Actuarial Report

University of Waterloo

University of Waterloo Pension Plan

Funding Valuation as of January 1, 2014

To protect the confidential and proprietary information included in this material, it may not be disclosed or provided to any third parties without the approval of Aon Hewitt.

Preparation of this Actuarial Valuation

University of Waterloo Pension Plan (the "Plan")
Registration Number: 0310565

This material has been prepared by Aon Hewitt, at the request of the University of Waterloo (the "University") Pension and Benefits Committee (the "Committee") to present the actuarial valuation results of the Plan at January 1, 2014. The purposes of this valuation are to:

- determine the financial position of the Plan on a going concern basis at the valuation date;
- determine the financial position of the Plan on solvency and hypothetical wind-up bases at the valuation date;
- determine the funding requirements for the period covered by this report; and
- provide the necessary actuarial certifications required under the *Pension Benefits Act* (Ontario) and the *Income Tax Act* (Canada).

The intended users of this report are the Committee and the University, the Financial Services Commission of Ontario ("FSCO"), and the Canada Revenue Agency ("CRA").

This report will satisfy the triennial filing requirements for the period from January 1, 2014 until December 31, 2016, unless superseded by a subsequent valuation.

The University made an application to the Ministry of Finance, Pension Policy Branch, to participate in the two-stage solvency funding relief measures applicable to pension plans in the Broader Public Sector. The plan has been approved to participate in the first stage of the Solvency Funding Relief measures pursuant to Ontario Regulation 178/11 made under the *Pension Benefits Act* (Ontario).

In conducting the valuation, we have used personnel information provided by the University of Waterloo as of October 1, 2013 and supplementary information on personnel changes for the period from October 1, 2013 to December 31, 2013, unaudited financial statements of the pension fund provided by CIBC Mellon as of December 31, 2013, audited financial statements of the pension fund provided by the University, and the actuarial assumptions and methods described in the actuarial assumptions section of this report.

The following assumptions and methods have been used in this valuation based on the terms of this engagement:

- for the Going Concern Valuation, a discount rate based on the rate of return on the pension fund including a margin for adverse deviations;
- for the Going Concern Valuation, the unit credit method as the actuarial cost method;
- for the Going Concern Valuation, a market value of assets for investments other than real return bonds, and cash flows discounted at the valuation rate for real return bonds;
- for the Solvency Valuation, the exclusion of indexation in the Solvency Liability pursuant to the *Pension Benefits Act* (Ontario) and its Regulations; and
- for the Solvency Valuation, no smoothing of assets or discount rates to calculate the Solvency Liability.

Preparation of this Actuarial Valuation (continued)

For the purposes of this valuation, it is our opinion that:

- the membership and asset data upon which the valuation is based are sufficient and reliable;
- the assumptions used are appropriate; emerging experience differing from the assumptions will result in gains or losses which will be revealed in future valuations;
- the actuarial methods used are appropriate for purposes of the valuation and are consistent with the applicable regulatory requirements.

To our knowledge, there have been no events from January 1, 2014 (the "valuation date") to the date of this report that would have a material impact on the information provided in this report.

This report has been prepared, and our opinions given, in accordance with accepted actuarial practice in Canada.

Aon Hewitt

Linda M. Byron
Fellow of the Canadian Institute of Actuaries

July 2014

Allan H. Shapira
Fellow of the Canadian Institute of Actuaries

July 2014

Definition of Terms

Accrued Liability	The actuarial present value of the benefits earned by Members in respect of their service prior to the valuation date. For Active Members, the accrued benefits reflect anticipated future salary increases.
Actuarial Value of Assets	Since neither book value nor market value is necessarily an ideal measure, other methods are often used to reduce volatility in year-to-year valuation results. The method for this valuation assumes all investment gains/losses on Plan assets other than real return bonds are recognized fully at January 1, 2014. The asset valuation method for real return bonds involves calculating the discounted value of future cash flows to the valuation date at an assumed real return.
Funding Excess/(Unfunded Liability)	Amount by which the Actuarial Value of Assets exceeds/ (is less than) the Accrued Liability.
Deferred Asset Gain (Loss)	The amount by which the Market Value of Assets exceeds/ (is less than) the Actuarial Value of Assets, calculated for assets other than real return bonds. At January 1, 2014 the Deferred Asset Gain has been fully recognized.
Members' Pensionable Earnings	The covered Earnings (see definition under "Plan Provisions") for Active and Disabled Members accruing service at the valuation date.
Current Service Cost	The actuarial present value of the benefits expected to be earned in respect of service during the year following the valuation date. The Required Member Contributions are subtracted from the Total Current Service Cost to derive the University Current Service Cost. For funding purposes, the University Current Service Cost is expressed as a percentage of the Required Member Contributions. This amount is also shown as a percentage of Members' Pensionable Earnings.
Solvency Liability	The actuarial present value of benefits earned for service prior to the valuation date, determined as if the Pension Plan were terminated on the valuation date. The Solvency Liability is calculated using the assumptions summarized on page 54 of this report and excludes liabilities for future escalated adjustments (indexation).
Wind-Up Liability	Equal to the Solvency Liability, but including liabilities for future escalated adjustments.
Transfer Ratio	The ratio of Market Value of Assets to the Wind-Up Liability. If the Transfer Ratio is less than 1.00, restrictions may be placed on lump-sum transfers in respect of a member upon termination of employment.

Going Concern Funding Requirements	The University Current Service Cost, plus, if an Unfunded Liability and/or Solvency Deficit exists, Special Payments towards liquidating the Unfunded Liability and/or Solvency Deficit.
Personnel Data	
Active Members	Members contributing to the Pension Plan as of the valuation date. Includes both full-time and part-time Members and Members on a paid or unpaid leave of absence who have elected to pay their Required Member Contributions.
Disabled Members	Members who are certified to be totally disabled by a medical doctor and in receipt of disability income under the University's long term disability income plan. Such Members continue to accrue benefits but do not make the Required Member Contributions.
Retired Members and Surviving Beneficiaries	Members who have retired as of the valuation date, or surviving beneficiaries of such Members, and are in receipt of a pension from the trust fund.
Terminated Vested Members	Members who have terminated employment as of the valuation date and who are entitled to a monthly pension commencing at normal retirement date.
Suspended Members	Members who have previously joined the Plan but elected to cease making further contributions to the Plan until age 35.

Summary

	As of January 1, 2011	As of January 1, 2014[1,2]
Going Concern Valuation Results		
Past Service		
Actuarial Value of Assets	$ 885,225,589	$ 1,156,065,428
Less: Accrued Liability	1,026,734,422	1,305,570,459
Funding Excess/(Unfunded Liability)	$ (141,508,833)	$ (149,505,031)
As a % of Accrued Liability	13.8%	11.5%
Market Value of Assets	$ 959,478,177	$ 1,194,775,607
Deferred Asset Gain (Loss)[3]	$ 26,358,618	$ n/a
Current Service		
Total Current Service Cost	$ 42,744,681	$ 53,202,405
Less: Required Member Contributions	(20,212,781)	(25,986,716)
University Current Service Cost	$ 22,531,900	$ 27,215,689
As a % of Required Member Contributions	111.5%	104.7%
As a % of Members' Pensionable Earnings	7.63%	7.66%
Members' Pensionable Earnings	$ 295,266,160	$ 355,351,815
Solvency Valuation Results		
Solvency Assets[4]	$ 958,978,177	$ 1,194,275,607
Solvency Liability—Without Escalated Adjustments	996,710,462	1,270,650,784
Solvency Excess/(Deficit)	$ (37,732,285)	$ (76,375,177)
Wind-Up Valuation Results		
Wind-Up Assets[5]	$ 958,978,177	$ 1,194,275,607
Wind-Up Liability—With Escalated Adjustments	1,455,693,861	2,041,789,760
Wind-Up Excess/(Deficit)	$ (496,715,684)	$ (847,514,153)
Transfer Ratio	0.66	0.58

[1] After change in actuarial assumptions and asset valuation method
[2] Reflects change in Required Member Contributions effective January 1, 2013 and plan design changes effective January 1, 2014
[3] Calculated for assets other than real return bonds
[4] Net of a provision of $500,000 for estimated wind-up expenses

	As of January 1, 2011	As of January 1, 2014
Funding Requirements Under Going Concern Valuation		
Required Member Contributions	$ 20,212,781	$ 25,986,716
University Current Service Cost	$ 22,531,900	$ 27,215,689
As a % of Required Member Contributions	111.5%	104.7%
Plus: Special Payments to Amortize Unfunded Liability	8,124,219[1]	14,985,678[2]
Equals: Total University Contributions	$ 30,656,119	$ 42,201,367
As a % of Required Member Contributions	151.7%[3]	162.4%
Statutory Minimum Required University Contribution[3]	$ 28,980,961	$ 42,201,367
Personnel Data		
Active Members (Includes Members on Leave)	3,518	3,891
Disabled and Suspended Members	105	108
Retired Members and Surviving Beneficiaries	1,432	1,603
Terminated Vested Members	432	493
Total	5,487	6,095

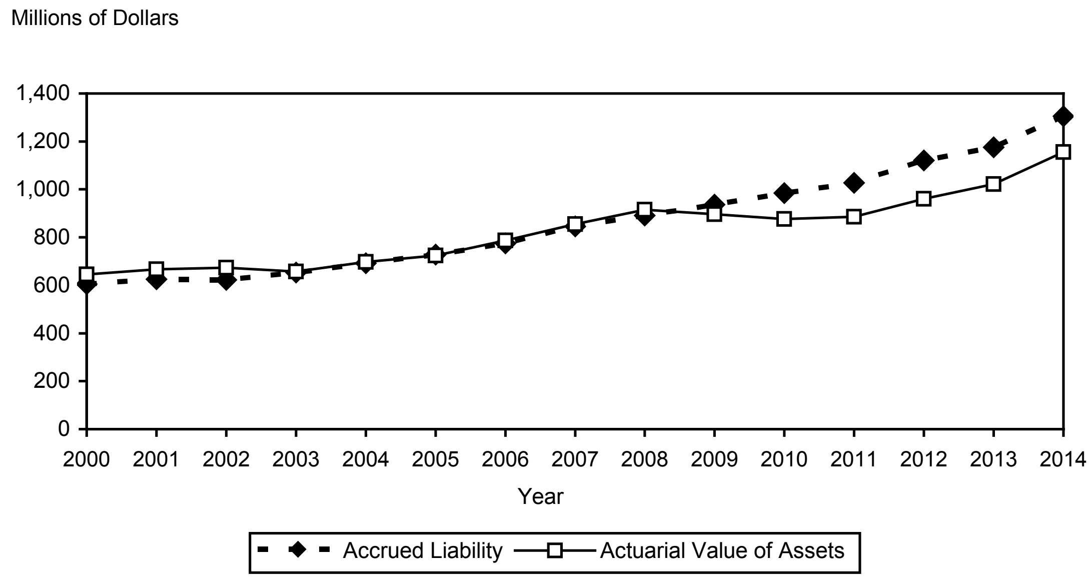
[1] Reflects amount required to bring the University contributions to 151.7% of Required Member Contributions in 2011, as per the funding protocols established by the Committee

[2] On basis of solvency relief granted pursuant to Ontario Regulation 178/11

[3] Reflects 145.0% of Required Member Contributions up to April 30, 2011 and 155.0% of Required Member Contributions from May 1, 2011

[3] January 1, 2011 going concern valuation excluded escalated adjustments for purpose of determining Minimum Required University contribution

History of Accrued Liability and Funding Excess/(Unfunded Liability)



Year	Actuarial Value of Assets (AVA)	Accrued Liability (AL)	Funding Excess/ (Unfunded Liability)	As a Percentage of AL
(Millions of dollars)				
2000	$ 644.8	$ 604.5	$ 40.3	6.7%
2001	$ 666.7	$ 625.3	$ 41.4[1]	6.6%
2002	$ 673.3	$ 622.9	$ 50.4[1]	2.6%
2003	$ 657.2	$ 653.1	$ (4.1)[2]	(0.6%)
2004	$ 697.4	$ 691.6	$ 5.8[3]	0.8%
2005	$ 724.0	$ 728.7	$ (4.7)	(0.7%)
2006	$ 786.7	$ 775.3	$ 11.4[4]	1.5%
2007	$ 854.4	$ 845.6	$ 8.8[5]	1.0%
2008	$ 915.1	$ 891.6	$ 23.5	2.6%
2009	$ 896.5	$ 936.5	$ (40.0)	(4.3%)
2010	$ 876.7	$ 984.9	$ (108.2)	(11.0%)
2011	$ 885.2	$ 1,026.7	$ (141.5)	(13.8%)
2012	$ 961.0	$ 1,120.9	$ (159.9)[1]	(14.3%)
2013	$ 1,021.4	$ 1,175.5	$ (154.1)	(13.1%)
2014	$ 1,156.1	$ 1,305.6	$ (149.5)[6]	(11.5%)

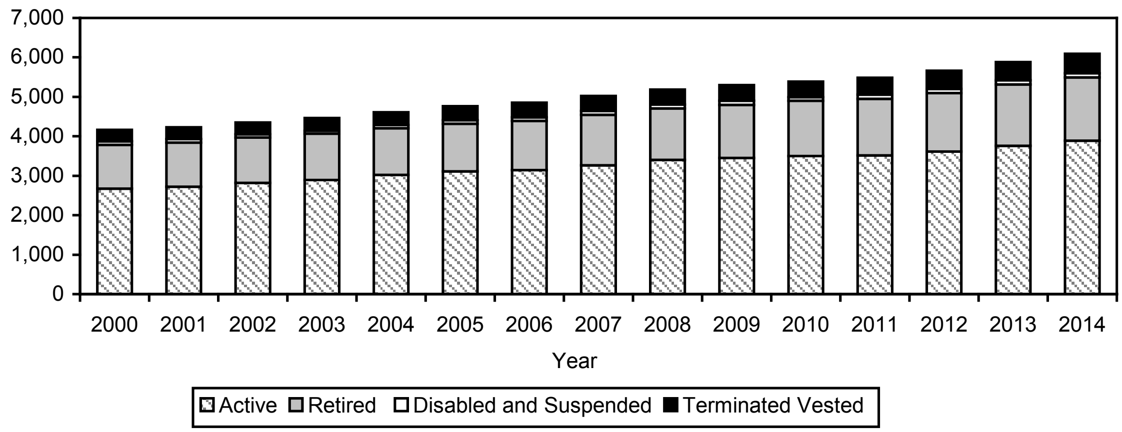
[1] After change in assumptions
[2] After maximum pension limit change
[3] After maximum pension limit change, change in assumptions and change in asset valuation method
[4] After maximum pension limit change and change in discount rate used to calculate actuarial value of real return bonds
[5] After maximum pension limit change and change in assumptions
[6] After change in assumptions, change in asset valuation method, and change in plan provisions

