University of Waterloo | Board of Governors

PENSION & BENEFITS COMMITTEE
AGENDA
FRIDAY, 19 January 2024
9:30 a.m.-12:00 p.m. EST
NH 3318
Governing Documents and Resources

TIMING	AGENDA ITEM	PAGE	ACTION
	OPEN SESSION		
9:30 a.m.	1. Approval of the Agenda	3	Decision
9:35 a.m.	2. Minutes of the 17 November 2023 Meeting (Open Session) and Business Arising	5	Decision
	a. Update on Summary of Fund Performance November 2023 [Shapira]	XX	Information
	b. Update on Bill 124 Payments [Hornberger]	Oral	Information
9:45 a.m.	3. Execution Against Work Plan [Willey-Thomas]	27	Information
	Pension		
9:50 a.m.	4. Pension Investment Governance Documents [Hadley]		
	a. Pension Fund Implementation Procedures (FIP)	35	Decision
	b. Pension Statement of Investment Policies and Procedures (SIPP)	44	Information
	c. Responsible Investment Policy (RIP)	56	Information
10:00 a.m.	5. UPP Review [Shapira]	60	Information
10:30 a.m.	6. Approval of Actuarial Valuation Assumptions [Byron/Shapira]	89	Decision
11:00 a.m.	7. Review of RPP Contribution, Protocol Caps and Overview of Pension Protocols [Shapira]	116	Information
11:10 a.m.	8. Other Business	Oral	Information

TIMING	AGENDA ITEM	PAGE	ACTION

13 November 2023

Sarah Willey-Thomas
Associate University Secretary

UPCOMING COMMITTEE MEETINGS	
6 February 2024	Board of Governors Meeting
16 February 2024	Pension & Benefits Committee
5 March 2024	Pension Investment Committee
22 March 2024	Pension & Benefits Committee
16 April 2024	Board of Governors Meeting

If you require assistance or need to convey regrets, please contact the Secretariat at board@uwaterloo.ca.

UNIVERSITY OF WATERLOO | Board of Governors

For Decision	**Open Session**
Date of Meeting:	January 19, 2024
To:	Members, Pension & Benefits Committee
From:	Sarah Willey-Thomas, Associate University Secretary
RE:	**1) Approval of Agenda**

1) Approval of Agenda

Committee members may request to have items moved to the regular agenda immediately prior to the approval of the agenda.

Recommendation:
To approve the agenda of the 19 January 2024 Pension & Benefits Committee meeting.

Documentation Provided:

- N/A

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UNIVERSITY OF WATERLOO | Board of Governors

For Decision **Open Session**

Date of Meeting:	January 19, 2024
To:	Members, Pension & Benefits Committee
From:	Sarah Willey-Thomas, Associate University Secretary
RE:	**2) Minutes of the 17 November 2023 Meeting and Business Arising**

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2) Minutes of the 17 November 2023 Meeting and Business Arising

Recommendation:
To approve the minutes of the 17 November 2023 meeting.

a. Update on Summary of Fund Performance November 2023

Further to the Committee meeting on 17 November 2023, Aon has supplied updated materials regarding the Summary of Fund Performance.

b. Update on Bill 124 Payments

Lee Hornberger, Director, Total Rewards, will provide the Committee with a verbal update further to discussion at the 17 November 2023 meeting.

Documentation Provided:
- Minutes of the 17 November 2023 Meeting
- Pension Risk Management Dashboard as of September 30, 2023

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University of Waterloo
Board of Governors
PENSION & BENEFITS COMMITTEE
Minutes of the 17 November 2023 Meeting
[in agenda order]

Present: Sarah Cressman, Elizabeth Demers, Teresa Fortney (chair), Melissa Graham, Sarah Hadley, Lily Hua, William Povelofskie, Jacinda Reitsma, James Rush, David Saunders, David Taylor, James Thompson, Sarah Willey-Thomas (secretary)

Regrets: Michelle Hollis

Resources/Guests: Anata Alphonso, Melanie Figueiredo, Patti Hancock, Lee Hornberger, Sue McGrath, Michelle St-Amour, Allan Shapira, Tyler Wendland

Organization of Meeting: Teresa Fortney took the chair, and Sarah Willey-Thomas acted as secretary. The secretary advised that a quorum was present. The agenda was accepted as distributed.

OPEN SESSION

1. AGENDA / ADDITIONAL AGENDA ITEMS

The Chair noted that the December Committee meeting would be canceled and that materials have been adjusted to reflect the cancellatikon.

Saunders and Taylor.

Motion to approve the 17 November 2023 agenda.

CARRIED

2. MINUTES OF THE 13 OCTOBER MEETING AND BUSINESS ARISING

Thomspon and Saunders.

Motion to approve the minutes of the 13 October 2023 meeting.

CARRIED

a. Pension Projection Tool – Early Retirement Reduction Disclosure

The Committee received an update on the language proposed for the pension portal including the placement of draft language and heard that Aon had been engaged in drafting the proposed language.

b. Request at Board – Information on Healthy Pension

The Committee received an update on the health of the pension plan which had been submitted to the Board of Governors at its 31 October 2023 meeting.

3. EXECUTION AGAINST WORK PLAN

The Committee reviewed the updated work plan.

4. REPORT FROM PENSION INVESTMENT COMMITTEE

The Committee received an update from the Pension Investment Committee. The Committee discussed that the negative returns would be discussed during a subsequent agenda item.

Benefits

5. ANNUAL BENEFITS UTILIZATION REPORT

The Committee received the Annual Benefits Utilization Report. The Committee discussed the cost per number of claims.

Pension

5. UPP REVIEW

Allan Shapira presented the UPP review. The Committee discussed how employee groups decide on joining the UPP and particularly where employee groups are not fully unionized; allocation of representation seats across member institutions; governance and fiduciary responsibilities; lack of representation for retirees; culture change associated with change in Committee representation on UPP; process for managing liabilities over ten year period; reason for not fully funding pensions; initial genesis for the UPP; lack of solvency requirements; strong representation on University of Waterloo Pension Plan for Staff and Faculty; potential size of the UPP if all Ontario universities were to join; need for scenario testing; how assets of UPP are backed in case of insolvency; how member university can remove themselves from the UPP; returns on plan over the last ten years; and impact on bargaining.

Committee members were invited to come with any questions they might have for the January Committee meeting.

6. SUMMARY OF TOTAL FUND INVESTMENT PERFORMANCE

Shapira presented the Summary of Total Fund Investment Performance. The Committee discussed the fees associated with the return; and return for the quarter and year to date performance.

7. PENSION RISK MANAGEMENT DASHBOARD Q3 2023

Shapira presented the Pension Risk Management Dashboard for Q3 2023. The Committee noted some corrections to the report and that an update would be brought forward to the next meeting.

9. MAXIMUM PENSION LIMITS AND CAPS ADJUSTMENTS, BASED ON AIW INCREASE

Sue McGrath presented the Maximum Pension Limits and Caps Adjustments, Based on AIW Increase.

10. OTHER BUSINESS

The Committee discussed Bill 124 salary increases, including timing of payments and impact for members who retired during the eligibility periods. The Committee noted it would receive an update and that questions could be directed to Hornberger.

24 November 2023

Sarah Willey-Thomas
Associate University Secretary

Pension Risk Management Dashboard

University of Waterloo

As of September 30, 2023

About these Materials

This dashboard was prepared for the University of Waterloo to track changes in the funded status of the Pension Plan over successive reporting periods, as well as quantify the amount of risk to which the Pension Plan is exposed. The report presents the funded status and performs the analysis on three bases:

Risk-Free Benchmark Basis – This liability is calculated using best estimate assumptions for retirement, termination and other demographic experience, and discount rate and inflation assumptions determined with reference to the risk-free environment. For this report, the liability has been determined using the real return bond yield plus a 40 basis point credit spread to reflect the additional yield that can be achieved with relatively little additional risk. This liability differs from the solvency calculation in that the demographic assumptions are best estimate and statutory “grow-in” provisions are not included.

Going Concern Basis – This liability is calculated using the going concern assumptions at the most recent valuation. The analysis is performed using the market value of assets with a Provision for Adverse Deviation, as prescribed by the *Pension Benefits Act* (Ontario).

Solvency Basis – This liability is calculated using assumptions determined in accordance with the Canadian Institute of Actuaries Annuity Purchase guidance and Commuted Value standards in effect at each measurement date shown in this report. A summary of these assumptions is included on page 15.

This dashboard also contains a reconciliation that compares the going concern liability with the liability calculated using the risk-free benchmark. The difference between the two liabilities represents the amount of return expected to be provided by taking on risk in the investment portfolio. Over successive quarters the tool helps quantify how that risk changes as the underlying interest rates change.

On all bases the following information is shown:

- Current Funded Status and Historical Asset Liability Performance
  - How well funded is the plan?
  - What has been the return on plan assets and liabilities?
- Detailed Asset and Liability Performance Attribution
  - What factors drove the performance of assets and liabilities over the prior period?
  - What is the relative impact of these factors on the assets and liabilities in isolation and in combination?

For the Risk-Free Benchmark Basis, the following information is also shown:

- Scenario Testing
  - What risk exposures does the plan face?
  - What would be the impact of a downside event for each risk factor?

Highlights

Over the quarter:

- The fund had a rate of return after fees of -3.3%.
- Nominal risk-free rates increased.
- Inflation expectations implicit in the underlying bond yields increased.

As a result,

- The going concern deficit increased from $5.0 million to $96.8 million over the quarter primarily due to lower than expected asset performance, partly caused by increases in bond yields and partly caused by lower than expected returns on the plan’s excess return seeking assets.
- The risk-free deficit decreased from $805.3 million to $581.4 million over the quarter primarily due to a significant increase in real return bond yields.
- The solvency surplus increased from $241.5 million to $345.8 million over the quarter primarily due to increases in risk-free rates.

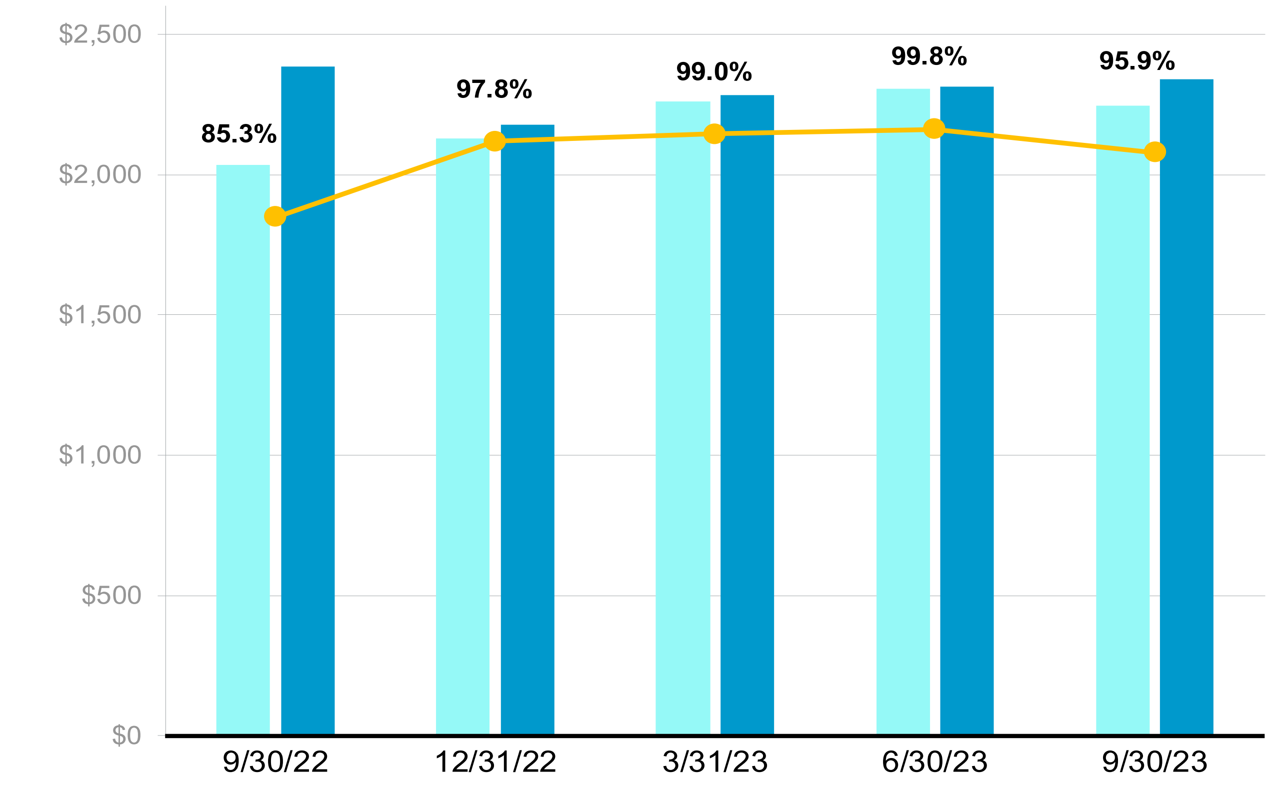
Highlights (cont'd)

- The estimated September 30, 2023 liabilities are projected based on the results of the most recent actuarial valuation of the Plan as at January 1, 2023.
- The December 31, 2022 liabilities shown are based on the December 31, 2021 actuarial valuation projected forward.
- The annuity purchase guidance educational note for valuations on or after September 30, 2023 (published as of October 24, 2023) has been reflected in the interest rates used to calculate the September 30, 2023 Solvency liabilities.
- The estimated transfer ratio has not decreased by 10% or more over the period; no Regulation 19 filing is required.
- All figures are in $1,000,000 (CAD).

Executive Summary – Going Concern

Values in $1,000,000 (CAD)

Funded Status



Highlights for the Quarter-Ending 9/30/23

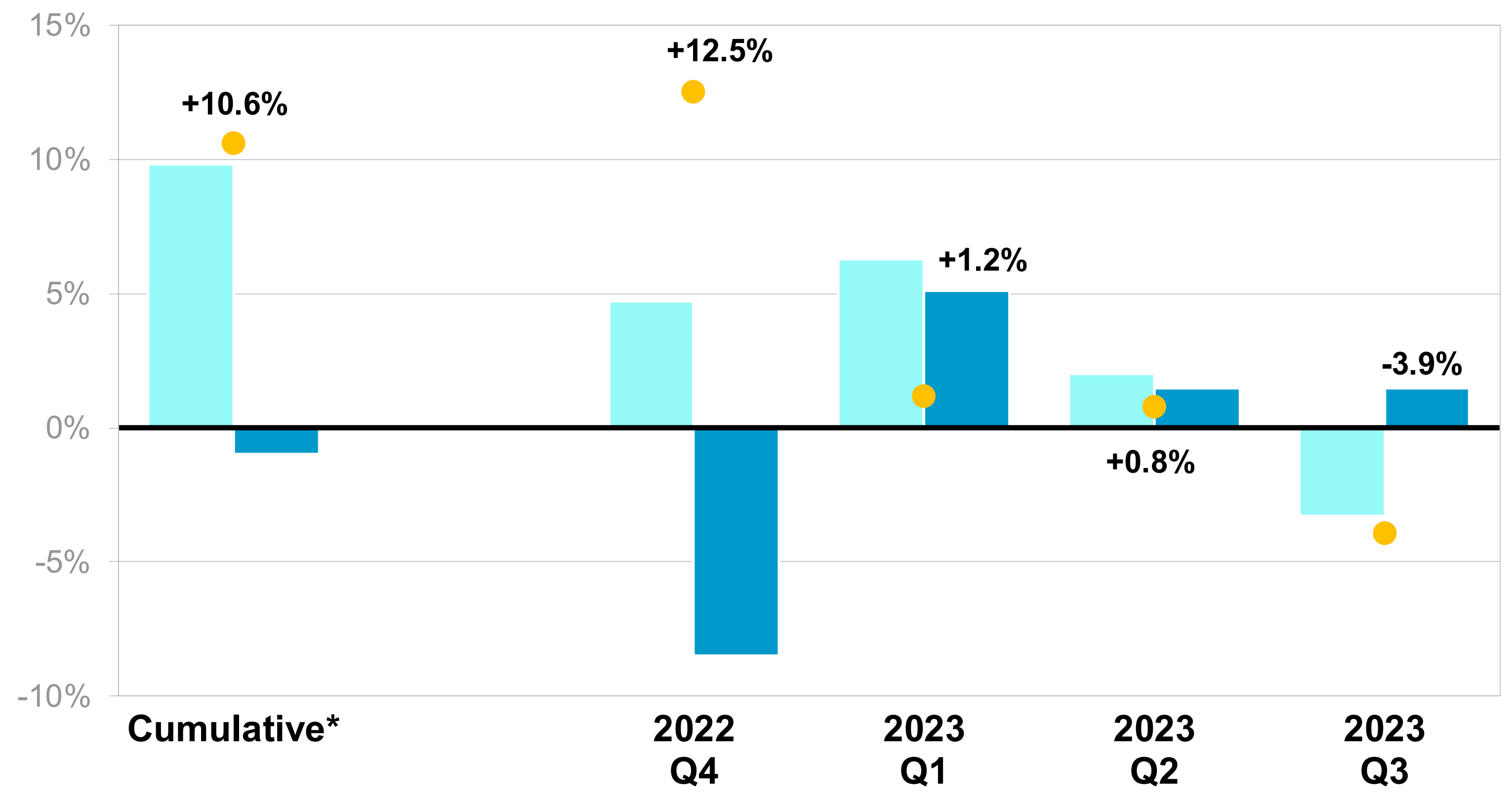
The plan's funded ratio decreased to 95.9% at 9/30/23. This result was primarily due to the combined effects of:

- Asset performance lower than expected;
- Contributions of $39.8 million which exceeds the new benefit accruals.

	9/30/22	12/31/22	03/31/23	06/30/23	09/30/23*
Market Value of Assets	$ 2,033.6	$ 2,130.3	$ 2,260.4	$ 2,307.5	$ 2,244.4
Going Concern Liability	2,384.4	2,177.8	2,284.2	2,312.5	2,341.2
Surplus/(Deficit)	$ (350.8)	$ (47.5)	$ (23.8)	$ (5.0)	$ (96.8)
Periodic Contributions	$ 27.9	$ 28.1	$ 18.1	$ 28.5	$ 39.8*
Effective Interest Rate	5.50%	6.25%	6.25%	6.25%	6.25%
Funded Ratio:	85.3%	97.8%	99.0%	99.8%	95.9%
Interest rate sensitivity:					
Asset:	1.5	1.6	1.5	1.5	1.4
Going Concern Liability Duration:	14.1	13.2	13.2	13.2	13.2

* Includes employee and University contributions to end of quarter; excludes investment manager and consulting expenses not yet invoiced

Asset-Liability Return



Asset Liability Return for Quarter-Ending 9/30/23

Assets returned -3.3% during the quarter while liabilities returned 1.5%, resulting in a funded status decrease of 3.9%.

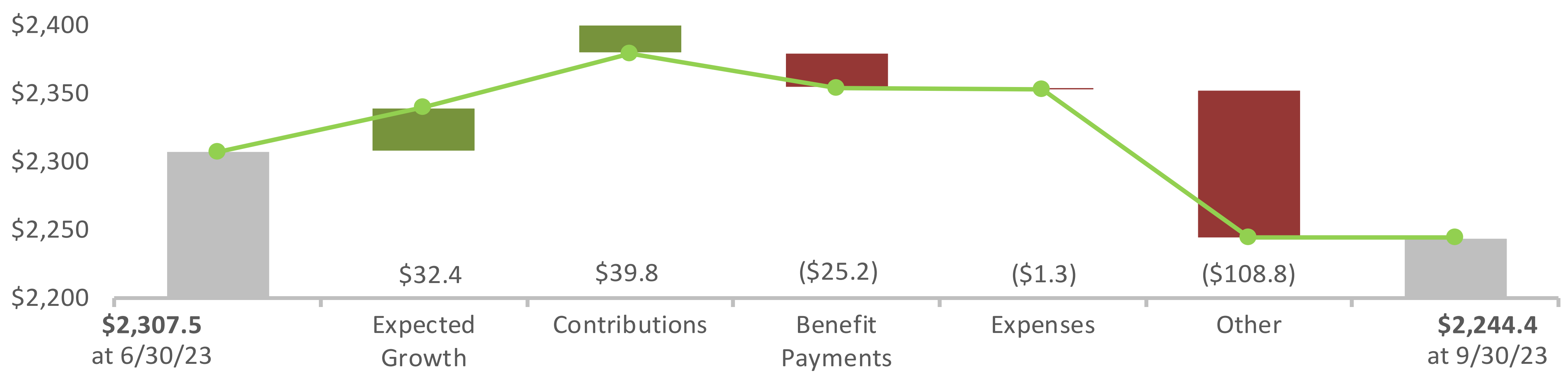
Periodic Return/Change	**Cumulative**	**12/31/22**	**3/31/22**	**6/30/22**	**9/30/22**
Market Value of Assets Return	9.8%	4.7%	6.3%	2.0%	-3.3%
Going Concern: Return	-1.0%	-8.5%	5.1%	1.5%	1.5%
Funded Ratio Change	10.6%	12.5%	1.2%	0.8%	-3.9%

AON

Asset-Liability Performance Attribution – Going Concern

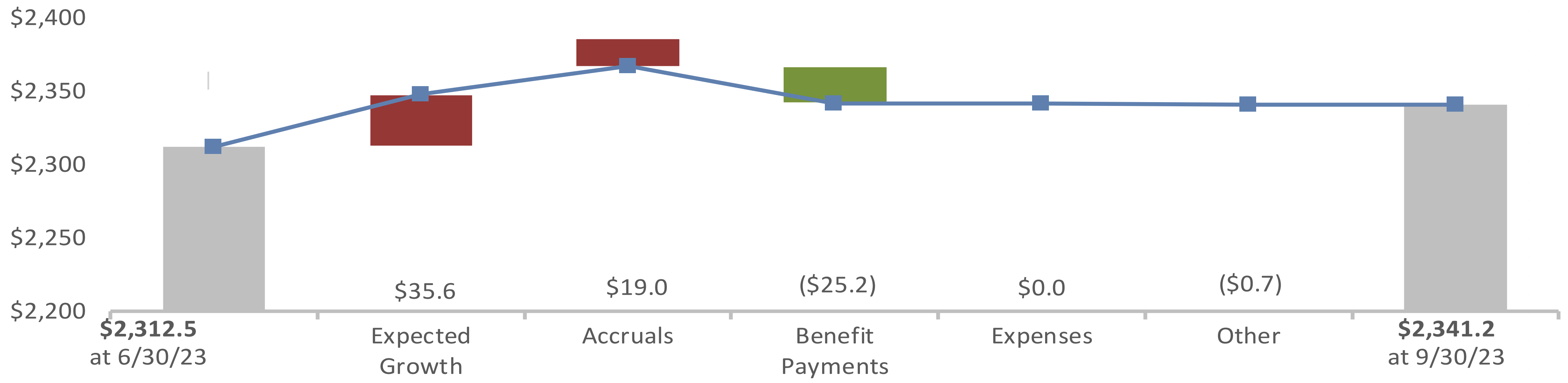
Values in $1,000,000 (CAD)

Assets



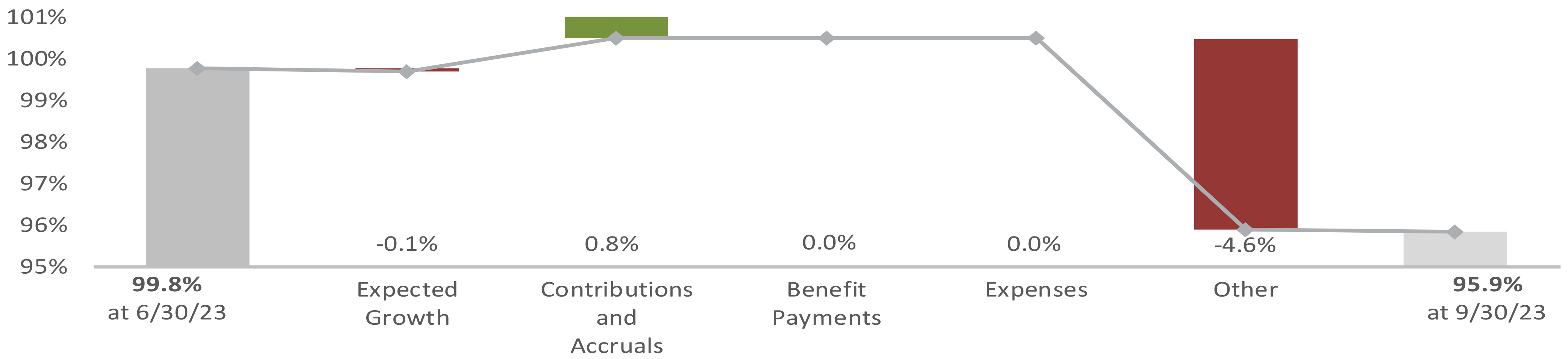
- Overall, assets returned -3.3% during this quarter.
- The fixed income assets lost value due to an increase in the underlying risk-free rates, partially offset by narrowing credit spreads.
- The plan's return-seeking assets provided lower returns than expected during the quarter.
- The University and members made $39.8 million in contributions during the quarter and the trust paid $25.2 million in benefits to the participants.
- "Other" represents the scale of the Plan's asset under performance relative to expectation.

