Actuarial Valuation Results as of January 1, 2015

University of Waterloo
Pension and Benefits Committee Meeting on March 27, 2015

Prepared by Aon Hewitt

Presentation to University of Waterloo

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Preparation of this Actuarial Valuation

Aon Hewitt has been retained by the University of Waterloo Pension and Benefits Committee to prepare an actuarial valuation of the University of Waterloo Pension Plan (the "Plan") as of January 1, 2015 for Plan management purposes. The valuation has not been prepared for filing with the regulatory authorities.

In conducting the valuation, we have used member data provided by the University of Waterloo as of January 1, 2015, the unaudited financial statements of the Plan provided by CIBC Mellon as of January 1, 2015, and the actuarial assumptions and methods described in this document.

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.

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Understanding the Actuarial Process

- Ultimate cost of Pension Plan equals the sum of benefits paid
- Cost is funded by University and member contributions and investment earnings, net of expenses
- Actuarial process from a funding perspective:
  - Using actuarial estimates to make periodic funding contributions in a systematic manner to meet the ultimate cost

Understanding the Actuarial Process (continued)

- Elements of an actuarial valuation:
  - Pension Plan: Contractually promises to pay benefits defined by the plan formula(s) on retirement, death, disability and termination
  - Plan Members: Current employees, retirees and beneficiaries in this group will be or are entitled to the benefits promised by the plan. Specific data is gathered and validated for all members
  - Actuarial Assumptions: Actuary uses these to estimate who will receive a benefit, what the amount of benefit will be, when the benefit will start, and how long it will be paid
  - Actuarial Cost Method: Used to allocate the cost of the estimated benefits (determined using the member data and actuarial assumptions) to various time periods

Actuarial Assumptions for Going Concern Valuation

Assumptions to Estimate:			
When Pension Benefits Are Payable	**Amount of Pension Benefits Payable**	**How Long Pension Benefits Are Payable**	**How Much Money to Set Aside**
▪ Termination Rates ▪ Disability Rates ▪ Preretirement Mortality Rates ▪ Retirement Ages	▪ Increases in CPP Wage Base ▪ Increases in ITA Maximum Pension ▪ Increases in Salaries ▪ Inflation	▪ Postretirement Mortality Rates	▪ Investment Return on Pension Fund
Demographic Assumptions	**Economic Assumptions**	**Demographic Assumptions**	**Economic Assumptions**

Pension Liability/Asset Relationship

Growth in Liabilities From Year to Year	Growth in Assets From Year to Year
Liabilities at beginning of year (representing discounted present value of pension benefits earned in respect of service up to the valuation date)	Value of pension fund assets at beginning of year
Plus	Plus
Interest on liabilities at rate used to discount the liabilities	Rate of return on pension fund assets
Plus	Plus
New liability for benefits earned by members in the year (current service) and increase/(decrease) in liability from experience losses/(gains)	Contributions made by members and University
Less	Less
Pension payments and lump-sum transfers	Pension payments, lump-sum transfers, fees and expenses

Highlights of January 1, 2015 Valuation Results

- This material includes the going concern valuation results for the Registered Pension Plan (RPP) and the Payroll Pension Plan (PPP) as at January 1, 2015
- The January 1, 2015 actuarial valuation of the RPP is not required or intended to be filed with the pension regulators
- The next required valuation to be filed with the pension regulators must have an effective date no later than January 1, 2017
- The going concern results have been determined using the same set of assumptions as the January 1, 2014 valuation, and an alternate set of economic assumptions

Plan Members—Demographics

	January 1, 2014	January 1, 2015
Active Members (Including Leaves)		
Number	3,891	3,940
Average age	47.7	47.8
Average years of credited service	10.6	10.7
Average pensionable earnings[1]	$ 89,973	$ 92,918
Total pensionable earnings[1]	$ 350,083,948	$ 366,096,682
LTD Members		
Number	97	86
Average age	56.4	57.4
Average years of credited service	18.1	18.4
Average pensionable earnings[1]	$ 55,769	$ 52,263
Total pensionable earnings[1]	$ 5,409,545	$ 4,494,583
Suspended Members		
Number	11	12
Average age	32.6	32.0
Average years of credited service	2.7	1.4

