

**METROPOLITAN TORONTO POLICE**  
**BENEFIT FUND**  
**DEC 31, 2017 FUNDING VALUATION RESULTS**

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# METRO TORONTO POLICE BENEFIT FUND

- Last valuation filed with FSCO as at December 31, 2016
- This valuation as at December 31, 2017 is not required to be filed
- On May 19, 2017, the government of Ontario announced that it would be implementing a new funding framework for defined benefit plans.
- On December 14, 2017, the Ministry of Finance published a description of the proposed funding rules (“Proposed Rules”)
- The actual regulations have not been published and their impact on this funding valuation is uncertain at this time.
- This presentation illustrates the going-concern results on the current and the Proposed Rules. The report for filing purposes will be prepared once the applicable regulations are finalized.

# METRO TORONTO POLICE BENEFIT FUND

## MEMBERSHIP STATISTICS

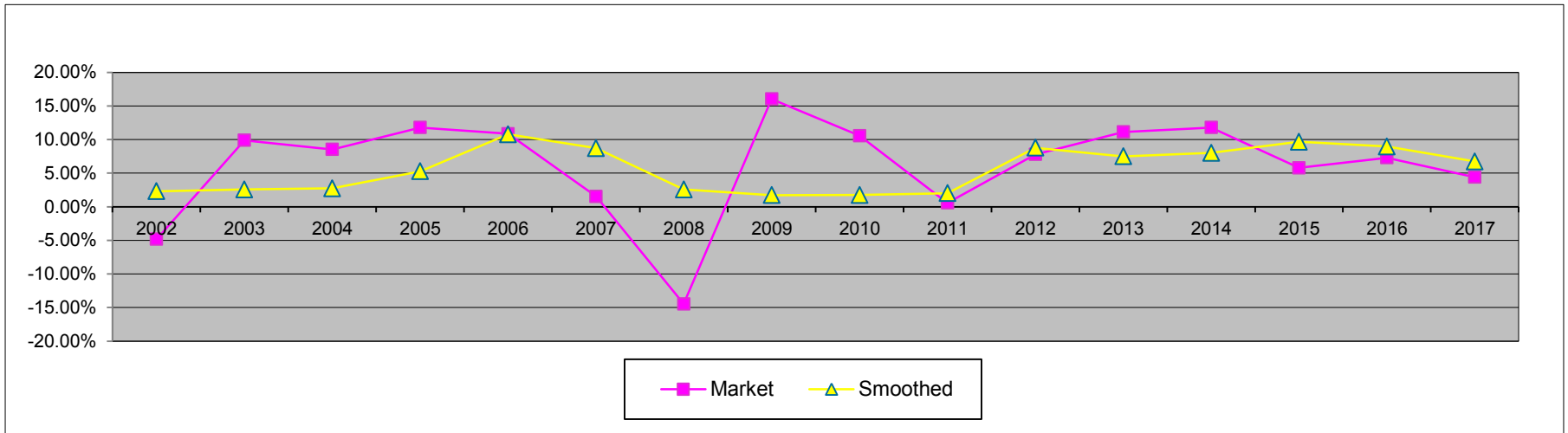
	2017	2016	2015	2014
<b>Membership</b>				
<b>Actives</b>	-	1	1	2
<b>Pensioners</b>	1,015	1,070	1,125	1,170
<b>Survivors</b>	674	700	703	716
<b>Total</b>	1,689	1,771	1,829	1,888
<b>Average Monthly Pension Payment</b>	2,523	2,480	2,482	2,472
<b>Average Monthly Survivor Payment</b>	1,547	1,508	1,479	1,483
<b>Total Benefits Paid in Year (\$000)</b>	44,099	45,004	46,530	47,928

# METRO TORONTO POLICE BENEFIT FUND

## RATES OF RETURN

### Rates of return Dec 31

	2017	2016	2015	2014
<b>Market Value (\$000)</b>	521,898	543,400	550,281	565,800
<b>Rate of Return, net of IMF</b>	4.40%	7.29%	5.78%	11.79%
<b>Rate of Return, gross</b>	4.55%	7.45%	6.07%	11.99%
<b>Smoothed Value (\$000)</b>	515,409	525,885	526,126	524,590
<b>Rate of Return, net of IMF</b>	6.74%	8.96%	9.66%	8.01%



