Revised Actuarial Valuation as at December 31, 2012

Supplementary Retirement Plan for Public Service Managers

December 16, 2014

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Executive Summary

A revised actuarial valuation has been prepared for the Supplementary Retirement Plan for Public Service Managers (the "Plan") as at December 31, 2012 for the primary purpose of establishing a funding recommendation for the Plan until the next actuarial valuation is performed, as well as establishing a revised contribution schedule. This revised actuarial report has been prepared due to a change in the December 31, 2012 increase in pensionable earnings assumption. Details are included in Appendix D.

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, 2015.

Financial Position of the Plan

	December 31, 2012	December 31, 2009
Actuarial Value of Assets	$ 103,323,000	$ 64,962,000
Actuarial Value of Liabilities	123,110,000	86,492,000
Excess Assets/(Unfunded Liability)	**$ (19,787,000)**	**$ (21,530,000)**

Contribution Requirements

The contributions recommended in this report, as a percentage of excess earnings, are as follows:

	December 31, 2012	December 31, 2009
Member Contribution Rate to RCA Fund/RTA	11.16% in 2013 12.80% thereafter	10.50% in 2010 11.16% thereafter
Matching Employer Contribution Rate to RCA Fund/RTA	11.16% in 2013 12.80% thereafter	10.50% in 2010 11.16% thereafter
Employer Contribution Rate to Reserve Fund	22.6% (January 1, 2013) 2.4% (April 1, 2014) 9.9% (April 1, 2015)	11.4% (January 1, 2010) 22.6% (April 1, 2011)

Basic Membership Information

As at December 31, 2012, the basic membership information is as follows:

	Active	Potential Actives	Deferred	HODs	Retired and Survivors
Percentage of liabilities	58%	0%	5%	<1%	37%
Number	1,073	546	82	46	691
Average age (years)	52.2	39.5	52.2	51.7	64.3
Average annual earnings/lifetime pension/account balance/lifetime pension	$157,619	$117,690	$3,627	$3,442	$3,688

Key Assumptions

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

	December 31, 2012	December 31, 2009
Rate of return on assets	RCA Fund: 2.50% Reserve Fund: 6.25%	6.25%
Discount rate	4.1%	4.7%
Inflation rate	2.25%	2.25%
Salary Increase – Base	0.0% for 2013, 2.0% for 2014, 2.25% for 2015, 2.5% for 2016, then 3.0% per annum thereafter	0.0% for two years, then 3.5% per annum thereafter
Salary Increase – Merit and Promotion	1.3%	1.25%
Maximum Pension Increase	3.0%	3.5%
Mortality table	UP94 generational projection using scale AA	UP94 projected to 2023 using scale AA
Retirement rates	Rates following 2012 experience study for MEPP	Rates following 2006 experience study for MEPP
Employer contribution rate to Reserve Fund	22.6% (January 1, 2013 to March 31, 2014) 2.4% (from April 1, 2014 to March 31, 2015)	11.4% (January 1,2010 to March 31, 2011)

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 a revised actuarial valuation of the Plan as at December 31, 2012 for the general purpose of determining the funding contributions based on the actuarial assumptions and methods summarized herein. More specifically, the purposes of the valuation are to:

- Determine the financial position of the Plan on a going concern basis as at December 31, 2012;
- Determine the contribution rate to be made by employers to the Reserve Fund; and
- Determine the funding requirements of the Plan as at December 31, 2012.

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

As per our engagement, we have summarized the results of this actuarial valuation along with the ensuing opinions and recommendations in this report to the Committee.

While we have been engaged by the Committee to conduct this actuarial valuation, we note that users of our work may well extend to parties external to the Committee, notably the participating employers and the Plan members. Out of respect for the confidentiality of the Committee, we shall not undertake to communicate the terms of our engagement or results of our work with such other users unless so directed by the Committee.

Summary of Changes Since the Previous Valuation

The last such actuarial valuation in respect of the Plan was performed as at December 31, 2009. Since the time of the previous valuation, we note that the following events have occurred:

- Going concern actuarial assumptions have been revised. The changes are summarized as follows:
  - The discount rate changed to 4.1% per annum from 4.7% per annum.
  - The salary rate assumption was changed to 0% per annum for 2013, 2.0% per annum for 2014, 2.25% per annum for 2015, 2.5% per annum for 2016 and 3.0% per annum thereafter from 0% per annum for two years and 3.5% per annum thereafter.
  - The salary increase for merit and promotion assumption was changed to 1.3% per annum from 1.25% per annum.
  - The ITA maximum pension limit increase was changed to 3.0% per annum from 3.5% per annum.
  - The mortality table was changed to the 1994 Uninsured Pensioner table with generational projection using scale AA from the same table projected to 2023 using scale AA.
  - The termination rates assumption has been changed based on the 2012 experience study for the Management Employees Pension Plan ("MEPP") from nil rates.
  - The retirement rates assumption has been changed based on the 2012 experience study for MEPP from the retirement rates based on the 2006 experience study for MEPP.

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, 2009;
- A copy of the valuation report as at December 31, 2012, dated February 3, 2014;
- Membership data compiled as at December 31, 2012 by Alberta Pensions Services Corporation ("APS");
- Asset data taken from the Plan's audited financial statements; and
- Confirmation of the Plan's provisions up to and including December 31, 2012.

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

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, 2012 will result in gains or losses which will be reflected in the next actuarial valuation report.
- The results of this valuation were completed prior to August 28, 2013. Subsequent to the completion of these valuation results, the Canadian Institute of Actuaries issued a draft report on Canadian pensioners' mortality experience. A final report has not been issued. It is expected that the next valuation would include modifications to the mortality assumption used in this valuation.
- To the best of our knowledge, the results contained in this report are based on the regulatory and 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 regulatory and 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 the liabilities assuming the Plan continues indefinitely. The difference between the actuarial value of assets and liabilities is a funding excess or surplus if positive, and an unfunded liability if negative.

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, 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, 2012 is shown in the following table. The results as at December 31, 2009 are also shown for comparison purposes.

Financial Position

	December 31, 2012	December 31, 2009
Assets		
Retirement Compensation Arrangement	$ 19,200,000	$ 14,342,000
Refundable Tax Account	25,241,000	16,348,000
Reserve Fund	58,882,000	34,272,000
Actuarial Value of Assets	**$ 103,323,000**	**$ 64,962,000**
Actuarial Liabilities		
Active members	$ 77,536,000	$ 61,963,000
Deferred vested members	5,105,000	3,970,000
Amounts held on deposit	158,000	445,000
Retired members and beneficiaries	40,311,000	20,114,000
Total Liabilities	**$ 123,110,000**	**$ 86,492,000**
Excess Assets/(Unfunded Liability)	**$ (19,787,000)**	**$ (21,530,000)**

On the basis of the plan provisions, membership data, assumptions and methods and asset information described in the Appendices, the contribution requirements of the Plan as at December 31, 2012 are shown in the following table as a percentage of excess earnings. The contribution requirements as at December 31, 2009 are also shown for comparison purposes.

