Actuarial Valuation as at December 31, 2020 for Supplementary Retirement Plan for Public Service Managers

December 13, 2021

Empower Results®

Table of Contents

Executive Summary

An actuarial valuation has been prepared for the Supplementary Retirement Plan for Public Service Managers (the "Plan") as at December 31, 2020 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, 2023.

Summary of Principal Results

Financial Position

	December 31, 2020	December 31, 2018
Assets	$ 210,636,000	$ 189,577,000
Liabilities	226,673,000	208,996,000
Excess/(Deficit)	**$ (16,037,000)**	**$ (19,419,000)**

Contribution Requirements

	December 31, 2020	December 31, 2018
Member Contribution Rate to RCA Fund / RTA	12.80%	12.80%
Matching Employer Contribution Rate to RCA Fund / RTA	12.80%	12.80%
Employer Contribution Rate to Reserve Fund	19.70%*	9.90%

* *Effective April 1, 2022*

Membership Data

	December 31, 2020	December 31, 2018
Active Members	633	1,034
Potential Active Members	51	358
Pending Members	35	54
Deferred Vested Members	158	129
Hold on Deposit Members	109	91
Retired Members and Beneficiaries	1,291	1,128

Key Assumptions

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

Going Concern	December 31, 2020	December 31, 2018
Rate of return on assets	RCA Fund: 1.50% per year Reserve Fund: 5.25% per year	RCA Fund: 2.90% per year Reserve Fund: 5.75% per year
Discount rate	4.45% per year	4.75% per year
Margin for adverse deviation	0.50%/0.45% included in asset return	0.50%/0.50% included in asset return
Inflation rate	2.00% per year	Same
Pensionable earnings – Base	0.00% per year for 2 years, 2.75% per year thereafter	0.00% per year for 3 years, 2.75% per year thereafter
Pensionable earnings – Merit and Promotion	0.5% per year	0.8% per year
Maximum pension increase	2.75% per year	Same
Mortality table	95% of 2014 Canadian Public Pensioner Mortality Table with generational improvements using Scale MI-2017	100% of 2014 Canadian Public Pensioner Mortality Table with generational improvements using Scale MI-2017
Retirement rates	Rates following 2021 experience study for MEPP	Rates following 2016 experience study for MEPP

Section 1: Introduction

Purpose and Terms of Engagement

We have been engaged by the 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, 2020 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, 2020; 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, 2023.

Summary of Changes Since the Last Valuation

The last such actuarial valuation in respect of the Plan was performed as at December 31, 2018. 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 the 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 4 successive 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, 2015;
- A copy of the Statement of Investment Policies and Procedures for the Plan;
- Membership data compiled as at December 31, 2020 by Alberta Pension Services Corporation ("APS");
- 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.

Subsequent Events

As of the date of this report, we have not been made aware of any 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, 2020 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, 2020 is shown in the following table. The results as at December 31, 2018 are also shown for comparison purposes.

Financial Position

	December 31, 2020	December 31, 2018
Assets		
Retirement Compensation Arrangement	$ 16,251,000	$ 19,879,000
Refundable Tax Account	35,117,000	36,541,000
Reserve Fund	159,268,000	133,157,000
Actuarial Value of Assets	**$ 210,636,000**	**$ 189,577,000**
Actuarial Liabilities		
Active and Potential members	$ 63,492,000	$ 82,847,000
Hold on deposit members	811,000	568,000
Deferred vested members	14,748,000	12,584,000
Pending members	2,096,000	2,941,000
Retired members and beneficiaries	145,526,000	110,056,000
Total Liabilities	**$ 226,673,000**	**$ 208,996,000**
Excess Assets/(Unfunded Liability)	**$ (16,037,000)**	**$ (19,419,000)**

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, 2020 are shown in the following table as a percentage of excess earnings. The contribution requirements as at December 31, 2018 are also shown for comparison purposes.

	December 31, 2020	**December 31, 2018**
Member Contribution Rate to RCA Fund / RTA	12.80%	12.80%
Matching Employer Contribution Rate to RCA Fund / RTA	12.80%	12.80%
Employer Contribution Rate to Reserve Fund	19.70%*	9.90%

** Effective April 1, 2022*

Change in Financial Position

The major components of the change in the unfunded liability for the period from December 31, 2018 to December 31, 2020 are summarized in the following table.

Excess Assets/(Unfunded Liability) as at December 31, 2018	**$**	**(19,419,000)**
Expected interest on Excess Assets/(Unfunded Liability)		(1,889,000)
Excess Assets/(Unfunded Liability) as at December 31, 2020	**$**	**(21,308,000)**
Change in financial position due to experience gains/(losses)		
Gain/(loss) from investment experience	$	5,331,000
Gain/(loss) due to salary experience		(5,913,000)
Gain/(loss) due to indexation experience		547,000
Gain/(loss) due to demographic experience		(36,000)
Net gain/(loss) due to other experience and miscellaneous items		(422,000)
Excess Assets/(Unfunded Liability) After Experience Gains/(Losses) as at December 31, 2020	**$**	**(21,801,000)**
Change in financial position due to assumption changes		
Termination rates	$	(378,000)
Retirement rates		43,000
Pension partner age difference		137,000
Deferred retirement age		1,192,000
Mortality table		(1,953,000)
Merit and promotion rate		5,135,000
Change due to salary rate to 0% for 2 years and 2.75% thereafter		10,685,000
Discount rate		(9,097,000)
Excess Assets/(Unfunded Liability) as at December 31, 2020	**$**	**(16,037,000)**

Discussion of Changes in Assumptions

Effective December 31, 2020, the following assumptions were changed:

Demographic Assumptions

The Plan adopted the recommendations of the 2021 experience study conducted by MEPP, specifically assumed retirement, termination, mortality, spousal age differences and merit and promotion were all adjusted. A complete summary of these changes is found in Appendix C.

In combination, these changes decreased the actuarial liability by $4,176,000.

Economic Assumption

- Base salary increase rate was changed to 0.0% for 2 years and 2.75% per year thereafter from 0.0% for 3 years and 2.75% per year thereafter.
- Discount rate was changed to 4.45% per year from 4.1% per year.

In combination, these changes in assumptions decreased the actuarial liability by $1,588,000.

Going Concern Valuation Sensitivity Results

In accordance with the Canadian of Institute of Actuaries (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.