# METRO TORONTO POLICE BENEFIT FUND

## RECONCILIATION OF SMOOTHED ASSETS (\$000)

	2017	2016	2015	2014
<b>Assets at Jan. 1</b>	525,885	526,126	524,590	522,954
<b>Employee Contributions</b>	-	-	-	-
<b>Employer Contributions</b>	-	-	-	9,328
<b>Pensioner Pensions</b>	(31,226)	(32,336)	(33,967)	(35,126)
<b>Survivor Pensions</b>	(12,873)	(12,667)	(12,563)	(12,802)
<b>Other Benefits</b>	-	-	-	-
<b>Non Investment Expenses</b>	(325)	(324)	(341)	(326)
<b>Investment Income (Market) net of fees</b>	22,922	38,446	31,353	61,653
<b>Transfer (to)/from Smoothing Account</b>	11,026	6,640	17,055	(21,346)
<b>Change in in-transits</b>	-	-	-	255
<b>Assets at Dec. 31</b>	515,409	525,885	526,126	524,590
<b>Smoothing Account - Jan. 1</b>	17,515	24,155	41,210	19,864
<b>Transfer to/(from) Smoothing Account</b>	(11,026)	(6,640)	(17,055)	21,346
<b>Smoothing Account - Dec. 31</b>	6,489	17,515	24,155	41,210

# METRO TORONTO POLICE BENEFIT FUND

## ASSUMPTION CHANGES, DATA ESTIMATES

### Assumption Changes

- Discount rate used for going-concern valuation has decreased from 4.25% to 3.55% per year (primarily due to change in asset mix) under the current rules and 3.80% under the Proposed Rules
  - No other changes to going-concern assumptions
  - Provision for Adverse Deviations (“PfAD”) of 7.5% of going-concern liabilities reflected under the Proposed Rules
- Wind-up and solvency valuation assumptions updated to reflect changes in market conditions

### Data Estimates

- Stepped Pension:
  - Liability due to surviving spouse’s pension payable on member’s death has been estimated based on available data
  - Information required to calculate spouse’s pension precisely is not available electronically
- Orphan’s Pension:
  - There are no orphans provided in the data
  - Given age of the population and data as provided, this benefit is not expected to be material.

# METRO TORONTO POLICE BENEFIT FUND

## ACTUARIAL ASSUMPTIONS

### Actuarial Assumptions

	Proposed Rules for 2017*	Current Rules for 2017	2016	2015	2014
<b>Actuarial Assumptions - Going Concern</b>					
Discount Rate	3.80%	3.55%	4.25%	5.00%	5.50%
Provision for Adverse Deviation ("PfAD")	7.5% of liability	N/A	N/A	N/A	N/A
Mortality Table (post retirement only)	125%	125%	125%	125%	125%
	CPM2014Pu	CPM2014Pu	CPM2014Pu	CPM2014Pu	CPM2014Pu
<b>Actuarial Assumptions - Solvency and Wind-up</b>					
Discount Rate - Solvency	2.750%	2.750%	3.125%	3.250%	3.125%
Discount Rate - Wind-Up	2.90%	2.90%	2.91%	2.63%	2.29%
Mortality Table (post retirement only)	110% of	110% of	110% of	110% of	UP94
	CPM2014	CPM2014	CPM2014	CPM2014	

\* The going-concern discount rate under proposed rules does not include margin for adverse deviations. Under the Proposed Rules, the PfAD is prescribed based on the plan's closed status and the target asset mix of the fund.

# METRO TORONTO POLICE BENEFIT FUND

## GOING CONCERN FINANCIAL POSITION

### AT DECEMBER 31 (\$000)

	Proposed Rules for 2017	Current Rules for 2017	2016	2015	2014
<b>Assets</b>					
Market Value	521,898	521,898	543,400	550,281	565,800
Actuarial Value	515,409	515,409	525,885	526,126	524,590
<b>Liabilities</b>					
Active and Disabled Members	-	-	1,598	1,514	2,403
Pensioners and Surviving Spouses	437,809	446,204	444,571	445,517	451,751
Provision for Adverse Deviations	32,837	-	-	-	-
Reserve for 50% excess refunds	12	12	11	11	10
<b>Total Liabilities</b>	<b>470,658</b>	<b>446,216</b>	<b>446,180</b>	<b>447,042</b>	<b>454,164</b>
Prior Year Credit Balance	-	-	-	-	-
<b>Going Concern Excess/(Deficiency)</b>	<b>44,751</b>	<b>69,193</b>	<b>79,705</b>	<b>79,084</b>	<b>70,426</b>
<b>Funded Ratio</b>	<b>110%</b>	<b>116%</b>	<b>118%</b>	<b>118%</b>	<b>116%</b>
<b>Actuarial Assumptions</b>					
Discount Rate	3.80%	3.55%	4.25%	5.00%	5.50%
Salary Increases	NA	NA	3.00%	3.00%	3.00%
YMPE Increases	NA	NA	3.00%	3.00%	3.00%
Mortality Table (post retirement only)	125%	125%	125%	125%	125%
	CPM2014Pu	CPM2014Pu	CPM2014Pu	CPM2014Pu	CPM2014Pu