Liability



- Liabilities were expected to grow by $35.6 million due to interest cost during the quarter.
- New benefit accruals increased the liability by $19.0 million during the quarter.
- Plan liabilities decreased by $25.2 million during the quarter as benefits were paid.

Funded Ratio

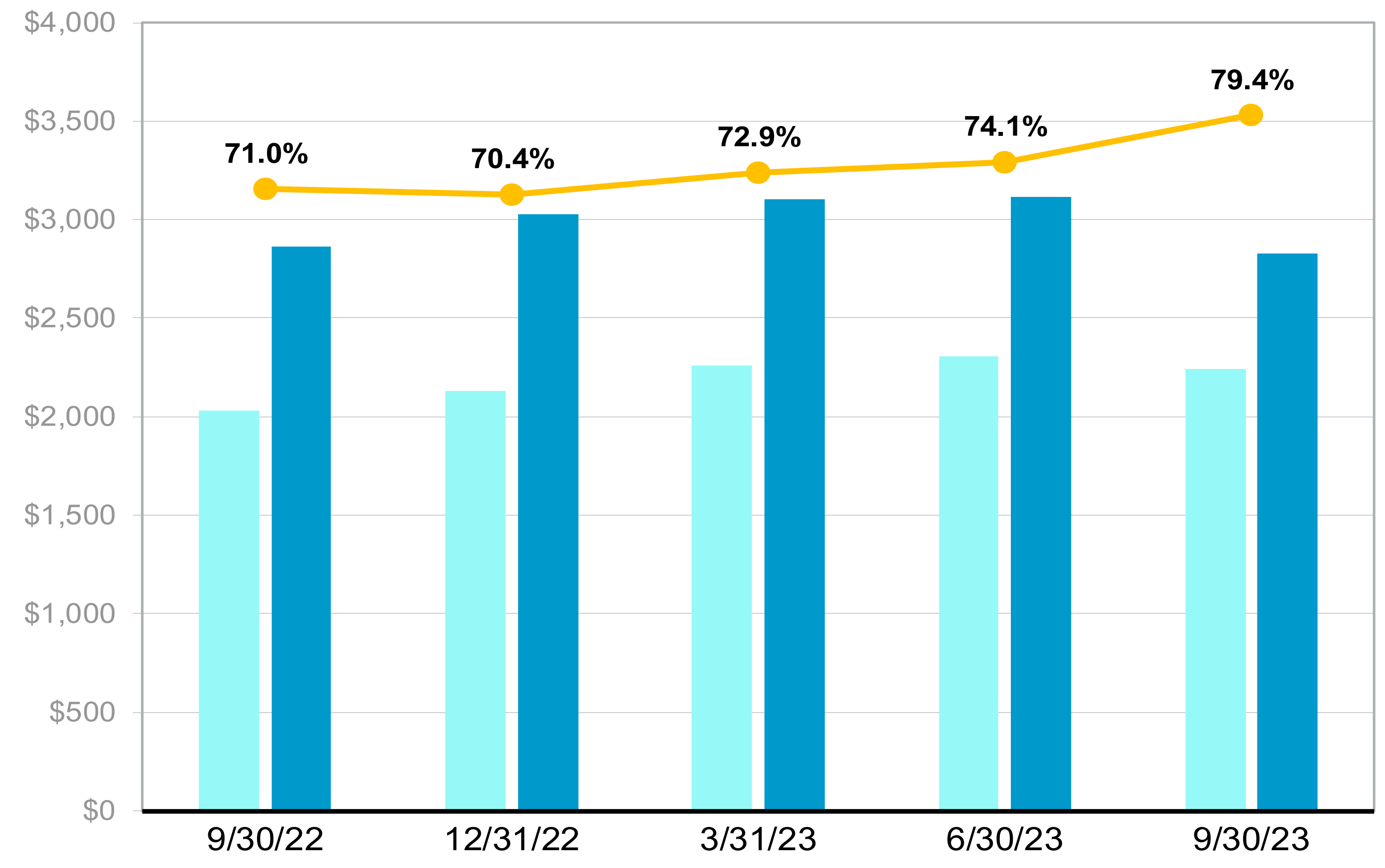


- Contributions exceeded the cost of new benefit accruals during the quarter, resulting in a net increase of 0.8% in the funded status.
- "Other" represents the impact of asset under-performance relative to the liabilities.

Executive Summary – Risk Free

Values in $1,000,000 (CAD)

Funded Status



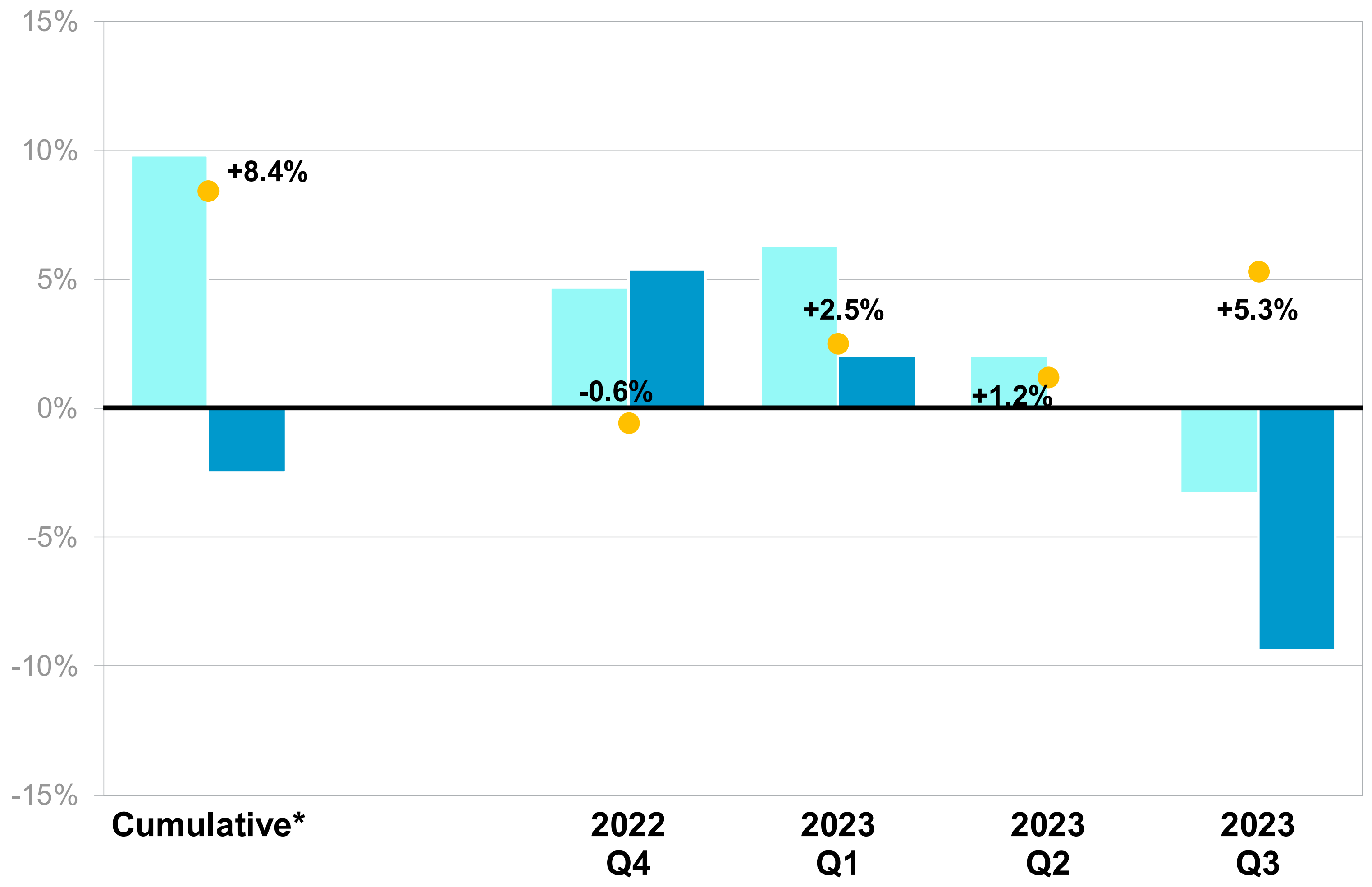
Highlights for the Quarter-Ending 9/30/23
The plan's funded ratio increased to 79.4% at 9/30/23. This result was primarily due to the combined effects of:

- Lower than expected asset returns, offset by
- An increase in the interest rate used to value liabilities, and
- Contributions that exceeded new benefit accruals.

	9/30/22	12/31/22	3/31/22	6/30/23	9/30/23*
Market Value of Assets	$ 2,033.6	$ 2,130.3	$ 2,260.4	$ 2,307.5	$ 2,244.4
Risk-Free Liability	2,863.0	3,025.9	3,100.7	3,112.8	2,825.8
Surplus/(Deficit)	$ (829.4)	$ (895.6)	$ (840.3)	$ (805.3)	$ (581.4)
Periodic Contributions	$ 27.9	$ 28.1	$ 18.8	$ 28.5	$ 39.8
Discount Rate	1.84%	1.59%	1.74%	1.79%	2.46%
Funded Ratio: Assets/Risk-Free Liability	71.0%	70.4%	72.9%	74.1%	79.4%
Interest rate sensitivity:					
Assets:	1.5	1.6	1.5	1.5	1.5
Risk-Free Liability:	17.0	17.4	17.2	16.8	15.8

* Includes employee and University contributions to end of quarter; excludes investment manager and consulting expenses not yet invoiced

Asset-Liability Return



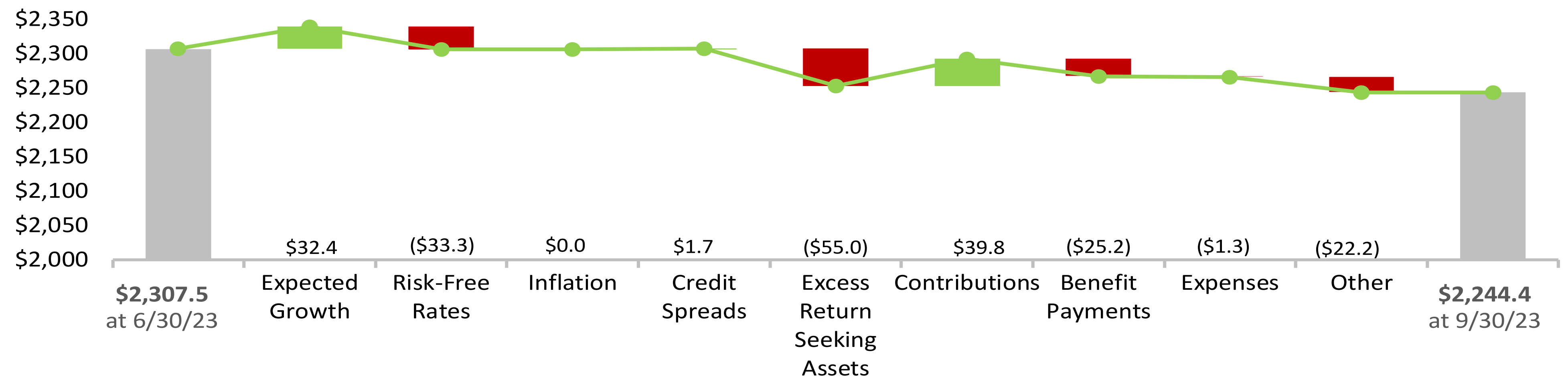
Asset Liability Return for Quarter-Ending 9/30/23
Assets returned -3.30% during the quarter while liabilities returned -9.4%, resulting in a funded status increase of 5.3%.

Periodic Return/Change	Cumulative	12/31/22	3/31/22	6/30/23	9/30/23
Market Value of Assets Return	9.8%	4.7%	6.3%	2.0%	-3.3%
Risk-Free Liability: Return	-2.5%	5.4%	2.0%	0.1%	-9.4%
Funded Ratio Change	8.4%	-0.6%	2.5%	1.2%	5.3%

Asset-Liability Performance Attribution – Risk Free

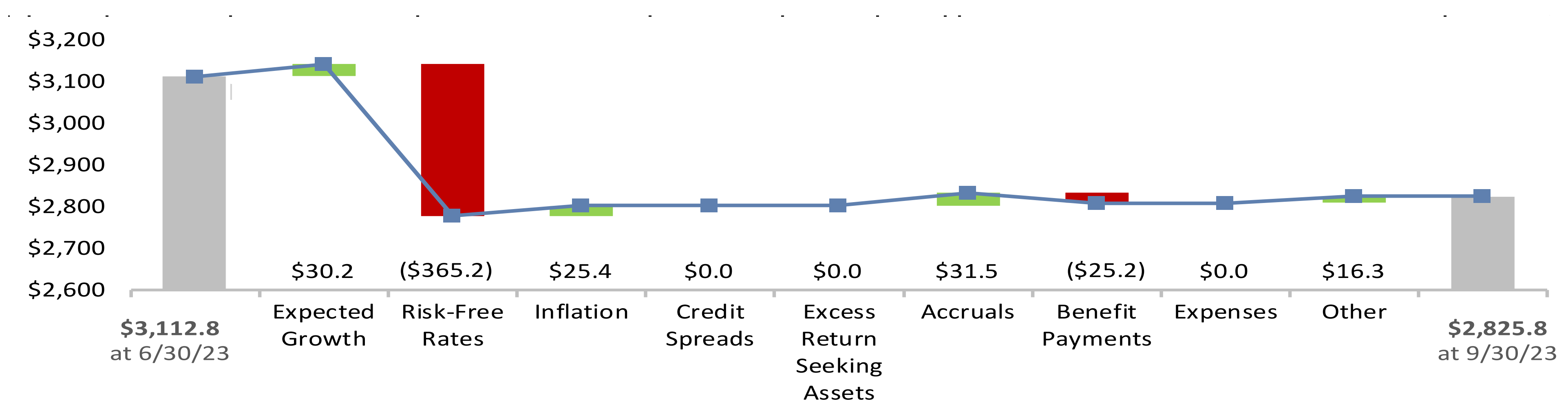
Values in $1,000,000 (CAD)

Assets



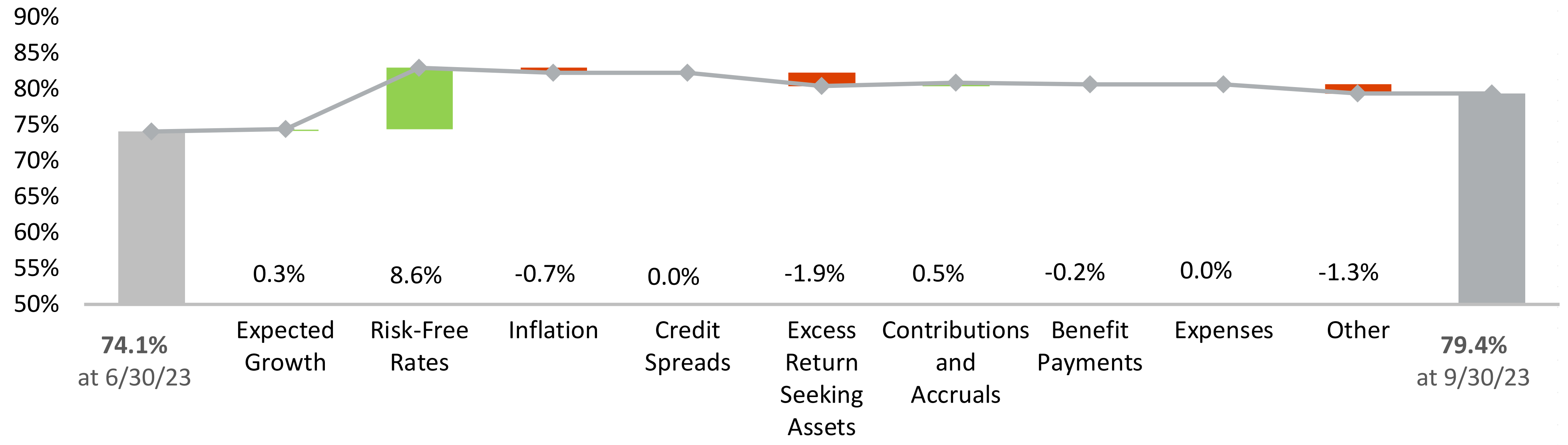
- Overall, assets returned -3.3% during this quarter.
- The fixed income assets lost value due to an increase in the underlying risk-free rates, marginally offset by a slight narrowing in credit spreads.
- The plan's return-seeking assets performed lower than expected during the quarter.
- The University and members made $39.8 million in contributions during the quarter and the trust paid $25.2 million in benefits to the participants.
- "Other" includes the impact of active management, and differences between benchmark and actual investment allocations.

Liability



- Liabilities were expected to grow by $30.2 million due to the interest cost during the quarter.
- New benefit accruals increased the liability by $31.5 million during the quarter.
- Plan liabilities decreased by $25.2 million during the quarter as benefits were paid out.
- An increase in risk-free rates led to a decrease in the Plan's liabilities, although this was partially offset by an increase in inflation expectations.

Funded Ratio

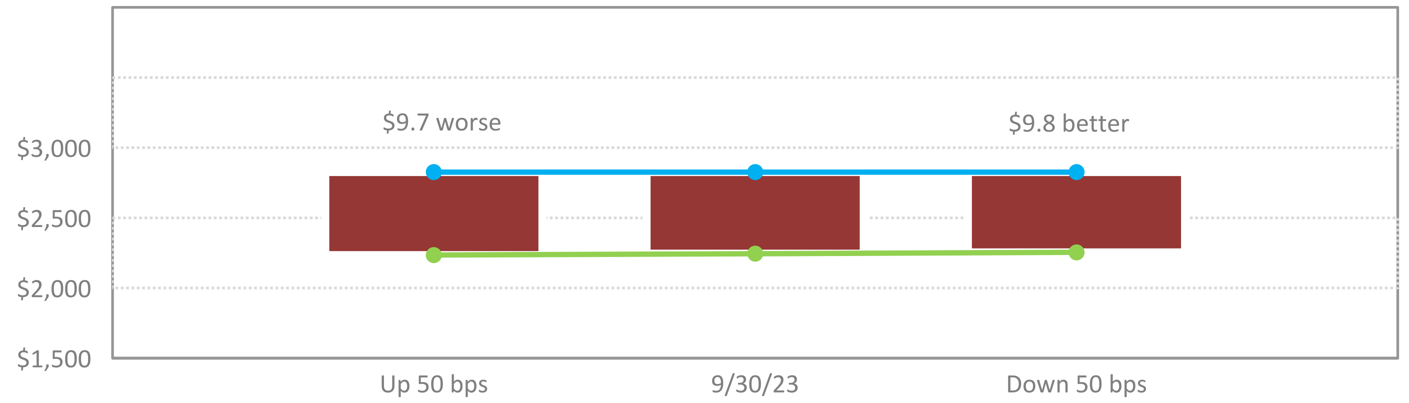


- The increase in risk-free rates during the period, resulted in an increase in the plan's funded status of 8.6%.
- Contributions exceeded benefit accruals during the quarter, resulting in a net increase of 0.5%.
- The plan's return-seeking assets provided lower returns than expected during the quarter, resulting in a decline of 1.9% in the plan's funded status during the period.

Sensitivity Analysis – Risk Free Benchmark

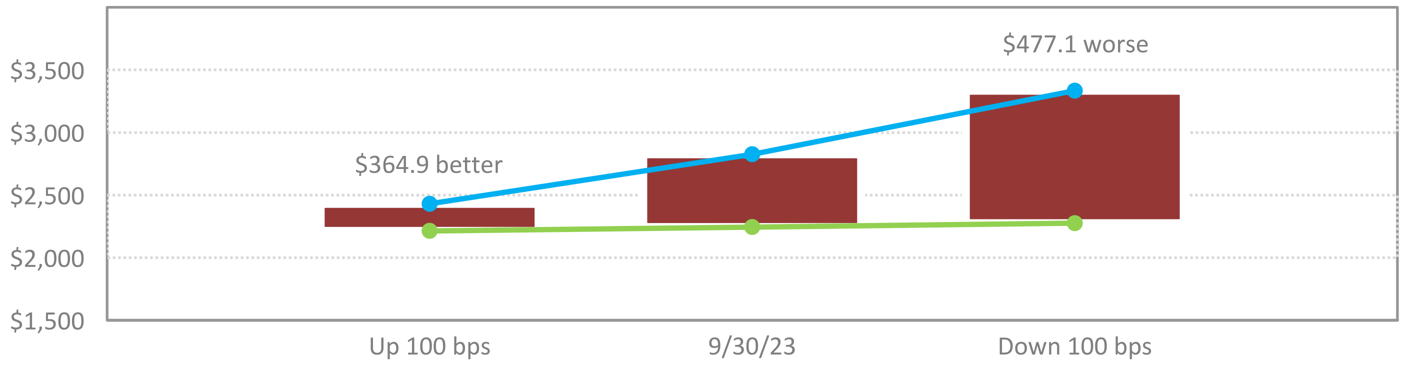
Values in $1,000,000 (CAD)

Credit Spreads



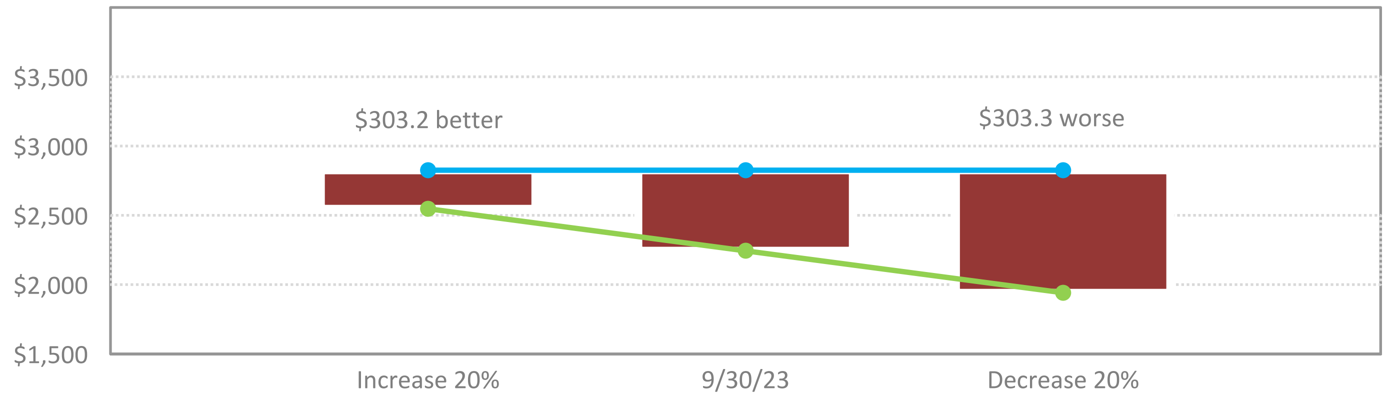
	Up 50bps		Current		Down 50bps
Market Value of Assets	$2,234.7		$2,244.4		$2,254.2
Risk Free Liability	$2,825.8		$2,825.8		$2,825.8
Surplus/(Deficit)	($591.1)		($581.4)		($571.6)
Change		($9.7)		$9.8	

Risk Free Rates



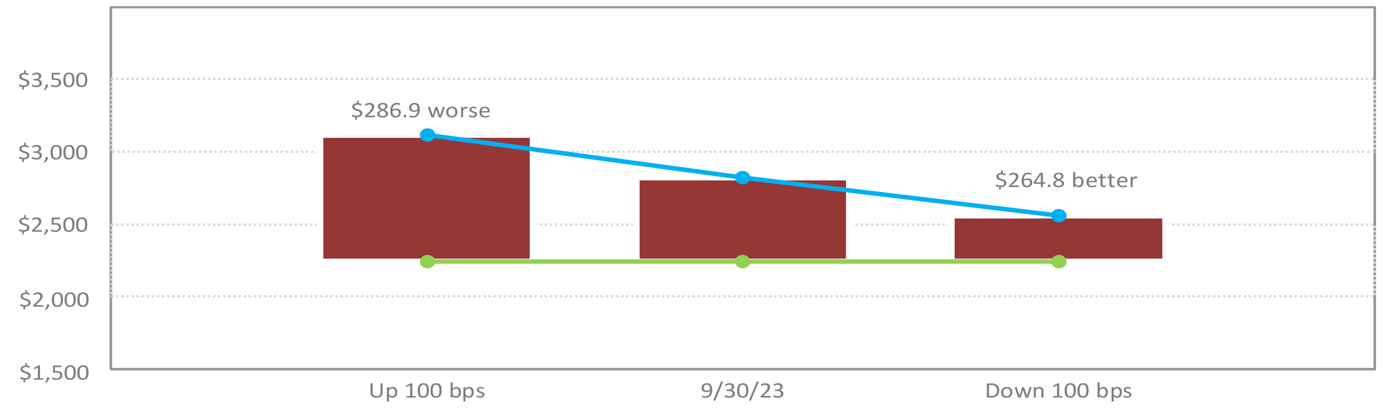
	Up 100bps		Current		Down 100bps
Market Value of Assets	$2,213.7		$2,244.4		$2,275.5
Risk Free Liability	$2,430.2		$2,825.8		$3,334.0
Surplus/(Deficit)	($216.5)		($581.4)		($1, 058.5)
Change		$364.9		($477.1)	