			Effect	
December 31, 2020			**$**	**%**
Going concern liabilities	$	226,673,000		
Going concern liabilities (discount rate – 1%)	$	261,972,000	35,299,000	15.6%
Going concern liabilities (discount rate + 1%)	$	198,566,000	(28,107,000)	(12.4)%
Normal cost	$	4,549,000		
Normal cost (discount rate – 1%)	$	5,562,000	1,013,000	22.3%
Normal cost (discount rate + 1%)	$	3,798,000	(751,000)	(16.5)%

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 51.9% of total assets) and a duration of 7.9 (based on relevant benchmarks) was considered.

		Base Scenario		**Adverse Scenario**		**Impact ($)**
Actuarial value of assets	$	210,636,000	$	219,324,000	$	8,688,000
Going concern liabilities		226,673,000		261,972,000		35,299,000
Excess Assets/(Unfunded Liability)	**$**	**(16,037,000)**	**$**	**(42,648,000)**	**$**	**(26,611,000)**
Total Normal Cost						
Jan 1, 2021 to Dec 31, 2021	$	4,549,000	$	5,562,000	$	1,013,000

Deterioration in Asset Value

In assessing the risk related to the deterioration in asset value we have chosen an adverse scenario equal to a 20% reduction in the equity 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 20% reduction in non-fixed income asset values.

		Base Scenario		**Adverse Scenario**		**Impact ($)**
Actuarial value of assets	$	210,636,000	$	190,375,000	$	(20,261,000)
Going concern liabilities		226,673,000		226,673,000		-
Excess Assets/(Unfunded Liability)	**$**	**(16,037,000)**	**$**	**(36,298,000)**	**$**	**(20,261,000)**
Total Normal Cost						
Jan 1, 2021 to Dec 31, 2021	$	4,549,000	$	4,549,000	$	-

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	$	210,636,000	$	210,636,000	$	-
Going concern liabilities		226,673,000		230,634,000		3,961,000
Excess Assets/(Unfunded Liability)	**$**	**(16,037,000)**	**$**	**(19,998,000)**	**$**	**(3,961,000)**
Total Normal Cost						
Jan 1, 2021 to Dec 31, 2021	$	4,549,000	$	4,616,000	$	67,000

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 2020 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	0	9,094,000
2008	9,094,000	3,067,000	846,000	304,000	(191,000)	385,000	0	11,205,000
2009	11,205,000	3,264,000	1,307,000	414,000	979,000	615,000	0	14,342,000
2010	14,342,000	2,957,000	1,700,000	525,000	1,318,000	35,000	0	16,427,000
2011	16,427,000	3,127,000	2,458,000	484,000	1,585,000	(40,000)	0	18,157,000
2012	18,157,000	3,168,000	3,118,000	521,000	1,078,000	436,000	0	19,200,000
2013	19,200,000	3,335,000	3,636,000	549,000	(330,000)	1,020,000	0	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	0	22,419,000
2017	22,419,000	3,626,000	8,297,000	756,000	663,000	2,415,000	0	20,070,000
2018	20,070,000	3,307,000	6,473,000	747,000	350,000	3,372,000	0	19,879,000
2019	19,879,000	2,637,000	7,999,000	822,000	1,415,000	3,508,000	0	18,618,000
2020	18,618,000	2,320,000	8,807,000	711,000	1,549,000	3,282,000	0	16,251,000
2021	16,251,000	2,050,541	8,933,822	719,532	186,744	4,733,305	0	13,568,236
2022	13,568,236	1,754,428	9,525,006	728,166	139,783	5,056,695	0	10,265,970
2023	10,265,970	1,519,591	10,058,637	736,904	84,420	5,355,561	0	6,430,000
2024	6,430,000	1,560,489	7,244,742	745,747	48,225	3,971,132	0	4,019,357
2025	4,019,357	1,593,535	4,858,196	754,696	30,145	2,791,374	0	2,821,519
2026	2,821,519	1,632,411	3,690,178	763,752	21,161	2,216,384	0	2,237,545
2027	2,237,545	1,666,176	3,130,804	772,917	16,782	1,943,470	0	1,960,252
2028	1,960,252	1,695,415	2,873,475	782,192	14,702	1,820,482	0	1,835,184
2029	1,835,184	1,730,842	2,774,448	791,578	13,764	1,776,131	0	1,789,895
2030	1,789,895	1,766,576	2,755,394	801,077	13,424	1,771,524	0	1,784,948
2031	1,784,948	1,798,951	2,773,209	810,690	13,387	1,785,256	0	1,798,643
2032	1,798,643	1,836,841	2,815,066	820,418	13,490	1,810,997	0	1,824,487
2033	1,824,487	1,877,660	2,871,884	830,263	13,684	1,844,231	0	1,857,915
2034	1,857,915	1,918,733	2,936,422	840,226	13,934	1,881,357	0	1,895,291
2035	1,895,291	1,957,430	3,002,412	850,309	14,215	1,919,253	0	1,933,468
2036	1,933,468	1,997,334	3,070,289	860,513	14,501	1,958,151	0	1,972,652
2037	1,972,652	2,044,275	3,146,088	870,839	14,795	2,001,066	0	2,015,861
2038	2,015,861	2,094,998	3,229,570	881,289	15,119	2,047,870	0	2,062,989
2039	2,062,989	2,143,387	3,314,512	891,864	15,472	2,095,452	0	2,110,924
2040	2,110,924	2,192,455	3,400,813	902,566	15,832	2,143,773	0	2,159,605
2041	2,159,605	2,242,791	3,488,999	913,397	16,197	2,193,100	0	2,209,297
2042	2,209,297	2,297,443	3,580,824	925,916	16,570	2,245,085	0	2,261,655
2043	2,261,655	2,357,194	3,682,241	936,608	16,962	2,300,943	0	2,317,905
2044	2,317,905	2,420,955	3,793,499	945,361	17,384	2,360,738	0	2,378,122
2045	2,378,122	2,484,991	3,910,600	952,513	17,836	2,422,639	0	2,440,475
2046	2,440,475	2,551,912	4,033,537	958,850	18,304	2,487,041	0	2,505,345
2047	2,505,345	2,620,853	4,163,378	962,820	18,790	2,553,704	0	2,572,494
2048	2,572,494	2,691,944	4,297,897	966,541	19,294	2,622,572	0	2,641,866
2049	2,641,866	2,764,004	4,437,208	968,662	19,814	2,693,028	0	2,712,842
2050	2,712,842	2,838,207	4,581,817	969,232	20,346	2,765,352	0	2,785,698
2051	2,785,698	2,915,465	4,732,298	968,865	20,893	2,840,135	0	2,861,028
2052	2,861,028	2,995,240	4,888,405	967,863	21,458	2,917,405	0	2,938,863

