ (1,660,377)
2031	\$ (1,660,377)	\$ -	\$ -		37,060	\$ 1.91	\$ 70,797	\$ 70,797		\$ (48,749)	\$ (1,638,329)
2032	\$ (1,638,329)	\$ -	\$ -		37,060	\$ 1.95	\$ 72,213	\$ 72,213		\$ (48,067)	\$ (1,614,183)
2033	\$ (1,614,183)	\$ -	\$ -		37,060	\$ 1.99	\$ 73,657	\$ 73,657		\$ (47,321)	\$ (1,587,846)
2034	\$ (1,587,846)	\$ -	\$ -		37,060	\$ 2.03	\$ 75,131	\$ 75,131		\$ (46,508)	\$ (1,559,224)
2035	\$ (1,559,224)	\$ -	\$ -		37,060	\$ 2.07	\$ 76,633	\$ 76,633		\$ (45,627)	\$ (1,528,218)
2036	\$ (1,528,218)	\$ -	\$ -		40,270	\$ 2.11	\$ 84,936	\$ 84,936		\$ (44,572)	\$ (1,487,854)
2037	\$ (1,487,854)	\$ -	\$ -		40,270	\$ 2.15	\$ 86,635	\$ 86,635		\$ (43,336)	\$ (1,444,555)
2038	\$ (1,444,555)	\$ -	\$ -		40,270	\$ 2.19	\$ 88,368	\$ 88,368		\$ (42,011)	\$ (1,398,198)
2039	\$ (1,398,198)	\$ -	\$ -		40,270	\$ 2.24	\$ 90,135	\$ 90,135		\$ (40,594)	\$ (1,348,657)
2040	\$ (1,348,657)	\$ -	\$ -		40,270	\$ 2.28	\$ 91,938	\$ 91,938		\$ (39,081)	\$ (1,295,800)
2041	\$ (1,295,800)	\$ -	\$ -		40,270	\$ 2.33	\$ 93,777	\$ 93,777		\$ (37,467)	\$ (1,239,491)
2042	\$ (1,239,491)	\$ -	\$ -		40,270	\$ 2.38	\$ 95,652	\$ 95,652		\$ (35,750)	\$ (1,179,589)
2043	\$ (1,179,589)	\$ -	\$ -		40,270	\$ 2.42	\$ 97,565	\$ 97,565		\$ (33,924)	\$ (1,115,948)
2044	\$ (1,115,948)	\$ -	\$ -		40,270	\$ 2.47	\$ 99,516	\$ 99,516		\$ (31,986)	\$ (1,048,417)
2045	\$ (1,048,417)	\$ -	\$ -		40,270	\$ 2.52	\$ 101,507	\$ 101,507		\$ (29,930)	\$ (976,840)
2046	\$ (976,840)	\$ -	\$ -		40,270	\$ 2.57	\$ 103,537	\$ 103,537		\$ (27,752)	\$ (901,055)
2047	\$ (901,055)	\$ -	\$ -		40,270	\$ 2.62	\$ 105,608	\$ 105,608		\$ (25,448)	\$ (820,895)
2048	\$ (820,895)	\$ -	\$ -		40,270	\$ 2.67	\$ 107,720	\$ 107,720		\$ (23,011)	\$ (736,186)
2049	\$ (736,186)	\$ -	\$ -		40,270	\$ 2.73	\$ 109,874	\$ 109,874		\$ (20,437)	\$ (646,749)
2050	\$ (646,749)	\$ -	\$ -		40,270	\$ 2.78	\$ 112,072	\$ 112,072		\$ (17,721)	\$ (552,399)
2051	\$ (552,399)	\$ -	\$ -		40,270	\$ 2.84	\$ 114,313	\$ 114,313		\$ (14,857)	\$ (452,943)
2052	\$ (452,943)	\$ -	\$ -		40,270	\$ 2.90	\$ 116,599	\$ 116,599		\$ (11,839)	\$ (348,183)
2053	\$ (348,183)	\$ -	\$ -		40,270	\$ 2.95	\$ 118,931	\$ 118,931		\$ (8,662)	\$ (237,913)
2054	\$ (237,913)	\$ -	\$ -		40,270	\$ 3.01	\$ 121,310	\$ 121,310		\$ (5,318)	\$ (121,921)
2055	\$ (121,921)	\$ -	\$ -		40,270	\$ 3.07	\$ 123,736	\$ 123,736		\$ (1,815)	\$ 0

Notes:
P&I - Principal and Interest
SDE - Single Detached Equivalents

TABLE 6-11
Township of Russell - 2016 Development Charges
Cash Flow Analysis
Buildout Water Services - Residential

Year	Reserve Fund Opening Balance	Dev't Related Expenditures		Debenture Payments (Ottawa Water Supply, Reservoir)	SDE per Year	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	Revenues minus Expenditures	Debenture Financing Requirement	Interest Earnings (1.5%) / Costs (3%)	DC Reserve Fund Closing Balance after Financing
		Nominal	Inflated (2%/Yr)								
2016	\$ (405,692)	\$ (67,062)	\$ (67,062)	\$ (855,111)	107	\$ 4,269	\$ 457,116	\$ (465,057)		\$ (19,147)	\$ (889,895)
2017	\$ (889,895)	\$ -	\$ -	\$ (855,111)	107	\$ 4,354	\$ 466,258	\$ (388,853)		\$ (32,530)	\$ (1,311,277)
2018	\$ (1,311,277)	\$ -	\$ -	\$ (855,111)	107	\$ 4,441	\$ 475,583	\$ (379,528)		\$ (45,031)	\$ (1,735,836)
2019	\$ (1,735,836)	\$ -	\$ -	\$ (855,111)	107	\$ 4,530	\$ 485,095	\$ (370,016)		\$ (57,625)	\$ (2,163,477)
2020	\$ (2,163,477)	\$ -	\$ -	\$ (855,111)	107	\$ 4,620	\$ 494,797	\$ (360,314)		\$ (70,309)	\$ (2,594,100)
2021	\$ (2,594,100)	\$ (32,929)	\$ (36,356)	\$ (855,111)	107	\$ 4,713	\$ 504,693	\$ (386,774)		\$ (83,625)	\$ (3,064,499)
2022	\$ (3,064,499)	\$ (32,929)	\$ (37,084)	\$ (855,111)	107	\$ 4,807	\$ 514,787	\$ (377,408)		\$ (97,596)	\$ (3,539,503)
2023	\$ (3,539,503)	\$ (32,929)	\$ (37,825)	\$ (855,111)	107	\$ 4,903	\$ 525,082	\$ (367,854)		\$ (111,703)	\$ (4,019,060)
2024	\$ (4,019,060)	\$ (32,929)	\$ (38,582)	\$ (855,111)	107	\$ 5,001	\$ 535,584	\$ (358,108)		\$ (125,943)	\$ (4,503,112)
2025	\$ (4,503,112)	\$ (32,929)	\$ (39,353)	\$ (757,420)	107	\$ 5,101	\$ 546,296	\$ (250,477)		\$ (138,851)	\$ (4,892,440)
2026	\$ (4,892,440)	\$ (32,929)	\$ (40,140)	\$ (620,898)	86	\$ 5,203	\$ 447,290	\$ (213,748)		\$ (149,979)	\$ (5,256,167)
2027	\$ (5,256,167)	\$ -	\$ -	\$ (620,898)	86	\$ 5,307	\$ 456,236	\$ (164,662)		\$ (160,155)	\$ (5,580,984)
2028	\$ (5,580,984)	\$ -	\$ -	\$ (620,898)	86	\$ 5,414	\$ 465,361	\$ (155,537)		\$ (169,763)	\$ (5,906,284)
2029	\$ (5,906,284)	\$ -	\$ -	\$ (620,898)	86	\$ 5,522	\$ 474,668	\$ (146,230)		\$ (179,382)	\$ (6,231,896)
2030	\$ (6,231,896)	\$ -	\$ -	\$ (620,898)	86	\$ 5,632	\$ 484,161	\$ (136,737)		\$ (189,008)	\$ (6,557,640)
2031	\$ (6,557,640)	\$ -	\$ -	\$ (620,898)	86	\$ 5,745	\$ 493,845	\$ (127,053)		\$ (198,635)	\$ (6,883,329)
2032	\$ (6,883,329)	\$ -	\$ -	\$ (620,898)	86	\$ 5,860	\$ 503,722	\$ (117,177)		\$ (208,258)	\$ (7,208,763)
2033	\$ (7,208,763)	\$ -	\$ -	\$ (620,898)	86	\$ 5,977	\$ 513,796	\$ (107,102)		\$ (217,869)	\$ (7,533,734)
2034	\$ (7,533,734)	\$ -	\$ -	\$ (620,898)	86	\$ 6,097	\$ 524,072	\$ (96,826)		\$ (227,464)	\$ (7,858,025)
2035	\$ (7,858,025)	\$ -	\$ -	\$ (620,898)	86	\$ 6,219	\$ 534,553	\$ (86,345)		\$ (237,036)	\$ (8,181,405)
2036	\$ (8,181,405)	\$ -	\$ -	\$ (620,898)	99	\$ 6,343	\$ 629,789	\$ 8,891		\$ (245,309)	\$ (8,417,823)
2037	\$ (8,417,823)	\$ -	\$ -	\$ (620,898)	99	\$ 6,470	\$ 642,385	\$ 21,487		\$ (252,212)	\$ (8,648,549)
2038	\$ (8,648,549)	\$ -	\$ -	\$ (620,898)	99	\$ 6,599	\$ 655,233	\$ 34,335		\$ (258,941)	\$ (8,873,155)
2039	\$ (8,873,155)	\$ -	\$ -	\$ (620,898)	99	\$ 6,731	\$ 668,337	\$ 47,439		\$ (265,483)	\$ (9,091,199)
2040	\$ (9,091,199)	\$ -	\$ -	\$ (620,898)	99	\$ 6,866	\$ 681,704	\$ 60,806		\$ (271,824)	\$ (9,302,217)
2041	\$ (9,302,217)	\$ -	\$ -	\$ (310,449)	99	\$ 7,003	\$ 695,338	\$ 384,889		\$ (273,293)	\$ (9,190,621)
2042	\$ (9,190,621)	\$ -	\$ -	\$ -	99	\$ 7,143	\$ 709,245	\$ 709,245		\$ (265,080)	\$ (8,746,456)
2043	\$ (8,746,456)	\$ -	\$ -	\$ -	99	\$ 7,286	\$ 723,430	\$ 723,430		\$ (251,542)	\$ (8,274,569)
2044	\$ (8,274,569)	\$ -	\$ -	\$ -	99	\$ 7,432	\$ 737,898	\$ 737,898		\$ (237,169)	\$ (7,773,839)
2045	\$ (7,773,839)	\$ -	\$ -	\$ -	99	\$ 7,580	\$ 752,656	\$ 752,656		\$ (221,925)	\$ (7,243,108)
2046	\$ (7,243,108)	\$ -	\$ -	\$ -	99	\$ 7,732	\$ 767,709	\$ 767,709		\$ (205,778)	\$ (6,681,176)
2047	\$ (6,681,176)	\$ -	\$ -	\$ -	99	\$ 7,887	\$ 783,064	\$ 783,064		\$ (188,689)	\$ (6,086,802)
2048	\$ (6,086,802)	\$ -	\$ -	\$ -	99	\$ 8,044	\$ 798,725	\$ 798,725		\$ (170,623)	\$ (5,458,700)
2049	\$ (5,458,700)	\$ -	\$ -	\$ -	99	\$ 8,205	\$ 814,699	\$ 814,699		\$ (151,541)	\$ (4,795,541)
2050	\$ (4,795,541)	\$ -	\$ -	\$ -	99	\$ 8,369	\$ 830,993	\$ 830,993		\$ (131,401)	\$ (4,095,949)
2051	\$ (4,095,949)	\$ -	\$ -	\$ -	99	\$ 8,537	\$ 847,613	\$ 847,613		\$ (110,164)	\$ (3,358,500)
2052	\$ (3,358,500)	\$ -	\$ -	\$ -	99	\$ 8,708	\$ 864,566	\$ 864,566		\$ (87,787)	\$ (2,581,721)
2053	\$ (2,581,721)	\$ -	\$ -	\$ -	99	\$ 8,882	\$ 881,857	\$ 881,857		\$ (64,224)	\$ (1,764,088)
2054	\$ (1,764,088)	\$ -	\$ -	\$ -	99	\$ 9,059	\$ 899,494	\$ 899,494		\$ (39,430)	\$ (904,024)
2055	\$ (904,024)	\$ -	\$ -	\$ -	99	\$ 9,240	\$ 917,484	\$ 917,484		\$ (13,459)	\$ 0

Notes:
P&I - Principal and Interest
SDE - Single Detached Equivalents

TABLE 6-12
Township of Russell - 2016 Development Charges
Cash Flow Analysis
Buildout Water Services - Non-Residential

Year	Reserve Fund Opening Balance	Dev't Related Expenditures		Debenture Payments (Ottawa Water Supply, Reservoir)	Non-Residential GFA (sq.ft.)	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	Revenues minus Expenditures	Debenture Financing Requirement	Interest Earnings (1.5%) / Costs (3%)	DC Reserve Fund Closing Balance after Financing
		Nominal	Inflated (2%/Yr)								
2016	\$ (66,581)	\$ (11,006)	\$ (11,006)	\$ (140,338)	55,320	1.57	\$ 86,835	\$ (64,509)		\$ (2,965)	\$ (134,055)
2017	\$ (134,055)	\$ -	\$ -	\$ (140,338)	55,320	1.60	\$ 88,572	\$ (51,767)		\$ (4,798)	\$ (190,620)
2018	\$ (190,620)	\$ -	\$ -	\$ (140,338)	55,320	1.63	\$ 90,343	\$ (49,995)		\$ (6,469)	\$ (247,084)
2019	\$ (247,084)	\$ -	\$ -	\$ (140,338)	55,320	1.67	\$ 92,150	\$ (48,188)		\$ (8,135)	\$ (303,407)
2020	\$ (303,407)	\$ -	\$ -	\$ (140,338)	55,320	1.70	\$ 93,993	\$ (46,345)		\$ (9,797)	\$ (359,550)
2021	\$ (359,550)	\$ (5,404)	\$ (5,967)	\$ (140,338)	55,320	1.73	\$ 95,873	\$ (50,432)		\$ (11,543)	\$ (421,525)
2022	\$ (421,525)	\$ (5,404)	\$ (6,086)	\$ (140,338)	55,320	1.77	\$ 97,791	\$ (48,634)		\$ (13,375)	\$ (483,534)
2023	\$ (483,534)	\$ (5,404)	\$ (6,208)	\$ (140,338)	55,320	1.80	\$ 99,746	\$ (46,800)		\$ (15,208)	\$ (545,542)
2024	\$ (545,542)	\$ (5,404)	\$ (6,332)	\$ (140,338)	55,320	1.84	\$ 101,741	\$ (44,929)		\$ (17,040)	\$ (607,511)
2025	\$ (607,511)	\$ (5,404)	\$ (6,459)	\$ (124,306)	55,320	1.88	\$ 103,776	\$ (26,988)		\$ (18,630)	\$ (653,130)
2026	\$ (653,130)	\$ (5,404)	\$ (6,588)	\$ (101,900)	37,060	1.91	\$ 70,912	\$ (37,576)		\$ (20,158)	\$ (710,863)
2027	\$ (710,863)	\$ -	\$ -	\$ (101,900)	37,060	1.95	\$ 72,330	\$ (29,570)		\$ (21,769)	\$ (762,202)
2028	\$ (762,202)	\$ -	\$ -	\$ (101,900)	37,060	1.99	\$ 73,777	\$ (28,123)		\$ (23,288)	\$ (813,613)
2029	\$ (813,613)	\$ -	\$ -	\$ (101,900)	37,060	2.03	\$ 75,253	\$ (26,648)		\$ (24,808)	\$ (865,069)
2030	\$ (865,069)	\$ -	\$ -	\$ (101,900)	37,060	2.07	\$ 76,758	\$ (25,142)		\$ (26,329)	\$ (916,540)
2031	\$ (916,540)	\$ -	\$ -	\$ (101,900)	37,060	2.11	\$ 78,293	\$ (23,607)		\$ (27,850)	\$ (967,998)
2032	\$ (967,998)	\$ -	\$ -	\$ (101,900)	37,060	2.15	\$ 79,859	\$ (22,041)		\$ (29,371)	\$ (1,019,410)
2033	\$ (1,019,410)	\$ -	\$ -	\$ (101,900)	37,060	2.20	\$ 81,456	\$ (20,444)		\$ (30,889)	\$ (1,070,743)
2034	\$ (1,070,743)	\$ -	\$ -	\$ (101,900)	37,060	2.24	\$ 83,085	\$ (18,815)		\$ (32,405)	\$ (1,121,963)
2035	\$ (1,121,963)	\$ -	\$ -	\$ (101,900)	37,060	2.29	\$ 84,747	\$ (17,153)		\$ (33,916)	\$ (1,173,032)
2036	\$ (1,173,032)	\$ -	\$ -	\$ (101,900)	40,270	2.33	\$ 93,929	\$ (7,971)		\$ (35,311)	\$ (1,216,314)
2037	\$ (1,216,314)	\$ -	\$ -	\$ (101,900)	40,270	2.38	\$ 95,807	\$ (6,093)		\$ (36,581)	\$ (1,258,988)
2038	\$ (1,258,988)	\$ -	\$ -	\$ (101,900)	40,270	2.43	\$ 97,724	\$ (4,177)		\$ (37,832)	\$ (1,300,997)
2039	\$ (1,300,997)	\$ -	\$ -	\$ (101,900)	40,270	2.48	\$ 99,678	\$ (2,222)		\$ (39,063)	\$ (1,342,282)
2040	\$ (1,342,282)	\$ -	\$ -	\$ (101,900)	40,270	2.52	\$ 101,672	\$ (229)		\$ (40,272)	\$ (1,382,782)
2041	\$ (1,382,782)	\$ -	\$ -	\$ (50,950)	40,270	2.58	\$ 103,705	\$ 52,755		\$ (40,692)	\$ (1,370,720)
2042	\$ (1,370,720)	\$ -	\$ -	\$ -	40,270	2.63	\$ 105,779	\$ 105,779		\$ (39,535)	\$ (1,304,475)
2043	\$ (1,304,475)	\$ -	\$ -	\$ -	40,270	2.68	\$ 107,895	\$ 107,895		\$ (37,516)	\$ (1,234,096)
2044	\$ (1,234,096)	\$ -	\$ -	\$ -	40,270	2.73	\$ 110,053	\$ 110,053		\$ (35,372)	\$ (1,159,416)
2045	\$ (1,159,416)	\$ -	\$ -	\$ -	40,270	2.79	\$ 112,254	\$ 112,254		\$ (33,099)	\$ (1,080,261)
2046	\$ (1,080,261)	\$ -	\$ -	\$ -	40,270	2.84	\$ 114,499	\$ 114,499		\$ (30,690)	\$ (996,453)
2047	\$ (996,453)	\$ -	\$ -	\$ -	40,270	2.90	\$ 116,789	\$ 116,789		\$ (28,142)	\$ (907,806)
2048	\$ (907,806)	\$ -	\$ -	\$ -	40,270	2.96	\$ 119,124	\$ 119,124		\$ (25,447)	\$ (814,129)
2049	\$ (814,129)	\$ -	\$ -	\$ -	40,270	3.02	\$ 121,507	\$ 121,507		\$ (22,601)	\$ (715,223)
2050	\$ (715,223)	\$ -	\$ -	\$ -	40,270	3.08	\$ 123,937	\$ 123,937		\$ (19,598)	\$ (610,883)
2051	\$ (610,883)	\$ -	\$ -	\$ -	40,270	3.14	\$ 126,416	\$ 126,416		\$ (16,430)	\$ (500,898)
2052	\$ (500,898)	\$ -	\$ -	\$ -	40,270	3.20	\$ 128,944	\$ 128,944		\$ (13,093)	\$ (385,046)
2053	\$ (385,046)	\$ -	\$ -	\$ -	40,270	3.27	\$ 131,523	\$ 131,523		\$ (9,579)	\$ (263,102)
2054	\$ (263,102)	\$ -	\$ -	\$ -	40,270	3.33	\$ 134,153	\$ 134,153		\$ (5,881)	\$ (134,829)
2055	\$ (134,829)	\$ -	\$ -	\$ -	40,270	3.40	\$ 136,837	\$ 136,837		\$ (2,007)	\$ 0

Notes:
P&I - Principal and Interest
SDE - Single Detached Equivalents

TABLE 6-13
Township of Russell - 2016 Development Charges
Cash Flow Analysis
Buildout Wastewater Services (Embrun) - Residential

Year	Reserve Fund Opening Balance	Dev't Related Expenditures		Debt Carrying Costs (P&I) 3%; 20 Yr Term	SDE per Year	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	Revenues minus Expenditures	Debenture Financing Requirement	Interest Earnings (1.5%) / Costs (3%)	DC Reserve Fund Closing Balance after Financing
		Nominal	Inflated (2%/Yr)								
2016	\$ (3,056,545)	\$ (5,013,867)	\$ (5,013,867)		69	\$ 4,503	\$ 311,889	\$ (4,701,979)		\$ (162,226)	\$ (7,920,749)
2017	\$ (7,920,749)	\$ -	\$ -		69	\$ 4,593	\$ 318,127	\$ 318,127		\$ (232,851)	\$ (7,835,473)
2018	\$ (7,835,473)	\$ -	\$ -		69	\$ 4,685	\$ 324,489	\$ 324,489		\$ (230,197)	\$ (7,741,181)
2019	\$ (7,741,181)	\$ -	\$ -		69	\$ 4,779	\$ 330,979	\$ 330,979		\$ (227,271)	\$ (7,637,473)
2020	\$ (7,637,473)	\$ -	\$ -		69	\$ 4,874	\$ 337,598	\$ 337,598		\$ (224,060)	\$ (7,523,935)
2021	\$ (7,523,935)	\$ (1,398,485)	\$ (1,544,040)		69	\$ 4,972	\$ 344,350	\$ (1,199,690)		\$ (243,713)	\$ (8,967,338)
2022	\$ (8,967,338)	\$ -	\$ -		69	\$ 5,071	\$ 351,237	\$ 351,237		\$ (263,752)	\$ (8,879,852)
2023	\$ (8,879,852)	\$ -	\$ -		69	\$ 5,173	\$ 358,262	\$ 358,262		\$ (261,022)	\$ (8,782,611)
2024	\$ (8,782,611)	\$ -	\$ -		69	\$ 5,276	\$ 365,427	\$ 365,427		\$ (257,997)	\$ (8,675,181)
2025	\$ (8,675,181)	\$ -	\$ -		69	\$ 5,382	\$ 372,736	\$ 372,736		\$ (254,664)	\$ (8,557,110)
2026	\$ (8,557,110)	\$ -	\$ -		79	\$ 5,489	\$ 431,403	\$ 431,403		\$ (250,242)	\$ (8,375,949)
2027	\$ (8,375,949)	\$ -	\$ -		79	\$ 5,599	\$ 440,031	\$ 440,031		\$ (244,678)	\$ (8,180,596)
2028	\$ (8,180,596)	\$ -	\$ -		79	\$ 5,711	\$ 448,832	\$ 448,832		\$ (238,685)	\$ (7,970,450)
2029	\$ (7,970,450)	\$ -	\$ -		79	\$ 5,825	\$ 457,808	\$ 457,808		\$ (232,246)	\$ (7,744,888)
2030	\$ (7,744,888)	\$ -	\$ -		79	\$ 5,942	\$ 466,964	\$ 466,964		\$ (225,342)	\$ (7,503,266)
2031	\$ (7,503,266)	\$ -	\$ -		79	\$ 6,061	\$ 476,304	\$ 476,304		\$ (217,953)	\$ (7,244,916)
2032	\$ (7,244,916)	\$ -	\$ -		79	\$ 6,182	\$ 485,830	\$ 485,830		\$ (210,060)	\$ (6,969,146)
2033	\$ (6,969,146)	\$ -	\$ -		79	\$ 6,305	\$ 495,546	\$ 495,546		\$ (201,641)	\$ (6,675,241)
2034	\$ (6,675,241)	\$ -	\$ -		79	\$ 6,432	\$ 505,457	\$ 505,457		\$ (192,675)	\$ (6,362,459)
2035	\$ (6,362,459)	\$ -	\$ -		79	\$ 6,560	\$ 515,566	\$ 515,566		\$ (183,140)	\$ (6,030,033)
2036	\$ (6,030,033)	\$ -	\$ -		50	\$ 6,691	\$ 335,141	\$ 335,141		\$ (175,874)	\$ (5,870,766)
2037	\$ (5,870,766)	\$ -	\$ -		50	\$ 6,825	\$ 341,844	\$ 341,844		\$ (170,995)	\$ (5,699,917)
2038	\$ (5,699,917)	\$ -	\$ -		50	\$ 6,962	\$ 348,681	\$ 348,681		\$ (165,767)	\$ (5,517,003)
2039	\$ (5,517,003)	\$ -	\$ -		50	\$ 7,101	\$ 355,655	\$ 355,655		\$ (160,175)	\$ (5,321,523)
2040	\$ (5,321,523)	\$ -	\$ -		50	\$ 7,243	\$ 362,768	\$ 362,768		\$ (154,204)	\$ (5,112,960)
2041	\$ (5,112,960)	\$ -	\$ -		50	\$ 7,388	\$ 370,023	\$ 370,023		\$ (147,838)	\$ (4,890,775)
2042	\$ (4,890,775)	\$ -	\$ -		50	\$ 7,536	\$ 377,424	\$ 377,424		\$ (141,062)	\$ (4,654,414)
2043	\$ (4,654,414)	\$ -	\$ -		50	\$ 7,686	\$ 384,972	\$ 384,972		\$ (133,858)	\$ (4,403,299)
2044	\$ (4,403,299)	\$ -	\$ -		50	\$ 7,840	\$ 392,671	\$ 392,671		\$ (126,209)	\$ (4,136,837)
2045	\$ (4,136,837)	\$ -	\$ -		50	\$ 7,997	\$ 400,525	\$ 400,525		\$ (118,097)	\$ (3,854,409)
2046	\$ (3,854,409)	\$ -	\$ -		50	\$ 8,157	\$ 408,535	\$ 408,535		\$ (109,504)	\$ (3,555,378)
2047	\$ (3,555,378)	\$ -	\$ -		50	\$ 8,320	\$ 416,706	\$ 416,706		\$ (100,411)	\$ (3,239,082)
2048	\$ (3,239,082)	\$ -	\$ -		50	\$ 8,486	\$ 425,040	\$ 425,040		\$ (90,797)	\$ (2,904,839)
2049	\$ (2,904,839)	\$ -	\$ -		50	\$ 8,656	\$ 433,541	\$ 433,541		\$ (80,642)	\$ (2,551,940)
2050	\$ (2,551,940)	\$ -	\$ -		50	\$ 8,829	\$ 442,212	\$ 442,212		\$ (69,925)	\$ (2,179,653)
2051	\$ (2,179,653)	\$ -	\$ -		50	\$ 9,006	\$ 451,056	\$ 451,056		\$ (58,624)	\$ (1,787,221)
2052	\$ (1,787,221)	\$ -	\$ -		50	\$ 9,186	\$ 460,077	\$ 460,077		\$ (46,715)	\$ (1,373,859)
2053	\$ (1,373,859)	\$ -	\$ -		50	\$ 9,370	\$ 469,279	\$ 469,279		\$ (34,177)	\$ (938,757)
2054	\$ (938,757)	\$ -	\$ -		50	\$ 9,557	\$ 478,664	\$ 478,664		\$ (20,983)	\$ (481,075)
2055	\$ (481,075)	\$ -	\$ -		50	\$ 9,748	\$ 488,238	\$ 488,238		\$ (7,162)	\$ 0

