

Actuarial Valuation of the Municipality of Middlesex Centre's Retirement Benefits PSAB Obligations & Expenses as at December 31, 2021

The Municipality of Middlesex Centre ("Municipality") retained Nexus Actuarial Consultants Ltd. to provide the Municipality with actuarial estimates of its non-pension retirement liabilities for extended health care, travel, and dental. Specifically, the Municipality requires:

1. Expected and actual accrued benefit obligations (liabilities) at the end of 2021;
and
2. Actuarial updates to December 31, 2022, 2023 and 2024;

to meet the financial reporting requirements under the Public Sector Accounting Board (PSAB) recommendations for local governments.

Understanding Present Value, Accrued Benefit Obligation and PSAB Liability

The **Present Value** of the Retirement Benefits at December 31, 2021 is the Municipality's proportion (excludes the proportion which is paid by employees) of the discounted projected future health and dental payments for all existing employees, retirees and those on Long Term Disability (LTD) at December 31, 2021. The Present Value can be thought of as the amount of money, which if deposited in a bank account at December 31, 2021 that earns interest at the valuation interest (discount) rate, is sufficient to pay for all of the Municipality's future payments (assuming that all of the valuation management assumptions are met). The discounted cash flow (Present Value) is shown in the first block of data in Appendix C of this report.

The **Accrued Benefit Obligation** (ABO) of the Retirement Benefits at December 31, 2021 is the Municipality's proportion of the **Present Value** of the Retirement Benefits which has been accrued (earned) based upon service to December 31, 2021. Retirement Benefits for the Municipality's employees are earned over the active employee's working lifetime. Retirement Benefits are accrued (earned) with each additional year of service of an active employee until that employee meets the eligibility requirements for the benefits. The benefits are "fully accrued" for some active employees with long service. The benefits are also fully accrued for all retirees receiving benefits, and for all those on LTD receiving benefits. The ABO is shown in the second block of data in Appendix C of this report.

The **PSAB Liability** at December 31, 2021 is the ABO adjusted for the unamortized gains and losses which have occurred at past valuation dates. PSAB recommends that gains and losses that occur at valuation dates be amortized over the Expected Average Remaining Service Life (EARSL). The EARSL is the average remaining service until benefits are fully accrued (earned). The PSAB Liability is shown in Exhibit V in Appendix B. The remaining unamortized Gains and losses are shown in Appendix B1a.

Limitations of the Valuation

This valuation was performed using information provided to us by the Municipality, including per employee data extracted from the Municipality's records in March of 2022. We worked with the Municipality to reduce errors or omissions in the data and information provided.

We reviewed the data and information for reasonableness. This report includes the following Appendices:

- Appendix A Membership Data Summary
- Appendix B Detailed Accounting Results
- Appendix C Actuarial Results
- Appendix D Benefit Provisions and Assumptions
- Appendix E ASO Cost Rates
- Appendix F Spot Yield Curves and Table

Each appendix was included in the report submitted to the Municipality in draft form to enable the Municipality to confirm our understanding of the information. Based upon our subsequent review and discussions with the Municipality, we believe the data and information provided are sufficient for the valuation.

In accordance with Chartered Professional Accountants (CPA) Section PS 3250, the actuarial assumptions should be based upon the Employer's best estimates of expected long-term experience and short-term forecasts. The actuarial assumptions have been suggested by us and agreed upon by the employer. We consider the assumptions and our selected methodology appropriate for our analysis.

The results of the valuation rely on the review of the Municipality's experience and the projections for the future using the management assumptions. To the extent that the valuation assumptions for the future are not met, the future experience will emerge differently from that projected resulting in gains and/or losses that will be determined at the next valuation. In any event, another complete analysis and valuation should be performed in three years at December 31, 2024, unless future events, such as a change in the employee benefit package, suggest the need for an earlier analysis and valuation.

Issues for the Valuation

There are no issues for this valuation.

Discount Rate

We suggest using the smooth curve for CPA valuations (Corporate AA bonds) as a base to estimate Ontario Municipal spot discount rates.