History of University Current Service Cost as a Percent of Members' Pensionable Earnings

Year	University Current Service Cost	Estimated Required Member Contributions	Members' Pensionable Earnings	Percent of Members' Pensionable Earnings	Percent of Required Member Contributions
(Millions of dollars)					
2000[1]	$ 15.0	$ 7.8	$ 148.1	10.1%	193.4%
2001[1 2]	$ 14.2	$ 8.0	$ 155.2	9.1%	177.5%
2002[1 2]	$ 14.7	$ 8.7	$ 167.3	8.9%	169.0%
2003[3]	$ 15.4	$ 9.4	$ 177.7	8.8%	164.6%
2004[4]	$ 16.6	$ 10.0	$ 190.3	8.7%	165.0%
2005	$ 17.2	$ 10.7	$ 204.7	8.4%	161.1%
2006[3]	$ 18.9	$ 11.2	$ 216.3	8.7%	168.5%
2007[5]	$ 21.9	$ 12.7	$ 233.9	9.4%	172.6%
2008[6]	$ 22.1	$ 15.1	$ 255.3	8.7%	146.2%
2009[6]	$ 21.5	$ 17.8	$ 269.4	8.0%	121.0%
2010	$ 22.2	$ 19.7	$ 287.8	7.7%	112.4%
2011	$ 22.5	$ 20.2	$ 295.3	7.6%	111.5%
2012[2]	$ 26.2	$ 21.0	$ 308.5	8.5%	125.0%
2013	$ 27.0	$ 22.7	$ 332.6	8.1%	118.8%
2014[5]	$ 27.2	$ 26.0	$ 355.4	7.7%	104.7%

[1] Amounts adjusted to reflect no reduction in Required Member Contributions in 2000, 2001 and 2002
[2] Reflects assumption changes from prior valuation
[3] Reflects change in maximum pension limit
[4] Reflects assumption changes from prior valuation and change in maximum pension limit
[5] Reflects assumption changes from prior valuation, plan amendments and contribution change from prior valuation
[6] Reflects mid-year contribution change

History of Distribution of Members



Year	Active	Retired	Disabled and Suspended	Terminated Vested	Total
2000	2,676	1,107	88	296	4,167
2001	2,722	1,120	88	299	4,229
2002	2,822	1,145	82	300	4,349
2003	2,891	1,173	80	317	4,461
2004	3,025	1,179	83	320	4,607
2005	3,113	1,209	82	356	4,760
2006	3,141	1,248	90	376	4,855
2007	3,265	1,279	95	387	5,026
2008	3,402	1,306	97	381	5,186
2009	3,455	1,345	105	395	5,300
2010	3,499	1,400	94	394	5,387
2011	3,518	1,432	105	432	5,487
2012	3,617	1,480	106	457	5,660
2013	3,760	1,555	109	458	5,882
2014	3,891	1,603	108	493	6,095

Going Concern Valuation Results

The following table shows the going concern valuation results broken down by member type.

Past Service		
Actuarial Value of Assets		$ 1,156,065,428
Less: Accrued Liability		
Active Members	$ 702,327,498	
Disabled and Suspended Members	17,175,900	
Retired Members and Surviving Beneficiaries	551,387,278	
Terminated Vested Members	27,199,975[1]	
Additional Voluntary Contribution Balances	959,189	
Member Flex Contribution Balances	1,251,748	
Cost of Living Increase Effective May 1, 2014 (0.94%)	5,268,871	
Total		$ 1,305,570,459
Funding Excess/(Unfunded Liability)		$ (149,505,031)
As a % of Accrued Liability		11.5%
Market Value of Assets		$ 1,194,775,607
Deferred Asset Gain (Loss)[2]		$ N/A
Current Service Cost		
Total Current Service Cost		$ 53,202,405
Less: Required Member Contributions		(25,986,716)
University Current Service Cost		$ 27,215,689
As a % of Required Member Contributions		104.7%
As a % of Members' Pensionable Earnings		7.66%
Members' Pensionable Earnings		$ 355,351,815

[1] Reflects actual indexation as of May 1, 2014 and indexation in following two years until next valuation date
[2] Calculated for assets other than real return bonds; deferred asset gain at January 1, 2014 has been fully recognized

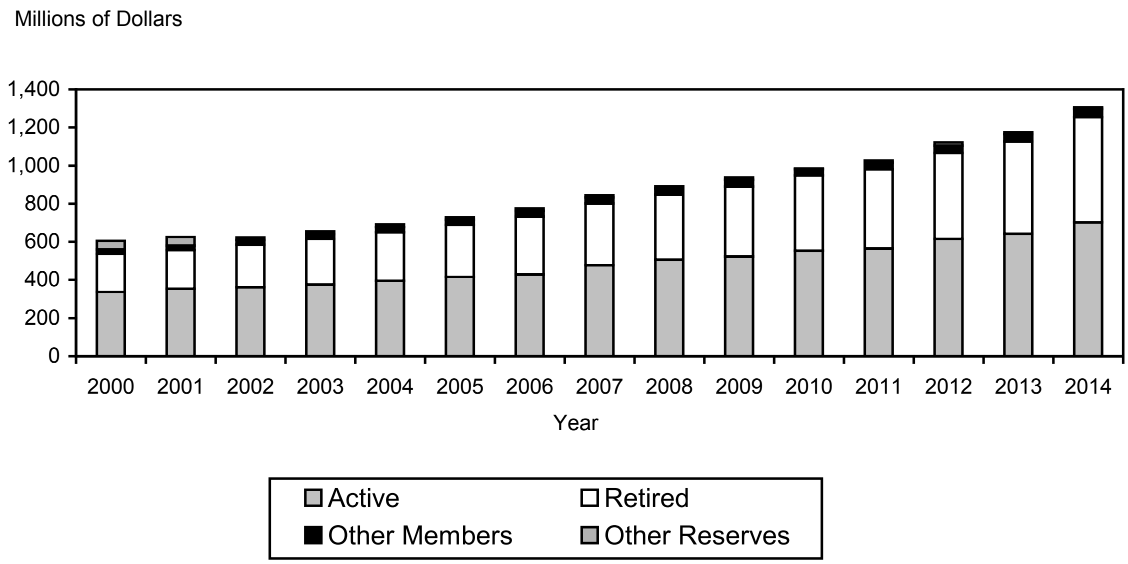
Going Concern Valuation Sensitivity Results

The Accrued Liability and the Total Current Service Cost are based on a nominal discount rate assumption of 6.00% per year. Combined with an assumed inflation rate of 2.25% per year, the real discount rate assumption is 3.75% per year. The impact on these results of lowering the nominal discount rate by 1.00% per year to 5.00% per year, which means lowering the real discount rate assumption to 2.75% per year, is as follows:

Going Concern Valuation Sensitivity Results	January 1, 2014
Accrued Liability	
Accrued Liability at valuation discount rate	$ 1,305,570,459
Accrued Liability at valuation discount rate less 1.00%	$ 1,512,374,093
Impact of 1.00% decrease in valuation discount rate	$ 206,803,634
Percentage increase from 1% decrease in valuation discount rate	15.8%
Total Current Service Cost	
Total Current Service Cost at valuation discount rate	$ 53,202,405
Total Current Service Cost at valuation discount rate less 1.00%	$ 66,661,234
Impact of 1.00% decrease in valuation discount rate	$ 13,458,829
Percentage increase from 1.00% decrease in valuation discount rate	25.3%

Note that using a discount rate 1.00% higher than that assumed would result in a comparable reduction in the Accrued Liability and the Total Current Service Cost.

History of Distribution of Accrued Liability



Year	Active Members	Retired Members	Other Members[1]	Other Liabilities[2]	Total
(Millions of dollars)					
2000	$ 336.7	$ 199.1	$ 23.4	$ 45.3	$ 604.5
2001	$ 353.2	$ 202.8	$ 24.1	$ 45.2	$ 625.3
2002	$ 362.1	$ 222.4	$ 25.1	$ 13.3	$ 622.9
2003	$ 376.0	$ 239.2	$ 24.7	$ 13.2	$ 653.1
2004	$ 395.2	$ 255.9	$ 25.7	$ 14.8	$ 691.6
2005	$ 415.1	$ 274.0	$ 26.8	$ 12.8	$ 728.7
2006	$ 429.9	$ 303.4	$ 29.8	$ 12.2	$ 775.3
2007	$ 477.5	$ 324.4	$ 31.6	$ 12.1	$ 845.6
2008	$ 506.8	$ 342.4	$ 30.9	$ 11.5	$ 891.6
2009	$ 523.1	$ 367.7	$ 34.5	$ 11.2	$ 936.5
2010	$ 553.3	$ 395.0	$ 32.6	$ 4.0	$ 984.9
2011	$ 565.0	$ 416.3	$ 35.3	$ 10.1	$ 1,026.7
2012	$ 615.5	$ 450.7	$ 39.1	$ 15.6	$ 1,120.9
2013	$ 641.8	$ 485.5	$ 38.4	$ 9.8	$ 1,175.5
2014	$ 702.3	$ 551.4	$ 44.4	$ 7.5	$ 1,305.6

[1] Terminated Vested, Suspended and Disabled Members
[2] Additional voluntary contribution balances, Member flex contribution balances and cost of living increase effective May 1 (July 1 for 2008 and prior years) following valuation date

The following table shows the actual asset mix as of January 1, 2014 and January 1, 2011.

	As of January 1, 2011	As of January 1, 2014
Actual Asset Mix (% of Total Market Value)[1]		
Canadian Equities	17%	12%
Foreign Equities	24%	29%
Fixed Income/Cash	37%	34%
Real Return Bonds	22%	17%
Real Estate	0%	3%
Infrastructure	0%	5%
Total	100%	100%

[1] Asset mix is based on the underlying assets excluding in-transit contributions and payments

The following chart shows the long-term target asset mix under the Statement of Investment Policies and Procedures.

	Long-Term Target Asset Mix
Target Asset Mix (% of Total Market Value, Excluding Real Return Bonds)	
Canadian Equities	15%
Global Equities	40%
Fixed Income/Cash	35%
Real Estate	5%
Infrastructure	5%
Total	100%

Reconciliation of Plan Assets - Unaudited

	Total Fund	Non-Real Return Bonds	Real Return Bonds
Market Value of Assets, December 31, 2010	$ 959,478,177	$ 751,689,339	$ 207,788,838
Plus:			
Required Member Contributions	$ 19,621,482	$ 19,621,482	$ -
University Contributions	29,845,655	29,845,655	-
Member Flex Contributions[1]	75,606	75,606	-
Transfers In From Other Plans	845,371	845,371	-
Investment Income	51,665,641	24,973,250	26,692,391
Net Transfers From Other Accounts	-	6,654,959	(6,654,959)
	$ 102,053,755	$ 82,016,323	$ 20,037,432
Less:			
Pension and Lump-Sum Refunds Paid[1]	$ 46,055,329	$ 46,055,329	$ -
Expenses and Fees	3,053,149	3,053,149	-
	$ 49,108,478	$ 49,108,478	$ -
Market Value of Assets, December 31, 2011	$ 1,012,423,454	$ 784,597,184	$ 227,826,270
2011 Rate of Return (After Expenses)	5.05%	2.89%	13.05%

	Total Fund	Non-Real Return Bonds	Real Return Bonds
Market Value of Assets, December 31, 2011	$ 1,012,423,454	$ 784,597,184	$ 227,826,270
Plus:			
Required Member Contributions	$ 21,103,015	$ 21,103,015	$ -
University Contributions	34,152,935	34,152,935	-
Member Flex Contributions[2]	53,323	53,323	-
Transfers In From Other Plans	1,848,564	1,848,564	-
Investment Income	80,180,964	74,237,444	5,943,520
Net Transfers From Other Accounts	-	6,757,542	(6,757,542)
	$ 137,338,801	$ 138,152,823	$ (814,022)
Less:			
Pension and Lump-Sum Refunds Paid[2]	$ 57,241,744	$ 57,241,744	$ -
Expenses and Fees	2,530,205	2,530,205	-
	$ 59,771,949	$ 59,771,949	$ -
Market Value of Assets, December 31, 2012	$ 1,089,990,306	$ 862,978,058	$ 227,012,248
2012 Rate of Return (After Expenses)	7.67%	9.10%	2.65%

[1] Includes amounts receivable/payable at December 31, 2011
[2] Includes amounts receivable/payable at December 31, 2012

	Total Fund	Non-Real Return Bonds	Real Return Bonds
Market Value of Assets, December 31, 2012	$ 1,089,990,306	$ 862,978,058	$ 227,012,248
Plus:			
Required Member Contributions	$ 24,220,418	$ 24,220,418	$ -
University Contributions	37,616,913	37,616,913	-
Member Flex Contributions[1]	36,260	36,260	-
Transfers In From Other Plans	519,122	519,122	-
Investment Income	102,540,485	116,895,462	(14,354,977)
Net Transfers From Other Accounts	-	6,826,881	(6,826,881)
	$ 164,933,198	$ 186,115,056	$ (21,181,858)
Less:			
Pension and Lump-Sum Refunds Paid[1]	$ 56,266,721	$ 56,266,721	$ -
Expenses and Fees	3,179,672	3,179,672	-
	$ 59,446,393	$ 59,446,393	$ -
Market Value of Assets, December 31, 2013 (unaudited)	$ 1,195,477,111	$ 989,646,721	$ 205,830,390
Plus:			
Adjustment to Bring Unaudited Value Equal to Audited Value[2]	(701,504)	(701,504)	
Market Value of Assets, December 31, 2013	$ 1,194,775,607	$ 988,945,217	$ 205,830,390
2013 Rate of Return (After Expenses)	9.09%	13.08%	(6.42)%

The reconciliation figures are taken from the unaudited year-end statements prepared by CIBC Mellon. Amounts receivable and payable were provided by the University of Waterloo. A further adjustment has been made to the December 31, 2013 value in respect of accrued items to bring the Market Value of Assets used for valuation purposes equal to the amount shown in the audited financial statements before adjustments to reflect that certain in-transit benefit payments are already included in the liabilities under the actuarial valuation.

1 Includes amounts receivable/payable at December 31, 2013

2 Calculated as $1,188,750,975 as per audited statements, plus $6,024,632 of in-transit benefit payments that for valuation purposes are included in the liabilities

Determination of Actuarial Value of Assets – Before Recognizing Deferred Asset Gains

Under the Actuarial Value of Assets method, the investment gains/losses vis-à-vis the expected return on assets, excluding real return bonds, are spread on a linear basis over three years.