Return-Seeking Assets



	Increase 20%		Current		Decrease 20%
Market Value of Assets	$2,547.6		$2,244.4		$1,941.1
Risk Free Liability	$2,825.8		$2,825.8		$2,825.8
Surplus/(Deficit)	($278.2)		($581.4)		($884.7)
Change		$303.2		($303.3)	

Inflation

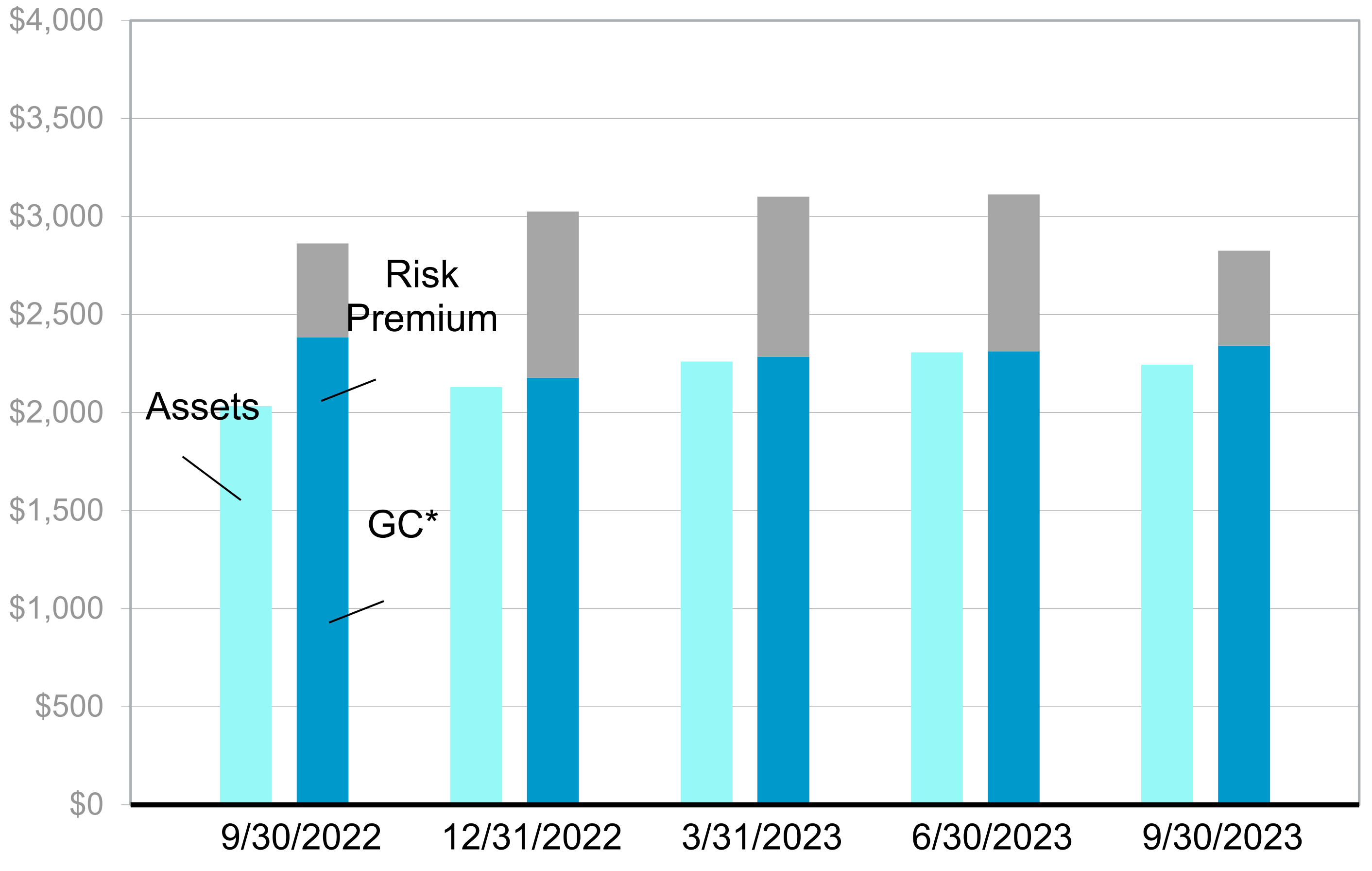


	Up 100bps		Inflation		Down 100bps
Market Value of Assets	$2,244.4		$2,244.4		$2,244.4
Risk-Free Liability	$3,112.7		$2,825.8		$2,561.0
Surplus/(Deficit)	(868.3)		($581.4)		($316.6)
Change		($286.9)		$264.8	

Reconciliation of Risk-Free Benchmark and Going Concern Funded Status

Funded Status

Values in $1,000,000 (CAD)



*Going Concern

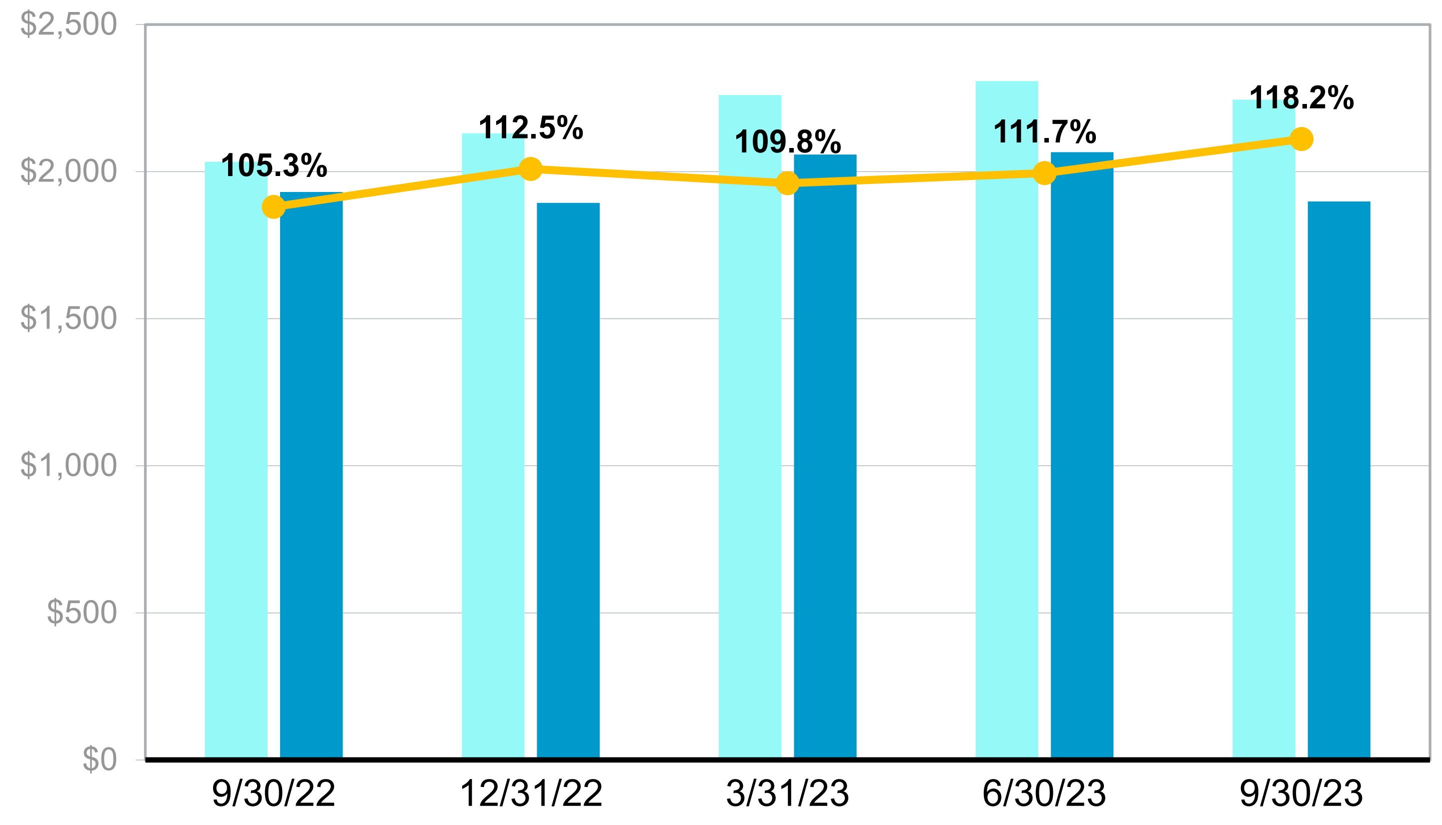
	9/30/22	12/31/22	03/31/23	06/30/23	09/30/23
Market Value of Assets	$ 2,033.6	$ 2,130.3	$ 2,260.4	$ 2,307.5	$ 2,244.4
Going Concern Liability	$ 2,384.4	$ 2,177.8	$ 2,284.2	$ 2,312.5	$ 2,341.2
Risk Premium	478.6	848.1	816.5	800.3	484.6
Risk-Free Liability	$ 2,863.0	$ 3,025.9	$ 3,100.7	$ 3,112.8	$ 2,825.8

The difference between the Risk-Free Liability and the Going Concern Liability is a measure of the amount of risk premium on which the Pension Plan funding is based.

Executive Summary – Solvency

Values in $1,000,000 (CAD)

Funded Status



Highlights for the Quarter-Ending 9/30/23

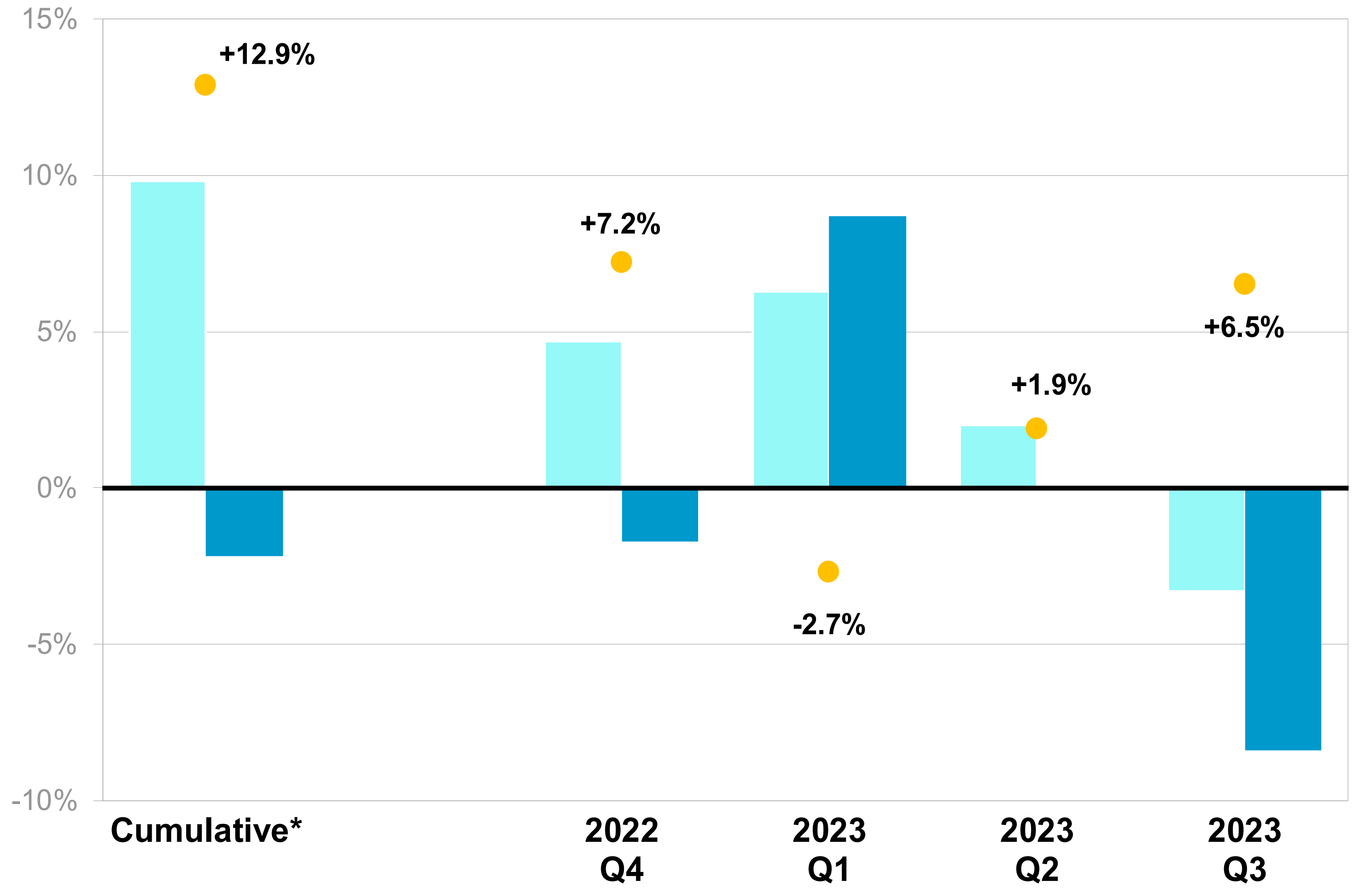
The plan's funded ratio increased to 118.2% at 9/30/23. This result was primarily due to the combined effects of:

- Lower than expected asset returns, offset by
- An increase in the interest rates resulting in lower liabilities, and
- Contributions which exceeds the new benefit accruals,

	9/30/2022	12/31/2022	03/31/2023	06/30/2023	09/30/2023*
Market Value of Assets	$ 2,033.6	$ 2,130.3	$ 2,260.4	$ 2,307.5	$ 2,244.4
Solvency Liability	1,930.8	1,893.5	2,057.8	2,066.0	1,898.6
Surplus/(Deficit)	$ 102.8	$ 236.8	$ 202.6	$ 241.5	$ 345.8
Periodic Contributions	$ 27.9	$ 28.1	$ 18.8	$ 28.5	$ 39.8
Effective Interest Rate	4.52%	4.76%	4.52%	4.61%	5.44%
Funded Ratio:					
Assets/Solvency Liability	105.3%	112.5%	109.8%	111.7%	118.2%
Interest rate sensitivity:					
Assets	1.6	1.6	1.5	1.5	1.5
Solvency Liability	12.6	12.4	12.6	12.6	11.7

* Includes employee and University contributions to end of quarter; excludes investment manager and consulting expenses not yet invoiced

Asset-Liability Return



Asset Liability Return for Quarter-Ending 9/30/23

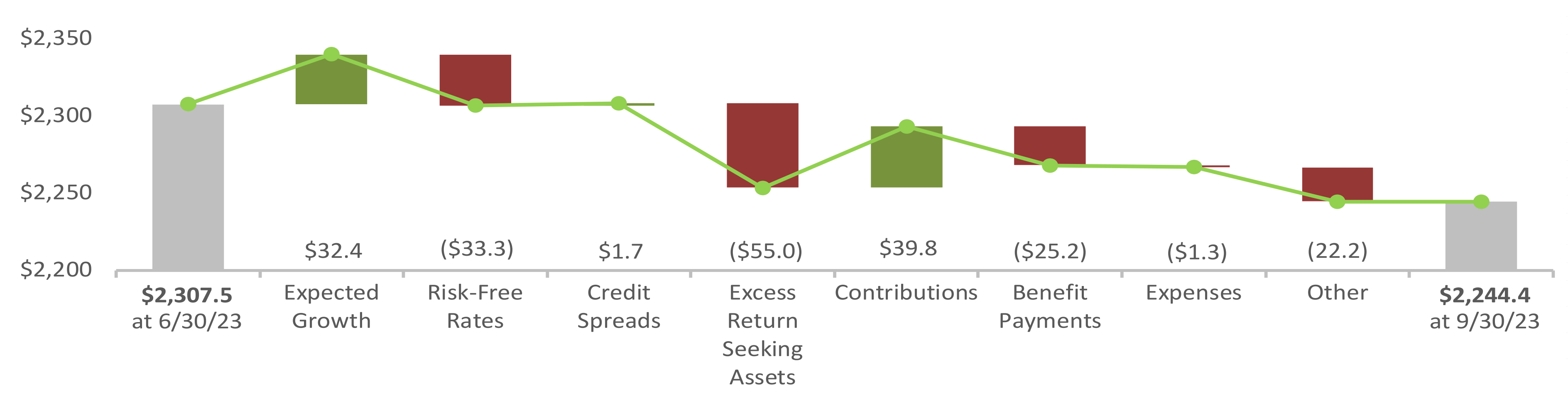
Assets returned -3.3% during the quarter while liabilities returned -8.4%, resulting in a funded status increase of 6.5%.

Periodic Return/Change	Cumulative	12/31/22	03/31/23	06/30/23	09/30/23
Market Value of Assets Return	9.8%	4.7%	6.3%	2.0%	-3.3%
Solvency Liability:					
Return	-2.2%	-1.7%	8.7%	0.0%	-8.4%
Funded Ratio Change	12.9%	7.2%	-2.7%	1.9%	6.5%

Asset-Liability Performance Attribution – Solvency

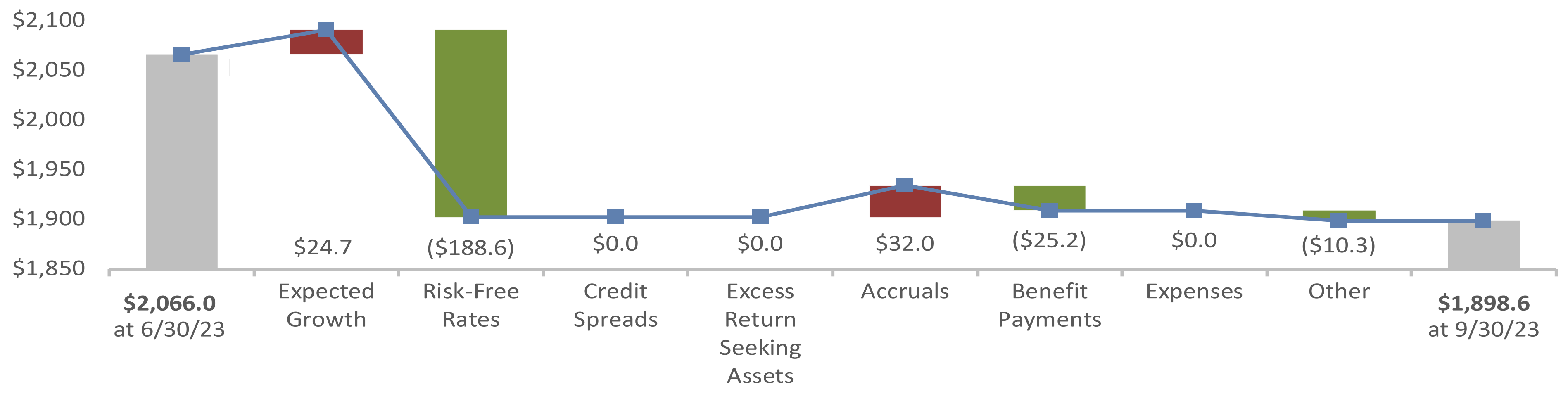
Values in $1,000,000 (CAD)

Assets



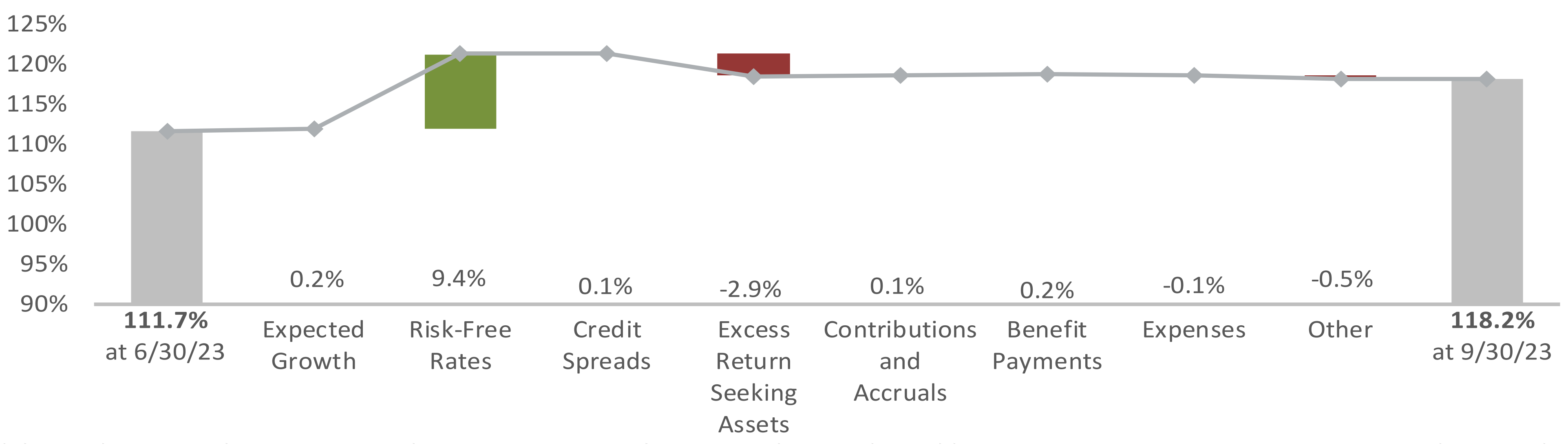
- Overall, assets returned -3.3% during this quarter.
- The fixed income assets lost value due to an increase in the underlying risk-free rates, marginally offset by a slight narrowing in credit spreads.
- The plan's return-seeking assets performed lower than expected during the quarter.
- The University and members made $39.8 million in contributions during the quarter and the trust paid $25.2 million in benefits to the participants.
- "Other" includes the impact of active management, and differences between benchmark and actual investment allocations.

Liability



- Liabilities were expected to grow by $24.7 million due to interest cost during the quarter.
- Risk-free rates increased, resulting in a net decrease of $188.6 million.
- New benefit accruals increased the liability by $32.0 million during the quarter.
- Plan liabilities decreased by $25.2 million during the quarter as benefits were paid out.

