

**Board of Governors**  
**PENSION & BENEFITS COMMITTEE**  
**Friday 16 September 2022**  
**9:30 a.m. to 12:00 noon**

**This meeting will be held via Microsoft Teams**  
**Non-members may arrange to join the open session of the electronic meeting**  
**by contacting Diana Goncalves, [d3goncalves@uwaterloo.ca](mailto:d3goncalves@uwaterloo.ca)**

<b>OPEN SESSION</b>		<b>ACTION</b>
9:30	1. Approval of the 24 June 2022 Minutes (Open Session)* and Business Arising a. Update – Filing Actuarial Valuation - December 31, 2021 [Aon]	Decision Information
9:35	2. Execution Against the Work Plan* [Weber-Kraljevski]	Information
9:40	3. Update on Government Pension Plan Initiatives [Aon]	Information
9:50	4. Pension Risk Management Dashboard, Q2 2022* [Aon]	Information
10:05	5. Investments Update, Q2 2022* [Huber]	Information
10:20	6. Update - Working Group to Review In-Vitro Fertilization Coverage [Saunders]	Information
10:35	7. Update on Green Shield Canada Implementation* [Hornberger]	Information
	8. Other Business	

**CONFIDENTIAL SESSION**

9.	Approval of the 24 June 2022 Minutes (Confidential Session)+ and Business Arising	Discussion
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Next Meeting: Friday 16 September 2022, 9:30 a.m. – 12:00 noon

\*attached \*\* to be distributed + distributed separately

9 September June 2022

Tim Weber-Kraljevski  
Associate University Secretary

**Please convey regrets to Diana Goncalves at [d3goncalves@uwaterloo.ca](mailto:d3goncalves@uwaterloo.ca)**

Future Agenda Items

- a. Presentation re: the UPP – planned for Fall 2022
- b. Pension Contribution for Members on LTD
- c. Level of LTD coverage vs. practical requirements
- d. EFAP Report Data Requirements
- e. Communication Plan re: Handling of Member Questions/Feedback

**University of Waterloo**  
**Board of Governors**  
**PENSION & BENEFITS COMMITTEE**  
**Minutes of the 24 June 2022 Meeting**  
**[in agenda order]**

**Present:** Peter Barr (chair), Sara Cressman, Tony Giovinazzo, Melissa Graham, Mike Grivicic (secretary), Michelle Hollis, Lily Hua, Dennis Huber, Ranjini Jha, James Rush, David Saunders, David Taylor

**Regrets:** Terrence Birmingham

**Resources:** Anata Alphonso, Sarah Hadley, Lee Hornberger, Joan Kennedy, Sue McGrath, Allan Shapira, Tim Weber-Kraljevski, Tyler Wendland

**Guests:** Danial Cockayne (7)

**Organization of Meeting:** Peter Barr took the chair, and Mike Grivicic acted as secretary. The secretary advised that a quorum was present. The agenda was accepted as distributed.

**OPEN SESSION**

**1. APPROVAL OF THE 20 MAY 2022 MINUTES (OPEN SESSION) AND BUSINESS ARISING**

There was a motion to approve the minutes as presented. Giovinazzo and Hollis. Carried. Items (a)-(c) were received for information.

**2. EXECUTION AGAINST THE WORK PLAN**

This item was received for information.

**3. UPDATE ON GOVERNMENT PENSION PLAN INITIATIVES**

Shapira observed that with recent shifts in the financial markets and movement on interest rates, an update to the plan's valuation will likely be timely in the fall.

**4. UPDATE ON THE PAYROLL PENSION PLAN**

Huber provided an overview of the exhibit, and highlighted that with participating employees now earning all pension benefits under the registered plan, the University will direct a portion of the PPP assets to the RPP over time (~\$8 million per year over the next three years) with the transfer amounts to fund a portion of the University's additional contributions to the RPP.

**5. PENSION ADMINISTRATION, INTERNAL SUPPORTING RESOURCES**

Hornberger discussed the exhibit provided, noting that it has been more than 10 years since the committee discussed a new staff allocation, and in that time the growth of the plan's membership and overall demands on support staff have grown significantly. Current plan demographics show a large number of members reaching retirement age in coming years, which will also significantly increase the demands on staff to support their needs. The proposed new hires are estimated to cost about \$175,000 annually. A motion was heard to approve the funding of two net new pension administrator positions by the plan, and to direct that a formal review of internal resources again be conducted within the next five years and in conjunction with the competitive bidding process that is required to support the pension administration system effective November 1, 2026. Jha and Saunders. Carried. An annual review of plan staffing will be added to the committee workplan.

