



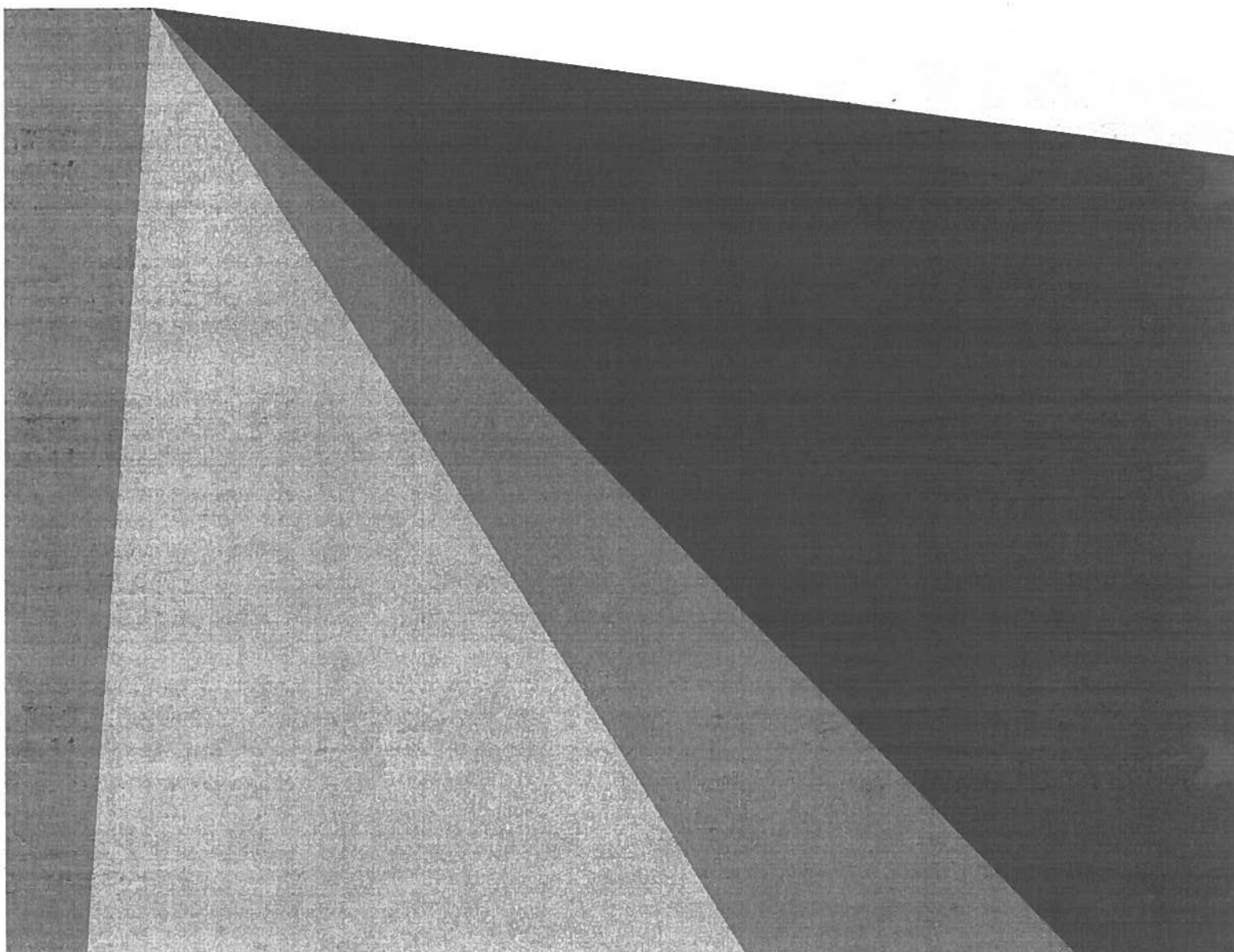
CONSULTING. OUTSOURCING. INVESTMENTS.

# **METROPOLITAN TORONTO PENSION PLAN**

## **REPORT ON THE ACTUARIAL VALUATION FOR FUNDING PURPOSES AS AT DECEMBER 31, 2011**

Registration No. 0351577

April 2012



**Note to reader regarding actuarial valuations:**

This valuation report may not be relied upon for any purpose other than those explicitly noted in the Introduction, nor may it be relied upon by any party other than the parties noted in the Introduction. Mercer is not responsible for the consequences of any other use. A valuation report is a snapshot of a plan's estimated financial condition at a particular point in time; it does not predict a pension plan's future financial condition or its ability to pay benefits in the future. If maintained indefinitely, a plan's total cost will depend on a number of factors, including the amount of benefits the plan pays, the number of people paid benefits, the amount of plan expenses, and the amount earned on any assets invested to pay the benefits. These amounts and other variables are uncertain and unknowable at the valuation date.

To prepare the results in this report, actuarial assumptions are used to model a single scenario from a range of possibilities for each valuation basis. The results based on that single scenario are included in this report. However, the future is uncertain and the plan's actual experience will differ from those assumptions; these differences may be significant or material. Different assumptions or scenarios within the range of possibilities may also be reasonable, and results based on those assumptions would be different. Furthermore, actuarial assumptions may be changed from one valuation to the next because of changes in regulatory and professional requirements, developments in case law, plan experience, changes in expectations about the future and other factors.

The valuation results shown in this report also illustrate the sensitivity to one of the key actuarial assumptions, the discount rate. We note that the results presented herein rely on many assumptions, all of which are subject to uncertainty, with a broad range of possible outcomes and the results are sensitive to all the assumptions used in the valuation.

Should the plan be wound up, the going concern funded status and solvency financial position, if different from the wind-up financial position, become irrelevant. The hypothetical wind-up financial position estimates the financial position of the plan assuming it is wound-up on the valuation date. Emerging experience will affect the wind-up financial position of the plan assuming it is wound-up in the future. In fact, even if the plan were wound-up on the valuation date, the financial position would continue to fluctuate until the benefits are fully settled.

Because actual plan experience will differ from the assumptions used in this valuation, decisions about benefit changes, investment policy, funding amounts, benefit security and/or benefit-related issues should be made only after careful consideration of alternative future financial conditions and scenarios, and not solely on the basis of a valuation report or reports.

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## Summary of Results

	31.12.2011 (\$000's)	31.12.2010 (\$000's)
<b>Asset Values</b>		
Market value of assets	\$520,300	\$563,510
Rate of return during the year (gross)	2.50%	9.34%
<b>Going-Concern Financial Status</b>		
Actuarial value of assets	\$512,097	\$554,508
Going-concern funding target	457,760	484,808
Funding excess (shortfall)	\$54,337	\$69,700
<b>Hypothetical Wind-up Financial Position</b>		
Wind-up assets	\$519,902	\$563,093
Wind-up liability	535,023	522,149
Wind-up excess (shortfall)	(\$15,121)	\$40,944
Transfer Ratio	97%	100%
<b>Solvency Financial Position</b>		
Solvency assets	\$519,902	\$563,093
Solvency asset adjustment	(15,238)	(16,090)
Adjusted solvency assets	\$504,664	\$547,003
Solvency liability	\$535,023	\$522,149
Solvency liability adjustment	(35,931)	(5,308)
Adjusted solvency liability	\$499,092	\$516,841
Solvency excess (deficiency)	\$5,572	\$30,162
<b>Indexation Reserve Account</b> (lesser of funding excess and solvency excess)	\$5,572	\$30,162

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<b>Plan Membership</b>	<b>31.12.2011</b>	<b>31.12.2010</b>
Active	1	4
Suspended or disabled	2	2
Retired members in receipt of pensions	1,633	1,724
Surviving spouses in receipt of pensions	1,011	1,031
Vested deferred pensioners	4	4
<b>Total membership</b>	<b>2,651</b>	<b>2,765</b>
<b>Funding Requirements (Annual)</b>	<b>2011</b>	<b>2010</b>
Total current service cost	\$0	\$0
Estimated member required contributions	\$0	\$0
Employer current service cost	\$0	\$0
Estimated minimum Employer contribution	\$0	\$0
Estimated maximum Employer contribution	\$15,121,000	\$0

<b>Schedule of Employer Contributions (Annual)</b>	<b>2012</b>	<b>2013<sup>1</sup></b>	<b>2014<sup>1</sup></b>
Current Service Cost	\$ 0	\$ 0	\$ 0
Unfunded Liability	0	0	0
Solvency Deficiency	0	0	0
<b>Total</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

<sup>1</sup> Subject to change if a valuation is prepared as at December 31, 2012

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## Introduction

### To: Trustees, Metropolitan Toronto Pension Plan

At the request of the Trustees, we have conducted an actuarial valuation of the Metropolitan Toronto Pension Plan (the "Plan"), sponsored by the City of Toronto (the "Employer"), as at the valuation date, December 31, 2011. We are pleased to present the results of the valuation.

