MEPP

management employees pension plan

Aon Consulting

Actuarial Valuation Report on the Management Employees Pension Plan as at December 31, 2009

August 26, 2010

AON

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Executive Summary

An actuarial valuation has been prepared as at December 31, 2009 for the purposes of determining the contribution requirements of the Plan and the financial position of the Plan on a going concern basis and a solvency basis. This section provides an overview of the important results and the key inputs to the valuation process. The next valuation should be performed no later than as at December 31, 2012.

Summary of Valuation Results

Going Concern Financial Position ('000s)

	December 31, 2009	December 31, 2006
Actuarial value of assets	$ 2,423,101	$ 2,066,806
Actuarial value of liabilities	2,766,758	2,307,672
Surplus/(unfunded liability)	$ (343,657)	$ (240,866)

Solvency Financial Position ('000s)

	December 31, 2009	December 31, 2006
Assets	$ 2,297,715	$ 2,286,244
Liabilities	3,655,024	2,960,749
Surplus/(deficiency)	$ (1,357,309)	$ (674,505)

Membership

	December 31, 2009			December 31, 2006		
	Number	Average Age	Proportion of Liabilities	Number	Average Age	Proportion of Liabilities
Active participants	4,983	49.0	39%	4,309	48.7	40%
Pensioners and survivors	3,109	65.8	55%	2,506	64.3	52%
Deferred pensioners	737	52.3	6%	741	52.0	8%
Amounts held on deposit	193	46.1	Less than 1%	118	46.5	Less than 1%
Total	9,022		100%	7,674		100%

Executive Summary

Summary of Going Concern Assumptions

Summary of Assumptions	December 31, 2009	December 31, 2006	
Demographic			
Mortality	UP-94@2023	UP-94@2020	
Termination of employment	Same as December 31, 2006	Rates by age from 8.0% at age 24 to 4.0% at age 54 and 0.0% thereafter	
Retirement	Same as December 31, 2006	Age	Rate
		Under 55	0.0%
		55	20.0%
		56 – 58	15.0%
		59 – 60	20.0%
		61 – 62	22.5%
		63	30.0%
		64	40.0%
		Over 64	100.0%
Disability	Same as December 31, 2006	Nil	
Economic			
Discount rate	6.5%	6.75%	
Asset rate of return (gross)	7.15%	7.2%	
Investment expenses	Same as December 31, 2006	0.2%	
Inflation rate	2.25%	3.5% for three years and 2.75% thereafter	
Earnings increase – base	0.0% for two years and 3.5% thereafter	4.0% for three years and 3.25% thereafter	
Earnings increase – merit and promotion	Same as December 31, 2006	1.25%	
DB maximum pension limit and increase	3.5%	3.25% after 2009	
Other			
Non-investment expenses	Same as December 31, 2006	0.4% of pensionable earnings	
Proportion with pension partner	Same as December 31, 2006	90% (all opposite gender)	
Age of female pension partner	Same as December 31, 2006	Three years younger than male pension partner	
Proportion with no pension partner	Same as December 31, 2006	10%	
Deferred pension take-up on termination	Same as December 31, 2006	100%	
Interest on participant contributions	Inflation rate plus 2.0%	Discount rate less 2.0%	

Executive Summary

Minimum Contribution Requirements

	Participants	Employer	Total
January 1, 2010 to December 31, 2010	10.5%	18.0%	28.5%
January 1, 2011 to December 31, 2014	To be determined	To be determined	30.3%
January 1, 2015 to December 31, 2016	To be determined	To be determined	28.2%
January 1, 2017 to December 31, 2017	To be determined	To be determined	23.4%
January 1, 2018 to December 31, 2024	To be determined	To be determined	23.0%
January 1, 2025 and after	To be determined	To be determined	20.9%

The going concern current service cost at December 31, 2009 is 20.9% of pensionable earnings.

Respectfully submitted,

Original Signed by

Robert Thiessen, FSA, FCIA
Vice President

August 26, 2010

Section 1: Introduction

Purpose and Terms of Engagement

The Minister of Finance has requested that the Management Employees Pension Board (the "MEP Board") for the Management Employees Pension Plan (the "Plan") arrange for the preparation of an actuarial valuation of the Plan as at December 31, 2009.

We have been engaged by the MEP Board to conduct such actuarial valuation of the Plan for the purposes of:

- determining the financial position of the Plan on a going concern basis as at December 31, 2009;
- determining the financial position of the Plan on a solvency basis as at December 31, 2009;
- determining the going concern current service cost as at December 31, 2009;
- determining the rule to be used to determine the current service cost for the Plan years after 2009 and prior to the certification of the next actuarial funding recommendation; and
- providing the required actuarial funding recommendation under *The Public Sector Pension Plans Act* (the "*Act*") and the *Income Tax Act.*

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 MEP Board.

While we have been engaged by the MEP Board to conduct this actuarial valuation, this valuation report has been prepared on behalf of the Minister of Finance. In addition, we note that users of our work may well extend to parties external to the MEP Board and Alberta Finance and Enterprise, notably the Canada Revenue Agency and the Plan participants. Out of respect for the confidentiality of the MEP Board and the Minister of Finance, we shall not undertake to communicate the terms of our engagement or results of our work with such other users unless so directed by either the MEP Board or Alberta Finance and Enterprise.

Section 1: Introduction

Summary of Changes since the Last Valuation

The last actuarial valuation report and corresponding funding recommendation that was filed under the *Act* and the *Income Tax Act* was prepared as at December 31, 2006 and dated September 10, 2007. The results in this report have been reconciled with the actuarial opinion and cost certificate contained in that report.

Since the time of the last valuation, there were no Plan amendments that would have an affect on this actuarial valuation.

For this valuation, changes were made to the assumptions to reflect expected future Plan experience.

- The mortality table was changed by projecting for three more years of mortality improvement to 2023.

- The rate of return on assets was decreased from 7.2% per annum to 7.15% per annum and the discount rate was decreased from 6.75% per annum to 6.5% per annum (thus the margin has been increased from 0.45% per annum to 0.65% per annum).

- The long term inflation rate was reduced from 3.5% per annum for three years and 2.75% per annum thereafter to 2.25% per annum for all years.

- The general productivity assumption was changed from 0.5% per annum to 1.25% per annum. No salary increases are assumed for the first two years for the current valuation to reflect anticipated salary experience. These changes affected the general earnings increase assumption and the DB maximum pension limit increase assumption.

- Interest on participant contributions was changed from the discount rate less 2% (i.e., 4.75% per annum) to the long-term inflation rate plus 2% (i.e., 4.25% per annum).

Section 1: Introduction

Information and Inputs

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

- Asset data as at December 31, 2009 obtained from the audited financial statements of the Plan, as summarized in Appendix A;
- Membership data as at December 31, 2009 obtained from the Alberta Pension Services Corporation (“APS”), as summarized in Appendix B;
- Plan rules as summarized in Appendix E;
- Information concerning events subsequent to the effective date of the valuation and prior to the date of this report as identified below.

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

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, since December 31, 2009 to the date of this report, will result in gains or losses.
- 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 are currently the subject of debate, review and / or court appeal. 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 1: Introduction

Summary of Recommended Action

The following summarizes the specific recommendations in this report:

- The contribution rates be at least the minimum contribution rates as detailed in Section 4;
- The report be filed with the Canada Revenue Agency; and
- The next actuarial valuation for the purposes of developing a contribution recommendation be performed no later than as at December 31, 2012.

Section 2: Going Concern Results

Going Concern Financial Position of the Plan

The financial position of the Plan on a going concern basis is measured by comparing the actuarial value of assets to the actuarial value of 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 going concern actuarial position of the Plan as at December 31, 2009 using the projected accrued benefit actuarial cost method prorated on service is summarized in the following table. For comparison purposes, the results as at December 31, 2006 are also shown. Further information concerning the asset data, membership data, assumptions and methods used to determine the going concern financial position, and the Plan provisions that have been valued, is contained in the Appendices.