Notes:

P&I - Principal and Interest

SDE - Single Detached Equivalents

TABLE 6-14
Township of Russell - 2016 Development Charges
Cash Flow Analysis
Buildout Wastewater Services (Emburn) - Non-Residential

Year	Reserve Fund Opening Balance	Dev't Related Expenditures		Debt Carrying Costs (P&I) 3%; 20 Yr Term	Non-Residential GFA (sq.ft.)	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	Revenues minus Expenditures	Debenture Financing Requirement	Interest Earnings (1.5%) / Costs (3%)	DC Reserve Fund Closing Balance after Financing
		Nominal	Inflated (2%/Yr)								
2016	\$ (501,632)	\$ (822,862)	\$ (822,862)		52,090	\$ 1.21	\$ 63,139	\$ (759,724)		\$ (26,445)	\$ (1,287,800)
2017	\$ (1,287,800)	\$ -	\$ -		52,090	\$ 1.24	\$ 64,401	\$ 64,401		\$ (37,668)	\$ (1,261,067)
2018	\$ (1,261,067)	\$ -	\$ -		52,090	\$ 1.26	\$ 65,689	\$ 65,689		\$ (36,847)	\$ (1,232,224)
2019	\$ (1,232,224)	\$ -	\$ -		52,090	\$ 1.29	\$ 67,003	\$ 67,003		\$ (35,962)	\$ (1,201,182)
2020	\$ (1,201,182)	\$ -	\$ -		52,090	\$ 1.31	\$ 68,343	\$ 68,343		\$ (35,010)	\$ (1,167,849)
2021	\$ (1,167,849)	\$ (229,515)	\$ (253,404)		52,090	\$ 1.34	\$ 69,710	\$ (183,693)		\$ (37,791)	\$ (1,389,334)
2022	\$ (1,389,334)	\$ -	\$ -		52,090	\$ 1.37	\$ 71,104	\$ 71,104		\$ (40,613)	\$ (1,358,843)
2023	\$ (1,358,843)	\$ -	\$ -		52,090	\$ 1.39	\$ 72,526	\$ 72,526		\$ (39,677)	\$ (1,325,994)
2024	\$ (1,325,994)	\$ -	\$ -		52,090	\$ 1.42	\$ 73,977	\$ 73,977		\$ (38,670)	\$ (1,290,687)
2025	\$ (1,290,687)	\$ -	\$ -		52,090	\$ 1.45	\$ 75,457	\$ 75,457		\$ (37,589)	\$ (1,252,819)
2026	\$ (1,252,819)	\$ -	\$ -		36,866	\$ 1.48	\$ 54,471	\$ 54,471		\$ (36,768)	\$ (1,235,115)
2027	\$ (1,235,115)	\$ -	\$ -		36,866	\$ 1.51	\$ 55,561	\$ 55,561		\$ (36,220)	\$ (1,215,774)
2028	\$ (1,215,774)	\$ -	\$ -		36,866	\$ 1.54	\$ 56,672	\$ 56,672		\$ (35,623)	\$ (1,194,725)
2029	\$ (1,194,725)	\$ -	\$ -		36,866	\$ 1.57	\$ 57,806	\$ 57,806		\$ (34,975)	\$ (1,171,895)
2030	\$ (1,171,895)	\$ -	\$ -		36,866	\$ 1.60	\$ 58,962	\$ 58,962		\$ (34,272)	\$ (1,147,205)
2031	\$ (1,147,205)	\$ -	\$ -		36,866	\$ 1.63	\$ 60,141	\$ 60,141		\$ (33,514)	\$ (1,120,579)
2032	\$ (1,120,579)	\$ -	\$ -		36,866	\$ 1.66	\$ 61,344	\$ 61,344		\$ (32,697)	\$ (1,091,932)
2033	\$ (1,091,932)	\$ -	\$ -		36,866	\$ 1.70	\$ 62,571	\$ 62,571		\$ (31,819)	\$ (1,061,181)
2034	\$ (1,061,181)	\$ -	\$ -		36,866	\$ 1.73	\$ 63,822	\$ 63,822		\$ (30,878)	\$ (1,028,237)
2035	\$ (1,028,237)	\$ -	\$ -		36,866	\$ 1.77	\$ 65,098	\$ 65,098		\$ (29,871)	\$ (993,009)
2036	\$ (993,009)	\$ -	\$ -		30,642	\$ 1.80	\$ 55,190	\$ 55,190		\$ (28,962)	\$ (966,782)
2037	\$ (966,782)	\$ -	\$ -		30,642	\$ 1.84	\$ 56,294	\$ 56,294		\$ (28,159)	\$ (938,647)
2038	\$ (938,647)	\$ -	\$ -		30,642	\$ 1.87	\$ 57,420	\$ 57,420		\$ (27,298)	\$ (908,525)
2039	\$ (908,525)	\$ -	\$ -		30,642	\$ 1.91	\$ 58,568	\$ 58,568		\$ (26,377)	\$ (876,334)
2040	\$ (876,334)	\$ -	\$ -		30,642	\$ 1.95	\$ 59,740	\$ 59,740		\$ (25,394)	\$ (841,988)
2041	\$ (841,988)	\$ -	\$ -		30,642	\$ 1.99	\$ 60,934	\$ 60,934		\$ (24,346)	\$ (805,399)
2042	\$ (805,399)	\$ -	\$ -		30,642	\$ 2.03	\$ 62,153	\$ 62,153		\$ (23,230)	\$ (766,476)
2043	\$ (766,476)	\$ -	\$ -		30,642	\$ 2.07	\$ 63,396	\$ 63,396		\$ (22,043)	\$ (725,123)
2044	\$ (725,123)	\$ -	\$ -		30,642	\$ 2.11	\$ 64,664	\$ 64,664		\$ (20,784)	\$ (681,243)
2045	\$ (681,243)	\$ -	\$ -		30,642	\$ 2.15	\$ 65,957	\$ 65,957		\$ (19,448)	\$ (634,734)
2046	\$ (634,734)	\$ -	\$ -		30,642	\$ 2.20	\$ 67,276	\$ 67,276		\$ (18,033)	\$ (585,490)
2047	\$ (585,490)	\$ -	\$ -		30,642	\$ 2.24	\$ 68,622	\$ 68,622		\$ (16,535)	\$ (533,403)
2048	\$ (533,403)	\$ -	\$ -		30,642	\$ 2.28	\$ 69,994	\$ 69,994		\$ (14,952)	\$ (478,361)
2049	\$ (478,361)	\$ -	\$ -		30,642	\$ 2.33	\$ 71,394	\$ 71,394		\$ (13,280)	\$ (420,246)
2050	\$ (420,246)	\$ -	\$ -		30,642	\$ 2.38	\$ 72,822	\$ 72,822		\$ (11,515)	\$ (358,939)
2051	\$ (358,939)	\$ -	\$ -		30,642	\$ 2.42	\$ 74,279	\$ 74,279		\$ (9,654)	\$ (294,315)
2052	\$ (294,315)	\$ -	\$ -		30,642	\$ 2.47	\$ 75,764	\$ 75,764		\$ (7,693)	\$ (226,243)
2053	\$ (226,243)	\$ -	\$ -		30,642	\$ 2.52	\$ 77,280	\$ 77,280		\$ (5,628)	\$ (154,592)
2054	\$ (154,592)	\$ -	\$ -		30,642	\$ 2.57	\$ 78,825	\$ 78,825		\$ (3,455)	\$ (79,222)
2055	\$ (79,222)	\$ -	\$ -		30,642	\$ 2.62	\$ 80,402	\$ 80,402		\$ (1,179)	\$ 0

Notes:
P&I - Principal and Interest
SDE - Single Detached Equivalents

TABLE 6-15
Township of Russell - 2016 Development Charges
Cash Flow Analysis
Buildout Wastewater Services (Russell) - Residential

Year	Reserve Fund Opening Balance	Dev't Related Expenditures		Debt Carrying Costs (P&I) 3%; 20 Yr Term	SDE per Year	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	Revenues minus Expenditures	Debenture Financing Requirement	Interest Earnings (1.5%) / Costs (3%)	DC Reserve Fund Closing Balance after Financing
		Nominal	Inflated (2%/Yr)								
2016	\$ (1,015,469)	\$ (1,875,232)	\$ (1,875,232)		32	\$ 2,842	\$ 90,456	\$ (1,784,776)		\$ (57,236)	\$ (2,857,481)
2017	\$ (2,857,481)	\$ -	\$ -		32	\$ 2,899	\$ 92,265	\$ 92,265		\$ (84,340)	\$ (2,849,556)
2018	\$ (2,849,556)	\$ -	\$ -		32	\$ 2,957	\$ 94,110	\$ 94,110		\$ (84,075)	\$ (2,839,521)
2019	\$ (2,839,521)	\$ -	\$ -		32	\$ 3,016	\$ 95,993	\$ 95,993		\$ (83,746)	\$ (2,827,274)
2020	\$ (2,827,274)	\$ -	\$ -		32	\$ 3,076	\$ 97,912	\$ 97,912		\$ (83,350)	\$ (2,812,711)
2021	\$ (2,812,711)	\$ (255,129)	\$ (281,683)		32	\$ 3,138	\$ 99,871	\$ (181,812)		\$ (87,109)	\$ (3,081,632)
2022	\$ (3,081,632)	\$ -	\$ -		32	\$ 3,201	\$ 101,868	\$ 101,868		\$ (90,921)	\$ (3,070,684)
2023	\$ (3,070,684)	\$ -	\$ -		32	\$ 3,265	\$ 103,905	\$ 103,905		\$ (90,562)	\$ (3,057,341)
2024	\$ (3,057,341)	\$ -	\$ -		32	\$ 3,330	\$ 105,984	\$ 105,984		\$ (90,130)	\$ (3,041,488)
2025	\$ (3,041,488)	\$ -	\$ -		32	\$ 3,397	\$ 108,103	\$ 108,103		\$ (89,623)	\$ (3,023,008)
2026	\$ (3,023,008)	\$ -	\$ -		7	\$ 3,465	\$ 25,534	\$ 25,534		\$ (90,307)	\$ (3,087,781)
2027	\$ (3,087,781)	\$ -	\$ -		7	\$ 3,534	\$ 26,045	\$ 26,045		\$ (92,243)	\$ (3,153,978)
2028	\$ (3,153,978)	\$ -	\$ -		7	\$ 3,605	\$ 26,566	\$ 26,566		\$ (94,221)	\$ (3,221,633)
2029	\$ (3,221,633)	\$ -	\$ -		7	\$ 3,677	\$ 27,097	\$ 27,097		\$ (96,243)	\$ (3,290,778)
2030	\$ (3,290,778)	\$ -	\$ -		7	\$ 3,750	\$ 27,639	\$ 27,639		\$ (98,309)	\$ (3,361,448)
2031	\$ (3,361,448)	\$ -	\$ -		7	\$ 3,825	\$ 28,192	\$ 28,192		\$ (100,421)	\$ (3,433,676)
2032	\$ (3,433,676)	\$ -	\$ -		7	\$ 3,902	\$ 28,756	\$ 28,756		\$ (102,579)	\$ (3,507,499)
2033	\$ (3,507,499)	\$ -	\$ -		7	\$ 3,980	\$ 29,331	\$ 29,331		\$ (104,785)	\$ (3,582,953)
2034	\$ (3,582,953)	\$ -	\$ -		7	\$ 4,059	\$ 29,918	\$ 29,918		\$ (107,040)	\$ (3,660,075)
2035	\$ (3,660,075)	\$ -	\$ -		7	\$ 4,140	\$ 30,516	\$ 30,516		\$ (109,345)	\$ (3,738,904)
2036	\$ (3,738,904)	\$ -	\$ -		49	\$ 4,223	\$ 207,803	\$ 207,803		\$ (109,050)	\$ (3,640,151)
2037	\$ (3,640,151)	\$ -	\$ -		49	\$ 4,308	\$ 211,959	\$ 211,959		\$ (106,025)	\$ (3,534,216)
2038	\$ (3,534,216)	\$ -	\$ -		49	\$ 4,394	\$ 216,199	\$ 216,199		\$ (102,784)	\$ (3,420,801)
2039	\$ (3,420,801)	\$ -	\$ -		49	\$ 4,482	\$ 220,523	\$ 220,523		\$ (99,316)	\$ (3,299,595)
2040	\$ (3,299,595)	\$ -	\$ -		49	\$ 4,571	\$ 224,933	\$ 224,933		\$ (95,614)	\$ (3,170,275)
2041	\$ (3,170,275)	\$ -	\$ -		49	\$ 4,663	\$ 229,432	\$ 229,432		\$ (91,667)	\$ (3,032,511)
2042	\$ (3,032,511)	\$ -	\$ -		49	\$ 4,756	\$ 234,020	\$ 234,020		\$ (87,465)	\$ (2,885,955)
2043	\$ (2,885,955)	\$ -	\$ -		49	\$ 4,851	\$ 238,701	\$ 238,701		\$ (82,998)	\$ (2,730,253)
2044	\$ (2,730,253)	\$ -	\$ -		49	\$ 4,948	\$ 243,475	\$ 243,475		\$ (78,255)	\$ (2,565,033)
2045	\$ (2,565,033)	\$ -	\$ -		49	\$ 5,047	\$ 248,344	\$ 248,344		\$ (73,226)	\$ (2,389,915)
2046	\$ (2,389,915)	\$ -	\$ -		49	\$ 5,148	\$ 253,311	\$ 253,311		\$ (67,898)	\$ (2,204,501)
2047	\$ (2,204,501)	\$ -	\$ -		49	\$ 5,251	\$ 258,377	\$ 258,377		\$ (62,259)	\$ (2,008,383)
2048	\$ (2,008,383)	\$ -	\$ -		49	\$ 5,356	\$ 263,545	\$ 263,545		\$ (56,298)	\$ (1,801,137)
2049	\$ (1,801,137)	\$ -	\$ -		49	\$ 5,463	\$ 268,816	\$ 268,816		\$ (50,002)	\$ (1,582,323)
2050	\$ (1,582,323)	\$ -	\$ -		49	\$ 5,573	\$ 274,192	\$ 274,192		\$ (43,357)	\$ (1,351,487)
2051	\$ (1,351,487)	\$ -	\$ -		49	\$ 5,684	\$ 279,676	\$ 279,676		\$ (36,349)	\$ (1,108,161)
2052	\$ (1,108,161)	\$ -	\$ -		49	\$ 5,798	\$ 285,270	\$ 285,270		\$ (28,966)	\$ (851,857)
2053	\$ (851,857)	\$ -	\$ -		49	\$ 5,914	\$ 290,975	\$ 290,975		\$ (21,191)	\$ (582,073)
2054	\$ (582,073)	\$ -	\$ -		49	\$ 6,032	\$ 296,794	\$ 296,794		\$ (13,010)	\$ (298,289)
2055	\$ (298,289)	\$ -	\$ -		49	\$ 6,153	\$ 302,730	\$ 302,730		\$ (4,441)	\$ 0

Notes:

P&I - Principal and Interest

SDE - Single Detached Equivalents

TABLE 6-16
Township of Russell - 2016 Development Charges
Cash Flow Analysis
Buildout Wastewater Services (Russell) - Non-Residential

Year	Reserve Fund Opening Balance	Dev't Related Expenditures		Debt Carrying Costs (P&I) 3%; 20 Yr Term	Non-Residential GFA (sq.ft.)	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	Revenues minus Expenditures	Debtenture Financing Requirement	Interest Earnings (1.5%) / Costs (3%)	DC Reserve Fund Closing Balance after Financing
		Nominal	Inflated (2%/Yr)								
2016	\$ (166,656)	\$ (307,758)	\$ (307,758)		3,230	\$ 2.92	\$ 9,417	\$ (298,341)		\$ (9,475)	\$ (474,471)
2017	\$ (474,471)	\$ -	\$ -		3,230	\$ 2.97	\$ 9,606	\$ 9,606		\$ (14,090)	\$ (478,956)
2018	\$ (478,956)	\$ -	\$ -		3,230	\$ 3.03	\$ 9,798	\$ 9,798		\$ (14,222)	\$ (483,380)
2019	\$ (483,380)	\$ -	\$ -		3,230	\$ 3.09	\$ 9,994	\$ 9,994		\$ (14,351)	\$ (487,738)
2020	\$ (487,738)	\$ -	\$ -		3,230	\$ 3.16	\$ 10,194	\$ 10,194		\$ (14,479)	\$ (492,023)
2021	\$ (492,023)	\$ (41,871)	\$ (46,229)		3,230	\$ 3.22	\$ 10,397	\$ (35,832)		\$ (15,298)	\$ (543,153)
2022	\$ (543,153)	\$ -	\$ -		3,230	\$ 3.28	\$ 10,605	\$ 10,605		\$ (16,136)	\$ (548,683)
2023	\$ (548,683)	\$ -	\$ -		3,230	\$ 3.35	\$ 10,818	\$ 10,818		\$ (16,298)	\$ (554,164)
2024	\$ (554,164)	\$ -	\$ -		3,230	\$ 3.42	\$ 11,034	\$ 11,034		\$ (16,459)	\$ (559,589)
2025	\$ (559,589)	\$ -	\$ -		3,230	\$ 3.48	\$ 11,255	\$ 11,255		\$ (16,619)	\$ (564,954)
2026	\$ (564,954)	\$ -	\$ -		194	\$ 3.55	\$ 689	\$ 689		\$ (16,938)	\$ (581,202)
2027	\$ (581,202)	\$ -	\$ -		194	\$ 3.63	\$ 703	\$ 703		\$ (17,426)	\$ (597,925)
2028	\$ (597,925)	\$ -	\$ -		194	\$ 3.70	\$ 717	\$ 717		\$ (17,927)	\$ (615,134)
2029	\$ (615,134)	\$ -	\$ -		194	\$ 3.77	\$ 732	\$ 732		\$ (18,443)	\$ (632,846)
2030	\$ (632,846)	\$ -	\$ -		194	\$ 3.85	\$ 746	\$ 746		\$ (18,974)	\$ (651,073)
2031	\$ (651,073)	\$ -	\$ -		194	\$ 3.92	\$ 761	\$ 761		\$ (19,521)	\$ (669,833)
2032	\$ (669,833)	\$ -	\$ -		194	\$ 4.00	\$ 776	\$ 776		\$ (20,083)	\$ (689,140)
2033	\$ (689,140)	\$ -	\$ -		194	\$ 4.08	\$ 792	\$ 792		\$ (20,662)	\$ (709,010)
2034	\$ (709,010)	\$ -	\$ -		194	\$ 4.16	\$ 808	\$ 808		\$ (21,258)	\$ (729,461)
2035	\$ (729,461)	\$ -	\$ -		194	\$ 4.25	\$ 824	\$ 824		\$ (21,871)	\$ (750,508)
2036	\$ (750,508)	\$ -	\$ -		9,628	\$ 4.33	\$ 41,712	\$ 41,712		\$ (21,890)	\$ (730,685)
2037	\$ (730,685)	\$ -	\$ -		9,628	\$ 4.42	\$ 42,546	\$ 42,546		\$ (21,282)	\$ (709,421)
2038	\$ (709,421)	\$ -	\$ -		9,628	\$ 4.51	\$ 43,397	\$ 43,397		\$ (20,632)	\$ (686,655)
2039	\$ (686,655)	\$ -	\$ -		9,628	\$ 4.60	\$ 44,265	\$ 44,265		\$ (19,936)	\$ (662,326)
2040	\$ (662,326)	\$ -	\$ -		9,628	\$ 4.69	\$ 45,151	\$ 45,151		\$ (19,193)	\$ (636,368)
2041	\$ (636,368)	\$ -	\$ -		9,628	\$ 4.78	\$ 46,054	\$ 46,054		\$ (18,400)	\$ (608,714)
2042	\$ (608,714)	\$ -	\$ -		9,628	\$ 4.88	\$ 46,975	\$ 46,975		\$ (17,557)	\$ (579,296)
2043	\$ (579,296)	\$ -	\$ -		9,628	\$ 4.98	\$ 47,914	\$ 47,914		\$ (16,660)	\$ (548,042)
2044	\$ (548,042)	\$ -	\$ -		9,628	\$ 5.08	\$ 48,873	\$ 48,873		\$ (15,708)	\$ (514,878)
2045	\$ (514,878)	\$ -	\$ -		9,628	\$ 5.18	\$ 49,850	\$ 49,850		\$ (14,699)	\$ (479,726)
2046	\$ (479,726)	\$ -	\$ -		9,628	\$ 5.28	\$ 50,847	\$ 50,847		\$ (13,629)	\$ (442,508)
2047	\$ (442,508)	\$ -	\$ -		9,628	\$ 5.39	\$ 51,864	\$ 51,864		\$ (12,497)	\$ (403,142)
2048	\$ (403,142)	\$ -	\$ -		9,628	\$ 5.49	\$ 52,901	\$ 52,901		\$ (11,301)	\$ (361,541)
2049	\$ (361,541)	\$ -	\$ -		9,628	\$ 5.60	\$ 53,959	\$ 53,959		\$ (10,037)	\$ (317,619)
2050	\$ (317,619)	\$ -	\$ -		9,628	\$ 5.72	\$ 55,038	\$ 55,038		\$ (8,703)	\$ (271,283)
2051	\$ (271,283)	\$ -	\$ -		9,628	\$ 5.83	\$ 56,139	\$ 56,139		\$ (7,296)	\$ (222,440)
2052	\$ (222,440)	\$ -	\$ -		9,628	\$ 5.95	\$ 57,262	\$ 57,262		\$ (5,814)	\$ (170,993)
2053	\$ (170,993)	\$ -	\$ -		9,628	\$ 6.07	\$ 58,407	\$ 58,407		\$ (4,254)	\$ (116,839)
2054	\$ (116,839)	\$ -	\$ -		9,628	\$ 6.19	\$ 59,575	\$ 59,575		\$ (2,612)	\$ (59,875)
2055	\$ (59,875)	\$ -	\$ -		9,628	\$ 6.31	\$ 60,767	\$ 60,767		\$ (891)	\$ 0

Notes:
P&I - Principal and Interest
SDE - Single Detached Equivalents

TABLE 6-17
Township of Russell - 2016 Development Charges
Cash Flow Analysis
Buildout Water Services (excluding Embrun A/S) - Residential

