TOWERS WATSON

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Private and Confidential

October 29, 2015

Canada Revenue Agency
Information Holdings Operation Section - Pensions
Registered Plans Directorate
875 Heron Road, A-200
Ottawa ON   K1A 1A2

Subject: **The Hamilton Municipal Retirement Fund**
Registration No. 0275123

Dear Sir/Madam:

We are pleased to submit for your approval the actuarial valuation report as at December 31, 2014 and the Actuarial Information Summary.

A copy of this report has been filed with the Financial Services Commission of Ontario.

Please contact us should you have any questions.

Yours sincerely

Bill Liu
Consulting Actuary

Enclosures

Copy: Ralph Caughell, The City of Hamilton
Barb Howe, The City of Hamilton

THE CORPORATION OF THE CITY OF HAMILTON

HAMILTON MUNICIPAL RETIREMENT FUND

Actuarial Valuation as at December 31, 2014

October 2015

Registration Number 0275123

TOWERS WATSON

Table of Contents

Introduction

Purpose

This report with respect to the Hamilton Municipal Retirement Fund (the “Plan”) has been prepared for The Corporation of The City of Hamilton (the “Employer” or “City”) and presents the results of the actuarial valuation of the plan as at December 31, 2014.

The principal purposes of the report are:

- to present information on the financial position of the plan on both going concern and solvency bases;
- to review the hypothetical windup status of the plan;
- to provide the basis for employer contributions; and
- to provide certain additional information required for the administration of the plan.

This report outlines the changes in the plan’s financial situation since the previous actuarial valuation at December 31, 2011, provides the information and the actuarial opinion required by the *Pension Benefits Act (Ontario)* and Regulation thereto and provides the information required to maintain plan registration under the *Income Tax Act (Canada)* and Regulations thereto.

This report summarizes the results of the actuarial valuation and contains an actuarial opinion as an integral part of the report. Supporting detailed information on the significant terms of engagement, assets, actuarial basis, membership data and plan provisions is contained in the Appendices.

The information contained in this report was prepared for the Employer, for its internal use and for filing with the Financial Services Commission of Ontario and the Canada Revenue Agency, in connection with the actuarial valuation of the Plan prepared by Towers Watson Canada Inc. (“Towers Watson”). This report is not intended, nor necessarily suitable, for other parties or for other purposes. Further distribution of all or part of this report to other parties (except where such distribution is required by applicable legislation) or other use of this report is expressly prohibited without Towers Watson's prior written consent. Towers Watson is available to provide additional information with respect to this report to the above-mentioned intended users upon request.

Significant Events Since Previous Actuarial Valuation

Actuarial Basis

Since the previous actuarial valuation, the assumptions used in the solvency and hypothetical windup valuations have been updated to reflect market conditions at the actuarial valuation date. In addition, there has been a change to the going concern and solvency actuarial basis, as follows:

- for going concern valuation, the assumed rates of mortality were updated from UP94 projected to 2011 using projection scale AA to CPM2014-Public projected generationally using projection scale B with a 1.00 pension size adjustment factor.

- the going concern asset valuation method was changed from the actuarial value of assets (smoothed value of assets) to the market value of asset.

- the solvency asset valuation method was changed from the actuarial value of assets (smoothed value of assets) to the market value of asset, and smoothing of discount rates was removed.

Plan Provisions

This actuarial valuation reflects the plan provisions as at December 31, 2014 and does not make any provision for the possibility that a change or action (retroactive or otherwise) may be imposed by order of a regulatory body or a court as we were not aware of any definitive events that would require such change or action at the time this actuarial valuation was completed.

There have been no changes to the plan provisions since the previous actuarial valuation that affect the valuation's results.

Legislative and Actuarial Standards Updates

Since the previous actuarial valuation, the *Standards of Practice for Pension Commuted Values* published by the Canadian Institute of Actuaries effective February 1, 2011 were revised to provide for, effective February 1, 2014, updates to the mortality assumption as promulgated from time to time by the Actuarial Standards Board (ASB). On December 4, 2014 and April 27, 2015, the ASB proposed to promulgate the use of the mortality rates underlying the 2014 Canadian Pensioners Mortality Table (CPM2014) combined with the mortality improvement scale CPM Improvement Scale B (CPM-B) for calculations, effective October 1, 2015. The revised mortality rates have not been reflected for purposes of the solvency and hypothetical windup valuations but will be reflected in the next actuarial valuation.

Effective July 1, 2012, amendments to the *Pension Benefits Act (Ontario)* provide that certain members employed in the province of Ontario whose employment is terminated involuntarily will be eligible to grow-in to the plan's early retirement subsidies and all members employed in the province of Ontario will vest immediately in their accrued pension. These amendments to the *Pension Benefits Act (Ontario)* has no financial impact on such actuarial valuation results since the Plan is closed to new entrants and there are no active members in the Plan at December 31, 2014.

On December 8, 2010, Ontario Bill 120, *Securing Pension Benefits Now and for the Future Act, 2010*, received Royal Assent. The amendments under Bill 120 provide a framework for certain changes in funding rules for plans registered in the province of Ontario, some of which will be effective at a date to be proclaimed. The effect of future changes to funding rules resulting from Bill 120 has not been reflected in this report. Future changes to contribution requirements resulting from Bill 120 will be reflected in the first actuarial opinion prepared and filed on or after the effective date of the relevant section(s) of Bill 120.

In November 2012, the Regulation to the *Pension Benefits Act (Ontario)* was amended to allow deferring for up to 12 months the commencement of the period during which special payments are required to be made to liquidate any new going concern unfunded actuarial liability and/or statutory solvency deficiency revealed at the actuarial valuation date.

Subsequent Events

We completed this actuarial valuation on October 2015.

Other than the legislative and actuarial standards updates mentioned above, to the best of our knowledge and on the basis of our discussions with The Corporation of The City of Hamilton, no events which would have a material financial effect on the actuarial valuation occurred between the actuarial valuation date and the date this actuarial valuation was completed.

Section 1: Going Concern Financial Position

1.1 Statement of Financial Position

	December 31, 2014			December 31, 2011
	Fire	Others	Total	Total
Going Concern Value of Assets	$ 72,891,800	$ 9,258,300	$ 82,150,100	$ 83,512,100
Actuarial Liability				
Active members	$ 0	$ 0	$ 0	$ 0
Retired members	47,611,700	2,454,800	50,066,500	56,972,100
Beneficiaries	14,769,600	2,535,700	17,305,300	15,063,800
Terminated vested members	0	122,100	122,100	116,800
Provision for future pension increases	9,834,800	492,400	10,327,200	11,056,800
Total actuarial liability	$ 72,216,100	$ 5,605,000	77,821,100	$ 83,209,500
Actuarial Surplus (Unfunded Actuarial Liability)	$ 675,700	$ 3,653,300	$ 4,329,000	$ 302,600

Comments:

- The financial position of the plan on a going concern basis is determined by comparing the going concern value of assets to the actuarial liability and is a reflection of the assets available for the benefits accrued in respect of credited service prior to the actuarial valuation date assuming the plan continues indefinitely.
- The split of assets between “Fire” and “Other” groups is provided by the City, based on the pension payroll in effect at the valuation date.
- The increase in the actuarial liability as at December 31, 2014 that would result from a 1% decrease in the assumed liability discount rate is $6,339,500. For purposes of this calculation, no changes were made to any of the other actuarial assumptions or actuarial methods.