[1] Year following valuation date

Plan Members—Demographics (continued)

	January 1, 2014	January 1, 2015
Pensioners and Survivors		
Number	1,603	1,673
Average age	74.2	74.2
Average annual pension	$ 28,577	$ 29,184
Total annual pension	$ 45,809,128[1]	$ 48,823,996[1]
Total bridge benefit	$ 54,650	$ 77,006
Deferred Pensions: Subject to COLA		
Number	475	481
Average age	48.9	49.7
Average annual pension	$ 5,964	$ 6,328
Deferred Pensions: Others		
Number	9	9
Average age	64.5	65.5
Average annual pension	$ 872	$ 872

[1] Does not reflect increase as of May 1, 2014 or 2015, as applicable

Actuarial Assumptions for Going Concern Valuation—Economic Assumptions

Economic Assumptions	January 1, 2014 (Last Filed Valuation)	January 1, 2015	
		Preliminary Assumptions	Alternate Assumptions
Increase in Consumer Price Index (CPI)	2.25% per year	No change	2.00% per year
Increase in Year's Maximum Pensionable Earnings under Canada pension plan	3.00% per year (CPI + 0.75%)	No change	2.75% per year (CPI + 0.75%)
Increase in *Income Tax Act* maximum pension	$2,770.00 in 2014; increased after 2014 at 3.00% per year up to $3,200	$2,818.89 in 2015; increased after 2015 at 3.00% per year up to $3,200[1]	$2,818.89 in 2015; increased at 2.75% per year up to $3,200[1]
Increase in salaries[2]	5.00% per year for 1 year; 4.25% per year thereafter (CPI + 2.00%)	4.25% per year (CPI + 2.00%)	4.00% per year (CPI + 2.00%)
Increase in salaries (disabled)	2.25% per year (CPI + 0.00%)	No change	2.00% per year
Interest rate used to discount liabilities	6.00% per year (CPI + 3.75%)	No change	5.75% per year (CPI + 3.75%)
Interest rate used to discount cash flow from real return bonds	3.75% per year	Not applicable	Not applicable
Interest rate used to calculate 50% rule	1.70% per year for 10 years; 2.30% per year thereafter	1.30% per year for 10 years; 1.60% per year thereafter	Same
Interest rate for crediting on required member contributions	3.00% per year	No change	No change
Loading for administrative expenses	Reflected in discount rate	No change	No change

[1] PPP limit of $3,228 in 2015 increased at 3.00% / 2.75% per year up to $3,400 for PPP
[2] Across the board increases plus grid steps / merit / promotion

Actuarial Assumptions for Going Concern Valuation—Demographic Assumptions

Demographic Assumptions	January 1, 2014 (Last Filed Valuation)	January 1, 2015 Preliminary Assumptions	January 1, 2015 Alternate Assumptions
Retirement age	Age 64, but no earlier than one year after valuation date	No change	No change
Mortality rates	2014 Canadian Pensioners Combined Table ("CPM2014 Combined") with Improvements under Scale CPM-B	No change	No change
Termination rates	**Age** / **Rates Per 100**: 20: 10.0; 25: 10.0; 30: 5.6; 35: 3.2; 40: 2.2; 45: 1.7; 50: 1.2; 55: 0.7	No change	No change

Reconciliation of Plan Assets (Market Value)

		Total
Market Value of Assets, January 1, 2014[1]	**$**	**1,194,775,607**
Plus		
Member contributions	$	26,037,174
University contributions		42,373,222
Flex contributions		0
Transfers in from other plans		1,552,320
Investment oncome		114,532,124
Net transfers from other accounts		0
	$	184,494,840
Less		
Pensions and lump-sum refunds paid	$	61,351,378
Expenses and fees		1,409,332
	$	62,760,710
Market Value of Assets, December 31, 2014	**$**	**1,316,509,737**
Rate of return (net of expenses and fees)		9.43%