Year	Reserve Fund Opening Balance	Dev't Related Expenditures		Debenture Payments (Ottawa Water Supply, Reservoir)	SDE per Year	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	Revenues minus Expenditures	Debenture Financing Requirement	Interest Earnings (1.5%) / Costs (3%)	DC Reserve Fund Closing Balance after Financing
		Nominal	Inflated (2%/Yr)								
2016	\$ (405,692)	\$ -	\$ -	\$ (855,111)	107	\$ 4,192	\$ 448,888	\$ (406,223)		\$ (18,264)	\$ (830,178)
2017	\$ (830,178)	\$ -	\$ -	\$ (855,111)	107	\$ 4,276	\$ 457,866	\$ (397,245)		\$ (30,864)	\$ (1,258,287)
2018	\$ (1,258,287)	\$ -	\$ -	\$ (855,111)	107	\$ 4,361	\$ 467,023	\$ (388,088)		\$ (43,570)	\$ (1,689,945)
2019	\$ (1,689,945)	\$ -	\$ -	\$ (855,111)	107	\$ 4,448	\$ 476,364	\$ (378,747)		\$ (56,380)	\$ (2,125,071)
2020	\$ (2,125,071)	\$ -	\$ -	\$ (855,111)	107	\$ 4,537	\$ 485,891	\$ (369,220)		\$ (69,290)	\$ (2,563,582)
2021	\$ (2,563,582)	\$ -	\$ -	\$ (855,111)	107	\$ 4,628	\$ 495,609	\$ (359,502)		\$ (82,300)	\$ (3,005,384)
2022	\$ (3,005,384)	\$ -	\$ -	\$ (855,111)	107	\$ 4,721	\$ 505,521	\$ (349,590)		\$ (95,405)	\$ (3,450,379)
2023	\$ (3,450,379)	\$ -	\$ -	\$ (855,111)	107	\$ 4,815	\$ 515,632	\$ (339,479)		\$ (108,604)	\$ (3,898,462)
2024	\$ (3,898,462)	\$ -	\$ -	\$ (855,111)	107	\$ 4,911	\$ 525,944	\$ (329,167)		\$ (121,891)	\$ (4,349,520)
2025	\$ (4,349,520)	\$ -	\$ -	\$ (757,420)	107	\$ 5,010	\$ 536,463	\$ (220,957)		\$ (133,800)	\$ (4,704,276)
2026	\$ (4,704,276)	\$ -	\$ -	\$ (620,898)	86	\$ 5,110	\$ 439,240	\$ (181,658)		\$ (143,853)	\$ (5,029,788)
2027	\$ (5,029,788)	\$ -	\$ -	\$ (620,898)	86	\$ 5,212	\$ 448,024	\$ (172,874)		\$ (153,487)	\$ (5,356,149)
2028	\$ (5,356,149)	\$ -	\$ -	\$ (620,898)	86	\$ 5,316	\$ 456,985	\$ (163,913)		\$ (163,143)	\$ (5,683,205)
2029	\$ (5,683,205)	\$ -	\$ -	\$ (620,898)	86	\$ 5,423	\$ 466,125	\$ (154,774)		\$ (172,818)	\$ (6,010,796)
2030	\$ (6,010,796)	\$ -	\$ -	\$ (620,898)	86	\$ 5,531	\$ 475,447	\$ (145,451)		\$ (182,506)	\$ (6,338,753)
2031	\$ (6,338,753)	\$ -	\$ -	\$ (620,898)	86	\$ 5,642	\$ 484,956	\$ (135,942)		\$ (192,202)	\$ (6,666,897)
2032	\$ (6,666,897)	\$ -	\$ -	\$ (620,898)	86	\$ 5,754	\$ 494,655	\$ (126,243)		\$ (201,901)	\$ (6,995,040)
2033	\$ (6,995,040)	\$ -	\$ -	\$ (620,898)	86	\$ 5,870	\$ 504,548	\$ (116,350)		\$ (211,596)	\$ (7,322,987)
2034	\$ (7,322,987)	\$ -	\$ -	\$ (620,898)	86	\$ 5,987	\$ 514,639	\$ (106,259)		\$ (221,283)	\$ (7,650,529)
2035	\$ (7,650,529)	\$ -	\$ -	\$ (620,898)	86	\$ 6,107	\$ 524,932	\$ (95,966)		\$ (230,955)	\$ (7,977,450)
2036	\$ (7,977,450)	\$ -	\$ -	\$ (620,898)	99	\$ 6,229	\$ 618,454	\$ (2,444)		\$ (239,360)	\$ (8,219,255)
2037	\$ (8,219,255)	\$ -	\$ -	\$ (620,898)	99	\$ 6,353	\$ 630,823	\$ 9,925		\$ (246,429)	\$ (8,455,759)
2038	\$ (8,455,759)	\$ -	\$ -	\$ (620,898)	99	\$ 6,480	\$ 643,439	\$ 22,541		\$ (253,335)	\$ (8,686,553)
2039	\$ (8,686,553)	\$ -	\$ -	\$ (620,898)	99	\$ 6,610	\$ 656,308	\$ 35,410		\$ (260,065)	\$ (8,911,208)
2040	\$ (8,911,208)	\$ -	\$ -	\$ (620,898)	99	\$ 6,742	\$ 669,434	\$ 48,536		\$ (266,608)	\$ (9,129,281)
2041	\$ (9,129,281)	\$ -	\$ -	\$ (310,449)	99	\$ 6,877	\$ 682,823	\$ 372,374		\$ (268,293)	\$ (9,025,200)
2042	\$ (9,025,200)	\$ -	\$ -	\$ -	99	\$ 7,015	\$ 696,479	\$ 696,479		\$ (260,309)	\$ (8,589,029)
2043	\$ (8,589,029)	\$ -	\$ -	\$ -	99	\$ 7,155	\$ 710,409	\$ 710,409		\$ (247,015)	\$ (8,125,635)
2044	\$ (8,125,635)	\$ -	\$ -	\$ -	99	\$ 7,298	\$ 724,617	\$ 724,617		\$ (232,900)	\$ (7,633,918)
2045	\$ (7,633,918)	\$ -	\$ -	\$ -	99	\$ 7,444	\$ 739,109	\$ 739,109		\$ (217,931)	\$ (7,112,740)
2046	\$ (7,112,740)	\$ -	\$ -	\$ -	99	\$ 7,593	\$ 753,891	\$ 753,891		\$ (202,074)	\$ (6,560,922)
2047	\$ (6,560,922)	\$ -	\$ -	\$ -	99	\$ 7,745	\$ 768,969	\$ 768,969		\$ (185,293)	\$ (5,977,246)
2048	\$ (5,977,246)	\$ -	\$ -	\$ -	99	\$ 7,900	\$ 784,349	\$ 784,349		\$ (167,552)	\$ (5,360,449)
2049	\$ (5,360,449)	\$ -	\$ -	\$ -	99	\$ 8,058	\$ 800,036	\$ 800,036		\$ (148,813)	\$ (4,709,227)
2050	\$ (4,709,227)	\$ -	\$ -	\$ -	99	\$ 8,219	\$ 816,036	\$ 816,036		\$ (129,036)	\$ (4,022,226)
2051	\$ (4,022,226)	\$ -	\$ -	\$ -	99	\$ 8,383	\$ 832,357	\$ 832,357		\$ (108,181)	\$ (3,298,051)
2052	\$ (3,298,051)	\$ -	\$ -	\$ -	99	\$ 8,551	\$ 849,004	\$ 849,004		\$ (86,206)	\$ (2,535,253)
2053	\$ (2,535,253)	\$ -	\$ -	\$ -	99	\$ 8,722	\$ 865,984	\$ 865,984		\$ (63,068)	\$ (1,732,336)
2054	\$ (1,732,336)	\$ -	\$ -	\$ -	99	\$ 8,896	\$ 883,304	\$ 883,304		\$ (38,721)	\$ (887,753)
2055	\$ (887,753)	\$ -	\$ -	\$ -	99	\$ 9,074	\$ 900,970	\$ 900,970		\$ (13,217)	\$ 0

Notes:
P&I - Principal and Interest
SDE - Single Detached Equivalents

TABLE 6-18
Township of Russell - 2016 Development Charges
Cash Flow Analysis
Buildout Water Services (excluding Embrun A/S) - Non-Residential

Year	Reserve Fund Opening Balance	Dev't Related Expenditures		Debenture Payments (Ottawa Water Supply, Reservoir)	Non-Residential GFA (sq.ft.)	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	Revenues minus Expenditures	Debenture Financing Requirement	Interest Earnings (1.5%) / Costs (3%)	DC Reserve Fund Closing Balance after Financing
		Nominal	Inflated (2%/Yr)								
2016	\$ (66,581)	\$ -	\$ -	\$ (140,338)	55,320	1.54	\$ 85,272	\$ (55,066)		\$ (2,823)	\$ (124,471)
2017	\$ (124,471)	\$ -	\$ -	\$ (140,338)	55,320	1.57	\$ 86,978	\$ (53,361)		\$ (4,535)	\$ (182,366)
2018	\$ (182,366)	\$ -	\$ -	\$ (140,338)	55,320	1.60	\$ 88,717	\$ (51,621)		\$ (6,245)	\$ (240,232)
2019	\$ (240,232)	\$ -	\$ -	\$ (140,338)	55,320	1.64	\$ 90,492	\$ (49,847)		\$ (7,955)	\$ (298,034)
2020	\$ (298,034)	\$ -	\$ -	\$ (140,338)	55,320	1.67	\$ 92,301	\$ (48,037)		\$ (9,662)	\$ (355,733)
2021	\$ (355,733)	\$ -	\$ -	\$ (140,338)	55,320	1.70	\$ 94,148	\$ (46,191)		\$ (11,365)	\$ (413,288)
2022	\$ (413,288)	\$ -	\$ -	\$ (140,338)	55,320	1.74	\$ 96,030	\$ (44,308)		\$ (13,063)	\$ (470,660)
2023	\$ (470,660)	\$ -	\$ -	\$ (140,338)	55,320	1.77	\$ 97,951	\$ (42,387)		\$ (14,756)	\$ (527,803)
2024	\$ (527,803)	\$ -	\$ -	\$ (140,338)	55,320	1.81	\$ 99,910	\$ (40,428)		\$ (16,441)	\$ (584,672)
2025	\$ (584,672)	\$ -	\$ -	\$ (124,306)	55,320	1.84	\$ 101,908	\$ (22,397)		\$ (17,876)	\$ (624,945)
2026	\$ (624,945)	\$ -	\$ -	\$ (101,900)	37,060	1.88	\$ 69,636	\$ (32,264)		\$ (19,232)	\$ (676,442)
2027	\$ (676,442)	\$ -	\$ -	\$ (101,900)	37,060	1.92	\$ 71,029	\$ (30,872)		\$ (20,756)	\$ (728,070)
2028	\$ (728,070)	\$ -	\$ -	\$ (101,900)	37,060	1.95	\$ 72,449	\$ (29,451)		\$ (22,284)	\$ (779,804)
2029	\$ (779,804)	\$ -	\$ -	\$ (101,900)	37,060	1.99	\$ 73,898	\$ (28,002)		\$ (23,814)	\$ (831,621)
2030	\$ (831,621)	\$ -	\$ -	\$ (101,900)	37,060	2.03	\$ 75,376	\$ (26,524)		\$ (25,346)	\$ (883,491)
2031	\$ (883,491)	\$ -	\$ -	\$ (101,900)	37,060	2.07	\$ 76,884	\$ (25,016)		\$ (26,880)	\$ (935,388)
2032	\$ (935,388)	\$ -	\$ -	\$ (101,900)	37,060	2.12	\$ 78,421	\$ (23,479)		\$ (28,414)	\$ (987,280)
2033	\$ (987,280)	\$ -	\$ -	\$ (101,900)	37,060	2.16	\$ 79,990	\$ (21,910)		\$ (29,947)	\$ (1,039,138)
2034	\$ (1,039,138)	\$ -	\$ -	\$ (101,900)	37,060	2.20	\$ 81,590	\$ (20,311)		\$ (31,479)	\$ (1,090,927)
2035	\$ (1,090,927)	\$ -	\$ -	\$ (101,900)	37,060	2.25	\$ 83,221	\$ (18,679)		\$ (33,008)	\$ (1,142,614)
2036	\$ (1,142,614)	\$ -	\$ -	\$ (101,900)	40,270	2.29	\$ 92,238	\$ (9,662)		\$ (34,423)	\$ (1,186,699)
2037	\$ (1,186,699)	\$ -	\$ -	\$ (101,900)	40,270	2.34	\$ 94,083	\$ (7,817)		\$ (35,718)	\$ (1,230,235)
2038	\$ (1,230,235)	\$ -	\$ -	\$ (101,900)	40,270	2.38	\$ 95,965	\$ (5,935)		\$ (36,996)	\$ (1,273,166)
2039	\$ (1,273,166)	\$ -	\$ -	\$ (101,900)	40,270	2.43	\$ 97,884	\$ (4,016)		\$ (38,255)	\$ (1,315,437)
2040	\$ (1,315,437)	\$ -	\$ -	\$ (101,900)	40,270	2.48	\$ 99,842	\$ (2,059)		\$ (39,494)	\$ (1,356,990)
2041	\$ (1,356,990)	\$ -	\$ -	\$ (50,950)	40,270	2.53	\$ 101,838	\$ 50,888		\$ (39,946)	\$ (1,346,048)
2042	\$ (1,346,048)	\$ -	\$ -	\$ -	40,270	2.58	\$ 103,875	\$ 103,875		\$ (38,823)	\$ (1,280,996)
2043	\$ (1,280,996)	\$ -	\$ -	\$ -	40,270	2.63	\$ 105,953	\$ 105,953		\$ (36,841)	\$ (1,211,884)
2044	\$ (1,211,884)	\$ -	\$ -	\$ -	40,270	2.68	\$ 108,072	\$ 108,072		\$ (34,735)	\$ (1,138,548)
2045	\$ (1,138,548)	\$ -	\$ -	\$ -	40,270	2.74	\$ 110,233	\$ 110,233		\$ (32,503)	\$ (1,060,817)
2046	\$ (1,060,817)	\$ -	\$ -	\$ -	40,270	2.79	\$ 112,438	\$ 112,438		\$ (30,138)	\$ (978,518)
2047	\$ (978,518)	\$ -	\$ -	\$ -	40,270	2.85	\$ 114,687	\$ 114,687		\$ (27,635)	\$ (891,466)
2048	\$ (891,466)	\$ -	\$ -	\$ -	40,270	2.90	\$ 116,980	\$ 116,980		\$ (24,989)	\$ (799,475)
2049	\$ (799,475)	\$ -	\$ -	\$ -	40,270	2.96	\$ 119,320	\$ 119,320		\$ (22,194)	\$ (702,350)
2050	\$ (702,350)	\$ -	\$ -	\$ -	40,270	3.02	\$ 121,706	\$ 121,706		\$ (19,245)	\$ (599,888)
2051	\$ (599,888)	\$ -	\$ -	\$ -	40,270	3.08	\$ 124,140	\$ 124,140		\$ (16,135)	\$ (491,882)
2052	\$ (491,882)	\$ -	\$ -	\$ -	40,270	3.14	\$ 126,623	\$ 126,623		\$ (12,857)	\$ (378,116)
2053	\$ (378,116)	\$ -	\$ -	\$ -	40,270	3.21	\$ 129,156	\$ 129,156		\$ (9,406)	\$ (258,366)
2054	\$ (258,366)	\$ -	\$ -	\$ -	40,270	3.27	\$ 131,739	\$ 131,739		\$ (5,775)	\$ (132,402)
2055	\$ (132,402)	\$ -	\$ -	\$ -	40,270	3.34	\$ 134,374	\$ 134,374		\$ (1,971)	\$ 0

Notes:
P&I - Principal and Interest
SDE - Single Detached Equivalents

TABLE 6-19
Township of Russell - 2016 Development Charges
Cash Flow Analysis
Buildout Water Services (Embrun) - Residential

Year	Reserve Fund Opening Balance	Dev't Related Expenditures		Debenture Payments (Ottawa Water Supply, Reservoir)	SDE per Year	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	Revenues minus Expenditures	Debenture Financing Requirement	Interest Earnings (1.5%) / Costs (3%)	DC Reserve Fund Closing Balance after Financing
		Nominal	Inflated (2%/Yr)								
2016	\$ -	\$ (67,062)	\$ (67,062)	\$ -	69	\$ 120	\$ 8,277	\$ (58,785)		\$ (882)	\$ (59,667)
2017	\$ (59,667)	\$ -	\$ -	\$ -	69	\$ 122	\$ 8,443	\$ 8,443		\$ (1,663)	\$ (52,887)
2018	\$ (52,887)	\$ -	\$ -	\$ -	69	\$ 124	\$ 8,611	\$ 8,611		\$ (1,457)	\$ (45,733)
2019	\$ (45,733)	\$ -	\$ -	\$ -	69	\$ 127	\$ 8,784	\$ 8,784		\$ (1,240)	\$ (38,190)
2020	\$ (38,190)	\$ -	\$ -	\$ -	69	\$ 129	\$ 8,959	\$ 8,959		\$ (1,011)	\$ (30,242)
2021	\$ (30,242)	\$ (32,929)	\$ (36,356)	\$ -	69	\$ 132	\$ 9,139	\$ (27,218)		\$ (1,316)	\$ (58,775)
2022	\$ (58,775)	\$ (32,929)	\$ (37,084)	\$ -	69	\$ 135	\$ 9,321	\$ (27,762)		\$ (2,180)	\$ (88,717)
2023	\$ (88,717)	\$ (32,929)	\$ (37,825)	\$ -	69	\$ 137	\$ 9,508	\$ (28,317)		\$ (3,086)	\$ (120,121)
2024	\$ (120,121)	\$ (32,929)	\$ (38,582)	\$ -	69	\$ 140	\$ 9,698	\$ (28,884)		\$ (4,037)	\$ (153,042)
2025	\$ (153,042)	\$ (32,929)	\$ (39,353)	\$ -	69	\$ 143	\$ 9,892	\$ (29,461)		\$ (5,033)	\$ (187,536)
2026	\$ (187,536)	\$ (32,929)	\$ (40,140)	\$ -	79	\$ 146	\$ 11,449	\$ (28,692)		\$ (6,056)	\$ (222,284)
2027	\$ (222,284)	\$ -	\$ -	\$ -	79	\$ 149	\$ 11,678	\$ 11,678		\$ (6,493)	\$ (217,100)
2028	\$ (217,100)	\$ -	\$ -	\$ -	79	\$ 152	\$ 11,911	\$ 11,911		\$ (6,334)	\$ (211,523)
2029	\$ (211,523)	\$ -	\$ -	\$ -	79	\$ 155	\$ 12,150	\$ 12,150		\$ (6,163)	\$ (205,537)
2030	\$ (205,537)	\$ -	\$ -	\$ -	79	\$ 158	\$ 12,392	\$ 12,392		\$ (5,980)	\$ (199,125)
2031	\$ (199,125)	\$ -	\$ -	\$ -	79	\$ 161	\$ 12,640	\$ 12,640		\$ (5,784)	\$ (192,269)
2032	\$ (192,269)	\$ -	\$ -	\$ -	79	\$ 164	\$ 12,893	\$ 12,893		\$ (5,575)	\$ (184,950)
2033	\$ (184,950)	\$ -	\$ -	\$ -	79	\$ 167	\$ 13,151	\$ 13,151		\$ (5,351)	\$ (177,150)
2034	\$ (177,150)	\$ -	\$ -	\$ -	79	\$ 171	\$ 13,414	\$ 13,414		\$ (5,113)	\$ (168,850)
2035	\$ (168,850)	\$ -	\$ -	\$ -	79	\$ 174	\$ 13,682	\$ 13,682		\$ (4,860)	\$ (160,028)
2036	\$ (160,028)	\$ -	\$ -	\$ -	50	\$ 178	\$ 8,894	\$ 8,894		\$ (4,667)	\$ (155,801)
2037	\$ (155,801)	\$ -	\$ -	\$ -	50	\$ 181	\$ 9,072	\$ 9,072		\$ (4,538)	\$ (151,267)
2038	\$ (151,267)	\$ -	\$ -	\$ -	50	\$ 185	\$ 9,253	\$ 9,253		\$ (4,399)	\$ (146,413)
2039	\$ (146,413)	\$ -	\$ -	\$ -	50	\$ 188	\$ 9,439	\$ 9,439		\$ (4,251)	\$ (141,225)
2040	\$ (141,225)	\$ -	\$ -	\$ -	50	\$ 192	\$ 9,627	\$ 9,627		\$ (4,092)	\$ (135,690)
2041	\$ (135,690)	\$ -	\$ -	\$ -	50	\$ 196	\$ 9,820	\$ 9,820		\$ (3,923)	\$ (129,793)
2042	\$ (129,793)	\$ -	\$ -	\$ -	50	\$ 200	\$ 10,016	\$ 10,016		\$ (3,744)	\$ (123,521)
2043	\$ (123,521)	\$ -	\$ -	\$ -	50	\$ 204	\$ 10,217	\$ 10,217		\$ (3,552)	\$ (116,857)
2044	\$ (116,857)	\$ -	\$ -	\$ -	50	\$ 208	\$ 10,421	\$ 10,421		\$ (3,349)	\$ (109,785)
2045	\$ (109,785)	\$ -	\$ -	\$ -	50	\$ 212	\$ 10,629	\$ 10,629		\$ (3,134)	\$ (102,290)
2046	\$ (102,290)	\$ -	\$ -	\$ -	50	\$ 216	\$ 10,842	\$ 10,842		\$ (2,906)	\$ (94,354)
2047	\$ (94,354)	\$ -	\$ -	\$ -	50	\$ 221	\$ 11,059	\$ 11,059		\$ (2,665)	\$ (85,960)
2048	\$ (85,960)	\$ -	\$ -	\$ -	50	\$ 225	\$ 11,280	\$ 11,280		\$ (2,410)	\$ (77,090)
2049	\$ (77,090)	\$ -	\$ -	\$ -	50	\$ 230	\$ 11,505	\$ 11,505		\$ (2,140)	\$ (67,724)
2050	\$ (67,724)	\$ -	\$ -	\$ -	50	\$ 234	\$ 11,736	\$ 11,736		\$ (1,856)	\$ (57,845)
2051	\$ (57,845)	\$ -	\$ -	\$ -	50	\$ 239	\$ 11,970	\$ 11,970		\$ (1,556)	\$ (47,430)
2052	\$ (47,430)	\$ -	\$ -	\$ -	50	\$ 244	\$ 12,210	\$ 12,210		\$ (1,240)	\$ (36,460)
2053	\$ (36,460)	\$ -	\$ -	\$ -	50	\$ 249	\$ 12,454	\$ 12,454		\$ (907)	\$ (24,913)
2054	\$ (24,913)	\$ -	\$ -	\$ -	50	\$ 254	\$ 12,703	\$ 12,703		\$ (557)	\$ (12,767)
2055	\$ (12,767)	\$ -	\$ -	\$ -	50	\$ 259	\$ 12,957	\$ 12,957		\$ (190)	\$ 0

Notes:

P&I - Principal and Interest

SDE - Single Detached Equivalents

TABLE 6-20
Township of Russell - 2016 Development Charges
Cash Flow Analysis
Buildout Water Services (Embrun) - Non-Residential