	December 31, 2012	**December 31, 2009**
Member Contribution Rate to the RCA Fund/RTA	11.16% in 2013 12.80% thereafter	10.50% in 2010 11.16% thereafter
Matching Employer Contribution Rate to the RCA Fund/RTA	11.16% in 2013 12.80% thereafter	10.50% in 2010 11.16% thereafter
Employer Contribution Rate to Reserve Fund	22.6% (January 1, 2013) 2.4% (April 1, 2014)* 9.9% (April 1, 2015)*	11.4% (January 1, 2010) 22.6% (April 1, 2011)**

* *Assuming member contributions remain unchanged at 12.80% of excess earnings.*

** *Assuming member contributions remain unchanged at 11.16% of excess earnings.*

Change in Actuarial Liabilities

During the period from December 31, 2009 to December 31, 2012, the actuarial liabilities of the Plan changed from $86,492,000 to $123,110,000. The major components of this change are summarized in the following table.

Reconciliation of the Actuarial Liabilities
for the Period from December 31, 2009 to December 31, 2012

Actuarial Liability as at December 31, 2009	**$ 86,492,000**
Expected interest accrued on benefits	16,194,000
Benefits earned	31,741,000
Benefits paid	(7,276,000)
Change in financial reporting assumptions	15,172,000
Experience (gains)/losses at December 31, 2009 valuation	12,870,000
Extrapolated December 31, 2012 liability as at December 31, 2012 reported on annual financial statement	**$ 155,193,000**
Change in liabilities due to experience (gains)/losses	
Emerging potential members	11,118,000
Unexpected members due to salary changes and new hires	2,295,000
Salary changes, retirement and other experience	(40,745,000)
Actuarial Liability after experience (gains)/losses as at December 31, 2012 before change in assumptions	**$ 127,861,000**
Change in liability due to change in economic assumptions	8,878,000
Change in liability due to change in demographic assumptions	(13,629,000)
Actuarial Liability as at December 31, 2012	**$ 123,110,000**

Discussion of Changes in Assumptions

Effective December 31, 2012, the following assumptions were changed:

Economic Assumption

- The discount rate changed to 4.1% per annum from 4.7% per annum.
- Base salary increase rate was changed to 0% per annum for 2013, 2.0% per annum for 2014, 2.25% per annum for 2015, 2.5% per annum for 2016 and 3.0% per annum thereafter from 0% per annum for two years and 3.5% per annum thereafter.
- Salary increase due to merit and promotion was changed to 1.3% per annum from 1.25% per annum.
- ITA maximum pension limit was changed to 3.0% per annum from 3.5% per annum.

In combination, these changes in assumptions increased the actuarial liability by $8,878,000.

Demographic Assumptions

- Mortality table was changed to UP94 with generational projection from UP94 projected to 2023.
- The termination rates assumption has been changed based on the 2012 experience study for MEPP from nil rates, and is shown in Appendix D.
- The retirement rates assumption has been changed based on the 2012 experience study for MEPP from the retirement rates based on the 2006 experience study for MEPP, and is shown in Appendix D.

In combination, these changes in assumptions decreased the actuarial liability by $13,629,000.

Valuation Sensitivity Results

In accordance with the Canadian Institute of Actuaries Standards of Practice specific to pension plans that became effective December 31, 2010, the table below presents the sensitivity of the actuarial liability of using a discount rate 1% lower than that used for the valuation.

	Valuation Basis December 31, 2012	Based on Rate of 1% Lower	Effect	
			$	%
Actuarial liability	$ 123,110,000	$ 146,540,000	$ 23,430,000	19%

The actuarial liability is based on a nominal discount rate assumption of 4.1% per year. The table above presents the impact of reducing the nominal discount rate assumption by 1% per year to 3.1% per year.

Note that using a discount rate 1% higher than that assumed would result in a comparable reduction in the Plan's actuarial liability.

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 2012 represent actual results.

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

RCA Fund

Year	RCA Assets Beginning of Year ($)	Net Contributions ($)	Total Benefit Payments ($)	Expenses ($)	Investment income ($)	Transfer To/From RTA ($)	RCA Assets End of Year ($)
2007	7,070,000	2,218,000	610,000	238,000	122,000	532,000	9,094,000
2008	9,094,000	3,067,000	846,000	304,000	(191,000)	385,000	11,205,000
2009	11,205,000	3,264,000	1,307,000	414,000	979,000	615,000	14,342,000
2010	14,342,000	2,957,000	1,700,000	525,000	1,318,000	35,000	16,427,000
2011	16,427,000	3,127,000	2,458,000	484,000	1,585,000	(40,000)	18,157,000
2012	18,157,000	3,168,000	3,118,000	521,000	1,078,000	436,000	19,200,000
2013	19,200,000	2,757,755	3,294,280	528,034	466,693	1,413,794	20,015,928
2014	20,015,928	2,893,816	3,909,316	535,162	481,015	1,714,151	20,660,431
2015	20,660,431	2,688,311	4,496,260	542,387	487,132	2,004,564	20,801,791
2016	20,801,791	2,527,688	5,076,237	549,709	481,317	2,297,460	20,482,310
2017	20,482,310	2,425,586	5,638,832	557,130	464,928	2,586,952	19,763,814
2018	19,763,814	2,310,788	6,216,562	564,651	438,215	2,889,174	18,620,778
2019	18,620,778	2,194,231	6,781,534	572,274	401,025	3,190,255	17,052,480
2020	17,052,480	2,071,536	7,414,896	580,000	352,270	3,531,313	15,012,703
2021	15,012,703	1,934,657	8,044,903	587,830	291,592	3,876,656	12,482,875
2022	12,482,875	1,790,336	8,678,653	595,766	218,521	4,230,066	9,447,379
2023	9,447,379	1,661,026	9,287,875	603,809	133,301	4,577,287	5,927,309
2024	5,927,309	1,542,388	6,857,737	611,960	74,091	3,391,823	3,465,914
2025	3,465,914	1,428,331	4,274,024	620,221	43,324	2,115,350	2,158,674
2026	2,158,674	1,338,208	2,868,288	628,594	26,983	1,420,652	1,447,635
2027	1,447,635	1,230,376	2,040,931	637,080	18,095	1,011,418	1,029,513
2028	1,029,513	1,113,038	1,496,870	645,681	12,869	742,001	754,870
2029	754,870	1,003,695	1,104,167	654,398	9,436	547,365	556,801
2030	556,801	893,606	787,175	663,232	6,960	390,108	397,068
2031	397,068	788,670	513,552	672,186	4,963	254,294	259,257
2032	259,257	683,555	261,551	681,261	3,241	129,155	132,396
2033	132,396	590,529	32,467	690,458	1,655	15,406	17,061
2034	17,061	504,449	-	521,510	213	(107)	107
2035	107	432,570	-	432,677	1	(1)	1
2036	1	367,158	-	367,159	-	-	-
2037	-	309,182	-	309,182	-	-	-
2038	-	251,975	-	251,975	-	-	-
2039	-	202,168	-	202,168	-	-	-
2040	-	153,772	-	153,772	-	-	-
2041	-	117,323	-	117,323	-	-	-
2042	-	88,539	-	88,539	-	-	-
2043	-	66,953	-	66,953	-	-	-
2044	-	49,000	-	49,000	-	-	-
2045	-	34,486	-	34,486	-	-	-

