



# **Preliminary Actuarial Valuation Results as of January 1, 2025**

**Pension & Benefits Committee  
Meeting on March 21, 2025**

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# Introduction



# 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

# Introduction to the January 1, 2025 Valuation Results



- This material includes the going concern valuation results for the Registered Pension Plan (RPP) and the Payroll Pension Plan (PPP), as well as the solvency and hypothetical wind up valuation results for the RPP, at January 1, 2025
- The going concern results have been determined using the set of assumptions discussed with the Pension & Benefits Committee on January 17, 2025; the solvency and wind up results are based on the January 1, 2025 prescribed assumptions
- Aon has calculated the indexation at May 1, 2025 based on the increase in CPI for the period ending December 31, 2024 and included a reserve for carry-forward indexation from 2023

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## Going Concern Valuation Results - RPP



# Going Concern Assumptions Update

The valuation has been performed using the assumptions discussed with the P&B Committee on January 17, 2025, with the following updates. A complete list of the going concern assumptions can be found in the Appendix.

## Going Concern Discount Rate

- At the previous P&B Committee meeting Aon's capital market assumptions as at December 31, 2024 were not yet available
- These assumptions have since been released and Aon has provided updated information related to the going concern discount rate on the following pages
- The target asset mix at January 1, 2025 generates an expected return of 6.58% per annum net of passive investment expenses
- The January 1, 2024 discount rate of 6.00% was net of a margin of 0.36%
- Aon has provided the results using the discount rate of 6.00% per annum and 6.25% per annum (which is equivalent to net of a margin of 0.58% and 0.33% respectively)
- Aon recommends the continued use of a 6.0% discount rate

## Indexation

- Aon has calculated the indexation at May 1, 2025 based on the increase in CPI for the period ending December 31, 2024, and included a reserve for carry-forward indexation from 2023
- Consistent with prior practice, Aon has included 3 years of indexation for deferred vested members meeting the plan criteria for pre-retirement indexation

## Provision for Expenses

- The University provided Aon with a breakdown of the actual plan expenses incurred in 2024. As a result of this, Aon recommends increasing the provision for ongoing administration expenses to \$2,000,000 in 2025.
- The Administration Expenses are assumed to increase by 3% a year going forward.

# Expected Investment Returns on Various Asset Classes and UW Pension Fund

Asset Class	Target Asset Mix Used for Discount Rate	30-Year Annualized Mean <sup>1</sup> (Nominal Return)	Annual Standard Deviation
Inflation	N/A	2.0%	2.3%
Cash (365-Day T-Bills)	2.0%	3.4%	3.6%
Long Term Bonds	20.0%	4.4%	11.9%
Canadian Equities	5.0%	5.9%	16.7%
Global Equities	48.0%	6.9%	16.2%
Listed Infrastructure	5.0%	6.6%	15.7%
Direct Infrastructure	5.0%	6.9%	11.8%
Global Listed Real Estate	5.0%	6.5%	19.4%
Direct Real Estate	5.0%	6.0%	15.9%
Private Debt	5.0%	5.4%	13.0%

- Above returns determined at December 31, 2024
- Expected rate of return, net of passive investment fees and based on above target asset mix is **6.58%**
- Discount rate of 6.00% would be net of 0.58% additional margin
- Discount rate of 6.25% would be net of 0.33% additional margin

<sup>1</sup>Takes into effect the compounding for each underlying asset class

# Reconciliation of Plan Assets (Market Value)

	Total
<b>Market Value of Assets, December 31, 2023 (Unadjusted for in-transit items)</b>	<b>\$ 2,416,338,000</b>
<b>Plus</b>	
Member contributions	\$ 52,085,000
University contributions	72,573,000
Flex contributions	0
Transfers in from other plans	331,000
	<b>\$ 124,989,000</b>
<b>Less</b>	
Pensions and lump-sum refunds paid	\$ 104,761,000
Investment and non-investment expenses and fees	<u>6,570,000</u>
	<b>\$ 111,331,000</b>
<b>Plus</b>	
Investment return	\$ 364,119,000
<b>Market Value of Assets, December 31, 2024 (Unaudited)</b>	<b>\$ 2,794,115,000</b>
<b>Market Value of Assets, December 31, 2024 (Adjusted for in-transit cashflows)</b>	<b>\$ 2,791,754,000</b>
Rate of return (net of all expenses and fees) <sup>1</sup>	14.7%