# METRO TORONTO POLICE BENEFIT FUND

## RECONCILIATION OF CHANGE IN FINANCIAL POSITION (\$000)

### Actuarial Gain and Loss

	2017	2016	2015	2014
<b>Funding Excess - Jan. 1</b>	79,705	79,084	70,426	17,740
<b>Pensioner Upgrade (This Year)</b>	(4,890)	-	-	-
<b>Actuarial assumptions</b>	(22,804)	(23,920)	(15,899)	27,257
<b>Employer Contributions for Deficiency</b>	-	-	-	9,584
<b>Investment Returns (smoothed basis)</b>	15,923	23,859	24,413	13,837
<b>Mortality</b>	1,292	562	72	2,107
<b>Expenses (non-investment)</b>	(325)	(324)	(341)	(326)
<b>Miscellaneous</b>	292	444	413	227
<b>Funding Excess - Dec. 31 - Current Rules</b>	69,193	79,705	79,084	70,426
<b>Impact of the Proposed Rules</b>	(24,442)			
<b>Funding Excess - Dec. 31 - Proposed Rules</b>	44,751			

# METRO TORONTO POLICE BENEFIT FUND

## WINDUP/SOLVENCY FINANCIAL POSITION

### AT DECEMBER 31 (\$000)

	2017	2016	2015	2014
<b>Wind-Up Assets</b>				
<b>Market Value</b>	521,898	543,400	550,281	565,800
<b>Letter of Credit</b>	-	20,933	14,703	4,823
<b>Expenses of Wind-Up of Plan</b>	(253)	(266)	(274)	(283)
<b>Total Wind-Up Assets</b>	521,645	564,067	564,710	570,340
<b>Wind-Up Liabilities</b>				
<b>Active and Disabled Members</b>	-	1,831	1,898	3,165
<b>Pensioners and Surviving Spouses</b>	486,887	511,545	556,594	581,156
<b>Reserve for 50% excess refunds</b>	12	11	11	10
<b>Total Wind-Up Liabilities</b>	486,899	513,387	558,503	584,331
<b>Wind-Up Excess/(Deficit) *</b>	34,746	50,680	6,207	(13,991)
<b>Wind-Up Excess/(Deficit) without letter of credit</b>	34,746	29,747	(8,496)	(18,814)
<b>Ratio of Assets to Liabilities</b>	107%	106%	98%	97%
<b>Solvency Asset smoothing adjustment</b>	(18,727)	(33,340)	(40,783)	(54,259)
<b>Solvency Liability smoothing adjustment</b>	(6,065)	9,141	29,040	41,002
<b>Solvency Surplus/(Shortfall)</b>	9,954	26,481	(5,536)	(27,248)

\* Wind-up status of the plan is same as the non-smoothed solvency status of the plan

# METRO TORONTO POLICE BENEFIT FUND

## RANGE OF FUNDING REQUIREMENTS

<b>Funding Requirements (prior to letter of credit)</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>
<b>Current Service Cost</b>	-	-	-	-
<b>Funding Deficiency Payments</b>	-	-	-	-
<b>Solvency Deficiency Payments*</b>	-	-	3,425,000	9,014,400
<b>Total Contribution - Per Year</b>	-	-	3,425,000	9,014,400
<b>Total Contribution - Per Month</b>	-	-	521,400 for first 6 months, 49,400 thereafter	751,200
<b>Minimum contribution for the year (per PBA)</b>	-	-	3,425,000	9,014,400
<b>Maximum contribution for the year (per ITA)</b>	-	-	8,496,000	18,814,000
<b>Maximum contribution for the year (per CRA Q&amp;A)</b>	-	-	8,496,000	18,814,000