Funded Ratio

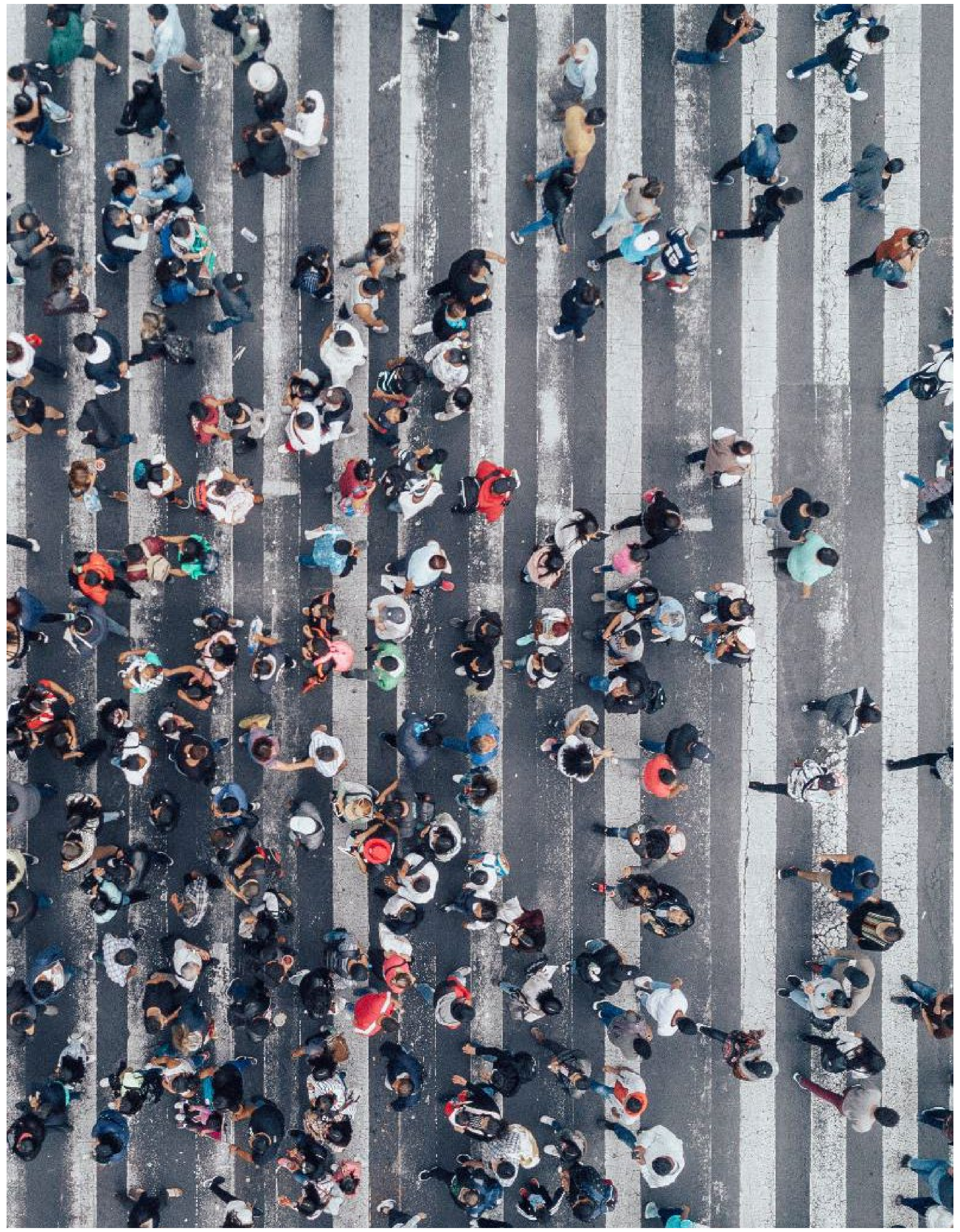


- The difference in exposure to risk-free rates between assets and liabilities combined with changes in risk-free rates resulted in an increase in funded status of 9.4%.
- Return-seeking assets did not perform as well as expected during the quarter, deducting 2.9% from the plan's funded status during the period.

Appendix

AON

Plan Provisions & Membership Data



The Plan provisions and membership data are outlined in the Actuarial Valuation as at January 1, 2023 for University of Waterloo Pension Plan Report, dated August 2023.

Actuarial Methods & Assumptions

Our analysis of the estimated financial position of the Pension Plan is based on the following:

	9/30/22	12/31/22	03/31/23	06/30/23	09/30/23
Going Concern					
Discount Rate	5.50%	6.25%	6.25%	6.25%	6.25%
Inflation	2.00%	2.00%	2.00%	2.00%	2.00%
Salary Increase	3.00%/4.00%[1]	3.00%/4.00%[1]	3.00%/4.00%[1]	3.00%/4.00%[1]	3.00%/4.00%[1]
PfAD	9.00%	9.00%	9.60%	9.60%	9.60%
Mortality	CPM2014Public	CPM2014Public	CPM2014Public	CPM2014Public	CPM2014Public
Risk-Free Benchmark					
Discount Rate (Net of inflation)	1.84%	1.59%	1.74%	1.79%	2.46%
Solvency					
Annuity Purchase Interest Rate	4.64%	4.91%	4.63%	4.74%	5.48%
Effective Date of Annuity Purchase Guidance Used	9/30/22	12/31/22	05/01/23	07/24/23	10/24/23
Lump Sum Value Interest Rate (Years 1-10)[2]	4.30%	4.30%	4.10%	4.40%	5.30%
Lump Sum Value Interest Rate (Years 10+)[2]	4.30%	4.70%	4.50%	4.40%	5.10%
Mortality[3]	CPM2014	CPM2014	CPM2014	CPM2014	CPM2014
Underlying Canadian Reference Data					
CANSIM v39054 (7 Year)	3.19%	3.27%	2.86%	3.38%	4.11%
CANSIM v39056 (30 Year Long Term)	3.09%	3.28%	3.02%	3.09%	3.81%
CANSIM v39057 (30 Year Real Return)	1.44%	1.19%	1.34%	1.39%	2.06%
CANSIM v39062 (Over 10 Years)	3.14%	3.31%	3.03%	3.14%	3.88%

[1] 3.00% per year for 1 year; 4.00% year thereafter
[2] Lump Sum Value Interest Rates are based on rates in effect on the first day of the month following quarter end (i.e., January 1st, April 1st, July 1st and October 1st).
[3] With improvement scale MI-2017 for Going Concern and Risk Free and CPM-B for Solvency.

All other assumptions and methods are the same as those shown in the Actuarial Valuation Results presentation as of January 1, 2023. For the Risk-Free Benchmark basis, all other assumptions and methods are the same as those used for the Going Concern basis.

Actuarial Attestation

This document is intended to provide the University of Waterloo with a summary of the performance of the Pension Plan as of September 30, 2023.

This analysis is intended to assist the University of Waterloo with a review of the associated issues and options, and its use may not be appropriate for other purposes. This analysis has been prepared solely for the benefit of the University of Waterloo. Any further dissemination of this report is not permitted without the prior written consent of Aon.

In conducting the analysis, we have relied on plan design, demographic and financial information provided by other parties, including the plan sponsor. While we cannot verify the accuracy of all the information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy or completeness of the information and believe that it has produced appropriate results.

Experience different than anticipated could have a material impact on the ultimate costs of the benefits. In addition, changes in plan provisions or applicable laws could have a substantial impact on cost. Actual experience may differ from our modeling assumptions.

Aon
August 2023

Asset Allocation and Benchmarking

Asset Class	09/30/23
Alternatives	
• FTSE EPRA NAREIT DEVELOPED Total Return Index USD	2.9%
• MSCI USA Infrastructure Index	5.9%
Fixed Income	
• FTSE TMX Universe Bond Index	33.0%
International Equities	
• MSCI World Index	52.5%
• S&P TSX	5.7%
Total	100.0%

Legal Disclaimer

For Information **Open Session**

Date of Meeting: January 19, 2024

To: Members, Pension & Benefits Committee

From: Sarah Willey-Thomas, Associate University Secretary

RE: **3) Execution Against Work Plan**

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3) Execution Against Work Plan

Sarah Willey-Thomas will provide an overview of the Committee Work Plan.

Members will recall that the work plan is an iterative document which is supplied for the Committee's information and reference at each Committee meeting.

Documentation Provided:

- 2023/24 Pension & Benefits Committee Work Plan

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2023-2024 Pension & Benefits Committee Work Plan

Pension & Benefits Committee Agenda Items ▪ expected *as needed/available	**19 May 2023**	**16 June 2023**	**15 September 2023**	**13 October 2023**	**17 November 2023**	**8 December 2023**	**19 January 2024**	**16 February 2024**	**22 March 2024**
OPEN SESSION									
Execution against Audit Committee Work Plan – Consent Agenda	▪	▪	▪	▪	▪	▪	▪	▪	▪
Minutes of the Previous Meeting – Consent Agenda				▪	▪	▪	▪	▪	▪
Budget Overview	▪								
Finance									
Previous Years' Fees and Expenses	▪								
Annual Audit of the Pension Plan Fund Financial Statements	▪								
Carbon Metrics Reporting	▪								
Summary of Total Fund Investment Performance	▪		▪		▪			▪	
Statement of Investment Policies and Procedure and Fund Implementation Procedures; Pension Statement SIPP						▪			
Actuarial Consultants									
Pension Risk Management Dashboard (Quarterly)	▪		▪		▪			▪	
Approval of Actuarial Valuation Assumptions							▪		
RPP Actuarial Valuation, decision on filing									▪
Review of RPP Contribution and Protocol Caps						▪			
Human Resources									
Extended Health & Dental Benefits – Indexation of Maxima effective January 1					▪				
Retiree Life Insurance – Indexation of Coverage effective January 1					▪				
Annual Benefits Utilization Report					▪				
NEW: Annual Plan Design Review					▪				
Maximum Pension Limits and Caps Adjustments, Based on Average Industrial Wage Increase (AIW)						▪			
Cost of Living Adjustments • Pensions in Pay • Deferred Pensions • Pensionable Earnings for Members on LTD								▪	

[1] Annual, as required
[2] Note Committee approved threshold
[3] Completed every five years

Group Benefits Program – Annual Renewal
• Life Insurance – Premium Rate
• Long Term Disability
  ○ Premium Rate
  ○ Maximum Insured Salary (Indexation)
• Healthcare Benefits – ASO Fees/Charges
• Healthcare Benefits – Budget Rates
									▪

Governance									
Review of Committee Terms of Reference		▪							
Annual Report to the Community								▪	
Annual Committee Self Assessment									▪
Committee Priorities									▪
CONFIDENTIAL SESSION									
Minutes of the Previous Meeting	▪	▪	▪	▪	▪	▪	▪	▪	▪
Other Business	*	*	*	*	*	*	*	*	*
IN CAMERA SESSION									
Minutes of the Previous Meeting and Business Arising	▪	▪	▪	▪	▪	▪	▪	▪	▪
Other Business	*	*	*	*	*	*	*	*	*

Special Topics for 2023-2024 to be Scheduled:

- Reports from Pension Investment Committee (PIC)
  - New or terminating investment managers (as the need arises)
  - Appointment of investment consultant
- Responsible Investment Policy (recommendation to Board)

For more information:
uwaterloo.ca/secretariat
board@uwaterloo.ca
NH 3060

[1] Annual, as required
[2] Note Committee approved threshold
[3] Completed every five years

UNIVERSITY OF WATERLOO | Board of Governors

For Information **Open Session**

Date of Meeting: January 19, 2024

To: Members, Pension & Benefits Committee

From: Sarah Willey-Thomas, Associate University Secretary

RE: **4) Pension Investment Governance Documents**

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4) Pension Investment Governance Documents

Sarah Hadley, Chief Financial Officer, will speak to the review and changes associated with the Pension Investment Governance documents.

a) Pension Fund Implementation Procedures (FIP)

Recommendation:

That the Pension & Benefits Committee approved changes to the Pension Fund Implementation Procedures (FIP), as presented.

This Fund Implementation Procedures (FIP) document outlines the monitoring and reporting obligations of Board committees, University staff, and third parties engaged to provide services to the Plan.

The Pension & Benefits Committee approves changes to the FIP in accordance with the Committee's terms of reference.

b) Pension Statement of Investment Policies and Procedures (SIPP)

The SIPP is being provided to the Committee for information. No changes are being proposed at this time.

c) Responsible Investment Policy (RIP)

The RIP d is being provided to the Committee for information. No changes are being proposed at this time.

Documentation Provided:

- Summary of Recommended Updates to SIPP, FIP and RIP

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Report to the Pension & Benefits committee
Summary of Recommended Updates to SIPP, FIP and RIP
October 12, 2023

Summary of Changes to the Pension Statements of Investment Policies and Procedures

There are no proposed changes to the Statement of Investment Policies and Procedures ("SIPP"), which was last updated in April 2023.

Summary of Changes to the Pension Fund Implementation Procedures

Updates have been proposed to the Fund Implementation Procedures ("FIP") to align with recent updates to the Terms of Reference for both the Pension Investment Committee and Pension and Benefits Committee. These previously approved changes to the Terms of Reference for both committees included changes to the approval process for appointments and dismissals of various pension service providers, and updates to the discretionary investment thresholds for the Pension Investment Committee.

All other changes are considered to be minor and administrative in nature.

Final approval for changes to the FIP takes place at the Pension and Benefits Committee.

Summary of Changes to the Responsible Investment Policy

There are no proposed changes to the Responsible Investment Policy ("RIP"), which was last updated in April 2023.

Jacinda Reitsma
Sarah Hadley
Tyler Wendland

Fund Implementation Procedures

University of Waterloo Pension Plan (2011)

Registration number: 0310565

Effective: December 1, 2023

APPROVED on this <insert date> [date of approval by Pension & Benefits Committee]

Replaces previous version which was last revised and effective on March 10, 2023

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7) Monitoring Fund Manager Performance 6
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Fund Implementation Procedures

This Fund Implementation Procedures (FIP) document outlines the monitoring and reporting obligations of Board committees, University staff, and third parties engaged to provide services to the Plan. With respect to the investment of pension assets, this policy is intended to be read together with the Statement of Investment Policies and Procedures (SIPP) established for the Plan, as amended from time to time. To the extent there is any conflict in the investment principles and approach as set out in this FIP or the SIPP, the SIPP shall govern.

1) Delegation of Responsibility

The Board of Governors of the University of Waterloo (the "Board") has established a Pension Investment Committee ("PIC") to assist in the determination and execution of the Plan's overall investment philosophy, policies, objectives and strategies for the Plan and a Pension & Benefits Committee (P&B) to provide oversight of the pension plan (the "Committees").

The Committees, contracted third party professional firms and University staff will carry out the responsibilities listed below.

a) PIC will:

i. perform oversight activities as in the PIC Terms of Reference. To the extent there is any conflict this document and the Terms of Reference, the Terms of Refence shall govern;

ii. review this document annually and recommend any changes to P&B;

iii. review Fund Manager performance, total Fund performance and achievement of the total return objective on a quarterly basis;

iv. make recommendations on the selection of Fund Managers and investment funds to P&B, consulting with F&I as applicable;

v. approve asset mix changes and investment decisions where the cumulative annual transaction(s) represent less than 20% of market value of the Plan's total assets at the beginning of the calendar year;

vi. commission asset liability studies at least every 10 years and in cases of significant changes in actuarial assumptions or capital market forecasts, consulting with P&B as applicable

vii. determine when active vs passive management strategies are appropriate

viii. review Plan liquidity requirements

ix. convene a meeting with P&B in the event of a significant market event or shift to discuss issues and market opportunities; and

x. provide quarterly reports to P&B and F&I.

b) P&B will make recommendations to the Board in the following areas, consulting with PIC with respect to investment philosophy, policies, objectives and strategies for the Plan:

i. the content of the SIPP after its annual review and consideration of recommendations from PIC; and

ii. the selection of an Investment Consultant;

iii. the selection of a Custodian/Trustee to hold the pension fund assets.

c) In addition, the P&B Committee will:

i. perform oversight activities as in the P&B Terms of Reference. To the extent there is any conflict this document and the Terms of Reference, the Terms of Refence shall govern;

ii. approve the content of this FIP in consultation with PIC;

iii. review the Fund's Funding Policy & Guideline at least every three (3) years, and approve changes as necessary;

iv. appoint a Consulting Actuary;

v. the selection of Fund Managers and/or investment funds, based on the recommendation from PIC;

vi. approve asset mix changes and investment decisions where the cumulative annual transaction(s) represent greater than 20% of the market value of the Plan's total assets at the beginning of the calendar year, based on the recommendation from PIC;

vii. review reports from PIC on Fund Manager performance and pension fund performance on at least a quarterly basis, as well as reviewing the outlook of the fund overall; and

viii. report to Plan members on at least an annual basis.

d) The Fund Managers will:

i. forward to University staff (for review and discussion at PIC) quarterly reviews of investment performance, expectations of future returns on various asset classes and proposed investment strategies for the following 12 to 24 months;

ii. manage asset mix and select securities within each asset class, subject to applicable legislation and the philosophy and other constraints set out in the SIPP, this document and the Responsible Investment Policy (RIP);

iii. forward to University staff (for review and discussion at PIC) quarterly reports describing their ESG analysis, approach and metrics, and periodically forward a climate risk assessment of their portfolio including any scenario analysis;

iv. advise University staff (for review and discussion at PIC) immediately of any changes in its senior investment personnel and/or significant changes in the size or mix of assets managed;

v. comply with all applicable legislation concerning the investment of the pension fund, including the Pension Benefits Act (Ontario) ("Applicable Laws");

vi. complete and deliver a compliance report (see Appendix A) to University staff each quarter. The compliance report will indicate whether or not the Fund Manager was in compliance with Applicable Laws, the SIPP and the RIP during the quarter. In the event that the Fund Manager is not in compliance with Applicable Laws, the SIPP and/or the RIP, the Fund Manager is required to immediately advise University staff (for discussion at PIC), detail the nature of the non-compliance and recommend the appropriate course of action to remedy the situation;

vii. comply, at all times and in all respects, with the Code of Ethics and Standards of Professional Conduct as promulgated by the CFA Institute; and

viii. in managing the Plan assets, the Fund Manager shall at all times exercise the degree of care that a person of ordinary prudence would exercise in dealing with the property of another person and shall use all relevant knowledge and skill which it possesses, or by reason of its profession, ought to possess.

e) The Consulting Actuary (or his/her delegate approved by P&B) will:

i. assist in the preparation and subsequent annual reviews of the SIPP and any supplementary documents;

ii. comment on any changes in the Plan's benefits, membership or contribution flow which may affect how the Plan's assets are invested;

iii. assist University staff, the PIC and P&B, as needed, in the implementation of the SIPP and this document;

iv. support PIC and P&B on matters related to investment risk management and administration of the Plan; and

v. meet with University staff, PIC and P&B as required.

f) Investment Consultant will:

i. participate in all reviews of the Fund Managers;

ii. report quarterly on the performance of the Fund Managers and the Plan;

iii. comment on the impact of potential investment opportunities/strategies/legislative changes which may affect how the Plan's assets are invested;

iv. monitor the performance of the Plan and the Fund Managers on a regular basis, and contact University staff immediately if there are adverse changes of any kind, which warrant further review and/or discussion with PIC; and

v. meet with University staff, PIC and P&B as required.

g) Performance Measurement Service Providers will:

i. Provide detailed performance reporting in the required format including ESG integration by Fund Managers as well as the carbon metrics for the total Plan asset portfolio

h) The Custodian/Trustee will:

i. fulfill the regular duties required by law of a Custodian/Trustee and perform the specific duties required of the Custodian/Trustee pursuant to agreements entered into from time to time with the University on behalf of the Plan; and

ii. provide University staff with monthly portfolio reports of all assets of the Plan and transactions during the period.

i) University staff will:

i. Prepare reporting for the PIC, P&B and F&I committees on Plan investment matters and act as resources to these Committees in this regard;

ii. Act as a contact for contracted third party professional firms relating to the investment of the Plan's assets and provide administration and monitoring related to these firms' contracts and deliverables;

iii. Provide cash flow information as necessary or requested by PIC;

iv. Monitor Fund Manager's and overall compliance with the SIPP, FIP, and RIP; and

v. Appoint Performance Measurement Service Providers.

2) Performance Measurement & Monitoring

For purposes of evaluating the performance of the Fund Managers, all rates of return are measured over rolling four-year periods. Return objectives are net of fees and include realized and unrealized capital gains or losses plus income from all sources.

Performance reporting provided by the Fund Managers and the Investment Consultant will include annualized returns when available for 15 or greater years; as well as a detailed attribution analysis for the most recent quarter and year-to-date periods.

The Investment Consultant will report on each Fund Manager's performance relative to their

peers.

In addition to performance criteria, the following factors will also be monitored and evaluated:

a) Stability of the investment firm (personnel, assets under administration, operational capabilities, etc.);

b) Investment objective and portfolio composition;

c) Changes in the investment philosophy used in the investment fund;

d) Consistency of style or approach;

e) Adherence to investment policy statement; and

f) ESG analysis and reporting including climate risk assessment and carbon metrics

3) Compliance Reporting by Fund Manager

The Fund Manager is required to complete and deliver a compliance report to University staff and the Plan's investment consultant each quarter. The compliance report will indicate whether or not the Fund Manager was in compliance with Applicable Laws, the SIPP, FIP and the RIP during the quarter.

In the event that a Fund Manager is not in compliance with Applicable Laws, the SIPP, FIP and/or the RIP the Fund Manager is required to immediately advise University staff, detail the nature of the non-compliance and recommend an appropriate course of action to remedy the situation.

While the guidelines in the SIPP are intended to guide the management of the assets, it is recognized that, where pooled funds are held, there may be instances where there is a conflict between the SIPP and the investment policy of a pooled fund. In that case, the pooled fund policy shall dominate, subject to the compliance reporting procedures outlined in this section. However, the Fund Manager is required to advise University staff, in advance, if there are any material discrepancies between the SIPP and the pooled fund's own investment guidelines. In addition, the Fund Manager will ensure that University staff have received a copy of the most recent version of the pooled fund policy and of any amendments made to the pooled fund policy.

4) Audit

The Plan's financial reporting for the regulatory authorities shall be audited annually by external auditors appointed by the University.

5) Monitoring of Asset Mix

In order to ensure that the assets of the Plan operate within the minimum and maximum asset mix ranges, as prescribed in the SIPP, PIC shall review the asset mix at least quarterly. Please refer to the section on Rebalancing Policy.

6) Selecting Fund Managers

Should PIC determine that there is a requirement for an additional Fund Manager, PIC will establish a sub-committee to undertake a Fund Manager search. The criteria used for selecting a Fund Manager will be consistent with the investment and risk philosophy set out in the SIPP. Although each search process will apply a specific list of considerations, the evaluation criteria shall include:

a) Establishing the relevant performance benchmark

b) Performance history

c) Quality of the firm and the fund specific investment team

d) Quality and consistency of the fund's investment process

e) Quality and transparency in reporting including valuation methods

f) ESG integration within the investment process and related reporting, including reporting on the Manager's integration of climate related risk factors and disclosure of carbon metrics

g) Risk management approach

h) Competitiveness of fees

i) Terms of the applicable investment management agreement

7) Monitoring Fund Manager Performance

At least quarterly, the University will monitor and review:

a) Each Fund Manager's staff turnover, consistency of style and record of service;

b) Each Fund Manager's current economic outlook and investment strategies including ESG approach;

c) Each Fund Manager's compliance with the SIPP, FIP and RIP; and

d) Investment performance of the assets of the Plan in relation to the rate of return expectations outlined in the SIPP.

8) Dismissal of Fund Manager

Reasons for considering the termination of the services of a Fund Manager include, but are not limited to, the following factors:

a) Performance results which are below the stated performance benchmarks;

b) Changes in the overall structure of the Plan's assets such that the Fund Manager's services are no longer required;

c) Change in personnel, firm structure or investment philosophy which might adversely affect the potential return and/or risk level of the portfolio; and/or

d) Failure to adhere to the SIPP, FIP or RIP.

9) Rebalancing Policy

The University shall monitor the asset mix and the net cash flow on a quarterly basis. Rebalancing will occur when the market value of an asset class varies from the limits set out in the SIPP, or if any individual Fund Manager's component exceeds a limit set out in the SIPP.

Rebalancing will be generally implemented within two quarters by:

a) Redirecting the net cash flows [administered monthly by University staff and not included in PIC's cumulative 20% asset mix change threshold]

b) Liquidating exceedances and directing those to assets below the benchmark taking into account the transaction costs and liquidity of the particular asset class

Notwithstanding the rebalancing policy, in certain circumstances, PIC may adjust the weight of any asset class within the permitted ranges for the purpose of protecting capital and managing risk.

10) Liability Hedging

PIC will determine the type of investment strategies, if any, to be implemented to hedge the interest rate and/or inflation sensitive liabilities of the plan.

Appendix A — Fund Manager Compliance Letter

To be completed by fund managers each quarter.

UNIVERSITY OF WATERLOO
_______________, 202_

This is to certify that I/we have complied with the *Pension Benefits Act* (Ontario) and all other laws and regulations applicable to the investment of the Pension Plan's assets and adhered to the guidelines contained in the Statement of Investment Policies and Procedures, the Fund Implementation Procedures for the University of Waterloo Pension Plan (2011), and the Responsible Investment Policy as approved by the Board of Governors of the University of Waterloo as well as the investment management agreement in place

Signed ___________________________

On behalf of ______________________

Date _____________________________

Statement of Investment Policies and Procedures

University of Waterloo Pension Plan (2011)

Registration number: 0310565

Effective: April 4, 2023

Replaces previous version which was last revised and effective on February 2, 2022

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Introduction

1) Purpose and Scope of Policy

a) This Statement of Investment Policies and Procedures (the “Policy”) sets out the investment principles, guidelines and procedures for investing and managing the assets and the associated risks for the University of Waterloo Pension Plan (2011), registration number 0310565, as amended (the “Plan”).

b) The University of Waterloo (the “University”) was established by an Act of Legislature in the Province of Ontario. The University’s Board of Governors (the “Board”) has established a governance structure to administer the Plan.

c) The Policy is informed by the requirements of the *Income Tax Act* (Canada) (“ITA”) and the *Pension Benefits Act* (Ontario) (“PBA”), including their respective regulations and all subsequent amendments, and any other applicable federal or provincial law governing the investment of pension funds, including Schedule III to the *Pension Benefits Standards Regulation, 1985* (Canada) (“PBSA”) (the foregoing are, collectively, the “Applicable Law”).

d) The Policy is intended to summarize and explain the investment approach but does not supersede the Plan text, resolutions of the Board of Governors, the Applicable Law or the Plan’s Funding Policy & Guideline (the “Governing Documents”). In case of any dispute between this document and the Governing Documents, the Governing Documents shall prevail.

e) The Pension & Benefits Committee and the Pension Investment Committee shall annually review and either confirm or recommend amendments to this Policy to the Board who may amend this Policy and direct the University to file any such amendments with the regulator in accordance with the Applicable Law. The University will provide any amended copy of this Policy to the Fund Managers and the Plan’s actuary.

