



Actuarial Valuation as at December 31, 2021 for Supplementary Retirement Plan for Public Service Managers

March 22, 2023

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Executive Summary

An actuarial valuation has been prepared for the Supplementary Retirement Plan for Public Service Managers (the "Plan") as at December 31, 2021 for the primary purpose of recommending a funding range for the Plan until the next actuarial valuation is performed. This section provides an overview of the important results and the key valuation assumptions which have had a bearing on these results. The next actuarial valuation for the purposes of developing funding requirements should be performed no later than as at December 31, 2024.

Summary of Principal Results

Financial Position

	December 31, 2021	December 31, 2020
Assets	\$ 230,897,000	\$ 210,636,000
Liabilities	<u>229,798,000</u>	<u>226,673,000</u>
Excess/(Deficit)	\$ 1,099,000	\$ (16,037,000)

Contribution Requirements

	December 31, 2021	December 31, 2020
Member Contribution Rate to RCA Fund / RTA	12.00%*	12.80%
Matching Employer Contribution Rate to RCA Fund / RTA	12.00%*	12.80%
Employer Contribution Rate to Reserve Fund	19.70%	19.70%**

* Effective April 1, 2023

** Effective April 1, 2022

Membership Data

	December 31, 2021	December 31, 2020
Active Members	431	633
Potential Active Members	403	51
Pending Members	33	35
Deferred Vested Members	161	158
Hold on Deposit Members	103	109
Retired Members and Beneficiaries	1,378	1,291

Key Assumptions

The principal assumptions to which the valuation results are most sensitive are outlined in the following table.

Going Concern	December 31, 2021	December 31, 2020
Rate of return on assets	RCA Fund: 1.50% per year Reserve Fund: 4.89% per year	RCA Fund: 1.50% per year Reserve Fund: 5.25% per year
Discount rate	4.65% per year	4.45% per year
Margin for adverse deviation	Included in asset return, 0.50% on RCA Fund and 0.67% on Reserve Fund	Included in asset return, 0.50% on RCA Fund and 0.45% on Reserve Fund
Inflation rate	2.00% per year	Same
Earnings – Base	2.75% per year	0.00% per year for 2 years, 2.75% per year thereafter
Earnings – Merit and Promotion	0.5% per year	Same
Maximum pension increase	2.75% per year	Same
Mortality table	95% of 2014 Canadian Public Pensioner Mortality with generational improvements using Scale MI-2017	Same
Retirement rates	Rates following 2021 experience study for MEPP	Same

Section 1: Introduction

Purpose and Terms of Engagement

We have been engaged by Supplementary Retirement Plan for Public Service Managers Advisory Committee, and hereafter referred to as the Committee, to conduct an actuarial valuation of the Plan, as at December 31, 2021 for the general purpose of determining recommended funding contributions, based on the actuarial assumptions and methods summarized herein. Specifically, the purposes of the valuation are to:

- Determine the financial position of the Plan on a going concern basis as at December 31, 2021; and
- Determine a recommended contribution rate that is sufficient to meet the funding requirements to the Reserve Fund to eliminate the deficit.

The results of this report may not be appropriate for accounting purposes or any other purposes not listed above.

The next required valuation will be as at December 31, 2024.

Summary of Changes Since the Last Valuation

The last such actuarial valuation in respect of the Plan was performed as at December 31, 2020. Since the time of the last valuation, we note that the following events have occurred:

- Going concern actuarial assumptions have been revised. The changes and financial impact of these changes are summarized on pages 9 to 10 of this report.
- In March 2020, the World Health Organization (WHO) declared a state of global pandemic linked to the 2019 coronavirus disease (COVID-19). So far, the COVID-19 pandemic in Canada has been accompanied by multiple waves of disease-related deaths. The net effect on short- and long-term mortality from COVID-19 remains uncertain at this time. Faced with this uncertainty, our view of basic mortality as well as the impact on the future progression of life expectancy remains unchanged for the moment and the mortality assumption has therefore not been revised. The impact of COVID-19 for 2020 is included in the gain and loss analysis of this valuation report; the impact for future years will be recognized in the next valuations as actual deaths will be different from that expected under our assumptions.

Information and Inputs

In order to prepare our valuation, we have relied upon the following information:

- A copy of the previous valuation report as at December 31, 2020;
- A copy of the Statement of Investment Policies and Procedures for the Plan (“SIPP”);
- Membership data compiled as at December 31, 2021 by Alberta Pension Services Corporation (“APS”); and
- Asset data taken from the Plan’s preliminary financial statements.

Furthermore, our actuarial assumptions and methods have been chosen to reflect our understanding of the Committee’s desired funding objectives with due respect to accepted actuarial practice and regulatory constraints.

Subsequent Events

Effective April 1, 2023, the contribution rates made by Members into the Management Employees Pension Plan will be changed to 12.0% of pensionable earnings from 12.8%. The Committee has elected to follow suit, and will reduce Member contributions into the RCA (and the Employer matching amounts) to 12.0% of excess earnings. This change has been reflected in this report.

As of the date of this report, we have not been made aware of any other subsequent events which would have an effect on the results of this valuation. However, the following points should be noted in this regard:

- Actual experience deviating from expected after December 31, 2021 will result in gains or losses which will be reflected in the next actuarial valuation report.
- To the best of our knowledge, the results contained in this report are based on the legal environment in effect at the date of this report and do not take into consideration any potential changes that may be currently under review. To the extent that actual changes in the legal environment transpire, any financial impact on the Plan as a result of such changes will be reflected in future valuations.

Section 2: Results

Financial Position of the Plan

The financial position of the Plan on the going concern basis is measured by comparing the actuarial value of assets to the actuarial value of liabilities at the valuation date on the premise that the Plan continues on into the future indefinitely.

The selection of the applicable actuarial assumptions and methods reflect the Plan's funding objectives, as communicated by the Committee, actuarial standards of practice, and pension standards.

On the basis of the Plan provisions, membership data, going concern assumptions and methods, and asset information described in the Appendices, the financial position of the Plan on a going concern basis as at December 31, 2021 is shown in the following table. The results as at December 31, 2020 are also shown for comparison purposes.

Financial Position

	December 31, 2021	December 31, 2020
Assets		
Retirement Compensation Agreement	\$ 11,017,000	\$ 16,251,000
Refundable Tax Account	33,186,000	35,117,000
Reserve Fund	<u>186,694,000</u>	<u>159,268,000</u>
Actuarial Value of Assets	\$ 230,897,000	\$ 210,636,000
Going Concern Liabilities		
Active and Potential members	\$ 56,294,000	\$ 63,492,000
Hold on Deposit members	715,000	811,000
Deferred vested members	14,622,000	14,748,000
Pending members	1,911,000	2,096,000
Retirees and beneficiaries	<u>156,256,000</u>	<u>145,526,000</u>
Total Liabilities	\$ 229,798,000	\$ 226,673,000
Excess Assets/(Unfunded Liability)	\$ 1,099,000	\$ (16,037,000)

Contribution Requirements

On the basis of the Plan provisions, membership data, going concern assumptions and methods and asset information described in the Appendices, the contribution requirements of the Plan as at December 31, 2021 are shown in the following table as percentage of excess earnings. The contribution requirements as at December 31, 2020 are also shown for comparison purposes.

	December 31, 2021	December 31, 2020
Member Contribution Rate to RCA Fund / RTA	12.00%*	12.80%
Matching Employer Contribution Rate to RCA Fund / RTA	12.00%*	12.80%
Employer Contribution Rate to Reserve Fund	19.70%**	19.70%**

* Effective April 1, 2023
 ** Effective April 1, 2022

Change in Financial Position

The major components of the change in the Excess Assets/(Unfunded Liability) for the period from December 31, 2020 to December 31, 2021 are summarized in the following table.

Excess Assets/(Unfunded Liability) as at December 31, 2020	\$	(16,037,000)
Expected interest on Excess Assets/(Unfunded Liability)		(714,000)
Excess Assets/(Unfunded Liability) as at December 31, 2021	\$	(16,751,000)
 Change in financial position due to experience gains/(losses)		
Gain from investment earnings greater than expected	\$	17,759,000
Gain due to salary and ITA maximum increases different than expected		1,999,000
Loss due to retirement experience		(287,000)
Gain due to termination experience		528,000
Loss due to mortality experience		(62,000)
Loss due to indexation experience		(567,000)
Loss due to contributions different than benefits accrued		(1,496,000)
Net gain/(loss) due to other experience and miscellaneous items		(767,000)
Excess Assets/(Unfunded Liability) After Experience Gains/(Losses)		
as at December 31, 2021	\$	356,000
Change due to salary rate to 2.75%	\$	(5,737,000)
Change due to discount rate to 4.65%		6,480,000
Excess Assets/(Unfunded Liability) as at December 31, 2021	\$	1,099,000

Discussion of Changes in Assumptions

Effective December 31, 2021, the following assumptions were changed:

Demographic Assumptions

- Base salary increase rate was changed to begin increasing at 2.75% per year immediately, whereas the previous assumption was 2.75% per year beginning in 2023.
- Discount rate was changed to 4.65% per year from 4.45% per year.

In combination, these changes in assumptions decreased the actuarial liability by \$743,000.

Going Concern Valuation Sensitivity Results

In accordance with the CIA Standards of Practice specific to pension plans, the table below presents the sensitivity of the going concern liabilities and the total normal cost of using a discount rate 1% lower and 1% higher than that used for the going concern valuation.

December 31, 2021	Effect	
	\$	%
Going concern liabilities	\$ 229,798,000	
Going concern liabilities (discount rate – 1%)	\$ 265,370,000	35,572,000 15.5%
Going concern liabilities (discount rate + 1%)	\$ 201,278,000	(28,520,000) -12.4%
Normal cost	\$ 3,863,000	
Normal cost (discount rate – 1%)	\$ 4,755,000	892,000 23.1%
Normal cost (discount rate + 1%)	\$ 3,177,000	(686,000) -17.8%

Plausible Adverse Scenarios

In accordance with the Canadian Institute of Actuaries Standards of Practice specific to pension plans, below is summarized scenarios of adverse but plausible assumptions, relative to the best estimate assumptions otherwise selected for the valuation.