Year	RCA Assets Beginning of Year ($)	Net Contributions ($)	Total Benefit Payments ($)	Expenses ($)	Investment Income ($)	Transfer To/From RTA ($)	Transfer To/From Reserve ($)	RCA Assets End of Year ($)
2053	2,938,863	3,077,255	5,049,683	966,435	22,041	2,997,038	0	3,019,079
2054	3,019,079	3,160,242	5,214,459	964,862	22,643	3,078,339	0	3,100,982
2055	3,100,982	3,246,384	5,384,109	963,257	23,257	3,162,055	0	3,185,312
2056	3,185,312	3,335,473	5,558,920	961,865	23,890	3,248,447	0	3,272,337
2057	3,272,337	3,427,418	5,738,884	960,871	24,543	3,337,606	0	3,362,149
2058	3,362,149	3,521,812	5,923,471	960,490	25,216	3,429,373	0	3,454,589
2059	3,454,589	3,618,765	6,112,459	960,895	25,909	3,523,722	0	3,549,631
2060	3,549,631	3,718,362	6,305,777	962,216	26,622	3,620,686	0	3,647,308
2061	3,647,308	3,820,717	6,503,445	964,580	27,355	3,720,335	0	3,747,690
2062	3,747,690	3,925,895	6,705,490	968,095	28,108	3,822,738	0	3,850,846
2063	3,850,846	4,033,953	6,911,980	972,819	28,881	3,927,959	0	3,956,840
2064	3,956,840	4,144,990	7,123,009	978,821	29,676	4,036,077	0	4,065,753
2065	4,065,753	4,259,078	7,338,744	986,087	30,493	4,147,169	0	4,177,662
2066	4,177,662	4,376,283	7,559,336	994,609	31,332	4,261,307	0	4,292,639
2067	4,292,639	4,496,722	7,784,973	1,004,388	32,195	4,378,583	0	4,410,778
2068	4,410,778	4,620,471	8,015,840	1,015,409	33,081	4,499,084	0	4,532,165
2069	4,532,165	4,747,612	8,252,113	1,027,664	33,991	4,622,893	0	4,656,884
2070	4,656,884	4,878,246	8,493,961	1,041,169	34,927	4,750,101	0	4,785,028
2071	4,785,028	5,012,483	8,741,556	1,055,955	35,888	4,880,812	0	4,916,700
2072	4,916,700	4,296,546	8,141,416	1,071,830	36,875	4,588,185	0	4,625,060
2073	4,625,060	4,115,880	7,651,879	1,089,061	34,688	4,353,126	0	4,387,814
2074	4,387,814	3,916,939	7,197,201	1,107,552	32,909	4,135,922	0	4,168,831
2075	4,168,831	3,704,673	6,746,640	1,126,864	31,266	3,921,119	0	3,952,385
2076	3,952,385	3,480,379	6,288,022	1,144,742	29,643	3,701,560	0	3,731,203
2077	3,731,203	3,248,005	5,819,236	1,159,972	27,984	3,475,612	0	3,503,596
2078	3,503,596	3,012,232	5,341,917	1,173,911	26,277	3,244,776	0	3,271,053
2079	3,271,053	2,764,921	4,851,448	1,184,526	24,533	3,005,720	0	3,030,253
2080	3,030,253	2,520,217	4,358,053	1,192,418	22,727	2,763,872	0	2,786,599
2081	2,786,599	2,279,765	3,868,699	1,197,665	20,899	2,522,732	0	2,543,631
2082	2,543,631	2,045,197	3,388,479	1,200,349	19,077	2,284,875	0	2,303,952
2083	2,303,952	1,812,597	2,916,137	1,200,413	17,280	2,049,635	0	2,066,915
2084	2,066,915	1,578,833	2,448,292	1,197,456	15,502	1,815,123	0	1,830,625
2085	1,830,625	1,351,051	1,990,940	1,190,736	13,730	1,583,973	0	1,597,703
2086	1,597,703	1,146,490	1,563,062	1,181,131	11,983	1,366,105	0	1,378,088
2087	1,378,088	968,183	1,177,014	1,169,257	10,336	1,167,968	0	1,178,304
2088	1,178,304	812,101	835,392	1,155,012	8,837	990,784	0	999,621
2089	999,621	668,809	530,158	1,138,272	7,497	830,467	0	837,964
2090	837,964	538,219	257,080	1,119,102	6,285	684,949	0	691,234
2091	691,234	423,115	16,924	1,097,424	5,184	554,582	0	559,766
2092	559,766	328,017	0	887,784	4,198	441,793	0	445,991
2093	445,991	249,795	0	695,786	3,345	346,220	0	349,565
2094	349,565	191,917	0	541,482	2,622	269,430	0	272,052
2095	272,052	144,803	0	416,855	2,040	207,407	0	209,447
2096	209,447	109,139	0	318,587	1,571	158,508	0	160,079
2097	160,079	79,943	0	240,021	1,201	119,410	0	120,611
2098	120,611	60,765	0	181,376	905	90,235	0	91,140
2099	91,140	45,684	0	136,824	684	68,070	0	68,754
2100	68,754	33,474	0	102,228	516	50,856	0	51,372

Year	RCA Assets Beginning of Year ($)	Net Contributions ($)	Total Benefit Payments ($)	Expenses ($)	Investment Income ($)	Transfer To/From RTA ($)	Transfer To/From Reserve ($)	RCA Assets End of Year ($)
2101	51,372	24,229	0	75,601	385	37,608	0	37,993
2102	37,993	16,747	0	54,740	285	27,228	0	27,513
2103	27,513	11,246	0	38,759	206	19,276	0	19,482
2104	19,482	6,934	0	26,416	146	0	0	0