- Amount above adjusted for in-transit benefit payments of \$2,361,000; final valuation results will reflect asset value in audited financial statements
- <sup>1</sup>Dollar-weighted return

# Going Concern Valuation Results as of January 1, 2025

## Registered Pension Plan – Past Service

	January 1, 2024	January 1, 2025 (6.00% discount rate)	January 1, 2025 (6.25% discount rate)
<b>Past Service</b>			
Actuarial (Market) value of assets	\$ 2,414,008,000	\$ 2,791,754,000	\$ 2,791,754,000
Less: Accrued liability			
Active members	\$ 1,161,720,000	\$ 1,225,305,000	\$ 1,169,137,000
Disabled and suspended members	19,615,000	19,164,000	18,426,000
Pensioners and beneficiaries <sup>1</sup>	1,059,755,000	1,137,307,000	1,114,009,000
Deferred vested members <sup>1</sup>	51,027,000	52,288,000	49,997,000
Additional voluntary contribution balances	252,000	168,000	168,000
Members flex contribution balances	538,000	394,000	394,000
Indexation Reserve <sup>2</sup>	23,493,000	14,677,000	14,340,000
<b>Total</b>	<b>\$ 2,316,400,000</b>	<b>\$ 2,449,303,000</b>	<b>\$ 2,366,471,000</b>
Going concern position	\$ 97,608,000	\$ 342,451,000	\$ 425,283,000
Provision for Adverse Deviation (PfAD)	(188,016,000)	(211,690,000)	(204,902,000)
<b>Funding Excess/(Unfunded Liability)</b>	<b>\$ (90,408,000)</b>	<b>\$ 130,761,000</b>	<b>\$ 220,381,000</b>
Going Concern Funded Ratio (before PfAD)	1.04	1.14	1.18
Going Concern Funded Ratio (with PfAD)	0.96	1.05	1.09

<sup>1</sup> Includes actual May 1 indexation adjustment and May 1, 2025 indexation adjustment of 2.38% on 100% indexed benefits and 1.79% on 75% indexed benefits

<sup>2</sup> Reflects carry-forward indexation from 2023 of 1.8% on 100% indexed benefits and 0.1% on 75% indexed benefits.

(The January 1, 2024 figure also reflects 1% additional indexation for 1 year. This has been removed for the January 1, 2025 valuation.)

# Going Concern Valuation Results as of January 1, 2025— Registered Pension Plan – Current Service

	January 1, 2024 to December 31, 2024		January 1, 2025 to December 31, 2025 (6.00% discount rate)		January 1, 2025 to December 31, 2025 (6.25% discount rate)	
	\$ Amount	% of Pensionable Earnings	\$ Amount	% of Pensionable Earnings	\$ Amount	% of Pensionable Earnings
<b>Current Service</b>						
Total current service cost	\$ 89,165,000	15.16%	\$ 90,320,000	14.99%	\$ 85,323,000	14.16%
Provision for non-investment expenses	1,704,000	0.29%	2,000,000	0.33%	2,000,000	0.33%
PfAD in respect of current service cost	7,714,000	1.31%	8,236,000	1.37%	7,806,000	1.30%
Additional margin to maintain 50/50 cost-sharing <sup>1</sup>	7,123,000	1.21%	6,930,000	1.15%	12,357,000	2.05%
Less: Members' required contributions	<u>(52,853,000)</u>	<u>(8.99%)</u>	<u>(53,743,000)</u>	<u>(8.92%)</u>	<u>(53,743,000)</u>	<u>(8.92%)</u>
<b>University Current Service Cost</b>	<b>\$ 52,853,000</b>	<b>8.99%</b>	<b>\$ 53,743,000</b>	<b>8.92%</b>	<b>\$ 53,743,000</b>	<b>8.92%</b>
As a % of members' required contributions	100.0%		100.0%		100.0%	
Pensionable earnings	\$ 588,159,000		\$ 602,378,000 (capped) <sup>2</sup>		\$ 602,378,000 (capped) <sup>2</sup>	

1 Reflects target 50/50 cost sharing on total current service cost in accordance with Funding Policy

2 Reflects individual earnings up to \$224,500 which is the maximum earnings on which members contribute to the pension plan

# Going Concern Valuation Results as of January 1, 2025

## Development of Special Payments

- Going concern deficits are required to be funded over 10 years with any adjustments in special payments made one year from the valuation date (if the valuation is filed)
- The University is currently required to contribute on the basis of the January 1, 2024 actuarial valuation of the plan on file with the regulators.