Interest Rate Sensitivity

The table below presents the sensitivity of the going concern position of using interest rates 1% lower than the current level. Equity risk premiums are assumed to remain unchanged, so the future return on all asset classes and the going concern discount rate both decrease by 1%. In order to calculate the impact on the Actuarial Value of Assets, the decrease in interest rates only impacts fixed income, inflation sensitive and alternative assets (assumed to be 33.4% of total assets) and a duration of 7.9 (based on relevant benchmarks) was considered.

	Base Scenario	Adverse Scenario	Impact (\$)
Actuarial value of assets	\$ 230,897,000	\$ 237,000,000	\$ 6,103,000
Going concern liabilities	<u>\$ 229,798,000</u>	<u>\$ 265,370,000</u>	<u>\$ 35,572,000</u>
Excess Assets/(Unfunded Liability)	\$ 1,099,000	\$ (28,370,000)	\$ (29,469,000)
Total Normal Cost			
Jan 1, 2022 to Dec 31, 2022	\$ 3,863,000	\$ 4,755,000	\$ 892,000

Deterioration in Asset Value

In assessing the risk related to the deterioration in asset value we have chosen an adverse scenario equal to a 15% reduction in the non-fixed income asset values and assume no change in future return expectations.

The table below presents the sensitivity of the going concern position of using the assets with a 15% reduction in non-fixed income asset values.

	Base Scenario	Adverse Scenario	Impact (\$)
Actuarial value of assets	\$ 230,897,000	\$ 207,819,000	\$ (23,078,000)
Going concern liabilities	<u>\$ 229,798,000</u>	<u>\$ 229,798,000</u>	<u>-</u>
Excess Assets/(Unfunded Liability)	\$ 1,099,000	\$ (21,979,000)	\$ (23,078,000)
Total Normal Cost			
Jan 1, 2022 to Dec 31, 2022	\$ 3,863,000	\$ 3,863,000	\$ -

Mortality Sensitivity

The table below presents the sensitivity of the going concern position of the Plan to using a mortality assumption with a 10% improvement to the base mortality rates. For the purposes of this analysis, we have used 90% of the rates of the base table used in the going concern valuation.

	Base Scenario	Adverse Scenario	Impact (\$)
Actuarial value of assets	\$ 230,897,000	\$ 230,897,000	\$ -
Going concern liabilities	<u>\$ 229,798,000</u>	<u>\$ 233,897,000</u>	<u>\$ 4,099,000</u>
Excess Assets/(Unfunded Liability)	\$ 1,099,000	\$ (3,000,000)	\$ (4,099,000)
Total Normal Cost			
Jan 1, 2022 to Dec 31, 2022	\$ 3,863,000	\$ 3,923,000	\$ 60,000

Section 3: Contribution Requirements

The assets of the Plan are held in three separate vehicles, the Retirement Compensation Account Fund, the Refundable Tax Account and the Reserve Fund. The following tables outline the projections of each of these accounts based on the actuarial assumptions and methods described in the Appendices. The years 2007 through 2021 represent actual results.

In order to determine the employer contributions required to be made to the Reserve Fund, a forecast actuarial cost method has been employed. Under this method, projections of the expected future cash flows, expected future earnings of both existing and potential members and expected future investment income for the RCA Fund and the Reserve Fund are determined. An open group model is used through the next 50 years. The employer contribution rate is then determined as the constant percentage of excess earnings which will exhaust all the assets at the time the last benefit is expected to be paid.

The methodology used to determine the contribution rate to the Reserve Fund is described in Appendix C.

RCA Fund

Year	RCA Assets Beginning of Year (\$)	Net Contributions (\$)	Total Benefit Payments (\$)	Expenses (\$)	Investment Income (\$)	Transfer To/From RTA (\$)	Transfer To/From Reserve (\$)	RCA Assets End of Year (\$)
2007	7,070,000	2,218,000	610,000	238,000	122,000	532,000	-	9,094,000
2008	9,094,000	3,067,000	846,000	304,000	(191,000)	385,000	-	11,205,000
2009	11,205,000	3,264,000	1,307,000	414,000	979,000	615,000	-	14,342,000
2010	14,342,000	2,957,000	1,700,000	525,000	1,318,000	35,000	-	16,427,000
2011	16,427,000	3,127,000	2,458,000	484,000	1,585,000	(40,000)	-	18,157,000
2012	18,157,000	3,168,000	3,118,000	521,000	1,078,000	436,000	-	19,200,000
2013	19,200,000	3,335,000	3,636,000	549,000	(330,000)	1,020,000	-	19,040,000
2014	19,040,000	3,981,000	4,267,000	592,000	1,921,000	1,985,000	(1,450,000)	20,618,000
2015	20,618,000	5,282,000	4,823,000	622,000	811,000	1,147,000	(400,000)	22,013,000
2016	22,013,000	3,893,000	5,434,000	703,000	651,000	1,999,000	-	22,419,000
2017	22,419,000	3,626,000	8,297,000	756,000	663,000	2,415,000	-	20,070,000
2018	20,070,000	3,307,000	6,473,000	747,000	350,000	3,372,000	-	19,879,000
2019	19,879,000	2,637,000	7,999,000	822,000	1,415,000	3,508,000	-	18,618,000
2020	18,618,000	2,320,000	8,807,000	711,000	1,549,000	3,282,000	-	16,251,000
2021	16,251,000	1,677,000	9,502,000	592,000	(442,000)	3,625,000	-	11,017,000
2022	11,017,000	1,416,591	9,754,219	599,104	130,973	5,111,175	-	7,322,416
2023	7,322,416	1,397,441	8,113,564	606,293	73,224	4,323,317	-	4,396,541
2024	4,396,541	1,419,402	5,202,374	613,569	43,965	2,885,989	-	2,929,954
2025	2,929,954	1,461,158	3,770,179	620,932	29,300	2,180,906	-	2,210,206
2026	2,210,206	1,512,848	3,094,671	628,383	22,102	1,850,476	-	1,872,578
2027	1,872,578	1,560,746	2,797,400	635,924	18,726	1,707,299	-	1,726,025
2028	1,726,025	1,609,916	2,692,386	643,555	17,260	1,659,341	-	1,676,601
2029	1,676,601	1,652,813	2,678,136	651,278	16,766	1,656,324	-	1,673,090
2030	1,673,090	1,695,214	2,709,211	659,093	16,731	1,675,786	-	1,692,517
2031	1,692,517	1,734,867	2,760,383	667,002	16,925	1,705,230	-	1,722,155
2032	1,722,155	1,775,283	2,822,432	675,006	17,222	1,740,108	-	1,757,330
2033	1,757,330	1,814,878	2,889,102	683,106	17,573	1,777,317	-	1,794,890
2034	1,794,890	1,851,760	2,955,348	691,303	17,949	1,814,351	-	1,832,300
2035	1,832,300	1,889,550	3,022,251	699,599	18,323	1,851,763	-	1,870,086
2036	1,870,086	1,927,696	3,089,788	707,994	18,701	1,889,541	-	1,908,242
2037	1,908,242	1,969,489	3,161,240	716,490	19,082	1,929,324	-	1,948,406
2038	1,948,406	2,013,759	3,237,078	725,088	19,484	1,971,341	-	1,990,825
2039	1,990,825	2,055,882	3,312,918	733,789	19,908	2,013,399	-	2,033,307
2040	2,033,307	2,099,187	3,389,901	742,594	20,333	2,056,081	-	2,076,414
2041	2,076,414	2,147,757	3,472,666	751,505	20,764	2,101,704	-	2,122,468
2042	2,122,468	2,199,826	3,560,151	762,142	21,225	2,150,534	-	2,171,759
2043	2,171,759	2,254,926	3,655,456	771,229	21,718	2,202,483	-	2,224,201
2044	2,224,201	2,312,729	3,758,379	778,551	22,242	2,257,344	-	2,279,586
2045	2,279,586	2,373,268	3,868,651	784,203	22,796	2,315,029	-	2,337,825
2046	2,337,825	2,436,320	3,985,514	788,631	23,378	2,375,383	-	2,398,761
2047	2,398,761	2,501,553	4,108,869	791,445	23,988	2,438,163	-	2,462,151
2048	2,462,151	2,569,441	4,238,600	792,992	24,622	2,503,485	-	2,528,107
2049	2,528,107	2,639,126	4,373,691	793,542	25,281	2,570,976	-	2,596,257
2050	2,596,257	2,710,753	4,513,741	793,269	25,963	2,640,524	-	2,666,487
2051	2,666,487	2,784,831	4,659,041	792,276	26,665	2,712,326	-	2,738,991
2052	2,738,991	2,861,082	4,809,314	790,759	27,390	2,786,342	-	2,813,732