# METRO TORONTO POLICE BENEFIT FUND

## COLA AND INDEXATION RESERVE (\$000)

	Proposed Rules for 2017	Current Rules for 2017	2016	2015	2014
Change in CPI (September to September)	1.55%	1.55%	1.34%	1.03%	2.03%
COLA for consideration of Jan 1 of next year	1.85%	1.85%	1.10%	0.00%	0.00%
Cost of COLA (Next Year) Going Concern	8,707	8,255	4,890	-	-
Cost of COLA (Next Year) Solvency	9,120	9,120	5,548	-	-
Going Concern Excess after COLA	36,044	60,938	74,815	79,084	70,426
Solvency Excess after COLA	834	834	-	(5,536)	(27,248)
Indexation Reserve before upgrade @ Dec 31	9,954	9,954	5,548	-	-
Indexation Reserve after upgrade @ Dec 31	834	834	-	-	-
Cost of Living Adjustments to Pensions					
History of Adjustments, effective Jan. 1	1.10%	1.10%	0.00%	0.00%	0.00%
Cost to Indexation Reserve of 1% COLA	4,930	4,930	5,044	N/A	N/A

# METRO TORONTO POLICE BENEFIT FUND

## COMPARISON WITH OMERS TRANSFER BASIS (\$000)

Balance Sheet	Proposed Rules Going-concern Valuation	Current Going-concern Valuation	OMERS Transfer Basis Excluding Indexing	OMERS Transfer Basis Full Indexing
Assets	521,898	521,898	521,898	521,898
Liabilities	470,658	446,216	423,400	494,929
Surplus	51,240	75,682	98,498	26,969
<b>Assumptions</b>				
Discount Rate	3.80%	3.55%	4.25%	4.25%
Indexing	0.00%	0.00%	0.00%	2.00%
Mortality	125%	125%	125%	125%
	CPM2014Pu	CPM2014Pu	CPM2014Pu	CPM2014Pu

OMERS economic assumptions used above. Police plan specific mortality assumption is assumed.

# METRO TORONTO POLICE BENEFIT FUND

## GOING CONCERN PROJECTION

### SMOOTHED BASIS

#### Going Concern Position at December 31, 2017

Discount Rate: 3.80%  
 Going Concern Excess/(Deficit): 44.8 \$million

#### Projected Going Concern Excess/(Deficit) at December 31, 2018

With 1.55% COLA at January 1, 2018

Discount Rate/ Asset Return	3.30%	3.80%	4.30%
-5.00%	16.4	34.1	51.9
0.00%	22.7	40.4	58.2
5.00%	28.9	46.6	64.4
10.00%	35.2	52.9	70.7

**Note that the above results are on a smoothed basis. Impact of asset returns on a market basis would be significantly different.**

# METRO TORONTO POLICE BENEFIT FUND

## SOLVENCY PROJECTION

### SMOOTHED BASIS

#### Solvency Position at December 31, 2017

Discount Rate (actual):	2.90%
Discount Rate (smoothed):	2.75%
Solvency Excess/(Deficit):	10.0 \$million

#### Projected Solvency Excess/(Deficit) at December 31, 2018

With 1.55% COLA at January 1, 2018

Market Discount Rate/ Asset Return	1.90% -100bps	2.40% -50bps	2.90% Base	3.40% +50bps	3.90% +100bps
-5.00%	(1.5)	3.5	8.5	13.6	18.6
0.00%	4.8	9.8	14.8	19.9	24.9
5.00%	11.0	16.0	21.0	26.1	31.1
10.00%	17.3	22.3	27.3	32.4	37.4

Note that the above results are on a smoothed basis. Impact of asset returns and discount rate changes on a market basis would be significantly different.

# METRO TORONTO POLICE BENEFIT FUND

## SOLVENCY PROJECTION

### REMOVE SOLVENCY SMOOTHING

#### Solvency Position at December 31, 2017

Discount Rate (actual): 2.90%

Solvency Excess/(Deficit): 34.7 \$million

#### Projected Solvency Excess/(Deficit) at December 31, 2018

With 1.55% COLA at January 1, 2018

Market Discount Rate/ Asset Return	1.90% -100bps	2.40% -50bps	2.90% Base	3.40% +50bps	3.90% +100bps
-5.00%	(51)	(32)	(12)	9	29
0.00%	(26)	(7)	13	34	54
5.00%	(1)	18	38	59	79
10.00%	24	44	64	84	104



**MAKE**



**TOMORROW,  
TODAY**