2) Overview of the Plan and its Governance

a) The Plan is a contributory defined benefit plan based upon an individual’s final average salary and years of participation in the Plan prior to retirement. Pensions paid under the Plan are escalated annually by the cost-of-living factor as described in the Governing Documents.

b) The University is the sponsor and legal administrator of the Plan for the purposes of Applicable Law. The University through its Board is ultimately responsible for all aspects of managing the Plan, including the prudent investment and administration of the assets of the Plan. In accordance with the Governing Documents, the Board has created committees and subcommittees, delegated to University staff, and appointed external agents, to carry out certain of its responsibilities. University staff are responsible for distributing all pertinent reports and information to the appropriate committees based on their terms of reference as well as communicating with the Fund Managers and agents regarding the committees’ decisions.

c) The University will comply with the Governing Documents and will exercise the care, diligence and skill in the administration and investment of the Plan’s assets (the “Fund”) that a person of ordinary prudence would exercise in dealing with the property of another person. The individuals acting on behalf of the Plan in furtherance of its duty will use all knowledge and skill that they possess or ought to possess in the administration and investment of the Fund.

3) Plan Objectives

The objective of the Plan is to provide members of the Plan with the retirement benefits prescribed under the terms thereof.

a) The University established the Plan to provide members with a defined level of retirement income in accordance with the Plan's terms. Further, the intent is to ensure that retirement benefits, and University and member contributions remain reasonable and relatively stable over the life of the Plan while ensuring its sustainability (the Plan's funding practices are detailed in the Funding Policy & Guideline, which establishes a formal framework to achieve the Plan's funding requirements).

b) To achieve the Plan's goals, its assets will be invested in a prudent and efficient manner. The Plan will strive to maximize long-term real returns on its invested assets subject to an appropriate level of risk.

4) Investment Objectives

Return and risk objectives are established taking into consideration factors, including the nature and sensitivity of the Plan's liabilities; allocation of liabilities between active and retired members; the going concern and solvency positions of the Plan, as calculated and projected by the Plan's actuary; net cash flow position of the Plan and liquidity needs to meet Plan obligations; investment horizon of the Plan; historical and expected capital market returns; volatility of different asset classes; financial implications of Environmental, Social and Governance ("ESG") factors; inflation and interest rate risks; benefits of investment diversification; and the University's risk tolerance with respect to the Fund.

5) Portfolio Return and Risk Objectives

The return objectives of the Fund are:

a) Earn a rate of return, after investment expenses, of CPI[1] + 3.5% over four-year moving periods. This objective is reviewed annually to ensure that it is realistic based on market conditions and consistent with the actuarial discount rate used to calculate the Plan's going concern liabilities

b) Achieve a minimum absolute rate of return, after investment expenses, which exceeds the benchmark return by 0.25% over four-year moving periods

The risk objective of the Fund is to reduce the frequency and severity of funding deficits.

6) Expected Volatility

The volatility of the Fund's returns is directly related to the asset mix. The Benchmark Portfolio in Section 13 has been constructed with the expected returns and related risks in mind. Provided the Fund's investment structure stays within the permitted ranges for each asset class, the volatility of the Fund's returns should be similar that of the Benchmark Portfolio.

7) Equity Returns/Risk

While the level of equity exposure drives much of the risk level of the Fund assets, equities are expected to outperform fixed income over the long-term. Therefore, the investment strategy will

[1] CPI source Bank of Canada Total CPI: https://www.bankofcanada.ca/rates/price-indexes/cpi/

include appropriate exposure to equities as part of providing the long-term risk adjusted returns necessary to fund the obligations of the Plan at a reasonable cost.

8) Active and Passive Investments

The investment strategy may employ a mix of active and passive management styles. Active management is adopted where there is a reasonable expectation of adding value relative to the relevant benchmark over the long-term, net of expenses. Passive management is adopted where the prospect of adding value above the relevant benchmark is diminished or for the purpose of managing active risk within asset classes.

9) Diversification

Diversification is intended to expose the Fund to opportunities to reduce investment concentration risk. The Fund will pursue diversification by asset class and geography in its asset mix and by investment style in the selection of its investment managers.

10) Liability Hedging

The Fund's investment strategy will consider the sensitivity of the Plan liabilities to interest rate and inflation changes and consider opportunities for hedging those liabilities through its investments.

11) Liquidity

The investment strategy should provide sufficient liquidity to meet the Plan's financial obligations as they come due, while ensuring the Fund does not contain excessive cash or low yielding liquid assets. Provided the liquidity requirements of the Plan are met, the Plan may consider investing a portion of the Fund in illiquid assets, where such investment has the potential of enhanced returns, in part, due to the illiquidity premium.

12) Currency Hedging

Currency movements relative to the Canadian dollar are not expected to have a significant impact over the long term. The Plan policy is to not hedge currency at the total fund level. Over shorter periods, currency movements may increase volatility and currency hedging may be employed by Fund Managers where expressly permitted.

13) Asset Mix

The Fund will be invested in a broad range of assets with the goal of meeting or exceeding return expectations and mitigating investment risks. The following benchmark portfolio ("Benchmark Portfolio") is representative of the long-term asset mix policy for the Fund based on the analysis conducted in the asset-liability study.

Assets	Minimum %	Maximum %	Benchmark Portfolio %	Assets
Cash	0	5	2	FTSE TMX Canada 91-Day T-Bill
Fixed Income	20	35	25	FTSE TMX Universe Bond

Canadian Equity	0	10	5	S&P/TSX Composite
Global Equity	40	55	48	MSCI ACWI
Total Equity	**40**	**65**	**53**	
Infrastructure	5	15	10	FTSE Developed Core Infrastructure 50/50
Real Estate	5	15	10	FTSE EPRA/NAREIT Developed (CAD)
Total Real Assets	**10**	**30**	**20**	

For the purpose of the total asset mix described above, the Fund Managers' asset class pooled funds are deemed to be 100% invested, even though these funds may contain a portion held in cash and cash equivalent instruments.

The Plan's target asset allocation for each investment category listed in subsection 76(12) of Regulation 909 under the *Pension Benefits Act* (Ontario) is as follows:

Asset Class under Sub-section 76(12) of Regulation 909, under the *Pension Benefits Act* (Ontario)		**Long Term Target Allocation**
1.	Insured Contracts	0.0%
2.	Mutual or pooled funds or segregated funds	0.0%
3.	Demand deposits and cash on hand	1.0%
4.	Short-term notes and treasury bills	1.0%
5.	Term Deposits and guaranteed investment certificates	0.0%
6.	Mortgage Loans	0.0%
7.	Real Estate	10.0%
8.	Real Estate Debentures	0.0%
9.	Resource properties	0.0%
10.	Venture Capital	0.0%
11.	Corporations referred to in subsection 11(2) of Schedule III to the federal investment regs	0.0%
12.	Employer issued securities	0.0%
13.	Canadian stocks other than investments referred to in 1 to 12 above	5.0%
14.	Non-Canadian stocks other than investments referred to in 1 to 12 above	48.0%
15.	Canadian bonds and debentures other than investments referred to in 1 to 12 above	25.0%
16.	Non-Canadian bonds and debentures other than investments referred to in 1 to 12 above	0.0%
17.	Investments other than investments referred to in 1 to 16 above[2]	10.0%

14) Rebalancing

At all times, the market value of the individual asset classes will be within the minimum and maximum aggregate investment limits prescribed in Section 13 but may deviate from the benchmark portfolio.

[2] Refers to the long-term target allocation to Infrastructure

The minimum portfolio weight for the real estate asset class will be achieved over a market cycle and may be held in fixed income and equities during the intervening period.

15) Responsible Investing

Consistent with its fiduciary duty, when selecting Fund Managers or direct investments, the Plan considers criteria that include: the Fund Manager's business and staff; historical performance; the integration of environmental, social and governance (ESG) factors, including climate change risks and opportunities, which may have a financial impact on the investments, as well as the Fund Manager's Responsible Investing Policy. The adoption of sound ESG practices is intended to reduce financial risk over all time periods and offer enhanced long-term value to the Fund. The Plan's ESG practices are further detailed in the University of Waterloo Responsible Investment Policy.

Permitted and Prohibited Investments

16) Permitted Investments

In general, and subject to the restrictions in Sections 17 & 18, the Fund Manager may invest in any of the following asset classes and in any of the investment instruments listed.

a) Cash and Short-Term Investments

Cash on hand, demand deposits, treasury bills, short-term notes and bankers' acceptances, commercial paper, term deposits and guaranteed investment certificates having a term of less than or equal to one year.

b) Fixed Income

Bonds, debentures, or other debt instruments of corporations, Canadian Governments, Government agencies, or guaranteed by Governments, supranationals, federal real return bonds, mortgage-backed securities, mortgages, asset-backed securities, non-convertible preferred shares, term deposits, guaranteed investment certificates, insurance contracts, private placements and bonds where capital, interest or both are linked to increases in the cost-of-living (i.e., real return bonds).

c) Equities

Common shares, preferred shares, American Depository Receipts, Global Depository Receipts, rights, warrants, installment receipts, index units, income trust units (including real estate investment trusts) and securities convertible into common shares.

d) Derivatives

Derivatives are a type of financial contract which can be traded on an exchange or over the counter for which the value is dependent on an underlying asset, group of assets or a benchmark; common derivatives include futures contracts, forwards, options and swaps.

The pooled funds in which the Plan invests may invest directly in derivatives to create synthetic exposures, or for hedging purposes, if their objectives and strategies permit, and if the exposure to derivatives is subject to limits based on the intended use and strategies for derivatives and the risks associated with them. Derivatives may also be used to hedge currency and provide downside protection. Derivatives may not be used for speculative trading or to create a portfolio with leverage. Investment funds that invest in derivatives must comply with all Applicable Law and must be invested and managed in accordance with regulatory derivatives best practices.

e) Infrastructure

Listed, direct or indirect investments in the debt or equity securities of infrastructure entities including the transportation, energy, utilities, telecommunications and social infrastructure sectors

f) Real Estate

REITs, direct or indirect investments in the debt or equity securities of real property assets including industrial, office, retail, multi-residential, agriculture and timberland properties.

g) Pooled Funds

Investments in open-ended or closed-ended pooled funds provided that the assets of such funds are permissible investments under this Policy. It is recognized that where pooled funds are held, there may be instances where there is a conflict between this policy and the investment policy of the pooled fund. In that case, the pooled fund policy shall dominate.

The Fund manager shall ensure that the Plan has received a copy of the most recent version of the pooled fund policy.

17) Minimum Quality Requirements

a) Quality Standards

i) The minimum quality standard for individual bonds and debentures is ‘BBB’ or equivalent as rated by at least two Recognized Bond Rating Agencies, at the time of purchase. Where an investment in the portfolio is downgraded below a ‘BBB’ rating, the following steps will be taken:

- The Fund Manager will notify the Plan of the downgrade at the earliest possible opportunity;
- Within ten business days of the downgrade, the Fund Manager will advise the Plan in writing of the course of action taken or to be taken by the Fund Manager, and its rationale; and
- Immediately upon downgrade, the Fund Manager will place the asset on a Watch List subject to monthly review by the Fund Manager with the Plan until such time as the security matures, is sold or until it is upgraded to a level consistent with the purchase quality standards as expressed in this policy.

ii) In cases in which the Recognized Bond Agencies do not agree on the credit rating, the bond will be classified according to the methodology used by FTSE TMX, which states:

- If two agencies rate a security, use the lower of the two ratings;
- If three agencies rate a security, use the middle of the three ratings; or
- If four agencies rate a security, use the middle of the three lowest ratings.

b) Rating Agencies

For the purposes of this Policy, the following rating agencies shall be considered to be ‘Recognized Bond Rating Agencies:’

i) DBRS Morningstar;

ii) Standard & Poor’s;

iii) Moody’s Investors Services; and

iv) Fitch Ratings

18) Maximum Quantity Restrictions

a) Total Plan Level

The Plan shall not, directly or indirectly, lend or invest moneys to or in any one person, any associated persons or any affiliated corporations if:

i) 10% or more of the total market value of the Plan's assets has already been lent or invested, in total, to or in the person, the associated persons or the affiliated corporations; or

ii) 10% or more of the total market value of the Plan's assets would be lent or invested, in total to or in the person, the associated persons or the affiliated corporations as a result of the loan or investment.

iii) Holdings issued by the Government of Canada and its agencies are exempt from the abovementioned 10% limitations.

The Plan shall not, directly or indirectly, invest moneys in the securities of a corporation to which are attached more than 30% of the votes that may be cast to elect the directors of the corporation.

This section applies to those investments and loans subject to quantitative limit under Section 9(1) of Schedule III to Pension Benefits Standards Regulations, 1985 (Canada).

b) Fixed Income

i) A maximum of 15% of the market value of the Canadian fixed income securities shall be invested in BBB bonds or debentures

ii) A maximum of 10% of the market value of the actively managed fixed income portfolio may be invested in debt denominated in US currency issued by the US Government, its agencies and instrumentalities. No other foreign currency debt will be purchased.

c) Equities

No one equity holding shall represent more than 10% of the total market value of the investment manager portfolio.

19) Fund Manager Compliance

Fund Managers must be compliant with the Policy, the Fund Implementation Procedures and the Responsible Investment Policy.

The Fund Managers shall not make investments in asset categories other than those explicitly permitted in the Policy, unless the Plan first consents in writing.

20) Securities and Cash Lending

The Fund Managers and custodian may participate in securities lending programs for the purpose of generating revenue, subject to the provisions of the Applicable Law.

Such loans must be secured by cash and/or readily marketable government bonds, treasury bills and/or letters of credit, discount notes, banker's acceptances of Canadian chartered banks, or high quality, liquid equities. The amount of collateral taken for securities lending should reflect OSFI standards and best practices in local markets. This market value relationship must be calculated at least daily.

Fund Managers and custodians participating in securities lending will make available the terms and conditions of any securities lending program(s) with the Plan.

21) Short Selling

Short selling and/or pair trading are not permitted.

22) Borrowing

The Plan shall not borrow money, except to cover short-term contingency and the borrowing is for a period that does not exceed ninety days, subject to the PBA and the ITA.

23) Monitoring

Compliance with this Policy, together with relevant risk metrics, will be monitored quarterly including:

a) Achievement of the total return objective

b) Liquidity requirements

c) Asset mix limits

d) Credit quality requirements

e) Single issuer limits

f) Fund Manager Performance and related ESG integration

General Provisions

24) Conflicts of Interest

a) Responsibilities

This standard, which is consistent with the University Policy 69 (Conflict of Interest) applies to the University and the members of the University, as well as to all agents employed by the Plan, in the execution of their responsibilities under the Pension Benefits Act (the “Affected Persons”).

An “agent” is defined to mean a company, organization, association or individual, as well as its employees who are retained to provide specific services with respect to the investment, administration and management of the assets of the Plan.

b) Disclosure

In the execution of their duties, the Affected Persons shall disclose any material conflict of interest relating to them, or any material ownership of securities, which could impair their ability to render unbiased advice, or to make unbiased decisions, affecting the administration of the Plan assets.

Further, it is expected that no Affected Person shall make any personal financial gain (direct or indirect) because of his or her fiduciary position. However, normal and reasonable fees and expenses incurred in the discharge of their responsibilities are permitted if documented and approved by the Plan.

No Affected Person shall accept a gift or gratuity or other personal favour, other than one of nominal value, from a person with whom they deal with in the course of performance of his or her duties and responsibilities for the Plan.

It is incumbent on any Affected Person who believes that he or she may have a conflict of interest, or who is aware of any conflict of interest, to disclose full details of the situation to the attention of the University immediately. The University, in turn, will decide what action is appropriate under the circumstances but, at a minimum, will table the matter at the next regular meeting of the appropriate committee.

No Affected Person who has or is required to make a disclosure as contemplated in this Policy shall participate in any discussion, decision or vote relating to any proposed investment or transaction in respect of which he or she has made or is required to make disclosure.

25) Voting Rights

The voting rights acquired through the investments held by the Plan are delegated to the Fund Managers of the securities. Fund Managers are expected to exercise all voting rights related to investments held by the Plan in the best interests of the Plan. Fund Managers shall report their voting activities to the Plan on a quarterly basis documenting how they voted as well as how ESG factors were included in the rationale for the voting decision.

26) Valuation of Investments Not Regularly Traded

The following principles will apply for the valuation of investments that are not traded regularly:

a) Equities

Average of bid-and-ask prices from two major investment dealers, at least once every month.

b) Fixed Income

Same as for equities.

c) Real Assets

The fair value of infrastructure and real estate investments is determined by the general partner or the pooled Fund Manager based on industry standards which may include consideration of previous transaction prices, discounted cash flow, and the valuations of other comparable publicly traded investments. Limited partnerships and pooled funds will be audited annually by a qualified independent third party appointed by the fund's general partner or Fund Manager.

27) Related Party Transactions

The University, on behalf of the Plan, may not enter into a transaction with a related party unless:

a) The transaction is made for the operation or administration of the Plan under terms and conditions that are not less favourable to the Plan than market terms and conditions and such transaction does not involve the making of loans to, or investments in, the related party; or

b) The combined value of all transactions with the same related party is nominal or the transaction(s) is immaterial to the Plan.

For the purposes of this section, only the market value of the combined assets of the Plan shall be used as the criteria to determine whether a transaction is nominal or immaterial to the Plan.

Transactions less than 0.5% of the combined market value of the assets of the Plan are considered nominal.

In addition, the prohibition to entering into transactions with a related party does not apply to investments:

a) In an investment fund in which investors other than the Administrator and its affiliates may invest and that complies with the requirements set out in Sections 9 and 11 of Schedule III to the

PBSA;

b) In an unallocated general fund of a person authorized to carry on a life insurance business in Canada;

c) In securities issued or fully guaranteed by the Government of Canada, the government of a province, or an agency of either one of them;

d) In a fund composed of mortgage-backed securities that are fully guaranteed by the Government of Canada, the government of a province, or an agency of either one of them;

e) In a fund that replicates the composition of a widely recognized index of a broad class of securities traded at a marketplace (as that term is defined in the PBSA); and

f) That involve the purchase of a contract or agreement in respect of which the return is based on performance of a widely recognized index of a broad class of securities traded at a marketplace (as that term is defined in the PBSA).

A "related party" in respect of the Plan means:

a) A person who is the administrator of the Plan including any officer, director or employee of the administrator. It also includes the Fund Managers and their employees, a union representing employees of the employer, a member of the Plan, a spouse or child of the persons named previously, or a corporation that is directly or indirectly controlled by the persons named previously, among others. Related party does not include government or a government agency, or a bank, trust company or other financial institution that holds the assets of the Plan, where that person is not the administrator of the Plan;

b) An officer, director or employee of one of the administrators of the Plan;

c) A person responsible for holding or investing the assets of the Plan, or any officer, director or employee thereof;

d) An association or union representing employees of the University, or an officer or employee thereof;

e) A member of the Plan;

f) The spouse or child of any person referred to in any of paragraphs (a) to (e);

g) An affiliate of the University;

h) A corporation that is directly or indirectly controlled by a person referred to in any of paragraphs (a) to (g); and/or

An entity in which a person referred to in paragraph (a) or (b), or the spouse or a child of such a person, has a substantial investment.

University of Waterloo Responsible Investment Policy

Effective: April 4, 2023

Replaces previous version which was effective on April 5, 2022

University of Waterloo Responsible Investment Policy

1. Introduction

The University's Board of Governors ("Board") exercises oversight of the investment portfolios, including the endowment fund and the registered pension fund (the "Funds" or, individually, the "Fund"), primarily through three Board Committees including the Finance & Investment Committee, the Pension & Benefits Committee and the Pension Investment Committee. (the "Committees" or, individually, a "Committee").

These Funds are normally invested through the selection and retention of external investment managers, investing in institutional pooled funds which serve a range of clients on a comingled basis. The Committees may also approve or recommend investing directly in securities to achieve specific outcomes.

In 2020, both the University and the Pension Plan for Faculty and Staff became signatories to the United Nations supported Principles for Responsible Investment ("UN PRI") which requires participation in a comprehensive annual assessment framework.

Each Committee fulfills its Board-assigned responsibilities prudently and in accordance with legislation, policies, guidelines and agreements governing the investment of the Funds. The Board acknowledges that as a pension plan administrator, it has a fiduciary duty to act reasonably and prudently and exclusively in the best financial interest of plan members and other beneficiaries.

The Board and its Committees will apply Environment, Social and Governance ("ESG") factors as part of investment decision making processes, including the climate change mitigation/carbon reduction approach approved for those portfolios. ESG factors will be integrated into the Committees' investment analysis and asset management activities in accordance with this document, the registered pension fund statement of investment policies and procedures ("Pension SIPP"), the registered pension fund implementation procedures ("Pension FIP"), the endowment investment statement of investment policies and procedures ("Endowment SIPP"), and the endowment investment fund implementation procedures ("Endowment FIP"), as applicable. The decision to integrate ESG factors into investment decisions is based on the belief that this approach is expected to enhance the long-term value of the Funds' portfolios and reduce the risk of loss.

2. Defining ESG

- Environmental – factors which relate to the physical environment (including contamination, greenhouse gas emissions, extreme weather, water scarcity)
- Social – factors arising from relationships with employees, consumers, suppliers, and communities (including labour rights, health and safety, equity, diversity and inclusion, product safety)
- Governance – factors which relate to the structures in place to ensure the effective direction and control (including the delineation of roles, executive compensation, and board independence)

3. Responsible Investing Principles

Responsible investing actively incorporates ESG factors into each investment decision and monitors those decisions. While ESG factors are relevant throughout all stages of the investment process from pre-investment, to monitoring, to exiting, the degree to which ESG factors are integrated depends on many factors such as active vs. passive mandates, the asset type, the time horizon, and the specific investment strategy.

In June 2021, the Board affirmed climate change mitigation as a priority area among ESG factors requiring focused investment attention relating to its impact on the financial performance of investments; the Board also recognized that further consideration is required relating to other ESG factors such as social justice, equity, diversity and inclusion and their potential consequential impact on investment risk and reward.

4. Application

This policy applies to the investments of the endowment fund and the registered pension fund. This policy will be cited in both the Endowment SIPP and the Pension SIPP and will be communicated to each investment manager.

This policy is intended to be read together with the Endowment SIPP or Pension SIPP, as applicable, for the Funds, as amended from time to time. While the Board will strive to maintain consistency between this policy and the SIPPs, to the extent there is any conflict in the investment principles and approach as set out in this policy or the SIPPs, the SIPP shall govern with respect to the relevant Fund.

To the extent possible, taking into account their particular fund's constating or disclosure documents the Funds' investment managers are required to integrate this policy into their investment analysis and decision-making based on forecasted financial impacts (in conjunction with traditional financial analysis) to support each Fund's return objectives.

5. ESG Factor Integration

The Funds' investment approach focuses on long-term value creation in a constantly changing environment experiencing many risks and opportunities. The Committees do not seek to limit an investment manager's investible universe (i.e., no exclusions) but do specify some traditional limitations such as minimum credit quality and maximum single security exposure which are stated within the particular fund's SIPP (or constating or other disclosure documents).

This approach is to be executed by the Committees principally through the rigorous selection of investment managers offering institutional pooled funds which are considered leaders in ESG factor integration. Each investment manager is monitored by the Committees on a quarterly basis to ensure consistency of style/approach including their ESG factor integration strategies, reviewing any significant personnel changes, reviewing the consistency of their proxy voting actions with their policy statement, and the Fund's investment performance metrics. The Committees encourage each investment manager to engage on ESG matters with the companies they invest in and report on such engagement and how it supports the manager's duty to act in the best interest of the Funds.

Investment managers will be required to consistently enhance their quarterly reporting to address evolving areas such as ESG factor integration, carbon metrics reporting, climate change risk assessment and scenario analysis.

The Committees prefer each Fund's investment managers to be signatories to UN PRI.

The Board has approved a carbon footprint reduction plan for the endowment and pension funds where progress is reviewed annually based on a percentage of the aggregate assets of the Funds. The Board is targeting to achieve a 50% carbon reduction by 2030 (relative to base year 2018) in the carbon footprint (scope 1 and scope 2) with an aspirational target/goal of achieving carbon neutrality by 2040. Any changes to these targets will be promptly reported to the investment managers.