* The actual December 31, 2014 Market Value of Assets will be adjusted based on the audited financial statements

[1] Includes the market value of the real return bonds as of January 1, 2014 of $205,830,390, and is based on the audited financial statements

Development of Actuarial Value of Assets

- At the last valuation, the Actuarial Value of Assets for assets other than real return bonds, was set equal to the Market Value of Assets
- The actuarial value of the real return bonds was determined by discounting the projected cash flow at the real rate of return of 3.75% per year
- The AVA of the real return bonds was $167,120,211 as of January 1, 2014 (compared to the MVA of $205,830,390)
- The real return bonds were sold in October 2014 at a MVA of $216,935,034, compared to an AVA of $172,569,989
- The difference between the MVA and the AVA of the real return bonds at the date of sale of $44,365,045 will be held as a reserve, and will be recognized over time
- The Actuarial Value of Assets as of January 1, 2015 is equal to the Market Value of Assets at that date, net of adjustments for amounts payable/receivable, less the above-mentioned reserve

Pension Fund Asset Mix as of December 31, 2014

Asset Class	Current Asset Mix	Target Asset Mix
Cash and short term	28%[1]	2%
Fixed-income	29%	33%
Equities	35%	55%
Infrastructure	5%	5%
Real estate	3%	5%
Total	100%	100%

[1] Includes the proceeds from the sale of the real return bonds which were invested in TDAM short-term fund as of the valuation date

Going Concern Valuation Results as of January 1, 2015
Registered Pension Plan—Past Service

	January 1, 2014 (Last Filed Valuation)	January 1, 2015 Preliminary Assumptions	January 1, 2015 Alternate Assumptions[1]
Past Service			
Actuarial value of assets	$ 1,156,065,428	$ 1,272,144,692	$ 1,272,144,692
Less: Accrued liability			
Active members	$ 702,327,498	$ 725,192,695	$ 736,872,546
Disabled and suspended members	17,175,900	14,977,273	15,077,329
Retired participants and surviving beneficiaries	551,387,278	586,613,876	588,096,584
Deferred vested members	27,199,975[2]	29,877,704[3]	30,323,422[3]
Additional voluntary contribution balances	959,189	1,002,779	1,002,779
Members flex contribution balances	1,251,748	1,395,950	1,395,950
Cost of living increase effective May 1	5,268,871	11,410,349	11,447,153
Total	$ 1,305,570,459	$ 1,370,470,626	$ 1,384,215,763
Funding excess/(unfunded liability)	$ (149,505,031)	$ (98,325,934)	$ (112,071,071)
Deferred asset gain/(loss)—funding reserve on sale of real return bonds	N/A	44,365,045	44,365,045
Funding excess/(unfunded liability) on market value basis without funding reserve	$ (149,505,031)	$ (53,960,889)	$ (67,706,026)
Market value of assets	$ 1,194,775,607	$ 1,316,509,737	$ 1,316,509,737

[1] Reflects decrease in inflation and inflation-linked assumptions by 0.25%, and nominal discount rate by 0.25%
[2] Reflects actual indexation as of May 1, 2014 of 0.94%, and expected indexation in following two years
[3] Reflects actual indexation as of May 1, 2015 of 1.91%, and expected indexation in following two years

Going Concern Valuation Results as of January 1, 2015 Registered Pension Plan—Current Service

	January 1, 2014 to December 31, 2014	
	$ Amount	% of Pensionable Earnings
Current Service		
Total current service cost	$ 53,202,405	14.97%
Less: Members' required contributions	(25,986,716)	(7.31%)
University current service cost	$ 27,215,689	7.66%
As a % of members' required contributions	104.7%	
Pensionable earnings	$ 355,351,815	