As a result, the Actuarial Value of Assets (before resetting to market value), excluding real return bonds, as of January 1, 2014 excludes the following fractions of the investment gains/losses vis-à-vis the expected return that arose during the three years preceding the valuation date:

Year	Original Amount of (Gain)/Loss	(Gain)/Loss Recognized in Prior Years	(Gain)/Loss Recognized at January 1, 2014	(Gain)/Loss to be Recognized in Future Years
2011	$ 26,170,665	$ 17,447,110	$ 8,723,555	$ 0
2012	(23,629,091)	(7,876,363)	(7,876,364)	(7,876,364)
2013	(60,676,825)	N/A	(20,225,609)	(40,451,216)
Total				$ (48,327,580)

The asset values produced by this method are related to the market value of the assets, with the intention that year-to-year fluctuations in the market-related asset values will tend to be less volatile than fluctuations in the market values. To the extent that more investment gains than losses will arise over the long term, the actuarial value will tend to be lower than the market value, and vice versa.

The actuarial value of the real return bonds has been determined by discounting their projected cash flow using a discount rate of 3.75%, equal to the real rate of return assumption incorporated in the going concern actuarial assumptions described in this report. We note that if the market value of the real return bonds (i.e., projected cash flow discounted at market real interest rates) was used for purposes of calculating the actuarial value of assets in the going concern valuation, the real interest rate used to discount the liabilities would have to be reduced to reflect the lower future return expectation on the portion of the actuarial value of assets relating to the real return bonds.

The Actuarial Value of Assets, determined as at January 1, 2014 using the above method for assets excluding real return bonds and the discounted projected cash flow method for the real return bonds, is $1,107,845,815.

Determination of Actuarial Value of Assets – After Recognizing Deferred Asset Gains

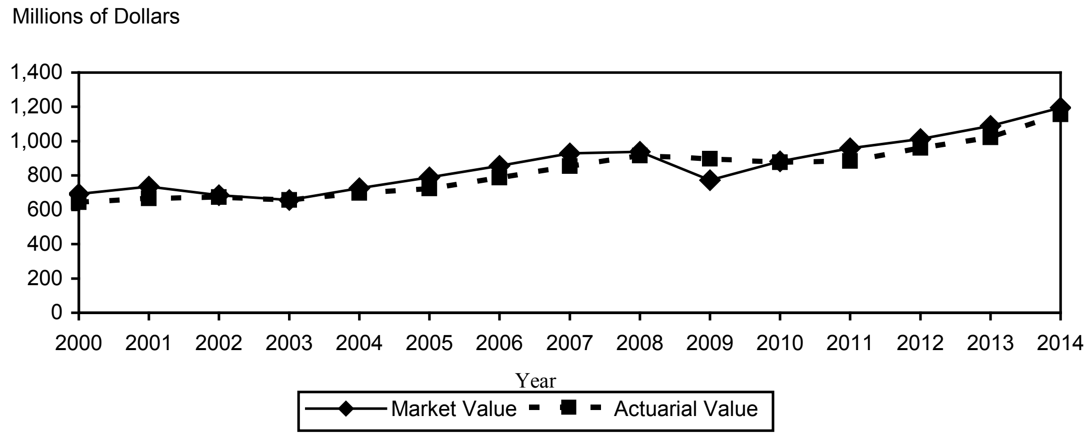
Effective with this valuation, the Actuarial Value of Assets for assets other than real return bonds, is set equal to the Market Value of Assets. The actuarial value of the real return bonds has been determined by discounting their projected cash flow using a discount rate of 3.75%, equal to the real rate of return assumption incorporated in the going concern actuarial assumptions described in this report.

The Actuarial Value of Assets is derived as follows:

Market Value of Assets other than Real Return Bonds		$ 988,945,217
Plus:	Actuarial Value of Real Return Bonds[1]	167,120,211
Equals:	Actuarial Value of Assets	$ 1,156,065,428

[1] Market Value of Real Return Bonds is $205,830,390 at January 1, 2014

History of Market and Actuarial Value of Assets



Beginning of Year	**Market Value of Assets**	**Actuarial Value of Assets**
(millions of dollars)		
2000	$ 692.4	$ 644.8[1 2]
2001	$ 735.0	$ 666.7[1 2]
2002	$ 686.0	$ 673.3[1 2]
2003	$ 658.1	$ 657.2[1 2]
2004	$ 725.6	$ 697.4[3 4]
2005	$ 790.1	$ 724.0[3 4]
2006	$ 857.1	$ 786.7[3 5]
2007	$ 929.1	$ 854.4[3 6]
2008	$ 938.1	$ 915.1[3 6]
2009	$ 773.1	$ 896.5[3 6]
2010	$ 882.0	$ 876.7[3 6]
2011	$ 959.5	$ 885.2[3 6]
2012	$ 1,012.4	$ 961.0[3 6]
2013	$ 1,090.0	$ 1,021.4[3 6]
2014	$ 1,194.8	$ 1,156.1[7]

[1] Actuarial value of assets, excluding real return bonds, is calculated based on the average of the market yield rates at the three year ends prior to the valuation date adjusted with the net cash flow in the current year
[2] Actuarial value of real return bonds calculated using 3.75% discount rate
[3] Actuarial value of assets, excluding real return bonds, is calculated using adjusted market value method which spreads investment gains or losses linearly over three years
[4] Actuarial value of real return bonds calculated using 4.25% discount rate
[5] Actuarial value of real return bonds calculated using 4.00% discount rate
[6] Actuarial value of real return bonds calculated using 3.85% discount rate
[7] Actuarial value of assets excluding real return bonds is reset to market value. Actuarial value of real return bonds calculated using 3.75% discount rate

History of Asset Returns

The following table shows the history of returns on the market value of assets (excluding real return bonds) and the interest rate credited on employee contributions.

Year	Return on Market Value[1] (After Expenses)	Interest Rate Credited on Employee Contributions
1969	-2.37%	5.00%
1970	8.65%	3.18%
1971	11.49%	4.12%
1972	19.90%	5.72%
1973	-4.94%	9.42%
1974	-9.58%	8.78%
1975	11.96%	4.22%
1976	11.74%	4.34%
1977	9.64%	2.30%
1978	17.12%	5.94%
1979	19.05%	12.62%
1980	23.56%	14.39%
1981	-0.80%	17.34%
1982	23.57%	14.73%
1983	19.16%	16.35%
1984	8.54%	16.37%
1985	24.56%	12.62%
1986	12.21%	18.96%
1987	1.00%	16.12%
1988	10.50%	11.58%
1989	16.02%	12.03%
1990	-3.33%	9.97%
1991	18.96%	6.05%

Year	Return on Market Value[1] (After Expenses)	Interest Rate Credited on Employee Contributions
1992	6.40%	10.54%
1993	20.48%	9.51%
1994	-2.43%	10.63%
1995	16.29%	10.85%
1996	20.11%	10.19%
1997	12.65%	13.61%
1998	7.98%	11.66%
1999	10.76%	14.26%
2000	8.04%	12.88%
2001	-4.18%	9.86%
2002	-4.59%	5.65%
2003	12.16%	2.51%
2004	9.40%	2.86%
2005	9.65%	3.20%
2006	13.25%	6.66%
2007	1.62%	11.11%
2008	-21.51%	8.48%
2009	14.70%	0.75%
2010	8.49%	2.02%
2011	2.89%	0.83%
2012	9.10%	1.58%
2013	13.08%	1.45%

The returns (after all expenses) on market value have been calculated assuming contributions and benefit payments take place in the middle of the year.

[1] Excluding real return bonds

Solvency Valuation

The solvency test required under the *Pension Benefits Act* (Ontario) measures the funded status of the Pension Plan on a wind-up basis, but excluding liabilities for future escalated adjustments (indexation). To the extent that there is a Solvency Deficiency, additional funding is required.

The Solvency Liability is therefore determined as if the Plan is wound up as of January 1, 2014, taking into account Section 74 of the *Pension Benefits Act* (Ontario) (member entitlements on Plan wind-up), but excluding liabilities for future escalated adjustments. The liability is calculated based on market interest rates.

The Solvency Liability may be adjusted to reflect the impact of using a weighted-average interest rate over a period of up to five years.

Solvency Assets are equal to the Market Value of Assets of the pension fund on an accrued basis and excluding an allowance for termination expenses. The Solvency Assets may be adjusted to reflect:

(1) the impact of using an asset method which smoothes out market gains/(losses) over a period of up to five years, plus;
(2) the present value of any remaining Special Payments established before January 1, 1988, plus;
(3) the present value of any Special Payments required to liquidate any Past Service Unfunded Liability (for service not previously recognized for benefit determination purposes) established on or after January 1, 1988, plus;
(4) the present value of any Special Payments other than those in (2) or (3) above that are scheduled for payment within five years after the valuation date.

There are no adjustments made to either the Solvency Liability or the Solvency Assets for the January 1, 2014 Solvency Valuation for the Plan other than reflecting the value of special payments already scheduled.

The Transfer Ratio under the *Pension Benefits Act* (Ontario) is the ratio of the Market Value of Assets to the Wind-Up Liability. The Transfer Ratio at January 1, 2014 is 0.59. If the Transfer Ratio is less than 1.00, a Transfer Deficiency exists, in which case restrictions are placed on transfers from the Plan fund. In this case, the administrator may transfer 100% of the commuted value of a pension, deferred pension or ancillary benefit if:

(1) an amount equal to the transfer deficiency in respect of that commuted value transfer is remitted to the pension fund; or
(2) the aggregate of the transfer deficiencies for all transfers made since the last review date does not exceed 5 per cent of the assets of the Plan at that time.

Note that the limit in (2) is much higher than the aggregate transfer deficiencies that would be expected to occur in this Pension Plan.[1]

[1] Specifically, additional contributions would only be required if the aggregate of transfer deficiencies for all transfers made since January 1, 2014 exceeds 5% of plan assets ($59,738,780), which would only occur if the aggregate of all transfers made since January 1, 2014 exceeds $101,252,169 (equal to $59,738,780 divided by 0.59)

Solvency and Wind-Up Valuation Results

	Solvency Valuation	Wind-Up Valuation
Market Value of Assets	$ 1,194,775,607	$ 1,194,775,607
Less: Wind-Up Expenses	500,000	500,000
Solvency/Wind-Up Assets	$ 1,194,275,607	$ 1,194,275,607
Solvency/Wind-Up Liabilities		
Active Members	$ 698,081,399	$ 1,208,126,587
Disabled and Suspended Members	18,314,293	30,399,783
Pensioners and Beneficiaries	522,573,316	737,677,521
Deferred Vested Members	29,470,839	63,374,932
Voluntary Contribution Balances	959,189	959,189
Member Flex Contribution Balances	1,251,748	1,251,748
Total	$ 1,270,650,784	$ 2,041,789,760
Solvency Excess/(Deficiency)	$ (76,375,177)	$ (847,514,153)
Transfer Ratio (Market Value of Assets/Wind-Up Liabilities)	N/A	0.59
Solvency Ratio (Market Value of Assets/Solvency Liabilities)	0.94	N/A

Pursuant to the Regulations to the *Pension Benefits Act* (Ontario), the Solvency Liability excludes the liabilities associated with future escalated adjustments (indexation). Reflecting future escalated adjustments in the wind-up valuation, increases the liabilities by $771,138,976.

The assumptions used to determine the Solvency/Wind-Up Liability are summarized on page 54 of this report. Note that the interest rates used to calculate the wind-up liabilities reflect the estimated value of future indexation of pensions during both the preretirement and postretirement periods.

In our opinion, the value of Plan assets, less a reasonable allowance for wind-up expenses, would be less than the actuarial liabilities (including escalated adjustments) if the Plan were wound-up on the valuation date. Assuming that there is a competitive market for inflation-indexed annuities, or that a reasonable fixed rate of indexation could be substituted for inflation-linked indexation to facilitate annuity purchases, the estimated actuarial liabilities, including escalated adjustments, would exceed the Market Value of Assets (net of wind-up expenses) by $847,514,153 if the Plan were wound-up on January 1, 2014.

Solvency Valuation Sensitivity Results

The Solvency Liability is based, among other assumptions, on the discount rate assumptions summarized in the Actuarial Assumptions section of this report. The impact on these results of using a discount rate 1.00% lower is as follows:

Solvency Valuation Sensitivity Results	**January 1, 2014**
Solvency Liability	
Solvency Liability at solvency discount rates	$ 1,270,650,784
Solvency Liability at solvency discount rates less 1.00%	$ 1,440,549,092
Impact of 1.00% decrease in solvency discount rates	$ 169,898,308
Percentage increase from 1.00% in solvency discount rates	13.4%

Note that using a solvency discount rate 1.00% higher than that assumed would result in a comparable reduction in the Solvency Liability.

Solvency Valuation Incremental Cost

The incremental cost on a solvency basis represents the present value at January 1, 2014 of the expected aggregate change in the Solvency Liability between January 1, 2014 and December 31, 2016, the date of the next required valuation. The Actuarial Assumptions section of this report provides more detail regarding the calculation methodology and assumptions. An educational note was published in December 2010 by the Canadian Institute of Actuaries to provide guidance to actuaries for this calculation.

Based on this methodology and on these assumptions, the incremental cost on a solvency basis for the period from January 1, 2014 to December 31, 2016 is estimated to be $178,908,790.

Contributions

Minimum Required Contribution

For a Plan Year, the minimum required contribution is equal to the sum of:

(a) University Current Service Cost for the Plan Year.

(b) Special Payments toward amortizing any Going Concern Unfunded Accrued Liability over 15 years from the date on which the unfunded liability was established.

(c) Special Payments toward amortizing any Solvency Deficiency over five years from the date on which the deficiency was established.

In order to satisfy the requirements of the *Pension Benefits Act* (Ontario) and its Regulations, contributions to the Plan must be made in accordance with the following rules:

(a) Required Member Contributions to the Plan must be remitted to the pension fund within 30 days following the end of the month in which the contributions were received from the employee or deducted from his or her remuneration.

(b) University Current Service Cost contributions must be remitted to the pension fund within 30 days after the month for which the contributions are payable.

(c) University Special Payments must be remitted to the pension fund by the end of the month for which they are payable.

