Pensions | Benefits | Investments

Actuarial Valuation Report on the Superannuation Adjustment Account as at December 31, 2021

Civil Service Superannuation Fund Indexing to be Effective July 1, 2022

March 2022

NOTICE TO READER – This Report is Privileged and Confidential

The primary purpose of this engagement is to prepare a report that provides a funding recommendation based on our understanding of the Pension Benefits Act and Regulations of Manitoba, the Income Tax Act, and the Canadian Institute of Actuaries Standards of Practice in effect at the date of this report. The list of intended purposes of this report is noted in the Terms of Engagement discussed in Section 2.

Additionally, the intended recipients are noted in the Terms of Engagement and no party other than the parties noted shall rely upon the information presented herein. The recipient shall neither reproduce the report nor parts thereof unless reproduction is necessary for its evaluation and approved by Ellement Consulting Group (Ellement). The recipient agrees to protect the confidentiality of the information contained in this report and shall take all the necessary and reasonable measures to prevent the unauthorized use, disclosure, or distribution of the report or parts thereof. The recipient agrees not to use, amend, adapt, convert, translate, or exploit the contents of this document without written consent from Ellement, nor allow Ellement's competitors or unintended recipients to have access to its contents.

An actuarial valuation report is a snapshot of a pension plan's estimated financial condition and health at a particular point in time; it does not predict the pension plan's future financial condition or its ability to pay benefits indefinitely. The actual financial condition and contribution adequacy will be more favourable, or less favourable, depending on actual experience, when the next formal actuarial valuation report is prepared. Further, the financial condition and health may change due to a change in assumptions, a change in the provisions in the plan text, or a change in governing legislation.

Over time, a pension plan's actual cost will depend on several factors, including but not limited to:

- the level of the benefits the pension plan provides;
- the number of individuals paid benefits, the age at which their benefit is settled, and the length of time benefits are paid in retirement;
- the amount of expenses incurred for operating and investing; and
- the amount earned on any invested assets.

These amounts and other variables are uncertain and impossible to predict with precision at any particular point in time.

Due to the nature of our engagement, the actuarial assumptions, as described in Note 3 (going concern assumptions) and Note 4 (solvency/hypothetical wind-up assumptions), have been selected to develop results for a single scenario from the range of possibilities for each valuation basis. Actual experience will differ from the results based on the assumptions from the single scenario illustrated herein. In addition, different assumptions or scenarios may also be within the reasonable range and results based on those assumptions would be different. Differences between actual experience and the selected assumptions may prove to be significant or material. As such, frequent monitoring and periodic valuations are recommended. In any case, the actuary will review the selected assumptions at the next actuarial valuation date and may make adjustments for a number of factors including changes in regulatory requirements, plan experience, and changes in expectations about the future.

Due to the limited scope of our engagement, other than the Plausible Adverse Scenarios discussed in Section 9, an analysis of the potential range of future measurements of the pension plan's financial health due to alternative actuarial assumptions, future experience, changes to the benefit level, or changes in legislation was not performed, nor was it required to be performed.

Given the intended purpose of the engagement and the uncertainty in the financial condition and health of the pension plan into the future described above, decisions about benefit reductions or enhancements, benefit security and sustainability, investment policy, funding policy, and benefit policy should be made only after careful consideration of alternative future financial conditions and scenarios, and not solely based on an actuarial valuation report or reports focused on a particular point in time.

TABLE OF CONTENTS

1. ACTUARIES' OPINION

The purpose of this Actuarial Valuation Report (Report/Valuation) is to determine the financial position of the Superannuation Adjustment Account (Account/Plan) of The Civil Service Superannuation Fund (CSSF or Fund) as at December 31, 2021, and the superannuation adjustment or cost-of-living adjustment (indexing) which can be granted effective July 1, 2022 according to the formula for the increase and the amounts available in the Account. Any increases in retirement pensions or increases in disability pensions are charged to the Account.

Superannuation adjustments are granted on July 1 of a year to offset part of the increase in the cost of living that has occurred in the 12-month period ended December 31 of the previous year as measured by the change in the Consumer Price Index for Canada (CPI). The maximum increase, which can be presently granted under the terms of the Civil Service Superannuation Act (CSSA), is 2/3 of the increase in the cost of living.

Effective January 1, 2000, the Civil Service Superannuation Board (Board) adopted a new method to credit interest to the Account to reflect the rate of return earned on the Fund, net of investment expenses and after reflection of any assets dedicated to the Account. As a result, an asset smoothing adjustment has been established to dampen the market fluctuations that are expected to occur in the future.

The increase in the CPI, which occurred during the 12 months ending December 31, 2021, is equal to 4.80%.