Valuation Date	Unfunded Liability	Period	Annual Statutory Special Payment
January 1, 2024	\$ 16,307,000	January 1, 2024 to December 31, 2034	\$ 16,828,000
	<u>\$ 74,101,000</u>	January 1, 2025 to December 31, 2034	\$ 10,392,000
	\$ 90,408,000		

- If this January 1, 2025 valuation is **not filed** with the regulators, the statutory special payments will remain at the current level shown above
- If this January 1, 2025 valuation **is filed** with the regulators, the statutory special payments required to fund the going concern deficit will be discontinued

# Analysis of Experience – Past Service

	In \$ Millions
Funding excess/(unfunded liability) as of January 1, 2024	\$ (90.4)
Plus: University contributions for current service	52.1
Member contributions for current service	52.1
Special payments	20.5
Less: Total current service cost	(98.6)
Plus: Interest at 6.00% per year	(5.4)
<b>Equals: Expected Funding Excess/(Unfunded Liability) as of January 1, 2025</b>	<b>\$ (69.7)</b>
Plus: Gains (losses) due to:	
Return on actuarial value of assets	214.5
Indexation (net of removing 1% higher CPI from the indexation reserve)	8.3
Salary increases higher than assumed	(11.4)
Change in ITA maximum pension and plan maximum higher than assumed	(3.8)
Change in YMPE higher than assumed	1.4
Mortality experience	(5.3)
Retirement experience	1.9
Termination experience	0.4
Additional year of COLA for deferred members	(0.7)
Data adjustments\Article 12 Transfers	(0.6)
Miscellaneous experience	1.0
<b>Equals: Funding Excess/(Unfunded Liability) as of January 1, 2025, Before Change in Assumptions</b>	<b>\$ 135.9</b>
Impact of additional 0.8% salary increase for Faculty	(0.7)
Impact of change in PfAD and PfAD experience	(4.5)
<b>Equals: Funding Excess/(Unfunded Liability) as of January 1, 2025 at 6.00% Discount Rate</b>	<b>\$ 130.8</b>
Impact of change in discount rate from 6.00% to 6.25%	\$ 89.6
<b>Equals: Funding Excess/(Unfunded Liability) as of January 1, 2025 at 6.25% Discount Rate</b>	<b>\$ 220.4</b>

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## Solvency and Hypothetical Wind Up Valuation Results



# Solvency and Wind Up Valuations

- The solvency and wind up valuations are performed at January 1, 2025 using assumptions that are prescribed by legislation and actuarial standards
- 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



# Solvency and Wind Up Valuation Results as of January 1, 2025

	January 1, 2024		January 1, 2025	
	Solvency Valuation	Wind Up Valuation	Solvency Valuation	Wind Up Valuation
<b>Market Value of Assets</b>	<b>\$ 2,414,008,000</b>	<b>\$ 2,414,008,000</b>	<b>\$ 2,791,754,000</b>	<b>\$ 2,791,754,000</b>
Less: Wind up expenses	<u>(1,000,000)</u>	<u>(1,000,000)</u>	<u>(3,000,000)</u>	<u>(3,000,000)</u>
Solvency/ wind up assets	\$ 2,413,008,000	\$ 2,413,008,000	\$ 2,788,754,000	\$ 2,788,754,000
<b>Solvency/ Wind Up Liabilities</b>				
Active members	\$ 1,168,045,000	\$ 1,491,886,000	\$ 1,216,244,000	\$ 1,539,846,000
Disabled and suspended members	21,857,000	30,283,000	21,110,000	29,170,000
Pensioners and beneficiaries	978,314,000	1,258,833,000	1,050,366,000	1,351,154,000
Deferred vested members	52,257,000	85,604,000	52,470,000	86,795,000
Voluntary contribution balances	252,000	252,000	168,000	168,000
Member flex contribution balances	<u>538,000</u>	<u>538,000</u>	<u>394,000</u>	<u>394,000</u>
<b>Total</b>	<b>\$ 2,221,263,000</b>	<b>\$ 2,867,396,000</b>	<b>\$ 2,340,752,000</b>	<b>\$ 3,007,527,000</b>
<b>Excess/ (Deficiency)</b>	<b>\$ 191,745,000</b>	<b>\$ (454,388,000)</b>	<b>\$ 448,002,000</b>	<b>\$ (218,773,000)</b>
Transfer ratio (market value of assets/ wind up liabilities)	N/A	0.84	N/A	0.93
Solvency ratio (market value of assets/ solvency liabilities)	1.09	N/A	1.19	N/A