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	2,050,541	(4,733,305)	32,434,236
2022	32,434,236	1,754,428	(5,056,695)	29,131,970
2023	29,131,970	1,519,591	(5,355,561)	25,296,000
2024	25,296,000	1,560,489	(3,971,132)	22,885,357
2025	22,885,357	1,593,535	(2,791,374)	21,687,519
2026	21,687,519	1,632,411	(2,216,384)	21,103,545
2027	21,103,545	1,666,176	(1,943,470)	20,826,252
2028	20,826,252	1,695,415	(1,820,482)	20,701,184
2029	20,701,184	1,730,842	(1,776,131)	20,655,895
2030	20,655,895	1,766,576	(1,771,524)	20,650,948
2031	20,650,948	1,798,951	(1,785,256)	20,664,643
2032	20,664,643	1,836,841	(1,810,997)	20,690,487
2033	20,690,487	1,877,660	(1,844,231)	20,723,915
2034	20,723,915	1,918,733	(1,881,357)	20,761,291
2035	20,761,291	1,957,430	(1,919,253)	20,799,468
2036	20,799,468	1,997,334	(1,958,151)	20,838,652
2037	20,838,652	2,044,275	(2,001,066)	20,881,861
2038	20,881,861	2,094,998	(2,047,870)	20,928,989
2039	20,928,989	2,143,387	(2,095,452)	20,976,924
2040	20,976,924	2,192,455	(2,143,773)	21,025,605
2041	21,025,605	2,242,791	(2,193,100)	21,075,297
2042	21,075,297	2,297,443	(2,245,085)	21,127,655
2043	21,127,655	2,357,194	(2,300,943)	21,183,905
2044	21,183,905	2,420,955	(2,360,738)	21,244,122
2045	21,244,122	2,484,991	(2,422,639)	21,306,475
2046	21,306,475	2,551,912	(2,487,041)	21,371,345
2047	21,371,345	2,620,853	(2,553,704)	21,438,494
2048	21,438,494	2,691,944	(2,622,572)	21,507,866
2049	21,507,866	2,764,004	(2,693,028)	21,578,842
2050	21,578,842	2,838,207	(2,765,352)	21,651,698
2051	21,651,698	2,915,465	(2,840,135)	21,727,028

Year	RTA Assets Beginning of Year ($)	Contributions to RTA ($)	Transfer To/From RCA ($)	RTA Assets End of Year ($)
2052	21,727,028	2,995,240	(2,917,405)	21,804,863
2053	21,804,863	3,077,255	(2,997,038)	21,885,079
2054	21,885,079	3,160,242	(3,078,339)	21,966,982
2055	21,966,982	3,246,384	(3,162,055)	22,051,312
2056	22,051,312	3,335,473	(3,248,447)	22,138,337
2057	22,138,337	3,427,418	(3,337,606)	22,228,149
2058	22,228,149	3,521,812	(3,429,373)	22,320,589
2059	22,320,589	3,618,765	(3,523,722)	22,415,631
2060	22,415,631	3,718,362	(3,620,686)	22,513,308
2061	22,513,308	3,820,717	(3,720,335)	22,613,690
2062	22,613,690	3,925,895	(3,822,738)	22,716,846
2063	22,716,846	4,033,953	(3,927,959)	22,822,840
2064	22,822,840	4,144,990	(4,036,077)	22,931,753
2065	22,931,753	4,259,078	(4,147,169)	23,043,662
2066	23,043,662	4,376,283	(4,261,307)	23,158,639
2067	23,158,639	4,496,722	(4,378,583)	23,276,778
2068	23,276,778	4,620,471	(4,499,084)	23,398,165
2069	23,398,165	4,747,612	(4,622,893)	23,522,884
2070	23,522,884	4,878,246	(4,750,101)	23,651,028
2071	23,651,028	5,012,483	(4,880,812)	23,782,700
2072	23,782,700	4,296,546	(4,588,185)	23,491,060
2073	23,491,060	4,115,880	(4,353,126)	23,253,814
2074	23,253,814	3,916,939	(4,135,922)	23,034,831
2075	23,034,831	3,704,673	(3,921,119)	22,818,385
2076	22,818,385	3,480,379	(3,701,560)	22,597,203
2077	22,597,203	3,248,005	(3,475,612)	22,369,596
2078	22,369,596	3,012,232	(3,244,776)	22,137,053
2079	22,137,053	2,764,921	(3,005,720)	21,896,253
2080	21,896,253	2,520,217	(2,763,872)	21,652,599
2081	21,652,599	2,279,765	(2,522,732)	21,409,631
2082	21,409,631	2,045,197	(2,284,875)	21,169,952
2083	21,169,952	1,812,597	(2,049,635)	20,932,915
2084	20,932,915	1,578,833	(1,815,123)	20,696,625
2085	20,696,625	1,351,051	(1,583,973)	20,463,703
2086	20,463,703	1,146,490	(1,366,105)	20,244,088
2087	20,244,088	968,183	(1,167,968)	20,044,304
2088	20,044,304	812,101	(990,784)	19,865,621
2089	19,865,621	668,809	(830,467)	19,703,964
2090	19,703,964	538,219	(684,949)	19,557,234
2091	19,557,234	423,115	(554,582)	19,425,766
2092	19,425,766	328,017	(441,793)	19,311,991
2093	19,311,991	249,795	(346,220)	19,215,565
2094	19,215,565	191,917	(269,430)	19,138,052
2095	19,138,052	144,803	(207,407)	19,075,447
2096	19,075,447	109,139	(158,508)	19,026,079
2097	19,026,079	79,943	(119,410)	18,986,611
2098	18,986,611	60,765	(90,235)	18,957,140
2099	18,957,140	45,684	(68,070)	18,934,754
2100	18,934,754	33,474	(50,856)	18,917,372

Year	RTA Assets Beginning of Year ($)	Contributions to RTA ($)	Transfer To/From RCA ($)	RTA Assets End of Year ($)
2101	18,917,372	24,229	(37,608)	18,903,993
2102	18,903,993	16,747	(27,228)	18,893,513
2103	18,893,513	11,246	(19,276)	18,885,482
2104	18,885,482	0	(18,885,482)	0