Year	Reserve Fund Opening Balance	Dev't Related Expenditures		Debenture Payments (Ottawa Water Supply, Reservoir)	Non-Residential GFA (sq.ft.)	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	Revenues minus Expenditures	Debenture Financing Requirement	Interest Earnings (1.5%) / Costs (3%)	DC Reserve Fund Closing Balance after Financing
		Nominal	Inflated (2%/Yr)								
2016	\$ -	\$ (11,006)	\$ (11,006)	\$ -	52,090	0.03	\$ 1,676	\$ (9,330)		\$ (140)	\$ (9,470)
2017	\$ (9,470)	\$ -	\$ -	\$ -	52,090	0.03	\$ 1,709	\$ 1,709		\$ (258)	\$ (8,020)
2018	\$ (8,020)	\$ -	\$ -	\$ -	52,090	0.03	\$ 1,743	\$ 1,743		\$ (214)	\$ (6,491)
2019	\$ (6,491)	\$ -	\$ -	\$ -	52,090	0.03	\$ 1,778	\$ 1,778		\$ (168)	\$ (4,881)
2020	\$ (4,881)	\$ -	\$ -	\$ -	52,090	0.03	\$ 1,814	\$ 1,814		\$ (119)	\$ (3,186)
2021	\$ (3,186)	\$ (5,404)	\$ (5,967)	\$ -	52,090	0.04	\$ 1,850	\$ (4,117)		\$ (157)	\$ (7,460)
2022	\$ (7,460)	\$ (5,404)	\$ (6,086)	\$ -	52,090	0.04	\$ 1,887	\$ (4,199)		\$ (287)	\$ (11,946)
2023	\$ (11,946)	\$ (5,404)	\$ (6,208)	\$ -	52,090	0.04	\$ 1,925	\$ (4,283)		\$ (423)	\$ (16,652)
2024	\$ (16,652)	\$ (5,404)	\$ (6,332)	\$ -	52,090	0.04	\$ 1,963	\$ (4,369)		\$ (565)	\$ (21,586)
2025	\$ (21,586)	\$ (5,404)	\$ (6,459)	\$ -	52,090	0.04	\$ 2,002	\$ (4,456)		\$ (714)	\$ (26,756)
2026	\$ (26,756)	\$ (5,404)	\$ (6,588)	\$ -	36,866	0.04	\$ 1,446	\$ (5,142)		\$ (880)	\$ (32,778)
2027	\$ (32,778)	\$ -	\$ -	\$ -	36,866	0.04	\$ 1,474	\$ 1,474		\$ (961)	\$ (32,265)
2028	\$ (32,265)	\$ -	\$ -	\$ -	36,866	0.04	\$ 1,504	\$ 1,504		\$ (945)	\$ (31,706)
2029	\$ (31,706)	\$ -	\$ -	\$ -	36,866	0.04	\$ 1,534	\$ 1,534		\$ (928)	\$ (31,100)
2030	\$ (31,100)	\$ -	\$ -	\$ -	36,866	0.04	\$ 1,565	\$ 1,565		\$ (910)	\$ (30,445)
2031	\$ (30,445)	\$ -	\$ -	\$ -	36,866	0.04	\$ 1,596	\$ 1,596		\$ (889)	\$ (29,738)
2032	\$ (29,738)	\$ -	\$ -	\$ -	36,866	0.04	\$ 1,628	\$ 1,628		\$ (868)	\$ (28,978)
2033	\$ (28,978)	\$ -	\$ -	\$ -	36,866	0.05	\$ 1,661	\$ 1,661		\$ (844)	\$ (28,162)
2034	\$ (28,162)	\$ -	\$ -	\$ -	36,866	0.05	\$ 1,694	\$ 1,694		\$ (819)	\$ (27,288)
2035	\$ (27,288)	\$ -	\$ -	\$ -	36,866	0.05	\$ 1,728	\$ 1,728		\$ (793)	\$ (26,353)
2036	\$ (26,353)	\$ -	\$ -	\$ -	30,642	0.05	\$ 1,465	\$ 1,465		\$ (769)	\$ (25,657)
2037	\$ (25,657)	\$ -	\$ -	\$ -	30,642	0.05	\$ 1,494	\$ 1,494		\$ (747)	\$ (24,910)
2038	\$ (24,910)	\$ -	\$ -	\$ -	30,642	0.05	\$ 1,524	\$ 1,524		\$ (724)	\$ (24,111)
2039	\$ (24,111)	\$ -	\$ -	\$ -	30,642	0.05	\$ 1,554	\$ 1,554		\$ (700)	\$ (23,257)
2040	\$ (23,257)	\$ -	\$ -	\$ -	30,642	0.05	\$ 1,585	\$ 1,585		\$ (674)	\$ (22,345)
2041	\$ (22,345)	\$ -	\$ -	\$ -	30,642	0.05	\$ 1,617	\$ 1,617		\$ (646)	\$ (21,374)
2042	\$ (21,374)	\$ -	\$ -	\$ -	30,642	0.05	\$ 1,649	\$ 1,649		\$ (616)	\$ (20,341)
2043	\$ (20,341)	\$ -	\$ -	\$ -	30,642	0.05	\$ 1,682	\$ 1,682		\$ (585)	\$ (19,244)
2044	\$ (19,244)	\$ -	\$ -	\$ -	30,642	0.06	\$ 1,716	\$ 1,716		\$ (552)	\$ (18,079)
2045	\$ (18,079)	\$ -	\$ -	\$ -	30,642	0.06	\$ 1,750	\$ 1,750		\$ (516)	\$ (16,845)
2046	\$ (16,845)	\$ -	\$ -	\$ -	30,642	0.06	\$ 1,785	\$ 1,785		\$ (479)	\$ (15,538)
2047	\$ (15,538)	\$ -	\$ -	\$ -	30,642	0.06	\$ 1,821	\$ 1,821		\$ (439)	\$ (14,156)
2048	\$ (14,156)	\$ -	\$ -	\$ -	30,642	0.06	\$ 1,858	\$ 1,858		\$ (397)	\$ (12,695)
2049	\$ (12,695)	\$ -	\$ -	\$ -	30,642	0.06	\$ 1,895	\$ 1,895		\$ (352)	\$ (11,153)
2050	\$ (11,153)	\$ -	\$ -	\$ -	30,642	0.06	\$ 1,933	\$ 1,933		\$ (306)	\$ (9,526)
2051	\$ (9,526)	\$ -	\$ -	\$ -	30,642	0.06	\$ 1,971	\$ 1,971		\$ (256)	\$ (7,811)
2052	\$ (7,811)	\$ -	\$ -	\$ -	30,642	0.07	\$ 2,011	\$ 2,011		\$ (204)	\$ (6,004)
2053	\$ (6,004)	\$ -	\$ -	\$ -	30,642	0.07	\$ 2,051	\$ 2,051		\$ (149)	\$ (4,103)
2054	\$ (4,103)	\$ -	\$ -	\$ -	30,642	0.07	\$ 2,092	\$ 2,092		\$ (92)	\$ (2,102)
2055	\$ (2,102)	\$ -	\$ -	\$ -	30,642	0.07	\$ 2,134	\$ 2,134		\$ (31)	\$ 0

Notes:
P&I - Principal and Interest
SDE - Single Detached Equivalents

TABLE 6-21
Township of Russell - 2016 Development Charges
Cash Flow Analysis
20 Year Services - Residential

Year	Reserve Fund Opening Balance	Dev't Related Expenditures		Debt Carrying Costs (P&I) 3%; 20 Yr Term	SDE per Year	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	Revenues minus Expenditures	Debt Service Financing Requirement	Interest Earnings (1.5%) / Costs (3%)	DC Reserve Fund Closing Balance after Financing
		Nominal	Inflated (2%/Yr)								
2016	\$ (852,959)	\$ (155,675)	\$ (155,675)	\$ -	112	\$ 2,933	\$ 328,783	\$ 173,108		\$ (22,992)	\$ (702,843)
2017	\$ (702,843)	\$ (1,856,486)	\$ (1,893,615)	\$ -	112	\$ 2,992	\$ 335,358	\$ (1,558,257)		\$ (44,459)	\$ (2,305,559)
2018	\$ (2,305,559)	\$ (263,261)	\$ (273,897)	\$ -	112	\$ 3,052	\$ 342,066	\$ 68,169		\$ (68,144)	\$ (2,305,534)
2019	\$ (2,305,534)	\$ (112,440)	\$ (119,322)	\$ -	112	\$ 3,113	\$ 348,907	\$ 229,585		\$ (65,722)	\$ (2,141,672)
2020	\$ (2,141,672)	\$ (974,955)	\$ (1,055,322)	\$ -	112	\$ 3,175	\$ 355,885	\$ (699,437)		\$ (74,742)	\$ (2,915,851)
2021	\$ (2,915,851)	\$ (987,328)	\$ (1,090,090)	\$ -	112	\$ 3,239	\$ 363,003	\$ (727,087)		\$ (98,382)	\$ (3,741,320)
2022	\$ (3,741,320)	\$ (60,478)	\$ (68,108)	\$ -	112	\$ 3,303	\$ 370,263	\$ 302,155		\$ (107,707)	\$ (3,546,872)
2023	\$ (3,546,872)	\$ (125,519)	\$ (144,182)	\$ -	112	\$ 3,369	\$ 377,668	\$ 233,486		\$ (102,904)	\$ (3,416,289)
2024	\$ (3,416,289)	\$ (12,792)	\$ (14,988)	\$ -	112	\$ 3,437	\$ 385,221	\$ 370,233		\$ (96,935)	\$ (3,142,991)
2025	\$ (3,142,991)	\$ (12,792)	\$ (15,288)	\$ -	112	\$ 3,506	\$ 392,926	\$ 377,638		\$ (88,625)	\$ (2,853,978)
2026	\$ (2,853,978)	\$ (12,792)	\$ (15,593)	\$ -	89	\$ 3,576	\$ 318,091	\$ 302,498		\$ (81,082)	\$ (2,632,562)
2027	\$ (2,632,562)	\$ (12,792)	\$ (15,905)	\$ -	89	\$ 3,647	\$ 324,453	\$ 308,548		\$ (74,349)	\$ (2,398,363)
2028	\$ (2,398,363)	\$ (12,792)	\$ (16,223)	\$ -	89	\$ 3,720	\$ 330,942	\$ 314,719		\$ (67,230)	\$ (2,150,874)
2029	\$ (2,150,874)	\$ (12,792)	\$ (16,548)	\$ -	89	\$ 3,794	\$ 337,561	\$ 321,013		\$ (59,711)	\$ (1,889,571)
2030	\$ (1,889,571)	\$ (12,792)	\$ (16,879)	\$ -	89	\$ 3,870	\$ 344,312	\$ 327,434		\$ (51,776)	\$ (1,613,913)
2031	\$ (1,613,913)	\$ (12,792)	\$ (17,216)	\$ -	89	\$ 3,948	\$ 351,199	\$ 333,982		\$ (43,408)	\$ (1,323,339)
2032	\$ (1,323,339)	\$ (12,792)	\$ (17,561)	\$ -	89	\$ 4,027	\$ 358,223	\$ 340,662		\$ (34,590)	\$ (1,017,267)
2033	\$ (1,017,267)	\$ (12,792)	\$ (17,912)	\$ -	89	\$ 4,107	\$ 365,387	\$ 347,475		\$ (25,306)	\$ (695,098)
2034	\$ (695,098)	\$ (12,792)	\$ (18,270)	\$ -	89	\$ 4,189	\$ 372,695	\$ 354,425		\$ (15,537)	\$ (356,210)
2035	\$ (356,210)	\$ (12,792)	\$ (18,636)	\$ -	89	\$ 4,273	\$ 380,149	\$ 361,513		\$ (5,303)	\$ 0

Notes:

P&I - Principal and Interest

SDE - Single Detached Equivalents

TABLE 6-22
Township of Russell - 2016 Development Charges
Cash Flow Analysis
20 Year Services - Non-Residential

Year	Reserve Fund Opening Balance	Dev't Related Expenditures		Debt Carrying Costs (P&I) 3%; 20 Yr Term	Non-Residential GFA (sq.ft.)	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	Revenues minus Expenditures	Debenture Financing Requirement	Interest Earnings (1.5%) / Costs (3%)	DC Reserve Fund Closing Balance after Financing
		Nominal	Inflated (2%/Yr)								
2016	\$ (174,208)	\$ (31,795)	\$ (31,795)	\$ -	98,010	\$ 0.86	\$ 84,569	\$ 52,774		\$ (4,435)	\$ (125,869)
2017	\$ (125,869)	\$ (379,169)	\$ (386,752)	\$ -	98,010	\$ 0.88	\$ 86,261	\$ (300,492)		\$ (8,283)	\$ (434,644)
2018	\$ (434,644)	\$ (53,769)	\$ (55,941)	\$ -	98,010	\$ 0.90	\$ 87,986	\$ 32,045		\$ (12,559)	\$ (415,157)
2019	\$ (415,157)	\$ (22,965)	\$ (24,370)	\$ -	98,010	\$ 0.92	\$ 89,746	\$ 65,375		\$ (11,474)	\$ (361,256)
2020	\$ (361,256)	\$ (199,125)	\$ (215,539)	\$ -	98,010	\$ 0.93	\$ 91,540	\$ (123,999)		\$ (12,698)	\$ (497,953)
2021	\$ (497,953)	\$ (201,652)	\$ (222,640)	\$ -	98,010	\$ 0.95	\$ 93,371	\$ (129,269)		\$ (16,878)	\$ (644,099)
2022	\$ (644,099)	\$ (12,352)	\$ (13,910)	\$ -	98,010	\$ 0.97	\$ 95,239	\$ 81,328		\$ (18,103)	\$ (580,874)
2023	\$ (580,874)	\$ (25,636)	\$ (29,448)	\$ -	98,010	\$ 0.99	\$ 97,143	\$ 67,696		\$ (16,411)	\$ (529,589)
2024	\$ (529,589)	\$ (2,613)	\$ (3,061)	\$ -	98,010	\$ 1.01	\$ 99,086	\$ 96,025		\$ (14,447)	\$ (448,011)
2025	\$ (448,011)	\$ (2,613)	\$ (3,122)	\$ -	98,010	\$ 1.03	\$ 101,068	\$ 97,946		\$ (11,971)	\$ (362,036)
2026	\$ (362,036)	\$ (2,613)	\$ (3,185)	\$ -	39,510	\$ 1.05	\$ 41,558	\$ 38,373		\$ (10,285)	\$ (333,949)
2027	\$ (333,949)	\$ (2,613)	\$ (3,248)	\$ -	39,510	\$ 1.07	\$ 42,389	\$ 39,140		\$ (9,431)	\$ (304,240)
2028	\$ (304,240)	\$ (2,613)	\$ (3,313)	\$ -	39,510	\$ 1.09	\$ 43,237	\$ 39,923		\$ (8,528)	\$ (272,845)
2029	\$ (272,845)	\$ (2,613)	\$ (3,380)	\$ -	39,510	\$ 1.12	\$ 44,101	\$ 40,722		\$ (7,575)	\$ (239,698)
2030	\$ (239,698)	\$ (2,613)	\$ (3,447)	\$ -	39,510	\$ 1.14	\$ 44,983	\$ 41,536		\$ (6,568)	\$ (204,730)
2031	\$ (204,730)	\$ (2,613)	\$ (3,516)	\$ -	39,510	\$ 1.16	\$ 45,883	\$ 42,367		\$ (5,506)	\$ (167,870)
2032	\$ (167,870)	\$ (2,613)	\$ (3,587)	\$ -	39,510	\$ 1.18	\$ 46,801	\$ 43,214		\$ (4,388)	\$ (129,044)
2033	\$ (129,044)	\$ (2,613)	\$ (3,658)	\$ -	39,510	\$ 1.21	\$ 47,737	\$ 44,078		\$ (3,210)	\$ (88,175)
2034	\$ (88,175)	\$ (2,613)	\$ (3,731)	\$ -	39,510	\$ 1.23	\$ 48,691	\$ 44,960		\$ (1,971)	\$ (45,186)
2035	\$ (45,186)	\$ (2,613)	\$ (3,806)	\$ -	39,510	\$ 1.26	\$ 49,665	\$ 45,859		\$ (673)	\$ (0)

Notes:

P&I - Principal and Interest

SDE - Single Detached Equivalents

TABLE 6-23
Township of Russell - 2016 Development Charges
Cash Flow Analysis
10 Year Services - Residential

Year	Reserve Fund Opening Balance	Dev't Related Expenditures		Debt Carrying Costs (P&I) 3%; 20 Yr Term	SDE per Year	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	Revenues minus Expenditures	Debenture Financing Requirement	Interest Earnings (1.5%) / Costs (3%)	DC Reserve Fund Closing Balance after Financing
		Nominal	Inflated (2%/Yr)								
2016	\$ 3,827,310	\$ (84,689)	\$ (84,689)	\$ -	112	\$ 4,498	\$ 504,158	\$ 419,468		\$ 60,556	\$ 4,307,334
2017	\$ 4,307,334	\$ (3,155,265)	\$ (3,218,370)	\$ -	112	\$ 4,588	\$ 514,241	\$ (2,704,129)		\$ 44,329	\$ 1,647,533
2018	\$ 1,647,533	\$ (135,553)	\$ (141,029)	\$ -	112	\$ 4,680	\$ 524,526	\$ 383,496		\$ 27,589	\$ 2,058,619
2019	\$ 2,058,619	\$ (101,004)	\$ (107,186)	\$ -	112	\$ 4,773	\$ 535,016	\$ 427,830		\$ 34,088	\$ 2,520,537
2020	\$ 2,520,537	\$ (101,004)	\$ (109,330)	\$ -	112	\$ 4,869	\$ 545,716	\$ 436,386		\$ 41,081	\$ 2,998,004
2021	\$ 2,998,004	\$ (1,626,284)	\$ (1,795,549)	\$ -	112	\$ 4,966	\$ 556,631	\$ (1,238,918)		\$ 35,678	\$ 1,794,764
2022	\$ 1,794,764	\$ (105,347)	\$ (118,638)	\$ -	112	\$ 5,065	\$ 567,763	\$ 449,125		\$ 30,290	\$ 2,274,179
2023	\$ 2,274,179	\$ (3,454,824)	\$ (3,968,506)	\$ -	112	\$ 5,167	\$ 579,119	\$ (3,389,388)		\$ 328	\$ (1,114,880)
2024	\$ (1,114,880)	\$ (18,975)	\$ (22,233)	\$ -	112	\$ 5,270	\$ 590,701	\$ 568,468		\$ (24,919)	\$ (571,331)
2025	\$ (571,331)	\$ (18,975)	\$ (22,677)	\$ -	112	\$ 5,375	\$ 602,515	\$ 579,838		\$ (8,506)	\$ -

Notes:

P&I - Principal and Interest

SDE - Single Detached Equivalents

TABLE 6-24
Township of Russell - 2016 Development Charges
Cash Flow Analysis
10 Year Services - Non-Residential

Year	Reserve Fund Opening Balance	Dev't Related Expenditures		Debt Carrying Costs (P&I) 3%; 20 Yr Term	Non-Residential GFA (sq.ft.)	DC Rates w. Inflation (2%/Yr)	Anticipated Revenues	Revenues minus Expenditures	Debenture Financing Requirement	Interest Earnings (1.5%) / Costs (3%)	DC Reserve Fund Closing Balance after Financing
		Nominal	Inflated (2%/Yr)								
2016	\$ 194,106	\$ (18,025)	\$ (18,025)	\$ -	98,010	\$ 0.33	\$ 32,588	\$ 14,564		\$ 3,021	\$ 211,691
2017	\$ 211,691	\$ (175,659)	\$ (179,172)	\$ -	98,010	\$ 0.34	\$ 33,240	\$ (145,932)		\$ 2,081	\$ 67,839
2018	\$ 67,839	\$ (14,267)	\$ (14,844)	\$ -	98,010	\$ 0.35	\$ 33,905	\$ 19,061		\$ 1,161	\$ 88,061
2019	\$ 88,061	\$ (5,316)	\$ (5,641)	\$ -	98,010	\$ 0.35	\$ 34,583	\$ 28,942		\$ 1,538	\$ 118,541
2020	\$ 118,541	\$ (5,316)	\$ (5,754)	\$ -	98,010	\$ 0.36	\$ 35,275	\$ 29,520		\$ 2,000	\$ 150,061
2021	\$ 150,061	\$ (90,921)	\$ (100,385)	\$ -	98,010	\$ 0.37	\$ 35,980	\$ (64,405)		\$ 1,768	\$ 87,424
2022	\$ 87,424	\$ (23,377)	\$ (26,326)	\$ -	98,010	\$ 0.37	\$ 36,700	\$ 10,373		\$ 1,389	\$ 99,186
2023	\$ 99,186	\$ (181,833)	\$ (208,869)	\$ -	98,010	\$ 0.38	\$ 37,434	\$ (171,435)		\$ (340)	\$ (72,588)
2024	\$ (72,588)	\$ (999)	\$ (1,170)	\$ -	98,010	\$ 0.39	\$ 38,182	\$ 37,012		\$ (1,622)	\$ (37,199)
2025	\$ (37,199)	\$ (999)	\$ (1,194)	\$ -	98,010	\$ 0.40	\$ 38,946	\$ 37,753		\$ (554)	\$ 0

Notes:
P&I - Principal and Interest

Table 6-25
Schedule of Development Charges – Uniform Approach
Total All Services

Service	RESIDENTIAL					NON-RESIDENTIAL
	Single and Semi-Detached Dwelling	Apartments - 2 Bedrooms +	Apartments - Bachelor and 1 Bedroom	Other Multiples	Special Care/Special Dwelling Units	(per ft ² of Gross Floor Area)
Municipal Wide Services:						
Roads and Related	\$ 2,248	\$ 1,223	\$ 884	\$ 1,386	\$ 707	\$ 0.66
Fire Protection Services	\$ 652	\$ 355	\$ 256	\$ 402	\$ 205	\$ 0.19
Police Services	\$ 33	\$ 18	\$ 13	\$ 20	\$ 10	\$ 0.01
Parks & Recreation Services	\$ 3,667	\$ 1,995	\$ 1,441	\$ 2,260	\$ 1,153	\$ 0.25
Library Services	\$ 91	\$ 49	\$ 36	\$ 56	\$ 29	\$ 0.01
Administration	\$ 111	\$ 60	\$ 44	\$ 68	\$ 35	\$ 0.04
By-law Enforcement	\$ 13	\$ 7	\$ 5	\$ 8	\$ 4	\$ -
Total Municipal Wide Services	\$ 6,815	\$ 3,707	\$ 2,679	\$ 4,200	\$ 2,143	\$ 1.16
Urban Services						
Wastewater Services	\$ 3,929	\$ 2,137	\$ 1,544	\$ 2,422	\$ 1,236	\$ 1.42
Water Services	\$ 4,269	\$ 2,322	\$ 1,678	\$ 2,631	\$ 1,342	\$ 1.57
Total Urban Services	\$ 8,198	\$ 4,459	\$ 3,222	\$ 5,053	\$ 2,578	\$ 2.99
GRAND TOTAL RURAL AREA	\$ 6,815	\$ 3,707	\$ 2,679	\$ 4,200	\$ 2,143	\$ 1.16
GRAND TOTAL URBAN AREA	\$ 15,013	\$ 8,166	\$ 5,901	\$ 9,253	\$ 4,721	\$ 4.15

Table 6-26
Schedule of Development Charges – Area-Specific Approach
Total All Services

Service	RESIDENTIAL					NON-RESIDENTIAL
	Single and Semi-Detached Dwelling	Apartments - 2 Bedrooms +	Apartments - Bachelor and 1 Bedroom	Other Multiples	Special Care/Special Dwelling Units	(per ft ² of Gross Floor Area)
Municipal Wide Services:						
Roads and Related	\$ 2,248	\$ 1,223	\$ 884	\$ 1,386	\$ 707	\$ 0.66
Fire Protection Services	\$ 652	\$ 355	\$ 256	\$ 402	\$ 205	\$ 0.19
Police Services	\$ 33	\$ 18	\$ 13	\$ 20	\$ 10	\$ 0.01
Parks & Recreation Services	\$ 3,667	\$ 1,995	\$ 1,441	\$ 2,260	\$ 1,153	\$ 0.25
Library Services	\$ 91	\$ 49	\$ 36	\$ 56	\$ 29	\$ 0.01
Administration	\$ 111	\$ 60	\$ 44	\$ 68	\$ 35	\$ 0.04
By-law Enforcement	\$ 13	\$ 7	\$ 5	\$ 8	\$ 4	\$ -
Total Municipal Wide Services	\$ 6,815	\$ 3,707	\$ 2,679	\$ 4,200	\$ 2,143	\$ 1.16
Urban Services						
Wastewater Services	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Water Services	\$ 4,192	\$ 2,281	\$ 1,648	\$ 2,584	\$ 1,318	\$ 1.54
Total Urban Services	\$ 4,192	\$ 2,281	\$ 1,648	\$ 2,584	\$ 1,318	\$ 1.54
Embrun Area-Specific						
Wastewater Services	\$ 4,503	\$ 2,450	\$ 1,770	\$ 2,775	\$ 1,416	\$ 1.21
Water Services	\$ 120	\$ 65	\$ 47	\$ 74	\$ 38	\$ 0.03
Total Embrun Area-Specific	\$ 4,623	\$ 2,515	\$ 1,817	\$ 2,849	\$ 1,454	\$ 1.24
Russell Area-Specific						
Wastewater Services	\$ 2,842	\$ 1,546	\$ 1,117	\$ 1,752	\$ 894	\$ 2.92
Total Russell Area-Specific	\$ 2,842	\$ 1,546	\$ 1,117	\$ 1,752	\$ 894	\$ 2.92
GRAND TOTAL RURAL AREA	\$ 6,815	\$ 3,707	\$ 2,679	\$ 4,200	\$ 2,143	\$ 1.16
GRAND TOTAL EMBRUN	\$ 15,630	\$ 8,503	\$ 6,144	\$ 9,633	\$ 4,915	\$ 3.94
GRAND TOTAL RUSSELL	\$ 13,849	\$ 7,534	\$ 5,444	\$ 8,536	\$ 4,355	\$ 5.62

Table 6-27
Comparison of Current and Calculated Development Charges
Residential (Single Detached) Comparison

Service	Current	Calculated		
		Uniform	Embrun Area Specific	Russell Area Specific
Municipal Wide Services:				
Roads and Related	\$ 749	\$ 2,248	\$ 2,248	\$ 2,248
Fire Protection Services	\$ 825	\$ 652	\$ 652	\$ 652
Police Services	\$ 16	\$ 33	\$ 33	\$ 33
Parks & Recreation Services	\$ 2,930	\$ 3,667	\$ 3,667	\$ 3,667
Library Services	\$ 632	\$ 91	\$ 91	\$ 91
Administration	\$ 199	\$ 111	\$ 111	\$ 111
By-law Enforcement	\$ 19	\$ 13	\$ 13	\$ 13
Total Municipal Wide Services	\$ 5,370	\$ 6,815	\$ 6,815	\$ 6,815
Area Specific Services:				
Wastewater Services	\$ 5,850	\$ 3,929	\$ 4,503	\$ 2,842
Water Services	\$ 7,980	\$ 4,269	\$ 4,312	\$ 4,192
Total Area Specific Services	\$ 13,830	\$ 8,198	\$ 8,815	\$ 7,034
Grand Total - Urban Area	\$ 19,200	\$ 15,013	\$ 15,630	\$ 13,849

Table 6-28
Comparison of Current and Calculated Development Charges
Non-Residential (per ft².) Comparison

Service	Current	Calculated		
		Uniform	Embrun Area Specific	Russell Area Specific
Municipal Wide Services:				
Roads and Related	0.33	\$ 0.66	\$ 0.66	\$ 0.66
Fire Protection Services	0.09	\$ 0.19	\$ 0.19	\$ 0.19
Police Services	0.01	\$ 0.01	\$ 0.01	\$ 0.01
Parks & Recreation Services	0.47	\$ 0.25	\$ 0.25	\$ 0.25
Library Services	0.10	\$ 0.01	\$ 0.01	\$ 0.01
Administration	0.10	\$ 0.04	\$ 0.04	\$ 0.04
By-law Enforcement	0.01	\$ -	\$ -	\$ -
Total Municipal Wide Services	1.11	\$ 1.16	\$ 1.16	\$ 1.16
Area Specific Services:				
Wastewater Services	3.78	\$ 1.42	\$ 1.21	\$ 2.92
Water Services	5.18	\$ 1.57	\$ 1.57	\$ 1.54
Total Area Specific Services	8.96	\$ 2.99	\$ 2.78	\$ 4.46
Grand Total - Urban Area	10.07	\$ 4.15	\$ 3.94	\$ 5.62

7. Development Charge Policy Recommendations and Development Charge By-law Rules

This chapter outlines the development charge policy recommendations and by-law rules. The rules provided are based on the Township's existing policies; however, there are items under consideration at this time and these may be refined prior to adoption of the by-law.

s.s.5(1)9 states that rules must be developed:

“...to determine if a development charge is payable in any particular case and to determine the amount of the charge, subject to the limitations set out in subsection 6.”