1.2 Reconciliation of Financial Position

Actuarial surplus (unfunded actuarial liability) as at December 31, 2011		$ 302,600
Expected interest on actuarial surplus (unfunded actuarial liability)		47,700
Plan experience:		
• Investment gains (losses)	$ 907,200	
• Mortality gains (losses)	1,162,600	
• Pension increases less than 2.00% per annum assumed	974,500	
• Gains (losses) from miscellaneous sources	13,200	3,057,500
Change in actuarial basis		
• Asset valuation method	8,544,700	
• Demographic assumption	(7,623,500)	921,200
Actuarial surplus (unfunded actuarial liability) as at December 31, 2014		$ 4,329,000

Section 2: Solvency and Hypothetical Windup Financial Position

2.1 Statement of Solvency Financial Position

	December 31, 2014			December 31, 2011
	Fire	Others	Total	Total
Solvency Value of Assets				
Market value of assets	$ 72,891,800	$ 9,258,300	$ 82,150,100	$ 78,087,700
Provision for plan windup expenses	(88,700)	(11,300)	(100,000)	(100,000)
Total	$ 72,803,100	$ 9,247,000	$ 82,050,100	$ 77,987,700
Solvency Liability				
Active members	$ 0	$ 0	$ 0	$ 0
Retired members	54,416,400	2,648,400	57,064,800	65,899,800
Beneficiaries	16,689,100	2,747,200	19,436,300	17,123,000
Terminated vested members	0	122,100	122,100	116,800
Total actuarial liability	$ 71,105,500	$ 5,517,700	76,623,200	83,139,600
Solvency Surplus (Unfunded Solvency Liability)	$ 1,697,600	$ 3,729,300	$ 5,426,900	$ (5,151,900)

Comments:

- The financial position of the plan on a solvency basis is determined by comparing the solvency value of assets to the solvency liability (the actuarial present value of benefits accrued in respect of credited service prior to the actuarial valuation date, calculated as if the plan were wound up on that date). No allowance was made for subsequent benefit changes which will become effective after January 1st of the ensuing year.

- The split of assets between “Fire” and “Others” groups is provided by the City, based on the pension payroll in effect at the valuation date.

- The solvency actuarial valuation results presented in this report are determined under a scenario where, following a plan windup, the employer continues its operations.

- Under an amendment to the Regulation to the *Pension Benefits Act (Ontario)*, the employer had the option prior to November 26, 1992 to make an election to exclude from the solvency liability any benefits relating to plant closure and permanent layoff. This plan does not have any such benefits.

- In addition, the Regulation permits certain benefits to be excluded from the solvency liability, without requiring the employer to make an election. Pursuant to the directions from the Employer, the cost-of-living adjustments have been excluded from the solvency valuation. The full solvency liability, taking into account all of the benefits excluded under the Regulation, is $96,664,100 as at December 31, 2014.

- The increase in the solvency liability as at December 31, 2014 that would result from a 1% decrease in the assumed liability discount rate is $6,268,600. For purposes of this calculation, no changes were made to any of the other actuarial assumptions or actuarial methods.

2.2 Hypothetical Windup Financial Position

The hypothetical windup valuation results presented in this report are determined under a scenario where, following a plan windup, the employer continues its operations.

If the plan were to be wound up on the valuation date, the hypothetical windup value of assets would be equal to the solvency value of assets. As permitted by the Regulation to the *Pension Benefits Act (Ontario),* the employer has elected to exclude certain benefits from the solvency liability. The full hypothetical windup liability, taking into account all of the benefits excluded under the Regulation, is $96,664,100 as at December 31, 2014. Consequently, the hypothetical windup surplus (unfunded hypothetical windup liability) as at the actuarial valuation date is $(14,614,000).

2.3 Solvency Incremental Cost

The solvency incremental cost for a given year represents the present value, at the valuation date, of the expected aggregate change in the solvency liability during the year, increased for expected benefit payments during the year. The solvency incremental costs in respect of each year between December 31, 2014 and December 31, 2017, the next valuation date, are derived from the projection of the solvency liability, as follows:

	2015	**2016**	**2017**
Projected solvency liability as at beginning of year	$ 76,623,200	$ 73,052,800	$ 69,531,500
Solvency incremental cost for the year[1]	1,907,300	1,857,600	1,804,800
Interest on projected solvency liability, solvency incremental cost and expected benefit payments	1,649,600	1,572,000	1,494,100
Expected benefit payments during year	(7,127,300)	(6,950,900)	(6,879,200)
Projected solvency liability as at end of year	$ 73,052,800	$ 69,531,500	$ 65,951,200

Note:

[1] These amounts are as at the beginning of the year. The solvency incremental cost, adjusted with interest as at December 31, 2014, is $1,817,600 for 2016 and $1,727,900 for 2017.

2.4 Determination of the Statutory Solvency Excess (Statutory Solvency Deficiency)

The minimum funding requirements under the Regulation to the *Pension Benefits Act (Ontario)* are based on the statutory solvency excess (statutory solvency deficiency) as at the valuation date. In calculating the statutory solvency excess (statutory solvency deficiency), various adjustments can be made to the solvency financial position including:

- recognition of the present value of existing amortization payments, including any going concern amortization payments established at the valuation date, due to be paid within the periods prescribed by the Regulation (however, amortization payments for future benefit increases excluded in the calculation of the solvency liability have not been included in the present value of existing amortization payments);

- smoothing of the asset value by use of an averaging technique;

- adjustment to the solvency liability by use of an averaging technique in determining the discount rate used to value the liabilities; and

- removal of any prior year credit balance from the asset value.

To the extent that there exists a statutory solvency deficiency, after taking account of these adjustments, additional amortization payments must be made. If there is no statutory solvency deficiency, the statutory solvency excess may be used to reduce the period of existing solvency amortization payments, if any.

Statutory Solvency Excess (Statutory Solvency Deficiency)

	December 31, 2014	December 31, 2011
Solvency surplus (unfunded solvency liability)	$ 5,426,900	$ (5,151,900)
Adjustments to solvency position:		
• Present value of existing amortization payments	$ 0	$ 0
• Smoothing of asset value	0	5,424,400
• Averaging of liability discount rate	0	6,620,800
• Prior year credit balance	0	0
• Total	$ 0	$ 12,045,200
Statutory solvency excess (statutory solvency deficiency)	$ 5,426,900	$ 6,893,300

Section 3: Contribution Requirements

3.1 Contributions for Current Service (Ensuing Year)

There are no active members in the plan and therefore no contributions required for current service.

3.2 Estimated Minimum Employer Contribution (Ensuing Year)

	December 31, 2014	December 31, 2011
Employer Normal Actuarial Cost	$ 0	$ 0
Amortization Payments		
Going concern	$ 0	$ 0
Solvency	0	0
Total	$ 0	$ 0
Application of Surplus	0	0
Estimated Minimum Employer Contribution	$ 0	$ 0

3.3 Estimated Maximum Employer Contribution (Ensuing Year)

	December 31, 2014	December 31, 2011
Employer Normal Actuarial Cost	$ 0	$ 0
Greater of the Unfunded Actuarial Liability and the Unfunded Hypothetical Windup Liability	14,614,000	27,477,500
Required Application of Excess Surplus	0	0
Estimated Maximum Employer Contribution	$ 14,614,000	$ 27,477,500

Comment:

- The *Income Tax Act (Canada)* permits the employer to make contributions up to the above amount less the amortization payments made in respect of periods since December 31, 2014, provided that all assumptions made for the purposes of the hypothetical windup valuation remain reasonable at the time each contribution is made. In addition, the maximum employer contribution is to be adjusted with interest for the period between the actuarial valuation date and the date each contribution is made.