We also suggest:

- Basing a projected yield curve on the shape of current yield curve, using a mean term of 18 years and an expected long term rate curve of CPI plus 1.50%.
- Blending the short term forecast with the expected long-term experience over 15 years.

Appendices F1 & F2 include a chart and a table showing the short term forecast, expected long term experience and blended yields by duration of mean term.

We suggest adoption of an average discount rate of 3.25% for the retirement benefits valuation, which is 0.75% lower than the 4.00% discount rate used at December 31, 2019.

The suggested rate is based upon discounting the Municipality's Retirement Benefits cash flow using the PS 3250/55 Discount Rate Curve shown in Appendix G1 and finding the equivalent flat discount rate, rounded to the nearest 0.25%.

Non-Pension Benefits

We understand that the Municipality provides the following post-employment benefits:

1. Accumulating Sick Leave Credits Paid Out During Periods of Sick Leave

The Municipality does not have an accumulating sick leave plan that permits usage of sick leave accumulated in prior years or that provides a partial payout at death, termination or retirement.

2. Health Care, Travel, and Dental (retirement benefits)

The Municipality provides health care (including travel) and dental benefits to eligible employees in retirement. The benefits are provided until the retiree's 65th birthday, or death, whichever comes first. The retiree pays 50% of the billed ASO health and dental deposit rates and 50% of the billed retiree travel premiums for members in early retirement.

Council, part-time and contract members are not eligible for retirement benefits.

3. Life Insurance

The Municipality does not provide life insurance for members in early retirement.

4. Eligibility and Termination of Benefits

Members are eligible to receive early retirement benefits if they are full-time, permanent employees of the Municipality, and retire on an OMERS pension with at least 10 years of service with the Municipality.

Benefits are provided to the earlier of age 65 or death.

5. Other Benefits

The other employee benefits, such as long term disability (LTD) are insured and terminate upon retirement or early retirement.

Since the LTD is insured, there is no accrued benefit obligation for the LTD to be reported to meet the PSAB requirements.

We also understand that:

- The Health Care, Travel, and Dental benefits are administered by RWAM Insurance Administrators Inc;
- The maximum fee schedules for dental are reasonably current and are revised on reasonably frequent basis so that they stay in line with current prices;
- There are no concrete plans or commitments to significantly change the current benefit package; and
- Those already retired will maintain their current level of early retirement

benefits until the appropriate termination date.

Historical Experience – ASO Cost Rates

The Municipality’s Health (except Travel) and Dental claims are self-insured under ASO contracts. The Cost Rates for Health and Dental were derived from the historical ASO costs from 2019 to 2021 and the number of family and single coverages included in the data for the current valuation was based on the tracking of headcounts in the Municipality’s renewal reports.

Municipality of Middlesex Centre ASO Health Cost Rates - Combined								
	Projected Cost Rate at July 1, 2022	Experience Year December 1 to November 30						
		2021	2020	2019	2018	2017	2016	2015
Annual Cost Rate Family	3,511.17	3,320.25	3,067.09	2,911.05	2,599.77	3,053.89	2,818.26	2,498.28
Monthly Cost Rate Family	292.60	276.69	255.59	242.59	216.65	254.49	234.85	208.19
Monthly Cost Rate Single	121.65	115.04	106.70	101.27	90.44	106.24	98.04	86.91
Percentage Change	5.75%	8.3%	5.4%	12.0%	-14.9%	8.4%	12.8%	N/A
3 Year Average Actual Increase		8.5%			1.3%			
Suggested Retiree Dental Cost Rate for Valn:								
Start with the Projected July 1, 2022 Combined (Active and Retiree) Cost Rate with 25% age adjustment								
Municipality of Middlesex Centre ASO Dental Cost Rates - Combined								
	Projected Cost Rate at July 1, 2022	Experience Year December 1 to November 30						
		2021	2020	2019	2018	2017	2016	2015
Annual Cost Rate Family	1,757.14	1,693.63	1,107.58	1,598.14	1,600.02	1,573.47	1,488.81	1,602.14
Monthly Cost Rate Family	146.43	141.14	92.30	133.18	133.33	131.12	124.07	133.51
Monthly Cost Rate Single	60.23	58.05	37.96	54.78	54.57	53.66	50.78	54.64
Percentage Change	3.75%	52.9%	-30.7%	-0.1%	1.7%	5.7%	-7.1%	N/A
3 Year Average Actual Increase		1.9%			0.0%			
Suggested Retiree Dental Cost Rate for Valn:								
Start with the Projected July 1, 2022 Combined (Active and Retiree) Cost Rate with 0% age adjustment								