	December 31, 2009 ('000s)	December 31, 2006 ('000s)
Assets		
Market value	$ 2,307,715	$ 2,246,892
Additional government contribution	0	39,352
Smoothing adjustment	115,386	(219,438)
Actuarial value of assets	$ 2,423,101	$ 2,066,806
Actuarial Liabilities		
Active participants	$ 1,092,070	$ 925,976
Pensioners and survivors	1,518,223	1,208,063
Deferred participants	154,564	174,143
Amounts held on deposit	3,067	1,717
Payments due on buybacks	(1,166)	(2,227)
Actuarial value of liabilities	$ 2,766,758	$ 2,307,672
Surplus/(Unfunded Liability)	**$ (343,657)**	**$ (240,866)**

Section 2: Going Concern Results

Change in Financial Position

During the period from December 31, 2006 to December 31, 2009, the going concern financial position of the Plan changed from an unfunded liability of $240,866,000 to an unfunded liability of $343,657,000. The major components of this change are summarized in the following table:

Surplus/(unfunded liability) at December 31, 2006	**$**	**(240,866,000)**
• Interest on surplus/(unfunded liability)		(52,142,000)
• Contributions towards unfunded liability		112,689,000
Expected surplus/(unfunded liability) at December 31, 2009	**$**	**(180,319,000)**
• Change in salary increase assumption		4,145,000
• Change in inflation rate assumption		88,402,000
• Change in mortality rate assumption		(15,990,000)
• Change in interest rate on member contributions assumption		665,000
• Change in assumed rate of increase in *Income Tax Act* maximum pension limit		(3,541,000)
• Change in discount rate assumption		(80,887,000)
Expected surplus/(unfunded liability) at December 31, 2009 after assumption changes	**$**	**(187,425,000)**
Experience gains and losses in the intervaluation period:		
• Gain on retirements	$	24,158,000
• Gain on terminations		2,175,000
• Gain on new hires		2,979,000
• Gain on administrative expenses		1,344,000
• Gain on indexing (COLA)		12,216,000
• Gain on *Income Tax Act* maximum pension limit		3,726,000
• Gain on miscellaneous items		1,686,000
• Loss on mortality		(2,429,000)
• Loss on earnings increases		(27,654,000)
• Loss on asset returns		(174,423,000)
Surplus/(unfunded liability) at December 31, 2009	**$**	**(343,657,000)**

Analysis of Experience During Intervaluation Period	Actual	Assumed
Average annual actuarial investment return	4.2%	6.75%
Average annual earnings increase	6.81%	5.25%
Average annual COLA	1.72%	2.10%
Income Tax Act maximum pension limit increase (2010 only)	2.05%	3.25%
Membership experience:		
Terminations from active membership	631	402
Deaths from active membership	13	23
Retirements from active membership	461	712
Retirements from deferred membership	129	411
Deaths from pensioners and survivors	86	72

Section 3: Solvency Results

Solvency Position of the Plan

The solvency valuation is a financial assessment of the Plan that is required by the *Act* and is performed in accordance with requirements prescribed by the *Act*. It is intended to provide an assessment of the Plan's financial position at the valuation date on the premise that the obligations of the Plan are settled on the valuation date for all participants. The *Act* does not require funding based on the solvency valuation results.

The financial position of the Plan on the solvency basis is measured by comparing the market value of the assets, reduced by an allowance for estimated wind-up expenses, with the actuarial liability for benefits earned for service up to the valuation date assuming the Plan is terminated on the valuation date with immediate settlement of liabilities.

Presented below is the financial position of the Plan determined on the solvency basis as at December 31, 2009. For comparison purposes, the results as at December 31, 2006 are also shown. Further information concerning the asset data, membership data, assumptions and methods used to determine the solvency position, and Plan provisions that have been valued, is contained in the Appendices.

	December 31, 2009 ('000s)	December 31, 2006 ('000s)
Assets		
Market value	$ 2,307,715	$ 2,246,892
Estimated Wind-up Expenses	$ (10,000)	$ 0
Additional government contribution	0	39,352
Total assets	**$ 2,297,715**	**$ 2,286,244**
Actuarial Liabilities		
• Active participants	$ 1,494,265	$ 1,232,674
• Pensioners and survivors	1,952,538	1,499,586
• Deferred participants	205,154	226,778
• Amounts held on deposit	3,067	1,711
Total	**$ 3,655,024**	**$ 2,960,749**
Solvency excess/(deficiency)	**$ (1,357,309)**	**$ (674,505)**

Section 4: Contribution Requirements

Contribution Requirements in Respect of Current Service Costs

The annual going concern cost of benefits in respect of service accruing after the valuation date is known as the current service cost. On the basis of the asset data, membership data, assumptions and methods used to determine the going concern actuarial position, and the Plan provisions that have been valued, as described in the Appendices, the following table sets out:

- The development of the rule to determine the current service costs until the next actuarial funding recommendation is prepared; and
- An estimate of the current service cost for 2010, 2011 and 2012.

	2010	2011	2012
Current service cost of benefits	$ 105,003,000	$ 106,316,000	$ 107,644,000
Allowance for expenses	2,052,000	2,077,000	2,103,000
Total current service cost	$ 107,055,000	$ 108,393,000	$ 109,747,000
Estimated pensionable earnings	$ 512,950,000	$ 519,362,000	$ 525,854,000
Total going concern current service cost as a % of pensionable earnings	20.9%	20.9%	20.9%

In the event that an updated funding recommendation is not prepared before January 1, 2013, the rule for determining the total current service cost provided in the above table will continue to be appropriate for 2013.

The total going concern current service cost as a percent of pensionable earnings has changed from 21.2% at December 31, 2006 to 20.9% at December 31, 2009. A reconciliation of this change is shown in the table below:

Current service cost at December 31, 2006	21.2%
Actual DB maximum pension limit experience	(0.0%)
Actual Plan membership and economic experience	(0.4%)
Changes in actuarial assumptions	0.1%
Current service cost at December 31, 2009	**20.9%**

Section 4: Contribution Requirements

Contribution Requirements in Respect of Unfunded Liabilities

The valuation as at December 31, 2001 disclosed an unfunded liability of $49.2 million. This unfunded liability is being amortized with contributions of 2.1% of pensionable earnings from April 1, 2003 to December 31, 2016. As of December 31, 2009, this unfunded liability was $27.2 million.

The valuation as at December 31, 2003 disclosed an unfunded liability of $222.8 million, $61.8 million of which was the balance of the 2001 unfunded liability. The remaining $161.0 million was to be amortized with special payments of 4.7% of pensionable earnings from January 1, 2005 to December 31, 2018. As at December 31, 2009, the 2003 unfunded liability is $138.3 million.

The valuation as at December 31, 2004 disclosed an unfunded liability of $255.8 million. Previously disclosed unfunded liabilities made up $235.2 million of this amount. The remaining $20.6 million was to be amortized with special payments of 0.4% of pensionable earnings commencing July 1, 2005 and continuing to December 31, 2018. The 2004 valuation also disclosed that the amortization payments for the 2001 unfunded liability can be discontinued at December 31, 2015 and the amortization payments for the 2003 unfunded liability can be delayed until July 1, 2005. As of December 31, 2009, the 2004 unfunded liability is $21.1 million.