Year	RCA Assets Beginning of Year (\$)	Net Contribution s (\$)	Total Benefit Payments (\$)	Expenses (\$)	Investment Income (\$)	Transfer To/From RTA (\$)	Transfer To/From Reserve (\$)	RCA Assets End of Year (\$)
2053	2,813,732	2,939,260	4,964,073	788,919	28,137	2,862,427	-	2,890,564
2054	2,890,564	3,019,624	5,123,265	786,923	28,906	2,940,641	-	2,969,547
2055	2,969,547	3,102,372	5,286,994	784,925	29,695	3,021,112	-	3,050,807
2056	3,050,807	3,187,612	5,455,329	783,090	30,508	3,103,955	-	3,134,463
2057	3,134,463	3,275,301	5,628,169	781,595	31,345	3,189,209	-	3,220,554
2058	3,220,554	3,365,406	5,805,372	780,588	32,206	3,276,877	-	3,309,083
2059	3,309,083	3,457,956	5,986,834	780,205	33,091	3,366,974	-	3,400,065
2060	3,400,065	3,553,060	6,172,563	780,562	34,001	3,459,562	-	3,493,563
2061	3,493,563	3,650,763	6,362,563	781,763	34,936	3,554,695	-	3,589,631
2062	3,589,631	3,751,209	6,556,953	783,887	35,896	3,652,472	-	3,688,368
2063	3,688,368	3,854,466	6,755,829	787,005	36,884	3,752,975	-	3,789,859
2064	3,789,859	3,960,568	6,959,264	791,163	37,899	3,856,264	-	3,894,163
2065	3,894,163	4,069,582	7,167,371	796,374	38,942	3,962,401	-	4,001,343
2066	4,001,343	4,181,571	7,380,272	802,642	40,013	4,071,450	-	4,111,463
2067	4,111,463	4,296,631	7,598,128	809,966	41,115	4,183,490	-	4,224,605
2068	4,224,605	4,414,860	7,821,132	818,333	42,246	4,298,609	-	4,340,855
2069	4,340,855	4,536,347	8,049,482	827,720	43,409	4,416,897	-	4,460,306
2070	4,460,306	4,661,180	8,283,367	838,118	44,603	4,538,441	-	4,583,044
2071	4,583,044	4,789,445	8,522,960	849,529	45,830	4,663,329	-	4,709,159
2072	4,709,159	4,921,233	8,768,405	861,987	47,092	4,791,650	-	4,838,742
2073	4,838,742	3,932,726	7,870,409	901,059	48,387	4,361,541	-	4,409,928
2074	4,409,928	3,742,638	7,236,208	916,358	44,099	4,054,233	-	4,098,332
2075	4,098,332	3,539,817	6,705,814	932,336	40,983	3,798,583	-	3,839,566
2076	3,839,566	3,325,505	6,217,943	947,128	38,396	3,563,338	-	3,601,734
2077	3,601,734	3,103,471	5,745,475	959,729	36,017	3,334,594	-	3,370,611
2078	3,370,611	2,878,190	5,277,539	971,262	33,706	3,107,548	-	3,141,254
2079	3,141,254	2,641,884	4,803,093	980,045	31,413	2,875,862	-	2,907,275
2080	2,907,275	2,408,069	4,328,770	986,575	29,073	2,643,136	-	2,672,209
2081	2,672,209	2,178,317	3,859,610	990,916	26,722	2,411,902	-	2,438,624
2082	2,438,624	1,954,187	3,399,674	993,137	24,386	2,184,212	-	2,208,598
2083	2,208,598	1,731,938	2,947,347	993,190	22,086	1,959,225	-	1,981,311
2084	1,981,311	1,508,576	2,499,143	990,744	19,813	1,735,037	-	1,754,850
2085	1,754,850	1,290,930	2,060,596	985,184	17,549	1,514,116	-	1,531,665
2086	1,531,665	1,095,472	1,649,900	977,237	15,317	1,305,910	-	1,321,227
2087	1,321,227	925,100	1,278,914	967,413	13,212	1,116,557	-	1,129,769
2088	1,129,769	775,963	950,105	955,627	11,298	947,217	-	958,515
2089	958,515	639,048	655,786	941,777	9,585	793,989	-	803,574
2090	803,574	514,268	391,926	925,916	8,036	654,903	-	662,939
2091	662,939	404,287	159,246	907,980	6,629	530,298	-	536,927
2092	536,927	313,421	-	850,348	5,369	422,490	-	427,859
2093	427,859	238,679	-	666,538	4,279	331,129	-	335,408
2094	335,408	183,377	-	518,785	3,354	257,716	-	261,070
2095	261,070	138,359	-	399,429	2,611	198,409	-	201,020
2096	201,020	104,283	-	305,303	2,010	151,646	-	153,656
2097	153,656	76,385	-	230,041	1,537	114,252	-	115,789
2098	115,789	58,061	-	173,850	1,158	86,346	-	87,504
2099	87,504	43,651	-	131,155	875	65,140	-	66,015

Year	RCA Assets Beginning of Year (\$)	Net Contribution s (\$)	Total Benefit Payments (\$)	Expenses (\$)	Investment Income (\$)	Transfer To/From RTA (\$)	Transfer To/From Reserve (\$)	RCA Assets End of Year (\$)
2100	66,015	31,984	-	97,999	660	48,670	-	49,330
2101	49,330	23,151	-	72,481	493	35,994	-	36,487
2102	36,487	16,002	-	52,489	365	26,062	-	26,427
2103	26,427	10,745	-	37,172	264	18,454	-	18,718
2104	18,718	6,625	-	25,343	187	-	-	-

Refundable Tax Account

Year	RTA Assets Beginning of Year (\$)	Contributions to RTA (\$)	Transfer To/From RCA (\$)	RTA Assets End of Year (\$)
2007	9,404,000	2,212,000	(527,000)	11,089,000
2008	11,089,000	3,070,000	(381,000)	13,778,000
2009	13,778,000	3,185,000	(615,000)	16,348,000
2010	16,348,000	3,014,000	(35,000)	19,327,000
2011	19,327,000	3,130,000	40,000	22,497,000
2012	22,497,000	3,180,000	(436,000)	25,241,000
2013	25,241,000	3,334,000	(1,020,000)	27,555,000
2014	27,555,000	3,951,000	(1,985,000)	29,521,000
2015	29,521,000	5,024,000	(1,147,000)	33,398,000
2016	33,398,000	3,972,000	(1,999,000)	35,371,000
2017	35,371,000	3,641,000	(2,415,000)	36,597,000
2018	36,597,000	3,316,000	(3,372,000)	36,541,000
2019	36,541,000	2,839,000	(3,508,000)	35,872,000
2020	35,872,000	2,527,000	(3,282,000)	35,117,000
2021	35,117,000	1,694,000	(3,625,000)	33,186,000
2022	33,186,000	1,416,591	(5,111,175)	29,491,416
2023	29,491,416	1,397,441	(4,323,317)	26,565,541
2024	26,565,541	1,419,402	(2,885,989)	25,098,954
2025	25,098,954	1,461,158	(2,180,906)	24,379,206
2026	24,379,206	1,512,848	(1,850,476)	24,041,578
2027	24,041,578	1,560,746	(1,707,299)	23,895,025
2028	23,895,025	1,609,916	(1,659,341)	23,845,601
2029	23,845,601	1,652,813	(1,656,324)	23,842,090
2030	23,842,090	1,695,214	(1,675,786)	23,861,517
2031	23,861,517	1,734,867	(1,705,230)	23,891,155
2032	23,891,155	1,775,283	(1,740,108)	23,926,330
2033	23,926,330	1,814,878	(1,777,317)	23,963,890
2034	23,963,890	1,851,760	(1,814,351)	24,001,300
2035	24,001,300	1,889,550	(1,851,763)	24,039,086
2036	24,039,086	1,927,696	(1,889,541)	24,077,242
2037	24,077,242	1,969,489	(1,929,324)	24,117,406
2038	24,117,406	2,013,759	(1,971,341)	24,159,825
2039	24,159,825	2,055,882	(2,013,399)	24,202,307
2040	24,202,307	2,099,187	(2,056,081)	24,245,414
2041	24,245,414	2,147,757	(2,101,704)	24,291,468
2042	24,291,468	2,199,826	(2,150,534)	24,340,759
2043	24,340,759	2,254,926	(2,202,483)	24,393,201
2044	24,393,201	2,312,729	(2,257,344)	24,448,586
2045	24,448,586	2,373,268	(2,315,029)	24,506,825
2046	24,506,825	2,436,320	(2,375,383)	24,567,761
2047	24,567,761	2,501,553	(2,438,163)	24,631,151
2048	24,631,151	2,569,441	(2,503,485)	24,697,107
2049	24,697,107	2,639,126	(2,570,976)	24,765,257
2050	24,765,257	2,710,753	(2,640,524)	24,835,487
2051	24,835,487	2,784,831	(2,712,326)	24,907,991

Year	RTA Assets Beginning of Year (\$)	Contributions to RTA (\$)	Transfer To/From RCA (\$)	RTA Assets End of Year (\$)
2052	24,907,991	2,861,082	(2,786,342)	24,982,732
2053	24,982,732	2,939,260	(2,862,427)	25,059,564
2054	25,059,564	3,019,624	(2,940,641)	25,138,547
2055	25,138,547	3,102,372	(3,021,112)	25,219,807
2056	25,219,807	3,187,612	(3,103,955)	25,303,463
2057	25,303,463	3,275,301	(3,189,209)	25,389,554
2058	25,389,554	3,365,406	(3,276,877)	25,478,083
2059	25,478,083	3,457,956	(3,366,974)	25,569,065
2060	25,569,065	3,553,060	(3,459,562)	25,662,563
2061	25,662,563	3,650,763	(3,554,695)	25,758,631
2062	25,758,631	3,751,209	(3,652,472)	25,857,368
2063	25,857,368	3,854,466	(3,752,975)	25,958,859
2064	25,958,859	3,960,568	(3,856,264)	26,063,163
2065	26,063,163	4,069,582	(3,962,401)	26,170,343
2066	26,170,343	4,181,571	(4,071,450)	26,280,463
2067	26,280,463	4,296,631	(4,183,490)	26,393,605
2068	26,393,605	4,414,860	(4,298,609)	26,509,855
2069	26,509,855	4,536,347	(4,416,897)	26,629,306
2070	26,629,306	4,661,180	(4,538,441)	26,752,044
2071	26,752,044	4,789,445	(4,663,329)	26,878,159
2072	26,878,159	4,921,233	(4,791,650)	27,007,742
2073	27,007,742	3,932,726	(4,361,541)	26,578,928
2074	26,578,928	3,742,638	(4,054,233)	26,267,332
2075	26,267,332	3,539,817	(3,798,583)	26,008,566
2076	26,008,566	3,325,505	(3,563,338)	25,770,734
2077	25,770,734	3,103,471	(3,334,594)	25,539,611
2078	25,539,611	2,878,190	(3,107,548)	25,310,254
2079	25,310,254	2,641,884	(2,875,862)	25,076,275
2080	25,076,275	2,408,069	(2,643,136)	24,841,209
2081	24,841,209	2,178,317	(2,411,902)	24,607,624
2082	24,607,624	1,954,187	(2,184,212)	24,377,598
2083	24,377,598	1,731,938	(1,959,225)	24,150,311
2084	24,150,311	1,508,576	(1,735,037)	23,923,850
2085	23,923,850	1,290,930	(1,514,116)	23,700,665
2086	23,700,665	1,095,472	(1,305,910)	23,490,227
2087	23,490,227	925,100	(1,116,557)	23,298,769
2088	23,298,769	775,963	(947,217)	23,127,515
2089	23,127,515	639,048	(793,989)	22,972,574
2090	22,972,574	514,268	(654,903)	22,831,939
2091	22,831,939	404,287	(530,298)	22,705,927
2092	22,705,927	313,421	(422,490)	22,596,859
2093	22,596,859	238,679	(331,129)	22,504,408
2094	22,504,408	183,377	(257,716)	22,430,070
2095	22,430,070	138,359	(198,409)	22,370,020
2096	22,370,020	104,283	(151,646)	22,322,656
2097	22,322,656	76,385	(114,252)	22,284,789
2098	22,284,789	58,061	(86,346)	22,256,504
2099	22,256,504	43,651	(65,140)	22,235,015
2100	22,235,015	31,984	(48,670)	22,218,330