	January 1, 2015 to December 31, 2015			
	Preliminary Assumptions		Alternate Assumptions	
	$ Amount	% of Pensionable Earnings	$ Amount	% of Pensionable Earnings
Current Service				
Total current service cost	$ 55,308,132	14.89%	$ 56,590,121	15.27%
Less: Members' required contributions	(27,319,730)	(7.35%)	(27,239,514)	(7.35%)
University current service cost	$ 27,988,402	7.54%	$ 29,350,607	7.92%
As a % of members' required contributions	102.4%		107.8%	
Pensionable earnings	$ 371,471,305		$ 370,580,275	

Analysis of Experience

	In $ Millions
Funding excess/(unfunded liability) as of January 1, 2014	$ (149.5)
Plus: University contributions	42.4
Member contributions	26.0
Less: Total current service cost	(53.3)
Plus: Interest at 6.00% per year	(8.5)
Equals: Expected funding excess/(unfunded liability) as of January 1, 2015	$ (142.9)
Plus: Gains (losses) due to:	
Return on actuarial value of assets (net of deferred gain on RRB sale)	37.8
COLA adjustment lower than assumed	2.0
Change in assumed interest rate for 50% rule	0.4
Salary increases lower than assumed	1.5
Change in ITA maximum pension/YMPE lower than assumed	0.7
Mortality experience	(1.1)
Retirement experience	4.2
Termination experience	(2.4)
Reconciliation of accrued benefits at December 31, 2013	1.5
Data adjustments	(0.2)
Miscellaneous experience	0.1
	$ 44.5
Plus: Change in actuarial assumptions	$ (13.7)
Equals: Funding excess/(unfunded liability) as of January 1, 2015—alternate assumption basis	$ (112.1)

Going Concern Valuation Results as of January 1, 2015 Payroll Pension Plan

	January 1, 2014[1]	January 1, 2015[2] Preliminary Assumptions	January 1, 2015[2] Alternate Assumptions
Past Service			
Market value of assets	$ 27,491,164	$ 33,993,532	$ 33,993,532
Less: Accrued liability			
Active members	$ 19,056,428	$ 19,035,045	$ 19,391,943
Pensioners and beneficiaries	10,798,092	12,069,826	12,100,172
Total	$ 29,854,520	$ 31,104,871	$ 31,492,115
Funding excess/(unfunded liability)	$ (2,363,356)	$ 2,888,661	$ 2,501,417
Current Service			
University current service cost	$ 1,492,678	$ 1,604,967	$ 1,616,071
As a % of pensionable earnings	0.42%	0.43%	0.44%

[1] Reflects maximum benefit in 2014 of $3,172 per year of credited service, indexed at 3.00% per year up to $3,400
[2] Reflects maximum benefit in 2015 of $3,228 per year of credited service, indexed at 3.00% / 2.75% per year up to $3,400

Total Current Service Cost for 2015

	Preliminary Assumptions					
	RPP		PPP		Total	
	$ Amount	% of Pensionable Earnings	$ Amount	% of Pensionable Earnings	$ Amount	% of Pensionable Earnings
Total current service cost	$ 55,308,132	14.89%	$ 1,604,967	0.43%	$ 56,913,099	15.32%
Less: Members' required contributions	(27,319,730)	(7.35%)	-	-	(27,319,730)	(7.35%)
University current service cost	$ 27,988,402	7.54%	$ 1,604,967	0.43%	$ 29,593,369	7.97%[1]

	Alternate Assumptions					
	RPP		PPP		Total	
	$ Amount	% of Pensionable Earnings	$ Amount	% of Pensionable Earnings	$ Amount	% of Pensionable Earnings
Total current service cost	$ 56,590,121	15.27%	$ 1,616,071	0.44%	$ 58,206,192	15.71%
Less: Members' required contributions	(27,239,514)	(7.35%)	-	-	(27,239,514)	(7.35%)
University current service cost	$ 29,350,607	7.92%	$ 1,616,071	0.44%	$ 30,966,678	8.36%[1]