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	1,585,068	0	0	0	8,403,178	169,256,246
2022	169,256,246	2,365,763	0	0	0	8,948,054	180,570,064
2023	180,570,064	2,340,359	0	0	0	9,541,363	192,451,786
2024	192,451,786	2,403,347	0	3,366,949	0	10,078,424	201,566,608
2025	201,566,608	2,454,242	0	6,326,988	0	10,480,587	208,174,450
2026	208,174,450	2,514,116	0	8,064,786	0	10,783,454	213,407,234
2027	213,407,234	2,566,119	0	9,282,785	0	11,027,567	217,718,135
2028	217,718,135	2,611,150	0	10,107,328	0	11,233,427	221,455,384
2029	221,455,384	2,665,712	0	10,873,091	0	11,410,964	224,658,970
2030	224,658,970	2,720,747	0	11,597,062	0	11,561,593	227,344,248
2031	227,344,248	2,770,609	0	12,263,826	0	11,686,376	229,537,406
2032	229,537,406	2,828,964	0	12,915,460	0	11,785,943	231,236,853
2033	231,236,853	2,891,830	0	13,427,682	0	11,863,369	232,564,370
2034	232,564,370	2,955,088	0	13,903,619	0	11,922,230	233,538,069
2035	233,538,069	3,014,686	0	14,362,768	0	11,962,861	234,152,848
2036	234,152,848	3,076,143	0	14,807,292	0	11,985,082	234,406,781
2037	234,406,781	3,148,438	0	15,182,505	0	11,990,462	234,363,176
2038	234,363,176	3,226,558	0	15,563,537	0	11,980,221	234,006,418
2039	234,006,418	3,301,083	0	15,873,987	0	11,955,298	233,388,812
2040	233,388,812	3,376,654	0	16,166,325	0	11,917,184	232,516,324
2041	232,516,324	3,454,177	0	16,398,421	0	11,867,321	231,439,402
2042	231,439,402	3,538,348	0	16,579,181	0	11,808,247	230,206,816
2043	230,206,816	3,630,372	0	16,710,560	0	11,742,503	228,869,131
2044	228,869,131	3,728,572	0	16,789,890	0	11,672,770	227,480,584
2045	227,480,584	3,827,196	0	16,828,513	0	11,601,446	226,080,713
2046	226,080,713	3,930,262	0	16,843,544	0	11,530,264	224,697,695
2047	224,697,695	4,036,440	0	16,800,140	0	11,461,582	223,395,577
2048	223,395,577	4,145,929	0	16,746,629	0	11,397,499	222,192,376
2049	222,192,376	4,256,910	0	16,653,503	0	11,339,689	221,135,473
2050	221,135,473	4,371,192	0	16,521,309	0	11,290,672	220,276,028
2051	220,276,028	4,490,179	0	16,362,841	0	11,252,834	219,656,200

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	219,656,200	4,613,043	0	16,184,910	0	11,228,189	219,312,521
2053	219,312,521	4,739,356	0	15,992,545	0	11,218,511	219,277,843
2054	219,277,843	4,867,166	0	15,793,510	0	11,225,270	219,576,770
2055	219,576,770	4,999,836	0	15,588,923	0	11,249,817	220,237,500
2056	220,237,500	5,137,044	0	15,383,814	0	11,293,491	221,284,220
2057	221,284,220	5,278,651	0	15,182,206	0	11,357,453	222,738,118
2058	222,738,118	5,424,029	0	14,989,317	0	11,442,662	224,615,492
2059	224,615,492	5,573,349	0	14,809,145	0	11,549,874	226,929,570
2060	226,929,570	5,726,741	0	14,644,579	0	11,679,709	229,691,440
2061	229,691,440	5,884,380	0	14,498,382	0	11,832,683	232,910,121
2062	232,910,121	6,046,367	0	14,372,879	0	12,009,210	236,592,819
2063	236,592,819	6,212,790	0	14,269,245	0	12,209,641	240,746,006
2064	240,746,006	6,383,801	0	14,188,908	0	12,434,281	245,375,180
2065	245,375,180	6,559,511	0	14,131,372	0	12,683,436	250,486,754
2066	250,486,754	6,740,021	0	14,096,338	0	12,957,451	256,087,888
2067	256,087,888	6,925,512	0	14,083,612	0	13,256,714	262,186,502
2068	262,186,502	7,116,101	0	14,092,695	0	13,581,656	268,791,563
2069	268,791,563	7,311,914	0	14,123,241	0	13,932,760	275,912,996
2070	275,912,996	7,513,106	0	14,175,444	0	14,310,546	283,561,204
2071	283,561,204	7,719,848	0	14,249,791	0	14,715,552	291,746,814
2072	291,746,814	6,617,216	0	15,195,576	0	15,091,526	298,259,980
2073	298,259,980	6,338,968	0	16,060,284	0	15,403,464	303,942,128
2074	303,942,128	6,032,574	0	16,917,563	0	15,671,231	308,728,369
2075	308,728,369	5,705,657	0	17,788,603	0	15,891,062	312,536,485
2076	312,536,485	5,360,217	0	18,636,478	0	16,059,664	315,319,889
2077	315,319,889	5,002,332	0	19,436,874	0	16,175,387	317,060,733
2078	317,060,733	4,639,213	0	20,217,694	0	16,236,753	317,719,005
2079	317,719,005	4,258,323	0	20,939,287	0	16,242,372	317,280,413
2080	317,280,413	3,881,448	0	21,604,519	0	16,191,991	315,749,334
2081	315,749,334	3,511,122	0	22,208,119	0	16,086,044	313,138,380
2082	313,138,380	3,149,857	0	22,746,785	0	15,925,346	309,466,799
2083	309,466,799	2,791,626	0	23,220,513	0	15,710,749	304,748,660
2084	304,748,660	2,431,600	0	23,623,981	0	15,443,005	298,999,284
2085	298,999,284	2,080,786	0	23,935,009	0	15,123,789	292,268,850
2086	292,268,850	1,765,737	0	24,153,762	0	14,756,429	284,637,254
2087	284,637,254	1,491,123	0	24,281,274	0	14,345,214	276,192,317
2088	276,192,317	1,250,736	0	24,312,730	0	13,894,719	267,025,042
2089	267,025,042	1,030,050	0	24,253,492	0	13,409,199	257,210,799
2090	257,210,799	828,924	0	24,109,178	0	12,892,460	246,823,006
2091	246,823,006	651,650	0	23,877,345	0	12,348,533	235,945,843
2092	235,945,843	505,188	0	23,395,821	186,747	11,781,376	224,649,838
2093	224,649,838	384,715	0	22,867,419	354,476	11,194,641	213,007,299
2094	213,007,299	295,576	0	22,308,204	483,096	10,592,370	201,103,945
2095	201,103,945	223,014	0	21,711,361	580,311	9,978,655	189,013,942
2096	189,013,942	168,088	0	21,090,753	650,076	9,356,948	176,798,149
2097	176,798,149	123,121	0	20,446,217	699,040	8,730,072	164,506,086
2098	164,506,086	93,585	0	19,777,561	726,975	8,100,782	152,195,918