Year	RTA Assets Beginning of Year (\$)	Contributions to RTA (\$)	Transfer To/From RCA (\$)	RTA Assets End of Year (\$)
2101	22,218,330	23,151	(35,994)	22,205,487
2102	22,205,487	16,002	(26,062)	22,195,427
2103	22,195,427	10,745	(18,454)	22,187,718
2104	22,187,718	6,625	(22,187,718)	6,625

Reserve Fund

Year	Reserve Fund at Beginning of Year (\$)	Total Contributions (\$)	Transfer from RCA/RTA (\$)	Total Benefit Payments (\$)	Expenses (\$)	Investment Income (\$)	Reserve Fund at End of Year (\$)
2007	27,370,000	2,167,000	0	0	0	252,000	29,789,000
2008	29,789,000	3,364,000	0	0	0	(6,571,000)	26,582,000
2009	26,582,000	3,358,000	0	0	0	4,332,000	34,272,000
2010	34,272,000	3,317,000	0	0	0	3,525,000	41,114,000
2011	41,114,000	4,647,000	0	0	0	241,000	46,002,000
2012	46,002,000	6,552,000	0	0	0	6,328,000	58,882,000
2013	58,882,000	6,827,000	0	0	0	12,256,000	77,965,000
2014	77,965,000	2,187,000	1,450,000	0	0	8,824,000	90,426,000
2015	90,426,000	3,075,000	400,000	0	0	9,508,000	103,409,000
2016	103,409,000	3,206,000	0	0	0	7,877,000	114,492,000
2017	114,492,000	2,549,000	0	0	0	12,530,000	129,571,000
2018	129,571,000	2,636,000	0	0	0	950,000	133,157,000
2019	133,157,000	2,078,000	0	0	0	18,372,000	153,607,000
2020	153,607,000	1,779,000	0	0	0	3,882,000	159,268,000
2021	159,268,000	1,419,000	0	0	0	26,007,000	186,694,000
2022	186,694,000	1,909,078	0	0	0	9,173,325	197,776,403
2023	197,776,403	2,256,524	0	2,111,814	0	9,671,970	207,593,083
2024	207,593,083	2,330,185	0	5,528,453	0	10,070,153	214,464,968
2025	214,464,968	2,398,734	0	7,477,109	0	10,360,135	219,746,728
2026	219,746,728	2,483,593	0	8,604,961	0	10,592,843	224,218,203
2027	224,218,203	2,562,225	0	9,450,388	0	10,792,692	228,122,733
2028	228,122,733	2,642,946	0	10,068,565	0	10,970,431	231,667,545
2029	231,667,545	2,713,369	0	10,713,029	0	11,129,690	234,797,575
2030	234,797,575	2,782,976	0	11,245,457	0	11,271,391	237,606,485
2031	237,606,485	2,848,074	0	11,853,648	0	11,395,432	239,996,342
2032	239,996,342	2,914,423	0	12,479,154	0	11,498,594	241,930,204
2033	241,930,204	2,979,425	0	13,018,204	0	11,581,545	243,472,970
2034	243,472,970	3,039,973	0	13,542,723	0	11,645,623	244,615,843
2035	244,615,843	3,102,011	0	14,122,994	0	11,688,826	245,283,686
2036	245,283,686	3,164,634	0	14,609,471	0	11,711,114	245,549,964
2037	245,549,964	3,233,244	0	15,028,101	0	11,715,576	245,470,683
2038	245,470,683	3,305,922	0	15,413,760	0	11,704,050	245,066,894
2039	245,066,894	3,375,073	0	15,757,914	0	11,677,589	244,361,643
2040	244,361,643	3,446,166	0	16,066,761	0	11,637,301	243,378,348
2041	243,378,348	3,525,901	0	16,303,815	0	11,585,386	242,185,820
2042	242,185,820	3,611,381	0	16,496,258	0	11,524,474	240,825,418
2043	240,825,418	3,701,836	0	16,640,086	0	11,456,665	239,343,833
2044	239,343,833	3,796,730	0	16,729,858	0	11,384,362	237,795,067
2045	237,795,067	3,896,115	0	16,768,323	0	11,310,139	236,232,999
2046	236,232,999	3,999,625	0	16,767,999	0	11,236,314	234,700,939
2047	234,700,939	4,106,716	0	16,718,706	0	11,165,241	233,254,190
2048	233,254,190	4,218,166	0	16,629,687	0	11,099,416	231,942,084
2049	231,942,084	4,332,566	0	16,509,079	0	11,041,017	230,806,588
2050	230,806,588	4,450,153	0	16,361,850	0	10,991,980	229,886,872
2051	229,886,872	4,571,764	0	16,190,426	0	10,954,182	229,222,391

Year	Reserve Fund at Beginning of Year (\$)	Total Contributions (\$)	Transfer from RCA/RTA (\$)	Total Benefit Payments (\$)	Expenses (\$)	Investment Income (\$)	Reserve Fund at End of Year (\$)
2052	229,222,391	4,696,943	0	16,000,221	0	10,929,407	228,848,521
2053	228,848,521	4,825,286	0	15,797,045	0	10,919,233	228,795,995
2054	228,795,995	4,957,216	0	15,585,321	0	10,925,066	229,092,956
2055	229,092,956	5,093,061	0	15,369,017	0	10,948,190	229,765,190
2056	229,765,190	5,232,996	0	15,152,381	0	10,989,768	230,835,572
2057	230,835,572	5,376,952	0	14,940,201	0	11,050,800	232,323,123
2058	232,323,123	5,524,874	0	14,736,501	0	11,132,114	234,243,610
2059	234,243,610	5,676,810	0	14,544,958	0	11,234,394	236,609,857
2060	236,609,857	5,832,941	0	14,368,625	0	11,358,196	239,432,368
2061	239,432,368	5,993,336	0	14,210,235	0	11,503,969	242,719,438
2062	242,719,438	6,158,235	0	14,071,745	0	11,672,075	246,478,004
2063	246,478,004	6,327,748	0	13,954,927	0	11,862,814	250,713,638
2064	250,713,638	6,501,933	0	13,860,909	0	12,076,431	255,431,093
2065	255,431,093	6,680,896	0	13,789,929	0	12,313,156	260,635,216
2066	260,635,216	6,864,745	0	13,741,974	0	12,573,229	266,331,216
2067	266,331,216	7,053,636	0	13,716,853	0	12,856,913	272,524,912
2068	272,524,912	7,247,729	0	13,714,025	0	13,164,510	279,223,125
2069	279,223,125	7,447,169	0	13,732,706	0	13,496,375	286,433,964
2070	286,433,964	7,652,103	0	13,772,456	0	13,852,919	294,166,531
2071	294,166,531	7,862,672	0	13,833,148	0	14,234,594	302,430,648
2072	302,430,648	8,079,024	0	13,915,537	0	14,641,865	311,236,000
2073	311,236,000	6,456,226	0	15,841,753	0	14,985,573	316,836,045
2074	316,836,045	6,144,164	0	16,878,556	0	15,226,365	321,328,019
2075	321,328,019	5,811,200	0	17,829,429	0	15,414,577	324,724,367
2076	324,724,367	5,459,370	0	18,706,556	0	15,550,571	327,027,752
2077	327,027,752	5,094,865	0	19,510,635	0	15,634,610	328,246,592
2078	328,246,592	4,725,029	0	20,282,073	0	15,666,298	328,355,847
2079	328,355,847	4,337,093	0	20,987,642	0	15,644,910	327,350,208
2080	327,350,208	3,953,247	0	21,633,802	0	15,570,573	325,240,227
2081	325,240,227	3,576,071	0	22,217,208	0	15,443,946	322,043,035
2082	322,043,035	3,208,123	0	22,735,590	0	15,265,984	317,781,553
2083	317,781,553	2,843,265	0	23,189,304	0	15,037,651	312,473,165
2084	312,473,165	2,476,579	0	23,573,129	0	14,759,802	306,136,417
2085	306,136,417	2,119,277	0	23,865,352	0	14,434,149	298,824,491
2086	298,824,491	1,798,400	0	24,066,925	0	14,063,931	290,619,897
2087	290,619,897	1,518,705	0	24,179,374	0	13,653,259	281,612,487
2088	281,612,487	1,273,872	0	24,198,017	0	13,206,485	271,894,827
2089	271,894,827	1,049,104	0	24,127,864	0	12,727,652	261,543,719
2090	261,543,719	844,257	0	23,974,331	0	12,220,377	250,634,022
2091	250,634,022	663,704	0	23,735,024	0	11,688,485	239,251,187
2092	239,251,187	514,533	0	23,395,821	38,691	11,135,726	227,466,933
2093	227,466,933	391,832	0	22,867,419	202,422	10,565,560	215,354,484
2094	215,354,484	301,043	0	22,308,204	328,925	9,981,792	203,000,191
2095	203,000,191	227,139	0	21,711,361	425,601	9,388,263	190,478,631
2096	190,478,631	171,198	0	21,090,753	496,144	8,788,216	177,851,147
2097	177,851,147	125,399	0	20,446,217	546,914	8,184,307	165,167,723
2098	165,167,723	95,316	0	19,777,561	577,696	7,579,125	152,486,907