**6. BENEFITS UTILIZATION REPORT**

Kennedy provided a PowerPoint presentation and observed: overall cost of benefits program rose in 2021-22; plan experience by specific category of benefit; recent plan changes implemented on 1 May 2021 included new benefits (vision coverage) and amendments to existing benefits (e.g. removal of doctor's note requirement for massage therapy). Members noted the rise in experience pertaining to mental health and observed that proactive therapies/interventions can be beneficial to individuals while help to reduce costs to the plan; the EFAP program and other wellness programs aim to provide such proactive assistance.

## Execution against Work Plan

### Pension & Benefits Committee, Board of Governors, University of Waterloo

The below represents the annual responsibilities of the P&B Committee and has been prepared as an aid to planning only. The committee's activities are much broader, however, and include: legislative changes, plan changes and improvements; selection of managers and service providers; and requests from the UW community regarding pension and benefits plans.

Task	Frequency (Target month)	10 Sept 2021	22 Oct 2021	19 Nov 2021	10 Dec 2021	14 Jan 2022	18 Feb 2022	11 Mar 2022	20 May 2022	24 June 2022	16 Sept 2022
Approval of Actuarial Valuation Assumptions	Annual (Jan)					✓					
Investment Status of PPP	Annual (Feb)						✓				
Cost-of-living Increase for Pensioners	Annual (Feb)						✓				
Pensions for Deferred Members	Annual (Feb)						✓				
Salaries for Pension Purposes for Individuals on Long-term Disability	Annual (Feb)						✓				
Actuarial Valuations (RPP and PPP), with posting to website once approved	Annual (Mar)							✓			
Review of Contribution and Protocol Caps (RPP and PPP)	Annual (Mar)							✓			
Monitor sharing of current service cost between employee and university contributions	Annual (Mar)										
Benefits Plan Premium Renewals	Annual (Mar)							✓			
Indexing of Long-term Disability Plan Benefits and Maxima	Annual (Mar)							✓			
Annual Committee Self-Assessment	Annual (Mar)							✓			
Budget Overview	Annual (May)								✓		
Previous Years' Fees and Expenses	Annual (May)								✓		
Annual Audit of the Pension Plan Fund Financial Statements	Annual (May)								✓		

Task	Frequency	10 Sept 2021	22 Oct 2021	19 Nov 2021	10 Dec 2021	14 Jan 2022	18 Feb 2022	11 Mar 2022	20 May 2022	24 June 2022	16 Sept 2022
Benefits Utilization Report	Annual (June)									✓	
Annual review re: benefits added/removed from insured plans in the market	Annual (June)									D	D
Review of Committee Terms of Reference	Annual (June)									✓	
Review of Administrative Staffing Support for the Plan (first iteration to occur in 2023)	Annual (Oct)										
Indexing of Plan Maxima – Health, Dental, Retiree Life Insurance	Annual (Nov)			✓							
Employee and Family Assistance Program – report on utilization	Annual (Nov)			✓							
Maximum pension limits and caps adjustments, based on average industrial wage increase (AIW)	Annual (Dec)				✓						
Total Fund Overview	Quarterly	✓			✓						✓
Investment Manager Review	Semi-annually				✓						
Approval of the Statement of Investment Policies and Procedures (SIPP)	Annual				✓						
Annual Report to the Community	Annual						✓				
Actuarial Filing - Minimum every three years  Secretariat to advise Aon and HR upon approval by BOG, to commence filing  Most recent filings: 2017, 2018, 2020, 2021, 2022											



# Pension Risk Management Dashboard

**University of Waterloo**  
As of June 30, 2022

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

**AON**

# About This Material

This dashboard was prepared for the University of Waterloo to track changes in 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 a discount rate and inflation assumption determined with reference to the risk-free environment. For this report, the liability has been determined at the real return bond yield plus a 40 basis point credit spread to reflect 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 Provision of Adverse Deviation as prescribed by the *Pension Benefits Act* (Ontario).

**Solvency/Hypothetical Wind Up 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 16.

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 both 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?