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	152,195,918	70,359	0	19,084,646	739,703	7,471,743	139,913,671
2100	139,913,671	51,554	0	18,367,420	741,358	6,845,216	127,701,662
2101	127,701,662	37,316	0	17,625,985	733,932	6,223,369	115,602,431
2102	115,602,431	25,793	0	16,860,662	719,643	5,608,322	103,656,241
2103	103,656,241	17,320	0	16,072,056	699,405	5,002,156	91,904,256
2104	91,904,256	10,679	18,885,482	15,261,118	674,503	4,406,944	99,271,740
2105	99,271,740	0	0	14,429,281	0	4,832,998	89,675,456
2106	89,675,456	0	0	13,578,441	0	4,351,527	80,448,543
2107	80,448,543	0	0	12,710,961	0	3,889,886	71,627,467
2108	71,627,467	0	0	11,829,727	0	3,449,912	63,247,652
2109	63,247,652	0	0	10,938,150	0	3,033,375	55,342,877
2110	55,342,877	0	0	10,040,172	0	2,641,947	47,944,653
2111	47,944,653	0	0	9,140,683	0	2,277,151	41,081,121
2112	41,081,121	0	0	8,245,530	0	1,940,314	34,775,905
2113	34,775,905	0	0	7,361,295	0	1,632,501	29,047,111
2114	29,047,111	0	0	6,495,178	0	1,354,475	23,906,408
2115	23,906,408	0	0	5,655,120	0	1,106,640	19,357,928
2116	19,357,928	0	0	4,849,966	0	888,980	15,396,941
2117	15,396,941	0	0	4,089,245	0	700,997	12,008,693
2118	12,008,693	0	0	3,382,659	0	541,662	9,167,696
2119	9,167,696	0	0	2,739,215	0	409,400	6,837,882
2120	6,837,882	0	0	2,166,619	0	302,115	4,973,378
2121	4,973,378	0	0	1,669,955	0	217,266	3,520,689
2122	3,520,689	0	0	1,251,141	0	151,994	2,421,543
2123	2,421,543	0	0	908,982	0	103,270	1,615,831
2124	1,615,831	0	0	639,257	0	68,051	1,044,625
2125	1,044,625	0	0	434,546	0	43,436	653,515
2126	653,515	0	0	285,045	0	26,827	395,297
2127	395,297	0	0	180,184	0	16,023	231,136
2128	231,136	0	0	109,658	0	9,256	130,735
2129	130,735	0	0	64,339	0	5,175	71,571
2130	71,571	0	0	36,455	0	2,801	37,918
2131	37,918	0	0	19,962	0	1,467	19,423
2132	19,423	0	0	10,578	0	742	9,587
2133	9,587	0	0	5,410	0	361	4,537
2134	4,537	0	0	2,659	0	168	2,047
2135	2,047	0	0	1,250	0	75	872
2136	872	0	0	560	0	31	343
2137	343	0	0	234	0	12	122
2138	122	0	0	86	0	4	39
2139	39	0	0	27	0	1	14
2140	14	0	0	6	0	1	9

Required Contributions

Effective January 1, 2014, members are required to contribute 12.80% 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.

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, 2012 actuarial valuation, contributions were set at 9.9% (effective April 1, 2015) of excess earnings and has remained at this rate since.

The established employer contribution rate for the Reserve Fund of 9.9% of earnings is insufficient to meet the obligations of the current Plan members. Without a future increase to contribution rates, or actuarial experience gains, the fund is expected to be depleted of funds by 2104.

The recommended employer contribution rate for the Reserve Fund based on this valuation is 19.70% of excess earnings, to be effective April 1, 2022. This assumes the member contribution rate and the matching employer contribution rate to the RCA Fund/RTA will remain at 12.80% of excess earnings indefinitely.

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, 2020. I confirm that I have prepared an actuarial valuation of the Plan as at December 31, 2020 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, 2023.

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 12.80% of excess earnings. Additional employer contributions are 19.7% of excess earnings to the Reserve Fund effective April 1, 2022. The current contribution rate of 9.9% is not expected to meet the Plan's obligations.
- 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
600 – 3rd Avenue SW, Suite 1800
Calgary, AB T2P 0G5

December 13, 2021

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

As at the date of this report, the Plan's annual report was not available and a summary of the composition of the Plan's assets (excluding the RTA) by asset type as reported by Alberta Treasury Board and Finance as at December 31, 2020 was not available. The composition at the previous valuation date of December 31, 2018 is shown.

	December 31, 2018
Cash and short term	0.7%
Bonds and mortgages	32.9%
Canadian equities	13.3%
Foreign equities	31.4%
Private equities	1.5%
Real estate	11.1%
Infrastructure	6.1%
Timberland	1.6%
Strategic opportunities	1.4%
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%	2.0%	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 (close to 96%) with the remainder invested in cash/money market (approximately 4%). The Reserve Fund has a greater portion of investments in equities (close to 55%), with the remainder of assets invested in fixed income (close to 27%) and inflation sensitive and alternative investments (approximately 18%).

Reconciliation of Changes in Market Value of Assets

The table below reconciles changes in the market value of assets between December 31, 2018 and December 31, 2020.

RCA Fund

	2019	2020
Market Value of Assets, Beginning of Plan Year	**$ 19,879,000**	**$ 18,618,000**
Contributions During Plan Year	**$ 2,637,000**	**$ 2,320,000**
Benefit Payments During Plan Year		
Non-retired members[1]	$ (1,018,000)	$ (960,000)
Retired members	(6,981,000)	(7,847,000)
Total	**$ (7,999,000)**	**$ (8,807,000)**
Transfers During Plan Year		
Transfer from RTA	$ 3,508,000	$ 3,282,000
Transfer to Reserve Fund	0	0
Total	**$ 3,508,000**	**$ 3,282,000**
Fees/Expenses		
Investment fees/expenses	$ (51,000)	$ (46,000)
Non-investment fees/expenses	(822,000)	(711,000)
Total	**$ (873,000)**	**$ (757,000)**
Investment Income	**$ 1,466,000**	**$ 1,595,000**
Market Value of Assets, End of Plan Year	**$ 18,618,000**	**$ 16,251,000**
Rate of return, net of investment fees/expenses	7.6%	9.3%

[1] Includes members who have terminated employment or died

RTA Fund

	2019-Dec-31	2020-Dec-31
Market Value of Assets, Beginning of Plan Year	**$ 36,541,000**	**$ 35,872,000**
Contributions During Plan Year	**$ 2,839,000**	**$ 2,527,000**
Transfers During Plan Year		
Transfer to RCA	$ (3,508,000)	$ (3,282,000)
Total	**$ (3,508,000)**	**$ (3,282,000)**
Market Value of Assets, End of Plan Year	**$ 35,872,000**	**$ 35,117,000**