3.4 Timing of Contributions

To satisfy the requirements of Ontario pension legislation, the employer normal actuarial cost must be paid monthly and within 30 days of the month to which it pertains while the amortization payments must also be paid monthly but within the period to which they are applicable.

In addition, within 60 days after this report is filed with the Financial Services Commission of Ontario, the employer must make a special contribution equal to the excess, if any, of:

- the amount of employer contributions (employer normal actuarial cost and amortization payments) that should have been paid after December 31, 2014 according to the minimum contribution requirements revealed by this report (determined with regard to any reported prior year credit balance available to meet these minimum contribution requirements), over

- the actual amount of employer contributions made in respect of periods after December 31, 2014.

Interest must be added to this excess, with such interest determined by reference to the going concern discount rate for payments in respect of employer normal actuarial cost or going concern amortization payments and the solvency discount rate for payments in respect of solvency amortization payments.

To satisfy the requirements of the *Income Tax Act (Canada)*, employer contributions that are remitted to the plan in the taxation year or within 120 days after the end of such taxation year are deductible in such taxation year provided they were made to fund benefits in respect of periods preceding the end of the taxation year.

3.5 Other Statutory Contributions

Additional contributions may be required in respect of the transfer values for members who terminate employment or active plan membership. Where applicable, such additional contributions must be remitted before the related transfer value may be paid in full to the terminated member. Details are provided in Appendix G.

3.6 Future Contribution Levels

Future contribution levels may change as a result of future changes in the actuarial methods and assumptions, the membership data, the plan provisions and the legislative rules, or as a result of future experience gains or losses, none of which have been anticipated at this time. Emerging experience, differing from the assumptions, will result in gains or losses that will be revealed in future actuarial valuations.

Section 4: Actuarial Certification and Opinion

4.1 Actuarial Certification

Based on the results of these actuarial valuations, we hereby certify that, in our opinion, as at December 31, 2014:

- The plan does not have a prior year credit balance.

- The actuarial surplus (unfunded actuarial liability), determined by comparing the actuarial liability, the measure of obligations of the plan on a going concern basis, to the going concern value of assets, is $4,329,000.

- The solvency surplus (unfunded solvency liability), determined by comparing the solvency liability, as defined in the Regulation to the *Pension Benefits Act (Ontario)*, to the solvency value of assets, is $5,426,900.

- The statutory solvency excess (statutory solvency deficiency) revealed at this actuarial valuation is $5,426,900. Since there is no statutory solvency deficiency, no solvency amortization payments are required in order to comply with the Regulation to the *Pension Benefits Act (Ontario)*.

- The hypothetical windup surplus (unfunded hypothetical windup liability), determined by comparing the hypothetical windup liability, the measure of the obligations of the plan on a hypothetical windup basis including the value of any potential obligations that may have been excluded for purposes of the solvency valuation, to the hypothetical windup value of assets, is $(14,614,000).

- The excess actuarial surplus, pursuant to section 147.2(2) of the *Income Tax Act (Canada)*, is $0.

- There are no active members in the Plan and therefore no contributions required for current service.

- The maximum employer contributions permissible under the *Income Tax Act (Canada)* are described in Section 3.

- The transfer ratio, as defined in the Regulation to the *Pension Benefits Act (Ontario)*, is 0.85. The solvency ratio, defined as the ratio of the solvency value of assets prior to deduction of the provision for plan windup expenses to the solvency liabilities, is not less than 1.00.

- As a result of Ontario Regulation 73/95, coverage under the Pension Benefit Guarantee Fund is exempted and Fund Assessment is not required.

- In accordance with the Regulation to the *Pension Benefits Act (Ontario)*, the next actuarial valuation should be performed with an effective date not later than December 31, 2017. The basis for employer contributions presented in this report is effective until the next actuarial opinion is filed.

4.2 Actuarial Opinion

In our opinion:

- the membership data on which the actuarial valuations are based are sufficient and reliable for the purposes of the going concern, solvency and hypothetical windup valuations,
- the assumptions are appropriate for the purposes of the going concern, solvency and hypothetical windup valuations, and
- the methods employed in the actuarial valuations are appropriate for the purposes of the going concern, solvency and hypothetical windup valuations.

This report has been prepared, and our opinions given, in accordance with accepted actuarial practice in Canada. The actuarial valuations have been conducted in accordance with our understanding of the funding and solvency standards prescribed by the *Pension Benefits Act (Ontario)* and Regulation thereto, and in accordance with our understanding of the requirements of the *Income Tax Act (Canada)* and Regulations thereto. This actuarial opinion forms an integral part of the report.

The results presented in this report have been developed using a particular set of actuarial assumptions. Other results could have been developed by selecting different actuarial assumptions. The results presented in this report are reasonable actuarial results based on actuarial assumptions reflecting our expectation of future events.

Towers Watson Canada Inc.

Bill Liu, FSA
Fellow of the Canadian Institute of Actuaries

Chat Le, FSA
Fellow of the Canadian Institute of Actuaries

Toronto, Ontario
October 2015

Appendix A: Significant Terms of Engagement

For purposes of preparing this actuarial valuation report, the Employer has directed that:

- The actuarial valuation is to be prepared as at December 31, 2014.

- For purposes of the going concern valuation, the terms of engagement require the use of the margins for adverse deviations mentioned in Appendix C.

- For purposes of determining the going concern liability discount rate, the target asset class distribution is to be established in accordance with the investment policy dated October 2014, which is the most up to date version.

- For purposes of determining the going concern financial position of the plan, the going concern value of assets is to be determined using the market value of assets as described in the Going Concern Asset Valuation Method section in Appendix C.

- For purposes of determining the solvency liabilities of the plan, certain benefits are to be excluded, as permitted by the Regulation to the *Pension Benefits Act (Ontario)*, without requiring an election from the employer.

- For purposes of determining the statutory solvency financial position of the plan, the solvency value of assets is to be determined using the market value of assets as described in the Asset Valuation Method and Rationale for Actuarial Assumptions sections in Appendix D.

- Since to the best of the knowledge of the plan administrator, there is no partial plan windup with an effective date prior to the date of this valuation, involving members employed in Ontario, not yet completed where the partial windup portion of the plan is in a surplus position on the date of this valuation, this report is to be prepared on the basis that there will be no retroactive changes to previously filed partial windup reports, if any, and neither the applicable pension regulator nor the plan sponsor will order/declare any partial plan windup with an effective date prior to the actuarial valuation date.

- The solvency and hypothetical windup valuation results presented in this report are to be determined under a scenario where all expenses are paid from the pension fund.

- This report is to be prepared on the basis that the plan administrator is deferring the commencement of new going concern special payments determined in this report for 12 months.

Should these directions from the plan administrator be amended or withdrawn, Towers Watson reserves the right to amend or withdraw this report.

Appendix B: Assets

Statement of Market Value

	December 31, 2014	December 31, 2011
Invested assets:		
• Canadian equities	$ 22,815,300	$ 29,291,600
• Foreign equities	25,562,600	13,472,600
• Fixed income	32,342,000	34,027,000
• Cash and short-term investments	1,454,900	1,120,000
• Total invested assets	$ 82,174,800	$ 77,911,200
Net outstanding amounts:		
• Contributions receivable	$ 0	$ 0
• Investment income receivable	85,300	235,300
• Benefits payable	0	0
• Expenses and other payables	(110,000)	(58,800)
• Total net outstanding amounts	$ (24,700)	$ 176,500
Total	$ 82,150,100	$ 78,087,700

Comments:

- The invested assets are held by RBC Investor Service.