**Notes:**

- Difference between Solvency and Wind Up Valuation is that Wind Up Valuation includes indexation under Plan, whereas Solvency Valuation excludes the indexation.

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## Cap/ Protocol Calculations



# Past Service Liabilities – Impact of Indexing RPP Cap to Full Increase in ITA Limit

The chart below shows the increase in Accrued Liability at January 1, 2025 if the current RPP hard dollar cap of \$4,093.70 indexed each year at 1/3 of the increase in the ITA limit is removed, and the ITA limit is increased by full AIW increases:

6.00%	Current Provisions	Current RPP Cap Indexed at full AIW Increase
RPP <sup>1</sup>	\$ 2,660,993,000	\$ 2,707,748,000
Increase in Liability	N/A	\$ 46,755,000

<sup>1</sup> Includes PfAD

# Current Service Cost – Impact of Indexing RPP Cap to Full Increase in ITA limit

The chart below shows the increase in Total Current Service Cost at January 1, 2025 if the current RPP hard dollar cap of \$4,093.70 indexed each year at 1/3 of the increase in the ITA limit is removed, and the ITA limit is increased by full AIW increases:

6.00%	Current Provisions	Current RPP Cap Indexed at full AIW Increase
RPP <sup>1</sup>	\$ 100,556,000	\$ 105,264,000
As a % of Pensionable Earnings	16.69%	17.47%
Increase	N/A	0.78%

<sup>1</sup> Includes PfAD and provision for expenses

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## Payroll Pension Plan Calculations



# Going Concern Valuation Results as of January 1, 2025 — Payroll Pension Plan

	January 1, 2024	January 1, 2025	January 1, 2025 (6.25% discount rate)
<b>Past Service</b>			
Market value of assets	\$ 34,483,000	\$ 25,549,000	\$ 25,549,000
Less:Accrued liability			
Active members	\$ 0	\$ 0	\$ 0
Pensioners and beneficiaries <sup>1</sup>	21,817,000 <sup>2</sup>	21,253,000 <sup>2</sup>	20,865,000 <sup>2</sup>
Indexation reserve <sup>3</sup>	362,000	179,000	176,000
PfAD	N/A	N/A	N/A
<b>Total</b>	<b>\$ 22,179,000</b>	<b>\$ 21,432,000</b>	<b>\$ 21,041,000</b>
Funding excess/(unfunded liability)	\$ 12,304,000	\$ 4,117,000	\$ 4,508,000
<b>Current Service</b>			
University current service cost	\$ 0	\$ 0	\$ 0

<sup>1</sup> Includes actual May indexation adjustment

<sup>2</sup> Annual pension payments from PPP are approximately \$1.8 million

<sup>3</sup> Reflects carry-forward from January 1, 2023; January 1, 2024 reserves includes additional 1% CPI adjustment which is not included at January 1, 2025

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## Appendix A



# Pension Fund Asset Mix as of January 1, 2025

Asset Class	Current Asset Mix	Target Asset Mix
Cash and short term	4%	2%
Fixed-income	26%	20%
Equities	56%	53%
Infrastructure	8%	10%
Real estate	5%	10%
Private Debt	<u>1%</u>	<u>5%</u>
<b>Total</b>	<b>100%</b>	<b>100%</b>