Year	Reserve Fund at Beginning of Year (\$)	Total Contributions (\$)	Transfer from RCA/RTA (\$)	Total Benefit Payments (\$)	Expenses (\$)	Investment Income (\$)	Reserve Fund at End of Year (\$)
2099	152,486,907	71,660	0	19,084,646	594,060	6,975,173	139,855,034
2100	139,855,034	52,507	0	18,367,420	599,961	6,374,575	127,314,735
2101	127,314,735	38,007	0	17,625,985	597,305	5,779,367	114,908,819
2102	114,908,819	26,270	0	16,860,662	588,215	5,191,537	102,677,749
2103	102,677,749	17,640	0	16,072,056	573,565	4,613,036	90,662,805
2104	90,662,805	10,876	22,187,718	15,261,118	554,578	4,045,798	101,091,502
2105	101,091,502	0	0	14,429,281	0	4,589,234	91,251,455
2106	91,251,455	0	0	13,578,441	0	4,128,993	81,802,007
2107	81,802,007	0	0	12,710,961	0	3,688,254	72,779,299
2108	72,779,299	0	0	11,829,727	0	3,268,713	64,218,285
2109	64,218,285	0	0	10,938,150	0	2,871,995	56,152,130
2110	56,152,130	0	0	10,040,172	0	2,499,624	48,611,583
2111	48,611,583	0	0	9,140,683	0	2,152,986	41,623,886
2112	41,623,886	0	0	8,245,530	0	1,833,268	35,211,624
2113	35,211,624	0	0	7,361,295	0	1,541,413	29,391,742
2114	29,391,742	0	0	6,495,178	0	1,278,075	24,174,639
2115	24,174,639	0	0	5,655,120	0	1,043,566	19,563,085
2116	19,563,085	0	0	4,849,966	0	837,808	15,550,927
2117	15,550,927	0	0	4,089,245	0	660,265	12,121,946
2118	12,121,946	0	0	3,382,659	0	509,908	9,249,196
2119	9,249,196	0	0	2,739,215	0	385,199	6,895,180
2120	6,895,180	0	0	2,166,619	0	284,117	5,012,678
2121	5,012,678	0	0	1,669,955	0	204,230	3,546,953
2122	3,546,953	0	0	1,251,141	0	142,814	2,438,627
2123	2,438,627	0	0	908,982	0	96,996	1,626,641
2124	1,626,641	0	0	639,257	0	63,894	1,051,278
2125	1,051,278	0	0	434,546	0	40,771	657,503
2126	657,503	0	0	285,045	0	25,175	397,634
2127	397,634	0	0	180,184	0	15,034	232,484
2128	232,484	0	0	109,658	0	8,685	131,511
2129	131,511	0	0	64,339	0	4,856	72,028
2130	72,028	0	0	36,455	0	2,630	38,204
2131	38,204	0	0	19,962	0	1,380	19,622
2132	19,622	0	0	10,578	0	701	9,745
2133	9,745	0	0	5,410	0	344	4,679
2134	4,679	0	0	2,659	0	164	2,184
2135	2,184	0	0	1,250	0	76	1,010
2136	1,010	0	0	560	0	36	486
2137	486	0	0	234	0	18	271
2138	271	0	0	86	0	11	196
2139	196	0	0	27	0	9	178
2140	178	0	0	6	0	9	181

Required Contributions

Effective April 1, 2023, members are required to contribute 12.00% of their excess earnings for each year of service under the Income Tax Act. Employers make matching contributions. Half of these contributions are deposited in the RCA Fund. The other half are forwarded to Canada Revenue Agency and held in the Refundable Tax Account. The member contribution rate up to March 31, 2023 is 12.80% of their excess earnings.

Employers are required to make additional contributions to the Reserve Fund. The Reserve Fund was established to meet the liability of the Plan not covered by assets in the RCA Fund and the RTA. Based on the December 31, 2020 actuarial valuation, contributions were set at 19.7% (effective April 1, 2022) of excess earnings. The contributions to the Reserve Fund up to March 31, 2022 were 9.90% of excess earnings.

The established employer contribution rate for the Reserve Fund of 19.7% of earnings is sufficient to meet the obligations of the current Plan members. Without actuarial experience gains, the fund is expected to be depleted of funds by 2140.

The recommended employer contribution rate for the Reserve Fund based on this valuation is to remain as 19.70% of excess earnings. This assumes the member contribution rate and the matching employer contribution rate to the RCA Fund/RTA will change to 12.00% of excess earnings indefinitely, effective April 1, 2023.

Section 4: Actuarial Certificate

Actuarial Opinion, Advice and Certification for the Supplementary Retirement Plan for Public Service Managers

Opinion

This actuarial certification forms an integral part of the actuarial valuation report for the Plan as at December 31, 2021. I confirm that I have prepared an actuarial valuation of the Plan as at December 31, 2021 for the purposes outlined in the Introduction section to this report and consequently:

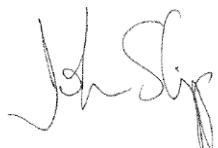
My advice on funding is the following:

- Contributions in the amounts as outlined in Section 3 of this report are recommended in order to fund the Plan in accordance with the assumptions and methods set out in this report.
- The next actuarial valuation for the purpose of developing funding requirements should be performed no later than as at December 31, 2024.

I hereby certify that, in my opinion:

- With respect to determining the funding requirements of the Plan, required member and matching employer contributions to the RCA Fund and Refundable Tax Account for the period following the valuation date are 12.00% of excess earnings effective April 1, 2023. Additional employer contributions are 19.70% of excess earnings to the Reserve Fund effective April 1, 2022.
- For the purposes of the valuation:
 - The data on which this valuation is based are sufficient and reliable;
 - The assumptions used are appropriate; and
 - The actuarial cost methods and the asset valuation methods used are appropriate.

- This report and its associated work have been prepared, and my opinion given, in accordance with accepted actuarial practice in Canada and in compliance with the requirements outlined in subparagraphs 147.2(2)(a)(iii) and (iv) of the *Income Tax Act*.
- Notwithstanding the above certifications, emerging experience differing from the assumptions will result in gains or losses that will be revealed in subsequent valuations.



John Slipp, FCIA, FSA
Associate Partner

Aon
Suite 1800, 600 - 3rd Avenue SW
Calgary, AB T2P 0G5

March 22, 2023

Appendix A: Assets

Asset Data

The Plan's assets are held and invested by Alberta Investment Management Corporation (AIMCo). The asset information presented in this report is based on the financial statements of the pension fund prepared by Alberta Treasury Board and Finance].

Employee contributions and matching employer contributions to the Plan are deposited into the Retirement Compensation Arrangement (RCA) trust fund. Half of these contributions are forwarded to the Canada Revenue Agency (CRA) to be held in a Refundable Tax Account (RTA). Employers also make additional contributions which are held in the government's Reserve Fund.

The assets in the RCA are invested. However, 50% of the realized investment income each year must be remitted to the RTA. This is offset by 50% of any benefits paid by the RCA. The amounts held in the RTA receive no investment income. The assets in the Reserve Fund are invested and no tax is paid on the investment income.

The assets in the RCA and the Reserve Fund are invested in a diversified portfolio in accordance with the Plan's Statement of Investment Policies and Procedures.

Tests of the sufficiency and reliability of the asset data were performed and the results were satisfactory. The tests included:

- A reconciliation of actual cash flow with expected cash flow from the previous actuarial report; and
- A reconciliation of any anticipated benefit payments (for retirees, terminated, or deceased members) against the financial statements of the pension fund for confirmation of payments.

Current Asset Mix

The composition of the assets as at December 31, 2021 is as follows.

December 31, 2021

Fixed Income and money market	33.0%
Canadian equities	14.2%
Foreign equities	34.7%
Private equities	1.1%
Inflation sensitive and alternative	16.6%
Overlays	<u>0.4%</u>
Total	100.0%

Target Asset Mix

The target asset mix of the Plan is contained in the Plan's Statement of Investment Policies and Procedures and is as follows:

	Minimum	Target	Maximum
Money Market and Fixed Income	25.0%	32.0%	45.0%
Cash and money market	0.0%	0.5%	5.0%
Fixed income (bonds and mortgages)	25.0%	31.5%	40.0%
Equity	35.0%	48.0%	60.0%
Canadian equities	10.0%	14.0%	20.0%
Global equities	25.0%	34.0%	40.0%
Private equity	0.0%	0.0%	5.0%
Hedge funds	0.0%	0.0%	5.0%
Inflation Sensitive and Alternative	12.5%	20.0%	30.0%
Real estate	7.5%	10.5%	15.0%
Infrastructure	5.0%	7.5%	15.0%
Real return bonds	0.0%	0.0%	5.0%
Private debt	0.0%	0.0%	5.0%
Timberlands	0.0%	<u>2.0%</u>	5.0%
		100.0%	

The long-term target asset mix applies to the assets held in the RCA Fund and the Reserve Fund. The assets held in the RTA are not covered in the Plan's Statement of Investment Policies and Procedures. The assets invested in the RCA Fund are different from the assets invested in the Reserve Fund. The RCA Fund is invested primarily in fixed income with a small amount invested in cash/money market. The Reserve Fund has a greater portion of investments in equities, with the remainder of assets invested in fixed income and inflation sensitive and alternative investments .

Reconciliation of Changes in Market Value of Assets

The tables below reconciles changes in the market value of assets between December 31, 2020 and December 31, 2021.