Reserve Fund

	2019-Dec-31	2020-Dec-31
Market Value of Assets, Beginning of Plan Year	**$ 133,157,000**	**$ 153,607,000**
Contributions During Plan Year		
Employer	$ 2,078,000	$ 1,779,000
Total	**$ 2,078,000**	**$ 1,779,000**
Transfers During Plan Year		
Transfer from RCA	$ 0	$ 0
Total	**$ 0**	**$ 0**
Investment Income	**$ 18,372,000**	**$ 3,882,000**
Market Value of Assets, End of Plan Year	**$ 153,607,000**	**$ 159,268,000**
Rate of return, net of investment fees/expenses	13.7%	2.5%

Total Market Value of Assets

	December 31, 2018	December 31, 2020
RCA Fund	$ 19,879,000	$ 16,251,000
RTA Fund	36,541,000	35,117,000
Reserve Fund	133,157,000	159,268,000
Total Fund	**$ 189,577,000**	**$ 210,636,000**

Appendix B: Membership Data

Source of Data

This valuation was based on member data provided by APSC as of December 31, 2020. 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 2 years of credited service from December 31, 2018, notwithstanding increases due to service purchases during the inter-valuation period. This test also revealed any members who accrued less than 2 years of credited service;
- A reconciliation of pensionable 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, 2018 (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 Pensionable 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 2015 to 2019, the most recent data was utilized and increased to 2020 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 (and the Plan provisions summarized in this report) is included in Appendix E of this report.

Membership Summary

The table below reconciles the number of members as of December 31, 2020 with the number of members as of December 31, 2018 and the changes due to experience in the period.

	Actives*	Potential Active*	Pending	Deferred	HOD	Retired & Beneficiaries	Total
Members, December 31, 2018	**1,034**	**358**	**54**	**129**	**91**	**1,128**	**2,794**
Changes due to:							
New entrants	49	6	0	0	0	0	55
Return to active	18	(15)	0	(3)	0	0	0
Termination							
Non-vested	(28)	(1)	(1)	0	30	0	0
Deferred vested	(65)	0	0	65	0	0	0
Lump sum	(25)	(24)	0	(5)	(8)	0	(62)
Death							
No further benefits	0	0	0	0	0	(19)	(19)
Lump sum	0	0	0	0	0	0	0
Surviving beneficiary	(2)	0	0	0	0	2	0
New beneficiary	0	0	0	0	0	0	0
Retirement	(145)	0	(7)	(24)	(3)	179	0
Transfer							
From Unexpected	61	4	0	0	1	0	66
To Ineligible	(6)	(31)	(11)	(2)	(1)	0	(51)
To Potential	(36)	36	0	0	0	0	0
To Unexpected	(222)	(282)	0	(2)	(1)	0	(507)
Data correction	0	0	0	0	0	1	1
Net change	(401)	(307)	(19)	29	18	163	(517)
Members, December 31, 2020	**633**	**51**	**35**	**158**	**109**	**1,291**	**2,277**

** An active member is one who is expected to have earnings in excess of the maximum earnings limit under the MEPP in 2021. 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 Members

	December 31, 2020	December 31, 2018
Number	633	1,034
Average age	52.7	52.3
Average service	11.9	11.3
Average pensionable earnings	$ 185,762	$ 171,692
Proportion female	47.1%	45.6%

Potential Active Members

	December 31, 2020	December 31, 2018
Number	51	358
Average age	43.9	41.4
Average pensionable earnings	$ 161,488	$ 135,362
Proportion female	58.8%	53.6%

Pending Members

	December 31, 2020	December 31, 2018
Number	35	54
Average age	51.6	51.1
Average amount pending	$ 15,793	$ 8,291
Proportion female	40.0%	35.2%

Deferred Vested Members

	December 31, 2020	December 31, 2018
Number	158	129
Average age	52.6	52.8
Average annual pension	$ 5,803	$ 6,028
Proportion female	46.8%	47.3%

Hold on Deposit Members

	December 31, 2020	December 31, 2018
Number	109	91
Average age	53.9	53.3
Average amount owing	$ 7,445	$ 6,241
Proportion female	40.4%	40.7%

Retired Members and Beneficiaries

	December 31, 2020	December 31, 2018
Number	1,291	1,128
Average age	68.5	67.8
Average Annual Pension	$ 6,428	$ 5,775
Proportion female	31.6%	30.1%

Active Membership Distribution

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

Age	< 5	5–10	10–15	15–20	20–25	25–30	>=30	Total
< 30	2							2
	$ 252,337							$ 252,337
30–35	3							3
	$ 133,280							$ 133,280
35–40	12	12	1					25
	*	$ 177,554	*					$ 167,953
40–45	17	13	17	6				53
	$ 169,662	$ 181,073	$ 175,192	$ 180,738				$ 175,489
45–50	26	29	55	38	2			150
	$ 185,106	$ 183,811	$ 182,643	$ 189,149	$ 189,166			$ 185,031
50–55	24	30	36	37	25			152
	$ 185,234	$ 187,290	$ 178,140	$ 185,273	$ 186,350			$ 184,153
55–60	22	23	27	35	41			148
	$ 195,924	$ 190,214	$ 194,546	$ 194,160	$ 186,574			$ 191,778
60–65	9	10	20	15	10			64
	$ 172,161	$ 180,470	$ 203,518	$ 200,988	$ 188,158			$ 192,514
>=65	3	8	10	9	6			36
	*	$ 204,407	*	$ 179,885	$ 191,342			$ 187,034
Total								
Count	**118**	**125**	**166**	**140**	**84**	**0**	**0**	**633**
Average Earnings	**$ 180,705**	**$ 185,990**	**$ 185,197**	**$ 189,690**	**$ 187,098**	**$ 0**	**$ 0**	**$ 185,762**

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	56
	$ 3,374	$ 4,426
50–55		50
		$ 6,994
55–60	111	30
	$ 9,616	$ 7,570
60–65	244	18
	$ 9,166	$ 4,887
65–70	367	4
	$ 6,819	$ 1,065
70–75	402	
	$ 4,912	
75–80	136	
	$ 3,251	
>=80	28	
	$ 2,332	
Total		
Count	**1,291**	**158**
Average Lifetime Pension	**$ 6,428**	**$ 5,803**