We suggest that the 2022 Retiree Cost Rates be set using the combined active and retiree Cost Rates with the average municipal age adjustments of plus 25% for Health Care and 0% for Dental.

The Municipality has fully pooled premium rates for the travel benefits, with separate rates for the retiree class. We suggest using the March 1, 2022 retiree travel premium rates to project the retiree travel costs, with the retiree paying 50% of this cost.

See Appendix E for the derivation of the ASO Health and Dental Cost Rates.

Management Assumptions

For each key actuarial assumption, the Municipality is required to establish its best estimate of expected long-term experience and short-term forecasts. The key actuarial assumptions established for this valuation (*prior valuation assumptions are given in italics*) are:

- **Financial**
 - Future cost of long term debt 3.25% per year¹ (*4.00%*)
 - Future inflation rates (CPI) 1.75% per year (*Same*)
 - Future salary escalations 2.75%, set at CPI plus 1.00% per year
(*Same*)
 - Future dental escalations Escalate at 3.75%, set at CPI plus 2.00%
per year (*Same*)
 - Future health cost rate escalations Escalate at 5.75%, set at CPI plus
4.00%, for 2022, reducing by 0.3333% per
year to 3.75% in 2028 and thereafter
(*Escalate at 6.75%, set at CPI plus 4.00%,
for 2019, reducing by 0.3333% per year to
3.75% in 2028 and 3.75% per year
thereafter*)
- **Demographic**
 - Expected future mortality rates Uninsured Pensioners 1994 with mortality
improvement projections to 2040 (*UP94-
2030*)
 - Expected future termination rates Ontario Light Termination Rates (*Same*)
 - Early future retirement rates **25%** in the earliest year of meeting rules for
no reduction in pension; **10%** in subsequent
years (*Same*)
 - Retiree benefits fully accrued OMERS Pension, Reduced or Unreduced
with 20 years of service (*Same*)
 - Current early retirees Remain retired (*Same*)
 - EARSL (expected average remaining service life) 18 years for retirement benefits. (*16
years*)
- **Benefit Provisions and Cost Rates**
 - Normal Retirement Age (NRA) Age 65 (*Same*)
 - Average age at Retirement Age 61 (*Same*)
 - Dental Projected 2022 active and retiree weighted
average annual Dental Cost Rates including

¹ See section on discount rate on page 3.

taxes and expenses (\$1,757.16 for family and \$772.76 [41%] for single) plus 0% age adjustment, plus future dental cost rate escalations (*Projected 2019 active and retiree weighted average annual Dental Cost Rates including taxes and expenses (\$1,660.02 for family and \$679.37 [41%] for single) plus 0% age adjustment, plus future dental cost rate escalations*)