RCA Fund

2021-Dec-31

Market Value of Assets, Beginning of Plan Year		\$ 16,251,000
Contributions During Plan Year		\$ 1,677,000
Benefit Payments During Plan Year		
Non-retired members ¹		\$ (857,000)
Retired members		<u>(8,645,000)</u>
Total		\$ (9,502,000)
Transfers During Plan Year		
Transfer from RTA		\$ 3,625,000
Transfer to Reserve Fund		<u>0</u>
Total		\$ 3,625,000
Fees/Expenses		
Investment fees/expenses		\$ (58,000)
Non-investment fees/expenses		<u>(592,000)</u>
Total		\$ (650,000)
Investment Income		\$ (384,000)
Market Value of Assets, End of Plan Year		\$ 11,017,000
Rate of return, net of investment fees/expenses		2.2%

¹ Includes members who have terminated employment or died

RTA Fund**2021-Dec-31**

Market Value of Assets, Beginning of Plan Year	\$ 35,117,000
Contributions During Plan Year	\$ 1,694,000
Transfers During Plan Year	
Transfer to RCA	\$ (3,625,000)
Total	\$ (3,625,000)
Market Value of Assets, End of Plan Year	\$ 33,186,000

Reserve Fund**2021-Dec-31**

Market Value of Assets, Beginning of Plan Year	\$ 159,268,000
Contributions During Plan Year	
Employer	\$ 1,419,000
Total	\$ 1,419,000
Investment Income	\$ 26,007,000
Market Value of Assets, End of Plan Year	\$ 186,694,000

Rate of return, net of investment fees/expenses 16.3%

Total Market Value of Assets**December 31, 2021 December 31, 2020**

RCA Fund	\$ 11,017,000	\$ 16,251,000
RTA Fund	33,186,000	35,117,000
Reserve Fund	186,694,000	159,268,000
Total Fund	\$ 230,897,000	\$ 210,636,000

Appendix B: Membership Data

Source of Data

This valuation was based on member data provided by APSC as of December 31, 2021. Tests of the sufficiency and reliability of the member data were performed and the results were satisfactory. The tests included:

- A reconciliation of membership status against the membership status at the last valuation. This test was performed to ensure that all members were accounted for. A summary of this reconciliation follows on the next page;
- A reconciliation of birth, hire, and participation dates against the corresponding dates provided for the last valuation to ensure consistency of data;
- A reconciliation of credited service against the corresponding amount provided for the last valuation to ensure that no member accrued more than 1 year of credited service from December 31, 2020. This test also revealed any members who accrued less than 1 year of credited service;
- A reconciliation of earnings against the corresponding amounts provided for the last valuation to identify any unusual increases or decreases;
- A reconciliation of accrued benefits against the corresponding amounts provided for the last valuation to identify any unusual benefit accruals;
 - A reconciliation of any stated benefit payments since December 31, 2020 (for retired, terminated, or deceased members) against the financial statements of the pension fund for confirmation of the payments; and
- A reconciliation of inactive member benefit amounts against the corresponding amounts provided for the last valuation to ensure consistency of data.

The following information was missing, and assumptions were made as follows with respect to such missing data:

- Annualization of Earnings: Since the data provided by APSC did not include annualized earnings for some members, earnings were annualized using actual earnings and in-year service where required.
- Earnings: If earnings were available for 2016 to 2020, the most recent data was utilized and increased to 2021 using the salary increase assumptions from the previous valuation. Otherwise, the overall average of the group was utilized.

A copy of the administrator certification certifying the accuracy and completeness of the member data is included in Appendix E of this report.

Membership Summary

The table below reconciles the number of members as of December 31, 2021 with the number of members as of December 31, 2020 and the changes due to experience in the period.

	Potential Actives*	Potential Active*	Pending	Deferred	HOD	Retired & Beneficiaries	Total
Members,							
December 31, 2020	633	51	35	158	109	1,291	2,277
Changes due to:							
New entrants	54	18	0	0	0	0	72
Return to active	4	(3)	0	(1)	0	0	0
Termination							
Non-vested	(5)	(3)	0	0	8	0	0
Deferred vested	(25)	(1)	0	26	0	0	0
Lump sum	(6)	0	0	(8)	(8)	0	(22)
Death							
No further benefits	0	0	0	0	0	(6)	(6)
Surviving beneficiary	(3)	0	0	(1)	0	4	0
Retirement	(71)	0	0	(12)	(6)	89	0
Transfer							
From Unexpected	11	255	0	0	0	0	266
To Ineligible	(7)	(2)	(2)	0	0	0	(11)
To Pending	(1)	0	1	0	0	0	0
To Potential	(93)	93	0	0	0	0	0
To Unexpected	(60)	(5)	0	(2)	0	0	(67)
Data correction	0	0	(1)	1	0	0	0
Net change	(202)	352	(2)	3	(6)	87	232

Members,	431	403	33	161	103	1,378	2,509
December 31, 2021							

* An active member is one who is expected to have earnings in excess of the maximum earnings limit under the MEPP in 2022. A potential active member is one who is a member of the Management Employees Pension Plan and is not currently an active member of the Plan, but is expected to become an active member some time in the future.

Active and Transferred Members

	December 31, 2021	December 31, 2020
Number	431	633
Average age	53.4	52.7
Average service	12.7	11.9
Average earnings	\$ 197,998	\$ 185,762
Proportion female	48.3%	47.1%

Potential Active Members

	December 31, 2021	December 31, 2020
Number	403	51
Average age	48.1	43.9
Average earnings	\$ 159,831	\$ 161,488
Proportion female	53.6%	58.8%

Pending Members

	December 31, 2021	December 31, 2020
Number	33	35
Average age	52.5	51.6
Average amount pending	\$ 17,090	\$ 15,793
Proportion female	45.5%	40.0%

Deferred Vested Members

	December 31, 2021	December 31, 2020
Number	161	158
Average age	52.6	52.6
Average annual pension	\$ 5,857	\$ 5,803
Proportion female	46.6%	46.8%

Hold on Deposit Members

	December 31, 2021	December 31, 2020
Number	103	109
Average age	53.6	53.9
Average amount owing	\$ 6,937	\$ 7,445
Proportion female	40.8%	40.4%

Retired Members and Beneficiaries

	December 31, 2021	December 31, 2020
Number	1,378	1,291
Average age	69.0	68.5
Average Annual Pension	\$ 6,689	\$ 6,428
Proportion female	32.9%	31.6%

Active/Disabled Membership Distribution

The following table provides a detailed summary of the active/disabled membership at the valuation date by years of credited service and by age group. For privacy reasons, average earnings is not shown for groups with one member.

Age	< 5	5–10	10–15	15–20	20–25	25–30	>=30	Total
< 30								
30–35								
35–40	5	1	1					7
	\$ 187,833	*	*					\$ 184,229
40–45	7	7	7	4				25
	\$ 199,798	\$ 185,755	\$ 193,817	\$ 225,106				\$ 198,240
45–50	23	12	36	33	3			107
	\$ 188,483	\$ 194,771	\$ 191,018	\$ 196,987	\$ 228,219			\$ 193,778
50–55	18	20	30	30	18			116
	\$ 217,418	\$ 197,927	\$ 192,443	\$ 190,664	\$ 194,674			\$ 197,150
55–60	12	19	15	34	28			108
	\$ 227,404	\$ 202,981	\$ 206,850	\$ 195,653	\$ 200,321			\$ 203,235
60–65	5	9	10	13	10			47
	\$ 213,023	\$ 194,114	\$ 200,402	\$ 201,277	\$ 199,267			\$ 200,541
>=65	2	3	6	6	4			21
	\$ 173,610	*	*	\$ 198,077	\$ 187,962			\$ 195,849
Total								
Count	72	71	105	120	63	0	0	431
Average								
Earnings	\$ 204,550	\$ 198,218	\$ 194,433	\$ 196,485	\$ 199,084	\$ 0	\$ 0	\$ 197,998

Deferred Vested/Retired Membership Distribution

The following table provides a detailed summary of the deferred vested/retired membership at the valuation date by age group. For privacy reasons, average pensions are not shown for groups with one member.

Age	Retired Members and Beneficiaries	Deferred Vested Members
< 50	3 * \$ 3,334	47
50–55	1 * \$ 7,316	65
55–60	112 \$ 10,409	32 \$ 6,764
60–65	247 \$ 9,469	13 \$ 4,948
65 ¹ –70	367 \$ 7,331	4 \$ 7,477
70–75	418 \$ 5,287	
75–80	192 \$ 3,692	
>=80	38 \$ 2,327	
Total		
Count	1,378	161
Average Lifetime Pension	\$ 6,689	\$ 5,856

¹ Includes all deferred vested members over age 65

Appendix C: Going Concern Assumptions and Methods

Assumptions and Methods

A member's entitlements under a pension plan are generally funded during the period over which service is accrued by the member. The cost of each member's benefits is allocated in some fashion over the member's service. An actuarial valuation provides an assessment of the extent to which allocations relating to periods prior to a valuation date (often referred to as the actuarial liabilities) are covered by the plan's assets.

The going concern valuation provides an assessment of a pension plan on the premise that the plan continues on into the future indefinitely based on assumptions in respect of future events upon which a plan's benefits are contingent and methods that effectively determine the way in which a plan's costs will be allocated over the members' service. The true cost of a plan, however, will emerge only as experience develops, investment earnings are received, and benefit payments are made.

This appendix summarizes the going concern assumptions and methods that have been used for the going concern valuation of the Plan at the valuation date. The going concern assumptions and methods have been chosen to reflect our understanding of the Plan's funding objectives with due respect to accepted actuarial practice and regulatory constraints. For purposes of this valuation, the going concern methods and assumptions were reviewed and changes as indicated were made.

The actuarial assumptions and methods used in the current and previous valuations are summarized below and described on the following pages.