The valuation as at December 31, 2006 disclosed a total unfunded liability of $240.9 million. This was $9.6 million less than the sum of the 2001, 2003 and 2004 unfunded liabilities as at December 31, 2006. This amount was applied to the 2001 unfunded liability reducing it to $47.5 million as of December 31, 2006. As a result, the 2001 unfunded liability special payments cease at December 31, 2014. As well, the 2006 valuation has also disclosed that the 2003 unfunded liability payments of 4.7% can be increased by 0.1% (the reduction in the current service cost) to 4.8% and then cease December 31, 2016. Furthermore, the 2004 unfunded liability payments of 0.4% can cease on December 31, 2017, one year earlier.

The valuation as at December 31, 2009 disclosed an unfunded liability of $343.7 million of which $186.6 million consists of the unfunded balances of the 2001, 2003 and 2004 unfunded liabilities. The remaining balance of $157.1 million can be amortized with special payments of 2.1% of pensionable earnings commencing January 1, 2011 and continuing to December 31, 2024.

Section 4: Contribution Requirements

The following table shows the resulting unfunded liability payments as a percentage of pensionable earnings:

Year	2001 Unfunded Liability	2003 Unfunded Liability	2004 Unfunded Liability	2009 Unfunded Liability	Total
2010	2.1%	4.8%	0.4%	-	7.3%
2011 to 2014	2.1%	4.8%	0.4%	2.1%	9.4%
2015 to 2016	-	4.8%	0.4%	2.1%	7.3%
2017	-	-	0.4%	2.1%	2.5%
2018 to 2024	-	-	-	2.1%	2.1%

Excess Surplus

The *Income Tax Act* prescribes the maximum going concern surplus that may be retained by the Plan while employer contributions continue. In general, this maximum is defined as 25% of the going concern actuarial liability.

Since the Plan has an unfunded liability, there is no excess surplus as at December 31, 2009.

Contribution Recommendations

The minimum total contribution rates resulting from this valuation are as follows:

January 1, 2010 to December 31, 2010	28.5%
January 1, 2011 to December 31, 2014	30.3%
January 1, 2015 to December 31, 2016	28.2%
January 1, 2017 to December 31, 2017	23.4%
January 1, 2018 to December 31, 2024	23.0%
January 1, 2025 and after	20.9%

Section 4: Contribution Requirements

The above schedule of total contribution rates will meet the Plan's current service cost requirements and eliminate the $343.7 million unfunded liability by December 31, 2024. An allocation between Plan participants and employers for the period after December 31, 2009 has not been made.

Maximum Employer Contributions

Under applicable legislation, the maximum amount that an employer is allowed to contribute is equal to:

- The employer's share of the current service cost in respect of service accruing after the valuation date; plus
- The lump sum amount to eliminate any deficiencies that exist at the valuation date; less
- Any excess surplus as permitted.

The employer contributions recommended in this valuation report do not exceed the legislated maximum requirements.

Section 5: Actuarial Certificate

Actuarial Opinion, Recommendations and Certification for the Management Employees Pension Plan at December 31, 2009

Opinion

This actuarial certification forms an integral part of this actuarial valuation report as at December 31, 2009. I confirm that I have prepared an actuarial valuation for the Plan as at December 31, 2009 for the purposes outlined in the Introduction section to this report and consequently:

I Hereby Recommend That:

1. Minimum contributions to the Plan be determined as follows:

	Participants	Employer	Total
January 1, 2010 to December 31, 2010	10.5%	18.0%	28.5%
January 1, 2011 to December 31, 2014	To be determined	To be determined	30.3%
January 1, 2015 to December 31, 2016	To be determined	To be determined	28.2%
January 1, 2017 to December 31, 2017	To be determined	To be determined	23.4%
January 1, 2018 to December 31, 2024	To be determined	To be determined	23.0%
January 1, 2025 and after	To be determined	To be determined	20.9%

2. The next actuarial valuation for the purpose of developing a funding recommendation be performed no later than as at December 31, 2012.

I Hereby Certify That, In Our Opinion:

1. With respect to the purposes of determining the Plan's financial position on the going concern basis as at December 31, 2009, determining the current service cost as at December 31, 2009 and determining the rule to be used for the current service cost for the Plan years 2010 to 2013 (or until the next actuarial certification under the *Act* and the *Income Tax Act*):

   (a) The Plan has an unfunded liability of $343,657,000 as at December 31, 2009, based on total assets of $2,423,101,000 and total liabilities of $2,766,758,000.

Section 5: Actuarial Certificate

(b) The Plan's current service cost, including allowance for Plan expenses, for the Plan year commencing January 1, 2010 is estimated to be $107,055,000 (20.9% of pensionable earnings).

(c) For the Plan years 2010 to 2013 or, if earlier, until the next actuarial valuation is certified, the Plan's current service cost is determined as 20.9% of pensionable earnings.

(d) There is no excess surplus as defined by Section 147.2(2) of the *Income Tax Act* in the Plan as at December 31, 2009.

(e) The contributions as recommended in this report are adequate to satisfy the Plan's funding requirements.

2. With respect to the purpose of determining the Plan's financial position on a solvency basis:

(a) There is a solvency deficiency of $1,357,309,000 as at December 31, 2009, determined as assets of $2,297,715,000 less liabilities of $3,655,024,000.

(b) The liabilities of the Plan would exceed the Plan's assets by $1,357,309,000 if the Plan was terminated and wound-up as at December 31, 2009.

3. For the purposes of this valuation:

- the data on which this valuation is based are sufficient and reliable;
- the assumptions used are, in aggregate, appropriate; and
- the actuarial cost methods and the asset valuation methods employed for this valuation are appropriate.

4. This report and its associated work have been prepared and these opinions and recommendations given in accordance with accepted actuarial practice and in compliance with the requirements outlined in subparagraphs 147.2(2)(a)(iii) and (iv) of the *Income Tax Act*.

Section 5: Actuarial Certificate

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

Original Signed by

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

August 26, 2010

Appendix A: Assets

Trustee/Investment Manager

Plan assets are held in trust by the Minister of Finance. Alberta Investment Management Corporation is responsible for the investment of the assets in accordance with the Plan's Statement of Investment Policies and Procedures. This type of arrangement governs only the investment of the assets of the Plan and in no way guarantees the benefits provided under the Plan or the costs of providing such benefits. Any excess income or, in fact, any other profit caused by the actual Plan experience varying from the actuarial assumptions will accrue to the fund. It is, of course, equally true that any losses due to variations of actual experience from the actuarial assumptions will emerge as a liability of the Plan, which will either cause a reduction in the surplus generated from other sources or require an increase in contributions to maintain the same benefit level.

Necessary asset data required for the valuation was taken from the Plan's audited financial statements. The valuation included an examination of the asset data to test for general reasonableness, internal consistency, consistency with asset data provided in prior years, a comparison of the contributions and disbursements reported with those expected to be made as well as a reconciliation with the previous valuation's asset data. These tests demonstrated that the asset data is sufficient and reliable for the purposes of the valuation.

Asset Allocation

Based on the Plan's audited financial statements, the composition of the Plan's assets as at the valuation date is as follows:

	('000's)
Market Value of Assets	
Fixed Income Securities	$ 825,712
Canadian Equities	504,419
Global Equities	764,892
Real Estate	124,121
Alternative Investments	97,254
Total Market Value of Assets at December 31, 2009	**$ 2,316,398**
Accrued investment income and accounts receivable	329
Accounts payable	(837)
Contributions receivable	825
Liabilities for investment purchases	(9,000)
Net invested assets available for benefits	**$ 2,307,715**

Appendix A: Assets

Reconciliation of Net Invested Assets Available for Benefits

A reconciliation of the change in the net invested assets at market value, as reported in the Plan's audited financial statements, for the period January 1, 2007 to December 31, 2009, is provided below.