[1] Total University contributions shown on following page

Contributions for 2015—Based on Filed Valuation

Member contributions:	$ 27,319,730	7.35% of pensionable earnings
University contributions:	1.63 x $ 27,319,730 = $ 44,531,160	11.99% of pensionable earnings
	$ 28,454,702	Allocated to pay University current service cost under RPP in 2015 (based on January 1, 2014 actuarial valuation—7.66% of pensionable earnings)
	14,985,680	Allocated to pay University special payments to amortize unfunded liability (based on January 1, 2014 actuarial valuation)
	1,090,778	Additional contributions allocated to fund the unfunded liability
	$ 44,531,160	Exceeds the statutory minimum required university contributions to the RPP

Contributions for 2015—Based on January 1, 2015 Valuation (Alternate Assumptions)

Member contributions:	$ 27,319,730	7.35% of pensionable earnings
University contributions:	1.63 x $ 27,319,730	11.99% of pensionable earnings
	= $ 44,531,160	
	$ 29,350,607	Allocated to pay University current service cost under RPP in 2015
	11,569,391	Allocated to pay University special payments to amortize unfunded liability of $112,071,071 over remaining 14 years of amortization period
	3,611,162	Additional contributions allocated to fund the unfunded liability
	$ 44,531,160	Total University contributions

Solvency and Wind Up Valuations

- The solvency and wind up valuations are performed at January 1, 2015 using assumptions that are prescribed by legislation and actuarial standards
- Both the solvency ratio and transfer ratio have declined since January 1, 2014 due to a significant decrease in government bond yields, which was only partially offset by the asset gains during the year
- The solvency and wind up valuations are both performed assuming the plan were to wind up on the valuation date and all benefits are settled either through an annuity purchase or the payment of lump-sum (commuted) values to members
- The solvency valuation excludes the value of indexation from the liabilities; solvency deficit is subject to funding requirements
- The wind up valuation represents the estimated liability of all benefits to be settled; wind-up deficit is calculated for reporting purposes but is not required to be funded
- The wind up valuation is based on the premise that a market for fully-indexed annuities exists, which may not be practical for a pension plan of this size

Actuarial Assumptions For Solvency and Wind Up Valuations

Assumptions	January 1, 2014 (Last Filed Valuation)	January 1, 2015
Retirement ages	Age between 55 and 65 that produces highest value	No change
Mortality rates	1994 Uninsured Pensioner Mortality Table with Generational Mortality Improvements under Scale AA	No change
Interest rates		
Solvency valuation (per year)		
Active members age 55 and over, pensioners and deferred pensioners[1]	3.83%	2.54%[3]
Active members under age 55[2]	3.10% for 10 years; 4.60% thereafter	2.40% for 10 years; 3.70% thereafter
Wind up valuation (per year)		
Active members age 55 and over, pensioners and deferred pensioners[1]	0.15%	-0.58%[3]
Active members under age 55[2]	1.70% for 10 years; 2.30% thereafter	1.30% for 10 years; 1.60% thereafter

[1] Settled through annuity purchase
[2] Settled through commuted value transfer
[3] Based on final guidance from Canadian Institute of Actuaries for January 1, 2015 actuarial valuations