Year	RCA Assets Beginning of Year ($)	Net Contributions ($)	Total Benefit Payments ($)	Expenses ($)	Investment income ($)	Transfer To/From RTA ($)	RCA Assets End of Year ($)
2046	-	23,719	-	23,719	-	-	-
2047	-	15,566	-	15,566	-	-	-
2048	-	10,002	-	10,002	-	-	-
2049	-	5,899	-	5,899	-	-	-
2050	-	3,585	-	3,585	-	-	-
2051	-	2,032	-	2,032	-	-	-
2052	-	1,167	-	1,167	-	-	-
2053	-	621	-	621	-	-	-
2054	-	309	-	309	-	-	-
2055	-	183	-	183	-	-	-
2056	-	92	-	92	-	-	-

Refundable Tax Account

Year	RTA Assets Beg of Year ($)	Contributions to RTA ($)	Transfer To/From RCA ($)	RTA Asset at End of Year ($)
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	2,757,755	(1,413,794)	26,584,962
2014	26,584,962	2,893,816	(1,714,151)	27,764,627
2015	27,764,627	2,688,311	(2,004,564)	28,448,374
2016	28,448,374	2,527,688	(2,297,460)	28,678,602
2017	28,678,602	2,425,586	(2,586,952)	28,517,236
2018	28,517,236	2,310,788	(2,889,174)	27,938,851
2019	27,938,851	2,194,231	(3,190,255)	26,942,827
2020	26,942,827	2,071,536	(3,531,313)	25,483,050
2021	25,483,050	1,934,657	(3,876,656)	23,541,052
2022	23,541,052	1,790,336	(4,230,066)	21,101,322
2023	21,101,322	1,661,026	(4,577,287)	18,185,061
2024	18,185,061	1,542,388	(3,391,823)	16,335,626
2025	16,335,626	1,428,331	(2,115,350)	15,648,607
2026	15,648,607	1,338,208	(1,420,652)	15,566,162
2027	15,566,162	1,230,376	(1,011,418)	15,785,120
2028	15,785,120	1,113,038	(742,001)	16,156,158
2029	16,156,158	1,003,695	(547,365)	16,612,487
2030	16,612,487	893,606	(390,108)	17,115,986
2031	17,115,986	788,670	(254,294)	17,650,361
2032	17,650,361	683,555	(129,155)	18,204,761
2033	18,204,761	590,529	(15,406)	18,779,884
2034	18,779,884	504,449	107	19,284,440
2035	19,284,440	432,570	1	19,717,010
2036	19,717,010	367,158	-	20,084,168
2037	20,084,168	309,182	-	20,393,350
2038	20,393,350	251,975	-	20,645,325
2039	20,645,325	202,168	-	20,847,493
2040	20,847,493	153,772	-	21,001,265
2041	21,001,265	117,323	-	21,118,588
2042	21,118,588	88,539	-	21,207,127
2043	21,207,127	66,953	-	21,274,080
2044	21,274,080	49,000	-	21,323,080
2045	21,323,080	34,486	-	21,357,566

Year	RTA Assets Beg of Year ($)	Contributions to RTA ($)	Transfer To/From RCA ($)	RTA Asset at End of Year ($)
2046	21,357,566	23,719	-	21,381,285
2047	21,381,285	15,566	-	21,396,851
2048	21,396,851	10,002	-	21,406,853
2049	21,406,853	5,899	-	21,412,752
2050	21,412,752	3,585	-	21,416,337
2051	21,416,337	2,032	-	21,418,369
2052	21,418,369	1,167	-	21,419,536
2053	21,419,536	621	-	21,420,157
2054	21,420,157	309	-	21,420,466
2055	21,420,466	183	-	21,420,649
2056	21,420,649	92	-	21,420,741

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	5,592,727	0	0	0	3,854,898	68,329,625
2014	68,329,625	1,684,563	0	0	0	4,323,244	74,337,432
2015	74,337,432	1,683,876	0	0	0	4,698,711	80,720,019
2016	80,720,019	1,953,042	0	0	0	5,106,034	87,779,094
2017	87,779,094	1,874,152	0	0	0	5,544,761	95,198,007
2018	95,198,007	1,785,452	0	0	0	6,005,671	102,989,130
2019	102,989,130	1,695,393	0	0	0	6,489,802	111,174,325
2020	111,174,325	1,600,592	0	0	0	6,998,414	119,773,330
2021	119,773,330	1,494,831	0	0	0	7,532,547	128,800,708
2022	128,800,708	1,383,320	0	0	0	8,093,273	138,277,301
2023	138,277,301	1,283,407	0	0	0	8,682,438	148,243,146
2024	148,243,146	1,191,740	0	3,036,111	0	9,207,560	155,606,336
2025	155,606,336	1,103,613	0	6,225,645	0	9,565,333	160,049,637
2026	160,049,637	1,033,979	0	8,198,097	0	9,779,224	162,664,743
2027	162,664,743	950,661	0	9,562,928	0	9,897,413	163,949,890
2028	163,949,890	859,999	0	10,612,225	0	9,942,111	164,139,775
2029	164,139,775	775,514	0	11,464,023	0	9,924,720	163,375,986
2030	163,375,986	690,453	0	12,208,949	0	9,851,046	161,708,536
2031	161,708,536	609,373	0	12,878,137	0	9,723,385	159,163,157
2032	159,163,157	528,155	0	13,442,639	0	9,544,120	155,792,794
2033	155,792,794	456,278	0	13,892,100	0	9,317,180	151,674,151
2034	151,674,151	389,767	0	14,075,043	178,269	9,046,399	146,857,006
2035	146,857,006	334,229	0	14,150,248	276,550	8,738,170	141,502,607
2036	141,502,607	283,688	0	14,151,174	351,643	8,399,565	135,683,044
2037	135,683,044	238,892	0	14,072,857	405,641	8,035,203	129,478,641
2038	129,478,641	194,691	0	13,921,110	455,140	7,649,241	122,946,323
2039	122,946,323	156,207	0	13,700,696	493,751	7,245,450	116,153,533
2040	116,153,533	118,813	0	13,425,177	528,152	6,827,267	109,146,285
2041	109,146,285	90,651	0	13,092,076	547,681	6,398,233	101,995,411
2042	101,995,411	68,410	0	12,696,561	556,375	5,962,697	94,773,583