('000s)	2007	2008	2009
Market Value at January 1	**$2,246,892**	**$2,361,300**	**$1,970,865**
Member contributions	42,606	49,962	54,878
Employer contributions	111,857	81,444	89,843
Net reciprocal transfers	985	8,752	14,616
Pension payments	(93,819)	(103,672)	(114,834)
Termination and death benefit payments	(5,987)	(8,405)	(6,552)
Investment income	65,059	(411,196)	307,231
Investment expenses	(5,081)	(5,945)	(6,805)
Other expenses	(1,212)	(1,375)	(1,527)
Market value at December 31	**$2,361,300**	**$1,970,865**	**$2,307,715**
Net rate of return	**2.6%**	**(17.6%)**	**15.1%**

Target Asset Mix

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

Money market and fixed income	14.0%
Inflation sensitive	27.0%
Equity	59.0%
Total	100.0%

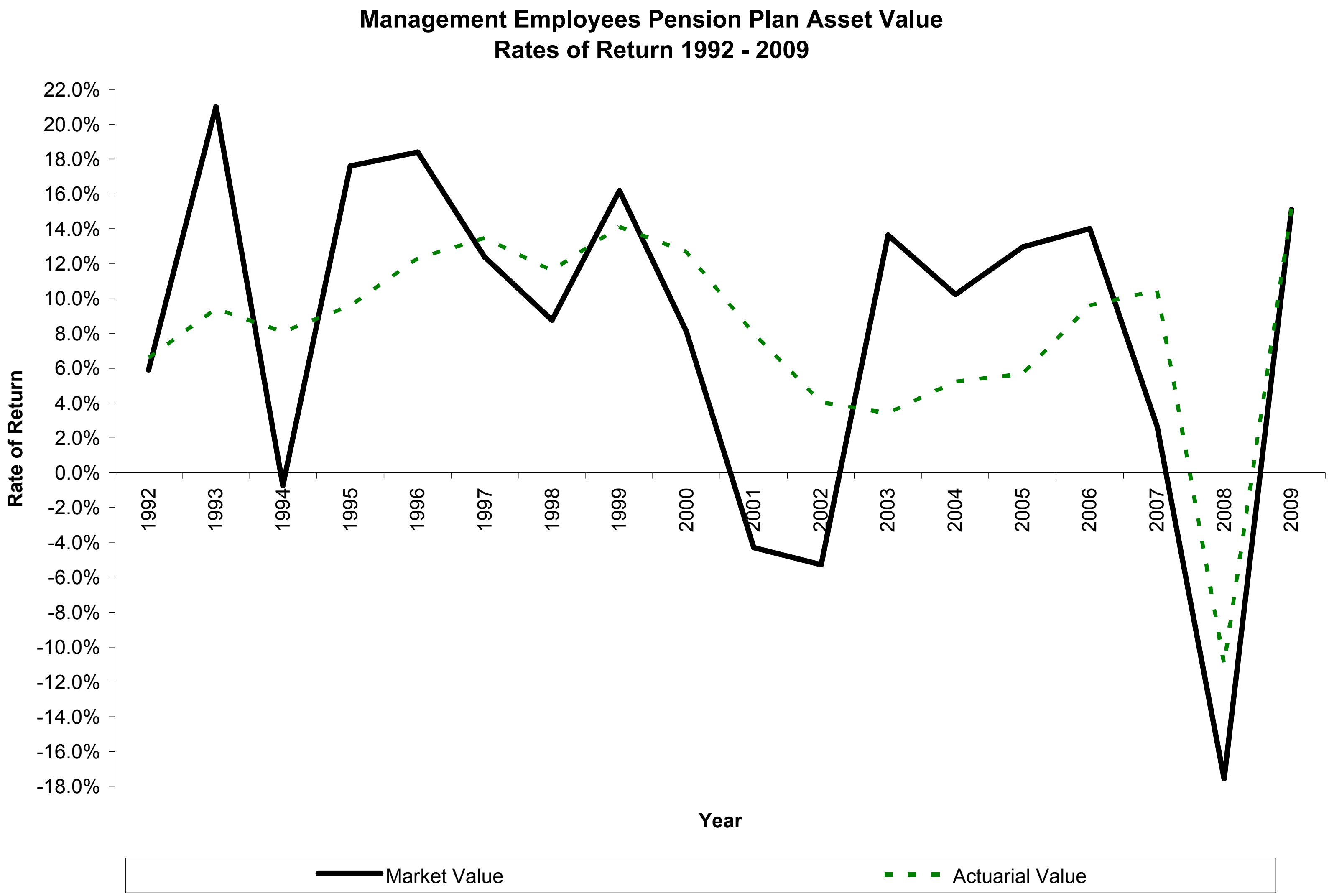
Appendix A: Assets

Actuarial Value of Assets

The formulation of the actuarial value of assets is shown below. Please refer to Appendix C for a complete description of the asset valuation method used for this valuation. Historical market and actuarial rates of return are shown in the graph on the next page.

Market Value	2005	2006	(000's) 2007	2008	2009
Market value at January 1	$1,726,978	$1,958,172	$2,246,892	$2,361,300	$1,970,865
Contributions and net transfers	86,956	104,325	155,448	140,158	159,337
Investment income	227,795	279,150	65,059	(411,196)	307,231
Benefit payments	(78,773)	(89,590)	(99,806)	(112,077)	(121,386)
Administration expenses	(1,416)	(1,207)	(1,212)	(1,375)	(1,527)
Investment expenses	(3,368)	(3,958)	(5,081)	(5,945)	(6,805)
Market value at December 31	$1,958,172	$2,246,892	$2,361,300	$1,970,865	$2,307,715
Net rate of return	13.0%	14.0%	2.6%	(17.6)%	15.1%
Expected actuarial rate of return	6.75%	6.75%	6.75%	6.75%	6.75%
Actual net market income	$224,427	$275,192	$59,978	($417,141)	$300,426
Expected actuarial income	116,799	132,633	153,502	160,289	134,263
Excess\(shortfall) (actual - expected)	107,628	142,559	(93,524)	(577,430)	166,163
5-year amortization of excess\(shortfall)					
20% of year-1	21,526	28,512	(18,705)	(115,486)	33,233
20% of year-2	10,870	21,526	28,512	(18,705)	(115,486)
20% of year-3	19,081	10,870	21,526	28,512	(18,705)
20% of year-4	(35,498)	19,081	10,870	21,526	28,512
20% of year-5	(34,265)	(35,498)	19,081	10,870	21,526
Sum of 5-year amortization	($18,286)	$44,491	$61,284	($73,283)	($50,920)
Actuarial Value					
Accumulated value at January 1	$1,731,522	$1,836,802	$2,027,454	$2,296,670	$2,410,382
Contributions and net transfers	86,956	104,325	155,448	140,158	159,337
Investment income	98,513	177,124	214,786	87,006	83,343
Benefit payments	(78,773)	(89,590)	(99,806)	(112,077)	(121,386)
Administration expenses	(1,416)	(1,207)	(1,212)	(1,375)	(1,527)
Accumulated value at December 31	$1,836,802	$2,027,454	$2,296,670	$2,410,382	$2,530,149
Adjustment for cap	0	0	0	(340,974)	(107,048)
Actuarial value at December 31	$1,836,802	$2,027,454	$2,296,670	$2,069,408	$2,423,101
Rate of return (actuarial value)	5.7%	9.6%	10.5%	-11.0%	15.2%

Appendix A: Assets



Appendix B: Membership Data

Source of Data

Data for active participants, pensioners, deferred participants and amounts held-on-deposit as at December 31, 2009, were supplied by APS. This data included dates of birth, gender, full/part-time status, service ratio, pensionable current service, prior bought service, prior service being bought and reciprocal service. Service fields were split for pre-1992 and post-1991 service. Pensionable salary (annualized and non-annualized) and in-year service were also provided for 2007-2009. Contribution information was provided split by employee/employer and pre-1992 and post-1991 service.