Schedule of Special Payments Before Solvency Funding Relief

Special Payments to amortize the Going Concern Unfunded Accrued Liability are as follows, reflecting the University's election to not defer the start of the Special Payments by one year:

Original Effective Date	Original Amount	Annual Special Payment	Remaining Years	Balance as of January 1, 2014
January 1, 2014	$149,505,031	$ 14,985,678	15.00	$149,505,031

Special Payments to amortize the Statutory Solvency Deficiency prior to the application of special solvency funding relief measures are as follows:

Original Effective Date	Original Amount	Annual Special Payment	Remaining Years	Balance as of January 1, 2014
January 1, 2010	$ 37,732,285	$ 13,200,862	0.08	$ 1,096,746
January 1, 2014	$ 6,865,363[1]	$ 1,503,838	5.00	$ 6,865,363

[1] Solvency Deficiency of $76,375,177 minus $1,096,746 (present value of remaining Solvency Special Payments established January 1, 2010 plus present value of special payments to amortize the Going Concern Unfunded Accrued Liability during the period from January 1, 2014 to December 31, 2018) measured using an interest rate of 3.70% per year, which is the liability-weighted average of interest rates used for Solvency Valuation

Minimum Special Payments Under Solvency Funding Relief Applicable to Broader Public Sector Pension Plans

Pursuant to Ontario Regulation 178/11 made under the *Pension Benefits Act*, the Plan has been approved to participate in the first stage of the solvency funding relief measures applicable to broader public sector pension plans.. Therefore, the schedule of Special Payments to amortize the Going Concern Unfunded Accrued Liability will be as follows:

Original Effective Date	Original Amount	Annual Special Payment	Remaining Years	Balance as of January 1, 2014
January 1, 2014	$149,505,031	$ 14,985,678	15.00	$149,505,031

Under the solvency funding relief measures, the minimum Special Payment each year during the Stage 1 period will be determined as the greater of the two tests below:

Test No. 1
Interest on Solvency Deficit
$76,375,177 x 3.70%[1] = $2,825,882

Test No. 2
Solvency Assets - 80% of Solvency Liabilities
$1,194,775,607 - 0.8 x $1,270,650,784 > $0
Amortization of 50% of above result (if less than $0) over 4 years at 3.70% = Nil

The University has elected to begin Special Payments immediately effective January 1, 2014. The annual Going Concern Special Payments exceed the minimum Solvency Special Payments required under Stage 1 Solvency Funding Relief measures. Therefore, no additional Solvency Special Payments will be required.

[1] Liability-weighted average of interest rates used for solvency valuation

Development of Minimum Required University Contribution

The table below presents the development of the Minimum Required University Contribution for the Plan Years beginning on January 1, 2014, January 1, 2015 and January 1, 2016.

	2014	2015	2016
Total Current Service Cost	$ 53,202,405	$ 55,862,525	$ 58,236,682
Less: Required Member Contributions	25,986,716	27,286,052	28,445,709
Equals: University Current Service Cost	$ 27,215,689	$ 28,576,473	$ 29,790,973
Plus: Special Payments Toward Amortizing Unfunded Accrued Liability	14,985,678	14,985,678	14,985,678
Plus: Solvency Special Payments (Minimum Special Payments)	0	0	0
Equals: Minimum Required University Contribution	$ 42,201,367	$ 43,562,151	$ 44,776,651

Maximum Eligible Contribution

Under Subsection 8502(b) of the Regulations to the *Income Tax Act* (the "Act"), each Employer contribution made after 1991 in respect of a defined benefit provision of a registered pension plan must be an eligible contribution pursuant to Subsection 147.2(2) of the Act.

The following contributions are eligible under Section 147.2 of the Act.

- the University Current Service Cost, eligible under Section 147.2(2) subject to certification by the actuary and approval by the Canada Revenue Agency; plus
- Special Payments eligible under Section 147.2(2) up to the amount of the greater of the Unfunded Liability or Wind-Up Deficit subject to certification by the actuary and approval by the Canada Revenue Agency; less
- required application of Excess Surplus; plus
- annual operating expenses that are eligible to be paid from the fund.

The University Current Service Cost and Special Payments for this plan will be eligible under Section 147.2(2) of the Act, subject to the approval of the Canada Revenue Agency.

Experience

Reconciliation of Going Concern Surplus/(Deficit) (in Millions of Dollars)

		2011	2012	2013
Funding Excess/(Unfunded Liability) at January 1		$ (141.5)	$ (159.9)	$ (154.1)
Less:	Total Current Service Cost	(41.5)	(47.5)	(49.9)
Plus:	University Contributions	29.8	34.2	37.6
Plus:	Member Contributions	19.6	21.1	24.2
Plus:	Interest at Discount Rate	(8.7)	(9.5)	(9.0)
Equals:	Expected Funding Excess/(Unfunded Liability) at End of Year	$ (142.3)	$ (161.6)	$ (151.2)
Plus:	Increase/(Decrease) Due to Gains/(Losses):			
	Return on Actuarial Value of Assets	15.2	1.8	16.7
	Indexation of Benefits	(2.3)	3.2	5.9
	Increase in Salaries	10.9	1.2	2.6
	Increase in Income Tax Act Maximum Pension/YMPE	(0.3)	0.8	0.4
	Interest Rate Used for 50% Rule	1.3	0.1	(0.6)
	Termination Experience	2.0	(3.1)	(0.8)
	Retirement Experience	1.6	3.7	2.7
	Mortality Experience	(1.1)	(0.5)	(1.6)
	Data Adjustments	0	(1.3)	(1.0)
	All Other Sources	(4.3)	1.6	(1.8)
Equals:	Funding Excess/(Unfunded Liability) at End of Year, Before Changes in Assumptions/Methods/Plan Provisions	$ (119.3)	$ (154.1)	$ (128.7)
Plus:	Increase/(Decrease) Due to:			
	Plan Amendment	0	0	29.4
	Change in Assumptions/Methods:			
	Change in Mortality Table	Included Below	0	(80.4)
	Change in Economic Assumptions	(40.6)	0	(18.0)
	Recognition of Deferred Asset Gain	0	0	48.2
Equals:	Funding Excess/(Unfunded Accrued Liability) at End of Year	$ (159.9)	$ (154.1)	$ (149.5)

Comments Regarding Experience

Return on Assets

The Committee performed interim actuarial valuations during the three-year period. The assumed rate of return for going concern actuarial valuation purposes and the actual net return on the Actuarial Value of Assets (AVA) were as follows:

Year	Expected Return	Actual Return on AVA
2011	6.35%	8.02%
2012	6.10%	6.23%
2013	6.10%	7.84%

The resulting net gains due to the return on the Actuarial Value of Assets being more than the expected returns were $15.2 million in 2011, $1.8 million in 2012, and $16.9 million in 2013.

The net rate of return based on the actual Market Value of Assets, excluding real return bonds, was 2.89% in 2011, 9.10% in 2012, and 13.08% in 2013.

Indexation of Benefits

The expected rates of increase on benefit entitlements effective May 1 of each year, compared to the actual rates of increase granted are summarized below:

Effective May 1,	Expected COLA	Actual COLA
2012	2.50%	2.91%
2013	2.25%	1.52%
2014	2.25%	0.94%

The result was an actuarial loss of $2.3 million in 2011, a gain of $3.3 million in 2012, and a gain of $5.9 million in 2013.

Salary Increases

The average cumulative salary increase in pensionable earnings from 2011 through 2013 was 13%. This is lower than the expected increases of 4.5% in 2011 and 5% in 2012 and 2013. This generated an actuarial gain of $14.7 million over the three-year period.

Increase in *Income Tax Act* (ITA) Maximum Pension and Year's Maximum Pensionable Earnings (YMPE)

The ITA maximum pension and YMPE each increased 3.7% in 2011, 1.9% in 2012 and 2.7% in 2013. The expected increase was 3.50% in 2011, and 3.25% in each of 2012 and 2013. This resulted in a net actuarial gain of $0.9 million over the three-year period.

Comments Regarding Experience (continued)

Termination Experience

The number of terminations since January 1, 2011 was different than expected under the valuation assumptions. In addition, commuted values paid on termination were higher than expected because of declining interest rates. The net impact is an actuarial loss of $1.9 million over the three-year period.

Retirement Experience

Retirement ages for retirements since January 1, 2011 were slightly later than expected under the valuation assumptions. This resulted in an actuarial gain of $8 million over the three-year period.

Mortality Experience

Mortality rates since January 1, 2011 were lower than expected under the valuation assumptions. This resulted in an actuarial loss of $4.5 million over the three-year period.

All Other Sources

Other factors such as personnel changes and data adjustments, interest rates used for 50% rule etc., different from expected, resulted in a net actuarial loss of $2.7 million over the three-year period.

Discussion of Changes in Actuarial Assumptions and Methods

In the reconciliation of the going concern financial position of the Plan for the period since January 1, 2011, the impact of the change in assumptions is shown partly in 2011 and partly in 2013. The numbers are presented in this way for consistency with valuation reports that were prepared as at January 1, 2012 and January 1, 2013 for Plan management purposes which were not filed with the Financial Services Commission of Ontario (FSCO) or Canada Revenue Agency (CRA).

Assumption Changes

The following economic and demographic assumptions were updated in an interim valuation as of January 1, 2012 and as of this valuation at January 1, 2014:

Assumption	January 1, 2011	January 1, 2012	January 1, 2014
Increase in Consumer Price Index	2.50% per annum	2.25% per annum	No change
Increase in YMPE	3.50% per annum	3.25% per annum	3.00% per annum
Increase in ITA Maximum Pension	3.50% per annum	3.25% per annum	3.00% per annum
Increase in Pensionable Earnings	4.50% per annum	5.00% per annum for 3 years; 4.25% per annum thereafter	No change
Discount Rate	6.35% per annum	6.10% per annum	6.00% per annum
Mortality	1994 Uninsured Pensioner Mortality Table with projected mortality improvements to 2015 using Scale AA	1994 Uninsured Pensioner Mortality Table with generational mortality improvements using Scale AA	2014 Canadian Pensioner Mortality Combined Table with Improvement Scale CPM-B

The updates in the economic and demographic assumptions made as at January 1, 2012 resulted in an increase in the Accrued Liability at January 1, 2012 of $40 million and an increase in Total Current Service Cost of $2.9 million. The further updates to the economic and demographic assumptions as of January 1, 2014, resulted in an additional net increase in Accrued Liability of $98.4 million and an increase in Total Current Service Cost of $1.5 million.

Asset Valuation Method

Coincident with the changes in economic and demographic assumptions above, the Actuarial Value of Assets for all assets other than real return bonds has been reset to Market Value of Assets at January 1, 2014. This results in the recognition of $48.2 million in investment gains which would otherwise be deferred. It is expected that the Actuarial Value of Assets at the next valuation will continue to be determined on a smoothed basis for assets other than real return bonds.

Discussion of Plan Amendments

The following plan design changes have been reflected in the valuation results and resulted in a net reduction of $29.4 million in Accrued Liability and a net reduction of $5.2 million in Total Current Service Cost.:

- Increase in member contribution rates effective January 1, 2013. (Please refer to the Plan Provisions section of this report for a detailed breakdown of the new member contribution rates.)
- For pension benefits earned on or after January 1, 2014, including salary increases on accrued benefits at that date, guaranteed indexation is reduced from 100% of the increase in CPI to 75% of the increase in CPI.
- The averaging period for the highest average earnings calculation will transition from 3 years to 5 years over a 2-year period from December 31, 2013 to December 31, 2015.

Personnel Information

Member Data

The actuarial valuation was based on Member data provided by the University as of October 1, 2013 and supplementary information on personnel changes for the period from October 1, 2013 to December 31, 2013, in order to construct membership data as of January 1, 2014. The last actuarial valuation filed with the pension regulator was as of January 1, 2011. In the interim years, actuarial valuations were performed for Plan management purposes. Tests of the sufficiency and reliability of the data were performed for each valuation and the results were satisfactory. The tests included:

- a reconciliation of Member data against the Member data used for the prior year's 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 prior year's valuation, to ensure consistency of data;
- a reconciliation of Credited Service against the corresponding amounts provided for the prior year's valuation, to ensure that no member accrued more than three years of Credited Service from January 1, 2011. This test also revealed any Members who accrued less than three years of Credited Service;
- a reconciliation of pensionable earnings against the corresponding amounts provided for the prior year's valuation to identify any unusual increases or decreases;
- a reconciliation of accrued benefits against the corresponding amounts provided for the prior year's actuarial valuation to identify any unusual benefit accruals; and
- a reconciliation of any stated benefit payments (for retirees or terminated employees) against the financial statements of the pension fund each year for confirmation of the payments.

A copy of a letter from the University certifying the accuracy and completeness of the data is included in an appendix to this report.

Reconciliation of Membership Status

The table below reconciles the number of Members as of January 1, 2011 with the number of Members as of January 1, 2014 and the changes due to experience in the period.

	Active	Disabled	Suspended	Retirees and Beneficiaries	Terminated Vested	MMO Deferred	Total
Members, January 1, 2010	3,518	93	12	1,432[1]	422	10	5,487
Changes Due to:							
New Entrants	1,002	-	-	-	-	-	1,002
Retirements						-	
Pension	(230)	(17)	-	276	(29)		0
Lump sum	(1)	-	-	(3)	(2)		(6)
Terminations							
Non-Vested	-	-	-	-	-	-	0
Vested - Deferred	(167)	(3)	(3)	-	173	-	0
Vested - Lump Sum	(192)	(3)	(4)	-	(87)	(1)	(287)
Vested - In-Transit	-	-	-	-	-	-	0
Transfers to Suspended	(7)	-	7	-	-	-	0
Deaths							
No Further Payments	(7)	(10)	-	(68)	(1)	-	(86)
Remaining Guarantee	-	-	-	(39)	-	-	(39)
Surviving Spouse	(1)	-	-	(26)	-	-	(27)
New Beneficiary	-	-	-	27	-	-	27
Disability	(58)	58	-	-	-	-	0
Return from Disability	22	(22)	-	-	-	-	0
Re-entry into Plan	5	-	(4)	-	(1)	-	0
Other	-	-	-	1	-	-	1
Change in Certain Only Beneficiaries	-	-	-	(3)	-	-	(3)
Data Correction	7	1	3	6	9	-	26
Net Change	373	4	(1)	171	62	(1)	608
Members, January 1, 2014	3,891	97	11	1,603	484	9	6,095

[1] Includes one Postponed Retiree who is still active but no longer accruing credited service; pensions for Postponed Retirees are not yet in payment

Personnel Characteristics

The valuation was based on personnel data supplied by the University as of October 1, 2013 and supplementary information on personnel changes for the period October 1, 2013 to December 31, 2013. This section presents the characteristics of Active, Disabled and Suspended Members for both the January 1, 2011 and January 1, 2014 valuations.

Active Members (Including Leaves)

	January 1, 2011	January 1, 2014
Number of Members		
Males	1,735	1,883
Females	1,783	2,008
Total	3,518	3,891
Average Age		
Males	48.3	48.4
Females	47.1	46.9
Total	47.7	47.6
Average Years of Credited Service		
Males	11.7	11.4
Females	10.0	9.7
Total	10.8	10.6
Average Pensionable Earnings for Following Year	$ 82,714	$ 89,973
Total Pensionable Earnings for Following Year	$ 290,986,905[1]	$ 350,083,948[2]

Disabled Members

	January 1, 2011	January 1, 2014
Number of Members		
Males	30	26
Females	63	71
Total	93	97
Average Age		
Males	56.2	57.1
Females	54.7	56.2
Total	55.2	56.4
Average Years of Credited Service		
Males	18.4	19.4
Females	16.5	17.7
Total	17.1	18.1
Average Pensionable Earnings for Following Year	$ 46,014	$ 55,769
Total Pensionable Earnings for Following Year	$ 4,279,311[1]	$ 5,409,545[2]

[1] Total Pensionable Earnings for Following Year for Active and Disabled Members is $295,266,216

[2] Total Pensionable Earnings for Following Year for Active and Disabled Members is $355,493,493

Suspended Members

	January 1, 2011	January 1, 2014
Number of Members	12	11
Average Age	32.4	32.6
Average Years of Credited Service	3.3	2.7

Retired and Terminated Vested Members

Following are some pertinent characteristics of the retired and terminated vested members' data as of January 1, 2014. The corresponding data for the six prior years is also shown for comparison purposes.