To these ends, investment managers must consider carbon-related emissions and climate change to the extent such factors may have a consequential impact on future investment values and performance. Specifically, in this regard, the investment managers shall:

- disclose how they address climate related risk and opportunities and potential impacts on their investment decisions;

- provide climate change related financial disclosures including appropriate carbon metrics which the University will consolidate to measure progress for each Fund on a total portfolio basis; and
- provide climate change risk assessments and scenario analysis when sufficient data becomes reliably available.

Notwithstanding the foregoing, any and all investment decisions in respect of the Funds shall be subject to appropriate due diligence and analysis that support the conclusion that the decision is in the best financial interest of the Fund as outlined in the governing documents for the Fund and, with respect to the pension Fund, as required by applicable law.

6. ESG Engagement by the University on behalf of the Committees

The University will participate in the appropriate investor coalitions and collectives (both formal and informal) where partner members have similar fiduciary responsibilities and will periodically review the effectiveness of those collective approaches.

7. ESG Analysis & Reporting

The Committees will require its investment consultant(s) and service providers to have the necessary systems, resources, and experience to support evolving ESG analysis and reporting standards.

The University will support responsible investment training opportunities for the staff involved in the day-to-day administration of the Funds.

The University will report annually on the Funds and the investment managers' responsible investing activities including proxy voting, company engagement, carbon metrics as well as the outcomes from UN PRI's annual assessments.

The University will undertake a climate change risk assessment and scenario analysis for each Fund at the portfolio level once sufficient reliable information is available.

8. Review

This Responsible Investment Policy will be reviewed concurrently with the review of the Endowment SIPP (by the Finance & Investment Committee) and Pension SIPP (by the Pension Investment Committee, with recommendation to the Pension & Benefits Committee for any amendments) including an overall assessment of the current ESG landscape, future risk & opportunities, and the identification of any changes to priority areas of focus.

For Information **Open Session**

Date of Meeting: January 19, 2024

To: Members, Pension & Benefits Committee

From: Sarah Willey-Thomas, Associate University Secretary

RE: **5) UPP Review**

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5) UPP Review

Allan Shapira, Aon, will provide the final presentation as it relates to the University Pension Plan and an extension of the presentations received by the Committee at its meetings on 17 November 2023, 13 October 2023, 15 September 2023, 16 June 2023.

Documentation Provided:

- Review of University Pension Plan Ontario (UPP) - Funding Structure and Plan Design

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Review of University Pension Plan Ontario (UPP) — Funding Structure and Plan Design

University of Waterloo Pension & Benefits Committee

Meeting on May 19, 2023
Updated for Meeting on September 15, 2023
Updated for Meeting on October 13, 2023
Updated for Meeting on November 17, 2023
Updated for Meeting on January 19, 2024

Approach for Reviewing the UPP

As agreed to at March 10, 2023 meeting of P&B Committee:

Session 1 — Funding Structure and Plan Design

- Past Service/Future Service Benefit and Funding Structure
- Detailed Comparison of Plan Provisions
- Analysis of Member and University Contributions

Session 2 — Regulatory Process

- Legislative Framework
- Consent Requirements and Process
- Notice Requirements
- FSRA Transfer Application

Session 3 — UPP Governance

- Joint Sponsors
- Board of Trustees
- UPP Constating Documents
- Required Agreements to Join UPP

Session 4 — Considerations

- Revisit of UPP Investment Strategy and Risk Management (from UPP)
- Revisit of UPP Service Delivery Model (from UPP)
- University and Member Considerations in Joining UPP
- Other Impacts on University Governance Structure

UPP Benefit Structure

Pension Benefits From UPP		
Pre-Conversion Date Pensionable Service	+	**Post-Conversion Date Pensionable Service**
Prior university plan provisions for pre-Conversion Date Pensionable Service will be replicated under UPP		UPP provisions apply as of Conversion Date forward
Each participating university will have different benefit provisions for pre-Conversion Date Pensionable Service		Common benefit provisions for all participating universities and employees

AON

UPP Funding Structure

UPP Pension Fund Invested as One Fund		
Assets and Liabilities for Pension Benefits Transferred Into UPP (Pre-Conversion Service)		**Assets and Liabilities for Pension Benefits Earned From Conversion Date (Post-Conversion Service)**
Assets and liabilities from prior university plans transferred into UPP	+	One joint cost- and risk-sharing arrangement across all participating universities and employees
Each participating university responsible for its own funded status on Conversion Date and for any losses/gains on pre-Conversion Date assets and liabilities for first 10 years from Conversion Date, followed by 10-year transition to 50/50		Contributions are shared 50/50 between universities and employees including sharing of any losses/gains that arise for UPP service

Comparison of Plan Provisions

Provisions	UW Pension Plan	UPP
Eligibility		
	Employees employed on a full-time or part-time basis (with at least one-third annual commitment) eligible to join on first day of any month coincident with or next following date of employment; mandatory enrollment on first day of month coincident with or next following date of employment if age 35 or over on date of employment, or first day of calendar year coincident with or next following attainment of age 35 if under age 35 at date of employment Full-time or part-time definite–term lecturers who have attained age 35 required to join on first day of month coincident with or next following earlier of promotion to a higher rank or completion of 5 years of service Employees employed at less than one-third annual commitment eligible to join on first day of any month coincident with or next following two immediately preceding calendar years of either earnings of at least 35% of YMPE or hours of work of at least 700	**Full-Time Employees**: Mandatory enrollment on the first day of the month coincident with or next following date of employment **Other Than Continuous Full-Time Employees:** Optional enrollment on first day of any month if either earnings* of at least 35% of YMPE or 700 hours* of work, in each of two consecutive calendar years immediately prior to applying for membership **from an eligible class of employment* **Transition:** All members of the university plan on the Conversion Date become members of the UPP

Comparison of Plan Provisions

Provisions	UW Pension Plan	UPP
Retirement Dates		
Normal Retirement Date	First day of month coincident with or next following attainment of age 65	Last day of month coincident with or in which member reaches age 65 (but no later than normal retirement date under university plan)
Early Retirement Date	Within 10 years of normal retirement date	Last day of month coincident with or in which member attains age 55
Postponed Retirement Date	First day of any month following normal retirement date, subject to pension commencing no later than December 1 of calendar year in which member attains age 71	Last day of any month in which member retires following normal retirement date, subject to no later than November 30 of calendar year in which member attains age 71
Pension Commencement Date	Same date as above for normal, early or postponed retirement	First day of month following normal, early or postponed retirement date

Comparison of Plan Provisions

Provisions	UW Pension Plan	UPP
Benefit Formula		
Average Earnings	Best 60 consecutive months of pensionable earnings	Best 48 non-consecutive months of pensionable earnings (definition of pensionable earnings that applied under university plan continues under UPP)
Average Year's Maximum Pensionable Earnings (YMPE)	Last 5 years	Last 48 consecutive months; Year's Additional Maximum Pensionable Earnings (YAMPE = 1.14 × YMPE) to be used as breakpoint starting in 2025
Benefit Rate Per Year of Pensionable Service	1.4% / 2.0%	1.6% / 2.0%
Maximum Benefit	Income Tax Act maximum pension, subject to cap of $4,000 per year of pensionable service effective January 1, 2023, increased thereafter each calendar year starting in 2024 by one-third of percentage increase in Average Industrial Wage	Income Tax Act maximum pension; automatically increased with percentage increase in Average Industrial Wage

AON

Comparison of Plan Provisions

Provisions	UW Pension Plan	UPP
Normal Form of Payment		
Without Spouse	Lifetime pension with 10-year guarantee period	Lifetime pension with 10-year guarantee period
With Spouse	Lifetime pension with 10-year guarantee period (LG10); statutory 60% survivor pension actuarially reduced from LG10 pension	Lifetime pension with 50% survivor pension; statutory 60% survivor pension actuarially reduced from 50% survivor pension
Unreduced Early Retirement		
	Age 62	Age 60 and 80 age-plus-service points (e.g., age 60 and 20 years of service; age 62 and 18 years of service); only applies to pension benefit earned for UPP service but pre-Conversion Date service counts for eligibility
Reduced Early Retirement		
	Accrued pension reduced 6% per year from age 62	Accrued pension reduced 5% per year from age 65
Reduction for Early Commencement of Deferred Pension		
	3% per year from ages 65 to 60, plus 6% per year from ages 60 to 55	Actuarial reduction from age 65

Comparison of Plan Provisions

Provisions	UW Pension Plan	UPP
Cost-of-Living Adjustments (Indexation)		
Pensions in Payment	For pension benefits accrued on and after January 1, 2014: Guaranteed indexation at 75% of increase in Consumer Price Index (CPI), up to a maximum adjustment of 3.75%; any indexation over 3.75% determined by P&B Committee based on financial health of plan For pension benefits accrued prior to January 1, 2014: Guaranteed indexation at 100% of increase in CPI, up to a maximum adjustment of 5.00%; any indexation over 5.00% determined by P&B Committee based on financial health of plan	Funded conditional indexation at 75% of increase in CPI Indexation at 75% of CPI included in contribution rates based on long-term actuarial assumptions and granted each year subject to funding policy under which Joint Sponsors can decide to reduce future indexation adjustments below 75% of CPI level given financial health of plan
Deferral Period	No indexation provided on pension benefit for post-January 1, 2008 Pensionable Service unless member has 20 or more years of service or is within 10 years of normal retirement date at termination of employment Indexation amount for eligible pension benefit determined annually by P&B Committee	No indexation provided

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Comparison of Plan Provisions

Provisions	UW Pension Plan	UPP
Disability		
	Members in receipt of income under university LTD plan: • Cease to contribute while disabled; and • Continue to accrue pensionable service with pensionable earnings at date of disability increased each year by a percentage determined by P&B Committee	Members in receipt of income under university LTD plan: • Cease to contribute while disabled (university makes both member and university contributions); and • Continue to accrue pensionable service with pensionable earnings at date of disability increased at same rate and at same time as disability income under LTD plan
Termination of Membership		
	Deferred pension or commuted value prior to eligibility for early retirement	Deferred pension or commuted value prior to eligibility for early retirement
Death in Service		
	Commuted value of accrued pension	Commuted value of accrued pension

Comparison of Plan Provisions

Provisions	UW Pension Plan	UPP
Member Contributions		
	7.80% up to YMPE, plus 11.20% above YMPE, up to maximum salary for contribution purposes ($222,646 in 2023) Ratio of contribution rate to benefit rate: 5.6	9.20% up to YAMPE, plus 11.50% above YAMPE, up to maximum salary for contribution purposes ($196,200 in 2023) Ratio of contribution rate to benefit rate: 5.75

Comparison of Benefits — Examples

Following table compares annual pension benefit earned under UW Pension Plan (based on 5-year average earnings and 5-year average YMPE) to annual pension benefit earned under UPP (based on 4-year average earnings and 4-year average YAMPE):

5-Year Average Earnings in 2025[1]	Annual Pension Earned Per Year of Service (Payable as a Life Guaranteed 10-Year Pension)		
	UW Plan[2]	UPP[3]	% Increase
$50,000	$ 700	$ 812	16.0%
$75,000	$ 1,100	$ 1,218	10.7%
$100,000	$ 1,600	$ 1,722	7.6%
$125,000	$ 2,100	$ 2,230	6.2%
$150,000	$ 2,600	$ 2,737	5.3%
$175,000	$ 3,100	$ 3,245	4.7%
$195,000	$ 3,500	$ 3,651	4.3%
$197,525	$ 3,551	$ 3,702[4]	4.3%
$205,090	$ 3,702[4]	$ 3,702[4]	0.0%

For members with a spouse at retirement, subsidized survivor pension will increase UPP pension versus UW pension by 5% to 7% at typical retirement ages

[1] 4-year average earnings assumed to be 1.5% higher
[2] Based on 5-year average YMPE of $66,636 in 2025
[3] Based on 4-year average YAMPE of $76,940 in 2025
[4] Based on ITA maximum pension of $3,702 in 2025

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Comparison of Contributions — Examples

Following table compares annual member contributions earned under the UW Pension Plan and the UPP, based on an annual salary that approximates the final year's salary for the average earnings used in the benefits examples:

Annual Salary in 2025	Annual Contributions			
	UW Pension Plan[1]	UPP[2]	Increase	% Increase
$53,000	$ 4,134	$ 4,876	$ 742	17.9%
$80,000	$ 6,570	$ 7,360	$ 790	12.0%
$106,000	$ 9,482	$ 10,348	$ 866	9.1%
$133,000	$ 12,505	$ 13,453	$ 948	7.6%
$159,000	$ 15,418	$ 16,443	$ 1,025	6.6%
$186,000	$ 18,442	$ 19,548	$ 1,106	6.0%
$207,000	$ 20,794	$ 21,963	$ 1,169	5.6%
$209,400	$ 21,063	$ 22,192[4]	$ 1,129	5.4%
$217,400	$ 21,959	$ 22,192[4]	$ 233	1.1%
$234,700	$ 23,896[3]	$ 22,192[4]	$ (1,704)	-

[1] YMPE of $70,300 in 2025
[2] YAMPE of $80,100 in 2025
[3] Based on ITA maximum contribution under UW Pension Plan for 2025
[4] Based on UPP salary cap for pension contribution purposes of $209,000 in 2025

Comparison of Early Retirement Benefits

Early Retirement at Ages Less Than 60

Age at Retirement	% of Accrued Pension	
	UW Pension Plan	UPP
55	58%	50%
56	64%	55%
57	70%	60%
58	76%	65%
59	82%	70%

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Comparison of Early Retirement Benefits (cont'd)

Early Retirement at Ages 60 to 64

Age at Retirement	% of Accrued Pension – Eligibility Service at Retirement											
	<15		16		17		18		19		20+	
	UW	UPP	UW	UPP	UW	UPP	UW	UPP	UW	UPP	UW	UPP
60	88%	75%	88%	75%	88%	75%	88%	75%	88%	75%	88%	100%
61	94%	80%	94%	80%	94%	80%	94%	80%	94%	100%	94%	100%
62	100%	85%	100%	85%	100%	85%	100%	100%	100%	100%	100%	100%
63	100%	90%	100%	90%	100%	100%	100%	100%	100%	100%	100%	100%
64	100%	95%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

UPP same or better than UW Pension Plan

Early Retirement Examples for Pre- and Post-Conversion Benefits

Retirement Age	60	60	62	62
Eligibility Service				
Pre-Conversion	15	10	10	5
Post-Conversion	15	5	5	15
Total	30	15	15	20
Early Retirement Reduction Applied To:				
Pre-Conversion Benefit	2 x 6% = 12%	2 x 6% = 12%	No reduction since age 62	No reduction since age 62
Post-Conversion Benefit	No reduction since 60/80 based on total Eligibility Service	5 x 5% = 25%	3 x 5% = 15%	No reduction since 60/80 based on total Eligibility Service

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More Details on Funded Conditional Indexation for Post-Conversion Date Benefits

- Contribution rates are established including post-retirement indexation at 75% of the Increase in CPI
- Funded conditional indexation applies to all benefits earned in respect of service under the UPP after the participating university's conversion date
- Indexation provided on each January 1st at 75% of the Increase in CPI (no cap on inflation), unless Sponsors jointly decide to activate conditionality lever to pay future indexation at below 75% of the Increase in CPI (future indexation adjustment):
  - No change to indexation already paid and included in pensions in payment
  - Future indexation adjustment requires filing of an actuarial valuation (the filing of a valuation is a Joint Sponsors' decision), but does not require a plan amendment
- For pensions in payment, run-rate indexation at 75% of the Increase in CPI will continue to be tracked:
  - Run-rate indexation is the level of indexation that would have been paid had 75% of the Increase in CPI applied every year
- Once the conditional indexation lever is activated, and subject to annual review, indexation continues to be paid at the lower level until Sponsors jointly decide, within the framework of the Funding Policy, to partially or fully deactivate the lever by:
  - Increasing future indexation to be paid partially toward or fully up to 75% of the Increase in CPI; and/or
  - Increasing pensions in payment partially or fully toward the run-rate pension (i.e., catch up to run-rate)
  - Requires filing of an actuarial valuation, but does not require a plan amendment

More Details on Funding In Respect of Assets and Liabilities Transferred to the UPP ("Past Service Funding")

Following is based on Joint Sponsors' Future Employers Terms and Conditions:

Initial Funded Status

- Going concern funded status determined on Conversion Date using actuarial basis in most recent UPP actuarial valuation (regardless of whether filed)
- Any initial going concern deficit at Conversion Date amortized over 15-year period from Conversion Date
- Any initial going concern surplus at Conversion Date is allocated to the participating university and can be used to offset any future losses in respect of that university's past service funding

10-Year Period After University Conversion Date

- Losses in respect of past service funding remain the responsibility of the participating university and are amortized over 15 years from date of loss
- Gains are available to the participating university to offset against any prior losses, or retained for offset against any future losses
- Any subsequent gain being applied to the initial going concern deficit has to be applied to reduce the payment period, or at the discretion of the participating university, 50% toward reducing the payment period and 50% toward reducing the payment amount

Years 11 Through 20 After University Conversion Date

- Responsibility for losses and allocation of gains in respect of past service funding transitions from 100% to the participating university to 100% to the UPP over this 10-year period, with the UPP portion shared 50/50

After 20 Years From University Conversion Date

- Past service funding is the responsibility of the UPP and shared 50/50, subject to the participating university remaining responsible for any university payment stream that was being amortized beyond 20 years

UPP Governance

The JSPP model is founded on cooperation, transparency and shared accountabilities between employers and plan members:

- 50/50 sharing of contributions
- Equal say in plan design, funding, administration
- Transparent plan operations, funding, decision-making
- Clear, explicit risk sharing

It's these characteristics that afford JSPPs unique benefits like solvency exemption and stable, predictable contributions.

UPP Joint Sponsors

Two Sponsors: Universities are one Sponsor and employees are the other Sponsor; each Sponsor has a Committee with 6 members

Sets contributions and benefits formula	Defines funding policy	Appoint administrator	Sets terms for and approves new entrants

UPP Administrator – Board of Trustees

Made up of 14 members, including an Independent Chair appointed by the Joint Sponsors[1]

Actuarial valuation	Investment of assets	Member services and benefit payments

[1] 6 Board members appointed by universities, 6 Board members appointed by faculty associations and unions, and 1 Board member appointed by non-unionized employees (without a tie-breaking vote)

UPP Constating Documents

- Agreement between Sponsors for the establishment of the UPP as a jointly sponsored pension plan
- Establishes Employer Sponsor and Employee Sponsor as the exclusive representatives of employers and members, respectively
- Sets out Joint Sponsor responsibility for UPP terms, Trust Agreement, Funding Policy and new employer terms and conditions

- Establishes the Board of Trustee as legal administrator of the UPP (per PBA) and the UPP Trust Fund
- Sets out powers and duties of Board of Trustee (e.g. fiduciary standard, pay benefits and collect contributions in accordance with UPP terms)
- Sets the composition of the Board, term of each Trustee and responsibility for appointment by Joint Sponsors

- Contains provisions applicable to benefits earned for service on and after date of participation
- Contains appendices for each prior plan converted to UPP to provide for replication of pre-conversion service and address any transitional provisions

- Adopted by the Joint Sponsors to set out the funding framework for the UPP
- Purpose is to provide for contribution stability, benefit security, intergenerational equity and plan sustainability
- Sets out the provisions applicable any initial deficit (or surplus) that exists on Conversion Date as well as the treatments of future gains and losses on pre-conversion assets and liabilities

Employee Sponsor Structure and Constating Documents

Amended and Restated Labour Sponsors Agreement	Sponsor Appointment Framework	Advisory Committee of Employee Sponsors (ACES)	Trustee Appointment Framework
Agreement between founding Labour Sponsors on composition of Employee Sponsor Committee (ESC), allocation between and within Faculty Associations and non-Faculty Associations, terms of appointment, and decisions of ESC	Documents process for appointments to ESC in accordance with Sponsors' Agreement between Employee and Employer Sponsors, and Labour Sponsors Agreement	Outlines purpose of ACES, which is to serve as a forum for collaboration, consultation and information exchange between ESC and participating employee groups, along with membership and composition, possible items to be discussed and meeting frequency	Documents foundational principles and process for appointments by ESC to Board of Trustees in accordance with Trust Agreement

Consent Requirements

UPP conversion cannot proceed unless:

At least 2/3 of all active Plan members consent

For employees participating in the Plan who are represented by a union or association determined to be a trade union for purposes of the Labour Relations Act, under the Pension Benefits Act, consent must be made by the union or association for the employees it represents pursuant to its process for determining whether or not to consent	In that case: • If the union or association consents on behalf of its members, all such members are deemed to have consented to the conversion • If the union or association does not consent on behalf of its members, all such members are deemed to have objected to the conversion

Employees participating in the Plan not included above have an individual right to consent to the conversion. If active member is non-unionized, member has an individual right to consent to the conversion.

No more than 1/3 of all inactive Plan members (retired and former members and other beneficiaries) object

Inactive members have an individual right to object to the conversion	"Other beneficiaries" includes surviving spouses and former spouses in receipt of pension

Key Components of the Process to Join the UPP

1

Mandate to proceed with UPP conversion from:

1) Applicable unions/associations that are to consent on behalf of their members; and
2) UW Board of Governors

2

Formal MOAs between UW and applicable unions/associations providing consent to UPP conversion

3

Approval from UPP Join Sponsors to join the UPP (including financial terms relating to past service benefits)

4

Members consent and regulatory process:

- Consent from UW Plan members and applicable unions/associations
- Filing transfer application with Ontario pension regulator (FSRA)
- Approval to transfer from FSRA

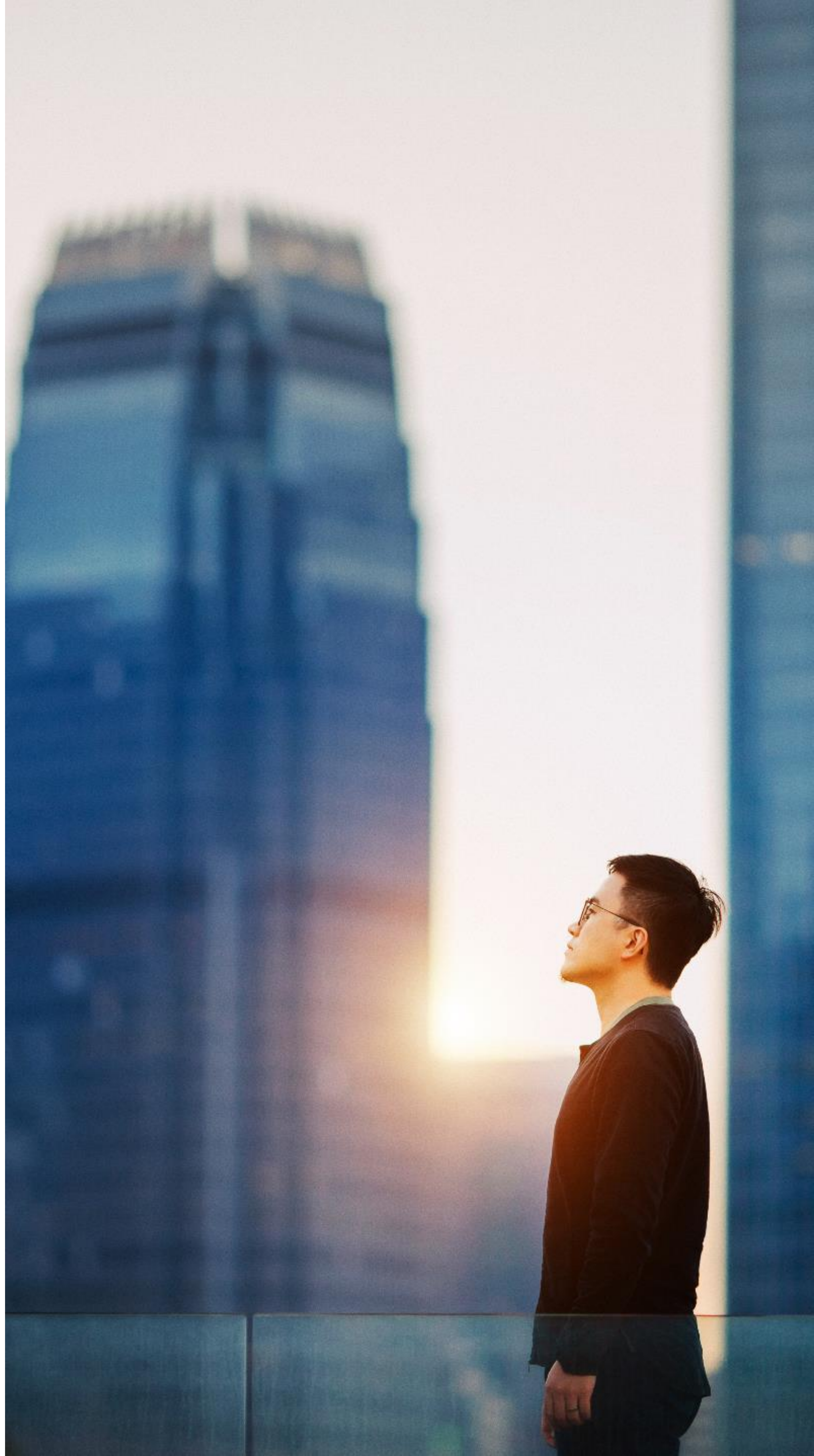
5

Formal Participation Agreement between UW Board of Governors and UPP Board of Trustees and Transfer Agreement between UW Board of Governors and Joint Sponsors

Key Agreements — Participation Agreement

Parties	UW Board of Governors and UPP Board of Trustees (terms subject to approval by Joint Sponsors)
Purpose	Provides for UW's participation in UPP on and after the Conversion Date

Key Terms	• Representations and warranties of UW, including:
	  o UW has entered into a MOA with the applicable unions/associations
	  o There is no conflict between the UPP terms and any collective agreement
	• Acknowledgement by UW that it is bound by the UPP constating documents and of the exclusive powers and responsibilities of the Joint Sponsors and Board of Trustees with respect to the UPP
	• Eligible classes of employees for participation and definition of pensionable earnings applicable to UW employees
	• Responsibilities of UW and UPP Board of Trustees



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Key Agreements — Transfer Agreement

Parties	UW Board of Governors and Joint Sponsors
Purpose	Provides for the transfer of assets and assumption of liabilities from the UW Pension Plan to the UPP effective as of the Conversion Date (required by the *Pension Benefits Act*)
Key Terms	• Conditional on consent of CEO of FSRA • Sets out the responsibilities of UW and the UPP for the preparation of actuarial valuations in connection with the conversion • Sets out UW's responsibilities for an initial deficit (if any) or the treatment of an initial surplus (based on Joint Sponsors' Future Employers Terms and Conditions) • Sets out the treatment of any subsequent gains and losses on pre-conversion assets and liabilities • Provides for the transfer of pension data and records for the purposes of administering pre-conversion benefits

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Notice and Regulatory Approval Process

Preparation and Distribution of Member Notices	Member Consent Period	Preparation and Filing of Transfer Application	Regulatory Approval of Conversion	Conversion of UW Plan to UPP
• Must be delivered after UW enters into MOAs with applicable unions/associations and term sheet with UPP Joint Sponsors — conditional on conversion • Prepared using information not more than 6 months older than notice distribution date	• Consent period closes 90 days after notices received • Consent requirements as per previous page	• UW to prepare transfer application for filing with FSRA, including UW Plan transfer amendment • Must be filed within 9 months after distribution of notices • Once filed, notice of application distributed to UW Plan members and applicable unions/associations and report filed with FSRA	• FSRA reviews transfer application and CEO of FSRA consents to transfer assets from UW Plan to UPP effective on applicable Conversion Date • Special notices must be posted on UW Plan and UPP websites for 10 days before FSRA will issue approval	• UW employees begin to accrue benefits and contribute to UPP on applicable Conversion Date • Asset transfer from UW Plan to UPP to be completed within 120 days after Conversion Date (to date, all asset transfers have been completed coincident with the Conversion Date) • Actuarial report filed with FSRA within 210 days from Conversion Date

About Aon

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Board of Governors

For Decision **Open Session**

Date of Meeting: January 19, 2024

To: Members, Pension & Benefits Committee

From: Sarah Willey-Thomas, Associate University Secretary

RE: **6) Approval of Actuarial Valuation Assumptions**

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6) Approval of Actuarial Valuation Assumptions

Recommendation:

That Pension & Benefits Committee approve the actuarial valuation assumptions, as presented.