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 ($)
2043	94,773,583	51,732	0	12,254,930	555,529	5,524,639	87,539,495
2044	87,539,495	37,860	0	11,778,497	549,282	5,087,158	80,336,734
2045	80,336,734	26,646	0	11,273,366	538,138	4,652,769	73,204,645
2046	73,204,645	18,327	0	10,737,877	521,705	4,224,001	66,187,390
2047	66,187,390	12,027	0	10,185,140	501,782	3,803,121	59,315,617
2048	59,315,617	7,728	0	9,622,794	478,782	3,391,793	52,613,562
2049	52,613,562	4,558	0	9,054,755	454,032	2,991,340	46,100,673
2050	46,100,673	2,770	0	8,484,833	427,397	2,602,871	39,794,084
2051	39,794,084	1,570	0	7,918,487	400,183	2,227,221	33,704,205
2052	33,704,205	902	0	7,358,043	372,581	1,864,959	27,839,441
2053	27,839,441	480	0	6,805,994	345,086	1,516,509	22,205,350
2054	22,205,350	239	0	6,264,302	317,883	1,182,149	16,805,553
2055	16,805,553	141	0	5,735,577	291,153	862,016	11,640,980
2056	11,640,980	71	21,420,741	5,222,669	265,191	556,068	28,130,001
2057	28,130,001	30	0	4,727,914	240,152	1,602,874	24,764,839
2058	24,764,839	0	0	4,253,774	216,068	1,408,120	21,703,117
2059	21,703,117	0	0	3,801,555	193,098	1,231,612	18,940,076
2060	18,940,076	0	0	3,373,182	171,339	1,072,988	16,468,543
2061	16,468,543	0	0	2,970,430	150,881	931,743	14,278,975
2062	14,278,975	0	0	2,594,130	131,767	807,252	12,360,330
2063	12,360,330	0	0	2,244,889	114,028	698,804	10,700,217
2064	10,700,217	0	0	1,942,896	98,688	604,964	9,263,596
2065	9,263,596	0	0	1,681,712	85,421	523,752	8,020,216
2066	8,020,216	0	0	1,455,782	73,945	453,460	6,943,949
2067	6,943,949	0	0	1,260,319	64,017	392,611	6,012,223
2068	6,012,223	0	0	1,091,191	55,426	339,932	5,205,538
2069	5,205,538	0	0	944,829	47,992	294,320	4,507,037
2070	4,507,037	0	0	818,156	41,558	254,824	3,902,147
2071	3,902,147	0	0	708,510	35,989	220,619	3,378,267
2072	3,378,267	0	0	613,594	31,168	190,993	2,924,499
2073	2,924,499	0	0	531,420	26,994	165,331	2,531,415
2074	2,531,415	0	0	460,274	23,380	143,099	2,190,860
2075	2,190,860	0	0	398,670	20,251	123,837	1,895,776
2076	1,895,776	0	0	345,325	17,541	107,146	1,640,056
2077	1,640,056	0	0	299,129	15,194	92,681	1,418,414
2078	1,418,414	0	0	259,121	13,162	80,142	1,226,274
2079	1,226,274	0	0	224,471	11,402	69,271	1,059,672

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 ($)
2080	1,059,672	0	0	194,460	9,878	59,844	915,178
2081	915,178	0	0	168,465	8,558	51,667	789,822
2082	789,822	0	0	145,949	7,414	44,571	681,030
2083	681,030	0	0	126,444	6,423	38,412	586,575
2084	586,575	0	0	109,549	5,565	33,064	504,525
2085	504,525	0	0	94,912	4,821	28,416	433,208
2086	433,208	0	0	82,233	4,177	24,375	371,173
2087	371,173	0	0	71,248	3,619	20,859	317,165
2088	317,165	0	0	61,732	3,136	17,796	270,093
2089	270,093	0	0	53,487	2,717	15,124	229,013
2090	229,013	0	0	46,344	2,354	12,792	193,108
2091	193,108	0	0	40,155	2,040	10,751	161,664
2092	161,664	0	0	34,793	1,768	8,961	134,063
2093	134,063	0	0	30,147	1,532	7,389	109,773
2094	109,773	0	0	26,122	1,327	6,003	88,327
2095	88,327	0	0	22,634	1,150	4,777	69,320
2096	69,320	0	0	19,613	996	3,688	52,399
2097	52,399	0	0	16,994	863	2,717	37,259
2098	37,259	0	0	14,726	748	1,845	23,630
2099	23,630	0	0	12,760	648	1,058	11,280
2100	11,280	0	0	11,057	561	342	5

Required Contributions

Effective January 1, 2014, members are required to contribute 12.80% (11.16% in 2013) 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 the assets in the RCA Fund and the RTA. Based on the December 31, 2009 actuarial valuation, contributions to the Reserve Fund were set at 22.6% (effective April 1, 2011) of excess earnings.

As a result of the original December 31, 2012 valuation, the recommended employer contribution rate for the Reserve Fund was 2.4% of excess earnings, to be effective April 1, 2014.

The recommended employer contribution rate for the Reserve Fund based on this revised valuation is 2.4% of excess earnings from April 1, 2014 to March 31, 2015 and 9.9% of excess earnings, to be effective April 1, 2015. This assumes the member contribution rate and the matching employer contribution rate to the RCA Fund/RTA increase from 11.16% to 12.80% of excess earnings effective January 1, 2014.