### Purpose

The purpose of this valuation is to determine:

- the funded status of the plan as at December 31, 2011 on going concern, hypothetical wind-up and solvency bases,
- the minimum required funding contributions from January 1, 2012, in accordance with the *Pension Benefits Act (Ontario)*; and
- the maximum permissible funding contributions from January 1, 2012, in accordance with the *Income Tax Act*.

The information contained in this report was prepared for the internal use of the Trustees, the Employer and for filing with the Financial Services Commission of Ontario ("FSCO") and with the Canada Revenue Agency ("CRA"), in connection with our actuarial valuation of the Plan. This report is not intended or suitable for any other purpose.

In accordance with pension benefits legislation, the next actuarial valuation of the Plan will be required as at a date not later than December 31, 2014, or as at the date of an earlier amendment to the Plan.

Upon filing this report, the Employer must contribute the excess, if any, of the minimum contribution with an allowance for interest recommended in this report over contributions actually made in respect of the period following January 1, 2012. This contribution, along with an allowance for interest, is due no later than 60 days following the date this report is filed.

### Recommendations

Based on the results of this valuation, it is recommended that an increase of 1.00% be granted on pensions, effective January 1, 2012, to pensioners on benefit for more than one year and a proportionate increase of 0.0833% for each month of pension payment made in 2011 be granted for pensioners who retired during 2011.

The total estimated cost to provide this increase is \$4,547,000, on the going-concern basis, and \$4,957,000, on the solvency basis.

### **Terms of Engagement**

In accordance with our terms of engagement with the Trustees, our actuarial valuation of the Plan is based on the following material terms:

- It has been prepared in accordance with applicable pension legislation and actuarial standards of practice in Canada;
- We have reflected the Trustee's decisions for determining the solvency funding requirements, summarized as follows:
  - The same plan wind-up scenario was hypothesized for both hypothetical wind-up and solvency valuations
  - Although permissible, no benefits were excluded from the solvency liabilities; and
  - The solvency financial position was determined on a four year smoothed basis.

See the Valuation Results - Solvency section of the report for more information.

### **Events Since the Last Valuation at December 31, 2010**

#### ***Changes in By-law Provisions***

An increase of 1.78% was granted on pensions, retroactive to January 1, 2011, to pensioners on benefit for more than one year and a proportionate increase of 0.1483% for each month of pension payment made in 2010 was granted for pensioners who retired during 2010.

The cost to provide this increase was \$8,415,000, on the going-concern basis, or \$8,980,000 on the solvency basis.

There have been no other changes to the By-law provisions since the previous valuation as at December 31, 2011. A summary of the main By-law provisions in effect on the valuation date is provided in Appendix F.

#### ***Assumptions***

We have used the same going concern valuation assumptions and methods as were used for the previous valuation except as follows:

In March 2012, the 1999 Board of Trustee approval to provide surplus payments to retirees was rescinded by the Board, resulting in a release of the reserve of \$7,666,000 held for this purpose.

The hypothetical wind-up and solvency assumptions have been updated to reflect market conditions at the valuation date.

A summary of the going concern, and hypothetical wind-up and solvency methods and assumptions are provided in Appendices C and D, respectively.

### **Regulatory Environment and Actuarial Standards**

There have been no changes to the Pension Benefits Act (Ontario) (the "Act") or the relevant regulations which impact the funding of the Plan.

The Government of Ontario has announced its intentions to make changes to the funding requirements for pension plans registered in Ontario. Since then Bill 120 received Royal assent. However, the intended changes to the funding requirements which impact the funding of single-employer pension plans will be contained in regulations which have not yet been adopted.

Certain changes to the Canadian Institute of Actuaries Standard of Practice for determining pension commuted values ("CIA CV Standard") became effective on February 1, 2011. The changes affect the mortality assumptions used to value the solvency and wind-up liabilities for benefits assumed to be settled through a lump sum transfer. The financial impact of the change in the CIA CV Standard has not been reflected in this actuarial valuation.

A new Canadian actuarial Standard of Practice – *Practice Specific Standards of Practice for Pension Plans* became effective December 31, 2010 (the "CIA Pension Standards"). The requirements of the CIA Pension Standards have been reflected in this report.

### **Subsequent Events**

After checking with representatives of the Company, to the best of our knowledge there have been no events subsequent to the valuation date which, in our opinion, would have a material impact on the results of the valuation. Our valuation reflects the financial position of the Plan as of the valuation date and does not take into account any experience after the valuation date.

### **Impact of Case Law**

This report has been prepared on the assumption that all of the assets in the pension fund are available to meet all of the claims on the Plan. We are not in a position to assess the impact that the Ontario Court of Appeal's decision in *Aegon Canada Inc. and Transamerica Life Canada versus ING Canada Inc.* or similar decisions in other jurisdictions might have on the validity of this assumption.

On July 29, 2004, the Supreme Court of Canada dismissed the appeal in *Monsanto Canada Inc. versus Superintendent of Financial Services ("Monsanto")*, thereby upholding the requirements to distribute surplus on partial plan wind-up under *The Pension Benefits Act (Ontario)*. The decision has retroactive application and applies on the termination of Ontario employees if they are included in a partial plan wind-up, regardless of the province in which the pension plan is registered.



Although this decision dealt with Ontario legislation, it is possible that it could have application to other provinces since the underlying language in the *Pension Benefits Act (Ontario)*, is similar to language in a number of other provinces, either currently or in the past.

We are not aware of any partial plan wind-up having been declared in respect of the Plan where the Monsanto decision may apply. In preparing this actuarial valuation, we have therefore assumed that all the Plan's assets are available to cover the Plan's liabilities presented in this report.

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## Valuation Results – Going Concern

### Financial Status (\$000's)

A going concern valuation compares the relationship between the value of Plan assets and the present value of expected future benefit cash flows in respect of accrued service, assuming the Plan will be maintained indefinitely.

The results of the current valuation, compared with those from the previous valuation, are summarized as follows:

	31.12.2011	31.12.2010
<b>Assets</b>		
Market value of assets	\$520,300	\$563,510
Asset smoothing adjustment	(8,203)	(9,002)
Actuarial value of assets	\$512,097	\$554,508
<b>Going concern funding target</b>		
• Active members		
Regular members	\$369	\$2,035
Fire-fighters	0	0
Total actives	\$369	\$2,035
• Disabled and suspended members	197	200
• Retired members' pensions	356,309	370,619
• Spouses and other survivor pensions	100,114	102,145
• Vested deferred members	246	143
• Reserve for possible surplus distribution to retired members	0	7,666
• Reserve for 50% Rule refunds	525	2,000
Total actuarial liabilities	\$457,760	\$484,808
<b>Funding excess (shortfall)</b>	<b>\$54,337</b>	<b>\$69,700</b>

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### Reconciliation of Financial Status (\$000's)

Funding excess (shortfall) as at previous valuation		\$69,700
Cost of COLA increase of 1.78% at 1/1/2011		(8,415)
Interest on funding excess (funding shortfall) at 5.50% per year, after COLA		4,027
		\$65,312
Expected funding excess (funding shortfall)		\$65,312
Net experience gains (losses)		
• Net Investment return	(15,754)	
• Retirement	58	
• Mortality	(2,314)	
• Release of surplus distribution reserve	7,666	
• Change in reserve for 50% Rule refunds	(295)	
Total experience gains (losses)	(\$10,639)	(\$10,639)
Data Corrections		(120)
Net impact of other elements of gains and losses		(216)
Funding excess (shortfall) as at current valuation		\$54,337

### Current Service Cost

As at December 31, 2011 all active members had completed 35.0 years of credited service. Therefore, no further contributions for current service are required by the Employer and the Plan members.