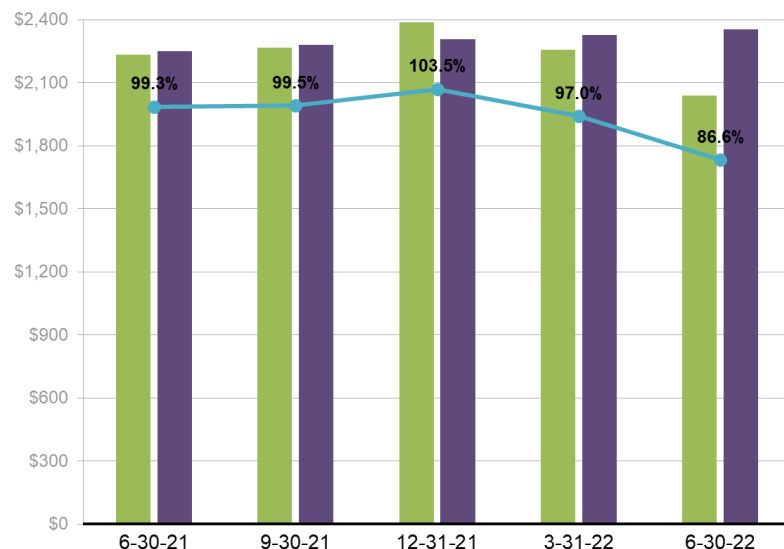
# Highlights

- The going concern funded position increased from a deficit \$69.8 million to a deficit of \$316.3 million over the quarter due to asset performance lower than expected.
- The risk-free deficit decreased from \$1,020.5 million to \$827.4 million over the quarter due to a decrease in risk-free liabilities from an increase in risk free rates.
- The solvency position decreased from \$164.9 million surplus to \$151.7 million surplus over the quarter primarily due to an decrease in solvency liabilities offset by loss on assets performance over the quarter.
- The total fund had a rate of return after all fees of -9.8% for last quarter, lower than expectations.
- The estimated June 30, 2022 liabilities are projected based on the most recent actuarial valuation, with membership data as at December 31, 2021.
- The annuity purchase guidance educational note for valuations as of June 30, 2022 and July 1, 2022 (published as of July 26, 2022) has been reflected in the interest rates used to calculate the June 30, 2022 Solvency and Hypothetical Wind Up liabilities.
- The transfer ratio as at June 30, 2022 is 77.6%. Compared to the transfer ratio of 74.8% in the last filed valuation on December 31, 2021, this represents an increase of 2.8%. Since the transfer ratio did not decrease 10% over the period, no Regulation 19 filing is required. See slide 11 for more details.
- The most recent actuarial valuation was performed as at December 31, 2021.
- 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 6/30/22

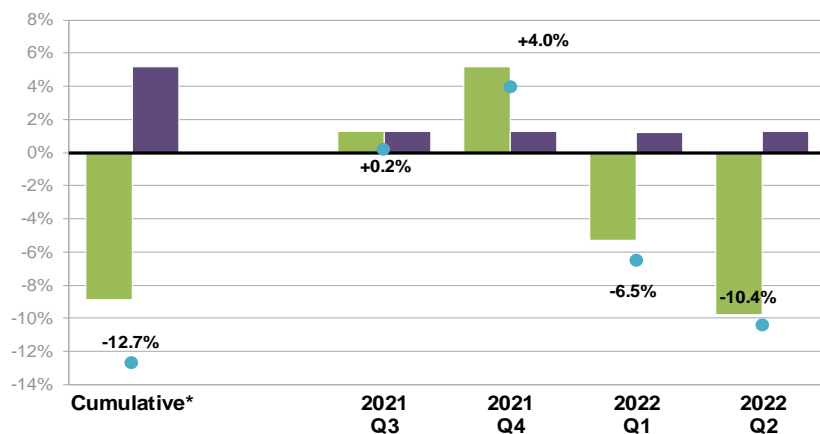
The plans' funded ratio decreased to 86.6% at 6/30/22. This result was primarily due to the combined effects of:

- Asset performance less than expected,
- Contributions of \$27.1 million which exceeded new benefit accruals, offset by
- An increase in liabilities.

	6/30/21	9/30/21	12/31/21	3/31/22	6/30/22
Market Value of Assets	\$ 2,233.1	\$ 2,267.7	\$ 2,387.7	\$ 2,257.3	\$ 2,037.5
Going Concern Liability Surplus/(Deficit)	\$ 2,249.7 <sup>1</sup>	\$ 2,279.0 <sup>1</sup>	\$ 2,306.3 <sup>1</sup>	\$ 2,327.1 <sup>1</sup>	\$ 2,353.8 <sup>1</sup>
Periodic Contributions	\$ 26.4	\$ 27.1	\$ 26.8	\$ 26.5	\$ 27.1
Effective Interest Rate	5.30%	5.30%	5.30%	5.50%	5.50%
Funded Ratio:	99.3%	99.5%	103.5%	97.0%	86.6%
Asset Duration:	1.8	1.8	1.8	1.6	1.5
Going Concern Liability Duration:	14.4	14.4	14.4	14.1	14.1