- The data relating to the invested assets are based on the audited financial statements provided by the City. All such data has been relied upon by Towers Watson following tests of reasonableness with respect to contributions, benefit payments and investment income. However, Towers Watson has not independently audited or verified this data.

Asset Class Distribution

The following table shows the target asset allocation stipulated by the plan's investment policy in respect of various major asset classes and the actual asset allocation as at December 31, 2014.

	Target asset allocation [1]	**Asset allocation as at December 31, 2014** [2]
Canadian equities	30%	28%
Foreign equities	30%	31%
Fixed income	40%	39%
Cash and short-term investments	0%	2%
Total	100%	100%

Notes:

[1] This information was obtained from the investment policy in effect for the plan as at December 31, 2014.

[2] This information was obtained from The Corporation of The City of Hamilton. All such data have been relied upon by Towers Watson and compared against the target asset allocation to assess reasonableness. However, Towers Watson has not independently audited or verified these data.

Reconciliation of Total Assets (Market Value)

		2014		2013		2012
Assets as at January 1	$	80,067,900	$	78,258,800	$	78,087,700
Receipts:						
• Contributions	$	0	$	0	$	0
• Investment income		9,635,700		9,595,600		8,258,100
• Total receipts	$	9,635,700	$	9,595,600	$	8,258,100
Disbursements:						
• Pension payments	$	7,144,200	$	7,415,300	$	7,682,000
• Fees		409,300		371,200		405,000
• Total disbursements	$	7,553,500	$	7,786,500	$	8,087,000
Assets as at December 31	$	82,150,100	$	80,067,900	$	78,258,800

Comments:

- This reconciliation is based on the financial statements provided by the City. All such data has been relied upon by Towers Watson following tests of reasonableness with respect to contributions, benefit payments and investment income. However, Towers Watson has not independently audited or verified this data.

- The rate of return earned on the market value of assets, net of all expenses, from December 31, 2011 to December 31, 2014 is approximately 11.7% per annum.

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Appendix C: Actuarial Basis – Going Concern Valuation

Methods

Asset Valuation Method

Pending the final regualations on conversions of public plans to JSPPs, the City is considering merging the closed plans, including the Plan, with a JSPP plan. As a result, the going concern asset valuation method was changed to the market value of invested assets at the actuarial valuation date, adjusted for net outstanding amounts.

For the previoius valuation, the actuarial value of assets was calculated as the average of the market value of total assets at the valuation date and the four previous years' adjusted market values. To obtain these adjusted market values, the market values at December 31 of each of the four preceding years were accumulated to the valuation date with net cash flow (contributions less benefit payments) and assumed investment return. Net cash flow was assumed to occur uniformly throughout each year. Assumed investment return for a year was calculated as the applicable going concern interest rate for those periods.

The going concern liability discount rate has been selected to equal the expected return on the assets over long periods of time, having regard to the investment policy of the pension fund. As such, no bias is expected in the asset valuation method.

Actuarial Cost Method

The actuarial liability was calculated using the projected unit credit cost method.

The actuarial liability for retired members and beneficiaries and terminated vested members was calculated as the actuarial present value of their respective benefits.

Since there are no more active members remaining in the plan, there is no normal actuarial cost for this plan.

Actuarial Assumptions

	December 31, 2014	December 31, 2011
Economic Assumptions (per annum)		
Liability discount rate	5.00%	5.00%
Rate of inflation	2.00%	2.00%
Post-retirement pension increases	2.00%	2.00%
Demographic Assumptions		
Mortality	2014 Public Sector Canadian Pensioners' Mortality Table, projected generationally using Scale B (refer to Table 1)	1994 Uninsured Pensioner Mortality Table, projected to 2011 using Scale AA
Other		
Years male spouse older than female spouse	3	3
Provision for non-investment expenses	None; return on plan assets is net of all expenses	None; return on plan assets is net of all expenses

Table 1 — Sample Mortality Rates

CPM 2014 Mortality Table- based on public sector data [1]			Scale B Mortality Improvement Table [2]		
Age	**Male**	**Female**	**Age**	**Male**	**Female**
20	0.00076	0.00018	20	0.02063	0.01095
25	0.00100	0.00024	25	0.01937	0.00884
30	0.00111	0.00030	30	0.02526	0.01095
35	0.00111	0.00042	35	0.02737	0.01305
40	0.00126	0.00060	40	0.02400	0.01389
45	0.00176	0.00086	45	0.01726	0.01137
50	0.00246	0.00128	50	0.01389	0.01095
55	0.00363	0.00206	55	0.01867	0.01297
60	0.00531	0.00348	60	0.02344	0.01499
65	0.00762	0.00558	65	0.02821	0.01701
70	0.01169	0.00880	70	0.02821	0.01701
75	0.01999	0.01459	75	0.02737	0.01701
80	0.03735	0.02711	80	0.02653	0.01701
85	0.07217	0.05316	85	0.01792	0.01682
90	0.13540	0.10233	90	0.00918	0.00918
95	0.24273	0.18859	95	0.00054	0.00054
100	0.36639	0.31779	100	0.00047	0.00047
105	0.47904	0.41916	105	0.00047	0.00047

Notes:

1 The mortality rates for years after 2014 are computed using the mortality rates for the year 2014 (q_x^{2014} rates) and mortality improvement rates (I_x rates).

2 Using the q_x^{2014} rates and the I_x rates defined above, the resulting mortality rate for age x in calendar year y is:
$q_x^y = q_x^{2014} \bullet (1 - I_x)^{y-2014}$.

Rationale for Actuarial Assumptions

The rationale for the material actuarial assumptions used in the going concern valuation is summarized below.

The going concern assumptions do not include margins for adverse deviations, except as noted below.

Liability discount rate

Valuation economic assumptions used for establishing the liability discount rate have been developed based on Towers Watson’s capital market model. The capital market model simulates economic variables (e.g. inflation and yields) and asset class returns, with the assumptions being developed through both the analysis of historical rates and returns, and the application of econometric theory. In modeling inflation and bond yields, current conditions and long term expectations are used and the serial correlation inherent in these parameters is recognized.

Our long term nominal rate of return assumption was determined using the expected long term asset mix for the plan, which is consistent with the target mix found in the investment policy in effect for the plan as at the valuation date.

Based on Towers Watson's capital market model, a best estimate long term gross nominal rate of return as at December 31, 2014 of 6.09% is appropriate. The following adjustments were subsequently made before selecting the long term nominal rate of return assumption:

● Best estimate long term nominal rate of return before adjustments	6.09%
● Adjustment for expenses paid by the plan	(0.50)
● Best estimate long term nominal rate of return after adjustments	5.59%

In the selection of the discount rate, we have assumed that additional returns associated with employing an active investment management strategy would equal the additional expenses associated with employing such strategy. Consequently, we have disregarded any potential additional returns.

We established 5.00% as the nominal rate of return assumption for the plan allowing for a 0.59% margin for adverse deviations.