Section 4: Actuarial Certificate

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

Opinion

This actuarial certification forms an integral part of the revised actuarial valuation report for the Plan as at December 31, 2012. I confirm that I have prepared a revised actuarial valuation of the Plan as at December 31, 2012 for the purposes outlined in the Introduction section to this report and consequently:

I hereby recommend that:

- Contributions in the amounts outlined in Section 3 of this report should be made to the Plan.
- The next actuarial valuation for the purpose of developing funding requirements should be performed no later than as at December 31, 2015.

I hereby certify that, in my opinion:

- With respect to the purposes of determining the Plan's financial position as at December 31, 2012:
  - The Plan has an unfunded liability of $19,787,000 as at December 31, 2012, based on total assets of $103,323,000 less total liability of $123,110,000.
- 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% (11.16% in 2013) of excess earnings. Additional employer contributions are 22.6% of excess earnings to the Reserve Fund to March 31, 2014, 2.4% of excess earnings to the Reserve Fund effective April 1, 2014 and 9.9% of excess earnings to the Reserve Fund effective April 1, 2015. The contribution rate to the Reserve Fund will need to be re-determined if the RCA/RTA rate of 12.80% changes.
  - The contributions as recommended in this report are expected to be sufficient to satisfy the Plan's funding requirements.
- 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.

- Notwithstanding the above certifications, emerging experience differing from the assumptions will result in gains or losses that will be revealed in subsequent valuations.

Robert J. Thiessen
Fellow, Canadian Institute of Actuaries
Fellow, Society of Actuaries

December 16, 2014

Appendix A: Glossary of Terms

- The **actuarial value of assets** is the asset value used for going concern valuation purposes. Smoothing methods are sometimes used to smooth investment gains and losses over a certain period.
- The **actuarial liability** is the actuarial present value of benefits earned in respect of service prior to the valuation date. The actuarial liability is calculated using the actuarial assumptions and methods summarized in Appendix D of this report.
- The **excess assets/(unfunded liability)** is the difference between the actuarial value of assets and the actuarial liability.
- **Excess earnings** are the 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. The maximum earnings level is $138,500 in 2014 ($134,834 in 2013).
- The **Retirement Compensation Arrangement (RCA)** is an approved means of providing a supplementary pension on salary above the Income Tax Act cap. The Income Tax Act requires that 50% of all contributions, investment income and realized capital gains within the RCA Fund be remitted annually to Canada Revenue Agency.
- The **RCA Fund** receives half of the required contributions from participating employees and participating employers. Contributions to the RCA fund from participating employers match the contributions made by the participating employees. The other half of the required contributions are remitted annually to the RTA.
- The **Reserve Fund** collects additional contributions from participating employers which are invested and required to meet future benefit payments of the Plan as determined by the actuary. Reserve Fund investment earnings are not taxable.
- 50% of all contributions, investment income and realized capital gains within the RCA Fund are remitted annually to the **Refundable Tax Account (RTA)**, held by Canada Revenue Agency. This tax held by Canada Revenue Agency does not accrue interest and is refunded upon the payment of benefits and administrative expenses from the RCA Fund.

Appendix B: Assets

Asset Data

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 Goals.

Current Asset Mix

The following is a summary of the composition of the Plan's assets by asset type as reported by Alberta Treasury Board and Finance as at December 31, 2012. For comparison purposes, the composition at the previous valuation date of December 31, 2009 is also shown.

	December 31, 2012	**December 31, 2009**
Cash and short term	1.7%	1.7%
Bonds and mortgages	31.4%	37.5%
Real return bonds	4.2%	5.1%
Canadian equities	14.0%	14.6%
International equities	38.9%	35.0%
Private equities	2.3%	0.5%
Infrastructure and private debt	3.3%	1.7%
Timberland	0.8%	0.4%
Real estate	3.4%	3.5%
Total	**100.0%**	**100.0%**

Target Asset Mix

The long-term target asset mix of the Plan is contained in the Plan's Statement of Investment Policies and Goals and is as follows:

	Minimum	Benchmark	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%		5.0%
Hedge funds	0.0%		5.0%
Inflation Sensitive and Alternative	**15.0%**	**20.0%**	**30.0%**
Real estate	10.0%	10.5%	15.0%
Infrastructure	5.0%	7.5%	15.0%
Real return bonds	0.0%		5.0%
Private debt	0.0%		5.0%
Timberlands	0.0%	2.0%	5.0%
Total	**100.0%**	**100.0%**	**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 Goals. 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 80%) with the remainder invested in real return bonds (close to 15%) and cash/money market (approximately 5%). The Reserve Fund has a greater portion of investments in equities (close to 70%), with the remainder of assets invested in fixed income (close to 20%) and inflation sensitive and alternative investments (approximately 10%).

Reconciliation of Changes in Market Value of Assets

The table below shows the development of the assets in each of the investment vehicles between December 31, 2009 and December 31, 2012.

RCA Fund

	2010	2011	2012
Market Value of Assets, Beginning of Plan Year	**$ 14,342,000**	**$ 16,427,000**	**$ 18,157,000**
Contributions During Plan Year	$ 2,957,000	$ 3,127,000	$ 3,168,000
Benefit Payments During Plan Year			
Non-retired members[1]	$ (447,000)	$ (796,000)	$ (789,000)
Retired members	(1,253,000)	(1,662,000)	(2,329,000)
Total	**$ (1,700,000)**	**$ (2,458,000)**	**$ (3,118,000)**
Transfers During Plan Year			
Transfer to RTA	35,000	(40,000)	436,000
Total	**$ 35,000**	**$ (40,000)**	**$ 436,000**
Fees/Expenses			
Investment fees/expenses	$ (62,000)	$ (94,000)	$ (67,000)
Non-investment fees/expenses	(525,000)	(484,000)	(521,000)
Total	**$ (587,000)**	**$ (578,000)**	**$ (588,000)**
Investment Income	**$ 1,380,000**	**$ 1,679,000**	**$ 1,145,000**
Market Value of Assets, End of Plan Year	**$ 16,427,000**	**$ 18,157,000**	**$ 19,200,000**
Rate of return, net of investment fees/expenses	**9.0%**	**9.6%**	**5.9%**

[1] Includes members who have terminated employment or died.