# Plan Members – Demographics

	January 1, 2024	January 1, 2025
<b>Active Members (Including Leaves)</b>		
Number	5,141	5,108
Average age	46.6	46.8
Average years of credited service	9.9	10.0
Average pensionable earnings	\$ 112,872	\$ 118,461
Total pensionable earnings	\$ 580,277,000	\$605,101,000
Average pensionable earnings (Capped)*	N/A	\$ 116,396
Total pensionable earnings (Capped)*	N/A	\$594,553,000
<b>LTD Members</b>		
Number	108	105
Average age	54.1	54.0
Average years of credited service	15.6	15.5
Average pensionable earnings	\$ 72,977	\$ 74,523
Total pensionable earnings	\$ 7,882,000	\$ 7,825,000
Average pensionable earnings (Capped)*	N/A	\$ 74,523
Total pensionable earnings (Capped)*	N/A	\$ 7,825,000

\* Reflects individual earnings up to \$224,500 which is the maximum earnings on which members contribute to the pension plan effective January 1, 2025

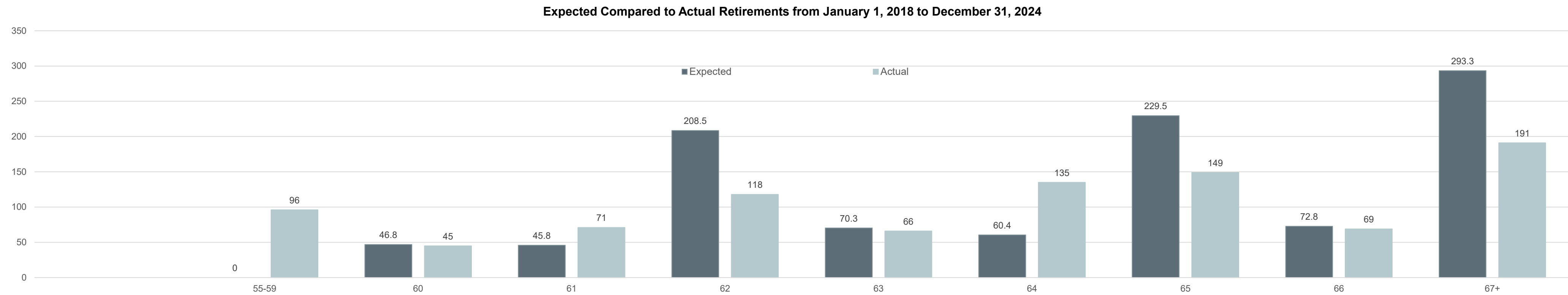
# Plan Members – Demographics (Cont'd)

	January 1, 2024	January 1, 2025
<b>Pensioners and Survivors</b>		
Number	2,566	2,691
Average age	74.6	74.8
Average annual pension	\$ 35,105	\$ 36,620
Total annual pension	\$ 90,079,000 <sup>1</sup>	\$ 98,545,000 <sup>1</sup>
<b>Deferred Members: Eligible for COLA on All Service</b>		
Number	235	220
Average age	60.0	59.6
Average annual pension	\$ 9,020	\$ 9,124
<b>Deferred Members: Eligible for COLA on Pre-2008 Service</b>		
Number	145	145
Average age	52.6	53.6
Average annual pension	\$ 11,657	\$ 11,735
<b>Deferred Pensions: Not Eligible for COLA</b>		
Number	345	361
Average age	43.3	43.8
Average annual pension	\$ 5,652	\$ 6,139

<sup>1</sup> Does not reflect increase as of May 1, 2024 or 2025, as applicable

# Retirement Age Experience

The following chart compares the actual retirements in the period January 1, 2018 to December 31, 2024 to the retirements that would have been expected during the period based on the assumed retirement rates adopted at the January 1, 2020 valuation.



Ages	Expected	Actual
55-59	0.0	96
60	46.8	45
61	45.8	71
62	208.5	118
63	70.3	66
64	60.4	135
65	229.5	149
66	72.8	69
67+	293.3	191

# Mortality Rates

- Since January 1, 2020, the mortality table being used is 2014 Canadian Pensioners' Public Sector Mortality Table with Improvements Under Scale MI-2017, projected from 2014
- Following table shows actual versus expected deaths for members of the RPP for 2015 through 2024:

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Actual Deaths	51	57	53	62	61	74	68	87	73	76	662.0
Expected Deaths (2014 CPM Public Table with Improvements Under Scale MI-2017)	55.8	58.6	61.6	63.7	66.4	68.3	70.0	73.9	75.2	78.4	671.8