- Health Care Projected 2022 active and retiree weighted average annual Health Care Cost Rates including expenses and taxes of \$3,511.20 for family and \$1,459.80 [42%] for single plus a 25% age adjustment, plus future health care cost rate escalations (*Projected 2019 active and retiree weighted average annual Health Care Cost Rates including expenses and taxes of \$2,775.25 for family and \$1,158.58 [42%] for single plus a 25% age adjustment, plus future health care cost rate escalations*)
- Travel Cost Rate Current (March 1, 2022) Retiree Premium Rates (\$97.00 family, \$48.50 single), plus RST, plus future travel premium rate escalations. (*Current (March 1, 2019) Retiree Premium Rates (\$97.00 family, \$48.50 single), plus RST, plus future travel premium rate escalations.*)
- Waived Benefit Eligibility 100% of those waiving benefit coverage while active will not be eligible for the benefit during early retirement (*Same*)
- Benefit Coverage Members will retain the currently assigned coverage of Family or Single (*Same*)
- Retiree Benefit Election Rate **50%** of those eligible will elect to receive retiree health, dental, and travel benefits (*Same*)
- Expected future sales tax 8% (*Same*)
- Expected future administration 0% (*Same*)
- Expected future changes in benefits Future benefit caps will track expected future cost rate escalation rates (*Same*)

Actuarial Cost Methods

As recommended by PSAB, the projected benefit method pro-rated on services has been adopted to attribute the cost of non-pension retirement benefits to the periods of employee service.

Health, Dental, and Travel Benefits

Under this method, the present value of all fiscal 2022 and later **Costs** to be paid by the Municipality for each active and retired employee for non-pension retirement benefits (health care, dental, travel), as at December 31, 2021, are pro-rated. They are pro-rated over the employee's service from the date of employment to the date the employee first becomes eligible to receive the benefit.

Valuation Results

The following tables summarize the results in accordance with PSAB 3250.B Example 2 *Illustrative Note to the Financial Statements*².

Retirement Benefits

Accounting Results - Middlesex Centre-All - RB					
Non-Pension Post-Employment Benefit Accounting Results					
Exhibits In Accordance with CPA PSAB Accounting Handbook Section 3250.B Example 2					
		3.25%	3.25%	3.25%	4.00%
Exhibit II	Expected closing balance of ABO	2024	2023	2022	2021
	ABO - opening balance	95,377	90,826	86,429	46,986
	Add: Current period benefit expense	6,726	6,386	6,064	3,606
	Increase due to plan amendment	-	-	-	-
	Interest accrued (Exhibit I)	3,128	2,977	2,834	1,832
	Deduct: Benefit payments	5,014	4,812	4,502	5,974
	Expected closing balance	100,217	95,377	90,826	46,450
Exhibit III	Amortization of actuarial gains/losses on ABO	2024	2023	2022	2021
	Expected closing balance of ABO at December 31	100,217	95,377	90,826	46,450
	Actual ABO per December 31 actuarial valuation	100,217	95,377	90,826	86,429
	Actuarial gain / (loss)	-	-	-	(39,979)
	EARSL years	18	18	18	18
	Annual amortization over EARSL	-	-	-	(2,221)
Exhibit V	Liability for Post-employment benefits recorded in the statement of financial position	2024	2023	2022	2021
	ABO - closing balance (Exhibit III)	100,217	95,377	90,826	86,429
	Unamortized actuarial gains/(losses) (Exhibit IV)	(33,316)	(35,537)	(37,758)	(39,979)
	Liability for Post-employment benefits	66,901	59,840	53,068	46,450
Exhibit VI	Expenditures/expenses recorded in the statement of revenues and expenditures/expenses	2024	2023	2022	2021
	Current period benefit cost	6,726	6,386	6,064	3,606
	Prior period cost of plan amendment incurred during the year	-	-	-	-
	Recognition of unamortized net actuarial gains	-	-	-	-
	Amortization of actuarial gains/losses (exhibit III)	2,221	2,221	2,221	-
	Post-employment benefit expenditure/expense	8,947	8,607	8,285	3,606
	Post-employment benefit interest expenditure/expense (exhibit I)	3,128	2,977	2,834	1,832
	Total expenditures/expenses related to Post-employment benefits	12,075	11,584	11,119	5,438

There is a net actuarial **loss of \$39,979** for the retirement benefit obligations, measured at December 31, 2021. The net actuarial loss is comprised of the following:

- A **\$20,516 loss** on changes to member data;
- A **\$11,438 loss** on changes to the claims cost factors;
- A **\$330 loss** on changes to the mortality table; and
- A **\$7,695 loss** on the decrease in the discount rate

The **net actuarial loss of \$39,979** should be amortized over the Estimated Average Remaining Service Life of 18 years, beginning in 2022. See Appendix B1a for details.