RTA Fund

	2010	2011	2012
Market Value of Assets, Beginning of Plan Year	**$ 16,348,000**	**$ 19,327,000**	**$ 22,497,000**
Contributions During Plan Year	$ 3,014,000	$ 3,130,000	$ 3,180,000
Transfers During Plan Year			
Transfer from RCA	(35,000)	40,000	(436,000)
Total	**$ (35,000)**	**$ 40,000**	**$ (436,000)**
Market Value of Assets, End of Plan Year	**$ 19,327,000**	**$ 22,497,000**	**$ 25,241,000**

Reserve Fund

	2010	2011	2012
Market Value of Assets, Beginning of Plan Year	**$ 34,272,000**	**$ 41,114,000**	**$ 46,002,000**
Contributions During Plan Year			
Employer	$ 3,317,000	$ 4,647,000	$ 6,552,000
Investment Income	**$ 3,525,000**	**$ 241,000**	**$ 6,328,000**
Market Value of Assets, End of Plan Year	**$ 41,114,000**	**$ 46,002,000**	**$ 58,882,000**

Total Market Value of Assets

	December 31, 2009	December 31, 2012
RCA Fund	$ 14,342,000	$ 19,200,000
RTA	16,348,000	25,241,000
Reserve Fund	34,272,000	58,882,000
Total Fund	**$ 64,962,000**	**$ 103,323,000**

Appendix C: Membership Data

Source of Data

This funding valuation was based on member data provided by APS as of December 31, 2012. 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 previous 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 previous valuation to ensure consistency of data;
- A reconciliation of credited service against the corresponding amount provided for the previous valuation to ensure that no member accrued more than three years of credited service from December 31, 2009, notwithstanding increases due to service purchases during the inter-valuation period. This test also revealed any members who had any unexpected changes in service, such as having accrued less than 3 years of credited service or had no change in credited service
- A reconciliation of pensionable earnings against the corresponding amounts provided for the previous valuation to identify any unusual increases (more than 15% per annum) or decreases;
- A reconciliation of accrued benefits against the corresponding amounts provided for the previous valuation to identify any unusual benefit accruals;
- pensions for retired employees against the corresponding amounts provided for the previous valuation to ensure consistency of data;
- A reconciliation of inactive member benefit amounts against the corresponding amounts provided for the previous 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 APS 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 2007 to 2011, the most recent data was utilized and increased to 2012 using the salary increase assumptions from the previous valuation. Otherwise, the overall average of the group was utilized.
- Service: We assumed that service would start from the date of commencement of contributions into the Plan.

Administrator Certification

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 F of this report.

Membership Summary

The table below reconciles the number of members as of December 31, 2012 with the number of members as of December 31, 2009 and the changes due to experience in the period.

	Actives	Potential Active*	Deferreds	HOD	Pensioners & Survivors	Total
Members, December 31, 2009	1,117	2,140	81	37	451	3,826
Changes due to:						
New entrants	124	198				322
Termination						
Non-vested	(19)	(1)		20		0
Deferred pension	(39)	(3)	42			0
Lump sum	(35)	(162)	(9)	(8)		(214)
Death						
Lump sum	(1)					(1)
Surviving beneficiary	(1)				1	0
Retirement	(186)	(4)	(12)	(4)	206	0
Transfer						
From Potential	160	(160)				0
From Unexpected	24		2		3	29
To Potential	(10)	10				0
To Unexpected		(1,220)				(1,220)
To Ineligible	(63)	(252)	(26)			(341)
Data correction	2	0	4	1	30	37
Net change	(44)	(1,594)	1	9	240	(1,388)
Members, December 31, 2012	**1,073**	**546**	**82**	**46**	**691**	**2,438**

** A potential active member is one who, as of December 31, 2012, is a member of the Management Employees Pension Plan, is not a member of the Plan but is expected to become a member, and whose earnings are currently less than the maximum earnings limit under the MEPP.*

Membership Summary

Active Members

	December 31, 2012	December 31, 2009
Number	1,073	1,117
Average age	52.2 years	52.3 years
Average service	9.1 years	7.1 years
Average pensionable earnings	$ 157,619	$ 147,907
Proportion of female	39%	37%

Potential Active Members

	December 31, 2012	December 31, 2009
Number	546	2,140
Average age	39.5 years	43.9 years
Average pensionable earnings	$ 117,690	$ 109,278
Proportion of female	49%	46%

Deferred Vested

	December 31, 2012	December 31, 2009
Number	82	81
Average age	52.2 years	50.8 years
Average annual pension	$ 3,627	$ 1,955
Proportion of female	40%	46%

Hold on Deposit Members

	December 31, 2012	December 31, 2009
Number	46	37
Average age	51.7 years	50.1 years
Average amount owing	$ 3,442	$ 12,028
Proportion of female	26%	33%

Pensioners and Survivors

	December 31, 2012	December 31, 2009
Number	691	451
Average age	64.3 years	62.5 years
Average annual pension	$ 3,688	$ 2,345
Proportion of female	24%	20%

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.

Age		**< 5**	**5 – 10**	**10 – 15**	**Total**
25-30	Count				
	Average Earnings				
30-35	Count	3	1		4
	Average Earnings	*	*		$147,981
35-40	Count	24	31	4	59
	Average Earnings	$142,590	$147,256	$159,533	$146,190
40-45	Count	51	57	33	141
	Average Earnings	$151,230	$147,749	$153,624	$150,383
45-50	Count	44	71	90	205
	Average Earnings	$163,982	$152,459	$165,020	$160,447
50-55	Count	52	62	132	246
	Average Earnings	$160,986	$158,373	$163,894	$161,888
55-60	Count	37	48	154	239
	Average Earnings	$160,455	$158,314	$157,962	$158,419
60-65	Count	21	16	109	146
	Average Earnings	$148,514	$163,275	$158,324	$157,456
65-70	Count	4	5	24	33
	Average Earnings	*	*	$150,745	$155,686
Total	Count	236	291	546	**1,073**
	Average Earnings	$156,462	$153,971	$160,064	**$157,619**

* Not shown for confidentiality reasons to comply with Section 17, Protection of Personal Privacy under the *Freedom of Information and Protection of Privacy Act*

Retired/Deferred Vested Membership Distribution

The following table provides a detailed summary of the retired/deferred vested membership at the valuation date by age group.

Age		Retired Members and Beneficiaries	Deferred Vested Members	Total
<50	Count	2	32	34
	Average lifetime pension	$ 2,226 per year	$ 3,111 per year	$ 3,059 per year
50–55	Count	3	21	24
	Average lifetime pension	$ 2,238 per year	$ 2,630 per year	$ 2,581 per year
55–60	Count	104	21	125
	Average lifetime pension	$ 4,994 per year	$ 4,299 per year	$ 4,877 per year
60–65	Count	292	8	300
	Average lifetime pension	$ 4,183 per year	$ 6,547 per year	$ 4,183 per year
65–70	Count	220		220
	Average lifetime pension	$ 2,996 per year		$ 2,996 per year
70–75	Count	58		58
	Average lifetime pension	$ 2,165 per year		$ 2,165 per year
75–80	Count	10		10
	Average lifetime pension	$ 1,021 per year		$ 1,021 per year
80–85	Count	2		2
	Average lifetime pension	$ 647 per year		$ 647 per year
Total	Count	691	82	773
	Average lifetime pension	$ 3,688 per year	$ 3,627 per year	$ 3,681 per year

Appendix D: Actuarial Assumptions and Methods

This appendix summarizes the actuarial assumptions and methods that have been used for the determination of the actuarial liability and the Reserve Fund contribution rate. The actuarial assumptions and methods used in the current and previous valuations are summarized below and described on the following pages.