	December 31, 2021	December 31, 2020
Economic Assumptions		
Asset rate of return	RCA Fund: 1.50% Reserve Fund: 4.99%	RCA Fund: 1.50% Reserve Fund: 5.25%
Discount rate	4.65% per year	4.45% per year
Inflation rate	2.00% per year	Same
Productivity increases	0.75% per year	0.0% per year for 2 years, 0.75% per year thereafter
Merit increases	0.5% per year	Same
Increases in earnings	2.75% per year	0.0% per year for 2 years, 2.75% per year thereafter
Increases in maximum pension limit	\$3,420.00 in 2022; then 2.75% per year	\$3,245.56 in 2021; then 2.75% per year
Interest on member contributions	Inflation plus 2.0% per year	Same
Investment expenses	0.40%/0.20% per year in Reserve/RCA	Same
Non-investment expenses	Increase at 60% of Alberta CPI until 2041, proportion to benefits paid thereafter	Same
Margin for adverse deviation	0.67%/0.50% in Reserve/RCA (implicit in asset rate of return)	0.45%/0.50% in Reserve/RCA (implicit in asset rate of return)

	December 31, 2021	December 31, 2020
Demographic Assumptions		
Mortality table	95% of 2014 Canadian Public Pensioner Mortality Table with generational improvements using Scale MI-2017 (sex-distinct rates)	Same
Retirement rates	Rates following 2021 experience study for MEPP (Table A following)	Same
Termination rates	Rates following 2021 experience study for MEPP (Table B following)	Same
Disability rates	None	Same
Proportion in a relationship		
Non-retired proportion with pension partner	80%	Same
Non-retired pension partner age differential	Males two years older	Same
Retired members	Actual relationship status and ages are used	Same
Termination option election		
Deferred pension	100%	Same
Margin for adverse deviation	Included above	Same
Open group assumptions	Based on new entrant data between 2016-2021. Replaces decrementing actives such that active population remains relatively constant. (Table C following)	Based on new entrant data between 2016-2018. Replaces decrementing actives such that active population remains relatively constant.
Methods		
Actuarial cost method – Liability	Projected accrued benefit	Same
Actuarial cost method – Contribution	Forecast with open group	Same
Asset valuation method	Market value of assets	Same

Table A—Retirement Rates

Age based retirement rates are in accordance with the following table:

Age	Rate (%)	
	Not Eligible for an Unreduced Pension	Eligible for an Unreduced Pension
55	15.0	25.0
56	12.0	20.0
57 – 59	15.0	20.0
60 – 63		20.0
64		25.0
65		40.0
66 – 68		30.0
69		20.0
70		50.0
71		100.0

Table B—Termination Rates

Age-based termination rates are in accordance with the following table:

Age	Rate (%)
Under 35	10.0
35 – 39	7.5
40 – 44	6.0
45 – 54	5.0

Table C—New Entrant Profile

The new entrant profile based on new entrant data between 2016-2021 is in accordance with the following table:

Group	Age at Enrollment Date	Proportion Male	Weight	Total Credited Service (years)	Valuation Salary
1	52	50%	2%	1.30	\$305,000
2	52	50%	8%	1.24	\$253,000
3	50	50%	50%	2.22	\$194,000
4	49	50%	40%	1.57	\$172,000

Justification of Actuarial Assumptions and Methods

Margins for Adverse Deviations

Margins for conservatism or provisions for adverse deviation have been built into the going concern assumptions where appropriate.

The margins have been chosen so as to balance the need for financial security for existing Plan members against overly conservative contribution requirements that potentially result in intergenerational inequity among members and unnecessary financial strain on the Plan sponsor.

The actuary has discussed the Plan's experience with the Committee and compared it to the expected experience. This review indicates that there is a need for use of margins for adverse deviations. The margins for adverse deviations incorporated in the assumptions reflect this review and the Committee's desire to maintain safety cushions. The actuary has discussed with the Committee the implications of incorporating margins for adverse deviations and the Company is fully cognizant and supports incorporating margins for adverse deviations.

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

Economic Assumptions

Asset Rate of Return

We have used an asset rate of return of 1.50% per year for the RCA fund and 5.25% per year for the Reserve Fund.

The overall expected return ("best-estimate") for the RCA Fund is 2.07% per year and for the Reserve Fund is 5.74% per year. These best estimate returns are based on an inflation rate of 2.0% per year. The overall expected return was developed using best-estimate returns for each major asset class in which the pension fund is invested. A Monte Carlo simulation is performed over 30 years where the portfolio returns are projected assuming annual rebalancing. The results are used to develop an overall best-estimate rate of return for the entire pension fund. Gains from rebalancing and diversification are implicit to this return.

The overall expected return has been established based on the Committee's investment policy and its funding policy (whether formal or informal) and objectives. There may be some barriers to achieving this return such as inflation higher than expected, asset returns lower than expected, and assets and liabilities that are mismatched.

The following tables lays out the adjustments that have been made to the overall expected rate of return for each fund:

Development of Asset Rate of Return for Reserve Fund

Overall expected return		5.70%
Non-investment expenses		0.00%
Investment expenses		
Passive	(1)	(0.04)%
Actively managed	(2)	<u>(0.36)%</u>
	(1)+(2)	(0.40)%
Additional returns due to active management		0.36%
Margin for adverse deviations		<u>(0.67)%</u>
Asset Rate of Return		4.99%

Development of Asset Rate of Return for RCA Fund

Overall expected return		2.07%
Non-investment expenses		0.00%
Investment expenses		
Passive	(1)	(0.07)%
Actively managed	(2)	<u>(0.33)%</u>
	(1)+(2)	(0.40)%
Additional returns due to active management		0.33%
Margin for adverse deviations		<u>(0.50)%</u>
Asset Rate of Return		1.50%

Discount Rate

The discount rate used to determine the actuarial liability is assumed to be 4.65% per year. The rate was derived from the total fund (RCA, RTA and Reserve Fund) net asset rate of return. The discount rate does not include a margin for adverse deviation. The discount rate reflects the taxation implications of the RCA.

Inflation Rate

The inflation rate assumption reflects our best estimate of future inflation considering current economic and financial market conditions.

Productivity Increases

The productivity increase assumption reflects our best estimate of future increases considering current economic and financial market conditions, and is consistent with historical real economic growth.

Merit Increases

We assume rates of increase as a result of individual employee merit and promotion of 0.5% per year. The merit and promotion scale is based on the 2021 experience study for MEPP over the years 2011 to 2020 and Committee input.

Increases in Earnings

The assumption for increases in earnings reflects the assumed rate of inflation plus allowances for the effect of productivity growth.

Increases in the Maximum Pension Limit

Pensions are limited to the maximum limits under the *Income Tax Act*. The *Income Tax Act* specifies both a dollar limit, and in addition pensions cannot exceed 2% of indexed highest average compensation per year of credited service. The assumed increase in the dollar limit reflects the assumed rate of inflation plus the productivity increase assumption.

Interest on Member Contributions

Interest is credited on member contributions with the rate credited by chartered banks on five-year personal fixed term deposits. The assumption for interest on member contributions reflects our expected increase in these rates, and is consistent with historical rates.

Expenses

Since the discount rate has been established net of investment expenses, no explicit assumption is required for investment expenses.

Administrative expenses are assessed to the Plan as a charge on a per member basis. It was assumed that expenses will increase each year in absolute dollar terms at 60% of the assumed rate of increase in the Consumer Price Index for Alberta until 2041. Each year thereafter, expenses are assumed to be proportional to benefits paid.

Demographic Assumptions

Mortality

At the current valuation, we are using the 2014 Canadian Public Pensioner Mortality Table, with pension size adjustments factor and with mortality improvements in accordance with MI-2017.

The 2021 experience study for MEPP developed a size adjustment to the mortality table of 95%. This has been adopted and is considered a best-estimate of the rates of mortality.

A margin for adverse deviations has been reflected in the mortality rates assumption using the 2014 Canadian Pensioner's Mortality Table combined with mortality improvement Scale MI-2017.

Retirement

Retirement rates are typically developed taking into account the past experience of the Plan. Accordingly, the rates of retirement have been developed based on the 2021 experience study for MEPP and are considered best-estimate rates of retirement based on the Plan provisions.

As in the previous valuation, all members in receipt of disability benefits from an employer's approved long-term disability plan are assumed to continue to be disabled until termination or retirement. As such, they are included as active members.

Deferred members are assumed to retire at age 60 or their current age if older. The previous valuation assumed deferred members would retire at age 55 or their current age if older.

Termination of Employment

A member's benefit entitlement under the Plan is affected by whether the member terminates employment prior to retirement for reasons other than death. In order to account for this in the calculation of the actuarial liability, an assumption regarding the probability that a member will terminate employment for reasons other than death has been made.

The termination rates were developed based on the 2021 experience study for MEPP and are considered to be best estimate.

Option Elections on Termination

We have assumed all members will elect a deferred annuity on termination. Given the commuted value payable on termination is based on the going concern assumptions, we do not expect this to result in material gains or losses.

Disability

If an active Plan member becomes disabled, contributory service continues to accrue until unreduced pension commencement age, but employee contributions are waived. Since this benefit is substantially the same as the benefit that accrues to an active member, no disability assumption was used. Use of an actual disability assumption in this case would reduce liabilities slightly, so a nil disability incidence assumption represents a small element of conservatism. The disability assumption has very little impact on the valuation results.

Proportion of Members with Pension Partners and Pension Partner Age Differential

These assumptions are relevant to the valuation of benefits since there is a subsidized joint and survivor benefit available for members with a pension partner. The proportion of members who will have a pension partner and the pension partner age difference assumptions are based on the 2021 experience study for MEPP.

The pension partner age difference assumption has very little impact on the valuation results.

New Entrant Profile

The new entrant profile was developed by taking the average profile observed with new entrant coming into the plan in 2016 through 2021, and adjusting base earnings to 2022.

Other

Actuarial Cost Method

An actuarial cost method is a technique used to allocate in a systematic and consistent manner the expected cost of a pension plan over the years of service during which Plan members earn benefits under the Plan. By funding the cost of a pension plan in an orderly and rational manner, the security of benefits provided under the terms of the Plan in respect of service that has already been rendered is significantly enhanced.

In order to determine the employer contributions required to be made to the Reserve Fund, a forecast actuarial cost method has been employed. Under this method, projections of the expected future cash flows, expected future earnings of both existing and potential members and expected future investment income for the RCA Fund and the Reserve Fund are determined. An open group model is used. That is, those entitled to a benefit will be replaced on termination, retirement or death. The new entrants were based on new members entering the Plan between 2016 to 2021. The employer contribution rate is then determined as the constant percentage of excess earnings which will exhaust all the assets at the time the last benefit is expected to be paid.

The RCA Fund receives all required employee contributions and pays all Plan expenses and benefits. At the end of each year, a transfer is made to the RTA in an amount equal to 50% of the difference between net investment income and benefits paid. Administrative expenses cannot be included in this calculation. If this difference is negative, a transfer from the RTA to the RCA Fund is made. The RCA Fund will receive contributions as long as the projections indicate that there are active members. In this projection, the last active member retires in 2104. It is assumed that the RCA Fund will pay all expenses and benefits for as long as it has sufficient funds to do so. In the year in which the RCA Fund can no longer pay all expected expenses and benefits, the shortfall will be paid by the Reserve Fund. Consequently, in this projection, the Reserve Fund commences to pay the balance of the expected benefits in 2023 and all of the expected benefits and the balance of the expected expenses in 2092.

