

Actuarial Valuation Report on the
Superannuation Adjustment Account
as at December 31, 2018

Civil Service Superannuation Fund
Indexing to be Effective July 1, 2019

Submitted: March, 2019



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I. ACTUARIES' OPINION

The purpose of this Actuarial Valuation Report (Report/Valuation) is to determine the financial position of the Superannuation Adjustment Account (Account) of The Civil Service Superannuation Fund (CSSF or Fund) as at December 31, 2018, and the superannuation adjustment or cost-of-living adjustment (indexing) which can be granted effective July 1, 2019 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, 2018, is equal to 1.99%.

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, 2019, be made equal to no more than 1.33% (2/3 of 1.99%) 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.

The long-term objective is to provide 20-year pre-funding of superannuation adjustments expected to be charged to the Account. At December 31, 2018, the required amount was estimated to be equal to \$1,161,605,000; however, only \$243,882,000 was available in the Account (21.0% funded). This objective had not been achieved as at December 31, 2018. 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, FSA, FCIA
Winnipeg, Manitoba March 18, 2019
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Brandon Ellement, FSA, FCIA

2. ACTUARIAL VALUATION BALANCE SHEET: GOING CONCERN

The ability of the Account to finance any superannuation adjustment at July 1, 2019 is indicated by the relationship between:

- (a) the value of the assets allocated to the Account as at December 31, 2018 (unaudited draft financial statements were used for 2018 at the time of preparation of this Report), and
- (b) the present value of the going concern liabilities as at December 31, 2018, which the Account has as a result of the superannuation adjustments already granted.

Going Concern	31-Dec-2018	31-Dec-2017
<u>Assets</u>		
Value of Account	\$ 540,824,000	\$ 558,981,000
Asset Smoothing Adjustment (Note 1)	11,288,000	(26,890,000)
Unavailable portion of 1986 surplus transfer (Note 6)	-	-
Unavailable portion of 2004 surplus transfer (Note 7)	(145,391,000)	(155,913,000)
Total Assets	\$ 406,721,000	\$ 376,178,000
<u>Liabilities (Note 2)</u>		
Value of superannuation adjustments granted from 1977 to date (Notes 3,5)	\$ 308,230,000	\$ 276,120,000
Provision for future Adverse Experience (PfAD)	-	-
Total Liabilities	\$ 308,230,000	\$ 276,120,000
Amount available to finance future superannuation adjustments	\$ 98,491,000	\$ 100,058,000

Unaudited draft financial statements were used for 2018 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 \$1,161,605,000 (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, 2018. The "long-term" amount available was equal to \$243,882,000 (\$98,491,000 + \$145,391,000) 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, 2018.

3. 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-2018	31-Dec-2017
<u>Assets</u>		
Value of Account	\$ 540,824,000	\$ 558,981,000
Asset Smoothing Adjustment (Note 1)	-	-
Unavailable portion of 1986 surplus transfer (Note 6)	-	-
Unavailable portion of 2004 surplus transfer (Note 7)	-	-
Total Assets	\$ 540,824,000	\$ 558,981,000
<u>Liabilities (Note 2)</u>		
Value of superannuation adjustments granted from 1977 to date (Notes 4,5)	\$ 362,410,000	\$ 340,986,000
Provision for future Adverse Experience (PfAD)	-	-
Total Liabilities	\$ 362,410,000	\$ 340,986,000
Amount available to finance wind-up superannuation adjustments	\$ 178,414,000	\$ 217,995,000

Unaudited draft financial statements were used for 2018 at the time of preparation of this Report.

4. COST OF JULY 1, 2019 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 130.8 on December 31, 2017 and 133.4 on December 31, 2018. This indicates the cost of living increased by 1.99% 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, 2017. Partial or interim superannuation adjustments are paid to members and other persons whose pension commenced after December 31, 2017. These superannuation adjustments are percentages of the full superannuation adjustment. The table of applicable percentages is shown in Note 5 of this Report.

The cost of granting 1.33% or 2/3 of 1.99%, on July 1, 2019 is equal to \$47,569,000 as at December 31, 2018.