The amount of the superannuation adjustment a member receives is determined by multiplying the percentage increase approved by the Board by the total of the basic pension plus superannuation adjustments granted to date. The member's basic pension is the formula pension determined under the CSSA prior to any adjustment for an optional form of payment. A full superannuation adjustment is paid to those retired employees who began to receive a pension 18 months prior to the date of increase. A partial or interim superannuation adjustment is paid to those employees who retired or who otherwise became eligible for a pension during that same 18-month period.

We recommend that the superannuation adjustment, effective July 1, 2022, be made equal to no more than 1.98% (0.413 of 4.80%) of the total of the monthly pension which would be received currently if the normal form of pension had been elected, plus any previously granted adjustments in that pension. Note that 1.98% is less than 2/3 of 4.80% as the Account is unable to provide the full 2/3 of the cost of living increase.

The long-term objective is to provide 20-year pre-funding of superannuation adjustments expected to be charged to the Account. At December 31, 2021, the required amount was estimated to be equal to $1,449,558,000; however, only $249,131,000 was available in the Account (17.2% funded). This objective had not been achieved as at December 31, 2021. Given the long-term Account funding deficiency, the Board may wish to inform the Liaison & Advisory Committees that an amendment to the CSSA may be appropriate to allow the Board to lower the indexing cost granted in the future.

We will be pleased to discuss this Report at your convenience.

Respectfully submitted,

ELLEMENT CONSULTING GROUP

Dennis Ellement

Brandon Ellement

Dennis Ellement, FSA, FCIA
Winnipeg, Manitoba March 25, 2022
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2. TERMS OF ENGAGEMENT

We are pleased to present the results of the actuarial valuation as of December 31, 2021, for the Superannuation Adjustment Account of the Civil Service Superannuation Fund. Further to the Notice to Reader found at the beginning of the Report, we note the following terms of engagement and other important information.

Purpose

Ellement has been engaged by the Civil Service Superannuation Board to perform an actuarial valuation of the Plan as of December 31, 2021, in accordance with the Pension Benefits Act and Regulations (PBA) of Manitoba, the Income Tax Act, and applicable Standards of Practice developed by the Canadian Institute of Actuaries (CIA). The previous valuation, as of December 31, 2020, was also performed by Ellement. The purpose of this Report is to:

- Determine the financial position of the Plan on the Going Concern and Solvency bases; and
- Determine the superannuation adjustment or cost-of-living adjustment (indexing) which can be granted effective July 1, 2022.

The results of this Report may not be appropriate for any other purpose, other than the purposes listed above.

The analysis and recommendations presented in this Report is not intended to be a legal opinion and Ellement is not a law firm. If you require a legal opinion on the material reviewed in this Report, we recommend securing the advice of legal counsel.

Intended Recipients and Users

The intended recipients and users of this Report include the following:

- Civil Service Superannuation Board; and
- Liaison & Advisory Committees.

Legislative Updates

Bill 8 – The Pension Benefits Amendment Act received royal assent on May 20, 2021. The Manitoba Pension Benefits Regulations were amended, and the changes, surrounding funding requirements, came into force on December 20, 2021. However, as the Plan is exempt from the funding requirements of the solvency test to the Manitoba Penson Benefits Act, the new funding requirements pursuant to Bill 8 do not apply to this Plan.

Subsequent Events

Emerging experience differing from the assumptions after December 31, 2021, will result in gains or losses, which will be revealed in subsequent valuations.

Covid-19 has contributed to the significant volatility and uncertainty in the financial markets. Historically low interest rates, financial volatility, and uncertainty will continue to be monitored. Further, any impacts to the demographics of the Plan's membership, including increased retirement rates, morbidity, and mortality, will also be monitored. As with other experience, the financial impact of this event, as it applies to the Plan, will be reflected in future actuarial valuation reports.

We are not aware of any other matters or subsequent events occurring since the completion of this Report which would materially affect the financial position of the Plan as at December 31, 2021.

3. ACTUARIAL VALUATION BALANCE SHEET: GOING CONCERN

The ability of the Account to finance any superannuation adjustment at July 1, 2022 is indicated by the relationship between:

(a) the value of the assets allocated to the Account as at December 31, 2021 (unaudited draft financial statements were used for 2021 at the time of preparation of this Report), and

(b) the present value of the going concern liabilities as at December 31, 2021, which the Account has as a result of the superannuation adjustments already granted.