Solvency and Wind Up Valuation Results as of January 1, 2015

	January 1, 2014		January 1, 2015	
	Solvency Valuation	**Wind Up Valuation**	**Solvency Valuation**	**Wind Up Valuation**
Market Value of Assets	$ 1,194,775,607	$ 1,194,775,607	$ 1,316,509,737	$ 1,316,509,737
Less: Wind up expenses	(500,000)	(500,000)	(500,000)	(500,000)
Solvency/wind up assets	$ 1,194,275,607	$ 1,194,275,607	$ 1,316,009,737	$ 1,316,009,737
Solvency/Wind Up Liabilities				
Active members	$ 698,081,399	$ 1,208,126,587	$ 839,011,700	$ 1,293,640,077
Disabled and suspended members	18,314,293	30,399,783	18,656,805	28,495,639
Pensioners and beneficiaries	522,573,316	737,677,521	620,592,040	845,931,438
Deferred vested members	29,470,839	63,374,932	40,654,070	80,505,465
Voluntary contribution balances	959,189	959,189	1,002,779	1,002,779
Member flex contribution balances	1,251,748	1,251,748	1,395,950	1,395,950
Total	$ 1,270,650,784	$ 2,041,789,760	$ 1,521,313,344	$ 2,250,971,348
Solvency Excess/(Deficiency)	**$ (76,375,177)**	**$ (847,514,153)**	**$ (205,303,607)**	**$ (934,961,611)**
Transfer ratio (market value of assets/wind up liabilities)	N/A	0.59	N/A	0.58
Solvency ratio (market value of assets/solvency liabilities)	0.94	N/A	0.87	N/A

Note:
Difference between Solvency and Wind Up Valuation is that Wind Up Valuation includes indexation under plan, whereas Solvency Valuation excludes the indexation.

Protocol Calculations

Protocol Calculations—Background

- The *Income Tax Act* (ITA) places a dollar limit cap on the benefits that may be paid to members from the RPP. This dollar limit is indexed each year by the increase in average industrial wage
- Both the RPP and PPP have annual indexed caps and maximum caps on the pension benefit payable from the Plans:
  - Caps essentially limit final average earnings that will be recognized under the defined benefit formula
- The current caps and maximum caps under the ITA, RPP and PPP are as follows:

	2015 Cap	Indexed Up To	Maximum Cap
ITA	$ 2,818.89		None
RPP	$ 2,818.89		$ 3,200.00
PPP	$ 3,228.00		$ 3,400.00

- Pension caps help manage funding risk but at the same time Pension and Benefits Committee wanted to ensure that the defined benefit formula will apply to the full final average earnings of the majority of Plan members
- Cap Protocol requires the tracking of funding required to meet the defined benefit formula without maximum caps:
  - Ensures there are no “hidden liabilities” and as funding resources become available, increase in maximum caps will be one of the priorities

Translation of Flat Dollar Maximums Into Salary Levels

- The following shows how the flat dollar amounts translate into salary levels at which the maximums are reached if the caps are not projected beyond the current hard dollar caps:

Final Average Salary at Which ITA Maximum Pension ($2,818.89) is Reached Under RPP in 2015:	$156,300
Final Average Salary at Which $3,200 Maximum Will Be Reached Under RPP (estimated):	$175,000
Final Average Salary at Which UW Maximum Pension ($3,228.00) is Reached Under PPP in 2015:	$176,700
Final Average Salary at Which $3,400 Maximum Will Be Reached Under PPP (estimated):	$185,000
Salary at Which Maximum Member Contribution is Reached Under RPP in 2015:	$209,600

Past Service Liabilities With Indexed Caps But Without $3,200/$3,400 Maximum Caps

- The chart below shows the increase in Accrued Liability at January 1, 2015 if the current caps are indexed in the future, without being subject to a maximum cap (based on alternate assumptions):

Provisions	As of January 1, 2015
Active accrued liability under RPP (current $2,818.89 cap indexed annually subject to $3,200.00 maximum cap)	$ 751,949,875
Active accrued liability under PPP (current $3,228.00 cap, indexed annually subject to $3,400.00 maximum cap)	$ 19,391,943
Increase in accrued liability under RPP (current $2,818.89 cap indexed annually, no maximum cap)	$ 41,613,114
Increase in accrued liability under PPP (current $3,228.00 cap indexed annually, no maximum cap)	$ 5,864,458

Current Service Cost With Indexed Caps But Without $3,200/$3,400 Maximum Caps

- The chart below shows the increase in University Current Service Cost at January 1, 2015 if the current caps are indexed in the future, without being subject to a maximum cap (based on alternate assumptions):