It is assumed that the RCA Fund will be wound-up when the last remaining active member retires. At that time, any remaining assets in the RCA and the entire balance of the RTA is transferred to the Reserve Fund. This occurs at the end of 2104 in this projection. The Reserve Fund is then responsible for the payment of all remaining benefits and expenses. As there are no active members, no further contributions occur.

With respect to the accrued benefit liability, the projected accrued benefit method prorated on service has been used. Under the projected accrued benefit actuarial cost method, the actuarial present value of benefits in respect of service prior to the valuation date, but based on earnings projected to retirement, is compared with the actuarial asset value, revealing either an actuarial excess or an unfunded actuarial liability.

When calculating the actuarial present value of benefits at the valuation date, the present value of all retirement, withdrawal and pre-retirement death benefits are included. For each member, the retirement, withdrawal and pre-retirement death benefits for a particular period of service are first projected each year into the future taking into account future vesting, early retirement entitlements and minimum pension/value entitlements. These projected benefits for each future year are then capitalized, multiplied by the probability of the member leaving the Plan in that year and discounted with interest and survivorship to the valuation date. The actuarial present value of benefits for the particular period of service is then determined by summing the present values of these projected benefits.

Asset Valuation Method

The actuarial value of assets (AVA) consists of the value of the assets contained in the RCA and the Reserve Fund, determined at market value plus the amount held by the federal government in the RTA. The same methodology was used in the previous valuation.

Other Methodologies

We have prepared a list of additional assumptions and methods used in the valuation of the Plan. This list is intended to assist users of this report in understanding the specific benefits valued. Small differences in methods and assumptions in a plan of this size can sometimes have effects in the millions of dollars. Appendix B of the report deals with data omissions so they will not be repeated here.

- It is administrative practice for the Plan that indexation of deferred and immediate pensions commences January 1 of the year following termination or retirement;
- Contributions are based on earnings in excess of the maximum earnings limit described earlier in this report;
- The excess earnings for calculating the contribution percentage is nil for members with 35 years of combined pensionable service; and
- For deferred benefits on termination, the pensions were deferred to the first unreduced age. Deferred pensioners over age 60 at the valuation date were assumed to retire on July 1, 2022.

Appendix D: Summary of Plan Provisions

This funding valuation was based on Plan design information provided by the Committee as of December 31, 2021. The following is a summary of the main provisions of the Plan.

Eligibility for Membership

Plan members include active MEPP members who are employed by an employer who participates in the Plan. Active MEPP members who have not yet accrued 35 years of combined pensionable service commence participating in the Plan on the later of July 1, 1999, the date their employer becomes a participating employer, and the date on which their earnings first exceed their pensionable earnings.

Normal Retirement

Eligibility

Age 60 with at least 5 years of combined pensionable service under MEPP.

Benefit

The annual pension payable at retirement is determined as:

- (a) 2.0% of highest average earnings, less
- (b) 2.0% of highest average pensionable earnings;
multiplied by
- (c) years of pensionable service.

The member's highest average pensionable earnings is the average of the member's annual earnings in the five consecutive years of combined pensionable service in which such average is the highest. Pensionable earnings are limited by an annual salary cap which is the earnings amount based on which the MEPP benefit earned for the year in question would equal the defined benefit limit under the *Income Tax Act*.

The member's highest average earnings is the average of the member's annual earnings in the five consecutive years of combined pensionable service in which such average is the highest. These earnings are not limited by an annual salary cap.

Early Retirement

Eligibility

Permitted for a member who has attained the age of 55 and accrued five years of combined pensionable service under MEPP.

Benefit

A member's pension is reduced by 3% for each year that the early retirement age precedes the earlier of age 60 and the age at which 80 points under MEPP would be reached, based on combined pensionable service to the date of termination.

No reduction is applied if the member has accrued 80 points under MEPP (that is, age plus combined pensionable service is greater than or equal to 80) or has attained age 60.

Postponed Retirement

Eligibility

Any time after a vested member's normal retirement date but not later than December 31 of the year in which the member attains age 71. Members are vested with at least five years of combined pensionable service.

Benefit

Normal retirement benefit accrued to postponed retirement date. The benefit is actuarially increased from the later of the participant's termination date and age 65 up to the postponed retirement date.

Termination of Participation Before Pension

Eligibility

Eligibility

Members are vested following completion of five years of combined pensionable service.

Benefit

Non vested members receive a refund of their contributions with interest.

Vested members are eligible to receive a deferred pension, payable upon commencement of the MEPP pension. In lieu of electing to receive a deferred pension, a vested member may elect to be paid the commuted value of the pension, plus excess contributions. The member's benefit election under the Plan will be the same as the benefit election made in respect of their benefit from the MEPP, except that the commuted value of the Plan benefit cannot be transferred to a registered retirement savings vehicle.

Pre-retirement Death

Eligibility

Members are vested following completion of five years of combined pensionable service.

Benefit

The pension partner, and if no pension partner, the beneficiaries of a non-vested member receive the member's contributions with interest.

If the member was vested at date of death, the surviving pension partner will receive either 100% of commuted value or an immediate unreduced pension for life determined as though the member had, immediately before death, terminated and retired with a total disability pension having elected a J&S 100% Guaranteed at Least 10 Years optional form pension, plus excess contributions. The pension partner also has the option to select an actuarially equivalent alternative form of pension. If there is no surviving pension partner, the beneficiary will receive 100% of commuted value plus excess contributions.

Disability

Eligibility

Qualification for benefits under employer-sponsored long-term disability plan or where the member is receiving temporary total or temporary partial disability benefits under the *Workers' Compensation Act*.

Benefit

Participation in the Plan continues, but no pension is payable concurrently with the LTD or WCB benefit. For the purpose of determining contributions and benefits, earnings will be the earnings immediately preceding disability, increased by subsequent general wage increases applicable for that member's employment class.

Contributions

Members must contribute on their regular earnings in excess of the maximum earnings level as determined from the maximum defined benefit pension limit for each year of service under the Income Tax Act, based upon the employee contribution rate to the MEPP. These contributions are remitted to the RCA Fund. Participating employers will make matching contributions to the Plan, which will be remitted to the RCA Fund. Half of the member and employer

contributions to the RCA Fund are remitted to Canada Revenue Agency and held in the RTA.

In addition, participating employers will make contributions to the Reserve Fund, with the contribution rate established by actuarial valuations at least once every three years.

Contribution Rate History

Valuation date: December 31, 2002

Members and employers: 7.75% of excess earnings up to March 31, 2003

Employers: 6.8% of excess earnings effective July 1, 2003 to Reserve Fund

Valuation date: December 31, 2002

Members and employers: 9.5% of excess earnings effective April 1, 2003

Employers: 5.8% of excess earnings effective July 1, 2005 to Reserve Fund

Valuation date: December 31, 2004

Members and employers: 10.5% of excess earnings effective July 1, 2005

Employers: 11.4% of excess earnings effective April 1, 2007 to Reserve Fund

Valuation date: December 31, 2009

Members and employers: 11.16% of excess earnings effective January 1, 2011

Employers: 22.6% of excess earnings effective April 1, 2011 to Reserve Fund

Valuation date: December 31, 2012

Members and employers: 12.80% of excess earnings effective January 1, 2014

Employers: 2.4% of excess earnings effective April 1, 2014 to March 31, 2015 to Reserve Fund, 9.9% of excess earnings effective April 1, 2015 to Reserve Fund

Valuation date: December 31, 2015

No change

Valuation date: December 31, 2018

No change

Normal Form of Payment

Member without pension partner at retirement

The normal form of pension is a lifetime pension guaranteed for 120 months. If the member dies before 120 monthly payments are made, the balance of the 120 payments are payable to the member's beneficiary or estate.

Member with pension partner at retirement

The normal form of pension is a joint form with a 2/3 survivor pension payable to the pension partner.

Cost-of-Living Increases

Definitions

Earnings

The participant's actual salary.

Pensionable earnings

The member's earnings limited each year to the amount as determined from the maximum defined benefit pension limit under the *Income Tax Act*.

Excess earnings

The difference between the member's actual earnings not limited by the maximum defined benefit pension limit under the *Income Tax Act*, and pensionable earnings.

Pensionable service

Pensionable service in the Plan equals the sum of periods of current service where contributions were made directly to MEPP, and subject to certain conditions purchased periods of leave without salary, which occurred on and after the later of the date the employer commenced participation in the Plan and the date the member commenced participation in MEPP.

Eligible periods of leave without salary are limited to periods of purchased leave without salary under MEPP where the cost was shared between the member and employer. For periods of leave without salary that occurred prior to the member commencing participation in the Plan, the contributions need not have been made while the leave occurred. For periods of leave without salary that occurred while the member was participating in the Plan, contributions must have been made while the leave occurred.

Combined pensionable service, as defined under MEPP, cannot exceed 35 years. Combined pensionable service (pensionable service in MEPP plus pensionable service in the Public Service Pension Plan) is used to determine eligibility for benefits, vesting and determination of highest average salary.

A copy of the administrator certification certifying the accuracy and completeness of the Plan provisions summarized in this report is included in Appendix E of this report.

Appendix E: Administrator Certification

With respect to the Supplementary Retirement Plan for Public Service Managers, forming part of the actuarial report as at December 31, 2021, I hereby certify that, to the best of my knowledge and belief:

- The asset data provided or made available to the actuary is complete and accurate; and
- The actuary has been notified of all relevant events subsequent to the valuation measurement date.

ADM/SFO

Name (print) of Authorized Signatory
Alberta Treasury Board and Finance

Title

Signature

Date

- The membership data and subsequent query answers provided or made available to the actuary are complete and accurate for all persons who are entitled to benefits under the terms of the Plan in respect of service up to the date of the valuation;
- The Plan provisions provided or made available to the actuary are complete and accurate; and
- The actuary has been notified of all relevant events subsequent to the valuation measurement date.

Troy Mann

Name (print) of Authorized Signatory
Alberta Pension Services Corporation



Signature

Vice President - Pensions Services

Title

March 23, 2023

Date

About Aon

Aon plc (NYSE:AON) is a leading global professional services firm providing a broad range of risk, retirement and health solutions. Our 50,000 colleagues in 120 countries empower results for clients by using proprietary data and analytics to deliver insights that reduce volatility and improve performance.

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