Allan Shapira and Linda Byron of Aon will present the Actuarial Valuation Assumptions for the January 1, 2024 actuarial valuation of the Registered Pension Plan (RPP) and Payroll Pension Plan (PPP). A full report has been included for members' review.

Members will recall that the University of Waterloo Pension Plan is a defined benefit plan. The Plan is funded by contributions from the employees and the University, and by investment returns.

An actuarial valuation report is required to be filed with the Ontario pension regulator at least every three years. In practice, the Committee commissions a report on an annual basis for planning and monitoring purposes and recommends filing the valuation more regularly than required. The Board approved the filing of the valuation most recently at its meeting on 6 June 2023.

Documentation Provided:

- Actuarial Assumptions (Preliminary)

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Actuarial Assumptions (Preliminary)

University of Waterloo
Pension & Benefits Committee (P&B) Meeting

January 19, 2024
Posted with Permission of Aon

January 2024

About This Material

- This material provides information for purposes of setting the actuarial assumptions to use for the January 1, 2024 actuarial valuation of the Registered Pension Plan (RPP) and Payroll Pension Plan (PPP)
- This valuation is not required to be filed with the pension regulators (FSRA and Canada Revenue Agency)
- Under the funding rules which came into effect May 1, 2018 for Ontario-registered pension plans:
    - Going concern assumptions should be “best estimate”
    - An explicit provision for adverse deviations (PfAD) is added to the best estimate non-indexed going concern liabilities and normal cost
    - Additional margin could be added to assumptions if deemed appropriate by P&B
- The valuation results will include the Protocol calculations that determine the liabilities and normal cost without the RPP Hard-Dollar Cap but with the projected *Income Tax Act* maximum pension
- No further benefits accrue to active members in the PPP as the RPP Cap now exceeds the PPP Cap:
    - Benefits for retired members will continue to be covered in the PPP

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**

Real Growth

Benefits

Pension Benefits Before Retirement
- CPP Wage Base increases
- ITA maximum pension increases
- Salary increases

Pension Benefits After Retirement
- Indexation

Inflation

Assets

Investment Return on Various Assets Classes

Since inflation drives both the pension benefits paid out and the funding earned from investment return, it is the excess of interest rates and investment return over inflation, or "real return" and the excess of salary and government benefit increases over inflation that are the key factors.

Actuarial Assumptions For Going Concern Valuation—Economic Assumptions – Prior Valuation

Economic Assumptions	January 1, 2023 Valuation (Last Filed Valuation)
Increase in Consumer Price Index (CPI)	2.00% per year
Indexation of Benefits	May 1, 2023 – Actual indexation; May 1, 2024[1] – 4.80% for 100% indexed benefits; 2.35% for 75% indexed benefits 2.00% per year thereafter
Increase in Year's Maximum Pensionable Earnings under Canada Pension Plan	2.75% per year (CPI + 0.75%)
Increase in Income Tax Act Maximum Pension	$3,506.67 in 2023; increased after 2023 at 2.75% per year up to a hard-dollar cap of $4,000 in 2023, which increases at 0.92% per year beginning in 2024
Increase in Salaries (Active members)	3.00% per year for 1 year; 4.00% per year thereafter (CPI + 2.00%)[2]
Increase in Salaries (Disabled members)	2.00% per year (CPI + 0.00%)
Interest Rate Used to Discount Liabilities	6.25% per year (CPI + 4.25%)
Interest Rate Used to Calculate 50% Rule	2.20%[3] per year for 10 years; 2.60% per year thereafter
Interest Rate for Crediting on Required Member Contributions	3.40% per year
Loading For Administrative Expenses	Explicit assumption of $1,654,000 in 2023 added to normal cost
Provision for Adverse Deviations	9.60% of non-indexed liabilities and normal cost

[1] Includes carry-forward of 1.80% on 100% indexed benefits and 0.35% on 75% indexed benefits
[2] Reflects PTR/grid steps/merit
[3] 2.70% / 3.10% for 75% indexed benefits in 2023

Actuarial Assumptions For Going Concern Valuation—Demographic Assumptions – Prior Valuation

Demographic Assumptions	January 1, 2023 Valuation	
Mortality Rates	2014 Canadian Pensioners Public Sector Mortality Table (“CPM2014 Public”) with Improvements Under Scale MI-2017, projected from 2014	
Retirement Rates	**Age**	**Rates Per 100**
	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 – Prior Valuation

Demographic Assumptions	January 1, 2023 Valuation	
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	0.0
	60	0.0
	65	0.0

Increase in Consumer Price Index (CPI)

- As of December 31, 2023, the underlying inflation rate implicit in the market yield of Government of Canada real return bonds (1.40%) and nominal bonds (3.02%) is 1.62%
- Bank of Canada target range for inflation extends from 1% to 3%; monetary policy aimed at the 2% target midpoint; recent experience has been higher but is trending towards target
- Assumption for increase in CPI has been set at 2.00% per year since the January 1, 2015 actuarial valuation; other economic assumptions (pension indexation, salary, YMPE, discount rate etc.) build off of the inflation rate
- The valuation will reflect actual inflationary increases to be granted at May 1, 2024 and any carry-forward to 2025
- Valuation can also include a temporary allowance for a higher indexation adjustment in 2025 (3.0% plus any carry forward), followed by the long term assumption of 2.0%

Benefits in pay earned prior to January 1, 2014 are indexed at 100% of the increase in CPI

Benefits in pay earned on or after January 1, 2014 are indexed at 75% of the increase in CPI

The Plan provides for the indexation adjustment to be capped at 5% for pre-2014 benefits and 3.75% for post-2013 benefits, with a provision for carry-forward to the following year of the difference between the increase granted and actual CPI

Inflation adjustment to be granted May 1, 2024 will be discussed at the February P&B meeting and is expected to include carry-forward from 2023

Increase in Pensionable Earnings

Increase in pensionable earnings of 4.00% per year thereafter based on:

Long term assumed across-the-board increase of 2.00% per year	Long term assumed 2.00% increment representing PTR/grid steps/merit across Faculty and Staff groups

Discount Rate

Based on expected investment return of UW pension fund reflecting long-term target asset mix as stated in the current SIPP:

Canadian Equities:	5.0%
Non-Canadian Equities:	48.0%
Nominal Fixed Income:	25.0%
Real Estate:	10.0%
Infrastructure:	10.0%
Cash:	2.0%

Discount Rate

For the January 1, 2023 actuarial valuation, the target asset mix generated an expected return of 6.65% per annum, net of passive investment expenses and before other expenses

The valuation utilized a discount rate of 6.25% which was net of an additional margin for adverse deviation of 0.40%.

For the January 1, 2024 actuarial valuation, the target asset mix in the SIPP generates an expected return of 6.55% per annum net of passive expenses and before other expenses

These results are based on Aon's September 30, 2023 capital market assumptions

Once Aon's December 31, 2023 capital market assumptions are available, we will reflect any changes; it is anticipated that the expected return will be lower at December 31, 2023 compared to September 30, 2023

- Interest rates are approximately 80 bps lower at December 31st compared to September 30th
- Expected returns on equities are expected to be lower than at September 30th
- The expected return will likely fall in range of 6.00% to 6.25% using the December 31st capital market assumptions

Expected Investment Returns on Various Asset Classes

Asset Class	30-Year Annualized Mean[1] (Nominal Return)	Annual Standard Deviation
Inflation	2.0%	2.3%
Cash (365-Day T-Bills)	3.9%	3.5%
Universe Bonds	4.7%	6.3%
Canadian Equities	6.1%	15.8%
Global Equities	7.1%	16.2%
Listed Infrastructure	6.9%	14.7%
Direct Infrastructure	6.7%	11.7%
Global Listed Real Estate	6.6%	19.3%
Direct Real Estate	4.7%	15.0%

Note: Above returns determined at September 30, 2023 using Aon's September 30, 2023 capital market assumptions ; Expected returns at December 31, 2023 expected to be lower

[1] Takes into effect the compounding for each underlying asset class

Expected Investment Returns For UW Pension Fund

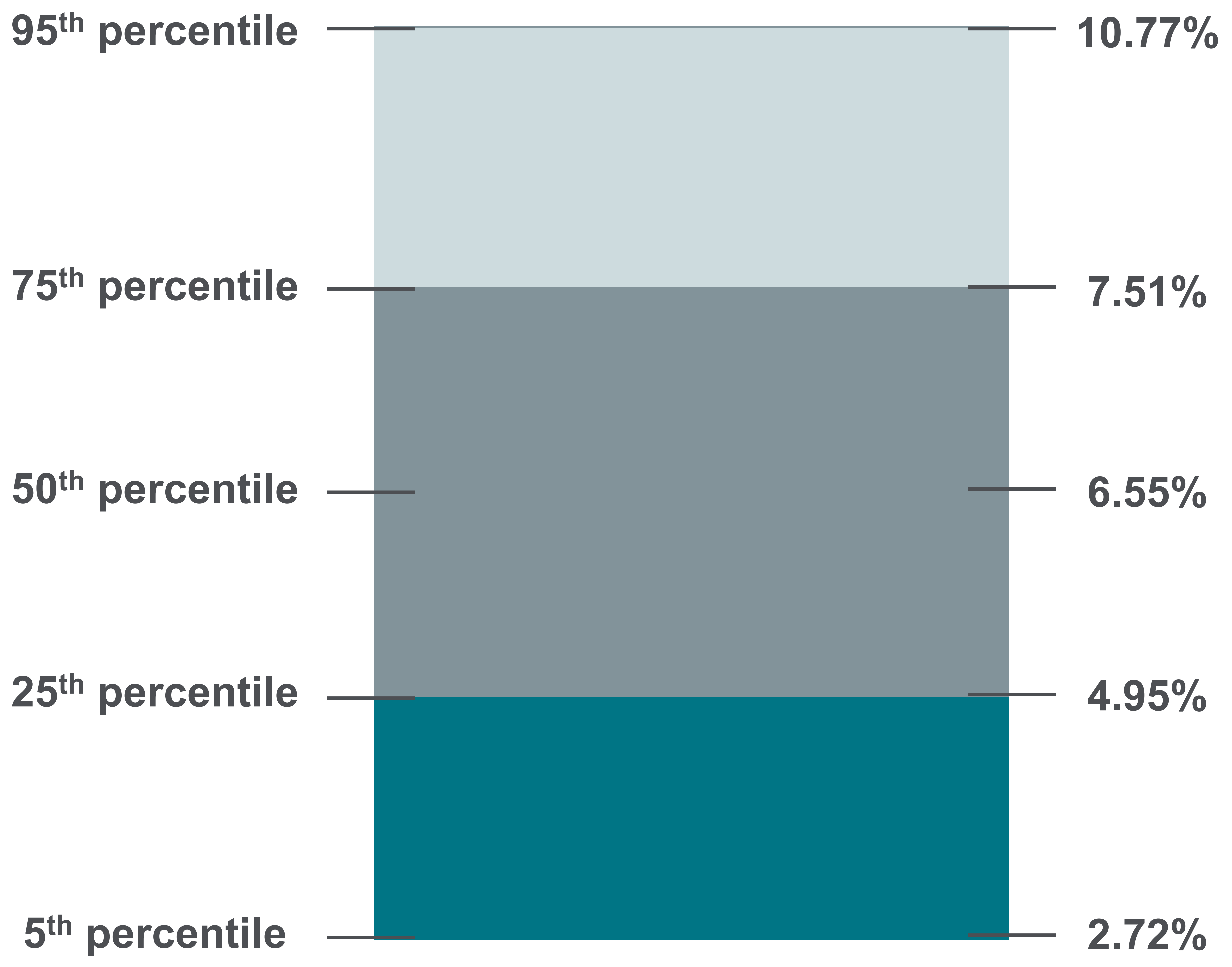
- Expected rate of return (net of passive investment fees) as of September 30, 2023 calculated based on the following target asset mix:

Asset Class	%
• Canadian Equities	5.0%
• Global Equities	48.0%
• Fixed Income	25.0%
• Cash	2.0%
• Infrastructure (Listed)	5.0%
• Infrastructure (Direct)	5.0%
• Real Estate (Listed)	5.0%
• Real Estate (Direct)	5.0%
	100.0%
Annual Expected Return	**6.55%**
Annual Standard Deviation (Asset Only)	**10.24%**
Annual Drawdown Risk 95% (Asset Only)	**-15.97%**

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 (September 30, 2023)



Provision for Expenses

- An explicit provision of $1,704,000 for administrative expenses will be added to the normal cost in 2024 (increase of 3% over 2023 expense provision)
  - Alternatively, an adjustment of 0.10% can be made to the discount rate
  - Prior to 2018, the administrative expenses were accounted for as an adjustment to the discount rate

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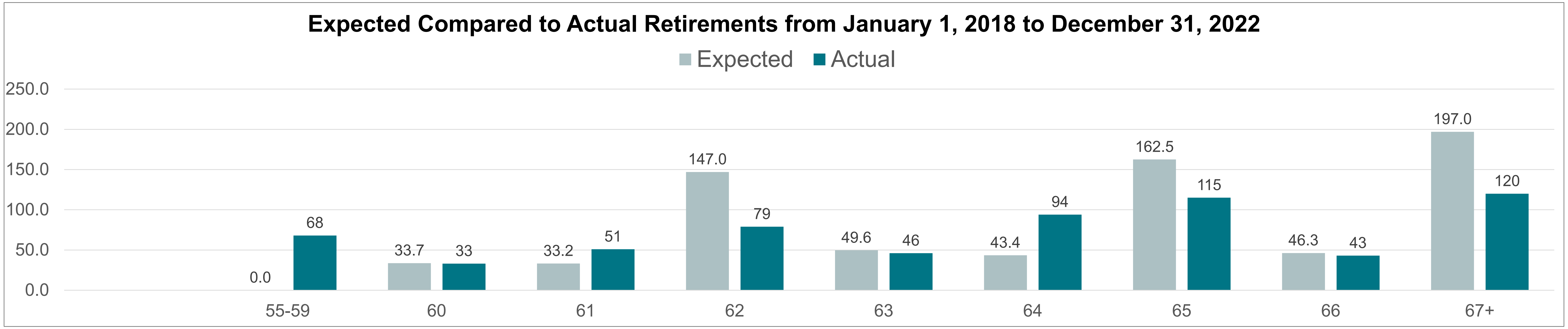
Retirement Age Assumption

- Effective with the January 1, 2020 valuation, the valuation uses retirement rates which are based on historical retirement experience
- Prior to the January 1, 2020 valuation, a single point retirement age of 64, but no earlier than one year following the valuation date, was used

Retirement Age Experience

The following chart compares the actual retirements in the period January 1, 2018 to December 31, 2022 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	68
60	33.7	33
61	33.2	51
62	147.0	79
63	49.6	46
64	43.4	94
65	162.5	115
66	46.3	43
67+	197.0	120

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 2022

	2015	2016	2017	2018	2019	2020	2021	2022	Total
Actual Deaths	51	57	53	62	61	74	68	87	513.0
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	518.2

Provision for Adverse Deviations (PfAD)

	% Fixed Income for PfAD	Target Asset Mix at January 1, 2023 and January 1, 2024
Canadian Equities	0%	5%
Global Equities	0%	48%
Fixed Income / Cash	100%	27%
Real Estate (REITs)	0%	5%
Real Estate (Direct)	50%	5%
Infrastructure (Listed)	0%	5%
Infrastructure (Direct)	50%	5%
% Fixed Income for PfAD Purposes		**32%**

- The PfAD is based on the SIPP that is in effect on the valuation date
- Fixed Income Allocation for PfAD and BDR = 32% at January 1, 2024
- PfAD = Base component of 4% (open plan) plus asset-based component, plus a component related to the Benchmark Discount Rate (BDR)

Provision for Adverse Deviation (PfAD) (cont'd)

As a % of Going Concern Liabilities and Normal Cost

Fixed Component

Closed Plans: 5%
Open Plans: 4%

+

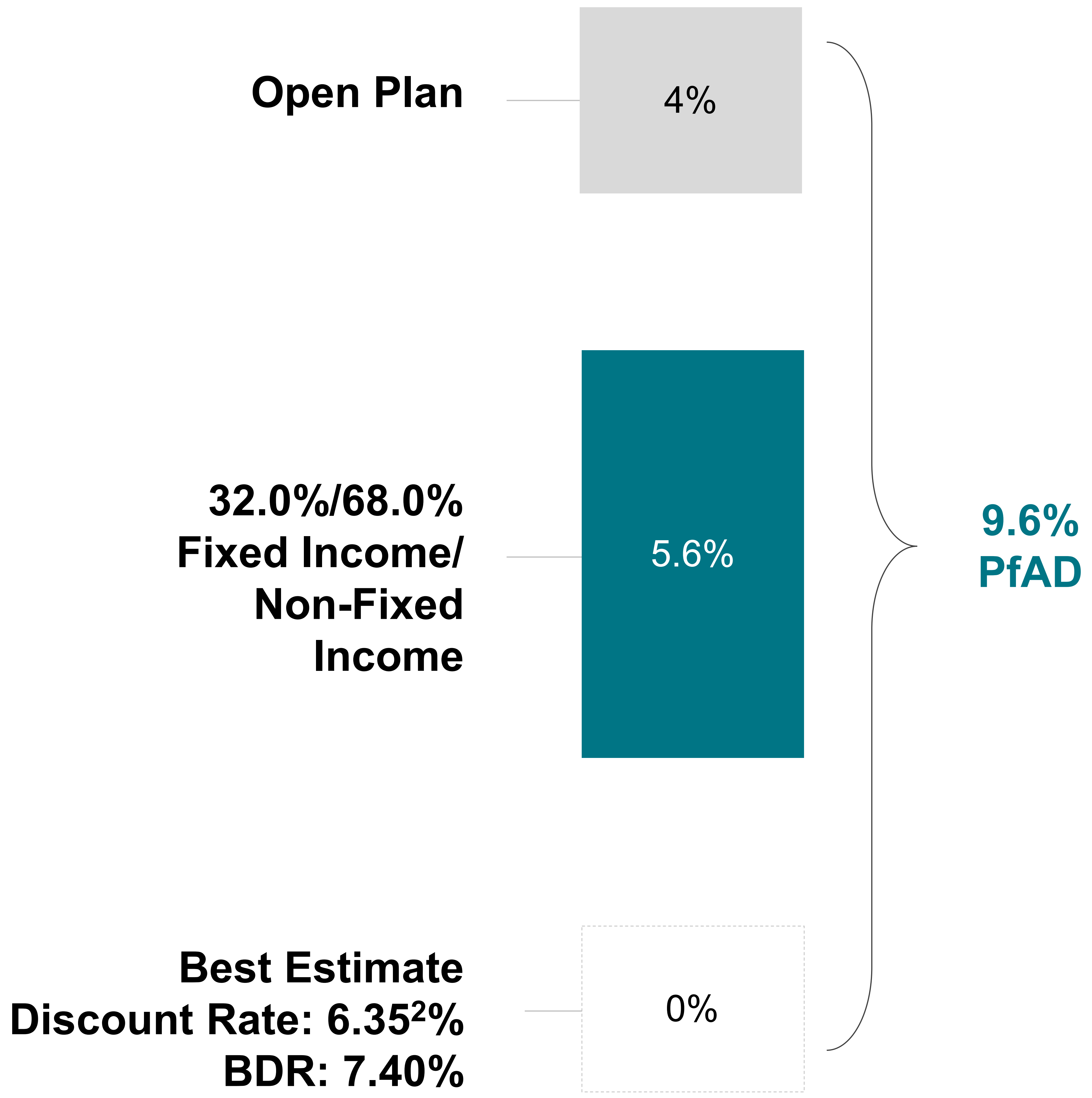
Asset Mix Component

% of non-fixed income	Closed Plans	Open Plans
0%	0%	0%
20%	2%	1%
40%	4%	2%
50%	5%	3%
60%	7%	4%
70%	11%	6%
80%	15%	8%
100%	23%	12%

+

Discount Rate Component

Duration x
(Best Estimate Discount Rate – BDR[1])



[1] Benchmark Discount Rate = V39056 Rate (3.02% at December 31, 2023)+ 5% x % of Non-Fixed Income + 1.5% x % of Fixed Income + 0.5% for diversification
[2] Assumes going concern discount rate of 6.25% after adjustment for passive investment fees; 6.35% is before adjustment for passive fees; to be adjusted once actual discount rate is selected from recommendation on next slide

Preliminary Actuarial Assumptions for January 1, 2024
Going Concern Valuation—Economic Assumptions

Economic Assumptions	January 1, 2024 Valuation
Increase in Consumer Price Index (CPI)	2.00% per year
Indexation of Benefits	May 1, 2024 – Actual indexation; May 1, 2025 – 3.0% plus carry forward (if any); 2.00% per year thereafter
Increase in Year's Maximum Pensionable Earnings under Canada Pension Plan	2.75% per year (CPI + 0.75%)
Increase in Income Tax Act 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
Increase in Salaries (Active Members)	4.00% per year (CPI + 2.00%[1])
Increase in Salaries (Disabled Members)	2.00% per year (CPI + 0.00%); actual adjustment at May 1 to be reflected
Interest Rate Used to Discount Liabilities	6.00% per year to 6.25% per year (to be confirmed)
Interest Rate Used to Calculate 50% Rule	2.40% per year for 10 years[2]; 2.50% per year thereafter
Interest Rate for Crediting on Required Member Contributions	3.00% per year
Loading For Administrative Expenses	Explicit assumption for $1,704,000 in 2024 added to normal cost
Provision for Adverse Deviation	9.60% of non-indexed liabilities and normal cost

[1] Reflects PTR/grid steps/merit

[2] 2.80% per year for 10 years: 2.90% per year thereafter for 75% indexed benefits

Preliminary Actuarial Assumptions For Going Concern Valuation—Demographic Assumptions – January 1, 2024

Demographic Assumptions	January 1, 2024 Valuation	
Mortality Rates	2014 Canadian Pensioners Public Sector Mortality Table ("CPM2014 Public") with Improvements Under Scale MI-2017 projected from 2014	
Retirement Rates	**Age**	**Rates Per 100**
	60	5
	61	5
	62	25
	63	10
	64	10
	65	50
	66	25
	67	25
	68	25
	69	50
	70	100

Preliminary Actuarial Assumptions For Going Concern Valuation—Demographic Assumptions – January 1, 2024

Demographic Assumptions	January 1, 2024 Valuation	
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+	0.0

Actuarial Assumptions For Solvency and Wind-Up Valuations

Assumptions	January 1, 2023 (Last Filed Valuation)	January 1, 2024
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[1]	4.91%	4.73%[3]
Active Members Under Age 55[2]	4.30% for 10 years; 4.70% thereafter	4.10% for 10 years; 4.20% thereafter
Interest Rates— Wind-Up Valuation (Per Year)		
Active Members Age 55 and Over, Pensioners and Deferred Pensioners[1]	0.99% (100% indexed) 1.97% (75% indexed)	1.20% (100% indexed)[3] 2.08% (75% indexed)[3]
Active Members Under Age 55[2]	2.20% for 10 years; 2.60% thereafter (100% indexed) 2.70% for 10 years; 3.10% thereafter (75% indexed)	2.40% for 10 years; 2.50% thereafter (100% indexed) 2.80% for 10 years; 2.90% thereafter (75% indexed)

[1] Settled through annuity purchase
[2] Settled through commuted value
[3] Depends on release of final guidance from Canadian Institute of Actuaries for January 1, 2024 actuarial valuations

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UNIVERSITY OF WATERLOO | Board of Governors

For Information **Open Session**

Date of Meeting: January 19, 2024

To: Members, Pension & Benefits Committee

From: Sarah Willey-Thomas, Associate University Secretary

RE: **7) Review of RPP Contribution, Protocol Caps and Overview of Pension Protocols**

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7) Review of RPP Contribution, Protocol Caps and Overview of Pension Protocols

Allan Shapira, Aon will present an overview of the RPP Contribution, Protocol Caps and Overview of Pension Protocols for the information of members.