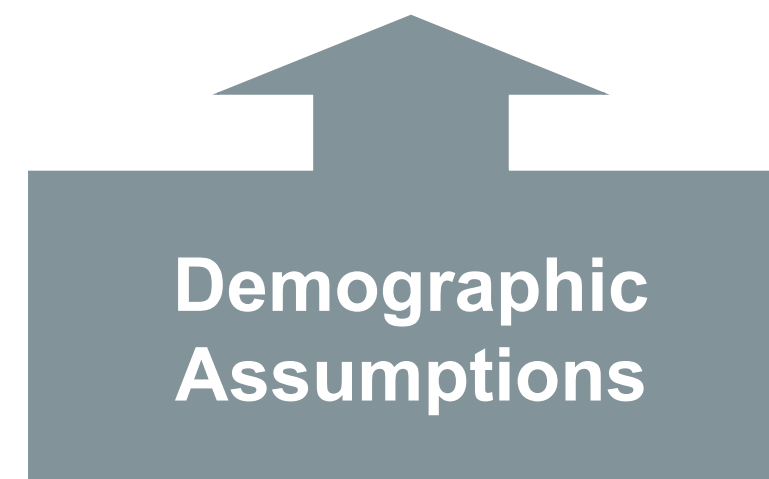
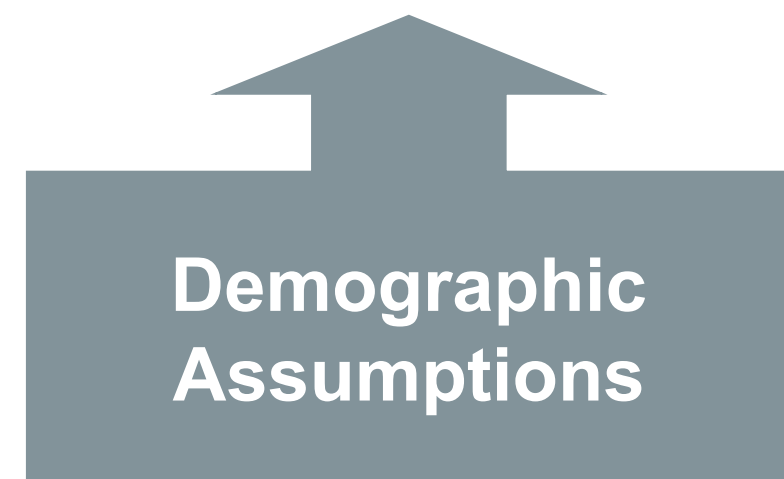
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## Appendix B - Assumptions