Paragraph 10 of subsection 5(1) goes on to state that the rules may provide for exemptions, phasing in and/or indexing of development charges.

s.s.5(6) establishes the following restrictions on the rules:

- the total of all development charges that would be imposed on anticipated development must not exceed the capital costs determined under 5(1) 2-8 for all services involved;
- if the rules expressly identify a type of development, they must not provide for it to pay development charges that exceed the capital costs that arise from the increase in the need for service for that type of development; however, this requirement does not relate to any particular development;
- if the rules provide for a type of development to have a lower development charge than is allowed, the rules for determining development charges may not provide for any resulting shortfall to be made up via other development; and
- with respect to “the rules,” subsection 6 states that a D.C. by-law must expressly address the matters referred to above re s.s.5(1) para. 9 and 10, as well as how the rules apply to the redevelopment of land.

7.1 Development Charge By-law Structure

It is recommended that:

- the Township impose a uniform municipal-wide development charge calculation for all municipal services; and

- one municipal development charge by-law be used for all services.

The use of area-specific charges and by-laws was considered as part of this process. However, given the location of anticipated development and the increase in needs, it was determined that maintaining the current Township-wide uniform charges is appropriate.

7.2 Development Charge By-law Rules

The following sets out the recommended rules governing the calculation, payment and collection of development charges in accordance with subsection 6 of the Development Charges Act, 1997.

It is recommended that the following provides the basis for the development charges:

7.2.1 Payment in any Particular Case

In accordance with the Development Charges Act, 1997, s.2(2), a development charge be calculated, payable and collected where the development requires one or more of the following:

- a) the passing of a zoning by-law or of an amendment to a zoning by-law under Section 34 of the Planning Act;
- b) the approval of a minor variance under Section 45 of the Planning Act;
- c) a conveyance of land to which a by-law passed under Section 50(7) of the Planning Act applies;
- d) the approval of a plan of subdivision under Section 51 of the Planning Act;
- e) a consent under Section 53 of the Planning Act;
- f) the approval of a description under Section 50 of the Condominium Act; or
- g) the issuing of a building permit under the Building Code Act in relation to a building or structure.

7.2.2 Determination of the Amount of the Charge

The following conventions be adopted:

- 1) Costs allocated to residential uses will be assigned to different types of residential units based on the average occupancy for each housing type constructed during the previous decade. Costs allocated to non-residential uses

will be assigned to industrial and commercial/institutional uses based on the gross floor area constructed.

- 2) Costs allocated to residential and non-residential uses are based upon a number of conventions, as may be suited to each municipal circumstance. These are summarized in Chapter 5 herein.

7.2.3 Application to Redevelopment of Land (Demolition and Conversion)

If a development involves the demolition and replacement of a building or structure on the same site, or the conversion from one principal use to another, the developer shall be allowed a credit equivalent to:

- 1) the number of dwelling units demolished/converted multiplied by the applicable residential development charge in place at the time the development charge is payable; and/or
- 2) the gross floor area of the building demolished/converted multiplied by the current non-residential development charge in place at the time the development charge is payable.

The demolition credit is allowed only if the land was improved by occupied structures, and if the demolition permit related to the site was issued less than 60 months (5 years) prior to the issuance of a building permit. The credit can, in no case, exceed the amount of development charges that would otherwise be payable.

7.2.4 Exemptions (full or partial)

a) Statutory exemptions

- Industrial building additions of up to and including 50% of the existing gross floor area (defined in O.Reg. 82/98, s.1) of the building; for industrial building additions which exceed 50% of the existing gross floor area, only the portion of the addition in excess of 50% is subject to development charges (s.4(3));
- Buildings or structures owned by and used for the purposes of any Township, local board or Board of Education (s.3); and
- Residential development that results in only the enlargement of an existing dwelling unit, or that results only in the creation of up to two additional dwelling units (based on prescribed limits set out in s.2 of O.Reg. 82/98).

b) Non-statutory exemptions

- buildings or structures used as hospitals governed by the Public Hospitals Act, R.S.O. 1990, c.P.40;
- buildings or structures owned by and used for the purposes of a college of applied arts and technology established pursuant to the Ministry of Colleges and Universities Act, R.S.O. 1990, c. M.19;
- buildings or structures owned by and used for the purposes of a university established by an Act of the Legislative Assembly of Ontario;
- Every place of worship and the land used in connection therewith;
- Water services rate is reduced by 24% for the properties legally described as Concession 1, Part of Lot A and Known as 4513 Gregoire Road and Concession 1, Part of Lot A and RP 50R-1437 Pt Part 1 (area located within the Village boundary); and
- Partial exemption of 50% for not-for-profit subsidized housing.

7.2.5 Phase-in Provision(s)

No provisions for phasing in the development charge are provided in the proposed development charge by-law.

7.2.6 Timing of Collection

The development charges for all services are payable upon issuance of a building permit for each dwelling unit, building or structure, subject to early or late payment agreements entered into by the Township and an owner under s.27 of the D.C.A., 1997.

7.2.7 Indexing

All development charges will be subject to mandatory indexing annually on the anniversary date of the by-law, in accordance with provisions under the Development Charges Act.

7.2.8 D.C. Spatial Applicability

In accordance with the D.C.A., the Township gave consideration to the imposition of charges related to Water and Wastewater services on an area-specific basis. As noted in Section 7.1, it has been recommended that D.C.s for all services be imposed on a municipal-wide basis.

7.3 Other Development Charge By-law Provisions

7.3.1 Categories of Services for Reserve Fund and Credit Purposes

It is recommended that the Township's development charge collections be contributed into nine (9) separate reserve funds, including: Water Services; Wastewater Services; Roads and Related Services; Fire Protection Services; Police Services; Parks and Recreation Services; Library Services; By-Law Services; and Administration.

7.3.2 By-law In-force Date

The proposed by-law under D.C.A., 1997 will come into force on the date of by-law passage.

7.3.3 Minimum Interest Rate Paid on Refunds and Charged for Inter-Reserve Fund Borrowing

The minimum interest rate is the Bank of Canada rate on the day on which the by-law comes into force (as per s.11 of O.Reg. 82/98).

7.4 Other Recommendations

It is recommended that Council:

“Approve the capital project listing set out in Chapter 5 of the Development Charges Background Study dated October 12, 2016, subject to further annual review during the capital budget process;”

“Approve the Development Charges Background Study dated October 12, 2016;”

“Determine that no further public meeting is required;” and

“Approve the Development Charge By-law as set out in Appendix D.”

8. By-law Implementation

8.1 Public Consultation

This chapter addresses the mandatory, formal public consultation process (subsection 8.1.2), as well as the optional, informal consultation process (subsection 8.1.3). The latter is designed to seek the co-operation and involvement of those involved, in order to produce the most suitable policy. Section 8.2 addresses the anticipated impact of the development charge on development, from a generic viewpoint.

8.1.1 Public Meeting of Council

Section 12 of the DCA, 1997 indicates that before passing a development charge by-law, the background study must be made available on the municipality's website 60-days prior to the passage of the by-law. Also, Council must hold at least one public meeting, giving at least 20 clear days' notice thereof, in accordance with the Regulation. Council must also ensure that the proposed by-law and background report are made available to the public at least two weeks prior to the (first) public meeting.

Any person who attends such a meeting may make representations related to the proposed by-law.

If a proposed by-law is changed following such a meeting, the Council must determine whether a further meeting (under this section) is necessary. For example, if the by-law which is proposed for adoption has been changed in any respect, the Council should formally consider whether an additional public meeting is required, incorporating this determination as part of the final by-law or associated resolution. It is noted that Council's decision, once made, is final and not subject to review by a Court or the O.M.B.

8.1.2 Other Consultation Activity

There are three broad groupings of the public who are generally the most concerned with municipal development charge policy:

1. The residential development community, consisting of land developers and builders, who are typically responsible for generating the majority of the development charge revenues. Others, such as realtors, are directly impacted by development charge policy. They are, therefore, potentially interested in all aspects of the charge, particularly the quantum by unit type, projects to be

funded by the D.C. and the timing thereof, and municipal policy with respect to development agreements, D.C. credits and front-ending requirements.

2. The second public grouping embraces the public at large and includes taxpayer coalition groups and others interested in public policy (e.g. in encouraging a higher non-automobile modal split).
3. The third grouping is the industrial/commercial/institutional development sector, consisting of land developers and major owners or organizations with significant construction plans, such as hotels, entertainment complexes, shopping centres, offices, industrial buildings and institutions. Also involved are organizations such as Industry Associations, the Chamber of Commerce, the Board of Trade and the Economic Development Agencies, who are all potentially interested in municipal development charge policy. Their primary concern is frequently with the quantum of the charge, gross floor area exclusions such as basement, mechanical or indoor parking areas, or exemptions and phase-in or capping provisions in order to moderate the impact.

8.2 Anticipated Impact of the Charge on Development

The establishment of sound development charge policy often requires the achievement of an acceptable balance between two competing realities. The first is that high non-residential development charges can, to some degree, represent a barrier to increased economic activity and sustained industrial/commercial growth, particularly for capital intensive uses. Also, in many cases, increased residential development charges can ultimately be expected to be recovered via higher housing prices and can impact project feasibility in some cases (e.g. rental apartments).

On the other hand, development charges or other municipal capital funding sources need to be obtained in order to help ensure that the necessary infrastructure and amenities are installed. The timely installation of such works is a key initiative in providing adequate service levels and in facilitating strong economic growth, investment and wealth generation.

8.3 Implementation Requirements

Once the Township has calculated the charge, prepared the complete Background Study, carried out the public process and passed a new by-law, the emphasis shifts to implementation matters.

These include notices, potential appeals and complaints, credits, front-ending agreements, subdivision agreement conditions and finally the collection of revenues and funding of projects.

The following provides an overview of the requirements in each case.

8.3.1 Notice of Passage

In accordance with s.13 of the D.C.A., when a D.C. by-law is passed, the municipal clerk shall give written notice of the passing and of the last day for appealing the by-law (the day that is 40 days after the day it was passed). Such notice must be given not later than 20 days after the day the by-law is passed (i.e. as of the day of newspaper publication or the mailing of the notice).

Section 10 of O.Reg. 82/98 further defines the notice requirements which are summarized as follows:

- Notice may be given by publication in a newspaper which is (in the Clerk's opinion) of sufficient circulation to give the public reasonable notice, or by personal service, fax or mail to every owner of land in the area to which the by-law relates;
- s.s.10 (4) lists the persons/organizations who must be given notice; and
- s.s.10 (5) lists the eight items which the notice must cover.

8.3.2 By-law Pamphlet

In addition to the "notice" information, the Township must prepare a "pamphlet" explaining each development charge by-law in force, setting out:

- a description of the general purpose of the development charges;
- the "rules" for determining if a charge is payable in a particular case and for determining the amount of the charge;
- the services to which the development charges relate; and
- a general description of the general purpose of the Treasurer's statement and where it may be received by the public.

Where a by-law is not appealed to the O.M.B., the pamphlet must be readied within 60 days after the by-law comes into force. Later dates apply to appealed by-laws.

The Township must give one copy of the most recent pamphlet without charge, to any person who requests one.

8.3.3 Appeals

Sections 13 to 19 of the D.C.A., 1997 set out requirements relative to making and processing a D.C. by-law appeal and an O.M.B. Hearing in response to an appeal. Any person or organization may appeal a D.C. by-law to the O.M.B. by filing a notice of appeal with the municipal clerk, setting out the objection to the by-law and the reasons supporting the objection. This must be done by the last day for appealing the by-law, which is 40 days after the by-law is passed.

8.3.4 Complaints

A person required to pay a development charge, or his agent, may complain to Municipal Council imposing the charge that:

- the amount of the charge was incorrectly determined;
- the credit to be used against the development charge was incorrectly determined; or
- there was an error in the application of the development charge.

Sections 20 to 25 of the D.C.A., 1997 set out the requirements that exist, including the fact that a complaint may not be made later than 90 days after a D.C. (or any part of it) is payable. A complainant may appeal the decision of Municipal Council to the O.M.B.

8.3.5 Credits

Sections 38 to 41 of the D.C.A., 1997 set out a number of credit requirements, which apply where a Township agrees to allow a person to perform work in the future that relates to a service in the D.C. by-law.

These credits would be used to reduce the amount of development charges to be paid. The value of the credit is limited to the reasonable cost of the work which does not exceed the average level of service. The credit applies only to the service to which the work relates, unless the Township agrees to expand the credit to other services for which a development charge is payable.

8.3.6 Front-Ending Agreements

The Township and one or more landowners may enter into a front-ending agreement which provides for the costs of a project which will benefit an area in the Township to which the D.C. by-law applies. Such an agreement can provide for the costs to be borne by one or more parties to the agreement who are, in turn, reimbursed in future by persons who develop land defined in the agreement.

Part III of the D.C.A., 1997 (Sections 44 to 58) addresses front-ending agreements and removes some of the obstacles to their use which were contained in the D.C.A., 1989. Accordingly, the Township assesses whether this mechanism is appropriate for its use, as part of funding projects prior to municipal funds being available.

8.3.7 Severance and Subdivision Agreement Conditions

Section 59 of the D.C.A., 1997 prevents a Township from imposing directly or indirectly, a charge related to development or a requirement to construct a service related to development, by way of a condition or agreement under s.51 or s.53 of the Planning Act, except for:

- “local services, related to a plan of subdivision or within the area to which the plan relates, to be installed or paid for by the owner as a condition of approval under Section 51 of the Planning Act;”
- “local services to be installed or paid for by the owner as a condition of approval under Section 53 of the Planning Act.”

It is also noted that s.s.59(4) of the D.C.A., 1997 requires that the municipal approval authority for a draft plan of subdivision under s.s.51(31) of the Planning Act, use its power to impose conditions to ensure that the first purchaser of newly subdivided land is informed of all the development charges related to the development, at the time the land is transferred.

In this regard, if the municipality in question is a commenting agency, in order to comply with subsection 59(4) of the Development Charges Act, 1997 it would need to provide to the approval authority, information regarding the applicable municipal development charges related to the site.

If the municipality is an approval authority for the purposes of Section 51 of the Planning Act, it would be responsible to ensure that it collects information from all entities which can impose a development charge.

The most effective way to ensure that purchasers are aware of this condition would be to require it as a provision in a registered subdivision agreement, so that any purchaser of the property would be aware of the charges at the time the title was searched prior to closing a transaction conveying the lands.

Appendix A – Background Information on Residential and Non-residential Growth Forecast

Appendix A – Background Information on Residential and Non-residential Growth Forecast

The following appendix contains the tables outlining the detailed growth forecast calculations .

**Schedule 1
Township of Russell
Residential Growth Forecast Summary**

Year	Population (Excluding Census Undercount)	Population (Including Census Undercount) ¹	Housing Units					Person Per Unit (PPU)	
			Singles & Semi-Detached	Multiple Dwellings ²	Apartments ³	Other	Total Households		
Historical	Mid 2001	12,412	12,870	3,595	140	285	20	4,040	3.07
	Mid 2006	13,883	14,400	4,095	170	385	75	4,725	2.94
	Mid 2011	15,247	15,810	4,640	220	405	15	5,280	2.89
Forecast	Mid 2016	16,803	17,420	5,142	237	557	15	5,951	2.82
	Mid 2021	18,615	19,300	5,660	258	709	15	6,641	2.80
	Mid 2026	20,157	20,900	6,102	275	839	15	7,231	2.79
	Mid 2036	22,983	23,830	6,850	311	1,084	15	8,260	2.78
	Buildout ⁴	29,172	30,250	8,550	528	1,478	15	10,571	2.76
	Incremental	Mid 2001 - Mid 2006	1,471	1,530	500	30	100	55	685
Mid 2006 - Mid 2011		1,364	1,410	545	50	20	-60	555	
Mid 2011 - Mid 2016		1,556	1,610	502	17	152	0	671	
Mid 2016 - Mid 2021		1,812	1,880	518	21	152	0	690	
Mid 2016 - Mid 2026		3,354	3,480	960	38	282	0	1,280	
Mid 2016 - Mid 2031		4,634	4,810	1,354	54	397	0	1,805	
Mid 2016 - Mid 2036		6,180	6,410	1,708	74	527	0	2,309	
Mid 2016 - Buildout ⁴		12,369	12,830	3,408	291	921	0	4,620	

Sources: Derived from the Township of Russell Updated Growth Outlook and Employment Land Needs Analysis prepared by Hemson Consulting, July 19, 2016; and Discussions with Township of Russell Planning Department, July 2016.

1. Census Undercount estimated at approximately 3.69%. Note: Population Including the Undercount has been rounded.

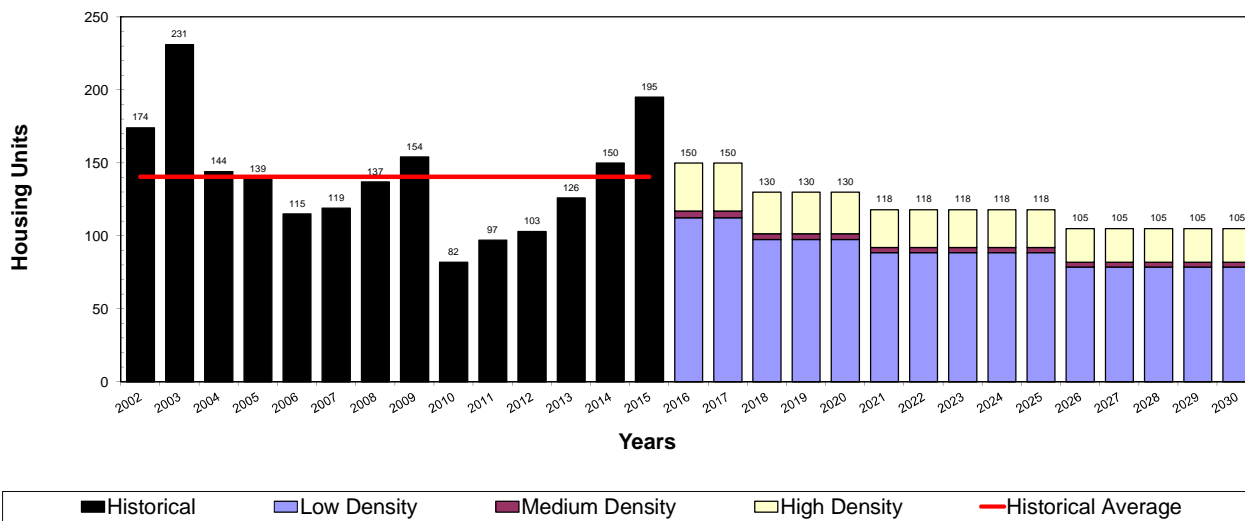
2. Includes townhomes and apartments in duplexes.

3. Includes bachelor, 1 bedroom and 2 bedroom+ apartments.

4. Buildout forecast is derived from Updated Growth Outlook and Employment Land Needs Analysis prepared by Hemson Consulting, March 18, 2016, page 14; and discussions with Township Planning Staff, July 2016.

Figure A-1

Annual Housing Forecast¹



Source: Historical housing activity (2002-2015) based on Statistics Canada building permits, Catalogue 64-001-XIB.

1. Growth Forecast represents calendar year.

Schedule 2
Township of Russell
Estimate of the Anticipated Amount, Type and Location of
Residential Development for Which Development Charges Can Be Imposed

Development Location	Timing	Single & Semi-Detached	Multiples ¹	Apartments ²	Total Residential Units	Gross Population In New Units	Existing Unit Population Change	Net Population Increase
Embrun Settlement Area	2016 - 2026	573	26	192	791	2,169	(87)	2,082
	2016 - 2036	1,220	58	416	1,694	4,635	(87)	4,548
	2016 - Buildout	1,618	152	553	2,323	6,296	(192)	6,104
Russell Settlement Area	2016 - 2026	267	12	90	369	1,011	(77)	934
	2016 - 2036	328	16	111	455	1,246	(77)	1,169
	2016 - Buildout	1,111	139	368	1,618	4,373	(170)	4,203
Limoges Settlement Area	2016 - 2026	10	-	-	10	32	(27)	4
	2016 - 2036	20	-	-	20	64	(28)	36
	2016 - Buildout	499	-	-	499	1,586	(59)	1,526
Sub-Total Urban Serviced by Municipal water and sewer	2016 - 2026	850	38	282	1,170	3,212	(191)	3,021
	2016 - 2036	1,568	74	527	2,169	5,944	(192)	5,752
	2016 - Buildout	3,228	291	921	4,440	12,254	(421)	11,833
Urban Serviced by Municipal Water only*	2016 - 2026	60	-	-	60	191	(6)	184
	2016 - 2036	60	-	-	60	191	(6)	184
	2016 - Buildout	60	-	-	60	191	(14)	177
Rural	2016 - 2026	50	-	-	50	159	(10)	148
	2016 - 2036	80	-	-	80	254	(10)	244
	2016 - Buildout	120	-	-	120	381	(23)	358
Township of Russell	2016 - 2026	960	38	282	1,280	3,562	(208)	3,354
	2016 - 2036	1,708	74	527	2,309	6,388	(209)	6,179
	2016 - Buildout	3,408	291	921	4,620	12,827	(458)	12,369

Sources: Derived from the Township of Russell Updated Growth Outlook and Employment Land Needs Analysis prepared by Hemson Consulting, July 19, 2016; and Discussions with Township of Russell Planning Department, July 2016.

*Note: 60 units of low density growth serviced only by municipal water are located in Marionville.

Residential distribution based on a combination of historical permit activity, available housing supply and discussions with Town staff regarding future development prospects.

1. Includes townhomes and apartments in duplexes.

2. Includes bachelor, 1 bedroom and 2 bedroom+ apartments.

**Schedule 3
Township of Russell
Current Year Growth Forecast
Mid 2011 to Mid 2016**

		POPULATION
Mid 2011 Population		15,247
Occupants of New Housing Units, Mid 2011 to Mid 2016	<i>Units (2)</i>	671
	<i>multiplied by persons per unit (3)</i>	2.78
	<i>gross population increase</i>	1,864
Decline in Housing Unit Occupancy, Mid 2011 to Mid 2016	<i>Units (4)</i>	5,280
	<i>multiplied by ppu decline rate (5)</i>	-0.0583
	<i>total decline in population</i>	-308
Population Estimate to Mid 2016		16,803
<i>Net Population Increase, Mid 2011 to Mid 2016</i>		1,556

- (1) 2011 population based on StatsCan Census unadjusted for Census Undercount.
- (2) Estimated residential units constructed, Mid 2011 to the beginning of the growth period, assuming a six month lag between construction and occupancy.
- (3) Average number of persons per unit (ppu) is assumed to be:

Structural Type	Persons Per Unit ¹	% Distribution of Estimated Units ²	Weighted Persons Per Unit Average
<i>Singles & Semi Detached</i>	3.18	75%	2.38
<i>Multiples (6)</i>	1.96	3%	0.05
<i>Apartments (7)</i>	1.55	23%	0.35
Total		100%	2.78

¹ Based on 2011 Census custom database

² Based on Building permit/completion activity

- (4) 2011 households taken from StatsCan Census.
- (5) Decline occurs due to aging of the population and family life cycle changes, lower fertility rates and changing economic conditions.
- (6) Includes townhomes and apartments in duplexes.
- (7) Includes bachelor, 1 bedroom and 2 bedroom+ apartments.

**Schedule 4
Township of Russell
Five Year Growth Forecast
Mid 2016 to Mid 2021**

		POPULATION
Mid 2016 Population		16,803
Occupants of New Housing Units, Mid 2016 to Mid 2021	<i>Units (2)</i>	690
	<i>multiplied by persons per unit (3)</i>	2.78
	<i>gross population increase</i>	1,920
		1,920
Decline in Housing Unit Occupancy, Mid 2016 to Mid 2021	<i>Units (4)</i>	5,951
	<i>multiplied by ppu decline rate (5)</i>	-0.0182
	<i>total decline in population</i>	-108
		-108
Population Estimate to Mid 2021		18,615
<i>Net Population Increase, Mid 2016 to Mid 2021</i>		1,812

(1) Mid 2016 Population based on:

2011 Population (15,247) + Mid 2011 to Mid 2016 estimated housing units to beginning of forecast period (671 x = 1,864) + (5,280 x -0.0583 = -308) = 16,803

(2) Based upon forecast building permits/completions assuming a lag between construction and occupancy.

(3) Average number of persons per unit (ppu) is assumed to be:

Structural Type	Persons Per Unit ¹	% Distribution of Estimated Units ²	Weighted Persons Per Unit Average
<i>Singles & Semi Detached</i>	3.18	75%	2.38
<i>Multiples (6)</i>	1.96	3%	0.06
<i>Apartments (7)</i>	1.55	22%	0.34
<i>one bedroom or less</i>	1.25		
<i>two bedrooms or more</i>	1.73		
Total		100%	2.78

¹ Persons per unit based on adjusted Statistics Canada Custom 2011 Census database.