### Discount Rate Sensitivity (\$000's)

The following table summarises the effect on the going concern funding target shown in this report of using a discount rate which is 1.00% lower than that used in the valuation:

Scenario	Valuation Basis	Reduce Discount Rate by 1%	% Increase
Going concern funding target	\$457,760	\$490,263	7.1%

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## Valuation Results – Hypothetical Wind-up Financial Position (\$000's)

When conducting a hypothetical wind-up valuation, we determine the relationship between the respective values of the Plan's assets and its liabilities assuming the Plan is wound up and settled on the valuation date, assuming benefits are settled in accordance with the Act and under circumstances producing the maximum wind-up liabilities on the valuation date.

The hypothetical wind-up financial position as of the valuation date, compared with that at the previous valuation, is as follows:

	31.12.2011	31.12.2010
<b>Assets</b>		
Market value of assets	\$520,300	\$563,510
Termination expense provision	(398)	(417)
Wind-up assets	\$519,902	\$563,093
<b>Present value of accrued benefits for:</b>		
• active members	\$464	\$2,317
• disabled and suspended members	237	219
• retired members	418,912	400,479
• survivors	114,609	109,312
• vested deferred members	276	156
• reserve for possible surplus distribution to retired members	0	7,666
• reserve for 50% Rule refunds	525	2,000
Total wind-up liability	\$535,023	\$522,149
Wind-up excess (shortfall)	(\$15,121)	\$40,944

### Wind-up Incremental Cost to December 31, 2014

The wind-up incremental cost is an estimate of the present value of the projected change in the hypothetical wind-up liabilities from the valuation date until the next scheduled valuation date, adjusted for the benefit payments expected to be made in that period.

The hypothetical wind-up incremental cost determined in this valuation is nil since the one active member has reached the max service of 35.0 years and is no longer accruing benefits and there are no changes expected to the benefits for pensioners.

### Discount Rate Sensitivity (\$000's)

The following table summarises the effect on the hypothetical wind-up liabilities shown in this report of using a discount rate which is 1.00% lower than that used in the valuation:

Scenario	Valuation Basis	Reduce Discount Rate by 1%	% increase
<b>Total hypothetical wind-up liability</b>	\$535,023	\$578,821	8.2%

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## Valuation Results – Solvency

### Overview

The Act also requires the financial position of the Plan to be determined on a solvency basis. The financial position on a solvency basis is determined in a similar manner to the Hypothetical Wind-up Basis, except for the following:

Exceptions	Reflected in valuation based on the terms of engagement
The circumstance under which the Plan is assumed to be wound-up could differ for the solvency and hypothetical wind-up valuations.	The same circumstances were assumed for the solvency valuation as were assumed for the hypothetical wind-up.
Certain benefits can be excluded from the solvency financial position. These include: <ul style="list-style-type: none"> <li>(a) any escalated adjustment (e.g. indexing),</li> <li>(b) certain plant closure benefits,</li> <li>(c) certain permanent layoff benefits,</li> <li>(d) special allowances other than funded special allowances,</li> <li>(e) consent benefits other than funded consent benefits,</li> <li>(f) prospective benefit increases,</li> <li>(g) potential early retirement window benefit values, and</li> <li>(h) pension benefits and ancillary benefits payable under a qualifying annuity contract.</li> </ul>	No benefits were excluded from the solvency liabilities shown in this valuation.
The financial position on the solvency basis needs to be adjusted for any Prior Year Credit Balance.	Not applicable.
The solvency financial position can be determined by smoothing assets and the solvency discount rate over a period of up to 5 years.	Solvency assets and liabilities were smoothed over 4 years.
The benefit rate increases coming into effect after the valuation date can be reflected in the solvency valuation.	Not applicable.

**Financial Position (\$000's)**

The financial position on a solvency basis, compared with the corresponding figures from the previous valuation, is as follows:

	31.12.2011	31.12.2010
<b><u>Assets</u></b>		
Market value of assets	\$520,300	\$563,510
Termination expense provision	(398)	(417)
Net assets	\$519,902	\$563,093
<b><u>Liabilities</u></b>		
Total hypothetical wind-up liabilities	\$535,023	\$522,149
Difference in circumstances of assumed wind-up	0	0
Value of excluded benefits	(0)	(0)
Liabilities on a solvency basis	\$535,023	\$522,149
Surplus (shortfall) on a market value basis	(\$15,121)	\$40,944
Liability smoothing adjustment	\$35,931	\$5,308
Asset smoothing adjustment	(\$15,238)*	(\$16,090)**
Surplus (shortfall) on a solvency basis	\$5,572	\$30,162
Transfer Ratio	97%	100%

\* Averaging method adjustment = 75% of investment losses from 2011, \$9,276,000, plus 50% of investment gains from 2010, (\$12,127,000), plus 25% of investment gains from 2009, (\$12,387,000).

\*\* Averaging method adjustment = 75% of investment gains from 2010, \$(18,191,000), plus 50% of investment gains from 2009, (\$24,774,000), plus 25% of investment losses from 2008, \$26,875,000.

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## Minimum Funding Requirements

The Act prescribes the minimum contributions that the City of Toronto must make to the Plan. The minimum contributions are comprised of going concern current service cost and special payments to fund any going concern or solvency shortfalls.

There is a funding excess and no special payments are required for solvency purposes on the basis of the assumptions and methods described in this report.

The rule for determining the minimum required employer monthly contributions, as well as an estimate of the employer contributions, from the valuation date until the next required valuation are as follows:

Employer's contribution rule				Estimated employer's contributions	
Period beginning	Monthly current service cost	Explicit monthly expense allowance	Minimum monthly special payments	Monthly current service cost including expense allowance	Total minimum monthly contributions
January 1, 2012	\$0	\$0	\$0	\$0	\$0
January 1, 2013	\$0	\$0	\$0	\$0	\$0
January 1, 2014	\$0	\$0	\$0	\$0	\$0

As at December 31, 2011 all active members had completed 35.0 years of credited service. Therefore, no further contributions for current service are required by the Employer and the Plan members.

The development of the minimum special payments is summarized in Appendix A.

## Other Considerations

### *Differences between valuation bases*

There is no provision in the minimum funding requirements to fund the difference between the hypothetical wind-up and solvency shortfalls, if any.

In addition, although minimum funding requirements do include a requirement to fund the going concern current service cost, there is no requirement to fund the expected growth in the



hypothetical wind-up or solvency liability after the valuation date, which could be greater than the going concern current service cost.

### ***Timing of contributions***

Funding contributions are due on monthly basis. Contributions for current service cost must be made within 30 days following the month to which they apply. Special payment contributions must be made in the month to which they apply.

### ***Retroactive contributions***

The Company must contribute the excess, if any, of the minimum contribution recommended in this report over contributions actually made in respect of the period following the valuation date. This contribution, along with an allowance for interest, is due no later than 60 days following the date this report is filed.

### ***Payment of benefits***

The Act imposes certain restrictions on the payment of lump sums from the Plan when the transfer ratio revealed in an actuarial valuation is less than one. If the transfer ratio shown in this report is less than one, the plan administrator should ensure that the monthly special payments are sufficient to meet the requirements of the Act to allow for the full payment of benefits, and otherwise should take the prescribed actions.

Additional restrictions are imposed when:

- The transfer ratio revealed in the most recently filed actuarial valuation is less than one and the administrator knows or 'ought to know' that the transfer ratio of the Plan has declined by 10% or more since the date the last valuation was filed.
- The transfer ratio revealed in the most recently filed actuarial valuation is greater than or equal to one and the administrator knows or 'ought to know' that the transfer ratio of the Plan has declined to less than 0.9 since the date the last valuation was filed.

As such, the administrator should monitor the transfer ratio of the Plan and, if necessary, take the prescribed actions.