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, 2020	December 31, 2018
Economic Assumptions		
Asset rate of return	RCA Fund: 1.50% Reserve Fund: 5.25%	RCA Fund: 2.90% Reserve Fund: 5.75%
Discount rate	4.45% per year	4.75% per year
Inflation rate	2.00% per year	Same
Productivity increases	0.0% per year for 2 years, 0.75% thereafter	0.0% per year for 3 years, 0.75% thereafter
Merit increases	0.5% per year	0.8% per year
Increases in pensionable earnings	0.0% per year for 2 years, 2.75% thereafter	0.0% per year for 3 years, 2.75% thereafter
Increases in maximum pension limit	$3,245.56 in 2021; then 2.75% per year	$3,025.56 in 2019; 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	0.50%/0.45% in Reserve/RCA (implicit in asset rate of return)	0.50%/0.50% (implicit in asset rate of return)

	December 31, 2020	December 31, 2018
Demographic Assumptions		
Mortality table	95% of 2014 Canadian Public Pensioner Mortality Table with generational improvements using Scale MI-2017 (sex-distinct rates)	100% of 2014 Canadian Public Pensioner Mortality Table with generational improvements using CPM Scale B (sex-distinct rates)
Retirement rates	Rates following 2021 experience study for MEPP (Table A following)	Rates following 2016 experience study for MEPP
Termination rates	Rates following 2021 experience study for MEPP (Table B following)	Rates following 2016 experience study for MEPP
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	Males three years older
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 2016-2018. Replaces decrementing actives such that active population remains relatively constant. (Table C following)	N/A
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	Rate (%) 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 2016-2018 is in accordance with the following table:

Group	Age at Enrollment Date	Proportion Male	Weight	Total Credited Service (years)	Valuation Salary
1	52	50%	3%	1.30	$300,700
2	58	50%	3%	1.24	$287,000
3	52	50%	8%	2.22	$205,800
4	48	50%	26%	1.57	$189,400
5	51	50%	60%	1.52	$165,900

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 Committee 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 5.76% per year. These best estimate returns are based on an inflation rate of 2.0% per year. These overall expected returns were developed using best-estimate returns for each major asset class in which the funds are invested. A Monte Carlo simulation is performed where the portfolio returns are projected assuming annual rebalancing. Expected plan cash flows are projected reflecting the plan's time horizon and discounted using the simulated returns. The internal rate of return is then calculated for each scenario and the average is used to develop an overall best-estimate rate of return for each fund. Gains from rebalancing and diversification are implicit to this return.

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

The following charts lay 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				5.76%
Non-investment expenses				0.00%
Investment expenses				
Passive	(1)	(0.06)%		
Actively managed	(2)	(0.34)%		
			(1)+(2)	(0.40)%
Additional returns due to active management				0.34%
Margin for adverse deviations				(0.45)%
Asset Rate of Return				**5.25%**

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)	(0.13)%		
			(1)+(2)	(0.20)%
Additional returns due to active management				0.13%
Margin for adverse deviations				(0.50)%
Asset Rate of Return				**1.50%**

Discount Rate

The discount rate used to determine the actuarial liability is assumed to be 4.45% 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 and represents a 0.3% decrease in comparison to 2018.

Increases in Pensionable Earnings

The assumption for increases in pensionable 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. 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 2018, and adjusting base earnings to 2021. There were significantly fewer new entrants in 2019 and 2020 with a very different profile than previously seen (i.e. higher average earnings). Therefore these years were not considered in this analysis.

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 2018. 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 2051. 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 2024 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 pensionable 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 55 with the early reduction factor calculated from the earlier of age 60 and the attainment of 80 points. Deferred pensioners over age 60 at the valuation date were assumed to retire on July 1, 2021.

Appendix D: Summary of Plan Provisions

This funding valuation was based on Plan design information provided by the Committee as of December 31, 2020. The following is a summary of the main provisions of the Plan.

Eligibility for Membership	All Alberta government employees who are part of the Management Employees Pension Plan (MEPP) and earn more than the amount as determined from the maximum defined benefit pension limit under the *Income Tax Act* from time to time, are members of the Plan effective July 1, 1999 or the date of participation in MEPP, if later. Agencies, boards and commissions associated with the Alberta government have the option of participating in the Plan, if their employees are contributing members of MEPP and their application is approved by the Minister of Finance.
Normal Retirement	
Eligibility	Age 55 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 are the member's average annual earnings in the five consecutive years of pensionable service in which such average is the highest. Pensionable earnings are limited each year to the amount as determined from the maximum defined benefit pension limit under the *Income Tax Act.* The member's highest average earnings are the member's average annual earnings in the five consecutive years of pensionable service in which such average is the highest. Earnings are not limited.
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 normal retirement date and before December 31 of the year in which the member attains age 71.
Benefit	Normal retirement benefit accrued to postponed retirement date. The benefit is actuarially increased from the normal retirement date to the postponed retirement date.

Termination of Employment

Eligibility	Members are vested following completion of five years of 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.

Pre-retirement Death

Eligibility	Members are vested following completion of five years of pensionable service.
Benefit	Beneficiaries of non-vested members 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 retired on the day before death and elected a

J&S 100% optional form pension, plus excess contributions. 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.

Benefit

Participation in the Plan continues, but no pension is payable concurrently with the LTD benefit. For the purpose of determining contributions and benefits, pensionable salary will be the pensionable salary 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, 2005
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, 2008 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	Cost-of-living increases based on 60% of the Alberta CPI apply to both deferred pensions and pensions-in-payment.
Definitions	
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 earnings	The member's actual earnings limited each year to the amount as determined from the maximum defined benefit pension limit under the Income Tax Act.
Pensionable service	Pensionable Service parallels pensionable service in the MEPP, commencing upon the later of July 1, 1999 and the date of employment except that optional service cannot be bought back under the Plan and service transferred into MEPP under a reciprocal transfer agreement is not counted under the Plan. Up to one year of unpaid leave may be bought back under the Plan provided the same period of service is also bought back under MEPP.

A copy of a letter from the Committee 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, 2020, 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;
- The actuary has been notified of all relevant events subsequent to the valuation measurement date; and
- The terms of engagement contained in Section 1 of this report are accurate and reflect the plan administrator's direction.

Dana Hogemann	ADM/SFO
Name (print) of Authorized Signatory Alberta Treasury Board and Finance	Title
Dana.Hogemann	Digitally signed by Dana.Hogemann Date: 2022.02.17 11:02:10 -07'00'
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	VP, Pensions Services
Name (print) of Authorized Signatory Alberta Pension Services Corporation	Title
	February 2, 2022
Signature	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.