² Forecast unit mix based upon historical trends and housing units in the development process.

(4) Mid 2016 households based upon 5,280 (2011 Census) + 671 (Mid 2011 to Mid 2016 unit estimate) = 5,951

(5) Decline occurs due to aging of the population and family life cycle changes, lower fertility rates and changing economic conditions.

(6) Includes townhomes and apartments in duplexes.

(7) Includes bachelor, 1 bedroom and 2 bedroom+ apartments.

**Schedule 4b
Township of Russell
Ten Year Growth Forecast
Mid 2016 to Mid 2026**

		POPULATION
Mid 2016 Population		16,803
Occupants of New Housing Units, Mid 2016 to Mid 2026	<i>Units (2)</i>	1,280
	<i>multiplied by persons per unit (3)</i>	2.78
	<i>gross population increase</i>	3,562
Decline in Housing Unit Occupancy, Mid 2016 to Mid 2026	<i>Units (4)</i>	5,951
	<i>multiplied by ppu decline rate (5)</i>	-0.0350
	<i>total decline in population</i>	-208
Population Estimate to Mid 2026		20,157
<i>Net Population Increase, Mid 2016 to Mid 2026</i>		3,354

(1) Mid 2016 Population based on:

2011 Population (15,247) + Mid 2011 to Mid 2016 estimated housing units to beginning of forecast period (671 x = 1,864) + (5,280 x -0.0583 = -308) = 16,803

(2) Based upon forecast building permits/completions assuming a lag between construction and occupancy.

(3) Average number of persons per unit (ppu) is assumed to be:

Structural Type	Persons Per Unit ¹	% Distribution of Estimated Units ²	Weighted Persons Per Unit Average
<i>Singles & Semi Detached</i>	3.18	75%	2.38
<i>Multiples (6)</i>	1.96	3%	0.06
<i>Apartments (7)</i>	1.55	22%	0.34
<i>one bedroom or less</i>	1.25		
<i>two bedrooms or more</i>	1.73		
Total		100%	2.78

¹ Persons per unit based on adjusted Statistics Canada Custom 2011 Census database.

² Forecast unit mix based upon historical trends and housing units in the development process.

(4) Mid 2016 households based upon 5,280 (2011 Census) + 671 (Mid 2011 to Mid 2016 unit estimate) = 5,951

(5) Decline occurs due to aging of the population and family life cycle changes, lower fertility rates and changing economic conditions.

(6) Includes townhomes and apartments in duplexes.

(7) Includes bachelor, 1 bedroom and 2 bedroom+ apartments.

**Schedule 4c
Township of Russell
Twenty Year Growth Forecast
Mid 2016 to Mid 2036**

		POPULATION
Mid 2016 Population		16,803
Occupants of New Housing Units, Mid 2016 to Mid 2036	<i>Units (2)</i>	2,309
	<i>multiplied by persons per unit (3)</i>	2.77
	<i>gross population increase</i>	6,388
Decline in Housing Unit Occupancy, Mid 2016 to Mid 2036	<i>Units (4)</i>	5,951
	<i>multiplied by ppu decline rate (5)</i>	-0.0350
	<i>total decline in population</i>	-209
Population Estimate to Mid 2036		22,983
<i>Net Population Increase, Mid 2016 to Mid 2036</i>		6,180

(1) Mid 2016 Population based on:

2011 Population (15,247) + Mid 2011 to Mid 2016 estimated housing units to beginning of forecast period (671 x = 1,864) + (5,280 x -0.0583 = -308) = 16,803

(2) Based upon forecast building permits/completions assuming a lag between construction and occupancy.

(3) Average number of persons per unit (ppu) is assumed to be:

Structural Type	Persons Per Unit ¹	% Distribution of Estimated Units ²	Weighted Persons Per Unit Average
<i>Singles & Semi Detached</i>	3.18	74%	2.35
<i>Multiples (6)</i>	1.96	3%	0.06
<i>Apartments (7)</i>	1.55	23%	0.35
<i>one bedroom or less</i> 1.25			
<i>two bedrooms or more</i> 1.73			
Total		100%	2.77

¹ Persons per unit based on adjusted Statistics Canada Custom 2011 Census database.

² Forecast unit mix based upon historical trends and housing units in the development process.

(4) Mid 2016 households based upon 5,280 (2011 Census) + 671 (Mid 2011 to Mid 2016 unit estimate) = 5,951

(5) Decline occurs due to aging of the population and family life cycle changes, lower fertility rates and changing economic conditions.

(6) Includes townhomes and apartments in duplexes.

(7) Includes bachelor, 1 bedroom and 2 bedroom+ apartments.

**Schedule 5
Township of Russell
Buildout Growth Forecast
Mid 2016 to Buildout**

		POPULATION
Mid 2016 Population		16,803
Occupants of New Housing Units, Mid 2016 to Buildout	<i>Units (2)</i>	4,620
	<i>multiplied by persons per unit (3)</i>	2.78
	<i>gross population increase</i>	12,827
Decline in Housing Unit Occupancy, Mid 2016 to Buildout	<i>Units (4)</i>	5,951
	<i>multiplied by ppu. decline rate (5)</i>	-0.0770
	<i>total decline in population</i>	-458
Population Estimate to Buildout		29,172
<i>Net Population Increase, Mid 2016 to Buildout</i>		12,369

(1) Mid 2016 Population based on:

2011 Population (15,247) + Mid 2011 to Mid 2016 estimated housing units to beginning of forecast period (671 x = 1,864) + (5,280 x -0.0583 = -308) = 16,803

(2) Based upon forecast building permits/completions assuming a lag between construction and occupancy.

(3) Average number of persons per unit (ppu) is assumed to be:

Structural Type	Persons Per Unit ¹	% Distribution of Estimated Units ²	Weighted Persons Per Unit Average
<i>Singles & Semi Detached</i>	3.18	74%	2.34
<i>Multiples (6)</i>	1.96	6%	0.12
<i>Apartments (7)</i>	1.55	20%	0.31
<i>one bedroom or less</i> 1.25			
<i>two bedrooms or more</i> 1.73			
Total		100%	2.78

¹ Persons per unit based on adjusted Statistics Canada Custom 2011 Census database.

² Forecast unit mix based upon historical trends and housing units in the development process.

(4) Mid 2016 households based upon 5,280 (2011 Census) + 671 (Mid 2011 to Mid 2016 unit estimate) = 5,951

(5) Decline occurs due to aging of the population and family life cycle changes, lower fertility rates and changing economic conditions.

(6) Includes townhomes and apartments in duplexes.

(7) Includes bachelor, 1 bedroom and 2 bedroom+ apartments.

Schedule 6
Township of Russell
Historical Residential Building Permits
Years 2006 - 2015

	Residential Building Permits			
	Singles & Semi Detached	Multiples¹	Apartments²	Total
2006	111	1	3	115
2007	103	1	15	119
2008	108	2	27	137
2009	101	2	51	154
2010	59	4	19	82
Sub-total	482	10	115	607
Average (2006 - 2010)	96	2	23	121
% Breakdown	79.4%	1.6%	18.9%	100.0%
2011	56	2	39	97
2012	81	0	22	103
2013	118	0	8	126
2014	101	0	49	150
2015	146	15	34	195
Sub-total	502	17	152	671
Average (2011 - 2015)	100	3	30	134
% Breakdown	74.8%	2.5%	22.7%	100.0%
2006 - 2015				
Total	984	27	267	1,278
Average	98	3	27	128
% Breakdown	77.0%	2.1%	20.9%	100.0%

Source: Historical housing activity (2002-2015) based on Statistics Canada building permits, Catalogue 64-001-XIB.

1. Includes townhomes and apartments in duplexes.
2. Includes bachelor, 1 bedroom and 2 bedroom+ apartments.

Schedule 7a

**Township of Russell
Persons Per Unit by Age and Type of Dwelling
(2011 Census)**

Age of Dwelling	Singles and Semi-Detached						20 Year Average
	< 1 BR	1 BR	2 BR	3/4 BR	5+ BR	Total	
1-5	-	-	-	3.193	-	3.225	
6-10	-	-	-	3.505	4.364	3.276	
11-15	-	-	2.750	2.886	-	2.860	
16-20	-	-	-	3.304	-	3.349	3.18
20-25	-	-	-	2.979	3.706	3.079	
25-35	-	-	-	2.945	4.231	2.991	
35+	-	-	2.385	2.696	5.308	2.621	
Total	0.353	-	2.391	3.017	4.603	2.985	

Schedule 7b

**United Counties of Prescott and Russell
Persons Per Unit by Age and Type of Dwelling
(2011 Census)**

Age of Dwelling	Singles and Semi-Detached						Adjusted PPU ¹	20 Year Average
	< 1 BR	1 BR	2 BR	3/4 BR	5+ BR	Total		
1-5	-	2.000	2.260	3.145	4.833	2.971	2.97	
6-10	-	-	2.127	3.107	4.588	3.016	3.02	
11-15	-	-	2.230	3.091	-	2.858	2.86	
16-20	-	2.182	1.956	2.942	3.767	2.780	2.78	2.91
20-25	-	1.500	2.093	2.855	3.868	2.776	2.78	
25-35	-	1.250	1.756	2.876	4.053	2.749	2.75	
35+	1.000	1.833	2.090	2.575	3.489	2.487	2.49	
Total	0.400	1.899	2.080	2.816	3.842	2.693		

Age of Dwelling	Multiples ²						Adjusted PPU ¹	20 Year Average
	< 1 BR	1 BR	2 BR	3/4 BR	5+ BR	Total		
1-5	-	-	1.550	2.214	-	1.763	1.70	
6-10	-	-	1.765	3.063	-	2.148	2.11	
11-15	-	-	1.967	-	-	1.977	1.96	
16-20	-	1.182	2.176	-	-	2.068	2.06	1.96
20-25	-	-	1.818	2.667	-	1.738	1.73	
25-35	-	-	1.875	3.692	-	2.125	2.12	
35+	0.958	1.238	1.926	2.847	-	2.072	2.07	
Total	0.821	1.167	1.883	2.931	-	2.023		

Age of Dwelling	Apartments ³						Adjusted PPU ¹	20 Year Average
	< 1 BR	1 BR	2 BR	3/4 BR	5+ BR	Total		
1-5	-	-	1.577	-	-	1.478	1.48	
6-10	-	-	1.737	-	-	1.766	1.77	
11-15	-	1.000	1.636	-	-	1.458	1.46	
16-20	-	1.050	1.622	-	-	1.500	1.50	1.55
20-25	-	1.176	1.660	-	-	1.600	1.60	
25-35	-	1.212	1.625	-	-	1.452	1.45	
35+	0.720	1.072	1.742	4.677	-	1.662	1.66	
Total	0.718	1.110	1.677	4.333	-	1.594		

Age of Dwelling	All Density Types					
	< 1 BR	1 BR	2 BR	3/4 BR	5+ BR	Total
1-5	-	1.583	1.954	3.063	4.684	2.746
6-10	-	1.917	1.973	3.096	4.457	2.842
11-15	-	1.207	2.000	3.012	-	2.603
16-20	-	1.261	1.878	2.924	3.862	2.608
20-25	-	1.268	1.925	2.845	3.868	2.611
25-35	-	1.224	1.725	2.843	4.026	2.530
35+	1.261	1.378	1.997	2.588	3.346	2.349
Total	1.083	1.369	1.950	2.800	3.756	2.519

1. The Census PPU has been adjusted to account for the downward PPU trend which has been recently experienced in both new and older units, largely due to the aging of the population

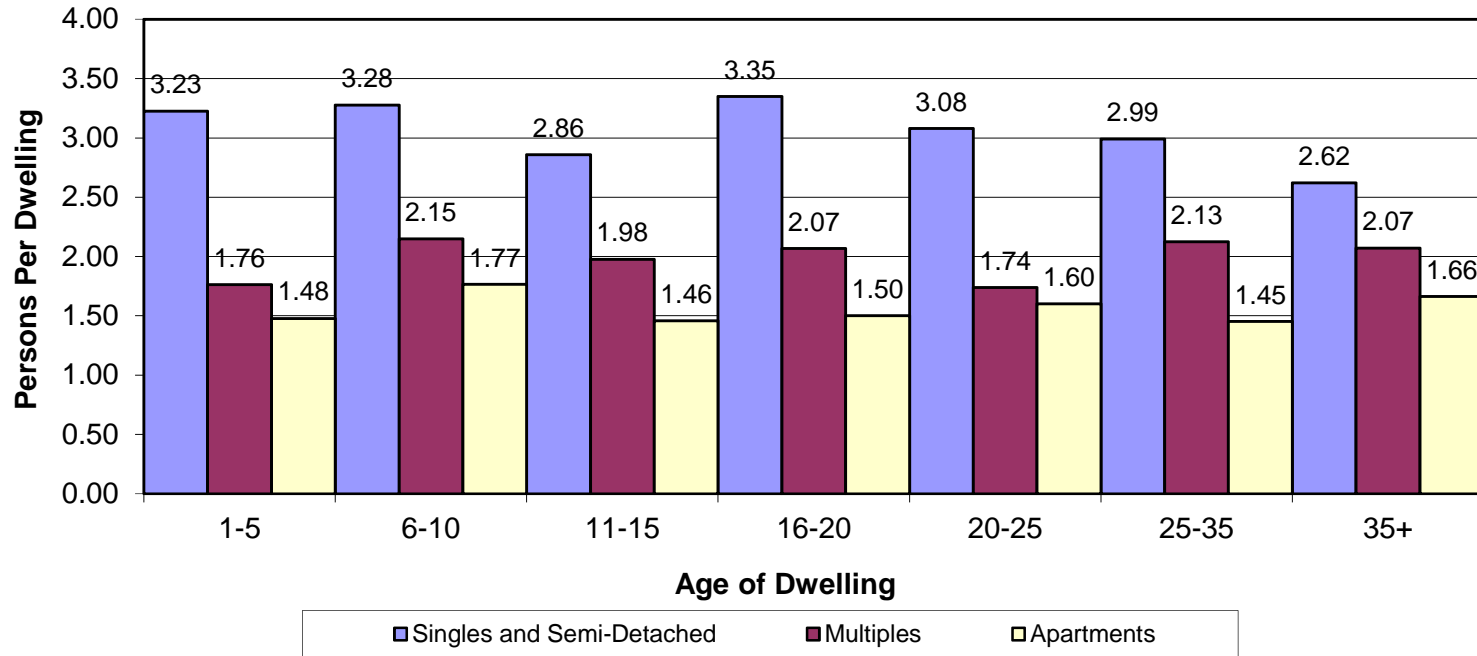
2. Includes townhomes and apartments in duplexes.

3. Includes bachelor, 1 bedroom and 2 bedroom+ apartments.

Note: Does not include Statistics Canada data classified as 'Other'

PPU Not calculated for samples less than or equal to 50 dwelling units, and does not include institutional population

**Schedule 8
Township of Russell
Persons Per Unit by Structural Type and Age of Dwelling
(2011 Census)**



Multiple and Apartment PPU's are based on United Counties of Prescott and Russell.

**Schedule 9a
Township of Russell
2016 Employment**

Period	Population	Activity Rate						Employment					
		Primary	Work at Home	Industrial	Commercial/ Population Related	Institutional	Total ¹	Primary	Work at Home	Industrial	Commercial/ Population Related	Institutional	Total ¹
Mid 2006	13,883	0.008	0.050	0.047	0.081	0.041	0.227	105	690	656	1,131	565	3,146
Mid 2011	15,247	0.008	0.045	0.026	0.082	0.058	0.219	125	685	401	1,256	880	3,346
Mid 2016	16,803	0.006	0.041	0.026	0.080	0.053	0.206	100	693	442	1,342	890	3,467
Mid 2021	18,615	0.005	0.038	0.042	0.077	0.049	0.211	85	713	774	1,442	905	3,919
Mid 2026	20,157	0.004	0.036	0.046	0.074	0.046	0.206	75	732	1,114	1,499	930	4,350
Mid 2036	22,983	0.003	0.033	0.059	0.071	0.042	0.207	70	747	1,356	1,625	955	4,753
Buildout ²	29,172	0.002	0.033	0.056	0.072	0.043	0.206	70	948	1,634	2,107	1,245	6,004
Incremental Change													
Mid 2001 - Mid 2006	-17,588	0.004	0.031	0.030	0.048	0.022	0.134	-20	90	125	70	-20	245
Mid 2006 - Mid 2011	1,364	0.0006	-0.0048	-0.0209	0.0009	0.0170	-0.0072	20	-5	-255	125	315	200
Mid 2011 - Mid 2016	1,556	-0.0022	-0.0037	0.0000	-0.0025	-0.0048	-0.0131	-25	8	41	87	10	121
Mid 2016 - Mid 2021	1,812	-0.0014	-0.0029	0.0153	-0.0024	-0.0043	0.0042	-15	20	332	100	15	452
Mid 2016 - Mid 2026	3,354	-0.0022	-0.0049	0.0193	-0.0055	-0.0068	-0.0002	-25	39	672	157	40	883
Mid 2016 - Mid 2036	6,180	-0.0029	-0.0087	0.0327	-0.0092	-0.0114	0.0005	-30	54	915	283	65	1,287
Mid 2016 - Buildout ²	12,369	-0.0036	-0.0087	0.0297	-0.0076	-0.0103	-0.0005	-30	255	1,192	765	355	2,537
Annual Average													
Mid 2001 - Mid 2006	-3,518	0.00072	0.00613	0.00607	0.00955	0.00442	0.02689	-4	18	25	14	-4	49
Mid 2006 - Mid 2011	273	0.0001	-0.0010	-0.0042	0.0002	0.0034	-0.0014	4	-1	-51	25	63	40
Mid 2011 - Mid 2016	311	-0.0004	-0.0007	0.0000	-0.0005	-0.0010	-0.0026	-5	2	8	17	2	24
Mid 2016 - Mid 2021	362	-0.00028	-0.00059	0.00306	-0.00048	-0.00087	0.00084	-3	4	66	20	3	90
Mid 2016 - Mid 2026	335	-0.00022	-0.00049	0.00193	-0.00055	-0.00068	-0.00002	-3	4	67	16	4	88
Mid 2016 - Mid 2036	309	-0.00015	-0.00044	0.00164	-0.00046	-0.00057	0.00002	-2	3	46	14	3	64
Mid 2016 - Buildout ²	302	-0.00009	-0.00021	0.00072	-0.00019	-0.00025	-0.00001	-1	6	29	19	9	62

Sources: Derived from the Township of Russell Updated Growth Outlook and Employment Land Needs Analysis prepared by Hemson Consulting, July 19, 2016; and Discussions with Township of Russell Planning Department, July 2016.

Notes: Employment forecast includes Highway 417 Industrial Park.

1. Excludes No Fixed Place of Work employment. Statistics Canada defines no fixed place of work (NFPOW) employees as "persons who do not go from home to the same work place location at the beginning of each shift". Such persons include building ; contractors, travelling salespersons, independent truck drivers, etc

2. Industrial buildout forecast is based on the employment land supply capacity identified in the Township of Russell Updated Growth Outlook and Employment Land Needs Analysis prepared by Hemson Consulting, July 19, 2016, page 15 and buildout for commercial and institutional is based on activity rates.

Schedule 9b
Township of Russell
Employment & Gross Floor Area (GFA) Forecast, 2016 to Buildout

Period	Population	Employment					Gross Floor Area in Square Feet (Estimated) ¹			
		Primary	Industrial	Commercial/ Population Related	Institutional	Total	Industrial	Commercial/ Population Related	Institutional	Total
Mid 2001	31,471	125	531	1,061	585	2,301				
Mid 2006	13,883	105	656	1,131	565	2,456				
Mid 2011	15,247	125	401	1,256	880	2,661				
Mid 2016	16,803	100	442	1,342	890	2,774				
Mid 2021	18,615	85	774	1,442	905	3,206				
Mid 2026	20,157	75	1,114	1,499	930	3,618				
Mid 2036	22,983	70	1,356	1,625	955	4,006				
Buildout ²	29,172	70	1,634	2,107	1,245	5,056				
Incremental Change										
Mid 2001 - Mid 2006	-17,588	-20	125	70	-20	155				
Mid 2006 - Mid 2011	1,364	20	-255	125	315	205				
Mid 2016 - Mid 2021	1,812	-15	332	100	15	432	431,600	50,000	10,500	492,100
Mid 2016 - Mid 2026	3,354	-25	672	157	40	844	873,600	78,500	28,000	980,100
Mid 2016 - Mid 2036	6,180	-30	914	283	65	1,232	1,188,200	141,500	45,500	1,375,200
Mid 2016 - Buildout ²	12,369	-30	1,192	765	355	2,282	1,549,600	382,500	248,500	2,180,600
Annual Average										
Mid 2001 - Mid 2006	-3,518	-4	25	14	-4	31				
Mid 2006 - Mid 2011	273	4	-51	25	63	41				
Mid 2016 - Mid 2021	362	-3	66	20	3	86	86,320	10,000	2,100	98,420
Mid 2016 - Mid 2026	335	-3	67	16	4	84	87,360	7,850	2,800	98,010
Mid 2016 - Mid 2036	309	-2	46	14	3	62	59,410	7,075	2,275	68,760
Mid 2016 - Buildout ²	302	-1	29	19	9	56	37,795	9,329	6,061	53,185

Sources: Derived from the Township of Russell Updated Growth Outlook and Employment Land Needs Analysis prepared by Hemson Consulting, July 19, 2016; and Discussions with Township of Russell Planning Department, July 2016.

Notes:

Employment forecast includes Highway 417 Industrial Park

Industrial buildout forecast is based on the **employment land supply capacity** identified in the Township of Russell Updated Growth Outlook and Employment Land Needs Analysis prepared by Hemson Consulting, July 19, 2016, page 15 and buildout for commercial and institutional is based on activity rates.

1. Square Foot Per Employee Assumptions

Industrial	1,300
Commercial/ Population Related	500
Institutional	700

Schedule 9c
Estimate of the Anticipated Amount, Type and Location of
Non-Residential Development for Which Development Charges Can Be Imposed

Development Location	Timing	Industrial GFA S.F.	Commercial GFA S.F.	Institutional GFA S.F.	Total Non-Res GFA S.F.	Employment Increase ¹
Embrun Settlement Area	2016 - 2026	289,900	37,380	19,320	346,600	325
	2016 - 2036	458,250	85,860	36,400	580,510	576
	2016 - Buildout ³	741,000	182,000	129,220	1,052,220	1,119
Russell Settlement Area	2016 - 2026	-	23,620	8,680	32,300	60
	2016 - 2036	-	25,140	9,100	34,240	63
	2016 - Buildout ³	-	127,400	99,400	226,800	397
Limoges Settlement Area	2016 - 2026	170,300	4,000	-	174,300	139
	2016 - 2036	297,050	12,000	-	309,050	253
	2016 - Buildout ³	375,700	54,600	19,880	450,180	427
Highway 417 Industrial Park	2016 - 2026	413,400	13,500	-	426,900	345
	2016 - 2036	432,900	18,500	-	451,400	370
	2016 - Buildout	432,900	18,500	-	451,400	370
Township of Russell	2016 - 2026	873,600	78,500	28,000	980,100	869
	2016 - 2036	1,188,200	141,500	45,500	1,375,200	1,262
	2016 - Buildout ³	1,549,600	382,500	248,500	2,180,600	2,312

Sources: Derived from the Township of Russell Updated Growth Outlook and Employment Land Needs Analysis prepared by Hemson Consulting, July 19, 2016; and Discussions with Township of Russell Planning Department, July 2016.

1. Employment Increase does not include No Fixed Place of Work.

2. Square feet per employee assumptions:

Industrial	1,300
Commercial	500
Institutional	700

Notes: Industrial growth by area is **based on available land supply** as summarized on Table 8, page 16 in the Township of Russell Growth Outlook and Employment Land Needs Analysis, July 19, 2016.

3. Timing of employment buildout by area will likely vary. The Updated Growth Outlook and Employment Lands Needs Analysis report has noted that there is limited demand for industrial growth in the designated areas in Embrun and Limoges, while demand is greatest in the Highway 417 Employment Park. According to the Report: "The opportunity for Russell Township to achieve its growth forecasts, in particular the higher growth for employment, is directly related to the availability of land in the 417 Industrial Park as the employment growth outlook is linked to the shortage of available employment lands in Ottawa to meet the needs of highway oriented industrial users along the Highway 417. This demand cannot be met by the Trade & Industry Lands in Embrun or Limoges," pg. 17.