## Maximum Eligible Contributions

The *Income Tax Act* (the "ITA") limits the amount of employer contributions that can be remitted to the defined benefit component of a registered pension plan. However, notwithstanding the limit imposed by the ITA, for plans which are not 'Designated' as defined in the ITA, in general, the minimum required contributions under the Act can be remitted.

In accordance with Section 147.2 of the ITA and *Income Tax Regulation* 8516, for a plan which is underfunded on either a going concern or on a hypothetical wind-up basis the maximum permitted contributions are equal to the employer's current service cost, including the explicit expense allowance if applicable, plus the greater of the going concern funding shortfall and hypothetical wind-up shortfall.

For a plan which is fully funded on both going concern and hypothetical wind-up bases, the employer can remit a contribution equal to the employer's current service cost, including the explicit expense allowance if applicable, as long as the surplus in the plan does not exceed a prescribed threshold. Specifically, in accordance with Section 147.2 of the ITA, for a plan which is fully funded on both going concern and hypothetical wind-up bases, the plan may not retain its registered status if the employer makes a contribution while the going concern funding excess exceeds 25% of the going concern funding target.

## Schedule of Maximum Contributions

The Company is permitted to fully fund the greater of the going concern and hypothetical wind-up shortfalls; \$15,121,000, as well as make current service cost contributions, which is nil. The portion of this contribution representing the payment of the hypothetical wind-up shortfall can be increased with interest at 3.31% per year from the valuation date to the date the payment is made, and must be reduced by the amount of any deficit funding made from the valuation date to the date the payment is made.

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## Indexation Reserve Account

### General

The pension plan that the Plan can be fairly compared with is the Ontario Municipal Employees Retirement System (OMERS). OMERS has adopted automatic indexation. It was, and is, our opinion that the Plan with its closed membership could not afford to undertake automatic indexation but, instead, must use available assets to meet inflationary pressures on a yearly basis.

Therefore, in 1991 a policy was recommended and adopted that:

- a) assets not required to meet specific current pension liabilities be held in an Indexation Reserve Account (IRA);
- b) the IRA be limited to 30% of the going-concern liability for non-indexed benefits;
- c) the IRA be built up to the maximum before any allocation of surplus be considered; and
- d) minor improvements in pension benefits and increases in pensions due to cost-of-living inflation should be limited to the extent that the IRA is sufficient.

**Indexation Reserve Account**

The change in the Indexation Reserve Account during 2011 is outlined below.

	(\$000)	(\$000)
<b>Indexation Reserve Account at December 31, 2010</b>		<b>\$30,162</b>
January 1, 2011 cost-of-living increases to pensions		(8,980)
<b>Indexation Reserve Account at January 1, 2011</b>		<b>\$21,182</b>
<b>Indexation Reserve Account at December 31, 2011</b>		
a) Going-concern excess (deficiency)	\$54,337	
b) Solvency excess (deficiency)	5,572	
Indexation Reserve Account (lesser of (a) and (b), but not less than zero)		<b>\$5,572</b>
January 1, 2012 recommended cost-of-living increases to pensions		4,957
<b>Indexation Reserve Account at January 1, 2012</b>		<b>\$615</b>



## Recommendations

### Active Members

No improvements are recommended at this time.

### Retired Members

As at December 31, 2011 there is a going-concern funding excess of \$54,337,000 and a total solvency excess of \$5,572,000, producing an Indexation Reserve Account of \$5,572,000. It is recommended that an increase of 1.00% be granted on pensions, effective January 1, 2012, to pensioners on benefit for more than one year and a proportionate increase of 0.0833% for each month of pension payment made in 2011 be granted for pensioners who retired during 2011 for which the total estimated cost is \$4,547,000 on the going-concern basis, or \$4,957,000 on the solvency basis. The pension increase schedule is provided below.

Number of Months of payment	Adjustment Percentage
12 or greater	1.0000%
11	0.9167%
10	0.8333%
9	0.7500%
8	0.6666%
7	0.5833%
6	0.5000%
5	0.4167%
4	0.3333%
3	0.2500%
2	0.1667%
1	0.0833%

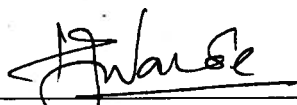
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## Actuarial Opinion

In our opinion, for the purposes of the valuation,

- the membership data on which the valuation is based are sufficient and reliable,
- all of the assumptions were independently reasonable at the time the valuation was prepared and are, in aggregate, appropriate, and
- the methods employed in the valuation are appropriate.

This report has been prepared, and our opinions given, in accordance with accepted actuarial practice in Canada. It has also been prepared in accordance with the funding and solvency standards set by the Ontario Pension Benefit Act.



\_\_\_\_\_  
Anil Narale  
Fellow of the Society of Actuaries  
Fellow of the Canadian Institute of Actuaries

April 13, 2012

\_\_\_\_\_  
Date



\_\_\_\_\_  
Frank Dekeyser  
Associate of the Society of Actuaries

April 13, 2012

\_\_\_\_\_  
Date

## APPENDIX A

## Prescribed Disclosure

## Definitions

The Act defines a number of terms as follows:

Defined Term	Description	Result (000's)
Transfer Ratio	The ratio of: <ol style="list-style-type: none"> <li>1. solvency assets minus the lesser of the Prior Year Credit Balance and the minimum required employer contributions until the next required valuation; to</li> <li>2. the sum of the solvency liabilities and liabilities for benefits, other than benefits payable under qualifying annuity contracts that were excluded in calculating the solvency liabilities.</li> </ol>	0.97
Prior Year Credit Balance	Accumulated excess of contributions made to the pension plan in excess of the minimum required contributions (note: only applies if the Company chooses to treat the excess contributions as a Prior Year Credit Balance).	\$0
Solvency Assets	Market value of assets including accrued or receivable income and excluding the value of any qualifying annuity contracts <sup>2</sup> .	\$ 519,902
Solvency Asset Adjustment	The sum of: <ol style="list-style-type: none"> <li>(a) the difference between smoothed value of assets and the market value of assets;</li> <li>(b) the present value of any going concern special payments (including those identified in this report) within 5 years following the valuation date;</li> <li>(c) the present value of any previously scheduled solvency special payments (excluding those identified in this report)</li> </ol>	(\$15,238) 0 0
		<u>\$504,664</u>

<sup>2</sup> In accordance with accepted actuarial practice, for purposes of determining the financial position, the market value of plan assets was adjusted for any in-transit benefit payments, contributions, and other in-transit cash flows, and reduced by a provision for estimated termination expenses payable from the Plan's assets that may reasonably be expected to be incurred in terminating the Plan and to be charged to the Plan

Defined Term	Description	Result (000's)
Solvency Liabilities	Liabilities determined as if the plan had been wound up on the valuation date, including liabilities for plant closure benefits or permanent layoff benefits that would be immediately payable if the employer's business were discontinued on the valuation date of the report, but, if elected by the plan sponsor, excluding liabilities for, (a) any escalated adjustment, (b) excluded plant closure benefits, (c) excluded permanent layoff benefits, (d) special allowances other than funded special allowances, (e) consent benefits other than funded consent benefits, (f) prospective benefit increases, (g) potential early retirement window benefit values, and (h) pension benefits and ancillary benefits payable under a qualifying annuity contract.	\$535,023
Solvency Liability Adjustment	The amount by which solvency liabilities are adjusted as a result of using a solvency valuation interest rate that is the average of market interest rates calculated over the period of time used in the determination of the smoothed value of assets.	\$35,931
Solvency Deficiency	The amount, if any, by which the sum of: (a) the solvency liabilities (b) the solvency liability adjustment (c) the prior year credit balance	\$535,023 (35,931) 0
		\$499,092
	Exceeds the sum of (d) the solvency assets (e) the solvency asset adjustment	\$519,902 (15,238)
		\$504,664
		\$0



### **Timing of Next Required Valuation**

In accordance with the *Act* the next valuation of the Plan would be required at an effective date within one year of the current valuation date if:

- The ratio of solvency assets to solvency liabilities is less than 80%;
- The ratio of solvency assets to solvency liabilities is less than 85% and solvency liabilities exceed solvency assets by \$5 million or more; or,
- The employer elected to exclude plant closure or permanent lay-off benefits under Section 5(18) of the regulations, and has not rescinded that election.