In carrying out the plan's investment policy, the plan administrator has opted to invest the plan's assets in a diversified portfolio, which includes certain asset classes subject to risk that provide potential for higher return. The investment return assumption used in this actuarial valuation to discount future expected benefit payments includes an estimated risk premium for investment of fund assets in instruments subject to risk. Based on historical experience, assets invested in instruments subject to risk are normally expected to yield higher returns in the long-run than assets invested in low-risk investments, but these returns may fluctuate significantly from year to year and not necessarily in line with changes in the plan's liabilities over long periods of time. As a result, investing in riskier asset classes will generally increase the potential for future asset-liability mismatch, which could lead to greater volatility in the plan's financial position and minimum contribution requirements.

Rate of inflation

The assumption reflects an estimate of future rates of inflation considering economic and financial market conditions at the valuation date.

Post-retirement pension increases

The assumption has been determined by applying the post-retirement increase provision specified in the plan to the inflation assumption.

Mortality

The 2014 Public Sector Canadian Pensioners' Mortality Table (CPM2014Publ) is based on a mortality experience study for calendar years 1999 to 2008 conducted by the Canadian Institute of Actuaries on a sample of Canadian registered pension plans. The CPM2014Publ table allows adjustments to the mortality rates based on pension size and/or industry classification. Improvement Scale B (CPM-B) is a two-dimensional scale developed by the Canadian Institute of Actuaries based primarily on the mortality experience of pensioners under the Canada Pension Plan (CPP) and the Québec Pension Plan (QPP) up to 2007 as well as the assumptions used in the 26th CPP Actuarial Report.

Base mortality rates from the CPM2014Publ table are considered reasonable for the actuarial valuation of the plan given that the mortality experience of the plan membership is insufficient to assess plan-specific experience, and there is no reason to expect the mortality experience of the plan to differ significantly from that of other pension plans covering membership groups with similar characteristics. Applying improvement scale CPM-B generationally provides allowance for improvements in mortality after 2014 and is considered reasonable for projecting mortality experience into the future.

No allowance has been made for mortality prior to retirement with respect to terminated vested members in order to approximate the value of pre-retirement death benefits.

At the previous actuarial valuation, the 1994 Uninsured Pensioner Mortality Table projected to 2011 using Scale AA was used.

Years male spouse older than female spouse

When provided, the actual data on the spouse were used for retired members. For other members, the assumption is based on surveys of the age difference in the general population and an assessment of future expectations for members of the plan.

Provision for expenses

The liability discount rate is net of all expenses. The assumed level of expenses reflected in the liability discount rate is based on recent experience of the plan and an assessment of future expectations.

Appendix D: Actuarial Basis – Solvency and Hypothetical Windup Valuations

Methods

Asset Valuation Method

The market value of assets, adjusted for net outstanding amounts, has been used for the solvency and hypothetical windup valuations. The resulting value has been reduced by a provision for plan windup expenses.

For the previous valuation, assets deemed to be available for purposes of the solvency valuation are equal to the sum of:

i. the market value of assets, reduced by a provision for plan windup expenses; and

ii. the amount by which the actuarial value of assets (a five-year average smoothed value of assets as described in Appendix C) exceeds (or is exceeded by) the market value.

Liability Calculation Method

The solvency and hypothetical windup liabilities for retired members and beneficiaries and terminated vested members were calculated as the actuarial present value of their respective benefits.

For previous valuation, smoothed discount rates were used to calculate the adjusted solvency liability.

Other Considerations

The solvency and hypothetical windup actuarial valuations have been prepared on a hypothetical basis. In the event of an actual plan windup, the plan assets may have to be allocated between various classes of plan members or beneficiaries as required by applicable pension legislation. Such potential allocation has not been performed as part of these solvency and hypothetical windup valuations.

Solvency Incremental Cost Actuarial Method

The solvency incremental cost for a given year represents the present value, at the valuation date, of the expected aggregate change in the solvency liability during the year, increased for expected benefit payments during the year.

The solvency incremental cost reflects expected decrements and related changes in membership status, any expected changes in benefits, entitlements, and pension formula or increases in the maximum pension limits during the year.

The solvency incremental cost has been calculated for each year until the next valuation date as the projected solvency liability at the end of the year, minus the solvency liability at the beginning of the year, increased for expected benefit payments during the year. Each of these amounts is discounted to the valuation date using the projected solvency liability discount rate.

The method used to calculate the projected solvency liabilities at each projection date is the same as used in the solvency valuation.

Actuarial Assumptions

	December 31, 2014	December 31, 2011
Economic Assumptions (per annum)		
Liability discount rate (non-smoothed)		
• Annuity purchase (solvency)	2.20%	3.30%
• Annuity purchase (windup)	(0.60)%	0.50%
Liability discount rate (smoothed)		
• Annuity purchase (solvency)	N/A	4.40%
Demographic Assumptions		
Mortality	1994 Uninsured Pensioner Mortality Table, projected generationally using Scale AA	1994 Uninsured Pensioner Mortality Table, projected generationally using Scale AA
Other		
Years male spouse older than female spouse	3	3
Provision for expenses		
• Solvency	$100,000	$100,000
• Hypothetical windup	$100,000	$100,000

Rationale for Actuarial Assumptions

The rationale for the material actuarial assumptions used in the solvency and hypothetical windup valuations is summarized below.

The actuarial assumptions used in the solvency and hypothetical windup valuations do not include margins for adverse deviations.

Liability discount rate

Discount Rates for Solvency and Hypothetical Windup

In the event of a plan windup, it is expected that all liabilities will be settled by a group annuity purchase.

For the calculation of the solvency and hypothetical windup liability, the liability discount rate corresponds to an approximation of the annuity purchase rates as at the valuation date following application of the relevant guidance on assumptions for solvency and hypothetical windup valuations issued by the Canadian Institute of Actuaries' Committee on Pension Plan Financial Reporting. The guidance provides that the approximation of the annuity purchase rate varies in accordance with the duration of the liabilities for non-indexed benefits assumed to be settled by group annuity. The duration of the liabilities assumed to be settled through the purchase of non-indexed annuities is 7.5.

Mortality

The assumption has been set following application of the relevant guidance on assumptions for solvency and hypothetical windup valuations issued by the Canadian Institute of Actuaries' Committee on Pension Plan Financial Reporting.

Years male spouse older than female spouse

See rationale for going concern assumptions in Appendix C.

Provision for expenses

Allowance was made for normal administrative, actuarial, legal and other costs which would be incurred if the plan were to be wound up (excluding costs relating to the resolution of surplus or deficit issues). The valuation is premised on a scenario in which all costs incurred as a result of plan windup were assumed to be paid from the pension fund.

Solvency Incremental Cost Actuarial Assumptions

Demographic and Benefit Projection Actuarial Assumptions

Except as noted below, the projected benefits valued in the solvency liability projection are based on the demographic and benefit projection assumptions used for the going concern valuation described in Appendix C.

New entrants

No allowance has been made for new entrants between the current valuation date and next actuarial valuation date in the demographic projections on the basis that the plan is closed to new entrants.

Solvency Liability Projection Actuarial Assumptions

Except as noted below, the assumptions for the solvency liability projections for purposes of calculating the solvency incremental cost are the same assumptions as those used for the solvency valuation described previously.

Liability discount rate

At the projection date, the unsmoothed solvency discount rates are assumed to remain at the same levels applicable at the valuation date. The discount rates used for calculation of the solvency incremental cost are the unsmoothed solvency discount rates.

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Appendix E: Membership Data

Summary of Membership Data

Active and Disabled Members

There are no remaining active members.