	Retired Members and Beneficiaries Receiving Lifetime Pensions			
	Number	Average Age	Average Annual Pension	Total Annual Pension
January 1, 2014	1,603	74.2	$ 28,577	$ 45,809,128
January 1, 2013	1,555	73.9	$ 27,789	$ 43,211,501
January 1, 2012	1,480	73.8	$ 26,870	$ 31,927,670
January 1, 2011	1,431	73.6	$ 25,891	$ 39,767,822
January 1, 2010	1,394	73.7	$ 24,950	$ 34,780,762
January 1, 2009	1,341	73.6	$ 23,809	$ 31,927,670
January 1, 2008	1,300	73.4	$ 22,752	$ 29,577,815
January 1, 2007	1,263	73.4	$ 21,959	$ 27,734,307
January 1, 2006	1,230	73.1	$ 21,001	$ 25,831,030
January 1, 2005	1,188	72.8	$ 19,910	$ 23,653,147
January 1, 2004	1,152	72.7	$ 18,985	$ 21,870,743

	Retired Members and Beneficiaries Receiving Bridge Benefits Only			
	Number	Average Age	Average Annual Temporary Pension	Total Annual Temporary Pension
January 1, 2014	0	-	$ -	$ -
January 1, 2013	0	-	$ -	$ -
January 1, 2012	0	-	$ -	$ -
January 1, 2011	0	-	$ -	$ -
January 1, 2010	2	64.8	$ 6,667	$ 13,335
January 1, 2009	4	64.2	$ 6,515	$ 26,059
January 1, 2008	6	63.6	$ 6,646	$ 39,882
January 1, 2007	10	63.3	$ 6,513	$ 65,126
January 1, 2006	13	62.7	$ 6,491	$ 84,385
January 1, 2005	21	62.6	$ 6,314	$ 132,591
January 1, 2004	27	62.4	$ 6,204	$ 167,506

Personnel Information (continued)

	Deferred Pensioners Subject to COLA			
	Number	Average Age	Average Annual Pension	Total Annual Pension
January 1, 2014	475	48.9	$ 5,964	$ 2,832,823
January 1, 2013	436	49.8	$ 5,587	$ 2,435,932
January 1, 2012	434	49.8	$ 5,778	$ 2,507,677
January 1, 2011	408	50.0	$ 6,148	$ 2,508,384
January 1, 2010	379	50.4	$ 6,065	$ 2,298,816
January 1, 2009	380	50.0	$ 6,058	$ 2,302,144
January 1, 2008	362	50.5	$ 5,413	$ 1,959,444
January 1, 2007	368	51.3	$ 5,657	$ 2,081,829
January 1, 2006	357	51.1	$ 5,422	$ 1,935,624
January 1, 2005	335	50.7	$ 5,251	$ 1,759,102
January 1, 2004	297	50.9	$ 5,218	$ 1,549,742

	Deferred Pensioners—Others			
	Number	Average Age	Average Annual Pension	Total Annual Pension
January 1, 2014	9	64.5	$ 872	$ 7,850
January 1, 2013	12	64.5	$ 1,007	$ 12,084
January 1, 2012	13	63.6	$ 1,027	$ 13,355
January 1, 2011	14	62.8	$ 1,068	$ 14,952
January 1, 2010	15[1]	61.8	$ 999	$ 14,985
January 1, 2009	15[1]	60.8	$ 999	$ 14,985
January 1, 2008	18[1]	59.4	$ 1,163	$ 20,930
January 1, 2007	18	58.4	$ 1,163	$ 20,930
January 1, 2006	19	57.8	$ 1,146	$ 21,774
January 1, 2005	21	57.4	$ 1,042	$ 21,886
January 1, 2004	23	57.1	$ 1,141	$ 26,234

[1] Excludes one terminated vested member who has Contributions with Interest in the Plan but no deferred pension

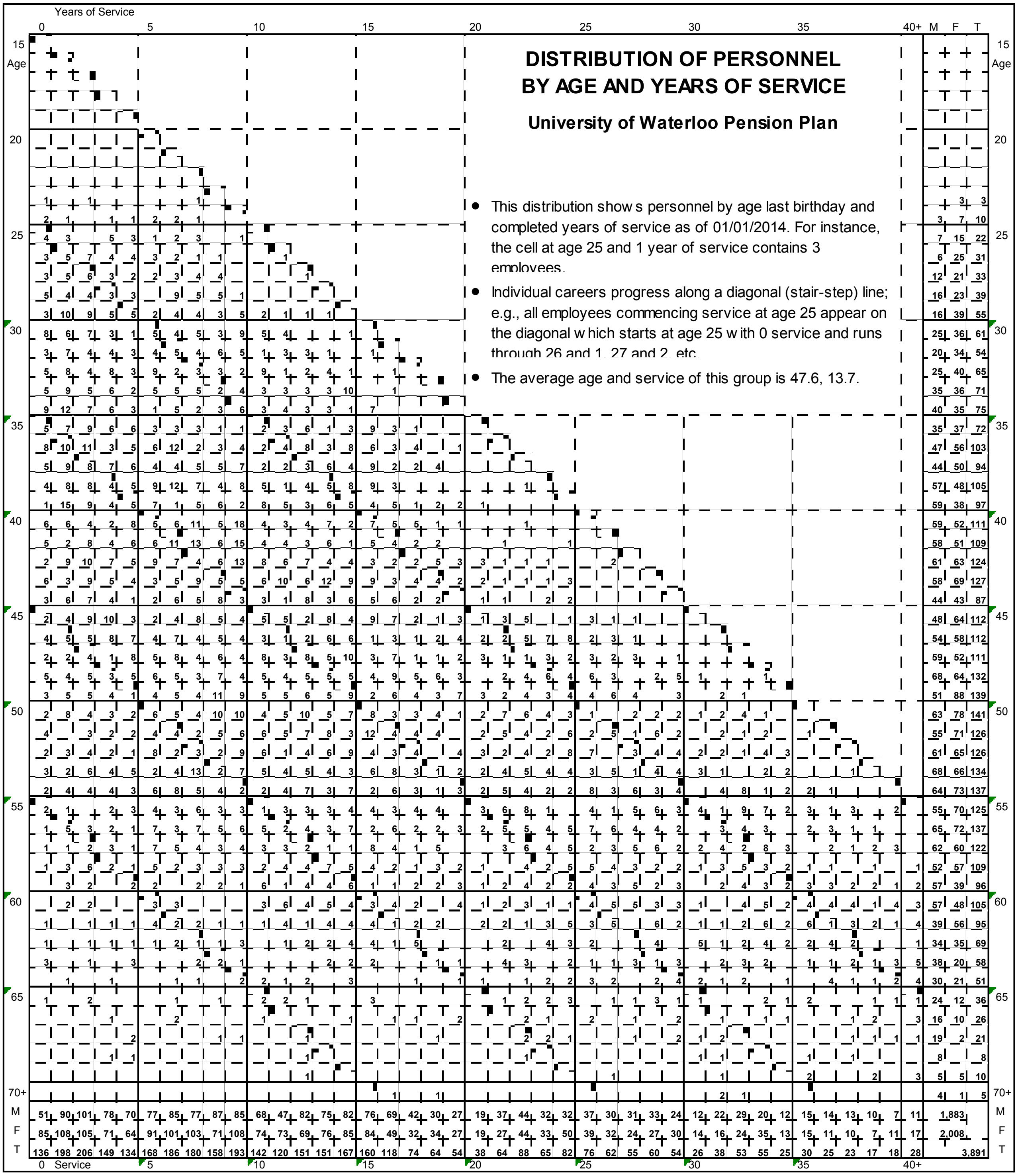
Distribution of Active Members by Age and Service

The following chart shows a distribution of active Members (including those on leave of absence) in the Plan by age last birthday and completed years of Credited Service on January 1, 2014. All Members hired at the same age lie along the same diagonal line.

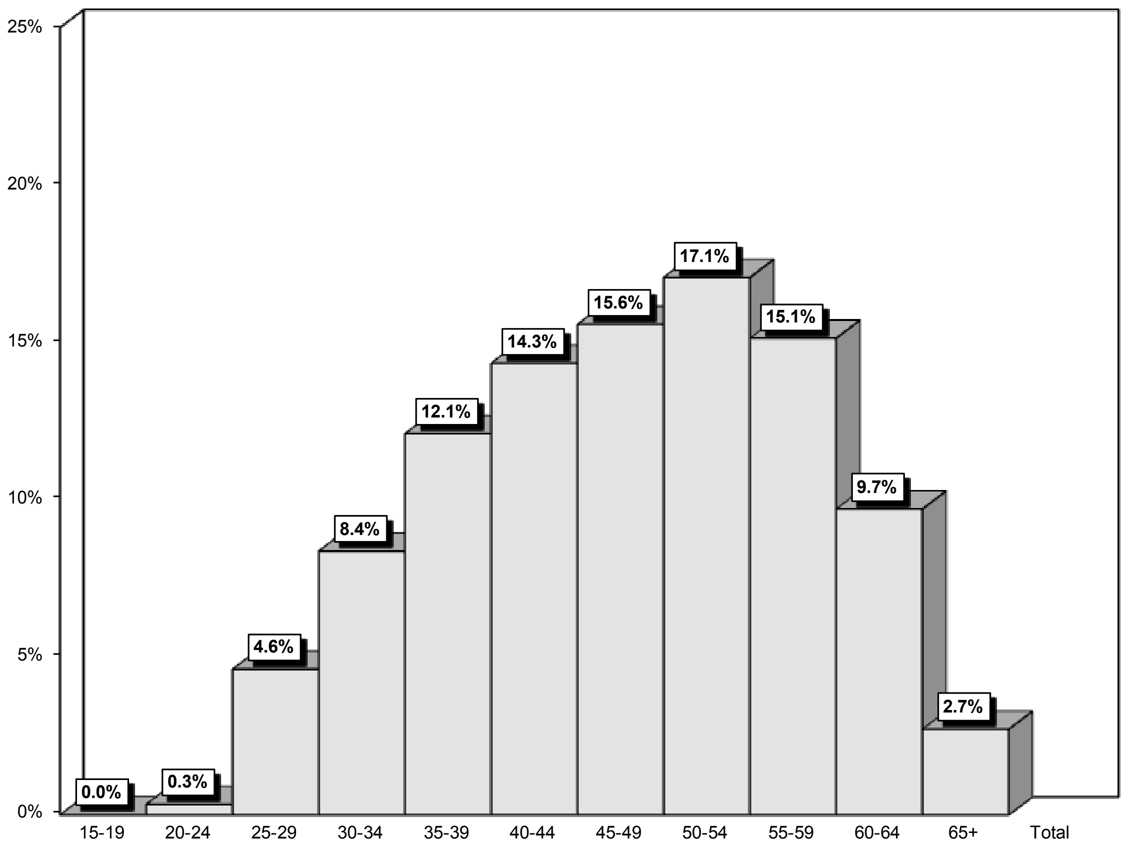
Several observations can be made by the user of this chart:

- the number of Members who will become eligible for early or normal retirement benefits in the next few years;
- the number of Members affected by changes in other benefits which are related to service (e.g. additional vacation for those with certain minimum service);
- the number of new entrants to the Plan per year for all past years who have remained with the University and new entrant patterns by age of entry; and
- the distribution of Members by age and service around median age and median service.

Supplementing this age/service distribution is a table showing the number and average pensionable earnings of Active Members (including those on leave) grouped in five-year intervals of age and service.


DISTRIBUTION OF PERSONNEL
BY AGE AND YEARS OF SERVICE
University of Waterloo Pension Plan
This distribution show s personnel by age last birthday and completed years of service as of 01/01/2014. For instance, the cell at age 25 and 1 year of service contains 3 employees.
Individual careers progress along a diagonal (stair-step) line; e.g., all employees commencing service at age 25 appear on the diagonal w hich starts at age 25 w ith 0 service and runs through 26 and 1, 27 and 2, etc.
The average age and service of this group is 47.6, 13.7.
Years of Service
Age
M F T
1,883
2,008
3,891

Distribution of Personnel By Age



	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+	Total
Number	0	13	180	326	471	558	606	664	589	378	106	3,891
Average Service	0.0	3.9	4.5	6.4	8.1	9.6	13.0	15.8	19.5	23.3	24.8	13.7

Detail of Employees 55 & Over

Age	55	56	57	58	59	60	61	62	63	64	65	66+
Number	125	137	122	109	96	105	95	69	58	51	36	70
Average Service	20.7	17.8	20.0	17.9	21.4	23.1	23.1	22.0	23.8	25.1	22.3	26.1

Distribution of Active Members by Age and Credited Service

Age Group		Completed Years of Credited Service: Under 5	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 35	Total
20-24	Number	13								13
	Average Earnings	$51,086								$51,086
25-29	Number	168	12							180
	Average Earnings	$57,430	$61,946							$57,731
30-34	Number	220	95	11						326
	Average Earnings	$71,612	$69,376	$68,891						$70,868
35-39	Number	261	143	62	5					471
	Average Earnings	$80,494	$97,667	$80,033	$67,836					$85,513
40-44	Number	180	227	120	30	1				558
	Average Earnings	$74,493	$97,442	$99,739	$82,619	$88,582				$89,720
45-49	Number	159	136	192	96	23				606
	Average Earnings	$86,197	$87,421	$95,012	$101,073	$89,966				$91,764
50-54	Number	113	149	123	213	60	6			664
	Average Earnings	$83,005	$94,252	$92,001	$97,767	$108,208	$92,181			$94,291
55-59	Number	74	105	82	71	195	52	10		589
	Average Earnings	$85,095	$83,530	$85,786	$95,417	$104,165	$127,717	$96,587		$96,428
60-65	Number	36	47	47	37	50	124	29	8	378
	Average Earnings	$93,592	$85,407	$81,105	$79,850	$97,471	$109,363	$126,598	$125,869	$98,578
Over 65	Number	10	9	11	10	13	15	22	16	106
	Average Earnings	$106,529	$72,936	$103,621	$93,678	$97,065	$139,050	$155,091	$171,862	$125,544
Total	Number	1,234	923	648	462	342	197	61	24	3,891
	Average Earnings	$76,419	$89,701	$91,409	$95,262	$102,625	$115,945	$131,954	$156,531	$89,973

Plan Provisions

Plan History

Prior to July 1, 1960, the Pension Plan was underwritten by means of contracts with the Government Annuities Branch of the federal government.