Going Concern	31-Dec-2021	31-Dec-2020
Assets		
Value of Account	$ 669,478,000	$ 626,743,000
Asset Smoothing Adjustment (Note 1)	(48,036,000)	(32,646,000)
Unavailable portion of 1986 surplus transfer (Note 6)	-	-
Unavailable portion of 2004 surplus transfer (Note 7)	(160,759,000)	(156,646,000)
Total Assets	$ 460,683,000	$ 437,451,000
Liabilities (Note 2)		
Value of superannuation adjustments granted from 1977 to date (Notes 3,5)	$ 372,311,000	$ 372,711,000
Provision for future Adverse Experience (PfAD)	-	-
Total Liabilities	$ 372,311,000	$ 372,711,000
Amount available to finance future superannuation adjustments	$ 88,372,000	$ 64,740,000

Unaudited draft financial statements were used for 2021 at the time of preparation of this Report.

The long-term objective is to provide 20-year pre-funding of superannuation adjustments expected to be charged to the Account. If the amount in the Account is insufficient to provide for 20-year pre-funding, then the maximum increase in superannuation allowances is limited to 2/3 of the increase in the CPI.

This 20-year objective is estimated to require about $1,449,558,000 (increases significantly, if indexing beyond 20 years is also reflected), at a 2.00% indexing level, to be available in the Account as at December 31, 2021. The "long-term" amount available was equal to $249,131,000 ($88,372,000 + $160,759,000) at that date, as indicated above. As a result, the long-term objective of 20-year pre-funding of indexing had not been achieved as at December 31, 2021.

4. ACTUARIAL VALUATION BALANCE SHEET: SOLVENCY TEST

The Account is exempt from the solvency funding requirements under the Manitoba Pension Benefits Act.

However, the Canadian Institute of Actuaries (CIA) requires that the actuary comment on the financial position of the Account should it be wound up at the actuarial valuation date and pensions be purchased at a suitable insurance carrier. The following provides the required CIA disclosure.

Solvency Test	31-Dec-2021	31-Dec-2020
Assets		
Value of Account	$ 669,478,000	$ 626,743,000
Asset Smoothing Adjustment (Note 1)	-	-
Unavailable portion of 1986 surplus transfer (Note 6)	-	-
Unavailable portion of 2004 surplus transfer (Note 7)	-	-
Total Assets	$ 669,478,000	$ 626,743,000
Liabilities (Note 2)		
Value of superannuation adjustments granted from 1977 to date (Notes 4,5)	$ 451,310,000	$ 469,044,000
Provision for future Adverse Experience (PfAD)	-	-
Total Liabilities	$ 451,310,000	$ 469,044,000
Amount available to finance wind-up superannuation adjustments	$ 218,168,000	$ 157,699,000

Unaudited draft financial statements were used for 2021 at the time of preparation of this Report.

5. COST OF JULY 1, 2022 SUPERANNUATION ADJUSTMENT

Superannuation adjustments are presently limited by the terms of the CSSA to 2/3 of the increase in the CPI during the 12-month period ended December 31 of the year prior to the date of increase. The CPI (2002=100) was 137.4 on December 31, 2020 and 144.0 on December 31, 2021. This indicates the cost of living increased by 4.80% during the period.

The full superannuation adjustment is paid to those retired employees or other persons who became entitled to receive a pension prior to December 31, 2020. Partial or interim superannuation adjustments are paid to members and other persons whose pension commenced after December 31, 2020. These superannuation adjustments are percentages of the full superannuation adjustment. The table of applicable percentages is shown in Note 5 of this Report.

We recommend that the superannuation adjustment, effective July 1, 2022, be made equal to no more than 1.98% or 0.413 of 4.80%. The cost of granting 1.98%, on July 1, 2022 is equal to $88,372,000 as at December 31, 2021.