Retired Members

	Fire December 31, 2014			Others December 31, 2014		
	Male	Female	Total	Male	Female	Total
• Number	118	0	118	9	4	13
• Average age	78.5	0	78.5	87.7	89.8	88.3
• Average annual lifetime pension	$ 39,384	$ 0	$ 39,384	$ 37,302	$ 17,484	$ 31,204

Comment:

- The lifetime pension as at December 31, 2014 includes the January 1, 2015 pension increase of 1.80%.

	Fire December 31, 2014		Others December 31, 2014	
Age	Number	Monthly Pension	Number	Monthly Pension
65 – 69	1	$ 4,699	0	-
70 – 74	26	83,583	0	-
75 – 79	47	151,400	0	-
80 +	44	147,591	13	$ 33,804
Total	118	$ 387,273	13	$ 33,804

Beneficiaries

	Fire December 31, 2014			Others December 31, 2014		
	Male	Female	Total	Male	Female	Total
• Number	0	65	65	1	22	23
• Average age	0	78.7	78.7	99.0	85.8	86.3
• Average annual lifetime pension	$ 0	$ 25,292	$ 25,292	$ 7,744	$ 17,520	$ 17,095

Comment:

- The lifetime pension as at December 31, 2014 includes the January 1, 2015 pension increase of 1.80%.

	Fire December 31, 2014		Others December 31, 2014	
Age	Number	Monthly Pension	Number	Monthly Pension
60 – 64	2	$ 4,119	0	-
65 – 69	2	3,821	0	-
70 – 74	14	30,769	1	$ 3,416
75 – 79	22	44,589	2	2,357
80 +	25	53,698	20	26,993
Total	65	$ 136,996	23	$ 32,766

Terminated Vested Members

	December 31, 2014	December 31, 2011
Terminated vested members:		
• Number	3	3
• Average age	93.2	90.2
• Average annual pension	$ 1,190	$ 1,137
• Average accumulated employee contributions	$ 40,707	$ 38,937

Comment:

- The annual pension as at December 31, 2014 includes the January 1, 2015 pension increase of 1.80%.

- The annual pension as at December 31, 2011 includes the January 1, 2012 pension increase of 2.84%.

Review of Membership Data

The membership data were supplied by The Corporation of The City of Hamilton as at December 31, 2014.

The membership data have been relied upon by Towers Watson following tests for reasonableness and found to be sufficient and reliable for the purposes of the valuations. Elements of the data review included the following:

- ensuring that the data were intelligible (i.e., that an appropriate number of records was obtained, that the appropriate data fields were provided and that the data fields contained valid information);
- preparation and review of membership reconciliations to ascertain whether the complete membership of the plan appeared to be accounted for;
- review of consistency of individual data items and statistical summaries between the current actuarial valuation and the previous actuarial valuation;
- review of reasonableness of individual data items, statistical summaries and changes in such information since the previous actuarial valuation date; and
- comparison of the membership data and the plan's financial statements for consistency.

However, the tests conducted as part of the membership data review may not have captured certain deficiencies in the data. We have also relied on the certification of the plan administrator as to the quality of the data.

Membership Reconciliation

	Actives	Terminated Vested	Retired	Beneficiaries	Total
As at December 31, 2011	0	3	159	90	252
• New entrants					
• Non-vested termination					
• Vested termination					
• Disability					
• Retirement					
• Deceased (without beneficiary)			(10)		(10)
• Deceased (with beneficiary)			(18)	18	
• Deceased survivors				(20)	(20)
• Data corrections					
• Net change			(28)	(2)	(30)
As at December 31, 2014	0	3	131	88	222

Appendix F: Summary of Plan Provisions

The following is an outline of the principal features of the plan which are of financial significance to valuing the plan benefits. This summary is based on the plan provisions as at December 31, 2014 including the 2007 amendment with an effective date of January 1, 2006, as provided by The Corporation of The City of Hamilton, and does not make any provisions for the possibility that a change or action (retroactive or otherwise) could be imposed by order of a regulatory body or a court. As the plan consists entirely of pensioners and deferred vested members, plan provisions relating to active members have not been included. It is not a complete description of the plan terms and should not be relied upon for administration or interpretation of benefits. For a detailed description of the benefits, please refer to the plan document.

Normal Retirement Age

Age 60 for Fire employees other than Fire Chief, age 65 for all others.

Amounts of Annual Pension

Normal and Disability Retirement: 2% of average annual earnings in best 5 years before retirement for each year of credited service up to 35 years reduced by 0.675% of the 5 year average earnings up to the average YMPE over the last five years for each year of contributory service after January 1, 1966. Reduction suspended from date of retirement to age 65 for CPP benefit.

Death Benefit

After retirement: Based on election made within range of allowable options.

Withdrawal Benefit

Deferred pensions commence at the normal retirement age.

Inflation Protection

Pension benefits, pensions and deferred pensions shall be inedexed beginning on January 1, 2006, by an inflation related adjustment formula equal to the inflation related adjustment formula used to increase pension benefits, pensions and deferred pensions under the Ontario Municipal Employees Retirement Systems Act, 2006, as amended from time to time, subject to the Income Tax Act.

Appendix G: PBGF Assessment, Transfer Ratio and Solvency Ratio

Pension Benefit Guarantee Fund Assessment

As a result of Ontario Regulation 73/95, coverage under the Pension Benefit Guarantee Fund (PBGF) is exempted and PBGF assessment is not required.

Transfer Ratio and Solvency Ratio

		December 31, 2014
Transfer Ratio		
Solvency value of assets	$	82,150,100
Lesser of estimated employer contributions for the period until the next actuarial valuation and the prior year credit balance	$	0
Hypothetical windup liability	$	96,664,100
Transfer ratio		0.85
Solvency Ratio		
Solvency value of assets	$	82,150,100
Solvency liability	$	76,623,200
Solvency ratio		Not less than 1.00

Comments:

- The solvency value of assets reflects net outstanding amounts. The solvency value of assets is prior to deduction of a provision for plan windup expenses.

- As the transfer ratio is less than 1.00, transfer deficiencies must be paid over a maximum period of five years unless the cumulative transfer deficiencies are within the limits prescribed by the

Regulation to the *Pension Benefits Act (Ontario)* or the employer remits additional contributions in respect of the transfer deficiencies. Pursuant to Regulations 19(4) or 19(5) to the *Pension Benefits Act (Ontario)*, approval of the Superintendent will be required to make commuted value transfers if there has been a significant decline in the transfer ratio after the valuation date.

- Based on the solvency ratio defined as the ratio of solvency value of assets to solvency liabilities, the next valuation of the plan is due with an effective date not later than December 31, 2017.

Appendix H: Certificate of the Plan Administrator

I hereby certify that to the best of my knowledge and belief:

- the significant terms of engagement contained in Appendix A of this report are accurate and reflect the Plan administrator's judgement of the plan provisions and/or an appropriate basis for the actuarial valuation of the plan;
- the information on plan assets forwarded to Towers Watson Canada Inc. and summarized in Appendix B of this report is complete and accurate;
- the data forwarded to Towers Watson Canada Inc. and summarized in Appendix E of this report are a complete and accurate description of all persons who are members of the plan, including beneficiaries who are in receipt of a retirement income, in respect of service up to the date of the actuarial valuation;
- the summary of plan provisions contained in Appendix F of this report is accurate; and
- there have been no events which occurred between the actuarial valuation date and the date this actuarial valuation was completed that may have a material financial effect on the actuarial valuation.