² The detailed Accounting Exhibits in Accordance with *CPA PSAB Accounting Handbook Section 3250.B Example 2* is presented in Appendices B1, B2 and B3. The results for the individual benefits are shown, for illustrative purposes, in Appendix C.

Sensitivity Analysis

It is important to note that the valuation results are very sensitive to the management assumptions for both the discount rate and for when people actually retire, as shown in the following table:

Sensitivity Analyses Municipality of Middlesex Centre	Accrued Benefit Obligation		
	December 31, 2021	Difference	% Change
Retirement Assumption (When do members actually retire?)			
25% Retire when 1st eligible, 10% of remaining each year thereafter	\$ 86,429		
25% Retire when 1st eligible, 15% of remaining each year thereafter	\$ 95,307	\$ 8,878	10.3%
50% Retire when 1st eligible, 15% of remaining each year thereafter	\$ 116,118	\$ 29,689	34.4%
100% Retire when 1st eligible for an Unreduced OMERS pension	\$ 157,741	\$ 71,312	82.5%
Minimum Service Requirement			
20 Years	\$ 86,429		
10 Years - No Significant Impact, due to Retirement Assumption	\$ 86,608	\$ 179	0.2%
Discount Rate Assumption			
3.25%	\$ 86,429		
2.25%	\$ 98,719	\$ 12,290	14.2%
4.25%	\$ 76,390	\$ (10,039)	-11.6%
Election Rate Assumption			
50.00%	\$ 86,429		
75.00%	\$ 114,595	\$ 28,166	32.6%
100.00%	\$ 142,762	\$ 56,333	65.2%
Benefit Inflation Assumptions			
Dental 3.75%, Health 5.75% in 2022 reducing by 0.333% per year to 3.75%	\$ 86,429		
Dental 4.75%, Health 6.75% in 2022 reducing by 0.333% per year to 4.75%	\$ 98,957	\$ 12,528	14.5%

If the retirement assumption were that 100% retire when first eligible for an unreduced OMERS pension, the accrued benefit obligation would increase by 83%.

If the discount rate assumption were 2.25% rather than 4.25%, the accrued benefit obligation would increase by 14%.

If 100% of all eligible members elect the health, travel, and dental benefits at retirement, the accrued benefit obligation would increase by 65%.

If the benefit inflation assumptions for health, travel, and dental were increased by 1%, the accrued benefit obligation would increase by about 15%.

Annual Confirmation by Management Prior to Using the Actuarial Updates

The actuarial updates for 2022, 2023 and 2024 require annual confirmation of some items before they are used. The items requiring annual confirmation by management are:

1. There has been no change in the benefit package since the December 31, 2021 valuation;
2. There has been no change in the eligibility for early retirement since the December 31, 2021 valuation;
3. The premium rates and escalation factors assumed in the December 31, 2021 valuation are still reasonable and any changes can be recognized as part of the full valuation at December 31, 2024;
4. The changes in active and early retirement membership entitled to benefits since 2021 can be recognized in the full valuation as at December 31, 2024 as any changes will not have a material impact upon results;
5. The discount rate (based upon the Municipality's cost of borrowing over the short and long term) of 3.25% together with the assumption that the difference between the rate of general inflation and discount rate will be 1.50% (i.e. general inflation will average 1.75% over the long term) remain appropriate; and
6. The results in Appendix B are consistent with your organization's 2022 and later financial statements.

Please note that the accounting results do not recognize the Municipality's reserves earmarked for their obligations as PSAB only recognizes assets that are in a segregated fund, or its equivalent.

In my opinion, these results comply with our understanding of the PSAB recommendations and are appropriate for use in the financial statements.

Sincerely,

Paul Serafini, F.C.I.A.
Actuary