Numerous tests were performed on the data, reconciling 2009 data to 2006 data and testing the validity of the 2009 data. Any outstanding questions were sent to APS and adjustments made according to the responses received.

Despite these numerous tests, where data was still unreliable or unavailable, assumptions were required to complete the data. These assumptions are summarized below.

Description	Assumption
Annualization of Pensionable Earnings	Since the data provided by APS did not include annualized salary for some members, earnings were annualized using actual earnings and in-year service where required.
Missing Earnings Information	If earnings were available for 2004 through 2008, the most recent data was utilized and increased by 5.25% per annum to 2009. Otherwise, the overall average of the group was utilized.
Missing Service Information	Service was assumed to start from date of commencement of contributions into the Plan.
Missing Detail in Financial Information	Due to the nature of the financial information, it was not possible to trace the refunds individually for every terminating member. The potential effect of this data omission was immaterial to the overall results of the valuation; however, it could affect the gain/loss analysis.
Pension Amounts for Pensioners	In some cases, the data fields used to calculate pre, post and bridge pensions were zero. In these cases, other fields were used which had the total pre and post pension. No bridge amounts were assumed.

Appendix B: Membership Data

Membership Reconciliation

	Actives	Deferreds	HODs	Pensioners	Survivors	Total
Number as at December 31, 2006	4,309	741	118	2,323	183	7,674
New participants/survivors	1,729	-	-	-	72	1,801
Data adjustments	(6)	8	(8)	25	-	19
Terminations – paid out	(248)	(83)	(35)	-	-	(366)
Terminations – to HOD	(139)	-	139	-	-	-
Terminations – to deferred	(244)	246	(2)	-	-	-
Retirements	(461)	(129)	(2)	592	-	-
Deaths	(5)	(1)	(1)	(13)	(14)	(34)
Deaths – to survivor	(8)	(4)	(1)	(59)	-	(72)
To active	56	(41)	(15)	-	-	-
Number as at December 31, 2009	4,983	737	193	2,868	241	9,022

Appendix B: Membership Data

Summary of Membership Data

	December 31, 2009	December 31, 2006
Active Participants		
Number	4,983	4,309
Average age	49.0	48.7
Average service	8.6	9.5
Expected average remaining service lifetime	7.8	7.7
Average current salary	$110,000	$96,004
Percent female	46%	43%
Deferred Participants		
Number	737	741
Average age	52.3	52.0
Average annual deferred pension	$15,493	$16,522
Percent female	44%	38%
Participants With Amounts Held-on-Deposit		
Number	193	118
Average age	46.1	46.5
Average contributions with interest	$15,809	$14,207
Pensioners		
Number	2,868	2,323
Average age	65.8	64.3
Average annual pension	$36,949	$36,480
Percent female	19%	16%
Survivors		
Number	241	183
Average age	65.9	63.5
Average annual pension	$28,447	$27,026
Percent female	81%	84%

The oldest pensioner is 85 years old and the oldest survivor is 83 years old.

Appendix B: Membership Data

Active Membership Distribution

Age		Years of Pensionable Service								
		Under 5	5-9.99	10-14.99	15-19.99	20-24.99	25-29.99	30-34.99	35 or More	Total
20-24	Number	1	0	0	0	0	0	0	0	1
	Avg Salary $	*	0	0	0	0	0	0	0	*
25-29	Number	69	0	0	0	0	0	0	0	69
	Avg Salary $	76,537	0	0	0	0	0	0	0	76,537
30-34	Number	302	28	0	0	0	0	0	0	330
	Avg Salary $	90,734	99,391	0	0	0	0	0	0	91,469
35-39	Number	382	116	6	0	0	0	0	0	504
	Avg Salary $	98,766	111,745	116,369	0	0	0	0	0	101,963
40-44	Number	419	167	80	8	3	0	0	0	677
	Avg Salary $	99,650	116,986	131,188	128,985	181,965	0	0	0	108,364
45-49	Number	448	277	142	31	20	10	1	0	929
	Avg Salary $	98,762	112,436	122,931	122,674	148,510	139,130	*	0	108,847
50-54	Number	367	292	187	49	60	93	30	2	1,080
	Avg Salary $	101,046	108,513	121,398	124,852	136,926	131,977	133,365	144,087	113,303
55-59	Number	237	208	160	46	58	90	93	24	916
	Avg Salary $	104,657	109,935	117,657	132,011	123,759	130,642	130,382	138,687	116,766
60-64	Number	79	104	64	11	27	45	52	32	414
	Avg Salary $	107,641	112,756	120,862	121,398	116,653	126,639	136,186	131,987	119,455
Over 64	Number	11	14	8	4	4	5	8	9	63
	Avg Salary $	131,812	125,793	116,532	108,597	134,871	173,331	132,900	100,415	126,202
Total	**Number**	**2,315**	**1,206**	**647**	**149**	**172**	**243**	**184**	**67**	**4,983**
	Avg Salary $	**98,624**	**111,498**	**121,860**	**126,139**	**131,389**	**131,639**	**132,494**	**130,507**	**110,000**

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

Average salary in the above table has not been limited to pensionable salary. The overall average salary limited to pensionable salary and excluding those members with 35 or more years of service is $103,689.

Appendix C: Going Concern Assumptions and Methods

Going Concern Actuarial Assumptions

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

The going concern valuation provides an assessment of a plan on the premise that the plan continues on into the future indefinitely. In order to prepare a going concern valuation, two important elements need to be established:

- going concern assumptions in respect of future events upon which a plan's benefits are contingent; and

- going concern methods which effectively determine the way in which a plan's costs will be allocated over the members' service.

Together, the assumptions and methods provide a basis from which a plan's cost can be estimated and also help establish an orderly program for meeting the ultimate cost of the plan. The true cost of a plan, however, will emerge only as experience develops, investment earnings are received, and benefit payments are made.

This appendix summarizes the going concern assumptions and methods that have been adopted for the going concern valuation of the Plan at the valuation date. These assumptions and methods should be reviewed periodically to ensure that they adequately reflect the experience of the plan and continue to satisfy the plan's funding objectives.

The actuarial assumptions used in the December 31, 2006 valuation were reviewed for appropriateness, and the following changes were made. The mortality table was changed by projecting for three more years of mortality improvement to 2023. The long term inflation rate was reduced from 2.75% to 2.25%. The general productivity assumption was changed from 0.5% to 1.25%. These two changes affected the general earnings increase assumption and the DB maximum pension limit increase assumption. The discount rate was reduced from 6.75% per annum to 6.5% per annum. Interest on member contributions was reduced to be equal to the inflation rate plus 2%.

Appendix C: Going Concern Assumptions and Methods

The financial effect of these changes is shown in Section 2. The assumptions used in this valuation are summarized in the following table.

Summary of Assumptions	December 31, 2009	December 31, 2006	
Demographic			
Mortality	UP-94@2023	UP-94@2020	
Termination of employment	Same as December 31, 2006	Rates by age from 8.0% at age 24 to 4.0% at age 54 and 0.0% thereafter	
Retirement	Same as December 31, 2006	Age	Rate
		Under 55	0.0%
		55	20.0%
		56 – 58	15.0%
		59 – 60	20.0%
		61 – 62	22.5%
		63	30.0%
		64	40.0%
		Over 64	100.0%
Disability	Same as December 31, 2006	Nil	
Economic			
Asset rate of return (gross)	7.15%	7.2%	
Margin for discount rate	(0.65)%	(0.45)%	
Investment expenses	(0.2)%	(0.2)%	
Value add	0.2%	0.2%	
Discount rate	6.5%	6.75%	
Inflation rate	2.25%	3.5% for three years and 2.75% thereafter	
Real rate of return	4.25%	4.00%	
Earnings increase – base	0.0% for two years and 3.5% thereafter	4.0% for three years and 3.25% thereafter	
Earnings increase – merit and promotion	Same as December 31, 2006	1.25%	
DB maximum pension limit and subsequent per annum increases	$2,494.44 for 2010 and 3.5% thereafter	$2,444.44 for 2009 and 3.25% thereafter	
Other			
Non-investment expenses	Same as December 31, 2006	0.4% of pensionable earnings	
Proportion with pension partner	Same as December 31, 2006	90% (all opposite gender)	
Age of female pension partner	Same as December 31, 2006	Three years younger than male pension partner	
Proportion with no pension partner	Same as December 31, 2006	10%	
Deferred pension take-up on termination	Same as December 31, 2006	100%	
Interest on participant contributions	Inflation rate plus 2.0%	Discount rate less 2.0%	

Appendix C: Going Concern Assumptions and Methods

Margins

Margins for conservatism or provisions for adverse deviation have been built into the going concern assumptions where appropriate. These margins are aimed at reducing the potential adverse effect of the uncertainty inherent in the going concern assumptions. If the future unfolds in accordance with what are considered to be best estimate assumptions (that is, assumptions with no such margins), then the margins built into the going concern assumptions will be released into surplus.