Signature	OCTOBER 28, 2015 Date
MIKE ZEGARAC Name	GENERAL MANAGER Title FINANCE & CORPORATE SERVICES

Appendix I: Actuarial Information Summary

Canada Revenue Agency | Agence du revenu du Canada

ACTUARIAL INFORMATION SUMMARY

Please see the instructions for completing this form. If an item does not apply, enter "N/A".

Part I – Plan Information and Contributions

A. 001. Name of registered pension plan

Hamilton Municipal Retirement Fund

B. 002. Registration number

Canada Revenue Agency: 0275123 **Other:**

C. 003. Is this plan a designated plan? ☐ Yes ☑ No

D. 004. Valuation date of report YYYY MM DD: 2014 12 31

E. 005. End date of period covered by report YYYY MM DD: 2017 12 30

F. 006. Purpose of the report (indicate all reasons for which the report was prepared)

☐ Initial report for a newly established plan
☑ Regular (triennial or annual) report for an ongoing plan
☐ Interim report in respect of an amendment to an ongoing plan
☐ Partial Termination
☐ Termination
☐ Conversion
☐ Other (please explain)

G. Contributions (prior to application of any credits or surplus) for covered period

Periods (see instructions)	Period 1	Period 2	Period 3	Period 4
007. Period start date (YYYY MM DD)	2015 01 01	2016 01 01	2017 01 01	
008. Period end date (YYYY MM DD)	2015 12 31	2016 12 31	2017 12 30	
Normal cost (defined benefit provision) **009.** Members	0	0	0	
010. Employer	0	0	0	
010a. Explicit expense allowance included in employer normal cost above				
Normal cost (money purchase provision) **011.** Members				
012. Employer				
Special payments **013.** Special payments for going-concern unfunded liability and/or solvency deficiency	0	0	0	
Fixed contributions **014.** Estimated dollar amounts of fixed employer and, if applicable, member contributions (defined benefit provision)				
014a. Estimated dollar amounts of fixed employer and, if applicable, member contributions (money purchase provision)				

Part II – Membership and Actuarial Information

H. Membership information

	Number	Average Age	Average Pensionable Service	Average Salary	Average Annual Pension
015. Active members	0	N/A	N/A	N/A	N/A
016. Retired members	219	80.00	N/A	N/A	32,375
017. Other participants	3	93.20	N/A	N/A	1,190

I. Actuarial basis for going-concern valuation (see instructions)

020. Asset valuation method

☑ Market ☐ Smoothed Market ☐ Book ☐ Book and Market combination ☐ Other

021. Liability valuation method

☑ Accrued benefit (unit credit) ☐ Entry age normal ☐ Individual level premium ☐ Aggregate
☐ Other (specify)

I. Actuarial basis for going-concern valuation (cont'd)

Selected actuarial assumptions

Where a flat rate is used, enter the rate under "Ultimate rate" and "N/A" under "Initial rate" and "Number of years."*

	Initial rate	Number of years*	Ultimate rate
Valuation interest rate			
025. Active members	N/A %	N/A	5.00 %
026. Retired members	N/A %	N/A	5.00 %
027. Rate of indexation	N/A %	N/A	2.00 %
028. Rate of general wage and salary increase	N/A %	N/A	N/A %
029. YMPE escalation rate	N/A %	N/A	N/A %
030. *Income Tax Regulations'* maximum pension limit escalation	N/A %	N/A	N/A %
031. Rate of CPI increase	N/A %	N/A	2.00 %

* from valuation date before ultimate rate becomes effective

035. Year *Income Tax Regulations'* maximum pension limit escalation commences ______

036. Mortality table

☐ 1994 GAM Static ☐ 1994 Group Annuity Reserving (GAR) ☐ 1994 UP

☐ 80% of 1983 GAM ☑ Other (specify) CPM2014Publ

036a. Generational Mortality Table
Has an assumption of generational mortality improvements been made? ☑ Yes ☐ No

036b. Projected Mortality Table
Has a projection of mortality improvements been made? ☐ Yes ☑ No

036b.(i) If *yes*, what is the year to which the mortality improvements have been projected (see instructions)? YYYY ______

037. Allowance for promotion, seniority and merit increases

☐ Included in (line **028**) above ☐ Separate scale based on age or service ☑ No allowance

038. Allowance for expenses

038a. Allowance for investment expenses

☑ Implicit ☐ Explicit

038b. Allowance for administrative expenses

☑ Implicit ☐ Explicit

039. If a multi-employer plan, number of hours of work per member per plan year ______

040. Was a withdrawal scale used? ☐ Yes ☑ No

041. Were variable retirement rates used? ☐ Yes ☑ No

042. If *no*, what is the assumed retirement age? 65

J. Actuarial basis for solvency valuation

	Initial rate	Select period	Ultimate rate
Valuation interest rate			
045. Benefits to be settled by lump sum transfer.	N/A %	N/A	N/A %
046. Benefits to be settled by purchase of deferred annuity	N/A %	N/A	N/A %
047. Benefits to be settled by purchase of immediate annuity.	N/A %	N/A	2.20 %
048. Rate of indexation	N/A %	N/A	N/A %

049. Mortality table ☑ 1994 UP Generational ☐ 1994 UP ☐ Other (specify) ______

049a. Year of projection (see instructions) YYYY ______

K. Balance sheet information (DB provisions, see instructions)

050. Market value of assets, adjusted for receivables and payables 82,150,100

051. Amount of contributions receivable included in market value above 0

Going-concern valuation

052. Going-concern assets 82,150,100

053. Optional ancillary contributions account balance included in going-concern assets above for a flexible pension plan (if applicable) ______

Going-concern liabilities

060. For active members 0

061. For retired members 77,699,000

062. For other participants 122,100

063. For optional ancillary benefits to be provided under a flexible pension plan (if applicable) ______

064. Other reserve ______

K. Balance sheet information (DB provisions, see instructions) (cont'd)

070. Net funded position—surplus/deficit 4,329,000

071. Additional voluntary contributions 0

072. Money purchase assets (if applicable) 0

Solvency Valuation

Complete lines **080** to **100** only if the report contains an explicit solvency valuation

Solvency Assets

080. Solvency assets with adjustment for expense provision, if any 82,050,100

081. Amount of wind-up expense provision reflected in line **080** 100,000

082. Optional ancillary contributions account balance included in solvency assets above for a flexible pension plan (if applicable) ....

Solvency Liabilities

090. For active members 0

091. For retired members 76,501,100

092. For other participants 122,100

093. For optional ancillary benefits to be provided under a flexible pension plan (if applicable) ....

094. Other reserve 0

100. Net solvency position—surplus/deficit 5,426,900

If the plan provides benefit increases coming into effect during the period covered by the report but after the valuation date, have those increases been reflected in:

102. The going-concern liabilities in lines **060** to **064**? .... ☐ N/A ☑ Yes ☐ No

103. The solvency liabilities in lines **090** to **094**? .... ☐ N/A ☐ Yes ☑ No

L. Actuarial gains or losses

110. Was a gain or loss analysis done? .... ☑ Yes ☐ No

111. If line **110** is ***yes***, indicate the date of the last filed funding valuation report and the net funded position as at that date .... YYYY 2011 MM 12 DD 31 302,600

If line **110** is ***yes***, indicate amount of gain or loss due to:

112. interest on surplus (unfunded liability) 47,700

113. special payments made ....

114. amounts used for contribution holiday ....

115. change in actuarial assumptions .... (7,623,500)

116. change in the asset valuation method 8,544,700

117. change in liability valuation method ....