	As of January 1, 2015
University current service cost (RPP + PPP) (current $2,818.89/$3,228.00 cap indexed annually, subject to $3,200.00/$3,400.00 maximum cap)	$ 30,966,678
As a % of pensionable earnings	8.36%
Increase in University current service cost (RPP + PPP) ($2,818.89/$3,228.00 cap indexed annually with no maximum cap)	$ 5,028,731
As a % of pensionable earnings	1.36%

Projection of Members With Benefits In Excess of Indexed Caps

- To assess the long-term impact of the caps on pension benefits, for active members in the January 1, 2015 actuarial valuation, pension benefits have been projected to retirement age under two scenarios (assumed retirement at age 65): Scenario A) with a fixed $3,400.00 cap on the indexed caps, and Scenario B) with no fixed dollar caps on the indexed caps
- Following assumptions have been used for projections:
  - Increase in salaries of 4.0% per year
  - Indexation of caps at 2.75% per year
- As of December 31, 2014 there were 67 members impacted by the current cap of $3,228.00 on the combined RPP and PPP:
  - University of Waterloo is one of the few universities with a plan (PPP) providing pension benefits in excess of the ITA maximum pension under the RPP

Projection of Members With Benefits in Excess of Indexed Caps (Subject to $3,400 Maximum Cap)

Pension Benefit With Cap as a % of Formula Benefit[1]	Number of Members As of January 1, 2015			
	Less Than Age 45	Ages 45 to 54	Ages 55 and Over	Total
Less than 50%	64	2	1	67
50% but less than 55%	74	8	2	84
55% but less than 60%	87	20	2	109
60% but less than 65%	84	50	4	138
65% but less than 70%	76	57	3	136
70% but less than 75%	93	61	13	167
75% but less than 80%	101	45	18	164
80% but less than 85%	72	44	29	145
85% but less than 90%	93	31	41	165
90% but less than 95%	75	28	45	148
95% but less than 100%	82	20	49	151
Total	**901 (56%)**	**366 (29%)**	**207 (18%)**	**1,474 (37%)**

Note:
Figures in parenthesis are percentage of total participants in the applicable category.

[1] Formula benefit is defined as the calculation of the pension applying the pension formula (based on final five-year average earnings) to all pensionable earnings without applying any caps; the projection of pension benefits is based on the salary increase assumption of 4.00% per year used in the actuarial valuation

Projection of Members With Benefits in Excess of Indexed Caps (Without $3,400 Maximum Cap)

Pension Benefit as a % of Formula Benefit[1]	Number of Members As of January 1, 2015			
	Less Than Age 45	Ages 45 to 54	Ages 55 and Over	Total
Less than 80%	4	10	13	27
80% but less than 85%	11	21	9	41
85% but less than 90%	21	25	19	65
90% but less than 95%	32	50	38	120
95% but less than 100%	35	53	50	138
Total	**103 (6%)**	**159 (13%)**	**129 (11%)**	**391 (10%)**

Note:
Figures in parenthesis are percentage of total participants in the applicable category.

[1] Formula benefit is defined as the calculation of the pension applying the pension formula (based on final five-year average earnings) to all pensionable earnings without applying any caps; the projection of pension benefits is based on the salary increase assumption of 4.00% per year used in the actuarial valuation

Appendix

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 and disabled members, the accrued benefits reflect anticipated future salary increases. For pensioners, the accrued liability reflects the actuarial present value of future benefit payments.
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 the market value of assets less a reserve equal to the gain on the real return bond sale which will be recognized over time.
Funding excess/(unfunded liability)	Amount by which the actuarial value of assets exceeds/ (is less than) the accrued liability.
Funding reserve	The amount by which the market value of assets exceeds/ (is less than) the actuarial value of assets.
Members' pensionable earnings	The covered earnings (see definition under "Plan Provisions") for active and disabled members accruing service at the valuation date.

Definition of Terms (continued)

Current service cost	The actuarial present value of the benefits expected to be earned by active and disabled members 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 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.

Definition of Terms (continued)

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.
Pensioners 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.
Deferred 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.

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