Appendix B – Level of Service

Appendix B – Level of Service

The following appendix contains the tables outlining the detailed service standard calculations as follows:

- Page B-3 Roads
- Page B-4 Bridges and Culverts
- Page B-5 Sidewalks
- Page B-6 Traffic Signals and Street Lights
- Page B-7 Public Works Facilities
- Page B-8 Public Works Vehicles and Equipment
- Page B-9 Fire Facilities
- Page B-10 Fire Vehicles
- Page B-11 Fire Small Equipment and Gear
- Page B-12 Police Services Agreement
- Page B-13 By-law Enforcement Facilities
- Page B-14 By-law Enforcement Vehicles and Equipment
- Page B-15 Parkland Development
- Page B-16 Park Trails
- Page B-17 Parks and Recreation Facilities
- Page B-18 Parks and Recreation Vehicles and Equipment
- Page B-19 Library Facilities
- Page B-20 Library Collection Materials

**Township of Russell
Service Standard Calculation Sheet**

Service: Roads
Unit Measure: km of roadways

Description	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 Value (\$/km)
LCB	35	35	35	35	35	35	35	35	35	35	\$380,000
HCB	69	69	69	69	69	69	69	69	75	78	\$480,000
Gravel	26	26	26	26	26	26	26	26	26	26	\$355,000
Total	131	131	131	131	131	131	131	131	136	139	

Population	13,883	14,172	14,452	14,768	15,097	15,247	15,425	15,656	15,984	16,319
Per Capita Standard	0.0094	0.0092	0.0090	0.0088	0.0087	0.0086	0.0085	0.0083	0.0085	0.0085

10 Year Average	2006-2015
Quantity Standard	0.0088
Quality Standard	\$426,591
Service Standard	\$3,754

DC Amount (before deductions)	20 Year
Forecast Population	6,179
\$ per Capita	\$3,754
Eligible Amount	\$23,195,966

**Township of Russell
Service Standard Calculation Sheet**

Service: Bridges, Culverts & Structures
Unit Measure: Number of Bridges, Culverts & Structures

Description	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 Value (\$/item)
Bridges	14	14	14	14	14	14	14	14	14	14	\$4,500
Major Culverts	11	11	11	11	11	11	11	11	11	11	\$300,000
Minor Culverts	230	230	230	230	230	230	230	230	230	230	\$7,500
Total	255	255	255	255	255	255	255	255	255	255	

Population	13,883	14,172	14,452	14,768	15,097	15,247	15,425	15,656	15,984	16,319
Per Capita Standard	0.0184	0.0180	0.0176	0.0173	0.0169	0.0167	0.0165	0.0163	0.0160	0.0156

10 Year Average	2006-2015
Quantity Standard	0.0169
Quality Standard	\$19,988
Service Standard	\$338

DC Amount (before deductions)	20 Year
Forecast Population	6,179
\$ per Capita	\$338
Eligible Amount	\$2,087,266

**Township of Russell
Service Standard Calculation Sheet**

Service: Sidewalks
Unit Measure: km of roadways

Description	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 Value (\$/km)
Sidewalks	27	27	27	27	27	27	27	27	27	27	\$89,000
Total	27	27	27	27	27	27	27	27	27	27	

Population	13,883	14,172	14,452	14,768	15,097	15,247	15,425	15,656	15,984	16,319
Per Capita Standard	0.0019	0.0019	0.0019	0.0018	0.0018	0.0018	0.0018	0.0017	0.0017	0.0017

10 Year Average	2006-2015
Quantity Standard	0.0018
Quality Standard	\$88,611
Service Standard	\$160

DC Amount (before deductions)	20 Year
Forecast Population	6,179
\$ per Capita	\$160
Eligible Amount	\$985,551

**Township of Russell
Service Standard Calculation Sheet**

Service: Traffic Signals & Streetlights
Unit Measure: No. of Traffic Signals

Description	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 Value (\$/item)
Street and stop signs	1,117	1,127	1,138	1,148	1,159	1,170	1,180	1,192	1,214	1,214	\$180
Street ligths	696	734	774	817	862	909	959	998	1,012	1,012	\$2,100
Total	1,813	1,861	1,912	1,965	2,021	2,079	2,139	2,190	2,226	2,226	

Population	13,883	14,172	14,452	14,768	15,097	15,247	15,425	15,656	15,984	16,319
Per Capita Standard	0.1306	0.1313	0.1323	0.1331	0.1339	0.1364	0.1387	0.1399	0.1393	0.1364

10 Year Average	2006-2015
Quantity Standard	0.1352
Quality Standard	\$1,003
Service Standard	\$136

DC Amount (before deductions)	20 Year
Forecast Population	6,179
\$ per Capita	\$136
Eligible Amount	\$837,872

**Township of Russell
Service Standard Calculation Sheet**

Service: Depots and Domes
Unit Measure: ft² of building area

Description	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 Bld'g Value (\$/ft²)	Value/ft² with land, site works, etc.
Municipal Garage	11,528	11,528	11,528	11,528	11,528	11,528	11,528	11,528	11,528	11,528	\$173	\$194
Salt shed	2,880	2,880	2,880	2,880	2,880	2,880	2,880	2,880	2,880	8,000	\$73	\$84
Total	14,408	14,408	14,408	14,408	14,408	14,408	14,408	14,408	14,408	19,528		

Population	13,883	14,172	14,452	14,768	15,097	15,247	15,425	15,656	15,984	16,319
Per Capita Standard	1.0378	1.0167	0.9970	0.9756	0.9544	0.9450	0.9341	0.9203	0.9014	1.1966

10 Year Average	2006-2015
Quantity Standard	0.9879
Quality Standard	\$169
Service Standard	\$167

DC Amount (before deductions)	20 Year
Forecast Population	6,179
\$ per Capita	\$167
Eligible Amount	\$1,032,943

**Township of Russell
Service Standard Calculation Sheet**

Service: Roads and Related Vehicles
Unit Measure: No. of vehicles and equipment

Description	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 Value (\$/Vehicle)
INT. 20 S (Single Axle)	1	1	-	-	-	-	-	-	-	-	\$134,300
35-09 Freightliner	-	-	1	1	1	1	1	1	1	1	\$200,000
37-03 Chev. ETV Cube Van	1	1	1	1	1	1	1	1	1	1	\$15,000
FORD L 9000 Tandem combination box & salt control	1	1	1	-	-	-	-	-	-	-	\$162,300
FORD L 9000 Tandem gravel & salt box	1	1	1	-	-	-	-	-	-	-	\$162,300
GMC Sierra pick up	1	1	-	-	-	-	-	-	-	-	\$33,500
28-08 Mitsubishi Fuso Cabover	-	-	1	1	1	1	1	1	1	1	\$63,000
26-01 INT. 20 S Tandem combination box & salt control	1	1	1	1	1	1	1	-	-	-	\$192,900
46-99 Belly Dump Trailer - home made	1	1	1	1	1	1	1	1	1	1	\$22,000
50-06 INT. 7600 Tandem combination box & salt control	1	1	1	1	1	1	1	1	1	1	\$284,000
INTL 10S Cube Van	1	1	1	-	-	-	-	-	-	-	\$40,800
Chev Col Pick-up	1	1	1	-	-	-	-	-	-	-	\$33,500
Ford 8240	1	1	-	-	-	-	-	-	-	-	\$50,300
33-07 McCormik	-	-	1	1	1	1	1	-	-	-	\$75,100
38-03 John Deere 644H - Loader #38	1	1	1	1	1	1	1	1	1	1	\$283,000
23-99 Champion 740A-VHP - Grader #23	1	1	1	1	1	1	1	1	1	1	\$340,000
55-56 Thompson portable steamer	1	1	1	1	1	1	1	1	1	1	\$21,000
29-11 CASE 580 5 M BACKHOE	-	-	1	1	1	1	1	1	1	1	\$138,600
53-11 CASE 721 E LOADER	1	1	1	1	1	1	1	1	1	1	\$187,000
John Deere Snowblower	1	1	1	1	1	1	1	1	1	1	\$23,500
Disc Mower	1	1	1	1	1	1	1	-	-	-	\$11,200
2011 Ford F450 (36-11)	-	-	-	-	-	1	1	-	-	-	\$62,700
2011 Freightliner M112 (54-11)	-	-	-	-	-	1	1	1	1	1	\$245,000
2012 Ford F150 (56-12)	-	-	-	-	-	-	1	1	1	1	\$29,000
58-14 Snow Plow	-	-	-	-	-	-	-	1	1	1	\$222,000
55-12 Snow Plow	-	-	-	-	-	-	-	1	1	1	\$220,000
50-06 Snow Plow	-	-	-	-	-	-	-	1	1	1	\$27,000
36-10 Pick-up Flat Bed	-	-	-	-	-	-	-	1	1	1	\$65,000
44-03 SUV	-	-	-	-	-	-	-	1	1	1	\$10,000
23-99.1 Shoulder Blade	-	-	-	-	-	-	-	1	1	1	\$23,000
29-14.1 Snow Plow	-	-	-	-	-	-	-	1	1	1	\$14,000
33-08.1 Brush	-	-	-	-	-	-	-	1	1	1	\$45,000
33-08.4 Broom	-	-	-	-	-	-	-	1	1	1	\$8,000
36-11.1 Airflow Salt Box	-	-	-	-	-	-	-	1	1	1	\$5,000
55-55 Chipper	-	-	-	-	-	-	-	1	1	1	\$33,000
57-13 Off-Road Vehicle	-	-	-	-	-	-	1	1	1	1	\$117,000
57-13.1 V-Plow	-	-	-	-	-	-	1	1	1	1	\$7,000
57-13.2 Snowblower	-	-	-	-	-	-	1	1	1	1	\$11,000
57-13.3 Sweeper	-	-	-	-	-	-	1	1	1	1	\$8,000
57-13.4 Sander spreader	-	-	-	-	-	-	1	1	1	1	\$5,000
29-14.2 Grader	-	-	-	-	-	-	-	1	1	1	\$27,000
29-14.3 Backhoe Blade	-	-	-	-	-	-	-	1	1	1	\$11,000
Tractor	-	-	-	-	-	-	-	1	1	1	\$26,000
59-14 Asphalte Roller	-	-	-	-	-	-	-	1	1	1	\$19,000
33-08.5 Grass mower	-	-	-	-	-	-	-	1	1	1	\$14,000
Sidewalk Machine (contract)	-	-	-	-	-	-	-	-	1	1	\$4,587
Total	17	17	18	14	14	16	22	33	34	34	

Population	13,883	14,172	14,452	14,768	15,097	15,247	15,425	15,656	15,984	16,319
Per Capita Standard	0.0012	0.0012	0.0012	0.0009	0.0009	0.0010	0.0014	0.0021	0.0021	0.0021

10 Year Average	
Quantity Standard	0.0014
Quality Standard	\$105,521
Service Standard	\$148

DC Amount (before deductions)	
Forecast Population	6,179
\$ per Capita	\$148
Eligible Amount	\$912,824

**Township of Russell
Service Standard Calculation Sheet**

Service: Fire Facilities
Unit Measure: ft² of building area

Description	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 Bld'g Value (\$/ft ²)	Value/ft ² with land, site works, etc.
Russell Fire Station	8,740	8,740	8,740	8,740	8,740	8,740	8,740	8,740	8,740	8,740	\$206	\$231
Old Embrun Fire Station	4,752	4,752	4,752	4,752	4,752	4,752	4,752	4,752	-	-	\$181	\$203
New Embrun Fire Station	-	-	-	-	-	-	-	-	8,299	8,299	\$256	\$286
Total	13,492	13,492	13,492	13,492	13,492	13,492	13,492	13,492	17,039	17,039		

Population	13,883	14,172	14,452	14,768	15,097	15,247	15,425	15,656	15,984	16,319
Per Capita Standard	0.9718	0.9520	0.9336	0.9136	0.8937	0.8849	0.8747	0.8618	1.0660	1.0441

10 Year Average	2006-2015
Quantity Standard	0.9396
Quality Standard	\$229
Service Standard	\$216

DC Amount (before deductions)	20 Year
Forecast Population	6,179
\$ per Capita	\$216
Eligible Amount	\$1,331,698

**Township of Russell
Service Standard Calculation Sheet**

Service: Fire Vehicles
Unit Measure: No. of vehicles

Description	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 Value (\$/Vehicle)
Russell Fire Station											
Pumper	1	1	1	1	1	1	1	1	1	1	\$650,000
Heavy Rescue	1	1	1	1	1	1	1	1	1	1	\$300,000
Emergency First Response Unit	1	1	-	-	-	-	-	-	-	-	\$67,100
Tanker	1	1	1	1	1	1	1	1	1	1	\$350,000
Light Rescue	-	-	1	1	1	1	1	1	1	1	\$200,000
Fire Safety Trailer	-	-	1	1	1	1	1	1	1	1	\$127,683
Embrun Fire Station											
72-95 Cubic Van	2	1	1	1	1	2	2	1	1	1	\$120,911
73-00 Tanker	1	1	1	1	1	1	1	1	1	1	\$294,335
74-04 Rescue	1	1	1	1	1	1	1	1	1	1	\$209,799
98-11 Pumper	1	1	1	1	1	1	1	1	1	1	\$431,648
Total	9	8	9	9	9	10	10	9	9	9	

Population	13,883	14,172	14,452	14,768	15,097	15,247	15,425	15,656	15,984	16,319
Per Capita Standard	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0006	0.0006	0.0006	0.0006

10 Year Average	2006-2015
Quantity Standard	0.0006
Quality Standard	\$294,900
Service Standard	\$177

DC Amount (before deductions)	20 Year
Forecast Population	6,179
\$ per Capita	\$177
Eligible Amount	\$1,093,312

Township of Russell
Service Standard Calculation Sheet

Service: Fire Small Equipment and Gear
 Unit Measure: No. of equipment and gear

Description	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 Value (\$/item)
Russell Fire Station											
Bunker gear & breathing apparatus	24	24	24	24	24	24	26	26	26	26	\$6,312
Generator	1	1	1	1	1	1	1	1	1	1	\$52,575
Jaws of life	1	1	1	1	1	1	1	1	1	1	\$25,460
Embrun Fire Station											
Bunker gear & breathing apparatus	24	24	24	24	24	24	26	26	26	26	\$5,816
Generator	1	1	1	1	1	1	1	1	1	1	\$30,000
Jaws of life	1	1	1	1	1	1	1	1	1	1	\$25,460
Thermal Imaging Camera	1	1	1	1	1	1	1	1	1	1	\$16,884
Carbon Air Bottles	1	1	1	1	1	1	1	1	1	1	\$6,395
Total	54	54	54	54	54	54	58	58	58	58	

Population	13,883	14,172	14,452	14,768	15,097	15,247	15,425	15,656	15,984	16,319
Per Capita Standard	0.0039	0.0038	0.0037	0.0037	0.0036	0.0035	0.0038	0.0037	0.0036	0.0036

10 Year Average	2006-2015
Quantity Standard	0.0037
Quality Standard	\$8,200
Service Standard	\$30

DC Amount (before deductions)	20 Year
Forecast Population	6,179
\$ per Capita	\$30
Eligible Amount	\$187,471

**Township of Russell
Service Standard Calculation Sheet**

Service: Police Small Equipment and Gear
Unit Measure: No. of equipment and gear

Description	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 Value (\$/item)
Police Services Agreement (capital)	1	1	1	1	1	1	1	1	1	1	\$155,818
Total	1	1	1	1	1	1	1	1	1	1	

Population	13,883	14,172	14,452	14,768	15,097	15,247	15,425	15,656	15,984	16,319
Per Capita Standard	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

10 Year Average	2006-2015
Quantity Standard	0.0001
Quality Standard	\$103,400
Service Standard	\$10

DC Amount (before deductions)	20 Year
Forecast Population	6,179
\$ per Capita	\$10
Eligible Amount	\$63,891

**Township of Russell
Service Standard Calculation Sheet**

Service: By-law Enforcement Facilities
Unit Measure: ft² of building area

Description	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 Bld'g Value (\$/ft ²)	Value/ft ² with land, site works, etc.
Animal Shelter Space	240	240	240	240	240	240	240	240	240	240	\$112	\$127
Total	240	240	240	240	240	240	240	240	240	240		

Population	13,883	14,172	14,452	14,768	15,097	15,247	15,425	15,656	15,984	16,319
Per Capita Standard	0.0173	0.0169	0.0166	0.0163	0.0159	0.0157	0.0156	0.0153	0.0150	0.0147

10 Year Average	2006-2015
Quantity Standard	0.0159
Quality Standard	\$128
Service Standard	\$2

DC Amount (before deductions)	10 Year
Forecast Population	3,354
\$ per Capita	\$2
Eligible Amount	\$6,809

Township of Russell
Service Standard Calculation Sheet

Service: By-law Enforcement Vehicles and Equipment

Contact :

Unit Measure: No. of vehicles and equipment

Description	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 Value (\$/Vehicle)
13-11 Pick-Up	1	1	1	1	1	1	1	1	1	1	\$35,000
2011 Ford Ranger Sport	1	1	1	1	1	1	1	1	1	1	\$26,000
2006 Bike (Stevens Police Edition)	2	2	2	2	2	2	2	2	2	2	\$1,800
2005 Rocky Mountain Bike	1	1	1	1	1	1	1	1	1	1	\$1,800
08-13 Pick-Up	1	1	1	1	1	1	1	1	1	1	\$30,000
Equipment											
Large Animal Trap	1	1	1	1	1	1	1	1	1	1	\$900
Medium Animal Trap	1	1	1	1	1	1	1	1	1	1	\$900
Dog Poles	2	2	2	2	2	2	2	2	2	2	\$500
Coleman Industrial Generator	2	2	2	2	2	2	2	2	2	2	\$5,600
SDMA Generator	1	1	1	1	1	1	1	1	1	1	\$113,000
Ballistic/Puncture Resistant Vest	4	4	4	4	4	4	4	4	4	4	\$1,100
Firearms	2	2	2	2	2	2	2	2	2	2	\$500
Fire Hall Antenna	-	1	1	1	1	1	1	1	1	1	\$3,300
Cellular Phones	36	36	36	36	36	36	36	36	36	36	\$300
Pagers	3	3	3	3	3	3	3	3	3	3	\$100
Radios	-	-	4	4	4	4	4	4	4	4	\$600
Prot Filing System	1	1	1	1	1	1	1	1	1	1	\$21,000
Radar 3C Battery	1	1	1	1	1	1	1	1	1	1	\$12,000
Misc. Equipment	1	1	1	1	1	1	1	1	1	1	\$13,100
Total	61	62	66	66	66	66	66	66	66	66	

Population	13,883	14,172	14,452	14,768	15,097	15,247	15,425	15,656	15,984	16,319
Per Capita Standard	0.0044	0.0044	0.0046	0.0045	0.0044	0.0043	0.0043	0.0042	0.0041	0.0040

10 Year Average	2006-2015
Quantity Standard	0.0043
Quality Standard	\$4,491
Service Standard	\$19

DC Amount (before deductions)	10 Year
Forecast Population	3,354
\$ per Capita	\$19
Eligible Amount	\$64,766

Township of Russell
Service Standard Calculation Sheet

Service: Parkland Development
 Unit Measure: Acres of Parkland

Description	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 Value (\$/Acre)
Embrun Community											
A.G. Bourdeau Park	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	\$118,500
Bourdeau Park	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	\$81,700
Jean Guy Lapionte Park	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	\$151,600
Pico Park	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	\$59,100
Mélanie Park	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	\$54,200
Omer Lamadeleine Park	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	\$78,700
Palais des Sports Park	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	\$295,300
Parc Richelieu	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	\$35,000
Russell Community											
Boyd Park	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	\$358,800
Burton Park (agreement with SNCA)	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	\$31,300
Duncanville Park	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	\$811,600
Hanover Woods Park	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	\$88,800
J. Henry Tweed Park (agreement with SNCA)	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	\$0
MacDougall Park	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	\$192,800
Russell Centennial Pool	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	\$733,662
Russell Agricultural Society Fairgrounds	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	\$117,400
Stanley Park	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	\$241,400
Stiver Park	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	\$58,800
Marionville											
Séraphin Marion	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	\$361,000
Camelot	-	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	\$57,100
Old Towne West	-	-	-	-	-	-	0.3	0.3	0.4	0.5	\$148,000
Russell Skateboard Park	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	\$81,700
Boat Launch	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	\$42,500
Total	50	52	52	52	52	52	52	52	52	52	

Population	13,883	14,172	14,452	14,768	15,097	15,247	15,425	15,656	15,984	16,319
Per Capita Standard	0.0036	0.0036	0.0036	0.0035	0.0034	0.0034	0.0034	0.0033	0.0033	0.0032

10 Year Average	2006-2015
Quantity Standard	0.0034
Quality Standard	\$116,429
Service Standard	\$396

DC Amount (before deductions)	10 Year
Forecast Population	3,354
\$ per Capita	\$396
Eligible Amount	\$1,327,714

**Township of Russell
Service Standard Calculation Sheet**

Service: Parkland Trails
Unit Measure: Linear Metres of Paths and Trails

Description	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 Value (\$/ Lin. Metre)
New York Central Fitness Trail	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200	\$31
Burton Park (agreement with SNCA)	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	\$11
Total	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	

Population	13,883	14,172	14,452	14,768	15,097	15,247	15,425	15,656	15,984	16,319
Per Capita Standard	0.6627	0.6492	0.6366	0.6230	0.6094	0.6034	0.5964	0.5876	0.5756	0.5638

10 Year Average	2006-2015
Quantity Standard	0.6108
Quality Standard	\$27
Service Standard	\$16

DC Amount (before deductions)	10 Year
Forecast Population	3,354
\$ per Capita	\$16
Eligible Amount	\$55,073

**Township of Russell
Service Standard Calculation Sheet**

Service: Recreation Vehicles and Equipment
Unit Measure: No. of vehicles and equipment

Description	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 Value (\$/Vehicle)
Ice Resurfacers - Olympia	1	1	1	1	1	1	1	1	1	1	\$125,000
Ice Resurfacers - Zamboni	1	1	1	1	1	1	1	1	1	1	\$117,000
Tractor - John Deere 4200 Series	1	1	1	1	1	1	1	1	1	1	\$66,000
Kubota with Cab	1	1	1	1	1	1	1	1	1	1	\$23,800
Riding Mower - Cub Cadet Zero Turn	1	1	1	1	1	1	1	1	1	1	\$10,200
Mobile Generator - Honda 3000 Watts	1	1	1	1	1	1	1	1	1	1	\$4,500
Floor Scrubber - Hurricane 3000	1	3	3	3	3	3	3	3	3	3	\$5,900
Trailer (J.D.J.)	1	1	1	1	1	1	1	1	1	1	\$6,800
Ford F150 XLT Pickup (51-05)	1	1	1	1	1	1	1	1	1	1	\$49,000
Dodge Ram 1500 Pickup (52-02)	1	1	1	1	1	1	1	1	1	1	\$28,000
57-2015 Polaris Ranger	-	-	-	-	-	-	-	-	-	1	\$11,000
Total	10	12	12	12	12	12	12	12	12	13	

Population	13,883	14,172	14,452	14,768	15,097	15,247	15,425	15,656	15,984	16,319
Per Capita Standard	0.0007	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008

10 Year Average	2006-2015
Quantity Standard	0.0008
Quality Standard	\$37,150
Service Standard	\$30

DC Amount (before deductions)	10 Year
Forecast Population	3,354
\$ per Capita	\$30
Eligible Amount	\$99,681

**Township of Russell
Service Standard Calculation Sheet**

Service: Library Facilities
Unit Measure: ft² of building area

Description	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 Bld'g Value (\$/ft ²)	Value/ft ² with land, site works, etc.
Russell Branch	2,800	2,800	2,800	2,800	2,800	5,314	5,314	5,314	5,314	5,314	\$536	\$595
Embrun Branch	2,700	2,700	2,700	2,700	2,700	3,000	3,000	3,000	3,000	3,000	\$302	\$337
Storage Space	100	100	100	100	100	100	200	200	200	200	\$56	\$65
Total	5,600	5,600	5,600	5,600	5,600	8,414	8,514	8,514	8,514	8,514		

Population	13,883	14,172	14,452	14,768	15,097	15,247	15,425	15,656	15,984	16,319
Per Capita Standard	0.4034	0.3951	0.3875	0.3792	0.3709	0.5518	0.5520	0.5438	0.5327	0.5217

10 Year Average	2006-2015
Quantity Standard	0.4638
Quality Standard	\$480
Service Standard	\$222

DC Amount (before deductions)	10 Year
Forecast Population	3,354
\$ per Capita	\$222
Eligible Amount	\$745,963

**Township of Russell
Service Standard Calculation Sheet**

Service: Library Collection Materials
Unit Measure: No. of library collection items

Description	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 Value (\$/item)
Collection Materials	39,476	39,951	42,299	44,180	46,652	44,224	45,822	40,388	42,918	42,918	\$23
Database Subscriptions	2	2	5	35	32	13	13	18	18	18	\$749
Total	39,478	39,953	42,304	44,215	46,684	44,237	45,835	40,406	42,936	42,936	

Population	13,883	14,172	14,452	14,768	15,097	15,247	15,425	15,656	15,984	16,319
Per Capita Standard	2.8436	2.8192	2.9272	2.9940	3.0923	2.9014	2.9715	2.5809	2.6862	2.6310

10 Year Average	2006-2015
Quantity Standard	2.8447
Quality Standard	\$23
Service Standard	\$66

DC Amount (before deductions)	10 Year
Forecast Population	3,354
\$ per Capita	\$66
Eligible Amount	\$221,934

Appendix C – Asset Management Plan

The Township of Russell Asset Management Plan is provided under separate cover.