	Eligible	Change in CPI	Adjustment Granted		% CPI Change	Indexing Cost	Account
Year	Pensioners	Reviewed	% Part	¢ Part	Granted	Granted	Contributions
1977	2,568	5.91	2.90	46	98.1	$ 1,735,960	$ 1,208,780
1978	2,909	9.46	3.50	56	74.0	2,327,200	2,220,958
1979	3,159	8.36	3.10	54	74.2	2,415,200	2,324,642
1980	3,463	9.80	2.75	49	56.1	2,644,500	2,588,509
1981	3,805	11.19	2.90	54	51.8	2,850,500	2,942,025
1982	4,114	12.10	3.90	71	64.5	4,877,200	3,432,320
1983	4,402	9.26	3.88	71	83.4	5,243,370	3,896,083
1984	4,974	4.55	2.25	49	100.0	3,888,500	3,941,546
1985	5,252	3.76	1.89	45	100.0	4,025,700	4,012,187
1986	5,633	4.35	2.18	59	100.0	4,728,800	4,332,794
1987	6,053	4.17	2.09	59	100.0	5,583,500	4,663,735
1988	6,568	4.15	1.39	41	66.7	5,043,430	5,139,247
1989	7,023	4.00	1.24	38	62.0	5,076,098	5,264,954
1990	7,470	5.13	1.71	55	66.7	7,572,600	5,582,498
1991	7,865	5.00	1.67	56	66.7	9,611,200	5,570,536
1992	8,566	3.78	2.52	-	66.7	9,019,300	5,757,381
1993	9,154	2.14	1.43	-	66.7	6,050,000	5,622,028
1994	9,828	1.70	1.13	-	66.7	5,937,400	5,540,923
1995	10,268	0.23	0.15	-	66.7	891,600	5,624,117
1996	10,490	1.75	1.17	-	66.7	7,469,600	5,578,940
1997	9,572	2.17	1.45	-	66.7	7,880,500	4,660,000
1998	9,896	0.73	0.49	-	66.7	2,954,700	4,986,000
1999	10,266	1.05	0.70	-	66.7	4,560,000	5,004,000
2000	10,697	2.58	1.72	-	66.7	11,908,500	5,345,000
2001	10,999	3.23	2.15	-	66.7	16,821,200	6,508,000
2002	11,498	0.70	0.47	-	66.7	3,869,800	6,882,000
2003	11,982	3.88	2.59	-	66.7	19,192,700	7,156,000
2004	12,515	1.99	1.33	-	66.7	9,703,600	7,808,000
2005	13,080	2.12	1.41	-	66.7	10,801,600	8,456,000
2006	13,620	2.15	1.43	-	66.7	11,502,600	8,689,000
2007	14,184	1.64	1.09	-	66.7	10,928,500	9,289,000
2008	14,912	2.38	1.59	-	66.7	17,944,400	9,819,000
2009	15,568	1.16	0.77	-	66.7	12,283,100	10,910,000
2010	16,210	1.32	0.88	-	66.7	16,065,000	11,118,000
2011	16,686	2.35	1.57	-	66.7	29,503,100	11,932,000
2012	17,615	2.30	1.53	-	66.7	30,352,200	13,062,000
2013	18,302	0.83	0.55	-	66.7	11,903,300	14,883,000
2014	18,916	1.24	0.83	-	66.7	19,494,100	16,497,000
2015	19,516	1.47	0.98	-	66.7	24,934,600	17,605,000
2016	20,183	1.61	1.07	-	66.7	28,675,300	18,480,000
2017	20,793	1.50	1.00	-	66.7	29,990,000	18,336,000
2018	21,589	1.87	1.25	-	66.7	40,869,000	18,036,000
2019	22,492	1.99	1.33	-	66.7	47,569,000	17,770,000
2020	23,126	2.25	1.50	-	66.7	57,920,000	17,087,000
2021	23,605	0.73	0.49	-	66.7	20,278,000	16,808,000
2022	24,173	4.80	1.98	-	41.3	88,372,000	n/a
						$ 683,268,458	$ 355,562,203

6. OPERATION OF THE ACCOUNT

The Account was established by an amendment to the CSSA, which became effective on July 1, 1977. The purpose of the Account is to finance the Fund's share of increases in superannuation allowances granted as a result of increases in the cost of living after January 1, 1976. On July 1, 1977, $3,000,000 of the Fund was allocated to the Account. The operation of the Account is determined as follows:

(a) credit 10.20% of the employees' (plus matching employers') contributions for the year,

(b) credit interest on the average balance in the Account,

(c) charge 50% (100% for matching employers) of the superannuation adjustments granted (ensure that 100% of the adjustments in respect of the pension formula improvement made effective September 1, 2000 are charged), and

(d) credit/charge special transfers to/from the Account authorized by amendments to the CSSA, and events such as the MTS privatization.

The following is a summary of the operation of the Account:

Year	Contributions	Interest Credits	Adjustment Payments	Special Allocations	Closing Balance	Rate of Return
1977	$ 1,208,780	$ 160,539	$ (115,764)	$ 3,000,000	$ 4,253,555	7.84%
1978	2,220,958	501,207	(392,028)	-	6,583,692	9.70%
1979	2,324,642	740,889	(715,987)	-	8,933,236	10.03%
1980	2,588,509	1,014,559	(1,057,304)	-	11,479,000	10.46%
1981	2,942,025	1,426,833	(1,445,863)	1,391,100	15,793,095	11.04%
1982	3,432,320	2,076,623	(1,990,248)	1,565,600	20,877,390	12.01%
1983	3,896,083	2,728,585	(2,698,547)	1,767,400	26,570,911	12.20%
1984	3,941,546	3,439,472	(3,296,815)	-	30,655,114	12.79%
1985	4,012,187	3,867,979	(3,784,228)	-	34,751,052	12.57%
1986	4,332,794	4,293,988	(4,363,367)	-	39,014,467	12.36%
1987	4,663,735	4,762,586	(5,254,158)	-	43,186,630	12.30%
1988	5,139,247	5,202,335	(6,028,614)	-	47,499,598	12.17%
1989	5,264,954	5,647,176	(6,557,826)	36,405,787	88,259,689	11.73%
1990	5,582,498	10,679,744	(7,016,480)	-	97,505,451	11.85%
1991	5,570,536	10,948,378	(7,934,086)	-	106,090,279	11.05%
1992	5,757,381	11,310,640	(8,821,101)	1,548,197	115,885,396	10.53%
1993	5,622,028	11,228,338	(9,448,147)	-	123,287,615	9.57%
1994	5,540,923	10,958,839	(9,814,103)	-	129,973,274	8.88%
1995	5,624,117	11,638,837	(9,841,942)	-	137,394,286	8.90%
1996	5,578,940	11,967,044	(9,926,270)	-	145,014,000	8.65%
1997	4,660,000	9,322,000	(7,974,000)	(35,860,000)	115,162,000	8.48%
1998	4,986,000	9,921,000	(8,264,000)	2,808,000	124,613,000	8.35%
1999	5,004,000	9,535,000	(8,269,000)	-	130,883,000	7.61%
2000	5,345,000	12,445,000	(8,760,000)	537,000	140,450,000	9.61%
2001	6,508,000	8,169,000	(9,845,000)	75,000	145,357,000	5.88%
2002	6,882,000	3,903,000	(10,621,000)	-	145,521,000	2.72%
2003	7,156,000	18,193,000	(11,560,000)	-	159,310,000	12.69%
2004	7,808,000	20,492,000	(12,961,000)	-	174,649,000	13.07%
2005	8,456,000	23,912,000	(13,923,000)	-	193,094,000	13.91%
2006	8,689,000	23,350,000	(15,014,000)	-	210,119,000	12.29%
2007	9,289,000	8,507,000	(16,008,000)	-	211,907,000	4.11%
2008	9,819,000	(28,369,000)	(17,193,000)	-	176,164,000	(13.62%)
2009	10,910,000	28,720,000	(18,244,000)	145,000,000	342,550,000	11.72%
2010	11,118,000	41,632,000	(18,830,000)	-	376,470,000	12.29%
2011	11,932,000	(7,253,000)	(20,267,000)	-	360,882,000	(1.95%)
2012	13,062,000	34,770,000	(22,360,000)	-	386,354,000	9.76%
2013	14,883,000	53,902,000	(23,620,000)	-	431,519,000	14.11%
2014	16,497,000	38,036,000	(24,382,000)	9,429,000	471,099,000	8.80%
2015	17,605,000	35,377,000	(25,836,000)	-	498,245,000	7.58%
2016	18,480,000	26,870,000	(27,396,000)	-	516,199,000	5.44%
2017	18,336,000	53,513,000	(29,067,000)	-	558,981,000	10.48%
2018	18,036,000	(5,068,000)	(31,125,000)	-	540,824,000	(0.92%)
2019	17,770,000	71,060,000	(33,800,000)	-	595,854,000	13.34%
2020	17,087,000	50,628,000	(36,826,000)	-	626,743,000	8.64%
2021	16,808,000	64,792,000	(38,865,000)	-	669,478,000	10.52%
Total	$ 372,370,203	$ 720,953,591	$ (591,512,878)	$ 167,667,084		

7. ANALYSIS OF GOING CONCERN RESULTS

The financial position of the Account as at December 31, 2021 can be reproduced if the amount available to finance future superannuation adjustments as at December 31, 2020 is adjusted to recognize the various changes in the financial position which occurred during 2021. This procedure is demonstrated in the following schedule on both a going concern and solvency test basis:

Going Concern 2021 Operation	Assets	Liabilities & Reserves	Amount Available
Opening Balance	$ 626,743,000	$ 562,003,000	$ 64,740,000
Contributions/2021 Indexing	16,808,000	20,278,000	(3,470,000)
Special Allocations	-	-	-
Amortization	-	(12,366,000)	12,366,000
Expected Interest	32,325,000	36,091,000	(3,766,000)
Investment Experience Gain/(Loss)	32,467,000	-	32,467,000
Benefit Experience Gain/(Loss)	(38,865,000)	(40,290,000)	1,425,000
Asset Smoothing Adjustment	-	15,390,000	(15,390,000)
Assumptions (PfAD)	-	-	-
Closing Balance	$ 669,478,000	$ 581,106,000	$ 88,372,000

8. ANALYSIS OF RESULTS - SOLVENCY TEST

The solvency test interest rate assumption for annuity purchases has increased by 0.36% from 2.48% to 2.84%. The solvency test interest rate assumption for cash settlements has remained unchanged at 5.25% for less than 10 years and 5.25% thereafter.