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 results in both intergenerational inequities among members and unnecessary financial strain on the Plan sponsor. To this end, the Plan's funding policy has been referred to for guidance and only adverse events that are plausible in usual operations have been contemplated.

Demographic Assumptions

Mortality

For the going concern valuation, gender-distinct mortality rates have been assumed to be in accordance with the Uninsured Pensioner 1994 Mortality Table with mortality improvements projected to the year 2023 using scale AA (UP-94@2023). The previous valuation used the Uninsured Pensioner 1994 Mortality Table with mortality improvements projected to the year 2020 using scale AA (UP-94@2020). Based on the 2006 experience rate study, this mortality assumption is considered to be a best estimate assumption.

Mortality rates per 1,000 lives at selected ages are as follows:

	UP94@2023		UP94@2020	
Age	**Male**	**Female**	**Male**	**Female**
35	0.8	0.4	0.8	0.4
40	0.9	0.5	0.9	0.5
45	1.2	0.7	1.2	0.7
50	1.6	0.9	1.7	1.0
55	2.7	2.0	2.9	2.0
60	5.4	4.1	5.6	4.2
65	10.4	8.0	10.8	8.2
70	16.5	12.8	17.2	13.0
75	26.6	19.3	27.7	19.8
80	49.8	34.6	51.4	35.3
85	85.3	61.2	87.1	62.3

Appendix C: Going Concern Assumptions and Methods

	UP94@2023		UP94@2020	
Age	**Male**	**Female**	**Male**	**Female**
90	146.4	114.6	148.2	115.6
95	237.0	188.9	238.4	190.1
100	331.4	288.7	332.4	289.6

Termination of Employment

Rates of participant termination at selected ages used for this valuation are shown in the following table. The rates were based on the 2006 experience study and are considered to be best estimate. The previous valuation used the same assumption.

Age	Annual Termination Rate
30	8.0%
35	7.0%
40	6.0%
45	4.0%
50	4.0%
55	0.0%

Retirement Rates

The retirement rates for active participants for each age are shown in the following table. The rates were based on the 2006 experience study and are considered to be best estimate.

Age	Annual Retirement Rate
Under 55	0.0%
55	20.0%
56 – 58	15.0%
59 – 60	20.0%
61 – 62	22.5%
63	30.0%
64	40.0%
Over 64	100.0%

Deferred participants are assumed to retire at age 55 or their current age if older.

The previous valuation used the same retirement assumption.

Appendix C: Going Concern Assumptions and Methods

Disability

As in the previous valuation, all participants 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 participants.

All participants who become disabled in the future are assumed to be covered by their employer's approved long-term disability plan and consequently this contingency can be ignored.

Proportion with Pension Partners and Age of Pension Partner

As with the previous valuation, it was assumed that 90% of participants would have a pension partner at the relevant time. All pension partners are assumed to be the opposite gender of the participant. Male partners were assumed to be three years older than their female partners based on an analysis of recent retirements. The remaining 10% of participants 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. This assumption is considered to be best estimate.

Economic Assumptions

Discount Rate

The actuarial present value of a future stream of benefit payments represents an estimate of the assets required at the valuation date that, together with future expected investment income, will be sufficient to provide for the future benefit stream. Therefore, in calculating actuarial present values, it is necessary to make an assumption with respect to the future expected investment returns that will be earned on the Plan's assets. This future investment rate of return is called the discount rate.

In selecting the going concern discount rate assumption, the following factors are typically taken into consideration:

- the Plan's investment policy;
- long-term historical trends;
- the expected return on the invested assets; and

- the pattern of future expected benefit payments.

Based on the Plan's current target asset mix, expected long-term asset class returns, and an underlying long-term inflation rate of 2.25% per annum, the invested assets of the Plan are expected to earn a gross rate of return of 7.15% before value added for active management. The expected rate of return has been determined as the mean return over a 30 year period resulting from a Monte Carlo simulation applied to Aon's proprietary multi-variate asset model using the Plan's current target asset mix policy.

Investment expenses charged to the Plan over the last few years have been approximately 20 basis points. Administration expenses are taken into account in the current service cost. It is assumed investment expenses will be offset by the value added from active management. Consequently, the net investment rate of return on assets is expected to be 7.15%. For the purposes of this valuation, a discount rate of 6.5% has been used providing a margin for adverse deviation of 65 basis points. This assumption represents a decrease in the discount rate from the previous valuation where a rate of 6.75% per annum was assumed.

Appendix C: Going Concern Assumptions and Methods

Underlying Inflation Rates

The inflation rate has been assumed to be 2.25% per annum for all years. This is considered to be a best estimate and is based on anticipated future long-term economic and financial market conditions. The previous valuation used an inflation rate of 3.5% per annum for three years and 2.75% per annum thereafter.

Increases in Pensionable Earnings

A participant's future pensionable earnings are assumed to increase up until the time the participant retires, dies or terminates from active employment at the rate of 0.0% per annum for 2010 and 2011 and 3.5% per annum thereafter, which consists of inflation plus 1.25% for productivity. The previous valuation assumed productivity of 0.50%.

In addition to this flat rate of earnings increase, participants are assumed to receive a merit and promotional increase of 1.25% per annum, based on the results of the 2006 experience study. The assumptions for increases in pensionable earnings are considered to be best estimate.

Escalation of Income Tax Act *Maximum Pensionable Earnings*

According to the terms of the Plan, pensionable earnings for service on and after January 1, 1992, are limited to the maximum pensionable 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* and are as follows:

Year	Maximum Pensionable Earnings
2009	$122,222
2010	$124,722
2011 +	Indexed to average wages (3.5%)

This assumption is considered to be best estimate and is consistent with the assumptions used for general earnings increases.

The previous valuation assumed indexing after 2009 of 3.25% per annum.

Appendix C: Going Concern Assumptions and Methods

Interest on Participant Contributions

It has been assumed that participant contribution account balances will be credited with interest using the inflation rate plus 2.0% per annum (or, 4.25% per annum). The assumption has changed from the previous valuation where it was assumed to be equal to the discount rate less 2.0% (or, 4.75% per annum). The assumption is considered to be best estimate.

Other Assumptions

Expenses

Investment expenses expected to be paid from the Plan in the future are assumed to be 20 basis points and are taken into account in the discount rate assumption. Administrative expenses are assumed to be 0.4% of pensionable earnings and this amount is included in the current service cost rate. These expense assumptions are unchanged from the previous valuation. They are considered to be best estimate and are based on recent Plan experience.

Proportion Electing Deferred Pension

As the Plan's termination benefit in respect of pre-1992 service is different for participants electing a cash transfer, an assumption is required. It was assumed that 100% of vested terminating participants would elect a deferred pension. The same assumption was used in the previous assumption. This assumption is considered to be best estimate.