	December 31, 2012	**December 31, 2009**
Economic Assumptions		
Asset rate of return	RCA Fund 2.50% Reserve Fund 6.25%	RCA Fund 6.25% Reserve Fund 6.25%
Discount rate	4.1%	4.7%
Inflation rate	2.25%	Same
Increases in pensionable earnings – Base	0.0% for 2013, 2.0% for 2014, 2.25% for 2015, 2.5% for 2016, and 3.0% per annum thereafter	0.0% for two years and 3.5% thereafter
Increases in pensionable earnings – Merit and Promotion	1.3%	1.25%
Increases in maximum pension limit	In accordance with *Income Tax Act*, then 3.0%	In accordance with *Income Tax Act*, then 3.5%
Interest on member contributions	Inflation rate plus 2.0%	Same
Non-investment expenses	Increase at 60% of Alberta CPI until 2036, proportional to benefits paid thereafter	Increase at 60% of Alberta CPI until 2033, proportional to benefits paid thereafter
Margin for adverse deviation	0.93%/0.98% (in discount rate)	0.90% (in discount rate)
Demographic Assumptions		
Mortality	1994 Uninsured Pensioner Generational Mortality Table with scale AA	1994 Uninsured Pensioner Mortality Table projected to 2023 with scale AA
Retirement	Rates following 2012 experience study for MEPP (Table A following)	Rates following 2006 experience study for MEPP
Termination of employment	Rates following 2012 experience study for MEPP (Table B following)	Nil
Disability	None	Same
Proportion married		
Non-retired proportion with spouse	90%	Same
Non-retired spousal age differential	Males three years older	Same
Retired members	Actual marital status and ages are used	Same

	December 31, 2012	December 31, 2009
Margin for adverse deviation	None	Same
Other		
Contribution rate to RCA/RTA	11.16% (2013) 12.80% (2014 and beyond)	10.50% (2010) 11.16% (2011 and beyond)
Contribution rate to Reserve Fund	22.6% to March 31, 2014 2.4% from April 1, 2014 to March 31, 2015	11.4% to March 31, 2011
Methods		
Actuarial cost method – Liability	Projected accrued benefit	Same
Actuarial cost method – Contribution	Forecast with closed group	Same
Asset valuation method	Market value	Same

Table A— Retirement Rates

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

Age	Rate (%)
<55	0.0
55	20.0
56 – 58	15.0
59 – 63	20.0
64	30.0
65	50.0
66 – 67	30.0
68	50.0
69	60.0
70	100.0

Table B— Termination Rates

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

Age	Rate (%)
Under 36	9.0
36 – 39	7.0
40 – 41	6.0
42 – 44	5.0
45 – 52	4.0
53 – 54	7.0

Justification of Actuarial Assumptions and Methods

Economic Assumptions

Asset Rate of Return

We have used an asset rate of return of 2.5% for the RCA fund and 6.25% for the Reserve Fund.

The overall expected return ("best-estimate") for the RCA Fund is 3.58% and for the Reserve Fund is 7.33%. These best estimate returns are based on an inflation rate of 2.25%. These best-estimate rates of return were developed using best-estimate returns for each major asset class in which the funds are invested and then using a building block approach, based on the Plan's investment policy, to develop an overall best-estimate rate of return for each fund. Any additional gains from rebalancing and diversification have been included above.

In order to set the asset rate of return, we have incorporated the following adjustments to the overall expected rate of return:

Development of Asset Rate of Return for Reserve Fund				
Overall expected return				7.33%
Investment expenses				
Passive	(1)	(0.10)%		
Actively managed	(2)	(0.30)%		
			(1)+(2)	(0.40)%
Additional returns due to active management				0.30%
Margin for adverse deviation				(0.98)%
Asset Rate of Return				**6.25%**

Development of Asset Rate of Return for RCA Fund				
Overall expected return				3.58%
Investment expenses				
Passive	(1)	(0.15)%		
Actively managed	(2)	(0.25)%		
			(1)+(2)	(0.40)%
Additional returns due to active management				0.25%
Margin for adverse deviation				(0.93)%
Asset Rate of Return				**2.50%**

Discount Rate

The discount rate used to determine the actuarial liability is assumed to be 4.1% per annum. The rate was derived from the total fund (RCA, RTA, Reserve Fund) net asset rate of return and includes a margin for adverse deviation of 0.91%. The discount rate aligns with the discount rate used for Section 4600 reporting purposes as at December 31, 2012 and reflects the taxation implications of the RCA. For the previous valuation, the discount rate was 4.7%.

Inflation Rate

The inflation rate is assumed to be 2.25% per annum. This reflects our best estimate of future inflation considering current economic and financial market conditions.

Increases in Pensionable Earnings

The increase in pensionable earnings assumption has been revised compared to the original December 31, 2012 report. The original assumption was that future base rate salary increases will not increase for three years from the valuation date and then increase at the rate of inflation plus 0.75% per annum for productivity growth thereafter. In this revised report, we have assumed future base rate salary increases will not increase for one year from the valuation date and then increase at 2.0% for 2014, 2.25% for 2015, 2.5% for 2016, and then increase at the rate of inflation plus 0.75% per annum for productivity growth thereafter. For the previous valuation at December 31, 2009, it was assumed that salaries would not increase for two years from the valuation date and then increase at the rate of inflation plus 1.25% per annum for productivity (or 0.0% for two years and 3.5% per annum thereafter). The current assumption was adopted to better reflect historic levels of real wage growth. The current and previous assumptions both reflect actual anticipated short-term salary experience. The current ultimate assumption was adopted to better reflect historic levels of real wage growth.

In addition to the base rate, we assume rates of increase as a result of individual employee merit and promotion of 1.3% per annum. The merit and promotion scale is based on plan experience over the years 1998-2011 and Committee input. For the previous valuation, it was assumed that members would receive a merit and promotional increase of 1.25% per annum for all years, based on the results of the 2006 experience study for MEPP.