118. plan amendments/changes ....

119. investment experience 907,200

120. retirement experience ....

121. mortality experience 1,162,600

122. withdrawal experience ....

123. salary increase experience ....

124. optional ancillary contributions forfeited ....

Are there major contributing sources other than lines **112** to **124** above (if ***yes***, specify)

125. Pension increase less than 2.00% per annum assumed 974,500

126. N/A .... N/A

127. all other sources (combined) 13,200

M. Subsequent events

135. Are there any subsequent event(s) that have not been reflected in the valuation? (refer to the SOP) .... ☐ Yes ☑ No

N. Statements of opinion

136. Does the report include the statements of opinion required by the SOP (data, assumptions, methods, accepted actuarial practice)? .... ☑ Yes ☐ No

136a. Are any of the actuary's statements of opinion qualified? .... ☐ Yes ☑ No

Part III – Information required by the Financial Services Commission of Ontario

Financial Services Commission of Ontario / Commission des services financiers de l'Ontario

O. Additional valuation information

Going-concern valuation

140. Have escalated adjustments been included in going-concern liabilities? ☐ N/A ☑ Yes ☐ No

Solvency valuation

141. Have any of the **excludable** benefits been excluded? ☐ N/A ☑ Yes ☐ No

142. If line **141** is ***yes***, enter the total amount of liabilities being excluded: 20,040,900

143. With respect to the type of benefits provided under the plan for service after the valuation date, complete the following table:

Provision Type	Benefit Accruals for Service After Valuation Date (Yes/No)	Closed (Yes/No)
Defined Benefit	No	Yes
Defined Contribution	No	Yes

144. (i) Has an averaging method been applied to the market value of assets in determining the solvency asset adjustment? ☐ Yes ☑ No

a. If line **(i)** is ***yes***, indicate the positive or negative amount by which the solvency assets are adjusted as a result of applying the averaging method: ____

(ii) Has the averaging method used in determining the solvency asset adjustment changed since the last valuation? ☑ Yes ☐ No

If line **(ii)** is ***yes***, complete **(ii)a** or **(ii)b**, as appropriate:

a. The change in method increases solvency asset adjustment by the amount of: 8,544,700

b. The change in method decreases solvency asset adjustment by the amount of: ____

P. Miscellaneous

145. Prior year credit balance: 0

146. Transfer ratio (express in decimal format): 0.8500

Guarantee fund assessment

147. PBGF liabilities: 0

148. PBGF assessment base: 0

149. Amount of additional liability for plant closure and/or permanent layoff benefits as described in clause 37(4)(a)(ii)(A) of Regulation 909, R.R.O. 1990, as amended: 0

149a. Number of Ontario plan beneficiaries: N/A

Part IV – Information required by the Office of the Superintendent of Financial Institutions Canada

Office of the Superintendent of Financial Institutions Canada / Bureau du surintendant des institutions financières du Canada

Q. Additional solvency valuation information

150a. Adjusted Solvency Ratio at the valuation date: ____

150b. Adjusted Solvency Ratio one year prior (the **prior valuation date**): ____

150c. Adjusted Solvency Ratio two years prior (the **prior second valuation date**): ____

151. Average Solvency Ratio: ____

152a. Solvency Liabilities: ____

152b. Adjusted Solvency Asset Amount: ____

152c. Solvency Deficiency: ____

153. Value of the Letters of Credit included in solvency assets on the valuation date: ____

160. Solvency ratio (express in decimal format): ____

162. Liability for active members who are within 10 years of pensionable age and whose entitlement is valued at an interest rate basis stated on line **045**: ____

163. Liability for active members who are within 10 years of pensionable age and whose entitlement is valued at an interest rate basis stated on line **046**: ____

164. Liability for active members who are not within 10 years of pensionable age: ____

165. Pensionable age:

a. May a member become entitled – with no employer consent required – to an unreduced retirement pension prior to the normal retirement age? ☐ Yes ☐ No

b. If ***yes*** to a., state the applicable age and service conditions:

		Age requirement	Service requirement			Age requirement	Service requirement
Active members	1)			Deferred vested members	1)		
	2)				2)		
	3)				3)		
	4)				4)		
	5)				5)		

c. Are these benefits reflected in the solvency valuation? ☐ N/A ☐ Yes ☐ No

166. Do the liabilities determined in the report include the impact of one or several plan amendments that affect the value of benefits having accrued prior to the report's valuation date, and which were not included in the prior report? ☐ Yes ☐ No

167. Does the report account for one or several plan amendments that affect only the cost of benefits that will accrue after the report's valuation date, and which were not included in the prior report? ☐ Yes ☐ No

168. If the answer to either question **166** or **167** is ***yes***, provide the amendment number and effective date ______ Amendment number

YYYY MM DD ______ Effective date

Part V – Information required by the Canada Revenue Agency

R. Additional information

173. Surplus/deficit determined at the valuation date as per the instructions:

173a. Going-concern basis	4,329,000
173b. Wind-up basis	(14,614,000)
173c. For designated plans, maximum funding valuation basis	

174. Excess surplus determined at the valuation date:

174a. Going-concern basis	
174b. For designated plans, maximum funding valuation basis	

175. For designated plans, employer normal cost determined under the maximum funding valuation basis:

Period 1	
Period 2	
Period 3	
Period 4	

176. Minimum surplus required under applicable pension benefit legislation before contribution holiday:

176a. Going-concern basis	
176b. Wind-up basis	

177. Maximum amount that could be claimed as eligible employer contribution(s) – defined benefit provisions – under subsection 147.2(2) of the *Income Tax Act:*

177a. Unfunded liability	14,614,000
177b. Normal cost:	
Period 1	0
Period 2	0
Period 3	0
Period 4	0

Part VI – Information required by the Régie des rentes du Québec

Régie des rentes Québec

S. Additional information

185. Date on which the valuation report was prepared: YYYY ____ MM ____ DD ____

186. Value of additional obligations arising from an amendment on a funding basis ____

187. Value of additional obligations arising from an amendment on a solvency basis ____

188. Surplus assets that can be appropriated to the payment of employer contributions ____

189. Special amortization payments ____

190. Total of the letters of credit taken into account in the assets on a solvency basis ____

191. Pensions insured by an insurer taken into account in the actuarial valuation on a solvency basis ____

T. Additional information for plans whose employer is a municipality, a municipal housing bureau, an educational institution at the university level, or a childcare service

195. Reserve on a funding basis ____

196. Provision for adverse deviations on a funding basis ____

	Present value	Amortization payments		
		Period 1	Period 2	Period 3
197. Technical funding deficiency				
198. Improvement funding deficiency				

U. Additional information pertaining to pension plans other than those mentioned in section T

200. Reserve on a solvency basis ____

201. Provision for adverse deviations on a solvency basis ____

	Present value	Amortization payments		
		Period 1	Period 2	Period 3
202. Funding deficiency				
203. Technical solvency deficiency				
204. Improvement solvency deficiency				

Part VII – Certification by Actuary

As the actuary who signed the funding valuation report (the report), I certify that this completed form accurately reflects the information provided in the report.

Dated this 28 (day) day of October (month), 2015 (year)

Xiaofeng Liu
Signature of actuary

Xiaofeng (Bill) Liu
Print or type name of actuary

Towers Watson Canada Inc.
Name of firm

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* Optional information. The Canada Revenue Agency will not communicate on plan specific matters with clients by email, since we cannot guarantee the confidentiality of emailed information.