Pursuant to the Standards of the Canadian Institute of Actuaries (CIA) it is now required to disclose the incremental cost in the next year on a hypothetical wind-up/solvency basis. This cost is estimated to be equal to $107,119,000 as at December 31, 2021. This cost in essence reflects the present value of the increase of the solvency liabilities in the next year plus the annual benefit payments expected to be made.

9. PLAUSIBLE ADVERSE SCENARIOS

Effective March 1, 2019, the CIA amended the Standards of Practice now requiring the disclosure of Plausible Adverse Scenarios (PAS). A PAS would be a scenario of adverse but plausible assumptions, relative to the best estimate assumptions otherwise selected for the valuation, about matters to which the Plan's financial condition is sensitive. As a result, the selection and application of a plausible adverse scenario is a stress-testing process on various risks to be considered.

The following disclosures of the change in the obligations under the selected PAS are not intended to be a comprehensive study of the risks inherent in the Plan, but rather an illustration of the sensitivity of the funded status and plan costs to certain key risks facing the Plan, that have a non-trivial probability of occurring within the short term.

Each of the scenarios below have been prepared on a standalone basis. These scenarios are not additive and should not be combined to design a combination scenario due to potential codependency's.

Scenario 1 – Interest Rate Risk

Under this scenario, the interest rates on fixed income assets decrease 25 basis points immediately and result in a 25-basis-point decline in the future return expectations on all the asset classes in which the plan is expected to invest, leading to a 25-basis-point decrease in the discount rate. All other assumptions remain unchanged.

GOING CONCERN		Decrease Real Rate 1/4%		
Real Rate	3.25%	3.00%		
Inflation Rate	2.00%	2.00%		
Nominal Rate	5.25%	5.00%		
Mortality	CPM2014PUB	CPM2014PUB	% Change in	Estimated
Liability Category	Liability	Liability	Liability	Duration
Active Participants	$ -	$ -	-	-
Other Participants	-	-	-	-
Pensions in Payment	372,311,000	379,695,000	1.98%	7.93
Total	$ 372,311,000	$ 379,695,000	1.98%	7.93
Increase/(Decrease) in Liabilities		$ 7,384,000		

SOLVENCY TEST		Decrease Real Rate 1/4%		
Cash Settlements 1st 10 years	n/a	n/a		
Cash Settlements thereafter	n/a	n/a		
Annnuity Purchases	2.84%	2.59%		
Mortality	CPM2014COM	CPM2014COM	% Change in	Estimated
Liability Category	Liability	Liability	Liability	Duration
Active Participants	$ -	$ -	-	-
Other Participants	-	-	-	-
Pensions in Payment	451,310,000	461,805,000	2.33%	9.30
Total	$ 451,310,000	$ 461,805,000	2.33%	9.30
Increase/(Decrease) in Liabilities		$ 10,495,000		

On a going concern basis, a 0.25% change in the discount rate from 5.25% to 5.00% would increase the net obligations by 1.98% from $372,311,000 in the base case to $379,695,000.

Scenario 2 – Deterioration of Assets

Under this scenario, equity values as at the Valuation Date are reduced by 20% and there are no changes to other economic assumptions.

The total assets available for benefits decrease from $669,478,000 in the base case to $561,603,000.

Scenario 3 – Longevity Risk

Under this scenario, mortality is set back 1 year from current assumptions (i.e. each member has the mortality of the age 1 year younger). All other assumptions remain unchanged.

On a going concern basis, the net obligations increase 3.08% from $372,311,000 in the base case to $383,791,000.

Scenario 4 – Contribution Risk

Under this scenario, employee contributions in 2021 are reduced by 20% for one year. All other assumptions remain unchanged.

The total assets available for benefits decrease from $669,478,000 in the base case to $666,398,000.

10. NOTES

Note 1: ASSET SMOOTHING ADJUSTMENT AS AT DECEMBER 31, 2021

Year End	Closing Assets	Net Investment Income	Rate of Return Net	Rate of Return Assumed	Investment Experience Gain/(Loss)	Unamortized Portion of Investment Experience Gain/(Loss)	
			(%)	(%)		(%)	$
2017	558,981,000	53,513,000	10.48	5.50	25,417,158	-	-
2018	540,824,000	(5,068,000)	(0.92)	5.50	(35,452,008)	20	(7,090,402)
2019	595,854,000	71,060,000	13.34	5.25	43,087,528	40	17,235,011
2020	626,743,000	50,628,000	8.64	5.25	19,863,814	60	11,918,288
2021	669,478,000	64,792,000	10.52	5.25	32,466,989	80	25,973,591
						Calculated:	$ 48,036,488
						+/- 10% Cap:	(66,947,800)
						Use:	$ 48,036,488

The asset write-down/(asset write-up) is to be capped at +/-10% of the market value of assets.