Members annually receive information pertaining to Maximum Pension Limits and CAPs, however, this item intends to provide a fulsome overview of all pension protocols in effect.

Documentation Provided:

- Pension Protocols Established by Pension & Benefits Committee

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Pension Protocols Established by Pension & Benefits Committee

Meeting of January 19, 2024

Protocols Established By Pension & Benefits Committee

University Pension Contribution Protocol, effective January 1, 2005
(the “Contribution Protocol”)

Protocol Regarding the Adjustments to the Pension Cap, effective January 1, 2008
(the “Cap Protocol”)

Protocol For Tracking Over-Contributions to the Pension Plan, effective January 1, 2008
(the “Fairness Protocol”)

Indexation Protocol For Pensions in Payment, effective October 11, 2013
(the “Indexation Protocol”)

Purpose of Presentation and Discussion

- Provide history/background behind each protocol and review key terms
- Identify what has changed since each protocol was adopted
- Consider whether protocol is still required and, if so, what changes, if any, need to be made

Contribution Protocol

- Recognizes improvements made to Pension Plan affect both liability for past service as well as ongoing current service cost:
  - Increase in past service liability is a one-time increase that can be funded from any funding excess at time of change
  - Increase in current service cost creates ongoing contribution requirements unless there is a funding excess in a given year to fund that additional cost
- Contribution Protocol establishes a base level of University current service cost prior to Pension Plan changes:
  - If University contributions in a given year are greater than base level, additional contributions, accumulated with investment return on pension fund, are treated as a “loan balance”[1] from University to Pension Plan
  - Loan balance[1] can be repaid at a later date by reducing annual University contribution when the Pension Plan has a funding excess
- Purpose of Contribution Protocol was to encourage University to make full current service contributions when there were small funding excesses rather than reducing its contributions
- Requires calculation each year of Adjusted University Current Service Cost which is based on Pension Plan provisions prior to changes to benefit provisions made from 1985 through 2007 and on member contribution rates prior to the increase in rates starting in 2007

[1] Term subsequently changed to University Credit Balance

Contribution Protocol (cont'd)

- Adjusted University Current Service Cost calculated under same actuarial assumptions as used for the applicable valuation but based on the following adjustments to the Plan provisions:
  - 5-year averaging period for Final Average Earnings
  - 3-year averaging period for YMPE
  - Benefit rate of 1.3% below Average YMPE
  - Normal form of life pension guaranteed 5 years
  - Unreduced pension at age 65
  - Cap on maximum pension of $2,200
  - Member contribution rates of 4.55% up to YMPE plus 6.50% above YMPE

Cap Protocol

Both Registered Pension Plan ("RPP") and Payroll Pension Plan ("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 defined benefit formula

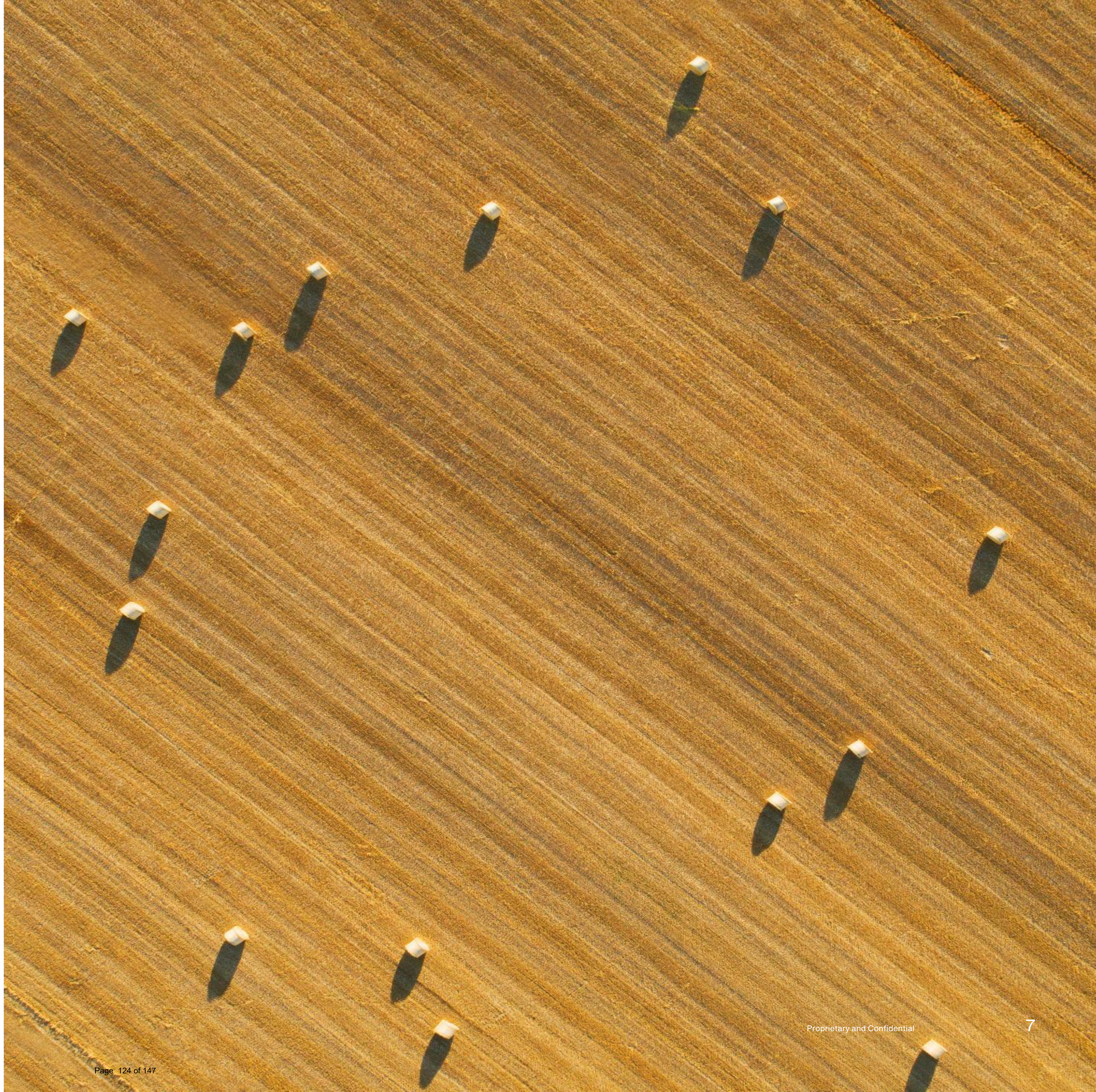
Pension caps help manage funding risk but at same time Pension & Benefits Committee wanted to ensure that the defined benefit formula will apply to the full final average earnings of majority of Plan members

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, first priority will be to increase maximum caps

Fairness Protocol

- Recognizes that because of relationship between maximum member contributions under RPP (prescribed by Income Tax Act) and maximum pension under RPP (prescribed by Income Tax Act) and PPP, member may end up contributing on salary on which pension is not being earned
- Fairness Protocol provides methodology for tracking any over-contributions to RPP



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Calculations Under Fairness Protocol

Following calculation made at date of retirement/termination

1

Calculate Final Average Earnings at which Plan cap (combined RPP and PPP) is reached at retirement/termination date

2

For each past calendar year in which member's salary exceeded the earnings level in 1; calculate the difference between the member contributions actually made and the member contributions that would have been made had the contribution been capped at the earnings level in 1.

3

Accumulate the difference in 2. to retirement date, including interest at the rate credited on member contributions

4

Determine if any excess contributions are payable under 50% cost sharing rule

5

Subtract 4 from 3; this represents the over-contributions that would be payable to the member in taxable cash (from the PPP) or converted to an increase in pension from the PPP

Indexation Protocol

- Introduced in connection with change in indexation provisions for pension benefits accrued after December 31, 2013:
  - From 100% of the increase in CPI up to a maximum increase in CPI of 5% to 75% of the increase in CPI up to a maximum increase in CPI of 5%
  - Change made to address funding shortfall and long-term sustainability of Pension Plan
- Recognizes that if Pension Plan returns to a funded position where there is a funding excess plus a margin, consideration will be given by the Pension & Benefits Committee to a top-up of the automatic indexation

Criteria for Consideration of Top-Up Indexation

- Top-up indexation under protocol applies to pensions in payment
- As of the January 1st valuation date immediately preceding a May 1st indexation date:
  - No special payments being made by University based on last filed actuarial valuation
  - Going concern margin (without asset smoothing) of the greater of 10% of liabilities or 50% of University Credit Balance Under Contribution Protocol
- Consideration also given to transfer/wind-up ratio and any legislative requirements for lump-sum funding of the cost of any top-up indexation
- Should normally be sufficient funds to cover cost of top-up to 100% of the increase in CPI (i.e., no partial top-up) without reducing funding below the going concern margin
- Once going concern funded ratio exceeds 100%, Pension Plan actuary should calculate, in conjunction with the annual actuarial valuation, the additional liabilities as if the benefits subject to indexation under the Pension Plan were to be indexed at the 100% level (including catch-up for past indexation)
- Any top-up indexation would also apply to pension benefits under the Payroll Pension Plan

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Fund Implementation Procedures

University of Waterloo Pension Plan (2011)

Registration number: 0310565

Effective: ~~March 10~~December 1, 2023

APPROVED on this <insert date> [date of approval by Pension & Benefits Committee]

Replaces previous version which was last revised and effective on March ~~11~~10, ~~2022~~2023

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Fund Implementation Procedures

This Fund Implementation Procedures (FIP) document outlines the monitoring and reporting obligations of Board committees, University staff, and third parties engaged to provide services to the Plan. With respect to the investment of pension assets, this policy is intended to be read together with the Statement of Investment Policies and Procedures (SIPP) established for the Plan, as amended from time to time. To the extent there is any conflict in the investment principles and approach as set out in this FIP or the SIPP, the SIPP shall govern.

1) Delegation of Responsibility

The Board of Governors of the University of Waterloo (the "Board") has established a Pension Investment Committee ("PIC") to assist in the determination and execution of the Plan's overall investment philosophy, policies, objectives and strategies for the Plan~~, a Finance & Investment Committee (F&I) established to provide expert investment advice to PIC,~~ and a Pension & Benefits Committee (P&B) to provide oversight of the pension plan (the "Committees").

The Committees, contracted third party professional firms and University staff will carry out the responsibilities listed below.

a) PIC will:

i. perform oversight activities as in the PIC Terms of Reference. To the extent there is any conflict this document and the Terms of Reference, the Terms of Refence shall govern;

~~i.~~ii. review this document annually and recommend any changes to P&B;

~~ii.~~iii. review Fund Manager performance, total Fund performance and achievement of the total return objective on a quarterly basis;

~~iii.~~iv. make recommendations on the selection of Fund Managers and investment funds to P&B, consulting with F&I as applicable;

~~iv.~~v. approve asset mix changes and investment decisions where the cumulative annual transaction(s) represent less than ~~15~~20% of market value of the Plan's total assets at the beginning of the calendar year;

~~v. consult with F&I, prior to making recommendations to P&B, for additional investment decisions which cumulatively impact more than 15% of the market value of Plan's total assets as measured at the beginning of the calendar year;~~

vi. commission asset liability studies at least every 10 years and in cases of significant changes in actuarial assumptions or capital market forecasts, consulting with P&B as applicable

vii. determine when active vs passive management strategies are appropriate

viii. review Plan liquidity requirements

ix. convene a meeting with P&B in the event of a significant market event or shift to discuss issues and market opportunities; and

x. provide quarterly reports to P&B and F&I.

b) P&B will make recommendations to the Board in the following areas, consulting with PIC with respect to investment philosophy, policies, objectives and strategies for the Plan:

i. the content of the SIPP after its annual review and consideration of recommendations from PIC; and

~~ii. the selection of a Consulting Actuary;~~

~~iii.~~ii. the selection of an Investment Consultant;

~~iv. the selection of Fund Managers, based on the recommendation from PIC;~~

~~v. asset mix changes and investment decisions where the cumulative annual transaction(s) exceed 15% of the market value of the Plan's total assets at the beginning of the calendar year, based on the recommendation from PIC; and~~

~~vi.~~iii. the selection of a Custodian/Trustee to hold the pension fund assets.

c) In addition, the P&B Committee will:

i. perform oversight activities as in the P&B Terms of Reference. To the extent there is any conflict this document and the Terms of Reference, the Terms of Refence shall govern;

~~i.~~ii. approve the content of this FIP in consultation with PIC;

iii. review the Fund's Funding Policy & Guideline at least every three (3) years, and approve changes as necessary;

iv. ~~the selection of a~~appoint a Consulting Actuary;

v. the selection of Fund Managers and/or investment funds, based on the recommendation from PIC;

~~ii.~~vi. approve asset mix changes and investment decisions where the cumulative annual transaction(s) represent greater than -20% of the market value of the Plan's total assets at the beginning of the calendar year, based on the recommendation from PIC;

~~iii.~~vii. review reports from PIC on Fund Manager performance and pension fund performance on at least a ~~semi-annual~~quarterly basis, as well as reviewing the outlook of the fund overall; and

~~iv.~~viii. report to Plan members on at least an annual basis.

d) The Fund Managers will:

i. forward to University staff (for review and discussion at PIC) quarterly reviews of investment performance, expectations of future returns on various asset classes and proposed investment strategies for the following 12 to 24 months;

ii. manage asset mix and select securities within each asset class, subject to applicable legislation and the philosophy and other constraints set out in the SIPP, this document and the Responsible Investment Policy (RIP);

iii. forward to University staff (for review and discussion at PIC) quarterly reports describing their ESG analysis, approach and metrics, and periodically forward a climate risk assessment of their portfolio including any scenario analysis;

iv. advise University staff (for review and discussion at PIC) immediately of any changes in its senior investment personnel and/or significant changes in the size or mix of assets managed;

v. comply with all applicable legislation concerning the investment of the pension fund, including the Pension Benefits Act (Ontario) (“Applicable Laws”);

vi. complete and deliver a compliance report (see Appendix A) to University staff ~~and the Fund’s Investment Consultant~~ each quarter. The compliance report will indicate whether or not the Fund Manager was in compliance with Applicable Laws, the SIPP and the RIP during the quarter. In the event that the Fund Manager is not in compliance with Applicable Laws, the SIPP and/or the RIP, the Fund Manager is required to immediately advise University staff (for discussion at PIC), detail the nature of the non-compliance and recommend the appropriate course of action to remedy the situation;

vii. comply, at all times and in all respects, with the Code of Ethics and Standards of Professional Conduct as promulgated by the CFA Institute; and

viii. in managing the Plan assets, the Fund Manager shall at all times exercise the degree of care that a person of ordinary prudence would exercise in dealing with the property of another person and shall use all relevant knowledge and skill which it possesses, or by reason of its profession, ought to possess.

e) The Consulting Actuary (or his/her delegate approved by P&B) will:

i. assist in the preparation and subsequent annual reviews of the SIPP and any supplementary documents;

ii. comment on any changes in the Plan’s benefits, membership or contribution flow which may affect how the Plan’s assets are invested;

iii. assist University staff, the PIC and P&B, as needed, in the implementation of the SIPP and this document;

iv. support PIC and P&B on matters related to investment risk management and administration of the Plan; and

v. meet with University staff, PIC and P&B as required.

f) Investment Consultant will:

i. participate in all reviews of the Fund Managers;

ii. report quarterly on the performance of the Fund Managers and the Plan;

iii. comment on the impact of potential investment opportunities/strategies/legislative changes which may affect how the Plan’s assets are invested;

iv. monitor the performance of the Plan and the Fund Managers on a regular basis, and contact University staff immediately if there are adverse changes of any kind, which warrant further review and/or discussion with PIC; and

v. meet with University staff, PIC and P&B as required.

g) Performance Measurement Service Providers will:

i. Provide detailed performance reporting in the required format including ESG integration by Fund Managers as well as the carbon metrics for the total Plan asset portfolio

h) The Custodian/Trustee will:

i. fulfill the regular duties required by law of a Custodian/Trustee and perform the specific duties required of the Custodian/Trustee pursuant to agreements entered into from time to time with the University on behalf of the Plan; and

ii. provide University staff with monthly portfolio reports of all assets of the Plan and transactions during the period.

i) University staff will:

i. Prepare reporting for the PIC, P&B and F&I committees on Plan investment matters and act as resources to these Committees in this regard;

ii. Act as a contact for contracted third party professional firms relating to the investment of the Plan's assets and provide administration and monitoring related to these firms' contracts and deliverables;

iii. Provide cash flow information as necessary or requested by PIC;

iv. Monitor Fund Manager's and overall compliance with the SIPP, FIP, and RIP; and

v. Appoint Performance Measurement Service Providers.

2) Performance Measurement & Monitoring

For purposes of evaluating the performance of the Fund Managers, all rates of return are measured over rolling four-year periods. Return objectives are net of fees and include realized and unrealized capital gains or losses plus income from all sources.

Performance reporting provided by the Fund Managers and the Investment Consultant will include annualized returns when available for 15 or greater years; as well as a detailed attribution analysis for the most recent quarter and year-to-date periods.

The Investment Consultant will report on each Fund Manager's performance relative to their

peers.

In addition to performance criteria, the following factors will also be monitored and evaluated:

a) Stability of the investment firm (personnel, assets under administration, operational capabilities, etc.);

b) Investment objective and portfolio composition;

c) Changes in the investment philosophy used in the investment fund;

d) Consistency of style or approach;

e) Adherence to investment policy statement; and

f) ESG analysis and reporting including climate risk assessment and carbon metrics

3) Compliance Reporting by Fund Manager

The Fund Manager is required to complete and deliver a compliance report to University staff and the Plan's investment consultant each quarter. The compliance report will indicate whether or not the Fund Manager was in compliance with Applicable Laws, the SIPP, FIP and the RIP during the quarter.

In the event that a Fund Manager is not in compliance with Applicable Laws, the SIPP, FIP and/or the RIP the Fund Manager is required to immediately advise University staff, detail the nature of the non-compliance and recommend an appropriate course of action to remedy the situation.

While the guidelines in the SIPP are intended to guide the management of the assets, it is recognized that, where pooled funds are held, there may be instances where there is a conflict between the SIPP and the investment policy of a pooled fund. In that case, the pooled fund policy shall dominate, subject to the compliance reporting procedures outlined in this section. However, the Fund Manager is required to advise University staff, in advance, if there are any material discrepancies between the SIPP and the pooled fund's own investment guidelines. In addition, the Fund Manager will ensure that University staff have received a copy of the most recent version of the pooled fund policy and of any amendments made to the pooled fund policy.

4) Audit

The Plan's financial reporting for the regulatory authorities shall be audited annually by external auditors appointed by the University.

5) Monitoring of Asset Mix

In order to ensure that the assets of the Plan operate within the minimum and maximum asset mix ranges, as prescribed in the SIPP, PIC shall review the asset mix at least quarterly. Please refer to the section on Rebalancing Policy.

6) Selecting Fund Managers

Should PIC determine that there is a requirement for an additional Fund Manager, PIC will establish a sub-committee to undertake a Fund Manager search. The criteria used for selecting a Fund Manager will be consistent with the investment and risk philosophy set out in the SIPP. Although each search process will apply a specific list of considerations, the evaluation criteria shall include:

a) Establishing the relevant performance benchmark

b) Performance history

c) Quality of the firm and the fund specific investment team

d) Quality and consistency of the fund's investment process

e) Quality and transparency in reporting including valuation methods

f) ESG integration within the investment process and related reporting, including reporting on the Manager's integration of climate related risk factors and disclosure of carbon metrics

g) Risk management approach

h) Competitiveness of fees

i) Terms of the applicable investment management agreement

7) Monitoring Fund Manager Performance

At least quarterly, ~~PIC~~ the University will monitor and review:

a) Each Fund Manager's staff turnover, consistency of style and record of service;

b) Each Fund Manager's current economic outlook and investment strategies including ESG approach;

c) Each Fund Manager's compliance with the SIPP, FIP and RIP; and

d) Investment performance of the assets of the Plan in relation to the rate of return expectations outlined in the SIPP.

8) Dismissal of Fund Manager

Reasons for considering the termination of the services of a Fund Manager include, but are not limited to, the following factors:

a) Performance results which are below the stated performance benchmarks;

b) Changes in the overall structure of the Plan's assets such that the Fund Manager's services are no longer required;

c) Change in personnel, firm structure or investment philosophy which might adversely affect the potential return and/or risk level of the portfolio; and/or

d) Failure to adhere to the SIPP, FIP or RIP.

9) Rebalancing Policy

~~PIC~~ The University shall monitor the asset mix and the net cash flow on a quarterly basis. Rebalancing will occur when the market value of an asset class varies from the limits set out in the SIPP~~,~~ or if any individual Fund Manager's component exceeds a limit set out in the SIPP.

Rebalancing will be generally implemented within two quarters by:

a) Redirecting the net cash flows [administered monthly by University staff and not included in PIC's cumulative ~~15~~20% asset mix change threshold]

~~b) Transfer of cash between portfolios~~

~~c)~~b) Liquidating exceedances and directing those to assets below the benchmark taking into account the transaction costs and liquidity of the particular asset class

Notwithstanding the rebalancing policy, in certain circumstances, PIC may adjust the weight of any asset class within the permitted ranges for the purpose of protecting capital and managing risk.

10) Liability Hedging

PIC will determine the type of investment strategies, if any, to be implemented to hedge the interest rate and/or inflation sensitive liabilities of the plan.

Appendix A — Fund Manager Compliance Letter

To be completed by fund managers each quarter.

UNIVERSITY OF WATERLOO

_______________, 202_

This is to certify that I/we have complied with the *Pension Benefits Act* (Ontario) and all other laws and regulations applicable to the investment of the Pension Plan's assets and adhered to the guidelines contained in the Statement of Investment Policies and Procedures, the Fund Implementation Procedures for the University of Waterloo Pension Plan (2011), and the Responsible Investment Policy as approved by the Board of Governors of the University of Waterloo as well as the investment management agreement in place

Signed ___________________________

On behalf of ______________________

Date _____________________________