Otherwise, the next valuation of the Plan would be required at an effective date no later than three years after the current valuation date.

Accordingly, the next valuation of the Plan will be required as of December 31, 2014.

### **Special Payments**

As the Plan does not have a going concern deficit or a solvency deficit, no special payments are required.

### **Pension Benefit Guarantee Fund (PBGF) Assessment**

In accordance with subsection 47(1)(p.14) of the Regulations under the Pension Benefits Act (Ontario), the pension benefits provided by this Plan are not guaranteed by the Pension Benefits Guarantee Fund (PBGF) and are therefore exempt from the filing of PBGF assessment certificate (subsection 18(7) of the Regulations) and payment of an annual PBGF assessment (section 37 of the Regulations).

## APPENDIX B

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### Plan Assets

As at December 31, 2011, the pension fund is held in trust by CIBC Mellon and is invested in accordance with the investment policy described below.

The going-concern assets are recorded at an "Actuarial Value" which is determined as follows:

1. The market value of total assets at the previous year-end is accumulated, together with the current year's cash flow, with interest at the valuation rate of 5.50%; and
2. The difference between the accumulation in (1) and the market value of total assets at the valuation date is spread over the current year and the three succeeding years in four equal amounts.

The value determined in accordance with the above method is \$512,136,000 at December 31, 2011. This amount is further adjusted with net payments in-transit of \$39,000, producing an **Actuarial Value of \$512,097,000** at December 31, 2011.

Amounts in-transit at December 31, 2011 (i.e. payments made in January 2012 in respect of 2011) include:

- \$39,000, in respect of investment management fees.

The effect of the foregoing is shown below (in \$000).

<b>Assets of the Pension Fund</b>	<b>Market Value</b>	<b>Actuarial Value</b>
I. Cash and Equivalents		
▪ Cash and short-term investments	\$14,149	\$14,149
II. External Management		
▪ Bonds	\$263,846	\$263,846
▪ Canadian equities	106,908	106,908
▪ Foreign (U.S.) equities	135,436	135,436
Subtotal	\$506,190	\$506,190
III. Smoothing Adjustment		(8,203)
<b>Total (before in-transit amounts)</b>	<b>\$520,339</b>	<b>\$512,136</b>
Net amount in-transit	(39)	(39)
<b>Total (after in-transit amounts)</b>	<b>\$520,300</b>	<b>\$512,097</b>

Under this adopted asset valuation method, the Plan's investment rate of return in 2011 was equal to 2.58% (net of investment management expenses).

The currently unrecognized elements of the market value of assets will be taken into account in future years in the following amounts (\$000).

2012	25% of 2009 gain	\$11,239	
	25% of 2010 gain	4,878	
	25% of 2011 loss	(4,264)	\$11,853
2013	25% of 2010 gain	\$4,878	
	25% of 2011 loss	(4,264)	614
2014	25% of 2011 loss	(\$4,264)	(4,264)
<b>Total</b>			<b>\$8,203</b>

The pension fund custodian is CIBC Mellon and the assets are invested in accordance with the investment policy by the following investment managers as at December 31, 2011:

Manager	Investments
TD Asset Management	Bonds & Canadian Equities
Fiera	Bonds
Gryphon	Canadian Equities
State Street	U.S. Equities

#### Reconciliation of Fund Assets (\$000)

		Market Value	Actuarial Value
<b>Value at 31.12.2010</b>		\$563,510	\$554,508
Net amount in-transit	\$64	64	64
<b>Adjusted Value at 31.12.2010</b>		\$563,574	\$554,572
I. Contributions			
Employee Contributions	\$0		
Employer Contributions	0	0	0
II. Adjusted Investment Income			
		13,403	14,202
III. Pensions & Other Benefits			
Pensions for Members	\$40,130		
Pensions for Widows & Others	13,686		
50% Rule Refunds	1,830	(55,646)	(55,646)
IV. Actuarial, Legal and Other Fees			
Actuarial Fees	\$240		
Custodial Fees	58		
Investment Management Fees	617		
Other Fees (audit, legal, etc.)	77	(992)	(992)
<b>Value at 31.12.2011 (before in-transits)</b>		\$520,339	\$512,136
Net amount in-transit	(\$39)	(39)	(39)
<b>Value at 31.12.2011 (after in-transits)</b>		\$520,300	\$512,097

## Investment Policy

The Plan administrator adopted a statement of investment policy and procedures. This policy is intended to provide guidelines for the manager(s) as to the level of risk which is commensurate with the Plan's investment objectives. A significant component of this investment policy is the asset mix.

The constraints on the asset mix and the actual asset mix at the valuation date are provided for information purposes:

	Investment Policy			Actual Asset Mix as at 31.12.2011
	Minimum	Target	Maximum	
Canadian Equities	10%	25%	40%	20.6%
Foreign Equities (US)	15%	25%	35%	26.0%
Canadian Bonds	30%	45%	60%	50.7%
Cash and cash equivalents	0%	5%	20%	2.7%
		100%		100.0%

## Historical Fund Performance

Annual rates of return, net of investment expenses, for the last 14 years are provided below on both a market value and actuarial value bases.

	Year-end Market Value	Market Value Rate of Return	Year-end Actuarial Value	Actuarial Value Rate of Return
2011	\$520,300,000	2.39%	\$512,097,000	2.58%
2010	563,510,000	9.19%	554,508,000	1.83%
2009	569,518,000	14.14%	599,848,000	1.98%
2008	553,263,000	-11.50%	645,820,000	1.86%
2007	688,253,000	1.15%	692,666,000	6.67%
2006	740,266,000	9.80%	707,665,000	8.52%
2005	732,883,000	8.52%	711,097,000	4.20%
2004	735,469,000	7.05%	743,769,000	1.63%
2003	748,494,000	9.37%	794,867,000	1.04%
2002	745,915,000	-5.95%	850,667,000	1.79%
2001	859,535,000	-0.16%	899,582,000	7.50%
2000	926,878,000	3.25%	900,371,000	11.67%
1999	965,949,000	9.53%	871,990,000	16.18%
1998	943,011,000	16.45%	810,002,000	17.38%

***Historical Updates to Pensions In-Payment***

Annual cost-of-living adjustments (COLA) for the last 25 years, applicable to pensions that have been in payment for at least one year on the effective date, are provided below. Adjustments are currently based on a ratio of the index determined on a 12 month average to December of the current year over the average to December of the prior year.

<b>Effective Date</b>	<b>COLA Update</b>	<b>Effective Date</b>	<b>COLA Update</b>
July 1, 1987	4.75%	January 1, 1999	1.00%
July 1, 1988	3.00%	January 1, 2000	2.60%
July 1, 1989	5.21%	January 1, 2001	3.20%
July 1, 1990	5.10%	January 1, 2002	2.50%
July 1, 1991	5.00%	January 1, 2003	2.30%
July 1, 1992	3.80%	January 1, 2004	2.80%
July 1, 1993	2.10%	January 1, 2005	1.83%
July 1, 1994	1.70%	January 1, 2006	2.23%
July 1, 1995	0.20%	January 1, 2007	2.01%
July 1, 1996	1.80%	January 1, 2008	2.14%
July 1, 1997	2.20%	January 1, 2009	2.37%
July 1, 1998	0.70%	January 1, 2010	0.30%
		January 1, 2011	1.78%

## APPENDIX C

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### Methods and Assumptions – Going Concern

#### **Valuation of Assets**

For this valuation, we have used an adjusted market-value method to determine the smoothed value of assets. This method is described in Appendix B.

#### **Going Concern Funding Target**

Over time, the real cost to the employer of a pension plan is the excess of benefits and expenses over member contributions and investment earnings. The actuarial cost method allocates this cost to annual time periods.

For purposes of the going concern valuation, we have continued to use the [projected] unit credit actuarial cost method. Under this method, we determine the present value of benefit cash flows expected to be paid in respect of service accrued prior to the valuation. This is referred to as the funding target.