Note 2: MEMBERSHIP

The following membership information used in this Report was provided by the staff of the Board.

Pensions in Payment	31-Dec-2021		31-Dec-2020
Pensioners	20,883		20,386
Survivors	3,290		3,219
Total	24,173	*	23,605

* The 24,173 is different than the pensions in payment count found in the Statistical Report provided by the staff of the Board as it includes some changes (retirements, deaths, etc.) in early 2022 which were included at the time of the preparation of this Report.

Note 3: ACTUARIAL ASSUMPTIONS - GOING CONCERN

The mortality rates use the CPM2014PUBLIC table projected with Scale B and the liability interest rate continues 5.25% per year. The difference between the Actuarial Valuation Report of the Basic Fund and this Report on the Account is largely attributable to the differences in the demographic profile and asset mix supporting the liabilities of the Account versus those of the Basic Fund. No change in the assumed discount rate of 5.25 per year has been made for this Report.

Note 4: ACTUARIAL ASSUMPTIONS - SOLVENCY TEST

The Canadian Institute of Actuaries prescribes the mortality and interest rates to be used to perform the solvency test (hypothetical wind-up) calculations. For this Report, the prescribed mortality table is the CPM2014COM table projected with Scale B and the prescribed liability interest rate is 2.84% (previously 2.48%) per year as at December 31, 2021. No future indexing has been included in solvency calculations as indexing is only available if the Account has a solvency excess.

Note 5: PARTIAL SUPERANNUATION ADJUSTMENTS EFFECTIVE JULY 1, 2022

	Percentage of Full Adjustment Payable	
Pension Commencement	Partial	Interim (delayed 12 months)
≤ December, 2020	100.00 %	-
January, 2021	91.67	-
February, 2021	83.33	-
March, 2021	75.00	-
April, 2021	66.67	-
May, 2021	58.33	-
June, 2021	50.00	-
July, 2021	-	45.83 %
August, 2021	-	41.67
September, 2021	-	37.50
October, 2021	-	33.33
November, 2021	-	29.17
December, 2021	-	25.00
January, 2022	-	20.83
February, 2022	-	16.67
March, 2022	-	12.50
April, 2022	-	8.33
May, 2022	-	4.17

Beneficiaries receive 2/3 of the superannuation adjustment otherwise paid.

Note 6: 1986 SURPLUS TRANSFER AMORTIZATION

The initial unamortized amount of $23,632,210 is the portion of the $31,788,810 surplus as at December 31, 1986 transferred to the Account that is not immediately available to provide superannuation adjustments. It is to be made available or amortized gradually as new retirements occur after 1986.

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
	Calendar Year	Unamortized Amount Jan. 1	Interest Credit Dec. 31	Amount Amortized Dec. 31	Unamortized Amount Dec. 31	Nominal Rate of Return (%)	Amortized Amount (%)
0	1986	$ 31,788,810	-	$ 8,156,600	$ 23,632,210	-	-
1	1987	23,632,210	-	1,079,992	22,552,218	-	4.57
2	1988	22,552,218	-	1,127,611	21,424,607	-	5.00
3	1989	21,424,607	$ 2,586,803	1,241,390	22,770,020	11.73	5.17
4	1990	22,770,020	2,778,183	1,382,158	24,166,045	11.85	5.41
5	1991	24,166,045	2,744,116	1,480,059	25,430,102	11.05	5.50
6	1992	25,430,102	2,748,283	1,617,439	26,560,946	10.53	5.74
7	1993	26,560,946	2,602,697	1,778,982	27,384,661	9.57	6.10
8	1994	27,384,661	2,485,743	1,926,641	27,943,763	8.88	6.45
9	1995	27,943,763	2,542,331	2,060,860	28,425,234	8.90	6.76
10	1996	28,425,234	2,511,954	2,168,697	28,768,491	8.65	7.01
11	1997	21,654,446	1,875,227	1,752,961	21,776,712	8.48	7.45
12	1998	21,776,712	1,856,314	1,911,912	21,721,114	8.35	8.09
13	1999	21,721,114	1,684,425	1,959,044	21,446,495	7.61	8.37
14	2000	21,446,495	2,110,524	2,025,904	21,531,115	9.61	8.60
15	2001	21,531,115	1,284,640	2,032,884	20,782,871	5.88	8.91
16	2002	20,782,871	569,138	2,062,604	19,289,405	2.72	9.66
17	2003	19,289,405	2,525,483	2,327,649	19,487,239	12.69	10.67
18	2004	19,487,239	2,630,205	2,494,848	19,622,596	13.07	11.28
19	2005	19,622,596	2,824,422	2,680,174	19,766,844	13.91	11.94
20	2006	19,766,844	2,503,987	2,901,889	19,368,942	12.29	13.03
21	2007	19,368,942	796,064	2,845,282	17,319,724	4.11	14.11
22	2008	17,319,724	(2,358,946)	2,395,221	12,565,557	(13.62)	16.01
23	2009	12,565,557	1,472,683	2,389,308	11,648,932	11.72	17.02
24	2010	11,648,932	1,431,654	2,527,169	10,553,417	12.29	19.32
25	2011	10,553,417	(205,792)	2,259,921	8,087,704	(1.95)	21.84
26	2012	8,087,704	789,360	2,300,047	6,577,017	9.76	25.91
27	2013	6,577,017	928,017	2,378,345	5,126,689	14.11	31.69
28	2014	5,126,689	451,149	2,156,950	3,420,888	8.80	38.67
29	2015	3,420,888	259,303	2,000,184	1,680,007	7.58	54.35
30	2016	1,680,007	91,392	1,771,399	-	5.44	100.00