# Actuarial Assumptions for Going Concern Valuation

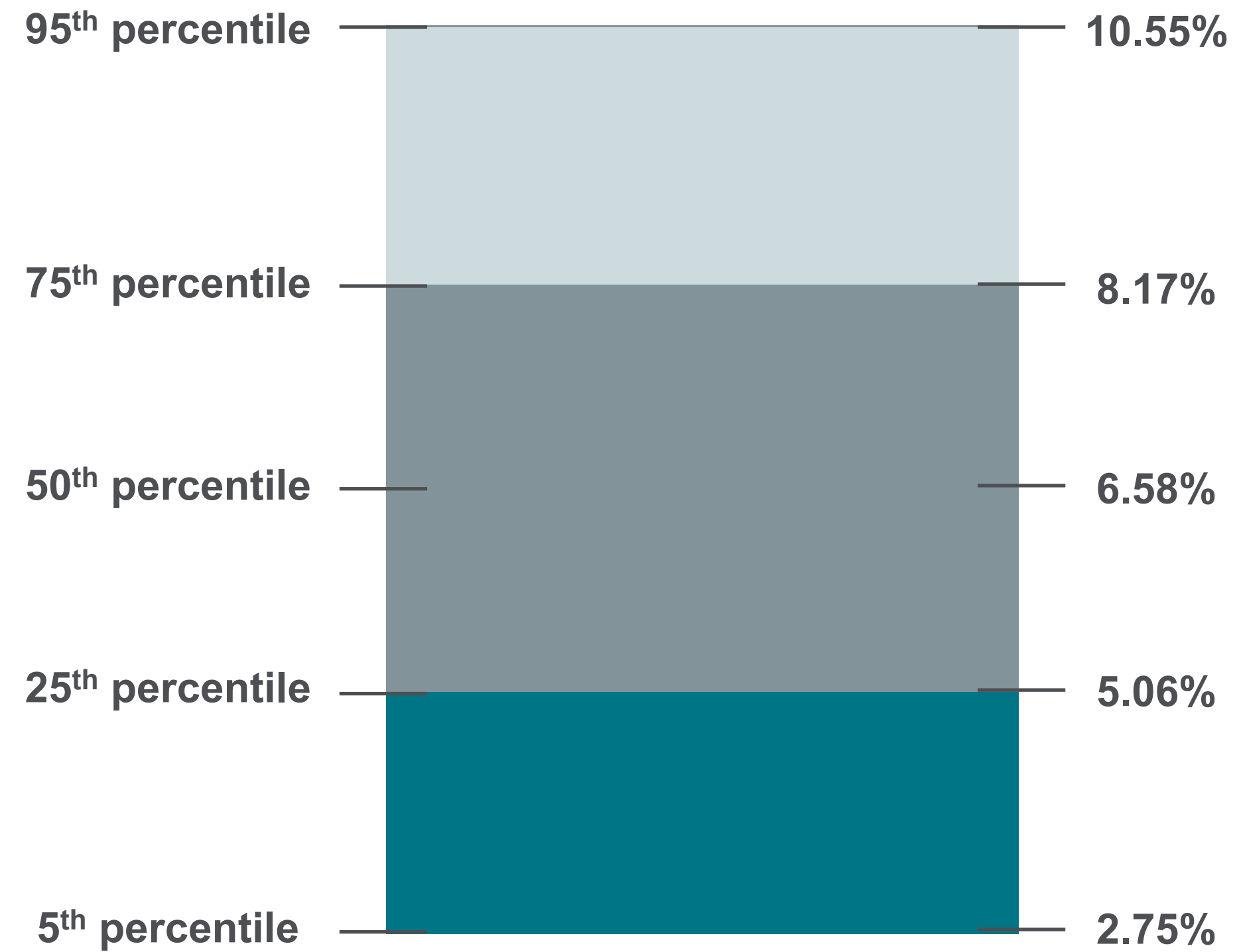
Assumptions to Estimate:			
When Pension Benefits Are Payable	Amount of Pension Benefits Payable	How Long Pension Benefits are Payable	How Much Money to Set Aside
<ul style="list-style-type: none"> <li>• Termination Rates</li> <li>• Disability Rates</li> <li>• Preretirement Mortality Rates</li> <li>• Retirement Ages</li> </ul>	<ul style="list-style-type: none"> <li>• Increases in CPP Wage Base</li> <li>• Increases in ITA Maximum Pension</li> <li>• Increases in Salaries</li> <li>• Inflation</li> </ul>	<ul style="list-style-type: none"> <li>• Postretirement Mortality Rates</li> </ul>	<ul style="list-style-type: none"> <li>• Investment Return on Pension Fund</li> </ul>



# Expected Investment Returns For UW Pension Fund (cont'd)

- The chart below provides the range of outcomes for the 30-year rate of return based on the target asset mix of the University of Waterloo pension fund:

**Annualized Rate of Return over a 30-Year Period (December 31, 2024)**



# Actuarial Assumptions for Going Concern Valuation

## Economic Assumptions

Economic Assumptions	January 1, 2024	January 1, 2025
Increase in Consumer Price Index (CPI)	2.00% per year	No change
Indexation of Benefits	<p>May 1, 2024 – 3.90% for 100% indexed benefits; 2.93% for 75% indexed benefits; May 1, 2025 – 3.00% for 100% indexed benefits; 2.25% for 75% indexed benefits</p> <p>Carry forward of 1.80% for 100% indexed benefits and 0.1% for 75% indexed benefits held in reserve</p> <p>2.00% per year thereafter for 100% indexed benefits and 1.50% per year thereafter for 75% indexed benefits</p>	<p>May 1, 2025 – 2.38% for 100% indexed benefits; 1.79% for 75% indexed benefits</p> <p>May 1, 2026 and thereafter – 2.00% for 100% indexed benefits; 1.50% for 75% indexed benefits</p> <p>Carry forward of 1.80% for 100% indexed benefits and 0.1% for 75% indexed benefits held in reserve</p>
Increase in Year's Maximum Pensionable Earnings under Canada Pension Plan	2.75% per year (CPI + 0.75%)	No change
Increase in <i>Income Tax Act</i> maximum pension	\$3,610.00 in 2024; increased after 2024 at 2.75% per year up to a hard-dollar cap of \$4,039.29 which increases at 0.92% per year after 2024	\$3,756.67 in 2025; increased after 2025 at 2.75% per year up to a hard-dollar cap of \$4,093.70 which increases at 0.92% per year after 2025
Increase in salaries <sup>1</sup>	4.00% per year (CPI + 2.00%)	4.00% per year (CPI + 2.00%)