On July 1, 1960, this Plan was amended and superseded by a pension plan funded through a trust fund. On January 1, 1969, the University established the current Plan, which improved and superseded the prior arrangements.

On July 1, 1977, substantial changes were made to the Plan. The pension benefit changed from a career-average basis with purchasing power adjustments to a final-average salary basis with postretirement cost-of-living increases.

Effective June 1, 1985, the Plan was amended to change the averaging period from five years to three years in determining final average earnings.

Effective January 1, 1987, the Plan was amended and restated to incorporate the new provisions of the *Ontario Pension Benefits Act, 1987.*

Effective January 1, 1992, the Plan was amended and restated to incorporate changes required as a result of amendments to the *Income Tax Act*.

Effective January 1, 1994, the Plan was amended to incorporate changes with respect to postponed retirements and the application of the DNR maximum pension.

Effective January 1, 1996, the Plan was amended to include a special early retirement program for Members who satisfied certain eligibility requirements.

Effective May 1, 1997, the Plan was amended to reduce, temporarily, Required Member Contributions.

Effective May 1, 1998, the Plan was amended to improve the pension benefit formula and reduce both temporarily and permanently, Required Member Contributions.

Effective May 1, 1999, the Plan was amended to reduce, temporarily, Required Member Contributions.

Effective January 1, 2000, the Plan was amended to permit Members to make additional flexible pension plan contributions to be used to purchase enhanced ancillary benefits.

Effective May 1, 2000, the Plan was amended to reduce, temporarily, Required Member Contributions. In addition, effective May 1, 2000, the Plan was amended to improve the early retirement provisions for Members who terminate on or after age 55 by offering an unreduced pension at age 62 and level 6% per year reductions prior to that age down to age 55. Finally, the Plan was amended and restated effective May 1, 2000 to consolidate all previous amendments.

Plan History (continued)

Effective May 1, 2001, the Plan was amended to modify the temporary reduction in Required Member Contributions.

Effective May 1, 2002, the Plan was amended to modify the temporary reduction in Required Member Contributions.

Effective January 1, 2003, this temporary reduction in Required Member Contributions ceased. Moreover, in February, 2003, the Federal Government announced changes to the maximum pension limit under the *Income Tax Act*.

Effective January 1, 2004, the Plan was amended to spell out that the University's contributions are to provide for the normal cost of the accruing plan benefits and to cover any unfunded liability and solvency deficiency amortization payments, after considering all relevant factors, including pension fund assets and Members' contributions.

Effective January 1, 2006, the Plan was amended to modify the maximum pension at the time of pension commencement, and the postponed retirement provisions, in connection with the elimination of mandatory retirement in Ontario, in December, 2006.

The Plan was amended in June 2007 to modify the following provisions as described in more detail in this section:

(1) Effective January 1, 2009 to increase the maximum pension at the time of pension commencement;

(2) Effective July 1, 2007 and July 1, 2008 to increase the Required Member Contributions; and

(3) Effective January 1, 2009 to change the indexation of terminated vested pensions for members terminating employment on or after January 1, 2009.

The Plan was amended in June 2008 to change the indexation adjustment date to May 1 of each year from July 1 of each year. The first affected indexation adjustment after the amendment was May 1, 2009 and with a proration for the ten-month period since July 1, 2008.

The Plan was amended effective May 1, 2009 to increase the Required Member Contributions.

The Plan was amended effective July 1, 2012 to reflect changes due to pension reform.

The Plan was amended effective January 1, 2013 to increase Required Member Contributions.

The Plan was amended effective January 1, 2014 to transition from a three-year to a five-year final average earnings pay definition and to change the guaranteed indexation on benefits earned on and after January 1, 2014 from 100% of the increase in CPI to 75% of the increase in CPI.

The balance of this section is a summary of the provisions of the Plan as at January 1, 2014. For complete details, reference should be made to the Pension Plan text.

Effective Date

January 1, 2011 (last restatement of the Plan document).

Eligibility for Membership

Faculty and Staff Employees are eligible to join the Plan on the first day of any month coincident with or next following the date of employment with the University. An eligible Employee must join the Plan no later than the first day of the calendar year coincident with or next following attainment of age 35, or their appointment (if already age 35).

Faculty Employees employed as lecturers may elect not to join the Plan. However, a lecturer who has attained age 35 must join the Plan on the first day of the month coincident with or next following the earlier of promotion to a higher rank or completion of five years of service with the University.

Any Employee who has either earned at least 35% of the Year's Maximum Pensionable Earnings (YMPE) under the Canada Pension Plan or worked at least 700 hours in each of the two immediately preceding calendar years, shall be eligible to join the Plan on the first day of any month coincident with or next following the date on which such conditions are satisfied.

Normal Retirement

Eligibility

First day of the month coincident with or next following attainment of age 65.

Benefit

Effective May 1, 1998 on retirement, a member receives an annual pension equal to the sum of the following:

- 1.4% of Final Average Earnings up to the Average Year's Maximum Pensionable Earnings, plus,
- 2.0% of Final Average Earnings in excess of the Average Year's Maximum Pensionable Earnings.

for each year and completed month of Credited Service under the Plan.

The Final Average Earnings is determined based on 36 consecutive months of earnings for retirements on or before January 1, 2014. The averaging period is increased by one month for each month in 2014 and 2015 so that the averaging period is 60 consecutive months for all retirements after December 31, 2015. The Average Year's Maximum Pensionable Earnings is determined over a five-year period.

On retirement prior to May 1, 1998, a member received an annual pension equal to the sum of the following:

- 1.3% of Final Three-Year Average Earnings up to the Average Year's Maximum Pensionable Earnings, plus,
- 2.0% of Final Three-Year Average Earnings in excess of the Average Year's Maximum Pensionable Earnings.

for each year and completed month of Credited Service under the Plan.

The Average Year's Maximum Pensionable Earnings was determined over a three-year period.

Normal Retirement (continued)

Benefit (continued)

Maximum Pension

The annual benefit payable in the Normal Form under the Plan for a member determined at the time of pension commencement cannot exceed the lesser of:

- the lesser of (a) and (b):
  - (a) the defined benefit limit for the year as defined in the *Income Tax Act*; and
  - (b) $3,200.00

  times the Member's Credited Service; and
- 2.0% of the Member's highest indexed compensation times Credited Service.

For service prior to January 1, 1992, a member's Credited Service shall not exceed 35 years.

Regulation 8504(6) imposes a lower maximum benefit limit in respect of any pre-1990 service that is granted after June 8, 1990 (e.g., buy-back or granting of years of pre-1990 service that was not previously counted as Credited Service).

Early Retirement

Eligibility

Within ten years of normal retirement date.

Benefit

For Members who retired on an early retirement date prior to May 1, 2000, the pension payable on early retirement is reduced by ⅓ of 1% for each of the first 60 complete months by which early retirement precedes the normal retirement date plus ½ of 1% for each additional complete month.

For Members who retire on an early retirement date on or after May 1, 2000, the pension payable on early retirement is reduced by 1/2 of 1% for each complete month by which early retirement date precedes the first day of the month coincident with or next following age 62.

In any event, the reduced pension cannot be less than the actuarial equivalent of the Member's accrued pension.

Postponed Retirement

Eligibility

Any age after normal retirement date; pension commencement under the Plan may not be postponed beyond the end of the calendar year in which the Member attains age 71.

Benefit

The Member continues to make required contributions, his or her service continues to accrue and the Member will receive a pension on his or her postponed retirement date based on Credited Service, Final Average Earnings and Average Year's Maximum Pensionable Earnings at that date, subject to the paragraphs below.

A Member who is a Faculty Employee employed by the University since prior to January 1, 1969 is permitted, if he or she elects on or before normal retirement date to postpone retirement by no more than three years following the first of the month coincident with or next following the end of the contract year during which he or she attains age 65, to elect on or before normal retirement date to cease making any further contributions to the Plan. Such Member shall receive a pension equal to the actuarial equivalent of the pension they would have received at normal retirement date.

Postponed Retirement (continued)

Benefit (continued)	A Member who is a non-union Staff Employee employed by the University since prior to January 1, 1969 is permitted, if he or she elects on or before normal retirement date to postpone retirement by no more than three years following the first of the month coincident with or next following the normal retirement date, to elect on or before normal retirement date to cease making any further contributions to the Plan. Such Member shall receive a pension equal to the actuarial equivalent of the pension they would have received at normal retirement date.

Disability

Eligibility	Any age prior to age 65.
Benefit	Members who are in receipt of income disability benefits under the long-term disability insurance plan of the University cease to contribute while disabled but continue to accrue Credited Service for pension purposes. Starting July 1, 1984, accrued pensions for LTD Members are based on pensionable earnings, to date of disability, increased each year by a percentage which is determined annually by the Committee.

Termination Benefits	
Eligibility	Any age prior to early retirement date.
Benefit	A Member whose service terminates is entitled to a locked-in fully vested deferred pension commencing at his normal retirement date. The early retirement reduction applicable if the former Member commences receipt of the pension prior to normal retirement date, on or after early retirement date, is equal to 1/3 of 1% for each of the first 60 complete months by which early retirement precedes the normal retirement date plus ½ of 1% for each additional complete month. A Member who terminates employment and is entitled to a locked-in vested deferred pension may request that an amount equal to the commuted value of the deferred pension entitlement be transferred to another registered pension plan, to a prescribed locked-in retirement savings arrangement or to an insurance company for the purchase of a life annuity that will not commence benefit payments prior to the Member's early retirement date. Different provisions applied for those members who terminated employment prior to July 1, 2012
Death Benefits	
Eligibility	Any age.
Benefit	On the death of a Member while in the service of the University, a refund of the commuted value of the accrued pension, subject to the 50% minimum employer cost rule plus any additional voluntary contributions, are paid to the Member's spouse, or if no spouse, the Member's designated beneficiary or estate. Different pensions applied prior to July 1,2012.
Minimum Employer Cost	On retirement, death, or termination, the Required Member Contributions with credited interest cannot provide more than 50% of the commuted value of the benefit. In the event that the Required Member Contributions with credited interest provide for more than 50%, the excess will be refunded to the Member or the Member's beneficiary or estate, as applicable or in the case of retirement be used to increase the lifetime pension.

Normal Form of Pension

The normal form of pension payable to a Member is a life annuity with a ten-year guarantee period.

For Members who terminated prior to May 1, 1998 and are entitled to a deferred pension under the Plan, the normal form is a life annuity with a five-year guarantee period.

Cost-of-Living Adjustments

The pension of each Member receiving pension payments on May 1 of any year shall be adjusted by the Postretirement Cost-of-Living Factor for each year, provided that the Member has received at least one regular pension payment prior to May 1.

For any pension benefits accrued prior to January 1, 2014, this factor is obtained by dividing the average Consumer Price Index for the preceding calendar year by the average index for the next preceding calendar year. In the first year of retirement, the increase will be provided on a pro-rata basis subject to the *Income Tax Act* rules. However, if this factor exceeds 105% and if the financial position of the Plan is not sufficient to provide for this increase, the factor may be reduced, within certain limits, to maintain the solvency of the Plan.

For any pension benefits accrued on and after January 1, 2014 this factor is obtained by dividing the average Consumer Price Index from the preceding calendar year by the average index for next preceding calendar year, and then multiplying the result by 0.75. However, if this factor exceeds 103.75% and if the financial position of the plan is not sufficient to period for this increase, the factor may be reduced, within certain limits, to maintain the solvency of the Plan.

In 2009, the date of the annual adjustment changed from July 1 to May 1, with the first such adjustment as of May 1, 2009 prorated to reflect the ten-month period since the prior adjustment.

All terminated Members who are entitled to a terminated vested pension except for those who terminated between July 1, 1977 and December 31, 1986 shall have their terminated vested pensions adjusted on May 1 (July 1 prior to 2009) of each year by a cost-of-living factor to be determined annually by the Committee, subject to the *Income Tax Act* Rules. Notwithstanding the foregoing, if a Member terminates employment on or after January 1, 2008 and is not within ten years of his or her Normal Retirement Date, or has not completed 20 years or more of continuous employment, the Cost of Living Factor shall only apply to the terminated vested member's pension earned in respect of Credited Service prior to January 1, 2008.

Cost-of-Living Adjustments (continued)

Increases in the Consumer Price Index and the corresponding postretirement cost-of-living factors for 2014 and previous years are shown below:

Year	Increase in Prior Year Consumer Price Index (%)	Postretirement Cost-of-Living Factor (%)
1968	-	2.50
1969	-	3.00
1970	4.50	4.50
1971	3.30	2.00
1972	2.90	2.30
1973	4.80	4.80
1974	7.70	6.40
1975	10.90	10.90
1976	10.80	10.80
1977	7.50	7.50
1978	7.99	5.00
1979	8.91	8.91
1980	9.15	9.15
1981	10.16	10.16
1982	12.49	10.00
1983	10.76	10.76
1984	5.83	5.83
1985	4.35	4.35
1986	3.96	3.96
1987	4.17	4.17
1988	4.37	4.37
1989	4.04	4.04
1990	4.97	4.97
1991	4.76	4.76
1992	5.64	5.64
1993	1.49	1.49
1994	1.84	1.84
1995	0.19	0.19
1996	2.17	2.17
1997	1.56	1.56
1998	1.63	1.63
1999	0.97	0.97
2000	1.74	1.74
2001	2.68	2.68
2002	2.56	2.56
2003	2.23	2.23
2004	2.77	2.77
2005	1.88	1.88
2006	2.17	2.17
2007	2.04	2.04
2008	2.20	2.20
2009[1]	1.94	1.94
2010	0.29	0.29
2011	1.78	1.78
2012	2.91	2.91
2013	1.52	1.52
2014	0.94	0.94

[1] Effective May 1, 2009 the indexation date was changed from July 1 to May 1. Therefore, the indexation adjustment made in 2009 is prorated for ten months since the prior adjustment

Member Contributions

Effective January 1, 2013, members are required to contribute 6.25% of annual earnings up to the YMPE, 8.95% of annual earnings that exceed the YMPE but are less than two times the YMPE, and 9.95% of annual earnings in excess of two times the YMPE, subject to the amount permitted under the Income Tax Act for the year.

Effective May 1, 2009, Members were required to contribute 5.80% of annual Earnings up to the YMPE, 8.30% of annual Earnings that exceed the YMPE but are less than two times the YMPE, and 9.65% of annual Earnings in excess of two times the YMPE, subject to the amount permitted under the *Income Tax Act* for the year.