* Remaining surplus reduced by $7,114,045 as a result of transfer to MTS.

Note 7: **2004 SURPLUS TRANSFER AMORTIZATION**

The initial unamortized amount of $121,945,754 is the portion of the $145,000,000 surplus as at December 31, 2004 transferred to the Account that is not immediately available to provide superannuation adjustments. It is to be made available or amortized gradually as new retirements occur after 2009.

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
	Calendar Year	Unamortized Amount Jan. 1	Interest Credit Dec. 31	Amount Amortized Dec. 31	Unamortized Amount Dec. 31	Nominal Rate of Return (%)	Amortized Amount (%)
0	2004	$ 145,000,000	$ -	$ -	$ 145,000,000	-	-
1	2005	145,000,000	-	-	145,000,000	-	3.33
2	2006	145,000,000	-	-	145,000,000	-	3.45
3	2007	145,000,000	-	-	145,000,000	-	3.57
4	2008	145,000,000	-	-	145,000,000	-	3.70
5	2009	145,000,000	3,538,435	26,592,681	121,945,754	2.44 *	3.85
6	2010	121,945,754	14,987,133	5,477,315	131,455,572	12.29	4.00
7	2011	131,455,572	(2,563,384)	5,370,508	123,521,680	(1.95)	4.17
8	2012	123,521,680	12,055,716	5,894,669	129,682,727	9.76	4.35
9	2013	129,682,727	18,298,233	6,726,407	141,254,553	14.11	4.55
10	2014	141,254,553	12,430,401	7,318,331	146,366,623	8.80	4.76
11	2015	146,366,623	11,094,590	7,873,061	149,588,152	7.58	5.00
12	2016	149,588,152	8,137,595	8,301,355	149,424,392	5.44	5.26
13	2017	149,424,392	15,659,676	9,171,337	155,912,731	10.48	5.56
14	2018	155,912,731	(1,434,397)	9,086,961	145,391,373	(0.92)	5.88
15	2019	145,391,373	19,395,209	10,299,161	154,487,421	13.34	6.25
16	2020	154,487,421	13,347,713	11,189,009	156,646,125	8.64	6.67
17	2021	156,646,125	16,479,172	12,366,093	160,759,204	10.52	7.14
18	2022	160,759,204	8,439,858	13,015,312	156,183,750	5.25	7.69
19	2023	156,183,750	8,199,647	13,698,616	150,684,781	5.25	8.33
20	2024	150,684,781	7,910,951	14,417,794	144,177,938	5.25	9.09
21	2025	144,177,938	7,569,342	15,174,728	136,572,552	5.25	10.00
22	2026	136,572,552	7,170,059	15,971,401	127,771,210	5.25	11.11
23	2027	127,771,210	6,707,989	16,809,900	117,669,299	5.25	12.50
24	2028	117,669,299	6,177,638	17,692,420	106,154,517	5.25	14.29
25	2029	106,154,517	5,573,112	18,621,272	93,106,357	5.25	16.67
26	2030	93,106,357	4,888,084	19,598,888	78,395,553	5.25	20.00
27	2031	78,395,553	4,115,767	20,627,830	61,883,490	5.25	25.00
28	2032	61,883,490	3,248,883	21,710,791	43,421,582	5.25	33.33
29	2033	43,421,582	2,279,633	22,850,608	22,850,607	5.25	50.00
30	2034	22,850,607	1,199,657	24,050,264	-	5.25	100.00

* Interest was credited from mid October 2009 to December 31, 2009.

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