Other

For all members, age has been determined as age nearest birthday as of the valuation date. All decrements are assumed to occur at the middle of the year. In particular, all active participants who have attained age 65 and all deferred participants who have attained age 55 as of the valuation date are assumed to retire on July 1, 2010.

Appendix C: Going Concern Assumptions and Methods

Going Concern Actuarial Cost Method

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

The Projected Accrued Benefit Actuarial Cost Method prorated by service has been used for this valuation. Under this 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 a surplus or an unfunded liability.

With respect to service after the valuation date, the expected value of benefits for service in the year following the valuation date (that is, the current service cost) is expressed as a percentage of the expected value of pensionable earnings for that year. The current service cost is determined each year by applying this percentage to the actual pensionable earnings for the year.

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 participant, 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 participant 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.

The pattern of future contributions necessary to pre-fund future benefit accruals for any one participant will increase gradually as a percentage of the participant's pensionable earnings as the participant approaches retirement. For a stable population (i.e., one where the demographics of the active participants remain constant from year to year), the current service cost will remain relatively level as a percentage of earnings. The Projected Accrued Benefit Actuarial Cost Method therefore allocates contributions among different periods in an orderly and rational manner for a stable population.

Appendix C: Going Concern Assumptions and Methods

In the event of future adverse experience, contributions in addition to the current service cost calculated under the Projected Accrued Benefit Actuarial Cost Method may be required to ensure that the plan assets are adequate to provide the benefits. Conversely, favourable experience may generate surplus which may serve to reduce future contribution requirements.

The previous valuation also used the Projected Accrued Benefit Actuarial Cost Method prorated by service.

Going Concern Actuarial Asset Valuation Method

The going concern asset valuation method determines the value that will be assigned to the assets on the valuation date. For purposes of the going concern valuation, the actuarial value of assets has been determined by applying a smoothing methodology to the Plan's market value of assets at the valuation date. The same method was used in the previous valuation.

Under this method, the actuarial value of the investment income for each year, net of investment expenses, is determined as the sum of the actuarially required net investment income on the market value of assets and an amortization adjustment. The actuarially required net investment income is equal to that amount of net investment income that generates a rate of return net of investment expenses on the market value of the assets equal to the valuation discount rate for the year.

The amortization adjustment is determined by amortizing over a five-year period, the difference between the actual investment income less investment expenses over the actuarially required net investment income for that year.

Following determination of the smoothed value of assets as described above, a further constraint is applied. The actuarial value of assets is restricted to be no less than 85% or no more than 105% of the market value of assets.

Appendix C: Going Concern Assumptions and Methods

Other Methodologies

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

- it is assumed that indexation of deferred and immediate pensions commences one year after termination or retirement;
- current service contributions are based on pensionable salary;
- the current service cost includes refunds of additional contributions for non-vested participants;
- the pensionable salary for calculating the current service cost percentage is nil for participants with more than 35 years of service;
- pensioners who had not elected a form of pension as at the valuation date were valued as joint and survivor $66^{2}/_{3}$% (joint and survivor 75% for pre-1992 service) for participants with pension partners and single life, with a 10 year guarantee (life only for pre-1992 service) for participants without pension partners;
- for deferred benefits on termination or death (post-1991 service), 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 55 at the valuation date were assumed to retire on July 1, 2010.

Payments Due

These amounts represent contributions to be made by Plan participants after the valuation date to buy back certain periods of service. The valuation includes the effect of these buybacks in the liabilities. The amount of payments due for buyback service as at December 31, 2009 was $1,166,000. As at December 31, 2006, this amount was $2,227,000. For the purposes of the balance sheet presentation, these amounts appear as reductions to the total liabilities as the pension liabilities for participants purchasing such service have been determined assuming the full amount of service has been bought.

Appendix D: Solvency Assumptions and Methods

The *Act* requires disclosure of the Plan's financial position at the valuation date under the solvency valuation provisions of the Alberta *Employment Pension Plans Act* (the "*EPPA*"). The *Act* does not require funding of any solvency deficit.

The *EPPA* requires that a Plan's solvency valuation liabilities be determined with the presumptions that:

- the plan is terminated and wound up on the valuation date, and
- the plan's liabilities are settled immediately.

The following summarizes the prescribed assumptions, methods and benefits that make up the solvency basis for the Plan at the valuation date. Judgement must be exercised in setting certain assumptions, especially as related to determining:

- the proportion of the Plan's benefits expected to be settled by way of annuity purchase and by way of lump sum settlement; and

- the hypothetical annuity purchase rates at the valuation date.

Consequently, if the Plan was terminated on the valuation date, the solvency liabilities may be different than the actual Plan liabilities. Such differences may be attributed to:

- differences between the actual and assumed proportion of benefits being settled by annuity purchase and lump sum benefits; and

- an actual annuity purchase rate that is different than the rates assumed to be representative of the annuity market on the valuation date.

Appendix D: Solvency Assumptions and Methods

Solvency Assumptions

Proportion of benefits settled by lump sum settlement and annuity purchase	The following participants and survivors are assumed to have their benefit entitlement settled by way of annuity purchase on plan termination: ▪ all persons receiving a monthly pension at the valuation date; and ▪ all participants who are entitled to retire and commence an immediate pension on the valuation date. All other participants are assumed to have their benefit entitlement settled by way of a lump sum settlement.
Discount rate – annuity purchase	The discount rate assumed to apply to benefits that are settled by way of annuity purchase is 2.7% per annum. This discount rate assumption is representative of the rate that, together with the UP-94 @ 2020 approximates annuity purchase rates at the valuation date for partially indexed annuities, in accordance with guidance for solvency valuations as at December 31, 2009 provided by the Canadian Institute of Actuaries.
Discount rate – lump sum settlements	The discount rate assumed to apply to benefits that are settled by way of lump sum settlement is 2.8% per annum for 10 years and 3.8% per annum thereafter in accordance with accepted actuarial practice as at the valuation date.
Salary and Maximum Pension Limits	No future increase is assumed since no future salary or maximum pension limit increases are taken into account in the Plan termination benefits.

Appendix D: Solvency Assumptions and Methods

Expenses	It is assumed that the wind-up expense, if the Plan were to be terminated, would be $10,000,000. These expenses have been treated as a reduction to assets, in accordance with the EPPA and accepted actuarial practice.
Mortality – annuity purchases	For benefits that are settled by way of annuity purchase, mortality is assumed to be in accordance with the gender-distinct rates of the UP-94 @ 2020. This mortality assumption is representative of the mortality rates that, together with the discount rate assumption of 2.7% approximate annuity purchase rates at the valuation date, in accordance with guidance on solvency valuations provided by the Canadian Institute of Actuaries.
Mortality – lump sum settlement	For benefits that are settled by way of lump sum settlement, mortality is assumed to be in accordance with the gender-distinct rates generated from the UP-94 @ 2020 using scale AA in accordance with accepted actuarial practice and as permitted by Regulation under the EPPA.
Termination rates	All participants who are actively employed on the valuation date are assumed to terminate their employment on this date and subsequently retire from the Plan in accordance with the retirement age assumption summarized below.

Appendix D: Solvency Assumptions and Methods

Retirement age	The age at which participants are assumed to retire from the Plan varies depending on the specifics of each member as follows: ▪ Participants entitled to retire from the Plan and commence an immediate pension are assumed to do so (age 55); ▪ All other participants are assumed to retire at age 55.
Proportion with a pension partner upon retirement from the Plan and spousal age	90% of the participants who have not retired from the Plan on the valuation date are assumed to have a pension partner upon retirement from the Plan. All pension partners are assumed to be the opposite gender of the participant. Such pension partners are assumed to be three years older than the participant if the participant is female and three years younger if the participant is male.