Year	Eligible	Change in CPI	Adjustment Granted		% CPI Change	Indexing Cost	Account
	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	n/a
						<u>\$ 516,698,458</u>	<u>\$ 320,705,203</u>

5. 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%)
Total	\$ 320,705,203	\$ 534,473,591	\$ (482,021,878)	\$ 167,667,084		

6. ANALYSIS OF GOING CONCERN RESULTS

The financial position of the Account as at December 31, 2018 can be reproduced if the amount available to finance future superannuation adjustments as at December 31, 2017 is adjusted to recognize the various changes in the financial position which occurred during 2018. This procedure is demonstrated in the following schedule on both a going concern and solvency test basis:

Going Concern		Liabilities &	Amount
2018 Operation	Assets	Reserves	Available
Opening Balance	\$ 558,981,000	\$ 458,923,000	\$ 100,058,000
Contributions/2018 Indexing	18,036,000	40,869,000	(22,833,000)
Special Allocations	-	-	-
Amortization	-	(9,087,000)	9,087,000
Expected Interest	30,384,000	15,143,000	15,241,000
Investment Experience Gain/(Loss)	(35,452,000)	-	(35,452,000)
Benefit Experience Gain/(Loss)	(31,125,000)	(31,278,000)	153,000
Asset Smoothing Adjustment	-	(38,178,000)	38,178,000
Impact of Interest from 5.50% to 5.25%	-	5,941,000	(5,941,000)
Closing Balance	<u>\$ 540,824,000</u>	<u>\$ 442,333,000</u>	<u>\$ 98,491,000</u>

7. ANALYSIS OF RESULTS - SOLVENCY TEST

The solvency test interest rate assumption for annuity purchases has increased by 0.21% from 3.02% to 3.23%. The solvency test interest rate assumption less than 10 years for cash settlements has increased by 0.60% from 2.60% to 3.20%, and the greater than 10 years solvency test interest rate has remained at 3.40%.

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 \$55,926,000 as at December 31, 2018. 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.

8. SENSITIVITY TEST (DURATION)

The impact on pension liabilities of changes in the actuarial assumptions depends largely upon the number of years over which benefits will be paid and the exact pattern of the expected benefit cash flow. The demographics of the group covered by a valuation have an impact on the resulting change in liability for a given change in an actuarial assumption. Different parts of the valuation are affected differently by a change in a specific valuation assumption. Two of the more significant assumptions are the real rate of return and the assumed inflation rate expected in the future. There are rules of thumb to estimate the effect upon liabilities of a change in the assumed real rate or assumed inflation rate. These rules of thumb can be expressed mathematically by introducing the concept of duration where:

$$\% \text{ change in liability} = - \text{duration} \times \% \text{ change in assumed rate}$$

The approximation is usually quite good for small changes in the assumed rate (we will test a negative 1/4% change). The following table summarizes the application of the above formula to the Account data as at December 31, 2018.

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	308,230,000	314,387,000	2.00%	7.99
Total	\$ 308,230,000	\$ 314,387,000	2.00%	7.99
Increase/(Decrease) in Liabilities		\$ 6,157,000		

SOLVENCY TEST		Decrease Real Rate 1/4%		
Cash Settlements 1st 10 years	n/a	n/a		
Cash Settlements thereafter	n/a	n/a		
Annuity Purchases	3.23%	2.98%		
Mortality	CPM2014COM	CPM2014COM	% Change in	Estimated
Liability Category	Liability	Liability	Liability	Duration
Active Participants	\$ -	\$ -	-	-
Other Participants	-	-	-	-
Pensions in Payment	362,410,000	370,712,000	2.29%	9.16
Total	\$ 362,410,000	\$ 370,712,000	2.29%	9.16
Increase/(Decrease) in Liabilities		\$ 8,302,000		