Increases in the Maximum Pension Limit

According to the terms of the Plan, pensionable earnings for service on and after January 1, 1992, are limited to the earnings upon which a maximum pension can be earned in each year. That is, maximum pensionable earnings are equal to the maximum annual pension payable for each year of service divided by 2%. Maximum pensionable earnings are in accordance with the Income Tax Act.

The maximum lifetime annual pension per year of pensionable service payable under the Income Tax Act is $2,696.67 in 2013. It is assumed that the maximum limit will increase at 3.0% per year commencing in 2014. This assumption is comprised of an annual increase of 2.25% on account of inflation, plus 0.75% on account of productivity, which is consistent with historical real economic growth. For the previous valuation, we assumed the rate of increase of the limit to be 3.5% per annum.

Interest on Member Contributions

Interest is credited on member contributions at the assumed rate of inflation plus 2.0% per annum. The assumption reflects the expected future interest credited on 5-year personal term deposits, and likely includes a margin for adverse deviation. This assumption has not changed from the previous valuation.

Expenses

Administrative expenses are assessed to the Plan as a charge on a per member basis. The total administrative expenses assessed for 2012 amounted to $521,000. 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 2036. Each year thereafter, expenses are assumed to be proportional to benefits paid (6.46% of the total benefit payments). The previous valuation assumed expenses would increase at 60% of the assumed rate of increase in the Consumer Price Index for Alberta until 2033 and then be proportional to benefits paid (3.91% of total benefit payments).

Economic 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.

Margins for adverse deviations of 0.93% (RCA Fund) and 0.98% (Reserve Fund) have been reflected in the asset rate of return assumption and 0.91% in the discount rate.

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.

Demographic Assumptions

Mortality

The membership of this Plan is not sufficiently large enough to develop its own plan-specific mortality table. The 1994 Uninsured Pensioner Mortality Table (“UP94”) reflects the mortality experience as of 1994 for a large sample of North American pension plans. Applying projection scale AA on a generational basis provides allowance for improvements in mortality after 1994 and is generally considered reasonable for projecting mortality experience into the future. This table is commonly used for valuations where the mortality experience of the membership of a plan is insufficient to assess plan specific experience and where there is no reason to expect the mortality experience of the Plan to differ significantly from that of other pension plans. Based on the 2012 experience study for MEPP, this mortality assumption is considered to be a best estimate assumption.

Subsequent to the completion of these valuation results, the Canadian Institute of Actuaries (CIA) issued a draft report on Canadian pensioner mortality. The draft report indicates mortality rates have improved greater than anticipated. The CIA mortality rates and improvement scales are in draft form and these rates will be different in the final report. We expect that the mortality table and improvement scale for the next actuarial valuation of the Plan will be changed. The use of the UP94 table with a generational projection using scale AA for this valuation remains an acceptable best estimate assumption.

For the previous valuation, assumed mortality rates were derived from the UP94 table, projected to 2023 using scale AA.

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 2012 experience study for MEPP and are considered best-estimate rates of retirement based on the plan provisions. The rates used in the previous valuation were based on the 2006 experience study for MEPP.

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 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 2012 experience study for MEPP and are considered to be best estimate. The rates used in the previous valuation were assumed to be nil.

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 Spouses and Spousal 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 spouse. The proportion of members who will have a spouse and the spousal age difference are based on broad population statistics.

For retired members, the actual marital status and spousal age are used.

As with the previous valuation, we assumed that 90% of members would have a pension partner at the relevant time. All pension partners are assumed to be the opposite gender of the member. Male partners were assumed to be three years older than their female partners based on an analysis of recent retirements. The remaining 10% of members were assumed to have no pension partner. While the definition of pension partner includes same-sex relationships, this assumption adequately provides for all such contingencies.

Demographic Margins for Adverse Deviations

All demographic assumptions are considered best estimate so no margins for conservatism or provisions for adverse deviation have been built into the going concern demographic assumptions.

Other

Contribution Rates

Contribution rates to the RCA/RTA are 11.16% of excess earnings for 2013 and assumed to be 12.80% of excess earnings for 2014 and beyond. Contribution rates to the Reserve Fund are 22.6% of excess earnings to March 31, 2014 and 2.4% of excess earnings from April 1, 2014 to March 31, 2015.

Methods

Actuarial Cost Method

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. A closed group model is used. That is, no new hires are considered to occur. 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 will receive all required employee contributions and will pay all Plan benefits. The RTA will receive matching employer contributions. At the end of each year, a transfer will be made to the RTA in an amount equal to 50% of the difference between net investment income and benefits paid. 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 2056. It is assumed that the RCA Fund will pay all benefits for as long as it has sufficient funds to do so. In the year in which the RCA Fund can no longer pay all expected expenses and benefits, the shortfall will be paid by the Reserve Fund. Consequently, in this projection, the Reserve Fund commences to pay the balance of the expected benefits in 2023 and all benefits commencing in 2031.

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 2056 in this projection. The Reserve Fund is then responsible for the payment of all remaining benefits. 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 excess assets 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 C 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;
- 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 55 at the valuation date were assumed to retire on July 1, 2013.

Appendix E: Summary of Plan Provisions

This funding valuation was based on plan design information provided by the Committee as of December 31, 2012. 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

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 F of this report.

Appendix F: Administrator Certification

With respect to the Supplementary Retirement Plan for Public Service Managers, forming part of the actuarial report as at December 31, 2012, I hereby certify that, to the best of my knowledge and belief:

- The asset data contained in Appendix B of this report is complete and accurate; and
- The actuary has been notified of all relevant events subsequent to the valuation measurement date.

R. Isaak	Executive Director Financial Services
Name (print) of Authorized Signatory Alberta Treasury Board and Finance	Title
Original Signed	January 30, 2014
Signature	Date

- The membership data summarized in Appendix C of this report form a complete and accurate description of 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 summary of the Plan provisions contained in Appendix E is an accurate summary of the Plan provisions; and
- The actuary has been notified of all relevant events subsequent to the valuation measurement date.

L. Bowering	VP, Policy & Research
Name (print) of Authorized Signatory Alberta Pensions Services Corporation	Title
Original Signed	January 16, 2014
Signature	Date

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About Aon Hewitt

Aon Hewitt is the global leader in human capital consulting and outsourcing solutions. The company partners with organizations to solve their most complex benefits, talent and related financial challenges, and improve business performance. Aon Hewitt designs, implements, communicates and administers a wide range of human capital, retirement, investment management, health care, compensation and talent management strategies. With more than 30,000 professionals in 90 countries, Aon Hewitt makes the world a better place to work for clients and their employees.

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