Effective July 1, 2008, Members were required to contribute 5.05% of annual Earnings up to the YMPE, 7.85% of annual Earnings that exceed the YMPE but are less than two times the YMPE, and 9.20% of annual Earnings in excess of two times the YMPE, subject to the maximum amount permitted under the *Income Tax Act* for the year.

Effective July 1, 2007, Members were required to contribute 4.80% of annual Earnings up to the YMPE, 7.175% of annual Earnings that exceeds the YMPE but are less than two times the YMPE, and 7.85% of annual Earnings in excess of two times the YMPE, subject to the maximum amount permitted under the *Income Tax Act* for the year.

For the period January 1, 2003 to June 30, 2007, Members were required to contribute 4.55% of annual Earnings up to the YMPE and 6.50% of the excess of Earnings above the YMPE, subject to the maximum amount permitted under the *Income Tax Act* for the year.

Prior to May 1, 1998, Members were required to contribute 4.875% of annual Earnings up to the YMPE and 6.50% of the excess of annual Earnings above the YMPE, subject to the maximum amount permitted under the *Income Tax Act* for the year. Between May 1, 1998 and January 1, 2003, there were temporary reductions in these member contribution rates.

These contributions are credited with interest each year at the four-year arithmetical average rate of return on the pension fund, excluding real return bonds, calculated at December 31st of the prior year. Effective January 1, 2012, the interest credit will be the CANSIM rate.

Member Flexible Pension Plan Contributions	Prior to January 1, 2014, members are permitted to make additional flexible Pension Plan contributions on December 31st of each year up to the maximum deductible contribution permitted by the *Income Tax Act*. On retirement or termination of membership, a Member's flexible Pension Plan contribution balance may be used to purchase additional ancillary benefits under the Pension Plan, up to the maximum ancillary benefits permitted by the *Income Tax Act*. Flexible contributions that cannot be used to purchase ancillary benefits will be forfeited by the Member.
Transfers to the Pension Fund	A new Member may transfer the value of his or her benefits earned under the registered pension plan of a previous employer into the pension fund. The terms and conditions of such transfer and the benefits that will be payable are determined in accordance with Article 12 of the Plan, as amended from time to time.
Definitions	
Credited Service	Member's years and completed months of continuous employment with the University while a member in the Plan. For service of a member employed on a part-time basis, the period of service is multiplied by the proportion the member's reduced work load bears to a regular full-time work load.
Earnings	**Staff Employees** Base salary, excluding overtime pay, reimbursement for expenses, special payments, shift premiums, week-end provisions, special allowances and other like payments. **Faculty Employees** Base salary, excluding reimbursement for expenses, administrative stipends, faculty research fellowships, seasonal stipends, summer teaching stipends, special payments, consulting fees, special allowances and other like payments.

Actuarial Assumptions

Going Concern Valuation	
Retirement Age	Age 64, but no earlier than one year after the valuation date. For Terminated Vested Members—age 65.
Mortality Rates	2014 Canadian Pensioner Mortality Combined Table (“CPM 2014 Combined”) with Improvement Scale CPM-B (UP 1994 projected to 2015 in previous valuation).
Withdrawal Rates	Table A following.
Disability Rates	None assumed.
Increase in Consumer Price Index (CPI)[1]	2.25% per annum (2.50% in previous valuation).
Increase in Year’s Maximum Pensionable Earnings	3.00% per annum (3.50% in previous valuation) (2.25% CPI+0.75%).
Increase in *Income Tax Act* Maximum Pension	\$2,770.00 in 2014; Maximum Pension Limit increases at 3.00% per annum thereafter to the plan maximum of \$3,200.00 (3.50% in previous valuation).
Increase in Pensionable Earnings	Active Members: 5.00% per annum for 1 year; 4.25% per annum thereafter (4.50% in previous valuation) (2.25% CPI + 2.0% merit and promotion). Members on LTD: 2.25% per annum (2.50% in previous valuation).
Interest Rate	6.00% per annum, net of all expenses (6.35% in previous valuation) (2.25% CPI + 3.75% real return).
Interest Rate on Required Member Contributions	3.00% per annum thereafter (4.00% in previous valuation).
Interest Rate Used to Calculate 50% Rule	1.7% per annum for 10 years; 2.3% per annum thereafter (1.9% for 10 years; 2.4% thereafter in previous valuation).
Loading for Administrative Expenses	Reflected in interest rate.

[1] Pensions in payment and deferred pension amounts during deferral period covered by this report are assumed to increase at this rate

Going Concern Valuation (continued)

Actuarial Value of Assets	**Assets Other Than Real Return Bonds**: Determined by recognizing investment gains/losses, determined in relation to the expected return on these assets, linearly over three years. At January 1, 2014 the value of these assets has been reset to market value. **Real Return Bonds:** Projected cash flows discounted to valuation date at 3.75% real rate of return (3.85% in previous valuation).
Actuarial Cost Method	Projected unit credit cost method.

Solvency Valuation

Retirement Age	
Active, Suspended and Disabled Members with less than 55-age-plus-service points	Normal Retirement Date.
Active, Suspended and Disabled Members with at least 55 age-plus-service points	Integral age between ages 55 and 65 that produces highest present value.
Mortality Rates	
Active, Suspended and Disabled Members under age 55	1994 Uninsured Pensioner Mortality Table with Generational Mortality Improvements under Scale AA.
Active, Suspended and Disabled Members age 55 and over; and Terminated Vested and Retired Member	1994 Uninsured Pensioner Mortality Table with Generational Mortality Improvements under Scale AA.
Interest Rates-Without Escalated Adjustment	
Active, Suspended and Disabled Members age 55 and over, and Retired Members	3.83% per annum.
Active Members under age 55	3.10% per annum for ten years; 4.60% per annum thereafter.
Terminated Vested Members	3.83% per annum.
Interest Rates-With Escalated Adjustment	
Active, Suspended and Disabled Members age 55 and over, Retired Members, and Terminated Vested Members	0.15% per annum.
Active, Suspended and Disabled Members under age 55	1.70% per annum for ten years; 2.30% per annum thereafter. Solvency interest rates are based on the April 2009 Canadian Institute of Actuaries (CIA) Standard of Practice for Determining Pension Commuted Values (“Commuted Value Basis”) and the January, 24, 2014 Annuity Proxy advice of the CIA’s Committee on Pension Plan Financial Reporting, a January 1, 2014 calculation date, and indexing at 100% of the increase in CPI during both the preretirement (if applicable) and postretirement periods.
Income Tax Act Maximum Pension Limit	$2,770.00 per year of Credited Service.

We have made the following assumptions regarding how the Plan's benefits would be settled on Plan wind-up:

	Percent of Liability Assumed to be Settled by Purchase of Annuities	Percent of Liability Assumed to be Settled by Lump-Sum Transfer
Active members—not retirement eligible	0%	100%
Active members—retirement eligible	100%	0%
Terminated vested members—not retirement eligible	100%	0%
Terminated vested members—retirement eligible	100%	0%
Retired members and surviving spouse	100%	0%

Table A

Withdrawals per 1,000 Participants:

Present Age	Rates	Present Age	Rates
20	100	45	17
21	100	46	16
22	100	47	15
23	100	48	14
24	100	49	13
25	100	50	12
26	90	51	11
27	80	52	10
28	71	53	9
29	63	54	8
30	56	55	7
31	50	56	6
32	45	57	5
33	40	58	4
34	36	59	3
35	32	60	2
36	30	61	1
37	28	62+	0
38	26		
39	24		
40	22		
41	21		
42	20		
43	19		
44	18		

Rationale for Actuarial Assumptions

Going Concern Valuation—Demographic Assumptions

Retirement Age

A single-point retirement age of age 64 has been used for all members. Pension benefits are payable on an unreduced basis at age 62. However, the nature of the workforce is such that we do not expect a significant proportion of members to commence pension payments prior to age 65. We monitor actual experience against this assumption at each valuation and consider this retirement age appropriate.

Mortality Table

The Canadian Institute of Actuaries (CIA) completed a study of Canadian pensioner mortality levels and trends. Some conclusions of the study were:

- the 1994 Uninsured Pensioner (UP94) mortality table together with generational improvements using Scale AA overstates average Canadian pensioner mortality rates, and therefore understates expected future pension payments for many plans; and
- more rapid improvements in longevity have been observed than suggested by Improvement Scale AA.

In light of these findings, we have modified the mortality assumption and have used the Canadian Pensioner Mortality Combined Table ("CPM 2014 Combined") with Improvement Scale CPM-B

Termination of Employment

The rates of termination of employment before retirement represent a best estimate of termination rates for a plan of the size and workforce characteristics of this plan. Table A was developed by a previous actuary for the plan. We have been using this Table as our assumption since our first valuation in 2005. The resulting gains and losses have been relatively small. Therefore, we continue to find this Table appropriate.

Option Elections on Termination

We have assumed 100% of members will elect a deferred annuity on termination.

Disability Incidence

If an active Plan member becomes disabled, credited service continues to accrue until Normal Retirement Date, but employee contributions are waived. Since this benefit is substantially the same as the benefit that accrues to an active member, no disability assumption has been 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. A disability assumption would have very little impact on the valuation results.

Percentage with Spouse and Spousal Age Difference

There is no percent married assumption or age difference assumption required since the Plan does not offer a subsidized Joint and Survivor pension at retirement, nor any specific preretirement death benefit for a spouse that is not offered to any other beneficiary.

Going Concern Valuation—Economic Assumptions

Inflation

The assumed inflation rate of 2.25% reflects a long-term rate of inflation in the 1%-3% band that the Bank of Canada has set for inflation The other economic assumptions are built off of the assumed inflation rate. Since benefits under the Plan are indexed to inflation (before retirement through salary increases and after termination/retirement through the indexation formula), it is the difference between the inflation rate and the other economic assumptions that is the most important variable.

Discount Rate

The discount rate reflects the best estimate of the rate of return on the pension fund assets of 6.50% per year net of investment expenses, less a margin of 0.10% for administrative expenses and a provision for adverse deviations of 0.40%. This results in a discount rate of 6.00%.

The best-estimate rate of return was developed using best-estimate real returns for each major asset class in which the pension fund is invested, and then using a building block approach, based on the plan's investment policy, to develop an overall best-estimate real rate of return for the entire pension fund. This method produced an assumed real rate of return of 4.25% which, combined with an assumed inflation rate of 2.25% produces an assumed rate of return of 6.50% for a passively-managed portfolio with no additional returns assumed to be achievable due to active management. For purposes of this development, the Real Return Bonds were assumed to yield 3.75% per year since these bonds are held in the actuarial value of assets on a discounted cash flow basis using a 3.75% real rate of return.

Non-Investment Expenses

Since the discount rate has been established net of all expenses, no explicit assumption is required for non-investment expenses.

Productivity Growth

We have assumed productivity growth in the Canadian economy will be 0.75% per year. The assumption reflects our best estimate, which is consistent with historical productivity growth.

Increases in the YMPE

We have assumed future increases to the YMPE will be 3.0% per year. The assumption reflects an assumed rate of inflation of 2.25% per annum plus an allowance of 0.75% per year for the effect of productivity growth in the Canadian economy.

Increases in the ITA Maximum Pension

Pensions are limited to the maximum limits under the *Income Tax Act*. The maximum lifetime annual pension per year of pensionable service payable under the *Income Tax Act* is $2,770.00 in 2014. It is assumed that the maximum limit will increase at 3.0% per year commencing in 2015, subject to the plan maximum of $3,200.00 per year. The assumption reflects an assumed rate of inflation of 2.25% per year plus an allowance of 0.75% per year for the effect of productivity growth in the Canadian economy.

Salary Increases

We have assumed future salary increases will be 5.0% for 1 year to reflect the last year of the current agreements with employee groups, and 4.25% per year thereafter. The assumption reflects an assumed rate of inflation of 2.25% per year, plus an allowance of 2.0% per year for the effect of productivity growth, individual employee merit, and promotion.

Interest Credited on Member Contributions

For years beginning in 2012, the interest rate credited on member contributions changed to the CANSIM rate. We have assumed this will be 3.0% per year.

Asset Valuation Method Considerations

The asset valuation method for this valuation assumes all investment gains/losses on Plan assets other than real return bonds are recognized fully at January 1, 2014.

The actuarial value of the real return bonds has been determined by discounting their projected cash flow using a discount rate of 3.75%, equal to the real rate of return assumption incorporated in the going concern actuarial assumptions. If the market value of real return bonds was used then the real interest rate used to discount the liabilities would need to be reduced to reflect the lower future return expectation on the portion of the liability related to the real return bonds.

Solvency and Hypothetical Wind-Up Valuations
Benefits Valued

	Solvency Valuation	**Hypothetical Wind-Up Valuation**
Vesting	We have treated all accrued benefits as vested on Plan wind-up.	We have treated all accrued benefits as vested on Plan wind-up.
Grow-In Benefits	Active members with 55 age-plus-continuous service points as of the valuation date are assumed to grow into the enhanced early retirement reduction.	Active members with 55 age-plus-continuous service points as of the valuation date are assumed to grow into the enhanced early retirement reduction.
Indexing	In accordance with the *Pension Benefits Act* (Ontario), solvency liability excludes the value of future escalated adjustments (future indexation) for both the preretirement and postretirement period.	The Hypothetical Wind-Up Valuation results include the value of future escalated adjustments (future indexation) in the postretirement period and the preretirement period as provided for in the plan.

Method of Benefit Settlement
We have assumed that all Plan benefits would be settled on Plan wind-up either by purchase of single premium annuities or by lump-sum transfer (including payment in cash).

Discount Rate and Mortality
We have set the Solvency and Hypothetical Wind-Up Assumptions described on page 54, based on guidance prepared by the Canadian Institute of Actuaries (“CIA”) Committee on Pension Plan Financial Reporting (“PPFRC”) in the January 24, 2014 Educational Note Supplement: *Guidance for Assumptions for Hypothetical Wind-up and Solvency Valuations Update – Effective December 31, 2013 and Applicable to Valuations with Effective Dates Between December 31, 2013 and December 30, 2014* (“CIA Guidance”).

For benefit entitlements that are expected to be settled by purchase of annuities, we based the assumptions on information compiled by the PPFRC from insurance companies active in the group annuity market.

The CIA Guidance indicates that the cost of purchasing non-indexed annuities would be estimated based on the duration of the liabilities expected to be settled through annuity purchase. The duration of this Plan was estimated to be 10.0 and the resulting duration adjustment to the unadjusted CANSIM series V39062 interest rate is 0.70%.

Solvency annuity purchase discount rate without Escalated Adjustment	= V39062 + Duration Adjustment
	= 3.13% + 0.70%
	= 3.83% per year

The CIA Guidance has determined that an appropriate proxy for estimating the cost of purchasing a group annuity where pensions are fully indexed to the rate of change in the CPI would be determined using an interest rate equal to the unadjusted yield on Government of Canada real-return long-term bonds (CANSIM series V39057) reduced arithmetically by 110 bps.