The funding excess or funding shortfall, as the case may be, is the difference between the market or smoothed value of assets and the funding target. A funding excess on a market value basis indicates that the current market value of assets and expected investment earnings are expected to be sufficient to meet the cash flows in respect of benefits accrued to the valuation date as well as expected expenses – assuming the plan is maintained indefinitely. A funding shortfall on a market value basis indicates the opposite – that the current market value of the assets is not expected to meet the plan's cash flow requirements in respect of accrued benefits and absent additional contributions.

As required under the Act, a funding shortfall must be amortized over no more than 15 years through special payments. A funding excess may, from an actuarial standpoint, be applied immediately to reduce required employer current service contributions unless precluded by the terms of the plan or by legislation.

The actuarial cost method used for the purposes of this valuation produces a reasonable matching of contributions with accruing benefits. Because benefits are recognized as they accrue, the actuarial cost method provides an effective funding target for a plan that is maintained indefinitely.

### **Current Service Cost**

The current service cost is the present value of projected benefits to be paid under the plan with respect to service expected to accrue during the period until the next valuation.

Since all Plan members have accrued 35 years of pensionable service at the valuation date, there are no further benefit accruals and therefore no current service cost.

### **Actuarial Assumptions – Going Concern Basis**

The present value of future benefit payment cash flows is based on economic and demographic assumptions. At each valuation we determine whether, in our opinion, the actuarial assumptions are still appropriate for the purposes of the valuation, and we revise them, if necessary. Emerging experience will result in gains or losses that will be revealed and considered in future actuarial valuations.

The table below shows the various assumptions used in the current valuation in comparison with those used in the previous valuation.

<b>Assumption</b>	<b>Current valuation</b>	<b>Previous valuation</b>
Discount rate:	5.50%	5.50%
Pensionable earnings increases:	3.50%	3.50%
ITA limit / YMPE increases:	3.50%	3.50%
Explicit expenses:	\$0	\$0
Inflation:	2.50%	2.50%
Post retirement pension increases:	0.00%	0.00%
Retirement rates:	100% at greater of age 61 and current age+1	100% at greater of age 61 and current age+1
Mortality rates:	100% of the rates of the 1994 Uninsured Pensioner Mortality Table	100% of the rates of the 1994 Uninsured Pensioner Mortality Table
Mortality improvements:	Fully generational using Scale AA	Fully generational using Scale AA
Eligible Survivor:	Based on actual data	Based on actual data
Allowance for Remarriage:	0.25% of pensioner liability	0.25% of pensioner liability

The assumptions are best-estimate with the exception that the discount rate includes a margin for adverse deviations, as shown below.



## Rationale for Assumptions

A rationale for each of the assumptions used in the current valuation is provided below.

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### Discount Rate

We have discounted the expected benefit payments using the expected investment return on the market value of the fund. Other bases for discounting the expected benefit payment cash flows may be appropriate, particularly for purposes other than those specifically identified in this valuation report.

The discount rate selected is 5.50% per annum. This rate is supported as follows:

- Estimated returns for each major asset class consistent with market conditions on the valuation date and the target asset mix specified in the Plan's investment policy. *Based on Mercer's methodology, estimated returns range from a low of 5.23%, with a conservative equity premium, to a high of 6.08%, with a normal equity premium plus 0.50%.*
- Additional returns assumed to be achievable due to active equity management (net of related expenses). *We have assumed no additional return due to active equity management.*
- Implicit provision for expenses determined as the average rate of administrative expenses paid from the fund over the last 3 years plus expected passive management fees. *On this basis, we have determined an implicit expense provision of 0.07%.*
- No specific margin for adverse deviations has been mandated by the regulators or communicated to us by the Trustees.

The components of the selected discount rate are summarized as follows:

Assumed investment return:	In the range 5.23% to 6.08%
Implicit expense provision:	(0.07%)
Implicit margin for adverse deviation:	In the range of (0.00%) to (0.51%)

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### Inflation

The inflation assumption is based on market expectations of long-term inflation implied by the yields on nominal and real return bonds at the valuation date of 2.50%.

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### Post retirement pension increases

No assumption was made for future pension increases.

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**Mortality Rates**

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There is strong evidence of continuing improvement in mortality since 1994 and it has become an industry standard to assume this trend continues into the future. We have used the AA projection scale to allow for improvements in mortality since 1994 and indefinitely in the future.

Based on the assumption used, the life expectancy of a member age 65 at the valuation date is 19.6 years for males and 22.0 years for females.

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**Eligible spouse**

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Actual status used for retirees.

- The survivor benefit assumption is based on actual data provided and an allowance for remarriage of 0.25% of the pensioner liability.
- Subject to the entitlement of the prior spouse, if any, the waiting period specified in the Plan and the requirements under the *Pension Benefits Act (Ontario)*, a spouse acquired after retirement date may be entitled to receive the spousal pension. The Plan provides that the new spouse of a pensioner, whose former spouse at retirement has died or who was without spouse at retirement, is eligible for a survivor pension provided that the new spousal relationship, as defined in the Plan, has been in effect for a minimum of 5 years. In order to make allowance for the possible increase in future liabilities on remarriage of a pensioner, based on remarriage rates for older adults in Canada, we have loaded the pensioner liabilities by 0.25% as an allowance for remarriage.
- It has been assumed that 100% of active members are married. Female spouses are assumed to be 4 years younger than males.

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**Allowance for stepped pensions**

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Upon the death of a pensioner whose pension has been stepped at retirement, the Plan provides a pension to the spouse whereby the survivor percentage is applied to the post-65 pre-stepped pension rather than the post-65 pension in payment. A stepped pension is a pension that has been increased before age 65 and reduced after age 65 to produce a level pension in anticipation of the OAS pension commencing from age 65.

We have performed a calculation based on the membership data supplied to estimate the spousal pension.

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**Reserve for 50% Rule Refunds**

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It has been discovered that, in respect of members who retired since January 1, 1987, the 50% rule refund of excess contributions amount was not processed. In the last valuation we included a reserve of \$2 million in the liabilities for these unpaid benefits. Due to payments made in 2011, this reserve has been reduced to \$525,000 as at December 31, 2011.

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**Reserve for Surplus Distribution to Retirees**

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In March 2012, the 1999 Board of Trustee approval to provide surplus payments to retirees was rescinded by the Board, resulting in a release of the reserve of \$7,666,000 held for this purpose.

In the prior valuation, we had valued a one-time payment of \$2,500 to each regular pensioner and surviving spouse and \$4,500 to each firefighter pensioner and surviving spouse. These figures approximate the annual contribution that would have been made to the Plan, were it not for the contribution holiday, by each active regular member and firefighter member, respectively. This payment was approved by the Trustees in 1999, but has yet to be approved by City Council.

## APPENDIX D

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### Methods and Assumptions – Hypothetical Wind-up and Solvency

#### **Hypothetical Wind-up Basis**

The Canadian Institute of Actuaries requires actuaries to report the financial position of a pension plan on the assumption that the plan is wound-up on the effective date of the valuation, with benefits determined on the assumption that the pension plan has neither a surplus nor a deficit. For the purposes of the hypothetical wind-up valuation, the plan wind-up is assumed to occur in circumstances that maximize the actuarial liability.

To determine the actuarial liability on the hypothetical wind-up basis, we have valued those benefits that would have been paid had the Plan been wound up on the valuation date, including benefits that would be immediately payable if the employer's business were discontinued on the valuation date, with all members fully vested in their accrued benefits. No benefits payable on plan wind-up were excluded from our calculations.

Upon plan wind-up members are given options for the method of settling their benefit entitlements. The options vary by eligibility and by province of employment, but in general, involve either a lump sum transfer or an immediate or deferred pension.

The value of benefits assumed to be settled through a lump sum transfer is based on the assumptions described in Section 3500 – *Pension Commuted Values* of the Canadian Institute of Actuaries' Standards of Practice applicable for December 31, 2011.

Benefits provided as an immediate or deferred pension are assumed to be settled through the purchase of annuities based on an estimate of the cost of purchasing annuities.