Appendix D – Proposed Development Charge By-law

THE CORPORATION OF THE TOWNSHIP OF RUSSELL

BY-LAW NUMBER __-2016

**Being a By-law to establish development charges for the
Township of Russell and to repeal By-law No. 5-2014**

WHEREAS Subsection 2(1) of the Development Charges Act, S .O. 1997, as amended, provides that the council of a municipality may by by-law impose development charges against land to pay for increased capital costs required because of increased needs for services arising from the development of the area to which the by-law applies;

AND WHEREAS Council has before it a report entitled "2016 Development Charges Background Study", the Township of Russell, dated October 12, 2016, as amended (the "Study");

AND WHEREAS Notice of Public Meeting was given pursuant to Section 12 of the Act on or before October 28, 2016 and copies of the Study and the proposed development charge by-law were made available to the public on October 12, 2016;

AND WHEREAS a Public Meeting was held on November 21, 2016 to hear comments and representations from all persons who applied to be heard (the "Public Meeting");

AND WHEREAS Council reviewed the Study in light of the public comments and representations and provided a Report to Council dated December 7, 2016;

AND WHEREAS Council at its December 12, 2016 meeting adopted the recommendations from the Committee of the Whole including:

- a) That Council approve the capital project listing set out in Chapter 5 of the Development Charges Background Study dated October 12, 2016 (as amended), subject to further annual review during the capital budget process";
- b) That Council approve the Development Charges Background Study dated October 12, 2016 (as amended)"; and
- c) That Council determine that no further public meeting is required";

NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE TOWNSHIP OF RUSSELL ENACTS AS FOLLOWS:

1. Definitions

In this By-law,

- 1.1 "Act" means the Development Charges Act, 1997, S.O. 1997, c.27 as amended;
- 1.2 "accessory" means, when used to describe a use, building or structure, a use, building or structure that is normally incidental and/or subordinate, and is exclusively devoted to a main use and/or building and/or structure, and is located on the same lot therewith;
- 1.3 "agricultural use" means a use of land, buildings, or structures for the production of crops, animal husbandry or other similar uses normally associated with agriculture;
- 1.4 "air-supported structure" means an air supported structure as defined in the Building Code Act;
- 1.5 "benefiting area" means an area defined by a map, plan or legal description in a front-ending agreement as an area that will receive a benefit from the construction of a service;
- 1.6 "Board of Education" means a board of education, French and English, public school board, secondary school board, Catholic school board or Protestant school board;
- 1.7 "building or structure" means a structure occupying an area greater than 10 square metres consisting of a wall, roof and floor or any of them or a structural system serving the function thereof, but does not include a farm building, but does include an air supported structure and an exterior storage tank;
- 1.8 "Building Code Act" means the Building Code Act, S .O. 1992, Chapter 23, as amended and all Regulations thereto including the Ontario Building Code, 1997, as amended or any successor legislation thereof;
- 1.9 "capital cost" means costs incurred or proposed to be incurred by the Township or a local board thereof directly or under an agreement,
 - a) to acquire land or an interest in land,
 - b) to improve land,
 - c) to acquire, construct or improve buildings and structures,
 - d) to acquire, construct or improve facilities including,
 - i) rolling stock, furniture and equipment, and
 - ii) materials acquired for circulation, reference or information purposes by a library board as defined in the Public Libraries Act, R.S.O 1990, c.P.44, and
 - e) to undertake studies in connection with any matter under the Act and any matters in clauses a) to d) above, required for the provision of services designated in this By-law within or outside the Township, including interest on borrowing for those expenditures under clauses a) to d) above that are growth-related;

- 1.10 "Council" means the Council of The Corporation of the Township of Russell;
- 1.11 "County" means the United Counties of Prescott and Russell.
- 1.12 "development" means the construction, erection or placing of one or more buildings or structures on land, or the making of an addition or alteration to a building or structure that has the effect of increasing the gross floor area, or the making of an addition or alteration of a building or structure which has the effect of creating a new dwelling unit which did not exist at the time of the passage of this By-law, and includes re-development;
- 1.13 "Development Charge" means a charge imposed with respect to growth-related net capital costs against land in the Township under this By-law pursuant to the Act;
- 1.14 "dwelling, apartment" means a building consisting of three or more dwelling units which have a common entrance from the street level, and the occupants of which have the right to use in common halls and/or stairs and/or elevators and/or yards and/or storage and/or laundry rooms and facilities. Apartment dwellings also include basement apartment conversions;
- 1.15 "dwelling, duplex" means a building that is divided horizontally into two dwelling units each of which has an independent entrance either directly or through a common vestibule;
- 1.16 "dwelling, semi-detached" means the whole of a building divided vertically from the foundation to the roof by an unpierced common wall into two separate dwelling units each of which has an independent entrance directly from grade;
- 1.17 "dwelling, single detached" means a completely detached dwelling unit to which entrance is gained only by a private entrance outside the building and does not include a mobile home;
- 1.18 "dwelling, row house" means a building that is divided vertically into three (3) or more dwelling units, each of which has independent entrances, to a front and rear yard immediately abutting the front and rear walls of each dwelling unit;
- 1.19 "dwelling, special care/special needs" means a building where the occupants have the right to use in common, halls, stairs, yards, common rooms, and accessory buildings; which may or may not have exclusive sanitary and/or culinary facilities, that is designed to accommodate persons with specific needs, including independent permanent living arrangements, and where support services such as meal preparation, grocery shopping, laundry, housekeeping, nursing, respite care and attendant services are provided at various levels. Special care/special needs dwellings includes, but is not limited to retirement homes and lodges, nursing homes, charitable dwellings, accessory dwellings and group homes;
- 1.20 "dwelling, street row house" means a row house dwelling in which each dwelling unit abuts a public street and where each dwelling unit is located on a separate lot;
- 1.21 "dwelling unit" means one or more habitable rooms designed or intended for use by one or more persons as an independent and separate housekeeping establishment in which separate kitchen and sanitary facilities are provided for the exclusive use of

such person or persons, with a private enhance from outside the building or from a common hallway or stairway inside the building.

- 1.22 "dwelling, multiple" means all dwellings other than single detached dwellings, semi-detached dwelling, duplex dwelling or apartment dwelling;
- 1.23 "farm building" means a farm building as defined in the Building Code Act;
- 1.24 "floor" includes a paved, concrete, wooden, gravel, or dirt floor;
- 1.25 "front-ending agreement" means an agreement made under Section 44 of the Act between the Township and any or all owners within the benefiting area providing for front-end payments by an owner or owners or any combination thereof;
- 1.26 "front-end payment" means a payment made by an owner pursuant to a front-ending agreement which may be in addition to a development charge that the owner is required to pay under this By-law, to cover the net capital costs of the services designated in the agreement that are required to enable the land to be developed;
- 1.27 "gross floor area" means the sum total of the total areas of all floors in a building or structure, whether at, above, or below-grade, measured between the exterior faces of the exterior walls of the building or structure or from the centre line of a common wall separating two uses, of from the outside edge of a floor that does not meet an exterior of common wall, and
 - a) includes the floor area of a mezzanine and air-supported structure and the space occupied by interior wall partitions;
 - b) excludes any parts of the building or structure used for the parking and loading of vehicles and
 - c) where a building does not have any walls, the gross floor area shall be the sum total of the area of land directly beneath the roof of the building and the total areas of all floor in the building or structure.
- 1.28 "growth-related net capital cost" means the portion of the net capital cost of services that is reasonably attributable to the need for such net capital cost that results or will result from development in all or a defined part of the Township;
- 1.29 "local board" means a municipal service board, transportation commission, public library board, board of health, police services board, planning board, or any other board, commission, committee, body or local authority established or exercising any power under any Act with respect to the affairs or purposes of one or more municipalities, excluding a school board and a conservation authority;
- 1.30 "mezzanine" means a mezzanine as defined in the Building Code Act;
- 1.31 "mixed-use" means lands, buildings or structures used, designed or intended to be used for both residential and non-residential uses;
- 1.32 "non-residential" means land, buildings or structures or portions thereof used, or designed or intended to be used for a use other than for a residential dwelling unit;

- 1.33 "owner" means the owner of land or a person who has made application for an approval for the development of land upon which a Development Charge is imposed;
- 1.34 "protracted" means in relation to a temporary building or structure the persistence of its construction, erection, placement on land, alteration or, of an addition to it, for a continuous period exceeding eight (8) months;
- 1.35 "redevelopment" means the construction, erection or placing of one or more buildings or structures on land where all or part of a building or structure has previously been demolished on such land, or changing the use of a building or structure, or part thereof, from residential to non-residential or from nonresidential to residential;
- 1.36 "regulation" means any regulation made pursuant to the Act;
- 1.37 "residential use" means the land, buildings or structures or portions thereof used, designed or intended to be used as living accommodation for one or more individuals;
- 1.38 "services" means services designated in this By-law including Schedule "A" to this By-law or in agreement under section 44 of the Act, or both;
- 1.39 "service standards" means the prescribed level of services on which the Schedule of Charges in Schedule "B" are based;
- 1.40 "temporary building or structure" means a building or structure constructed or erected or placed on land for a continuous period not exceeding eight (8) months, or an addition or alteration to a building or structure that has the effect of increasing the total floor area thereof for a continuous period not exceeding eight (8) months;
- 1.41 "Township" means The Corporation of the Township of Russell;
- 1.42 "Zoning By-law" means the Zoning By-law or By-laws passed under Section 34 of the Planning Act and in force and effect in the Township, or part thereof;

2. Rules

For the purpose of complying with Section 6 of the Act:

- 2.1 the area to which this By-law applies shall be the area described in Section 3 of this By-law;
- 2.2 the rules developed under paragraph 9 of subsection 5(1) of the Act for determining if a development charge is payable in any particular case and for determining the amount of the Development Charge shall be as set forth in this By-law;
- 2.3 the exemptions provided for such rules shall be the exemptions set forth in Section 13 of this By-law:

- 2.4 the indexing of Development Charges shall be in accordance with Section 10 of this By-law; and
- 2.5 the phasing of Development Charges (or no phasing) shall be as provided in Section 11 of this By-law;
- 2.6 the redevelopment of land shall be in accordance with the rules set forth in Section 13 of and Section 18 of this By-law.

3. Lands Affected

- 3.1 This By-law applies to all lands in the geographic area of the Township, subject to the following:
 - a) Development Charges for municipal wastewater services, as identified on Schedule "B" of this By-law, will not be levied against development within the Highway 417 Industrial Park or against development of land that will not receive wastewater services from the Township at the time of development; and
 - b) Development Charges for municipal water services, as identified on Schedule "B" of this By-law, will not be levied against development within the Highway 417 Industrial Park or against development of land that will not receive municipal water services from the Township at the time of development.

4. Designation of Services

- 4.1 It is hereby declared by Council that all development of land within the area to which this By-law applies will increase the need for services.
- 4.2 The Development Charge applicable to a development as determined under this By-law shall apply without regard to the services required or used by an individual development, subject to subsection 3.1 (a) and (b) of this By-law.
- 4.3 Development Charges shall be imposed and Reserve Funds established for the categories of services designated on Schedule "A" of this By-law to pay for the increased capital costs required because of increased needs for services arising from development.

5. Approvals for Development

- 5.1 Development charges shall be imposed against all lands, buildings or structures within the area to which this By-law applies if the development of such lands, buildings or structures requires any of the following approvals:

- a) the passing of a zoning by-law or of an amendment thereto under section 34 of the *Planning Act*;
 - b) the approval of a minor variance under section 45 of the *Planning Act*,
 - c) a conveyance of land to which a by-law passed under subsection 50(7) of the *Planning Act* applies;
 - d) the approval of a plan of subdivision under section 51 of the *Planning Act*,
 - e) a consent under section 53 of the *Planning Act*,
 - f) the approval of a description under section 50 of the *Condominium Act*, or;
 - g) the issuing of a permit under the Building Code Act, 1992 in relation to a building or structure.
- 5.2 No more than one Development Charge for each service designated in subsection 4.3 of this By-law shall be imposed upon any lands, buildings or structures to which this By-law applies even though two or more of the actions described in Subsection 5.1 are required before the lands, buildings or structure can be developed.
- 5.3 Notwithstanding Subsection 5.2, if two or more of the actions described in Subsection 5.1 occur at different times, additional Development Charges shall be imposed in respect of any increased or additional development permitted by that action.
- 5.4 Where a development requires an approval described in Subsection 5.1 after the issuance of a building permit and no Development Charge has been paid, then the Development Charge shall be paid prior to the granting of the approval required under Subsection 5.1.
- 5.5 If a development does not require a building permit but does require one or more of the approvals described in Subsection 5.1, then the Development Charge shall nonetheless be payable in respect of any increased or additional development permitted by such approval required for the increased or additional development being granted .
- 5.6 Nothing in this By-law prevents Council from requiring, as a condition of an agreement under sections 51 or 53 of the *Planning Act*, that the owner, at his or her own expense, install such local services related to a plan of subdivision or within the area to which the plan or consent relates, as Council may require or that the owner pay for local connections to storm drainage facilities installed at the owner's expense, or administrative, processing or inspection fees.

6. Calculation of Development Charges

- 6.1 The Development Charge with respect to the use of any land, buildings or structures shall be calculated as follows:
- a) in the case of residential development, or the residential portion of a mixed-

- b) use development, based upon the number and type of dwelling units ; or
in the case of non-residential development, or the non-residential portion of a mixed-use development, based upon the gross floor area of such development.

7. Amount of Charge Residential

- 7.1 The Development Charges described in Schedule "B" to this By-law shall be imposed on residential uses of lands, buildings or structures, including a dwelling unit accessory to a non-residential use and, in the case of a mixed use building or structure, on the residential component of the mixed use building or structure, according to the type of residential use.

8. Amount of Charge -Non-Residential

- 8.1 The Development Charges described in Schedule "B" to this By-law shall be imposed on non-residential uses of lands, buildings or structures, including a non-residential use accessory to a dwelling unit and, in the case of a mixed use building or structure, on the non-residential component of the mixed use building or structure, according to the type of non-residential use.

9. Special Provision

- 9.1 Notwithstanding Sections 6,7 and 8, if an owner has prepaid the Sewer Services component under an agreement with the Township, on or before July 7, 2009, for the applicable development, the charge related to Sewer Service in Schedule "B" shall not be imposed and collected, subject to the terms, provisions and limitation of the prepayment agreement.

10. Indexing of Development Charges

- 10.1 The Development Charges set out in Schedule "B" attached hereto shall be adjusted without amendment to this By-law annually on January 1st in each year, commencing January 1st, 2017, in accordance with the most recent twelve month change in Statistics Canada Quarterly, Construction Price Statistics with the base index value being that in effect as at August 31st in the prior year.

11. Phasing, Timing of Calculation and Payment

- 11 .1 The residential Development Charges set out in this are not subject to phasing in and are payable in full, subject to the exemptions and credits herein from the effective date of this By-law.
- 11 .2 The non-residential Development Charges set out in this By-law are not subject to phasing in and are payable in full, subject to the exemptions and credits herein from the effective date of this By-law.

- 11 .3 Subject to Section 18 (with respect to redevelopment) and Subsection 11 .4 below, the Development Charge shall be calculated as of, and shall be payable, on the date the first building permit is issued in relation to a building or structure on land to which the Development Charge applies.
- 11 .4 Notwithstanding Subsection 11 .3 above, the Township may require an owner to enter into an agreement, including the provision of security for the owner's obligations under agreement pursuant to Section 27 of the Act providing for all or part of a Development Charge to be paid before or after it otherwise would be payable. The terms of such agreement shall then prevail over the provision of this By-law.

12. Payment by Money or the Provision of Services

- 12.1 Payment of Development Charges shall be by cash or by cheque.
- 12.2 In the event that payment is made by cheque, payment shall be deemed to be made when the funds are credited to the Township's bank account. In the event of an NSF cheque, services charges as set out in the Township's fee by-law will apply in addition to the amount of the outstanding Development Charge.
- 12.3 In the alternative to payment by the means provided in Subsection 12.1 above, the Township may, at its sole discretion and by way of an agreement entered into with the owner, accept the provision of services in full or partial satisfaction of the Development Charge otherwise payable provided that :
- a) if the credit exceeds the amount of the charge for the service to which the work relates,
 - i) the excess amount shall not be credited against the charge for any other service, unless the Township has so agreed in an agreement under Section 38 of the Act ; and
 - ii) in no event shall the Township be required to make a cash payment to the credit holder.
- 12.4 If a Development Charge or any part of it remains unpaid after it is payable, the amount unpaid shall be added to the tax roll and shall be collected in the same manner as taxes pursuant to Section 32 of the Act.
- 12.5 In the event that a Development Charge under this By-law is paid and the person required to pay the development charge or the person's agent wishes to complain to Council that:
- a) the amount of the development charge was incorrectly determined; or
 - b) a credit is available to be used against the development charge or such credit was incorrectly determined; or
 - c) there was an error in the application of the Development Charge By-law

the complainant shall follow the procedures set out in Section 20 of the Act.

- 12.6 Nothing in this By-law prevents Council from requiring, as a condition of any approval given under the Planning Act that the Owner, at the Owner's expense, install such local services as Council may require in accordance with the Township's Engineering Standards and such policies which may be in effect at the time.

13. Rules with Respect to Exemptions for Intensification of Existing Housing

- 13.1 This By-law does not apply with respect to approvals related to the residential development of land, buildings or structures that would have the affect only,
- a) of permitting the enlargement of an existing dwelling unit;
 - b) of creating one or two additional dwelling units in an existing single detached dwelling;
 - c) of creating one additional dwelling unit in an existing semi-detached dwelling or duplex dwelling; or
 - d) of creating one additional dwelling unit in any other existing residential building, all as defined in the Regulations.
- 13.2 Notwithstanding Subsections 13.1 b) to d), a Development Charge shall be imposed with respect to the creation of one or two additional dwelling units in a dwelling, if the gross floor area of the additional one or two dwelling units exceeds, the gross floor area of the existing dwelling unit in Subsections 13.1 b) and 13.1 C), and the smallest existing dwelling unit in Subsection 13.1 d).
- 13.3 For the purposes of section 13.1, where a building permit has been issued for the construction of a single detached dwelling, semi-detached dwelling, duplex dwelling or any other residential dwelling following the adoption of this by-law, such building shall be deemed not to be existing for a period of 5 years after provisional occupancy certificate has been granted and a final inspection has been completed.

14. Rules with respect to Credits for Services or Lot Levies

- 14.1 Section 17 of Ontario Regulation No. 82/98 as amended under of the Development Charges Act applies only to those owners who applied for and received credits.
- 14.2 In the event that the charge or levy related to the development in respect of which a credit is available pursuant to the provisions of Subsection 13.1 was paid in connection with a particular serViC8, the credit available shall not exceed the amount of the component of the development charge for the particular service payable under this By-law and no refunds shall apply.
- 14.3 A credit given under Subsection 14.1 or 14.2 shall not exceed the total development charge payable by the owner.

14.4 The provisions of Section 40 of the Act shall apply to any credit given under Subsection 14.1, 14.2 or 14.3 of this By-law.

15. Categories of Exempt Institutions

15.1 The following categories of development are hereby designated as being exempt from the payment of Development Charges:

- a) buildings or structures used as hospitals governed by the Public Hospitals Act, R.S.O. 1990, c.P.40;
- b) buildings or structures owned by and used for the purposes of the Township or other municipality, or their local boards;
- c) buildings or structures owned by a Board of Education and used for school purposes pursuant to the Education Act, R.S.O. 1990, as amended;
- d) buildings or structures owned by and used for the purposes of a college of applied arts and technology established pursuant to the Ministry of Colleges and Universities Act, R.S.O. 1990, c. M.19;
- e) buildings or structures owned by and used for the purposes of a university established by an Act of the Legislative Assembly of Ontario; and
- f) buildings or structures developed by a not-for-profit organization for subsidized housing shall be entitled to a 50% exemption of development charges.

16. Agricultural Uses

16.1 Agricultural uses as well as farm buildings and other ancillary development to an agricultural use, excluding any residential uses, shall be exempt from the provisions of this By-law.

17. Temporary Buildings or Structures

17.1 Temporary buildings or structures shall be exempt from the provisions of this By-law.

17.2 In the event that a temporary building or structure becomes protracted, it shall be deemed not to be, nor ever to have been, a temporary building or structure, and the Development Charges required to be paid under this Bylaw become payable on the date the temporary building or structure becomes protracted .

17.3 Prior to the Township issuing a building permit for a temporary building or structure, the Township may require an owner to enter into an agreement, including the provision of security for the owner's obligation under the agreement pursuant to Section 27 of the Act providing for all or part of the Development Charge required by Subsection 17 .2 to be paid after it would otherwise be payable. The terms of such

agreement shall then prevail over the provisions of this By-law.

18. Rules with Respect to the Redevelopment of Land

- 18.1 Where there is a redevelopment of land on which there is a conversion of space proposed, or on which there was formerly erected a building or structure that has been demolished or removed, a credit shall be allowed against the Development Charge otherwise payable by the Owner pursuant to this By-law for the portion of the building or structure still in existence that is being converted or for the portion of the building or structure that has been demolished or removed, as the case may be, calculated by multiplying the number and type of dwelling units being converted or demolished or removed, or the non-residential gross floor area being converted or demolished or removed, by the relevant Development Charge in effect on the date when the Development Charge is payable in accordance with this Bylaw. In the case of the conversion, demolition or removal of non-residential space and redevelopment as a residential or mixed use, the credit shall be calculated based on the non-residential Development Charges in Schedule "B" of this By-law.
- 18.2 A credit in respect of any demolition or removal under this Section shall not be given unless a building permit has been issued or a subdivision agreement has been entered into with the Township for the development within five (5) years from the date the demolition permit was issued. In the event that no demolition permit was issued and the owner is unable to provide written proof or other evidence which in the sole opinion of the Township is able to substantiate the date of demolition, the date shall be deemed to have been in excess of five (5) years.
- 18.3 The amount of any credit hereunder shall not exceed, in total, the amount of the Development Charges otherwise payable with respect to the redevelopment.

19. Interest

- 19.1 The Township shall pay interest on a refund under Subsection 18(3) and 25(2) of the Development Charges Act, 1997 at a rate equal to the Bank of Canada rate on the date this By-law comes into force.

20. Front Ending Agreements

- 20.1 The Township may enter into agreement under Section 44 of the Act.

21. Schedules

- 21.1 The following Schedules to this By-law form an integral part of this By-law.

Schedule "A"	Designated Services
Schedule "B"	Residential and Non-Residential Development Charges

22. By-law Registration

22.1 A certified copy of this By-law may be registered on title to any land to which this By-law applies.

23. Date By-law Effective

23.1 This By-law comes into force upon passing and takes effect on the date of passing.

24. Date By-law Expires

24.1 This By-law expires five years after the date on which it comes into force.

25. Repeal

25.1 THAT the Township of Russell By-law No. 5-2014, and any amendments, are hereby repealed on the effective date this By-law comes into force.

26. Headings for Reference Only

26.1 The headings inserted in this By-law are for convenience of reference only and shall not affect the construction or interpretation of this By-law.

27. Severability

27.1 If, for any reason, any provision, section, subsection or paragraph of this Bylaw is held invalid, it is hereby declared to be the intention of Council that all the remainder of this By-law shall continue in full force and effect until repealed, reenacted or amended, in whole or in part or dealt with in any other way.

READ A FIRST, SECOND AND THIRD TIME THIS ___th day of _____ 2016.

THE CORPORATION OF THE TOWNSHIP OF RUSSELL

MAYOR

CLERK

THE CORPORATION OF THE TOWNSHIP OF RUSSELL

DEVELOPMENT CHARGE BY-LAW NO. __-2016

SCHEDULE "A"

DESIGNATED SERVICES

- 1. Roads and Related**
- 2. Fire Protection**
- 3. Police**
- 4. Parks and Recreation**
- 5. Library**
- 6. Administration**
- 7. By-law Enforcement**
- 8. Wastewater Services**
- 9. Water Services**

THE CORPORATION OF THE TOWNSHIP OF RUSSELL

DEVELOPMENT CHARGE BY-LAW NO. __-2016

SCHEDULE "B"

Service	RESIDENTIAL					NON-RESIDENTIAL
	Single, Semi-Detached and Duplex Dwelling	Apartments - 2 Bedrooms +	Apartments - Bachelor and 1 Bedroom	Other Multiples	Special Care/Special Needs Dwelling Units	(per ft ² of Gross Floor Area)
Municipal Wide Services:						
Roads and Related	\$ 2,248	\$ 1,223	\$ 884	\$ 1,386	\$ 707	\$ 0.66
Fire Protection Services	\$ 652	\$ 355	\$ 256	\$ 402	\$ 205	\$ 0.19
Police Services	\$ 33	\$ 18	\$ 13	\$ 20	\$ 10	\$ 0.01
Parks & Recreation Services	\$ 3,911	\$ 2,128	\$ 1,537	\$ 2,411	\$ 1,230	\$ 0.26
Library Services	\$ 454	\$ 247	\$ 179	\$ 280	\$ 143	\$ 0.03
Administration	\$ 118	\$ 64	\$ 46	\$ 73	\$ 37	\$ 0.04
By-law Enforcement	\$ 14	\$ 8	\$ 6	\$ 9	\$ 4	\$ -
Total Municipal Wide Services	\$ 7,431	\$ 4,043	\$ 2,921	\$ 4,581	\$ 2,336	\$ 1.19
Urban Services						
Wastewater Services	\$ 3,929	\$ 2,137	\$ 1,544	\$ 2,422	\$ 1,236	\$ 1.42
Water Services	\$ 4,269	\$ 2,322	\$ 1,678	\$ 2,631	\$ 1,342	\$ 1.57
Total Urban Services	\$ 8,198	\$ 4,459	\$ 3,222	\$ 5,053	\$ 2,578	\$ 2.99
GRAND TOTAL RURAL AREA	\$ 7,431	\$ 4,043	\$ 2,921	\$ 4,581	\$ 2,336	\$ 1.19
GRAND TOTAL URBAN AREA	\$ 15,629	\$ 8,502	\$ 6,143	\$ 9,634	\$ 4,914	\$ 4.18