<sup>1</sup> Across the board increases plus grid steps / merit / promotion

# Actuarial Assumptions for Going Concern Valuation

## Economic Assumptions

Economic Assumptions	January 1, 2024	January 1, 2025
Increase in salaries (disabled)	2.00% per year (CPI + 0.00%)	No change
Interest rate used to discount liabilities	6.00% per year (CPI + 4.00%)	6.00% or 6.25% per year (CPI + 4.00% or +4.25%)
Interest rate used to calculate 50% rule	2.40% per year for 10 years; 2.50% per year thereafter (100% indexed) 2.80% per year for 10 years; 2.90% per year thereafter (75% indexed)	2.00% per year for 10 years; 2.70% per year thereafter (100% indexed) 2.50% per year for 10 years; 3.20% per year thereafter (75% indexed)
Interest rate for crediting on required member contributions	3.00% per year	3.00% per year
Loading for administrative expenses	Explicit assumption of \$1,704,000 in 2024 added to current service cost	Explicit assumption of \$2,000,000 in 2025 added to current service cost
Provision for Adverse Deviation (PfAD)	9.60% of non-indexed liabilities and current service cost	10.10% of non-indexed liabilities and current service cost

# Actuarial Assumptions For Going Concern Valuation

## Demographic Assumptions

Demographic Assumptions	January 1, 2024		January 1, 2025
Mortality Rates	2014 Canadian Pensioners Public Sector Mortality Table (“CPM2014 Public”) with Improvements Under Scale MI-2017 projected from 2014		No Change
Retirement Rates	<b>Age</b>	<b>Rates Per 100</b>	No change
	60	5	
	61	5	
	62	25	
	63	10	
	64	10	
	65	50	
	66	25	
	67	25	
	68	25	
	69	50	
	70	100	

# Actuarial Assumptions For Going Concern Valuation

## Demographic Assumptions

Demographic Assumptions	January 1, 2023		January 1, 2024
Termination Rates	<b>Age</b>	<b>Rates Per 100</b>	No change
	20	10.0	
	25	10.0	
	30	5.6	
	35	3.2	
	40	2.2	
	45	1.7	
	50	1.2	
	55+	0.0	

# Actuarial Assumptions For Solvency and Wind-Up Valuations

Assumptions	January 1, 2024	January 1, 2025
Retirement Ages	50% at unreduced age and 50% at age that results in highest commuted value	No change
Mortality Rates	CPM2014 Combined with Improvements Under Scale CPM-B	No change
Interest Rates—Solvency Valuation (Per Year)		
Active Members Age 55 and Over, Pensioners and Deferred Pensioners <sup>1</sup>	4.73%	4.72%
Active Members Under Age 55 <sup>2</sup>	4.10% for 10 years; 4.20% thereafter	3.90% for 10 years; 4.60% thereafter
Interest Rates—Wind-Up Valuation (Per Year)		
Active Members Age 55 and Over, Pensioners and Deferred Pensioners <sup>1</sup>	1.20% (100% indexed) 2.08% (75% indexed)	1.35% (100% indexed) 2.17% (75% indexed)
Active Members Under Age 55 <sup>2</sup>	2.40% for 10 years; 2.50% thereafter (100% indexed) 2.80% for 10 years; 2.90% thereafter (75% indexed)	2.00% for 10 years; 2.70% thereafter (100% indexed) 2.50% for 10 years; 3.20% thereafter (75% indexed)

<sup>1</sup> Settled through annuity purchase

<sup>2</sup> Settled through commuted value

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## Appendix C – Background



# 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

# 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

# Definition of Terms

Definition	
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	The method for this valuation assumes the actuarial value of assets is set equal to the market value of assets.
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

Definition	
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

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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