Solvency annuity purchase discount rate with Escalated Adjustment	= V39057 – 110bps
	= 1.25% – 1.10%
	= 0.15% per year

For benefit entitlements that are expected to be settled by lump sum transfer, we based the assumptions on the CIA Standard of Practice for Determining Pension Commuted Values, effective April 1, 2009, using rates corresponding to a valuation date of January 1, 2011.

Preretirement Mortality
We have made no allowance for preretirement mortality. The impact of including such an assumption would not have a material impact on the valuation, since the value of the death benefit is approximately equal to the value of the accrued pension.

Salaries
To estimate active and disabled members' best average earnings at the valuation date, we have used actual historical member earnings.

Assumptions Not Needed
The following are not relevant to the solvency or hypothetical wind-up valuation:

- Salary Increases
- Termination Rates
- Increases in ITA Maximum Pension
- Disability Rates

Plan Wind-up Expenses
Plan wind-up expenses would normally include such items as fees related to preparation of the actuarial wind-up report, fees imposed by a pension supervisory authority, legal fees, administration, custodial and investment management expenses. We have assumed these fees would be $500,000. We have not made an allowance for expenses related to surplus or deficit resolution.

Calculation of Solvency Valuation Incremental Cost

The Solvency Valuation Incremental Cost represents the present value, as at January 1, 2014, of the expected aggregate change in the Solvency Liability between January 1, 2014 and December 31, 2016, the date of the next required valuation, adjusted upwards for expected benefit payments between January 1, 2014 and December 31, 2016.

The calculation methodology can be summarized as follows:

The present value at January 1, 2014 of expected benefit payments between January 1, 2014 and December 31, 2016, discounted to January 1, 2014,

plus

A projected Solvency Liability at December 31, 2016, discounted to January 1, 2014, allowing for, if applicable to the pension plan being valued:

- expected decrements and related changes in membership status between January 1, 2014 and December 31, 2016,
- accrual of service to December 31, 2016,
- expected changes in benefits to December 31, 2016,
- a projection of pensionable earnings to December 31, 2016,

minus

The Solvency Liability at January 1, 2014.

The projection calculations take into account the following assumptions and additional considerations:

- The assumptions for the expected benefit payments and decrement probabilities, service accruals, and projected changes in benefits and/or pensionable earnings would be consistent with the assumptions used in the Plan's going concern valuation
- No provision has been made for new entrants since the additional solvency liability for new entrants is expected to be covered by their required contributions plus the employer contributions

Discussion of Actuarial Assumptions and Methods

Ultimate Cost

The ultimate cost of a pension plan can be measured only when the obligation to all Members has been fully discharged. The cost will then be:

The benefits paid from the plan
plus
administrative expenses
less
investment gains
plus
investment losses.

The actuarial process assigns pension costs to the current year by estimating, based on both current and future service, the benefits to be paid to current Plan Members. These estimates are determined through an actuarial valuation which uses three basic elements to project payments from the Plan:

- Benefit provisions of the Plan.
- Data on the present workforce, terminated vested, and retired employees.
- Certain predictions (actuarial assumptions) about the future as it applies to this workforce.

Actuarial Assumptions

The first step in the actuarial process is to determine the magnitude of the pension liability by determining the benefits expected to be paid. To determine how many employees will become eligible for benefits, what benefits will be paid, and how long benefits will be paid, it is necessary to make some economic and demographic predictions (usually called actuarial assumptions) such as:

- An assumed retirement age predicting when employees will begin to receive retirement benefits.
- A mortality rate predicting the number of employees who will die before retirement and the duration of benefit payments after retirement.
- A withdrawal rate predicting the number of employees who will leave the workforce before retirement. (Sometimes certain kinds of withdrawal such as disabilities are predicted separately.)
- If the benefits are based on compensation, an assumed rate of pay increases predicting employees' compensation in future years.

These assumptions are applied to the data for each employee to predict the amount of benefits expected to be paid each year in the future. The total future benefit payments in each year are then discounted at a selected interest rate to determine the current amount which with future investment return, is expected to be sufficient to pay the expected benefits as they become payable. The discounted payments are usually called the present value of future benefits.

Total Future Benefit Payments	
Future Investment Return	**Present Value of Future Benefits**

Actuarial Method

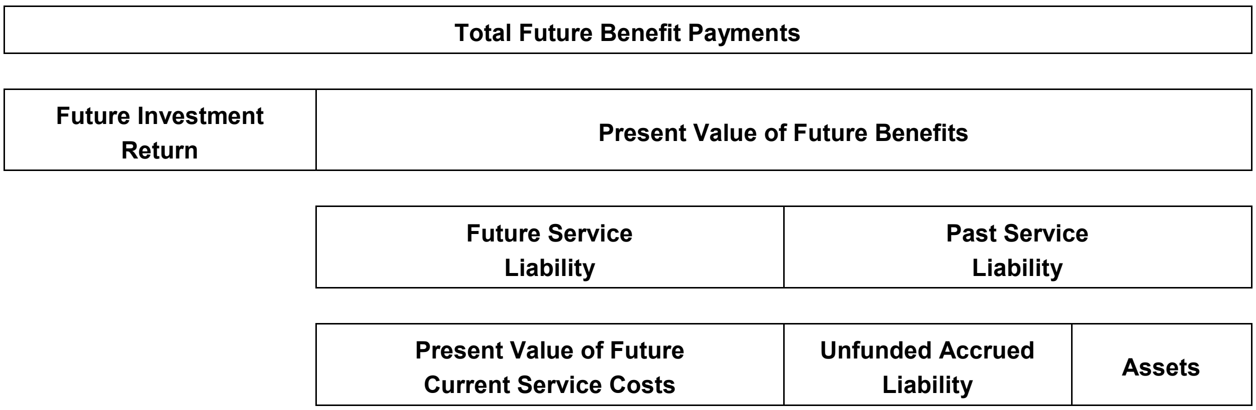
The actuarial method is the mathematical process which determines the contributions required to pay for the present value of future benefits, by allocating costs to the years of an employee's career. Some costs are allocated to future years in an employee's career (*future service liability*) and other costs are allocated to past years (*past service liability*).

Total Future Benefit Payments		
Future Investment Return	**Present Value of Future Benefits**	
	Future Service Liability	**Past Service Liability**

There is a fair amount of flexibility in this allocation of costs between future and past. Some methods assign relatively little cost to past years in an employee's career, others assign a more significant portion to the past. All methods produce allocations of contributions which are expected to accumulate to an amount sufficient to provide the benefits at retirement. However, the various methods produce widely different allocation of contributions to past and future employment.

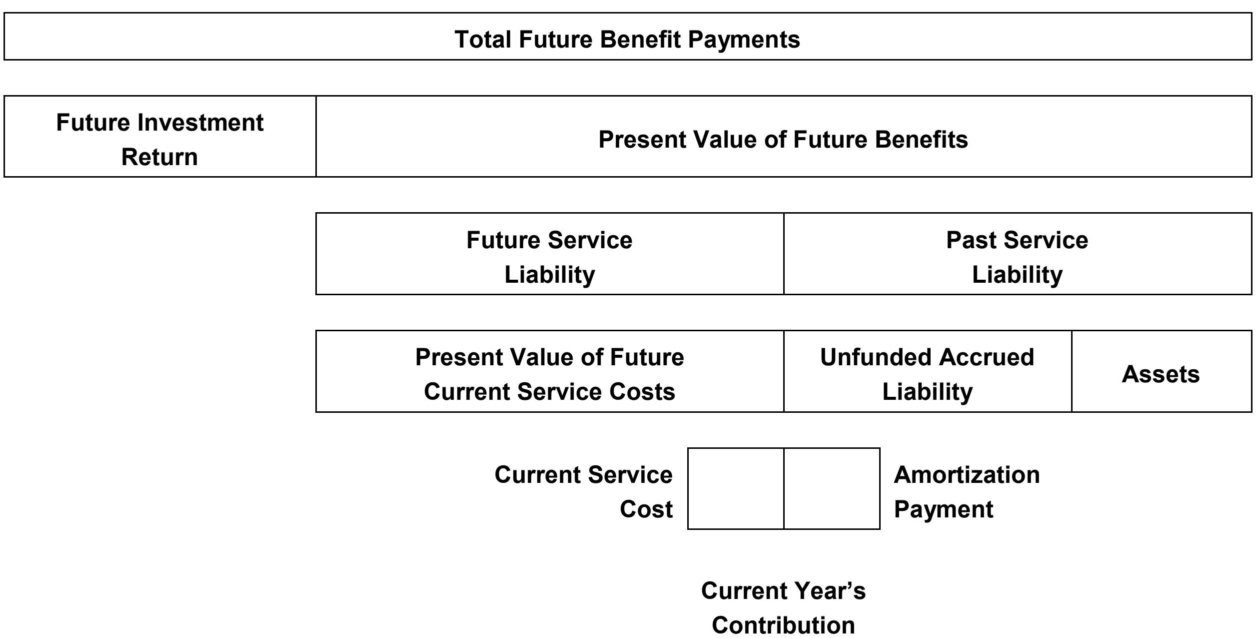
Usual terminology refers to the future allocation as the *present value of future current service costs* and the past allocation as the *accrued liability*.

The portion of the accrued liability, if any, which is not covered by the assets of the Plan is called the *unfunded accrued liability*. The value of the assets used in the actuarial process must take into account fair market value, but this may be done in a way which eliminates much of the short-term fluctuation of market value from one valuation to the next.



For the current year, the method produces a *current service cost*. Payment of the current service cost each year would eventually be expected to discharge all future service liability.

The unfunded accrued liability, if any, must also be discharged, and this is done by an *amortization payment*. The amortization payment is flexible, and may be increased or decreased within certain allowable bounds. The sum of both the current service cost and the amortization payment is the current year's pension cost.



The valuation to determine contributions to the ongoing Plan uses the *Projected Unit Credit Cost Method.*

Under this actuarial method, the cost attributed to past service (*past service liability* or *accrued liability*) is determined on the valuation date as the present value of the benefits actually earned (accrued) as of that date and taking into account projections of future earnings and future changes in Year’s Maximum Pensionable Earnings under the CPP. The *unfunded accrued liability* is the amount, if any, by which the accrued liability exceeds the valuation assets.

The current year's *current service cost*, determined on the valuation date, is the amount required to fund the benefit expected to be earned in the current year and taking into account projections of future earnings and future changes in Year’s Maximum Pensionable Earnings under the CPP.

Because the value of the future service liability is not used in the calculation of current service cost, it is often omitted from the actuarial report which may show only an accrued liability.

The calculations for any disability, termination or death benefits take into consideration that the entitlement to benefits may begin at various future times. Each age prior to retirement has associated with it appropriate probabilities of disability, termination and death.

Cost Certificate

University of Waterloo Pension Plan
Registration Number: 0310565

This cost certificate is intended to cover the period from January 1, 2014 to December 31, 2016, unless superseded by a subsequent valuation.

On the basis of data which we consider sufficient and reliable, we have prepared a valuation as of January 1, 2014 and we hereby certify that:

(1) The estimated University cost of benefits for current service in the year beginning January 1, 2014 is \$27,215,689 or 104.7% of the Required Member Contributions.

(2) The estimated University cost of benefits for current service in the Plan Years beginning January 1, 2015 and January 1, 2016 is 104.7% of Required member Contributions.

(3) Members are required to contribute 6.25% of annual Earnings up to the YMPE, 8.95% of annual Earnings in excess of the YMPE but less than two times the YMPE, and 9.95% of annual Earnings in excess of two times the YMPE. The estimated Required Member Contributions are \$25,986,716 in 2014, \$27,286,052 in 2015, and \$28,445,709 in 2016.

(4) The Plan has a Going Concern Unfunded Accrued Liability of \$149,505,031 as of January 1, 2014.

(5) The Plan has a Solvency Deficiency of \$76,375,177 as of January 1, 2014.

(6) The University has elected to not defer the start of the amortization of the Going Concern Unfunded Accrued Liability by one year following the valuation date. Special Payments to amortize the Going Concern Unfunded Accrued Liability are as follows:

Original Effective Date	Amortization Start Date	Annual Special Payment	Remaining Years	Balance as of January 1, 2014
January 1, 2014	January 1, 2014	\$ 14,985,678	15	\$ 149,505,031

(7) Under Ontario Regulation 178/11 made under the *Pension Benefits Act*, the Solvency Special Payments are \$0 for the period covered by this report.

(8) The Transfer Ratio under the *Pension Benefits Act* (Ontario) and its Regulations is 0.58 as of January 1, 2014. In our opinion, the value of Plan Assets less a reasonable allowance for wind-up expenses would be less than the actuarial liabilities if the Plan were wound up on the valuation date.

(9) The current service costs shown in this certificate are annual amounts calculated on the basis of monthly payments.

(10) The Prior Year Credit Balance as of January 1, 2014 is \$0.

(11) The pre-1990 past-service benefit restrictions under subsection 8504(6) of the *Income Tax Act* do not apply to any members of the Plan.

(12) The Ontario Pension Benefits Guarantee Fund (PBGF) assessment base is $75,875,177 as of January 1, 2014.

(13) For the purposes of this valuation, it is our opinion that:

- the data upon which the valuation is based are sufficient and reliable.
- the assumptions used are adequate and appropriate; emerging experience differing from the assumptions will result in gains or losses which will be revealed in future valuations.
- the methods employed in this valuation are appropriate.

(14) To our knowledge, there have been no events from January 1, 2014 (the "valuation date"), other than those disclosed, to the date of this report that would have a material impact on the information provided in this report.

This report has been prepared, and our opinions given, in accordance with accepted actuarial practice.

Aon Hewitt

Linda M. Byron
Fellow of the Canadian Institute of Actuaries

July 2014

Allan H. Shapira
Fellow of the Canadian Institute of Actuaries

July 2014

UNIVERSITY OF WATERLOO

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Aon Hewitt
225 King Street West
Suite 1600
Toronto, ON M5V 3M2

Dear Sir/Madam:

Subject: University of Waterloo Pension Plan, Registration Number 0310565

With respect to the University of Waterloo Pension Plan (the "Plan") actuarial report as at January 1, 2014, I hereby certify that, to the best of my knowledge and belief:

- The asset data provided or made available to the actuary is complete and accurate;
- The membership data and subsequent query answers provided or made available to the actuary are complete and accurate for all persons who are entitled to benefits under the terms of the Plan in respect of service up to the date of the valuation;
- The plan provisions provided or made available to the actuary are complete and accurate; and
- The actuary has been notified of all relevant events subsequent to the valuation measurement date.

Sue McGrath
Name (print) of Authorized Signatory

Manager, Pension Services
Title

Sue McGrath
Signature

June 19/14
Date