However, there is limited data available to provide credible guidance on the cost of a purchase on indexed annuities in Canada. In accordance with the *Canadian Institute of Actuaries Educational Note: Assumptions for Hypothetical Wind-up and Solvency Valuations with Effective Dates Between December 31, 2011 and December 30, 2012*, we have assumed that an appropriate proxy for estimating the cost of such purchase is using the yield on the long-term Government of Canada Real Return Bonds.

## Assumptions

Assumptions for determination of the hypothetical wind-up and solvency liability are as follows:

### Actuarial Assumptions – Windup and Solvency Liability

Mortality rates:	UP1994 table, fully generational using scale AA
Interest rate for benefits to be settled through annuity purchase:	3.31% per year
Allowance for re-marriage:	0.25% of pensioner liability
Post retirement cost-of-living increases	0.00 %

Assumptions for determination of the solvency liability adjustment are as follows:

### Actuarial Assumptions – Solvency Liability Adjustment

Mortality rates:	UP1994 table, fully generational using scale AA
Interest rate for benefits to be settled through annuity purchase:	4.25% per year
Allowance for re-marriage:	0.25% of pensioner liability
Post retirement cost-of-living increases	0.00 %

We have used an average of the annuity proxy rates as at December 31, 2008 (4.85% per year), December 31, 2009 (4.49% per year), December 31, 2010 (4.48% per year) and December 31, 2011 (3.31% per year) which produces a rate of 4.25% per year (rounded to the nearest 1/8%).

Other assumptions are as follows;

### Other Assumptions

Special payments:	Discounted at the average smoothed interest rate of 4.25% per year
Termination expenses:	\$398,000 (based on \$150 per pensioner/survivor and \$250 per other member)

We have not included a margin for adverse deviations in the solvency and hypothetical windup valuations.

To determine the hypothetical wind-up position of the Plan, a provision has been made for estimated termination expenses payable from the Plan's assets in respect of actuarial and administration expenses that may reasonably be expected to be incurred in terminating the Plan and to be charged to the Plan.

Because the settlement of all benefits on wind-up is assumed to occur on the valuation date and is assumed to be uncontested, the provision for termination expenses does not include custodial, investment management, auditing, consulting and legal expenses that would be incurred between the wind-up date and the settlement date or due to the terms of a wind-up being contested. Expenses associated with the distribution of any surplus assets that might arise on an actual wind-up are also not included in the estimated termination expense provisions.

In determining the provision for termination expenses payable from the Plan's assets, we have assumed that the plan sponsor would be solvent on the wind-up date. We have also assumed, without analysis, that the Plan's terms as well as applicable legislation and court decisions would permit the relevant expenses to be paid from the Plan.

Actual fees incurred on an actual plan wind-up may differ materially from the estimates disclosed in this report.

### **Incremental Cost**

There is no incremental cost since any remaining active members have accrued the maximum 35 years of credited service at the valuation date and we have assumed no future cost-of-living adjustment to pensions.

### **Solvency Basis**

The value of assets used for determining the financial position of the Plan on the solvency basis includes the solvency assets plus a solvency asset adjustment.

The *solvency assets* are determined as the market value of investments held by the Plan plus any cash balances of the Plan and accrued or receivable income items.

The *solvency asset adjustment* is determined as the amount, positive or negative, by which the value of the solvency assets are adjusted as a result of applying an averaging method that stabilizes short-term fluctuations of the Plan assets.

The value of the liabilities used for determining the financial position of the Plan on the solvency basis includes the solvency liabilities plus a solvency liability adjustment.

To determine the *solvency liability*, we have valued those benefits that would have been paid had the Plan been wound up on the valuation date with all members vested in their accrued benefits.

The *solvency liability adjustment* is determined as the amount, positive or negative, by which the value of the solvency liabilities are adjusted as a result of using a solvency valuation interest rate that is the average of the market interest rates calculated over a period of 4 years (the same period used for the averaging method used to determine the solvency asset adjustment).

The difference between (1) the sum of the solvency assets and solvency asset adjustment and (2) the sum of the solvency liability and solvency liability adjustment is called the *solvency excess* or *solvency deficiency*, as the case may be.

Since virtually all members have qualified for a retirement pension, we have assumed that all benefits will be settled through the purchase of annuities and have used a valuation interest rate for solvency purposes which, when used with the 1994 Uninsured Pensioners mortality table (i.e. UP1994) fully generational using scale AA,, provides an estimate of group annuity purchase rates for non-indexed pensions.

## APPENDIX E

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### Membership Data

#### **Analysis of Membership Data**

The actuarial valuation is based on membership data as at November 1, 2011 adjusted to December 31, 2011, provided by the City of Toronto.

We have applied tests for internal consistency, as well as for consistency with the data used for the previous valuation. These tests were applied to membership reconciliation, basic information (date of birth, gender, etc.), pensionable earnings, credited service, contributions accumulated with interest and pensions to retirees and other members entitled to a deferred pension. Contributions, lump sum payments and pensions to retirees were compared with corresponding amounts reported in financial statements. The results of these tests were satisfactory.



Plan membership data are summarized below. For comparison, we have also summarized corresponding data from the previous valuation.

	31.12.2011	31.12.2010
<b>Active Members</b>		
Number	1	4
Average pensionable earnings in the year	66,951	\$77,486
Average years of pensionable service	35.0	35.0
Average age	67.8	64.5
<b>Disabled &amp; Suspended Members</b>		
Number	2	2
Average annual accrued pension	\$6,812	\$6,812
Average years of pensionable service	35.0	35.0
Average age	67.7	66.7
<b>Deferred Pensioners</b>		
Number	4	4
Total annual pension	\$13,152	\$12,924
Average annual pension	\$3,288	\$3,231
Average age	77.2	76.2
<b>Pensioners</b>		
Number	1,633	1,724
Total annual lifetime pension	\$39,056,921	\$39,851,033
Total annual bridge pension	\$429,521	\$702,962
Average total annual pension	\$24,180	\$23,523
Average age	79.2	78.6
<b>Spousal Pensioners</b>		
Number	1,011	1,031
Total annual lifetime pension	\$13,768,880	\$13,653,297
Total annual bridge pension	\$135,404	\$132,737
Average total annual pension	\$13,753	\$13,371
Average age	81.4	80.8

*Note that the pension amounts above are net of Government Annuity pensions credited to certain members under predecessor pension plans.*

Report on the Actuarial Valuation for Funding Purposes  
as at December 31, 2011

Metropolitan Toronto Pension Plan

The membership movement for all categories of membership since the previous actuarial valuation is as follows:

	<b>Actives</b>	<b>Suspended &amp; Disabled Members</b>	<b>Pensioners</b>	<b>Spousal Pensioners</b>	<b>Vested Deferred Pensioners</b>	<b>Total</b>
Total at 31.12.2010	4	2	1,724	1,031	4	2,765
Pension Splits						
<b>Exits By:</b>						
Retirement	(3)		3			
Death – no spouse			(55)	(59)		(114)
Death – with spouse			(39)	39		
Disabled						
Total at 31.12.2011	1	2	1,633	1,011	4	2,651

The distribution of the inactive members by age as at the valuation date is summarized as follows:

<b>Deferred Vested Pensioners</b>		
<b>Age</b>	<b>Number</b>	<b>Average Annual Deferred Pension</b>
60 – 64	1	\$288
Over 65	3	4,288
Total	4	\$3,288

Report on the Actuarial Valuation for Funding Purposes  
as at December 31, 2011

Metropolitan Toronto Pension Plan

Age	Pensioners		Surviving Spouses	
	Number	Average Annual Pension	Number	Average Annual Pension
Under 50				
50 – 54			3	\$19,712
55 – 59			6	16,980
60 – 64	26	\$40,618	26	17,523
65 – 69	178	25,936	52	14,734
70 – 74	304	27,326	119	14,642
75 – 79	386	25,402	192	14,822
80 – 84	365	22,618	247	13,097
85 – 89	240	21,400	224	14,735
90 – 94	116	18,096	115	10,443
95 – 99	14	13,112	26	7,431
Over 100	4	6,812	1	3,685
Total	1,633	\$24,180	1,011	\$13,753
Males	1,302	\$26,335	40	\$9,785
Females	331	\$15,703	971	\$13,916

**Plan Participants Split by Employer**

The number of Plan participants at December 31, 2011 are split by Participating Employer below.