9. NOTES

Note 1: **ASSET SMOOTHING ADJUSTMENT AS AT DECEMBER 31, 2018**

Year End	Closing Assets	Net Investment Income	Rate of Return		Investment Experience Gain/(Loss)	Unamortized Portion of Investment Experience	
			Net	Assumed		Gain/(Loss)	
			(%)	(%)		(%)	\$
2014	471,099,000	38,036,000	8.80	5.50	14,259,995	-	-
2015	498,245,000	35,377,000	7.58	5.50	9,692,908	20	1,938,582
2016	516,199,000	26,870,000	5.44	5.50	(288,285)	40	(115,314)
2017	558,981,000	53,513,000	10.48	5.50	25,417,158	60	15,250,295
2018	540,824,000	(5,068,000)	(0.92)	5.50	(35,452,008)	80	(28,361,606)
						Calculated:	\$ (11,288,043)
						+/- 10% Cap:	(54,082,400)
						Use:	\$ (11,288,043)

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.

<u>Pensions in Payment</u>	<u>31-Dec-2018</u>	<u>31-Dec-2017</u>
Pensioners	19,370	18,503
Survivors	3,122	3,086
Total	<u>22,492 *</u>	<u>21,589</u>

* The 22,492 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 2019 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 is 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. The assumed discount rate has been decreased by 0.25% from 5.50% to 5.25% per year 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 3.23% (previously 3.02%) per year as at December 31, 2018. 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, 2019**

Pension <u>Commencement</u>	<u>Percentage of Full Adjustment Payable</u>	
	<u>Partial</u>	Interim <u>(delayed 12 months)</u>
≤ December, 2017	100.00 %	-
January, 2018	91.67	-
February, 2018	83.33	-
March, 2018	75.00	-
April, 2018	66.67	-
May, 2018	58.33	-
June, 2018	50.00	-
July, 2018	-	45.83 %
August, 2018	-	41.67
September, 2018	-	37.50
October, 2018	-	33.33
November, 2018	-	29.17
December, 2018	-	25.00
January, 2019	-	20.83
February, 2019	-	16.67
March, 2019	-	12.50
April, 2019	-	8.33
May, 2019	-	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]
		Unamortized	Interest	Amount	Unamortized	Nominal	Amortized
	Calendar	Amount	Credit	Amortized	Amount	Rate of	Amount
	Year	Jan. 1	Dec. 31	Dec. 31	Dec. 31	Return	(%)
						(%)	(%)
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]
		Unamortized	Interest	Amount	Unamortized	Nominal	Amortized
	Calendar	Amount	Credit	Amortized	Amount	Rate of	Amount
	Year	Jan. 1	Dec. 31	Dec. 31	Dec. 31	Return	(%)
						(%)	(%)
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	7,633,047	9,564,026	143,460,394	5.25	6.25
16	2020	143,460,394	7,531,671	10,066,138	140,925,927	5.25	6.67
17	2021	140,925,927	7,398,611	10,594,610	137,729,928	5.25	7.14
18	2022	137,729,928	7,230,821	11,150,827	133,809,922	5.25	7.69
19	2023	133,809,922	7,025,021	11,736,245	129,098,698	5.25	8.33
20	2024	129,098,698	6,777,682	12,352,398	123,523,982	5.25	9.09
21	2025	123,523,982	6,485,009	13,000,899	117,008,092	5.25	10.00
22	2026	117,008,092	6,142,925	13,683,446	109,467,571	5.25	11.11
23	2027	109,467,571	5,747,047	14,401,827	100,812,791	5.25	12.50
24	2028	100,812,791	5,292,672	15,157,923	90,947,540	5.25	14.29
25	2029	90,947,540	4,774,746	15,953,714	79,768,572	5.25	16.67
26	2030	79,768,572	4,187,850	16,791,284	67,165,138	5.25	20.00
27	2031	67,165,138	3,526,170	17,672,827	53,018,481	5.25	25.00
28	2032	53,018,481	2,783,470	18,600,650	37,201,301	5.25	33.33
29	2033	37,201,301	1,953,068	19,577,185	19,577,184	5.25	50.00
30	2034	19,577,184	1,027,802	20,604,986	-	5.25	100.00

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

Benefit security at a reasonable cost



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