Solvency Valuation Methods

The solvency liabilities have been calculated as the actuarial present value of the benefits to which a participant would be entitled if the Plan was terminated on the valuation date and the participant was vested, regardless of service.

It is further noted that the solvency liabilities do not take into consideration any benefit reductions that may be required in the event of Plan termination on the valuation date.

For purposes of the solvency valuation, assets have been valued at market value.

Appendix E: Summary of Plan Provisions

Prior to 1993, the Management Employees Pension Plan Act provided for the payment of pension and related ancillary benefits to eligible participants. In 1993, the Public Sector Pension Plans Act was passed, thereby covering the Management Employees Pension Plan.

This appendix outlines the major provisions of the Management Employees Pension Plan, which have a material affect on the cost of benefits payable under the Plan. This summary is not intended to be a detailed description of all Plan provisions.

Eligibility

Eligible participants include full-time and part-time employees who meet criteria specified in the Plan.

Pensionable Service and Pensionable Salary

Combined pensionable service, as defined under the provisions of the Plan, cannot exceed 35 years. Combined pensionable service (service in the Management Plan plus pensionable service in the Public Service Pension Plan) is used to determine eligibility for benefits, vesting and determination of highest average salary. Pensionable salary is defined as the participant's actual salary limited to the amount in any year after 1992 which results in the maximum defined benefit for that year under the *Income Tax Act* Regulations.

Credited Interest

Prior to 1994, participants' contributions were accumulated at the rate of 4% per annum, compounded semi-annually. Effective January 1, 1994, the rate of interest credited to participants' contributions was changed to the average yield of five-year personal fixed term chartered bank deposits (CANSIM series B14045) over the most recent 12-month period, calculated as of the first day of the calendar year.

Appendix E: Summary of Plan Provisions

Retirement Age

Participants are eligible to retire under the Plan if they have attained age 55 and have at least five years pensionable service.

Retirement Benefit

The annual pension payable at retirement is determined as follows:

- 2.0% of highest average pensionable salary, multiplied by years of pensionable service.

  Highest average pensionable salary is the participant's average annual salary in the five consecutive years of pensionable service in which such average is the highest. Effective January 1, 1992, and only in respect of pensionable service after 1991, pensionable earnings for each calendar year are limited to 50 times the defined benefit annual maximum pension limit for the year under the Income Tax Act. For years after 2003, the limit is as follows:

Year	Limit
2004	$91,667
2005	100,000
2006	105,556
2007	111,111
2008	116,667
2009	122,222
2010	124,722
2011 +	Indexed to Average Industrial Wage

Early Retirement

For service prior to January 1, 1992, if a participant has attained the age of 55 and accrued five years of service, there is no reduction in the participant's pension upon retirement.

For service after December 31, 1991, if the participant has accrued 80 points (that is, age plus pensionable service is greater than or equal to 80) or has attained age 60, no reduction is applied. Otherwise, the retirement pension is reduced by 3% for each year that the participant's early retirement age precedes the earlier of age 60 and the age at which 80 points would be reached (based on pensionable service to the date of termination).

Benefits on Disability

If the participant is not receiving benefits from an LTD plan and the participant is permanently and totally disabled, the participant is entitled to an immediate unreduced pension based on pensionable service and salary to the date of disability. If the participant is partially disabled, the pension is reduced in accordance with the plan rules.

If the participant is receiving benefits from an LTD plan, participation in this Plan depends on whether or not the LTD plan is an approved plan. If the LTD plan is an approved plan, participation in this 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 participant's employment class.

If the LTD plan is not an approved plan, the participant is considered to be on a disability leave. The participant is eligible to "buy back" this period of leave, as outlined in the plan, upon return to active employment.

Post-Retirement Death Benefits

a) Service Pre-1992

Normal Form

The normal form of pension for a participant who does not have a pension partner is payable for life. If the participant dies and has no pension partner at death, pension payments cease. The normal form of pension for a participant who has a pension partner is a joint form with a 75% survivor pension payable to the pension partner. If, at the death of the participant, the participant has a pension partner[1], the pension partner will continue to receive a pension equal to 75% of the participant's pension.

[1] If the participant terminated prior to January 1, 1994, the pension partner is entitled to the benefit if the pension partner had been the participant's pension partner for five years immediately preceding the participant's death. If the participant terminated after December 31, 1993, the benefit is payable if the participant is survived by the person who was the pension partner at pension commencement.

Appendix E: Summary of Plan Provisions

Optional Forms

Optional forms of pension are available on an actuarial equivalent basis to the normal form applicable to the participant.

b) Service Post-1991

Normal Form

The normal form of pension for a participant who does not have a pension partner at retirement is a lifetime pension guaranteed for 120 months. If the participant dies before 120 monthly payments are made, the balance of the 120 payments are payable to the participant's beneficiary or estate. The normal form of pension for a participant who has a pension partner at retirement is a pension payable for the lifetime of the participant. Upon the participant's death, a survivor pension equal to 2/3 of the participant's pension is payable to the pension partner for the remaining lifetime of the pension partner.

Optional Forms

Optional forms of pension are available on an actuarially equivalent basis to the normal form applicable to the participant.

Pre-Retirement Death Benefits

Pre-1992 Service	Benefit
No pension partner or dependent children	• Refund of participant contributions with interest.
Dependent children but no pension partner	
If $\geq$ 5 years of pensionable service or death in service	• Refund of 2 × participant contributions with interest.
Otherwise	• Refund of participant contributions with interest.
Pension partner	
If death in service	• Refund of 2 × participant contributions with interest.
Otherwise	• Refund of participant contributions with interest. • If the participant has at least five years of pensionable service, the pension partner is eligible for an unreduced immediate pension determined as though the participant had retired on the day before death and elected a J&S 100% optional form pension.

Appendix E: Summary of Plan Provisions

Post-1991 Service	Benefit
No pension partner	
< 5 years of pensionable service	• Refund of participant contributions with interest.
≥ 5 years of pensionable service	• 100% of commuted value plus excess contributions.
Pension partner	
< 5 years of pensionable service	• Refund of participant contributions with interest.
≥ 5 years of pensionable service	• Either 100% of commuted value or an immediate unreduced pension for life determined as though the participant had retired on the day before death and elected a J&S 100% optional form pension, plus excess contributions.

Termination Benefits

	Benefit
< 5 years of pensionable service	• Refund of participant contributions with interest.
≥ 5 years of pensionable service	• Either a refund of participant contributions with interest or a deferred pension. • For post-1991 service, excess contributions, if any, will be paid. • For post-1991 service, in lieu of the deferred pension, the participant may elect to transfer out 100% of the commuted value plus excess contributions. In that event, the participant must also take a refund of the participant's pre-1992 contributions in lieu of the deferred pension earned for pre-1992 service.

Appendix E: Summary of Plan Provisions

Cost-of-Living-Increases

Cost-of-living increases based on 60% of the Alberta CPI apply to both deferred pensions and pensions-in-payment.

Financing of the Plan and Contributions

In accordance with the Plan, contribution rates for service after December 31, 1991, will be set at a level appropriate for the funding of the Plan, as recommended by the Plan's actuary. Based on the December 31, 1999 valuation, contribution rates, as a percent of pensionable salary, were at the following levels:

	Contribution Rates
Participants	7.75%
Employers	10.75%
Total	**18.50%**

Based on the December 31, 2001 valuation, contribution rates, as a percent of pensionable salary were increased, effective April 1, 2003 as follows:

	Contribution Rates
Participants	9.5%
Employers	13.1%
Total	**22.6%**

Based on the December 31, 2003 valuation, contribution rates as a percent of pensionable salary, were increased, effective July 1, 2005 as follows:

	Contribution Rates
Participants	10.5%
Employers	18.0%
Total	**28.5%**