<b>ER Code</b>	<b>Pensioners</b>	<b>Survivors</b>	<b>Other</b>	<b>Total</b>	<b>Participating Employer Name</b>
1	663	420	4	1,087	Metro Toronto
4	-	1	-	1	Metro Planning Dept
6	3	2	-	5	Metro Toronto Zoo
9	4	3	-	7	Riverdale Hospital
16	-	1	-	1	City of Toronto (Swansea)
18	-	1	-	1	Toronto (Forest Hill) Fire Dept
21	110	70	-	180	North York (Inside Employees)
22	127	128	1	256	North York (Outside Employees)
23	23	12	-	35	North York PLB (Union)
24	9	0	-	9	North York PLB (Non-Union)
26	192	78	-	270	North York Firefighters
31	150	129	-	279	Scarborough
32	5	2	-	7	Scarborough PLB
33	112	51	1	164	Scarborough Firefighters
42	-	-	-	-	Etobicoke (New Toronto PLB)
51	1	2	-	3	York (Weston)
52	5	2	-	7	York (Weston) Firefighters
61	40	44	-	84	East York
62	70	18	-	88	East York Firefighters
63	2	2	-	4	East York Board of Education
64	2	1	-	3	East York (Leaside)
71	12	6	-	18	Toronto & York Roads Commission
80	103	38	1	142	Police (Civilians)
<b>Total</b>	<b>1,633</b>	<b>1,011</b>	<b>7</b>	<b>2,651</b>	

## APPENDIX F

### By-law Provisions

The following is a summary of the main provisions of the Plan, contained in By-law no. 15-92, which are relevant to the actuarial valuation. For complete details reference should be made to the formal plan document.

<b>Background</b>	The Plan became effective January 1, 1954. Benefits are based on a set formula and are entirely paid for by the Company.
<b>Eligibility for membership</b>	Employees of the Employer and predecessor employers who were hired before July 1, 1968.
<b>Employee Contributions</b>	5 ½% of annual pensionable earnings up to the Canada Pension Plan YMPE, and 7% of higher annual earnings until Credited Service equals or exceeds 35 years.  Firefighters must contribute an additional 1% of pensionable earnings  However, for a six-month period beginning July 1, 1998, member contributions were reduced by 2%. Member contributions were entirely eliminated for years 1999 to 2004. Since all active Members had completed 35 years of pensionable service as at December 31, 2004, there are no further contribution requirements after this date.  A refund of contributions previously made by members after completion of 35 years of credited service was made in 2000.
<b>Employer Contributions</b>	Same as Employee Contributions.
<b>Normal Retirement</b>	Regular Members – Age 65 Firefighters – Age 60
<b>Normal Retirement Pension</b>	2% of employee's highest consecutive 5-year average earnings, multiplied by his number of years of service up to a maximum of 35 years, less (after age 65 or total disability) 0.7% of final 3 average YMPE, multiplied by number of years of service after 1.1.66, up to a maximum of 35 years.  For years of service after 1991, the Canada Revenue Agency limit on pensions per year of service applies.
<b>Minimum Pension at Normal Retirement</b>	Greater of: <ul style="list-style-type: none"> <li>• Annual pension of \$450 multiplied by credited service (to a maximum of 30 years), effective from January 2008. The prior minimum was \$300, effective from June, 1992; and</li> <li>• 1.33% of final 5-year average earnings times credited service (up to 35 years)</li> </ul>

<b>Early Retirement Pension</b>	Unreduced pensions when age plus service total 85 (90 prior to January 1, 1987) or more. Firefighters also have a "30 and out" early retirement clause. The early retirement penalty is 4% per year. However, for a 5-year period beginning July 1, 1998, the rule of 85 was replaced by 80 and early retirement penalty was reduced to 2.5% per year.
<b>Disability Retirement</b>	Permitted, with full accrued pensions, (a) after 10 years service, upon total and permanent disability; or (b) after 20 years service, upon inability of performing current job.
<b>Pensionable Earnings</b>	Base pay
<b>Spousal Benefits</b>	66.67% of the deceased member's normal pension.
<b>Orphan's Pensions</b>	If there is no Spouse, 66.67% of the deceased member's normal pension until youngest orphan reaches 21. If there is a Spouse, an amount per child under age 21 where the total paid to Spouse AND Orphans is not to exceed 100% of the deceased member's normal pension.
<b>Other Pre-Retirement Death Benefits</b>	Return of deceased member's pre-1987 contributions plus interest, plus the commuted value of the deceased member's post-1986 accrued pension, in lieu of the spouse pension.
<b>Minimum Death Benefit</b>	Return of deceased member's contributions plus interest, or pension payable for 60 months certain.
<b>Withdrawal Benefits</b>	Vested pension, or return of terminated member's pre-1987 contributions plus interest plus the commuted value of the member's post-1986 accrued pension.
<b>Employer Cost-Sharing</b>	Upon termination, death or retirement, the member or his beneficiary is entitled to receive the excess, if any, of the member's contributions (pre-87 & post-86) plus interest over 50% of the commuted value of the accrued pension.

## APPENDIX G

## Projections and Sensitivity Illustrations

**Projected Solvency Excess/(Deficit) at December 31, 2012**

The current solvency excess is approximately \$0.6 million at January 1, 2012, based on a 4-year smoothing of windup discount rates, asset returns as described in this report and including any pensioner increase recommended at January 1, 2012.

The impact on the projected solvency position at December 31, 2012 of changes in the windup discount rate and asset returns during 2012 is provided in the following table.

**Projected Solvency Excess/(Deficit) at December 31, 2012 (\$million)**

Asset Returns	Wind-up Discount rates			
	3.00%	3.50%	4.00%	4.50%
-5.50%	(41)	(23)	(5)	13
0.00%	(34)	(16)	2	20
5.50%	(27)	(9)	9	27
11.00%	(20)	(3)	16	34

Note that for purposes of our projections we have assumed no smoothing of discount rates in determining the solvency liabilities at December 31, 2012, in accordance with pending changes to the PBA and Regulations to remove solvency liability smoothing.

**Projected Employer Contributions for 2013**

The current minimum required Employer contributions for 2012 are \$0.

The impact on the projected Employer contributions for 2013 of changes in the windup discount rate and asset returns, based on a projected valuation at December 31, 2012, is provided in the following table.

**Projected Employer Contributions for 2013 (\$million)**

<b>Asset Returns</b>	<b>Wind-up Discount rates</b>			
	<b>3.00%</b>	<b>3.50%</b>	<b>4.00%</b>	<b>4.50%</b>
<b>-5.50%</b>	8.8	5.0	1.1	0.0
<b>0.00%</b>	7.3	3.5	0.0	0.0
<b>5.50%</b>	5.9	2.0	0.0	0.0
<b>11.00%</b>	4.4	0.5	0.0	0.0



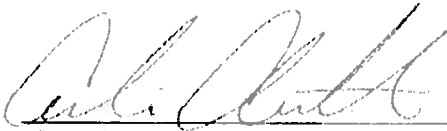
## APPENDIX H

### Employer Certification

With respect to the Report on the Actuarial Valuation for Funding Purposes as at December 31, 2011, of the Metropolitan Toronto Pension Plan I hereby certify that, to the best of my knowledge and belief:

- a copy of the official plan documents and of all amendments made up to December 31, 2011, were provided to the actuary and is reflected appropriately in the summary of plan provisions contained herein,
- the asset information summarised in Appendix B is reflective of the Plan's assets,
- the membership data provided to the actuary included a complete and accurate description of every person who is entitled to benefits under the terms of the Plan for service up to November 1, 2011 and adjustments to the effective date of the valuation, and;
- all events subsequent to December 31, 2011 that may have an impact on the Plan have been communicated to the actuary.

March 21, 2012  
Date

  
Signed

Colne Chavath  
Name



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