<sup>1</sup>After application of the PfAD at 9.00%

## Asset-Liability Return



## Asset Liability Return for Quarter-Ending 6/30/22

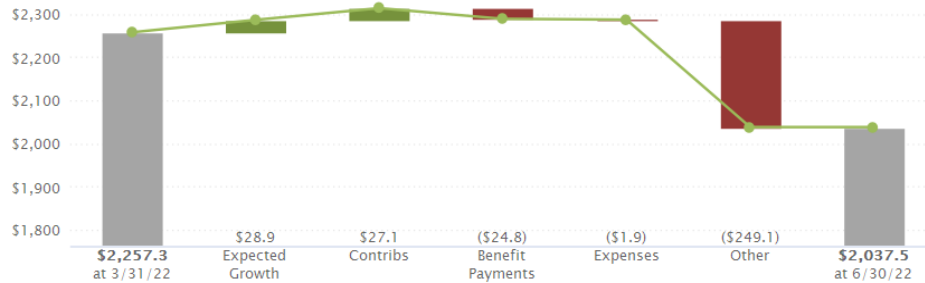
Assets returned -9.8% during the quarter while liabilities returned 1.3%, resulting in a funded status decrease of 10.4%.

Periodic Return/Change	Cumulative	9/30/21	12/31/21	3/31/22	6/30/22
Market Value of Assets Return	-8.9%	1.3%	5.2%	-5.3%	-9.8%
Going Concern Return	5.2%	1.3%	1.3%	1.2%	1.3%
Funded Ratio Change	-12.7%	0.2%	4.0%	-6.5%	-10.4%

# Asset-Liability Performance Attribution – Going Concern

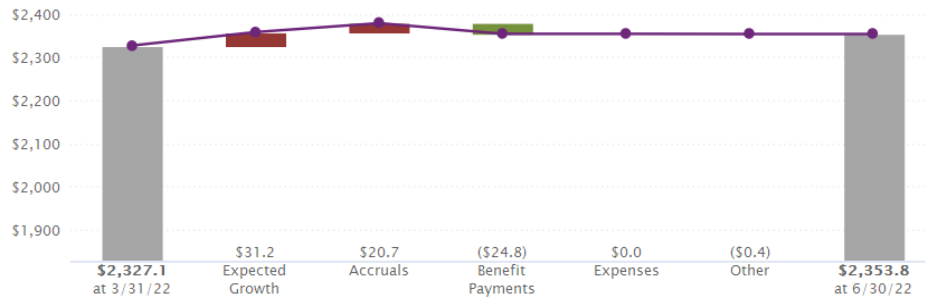
Values in \$1,000,000 (CAD)

## Assets



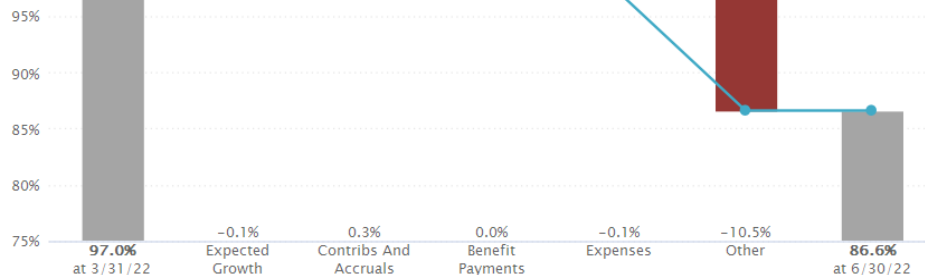
- Overall, assets returned -9.8% during this quarter.
- The fixed income assets lost value due to an increase in the underlying risk-free rates and widening credit spreads.
- The University and members made \$27.1 million in contributions during the quarter and the trust paid \$24.8 million in benefits to the participants.
- “Other” includes the impact of active management, and differences between benchmark and actual investment allocations.

## Liabilities



- Liabilities as of 6/30/22 are based on 5.50%.
- Liabilities were expected to grow by \$31.2 million due to interest cost during the quarter.
- New benefit accruals increased the liability by \$20.7 million during the quarter.
- Plan liabilities decreased by \$24.8 million during the quarter as benefits were paid.

## Funded Ratio

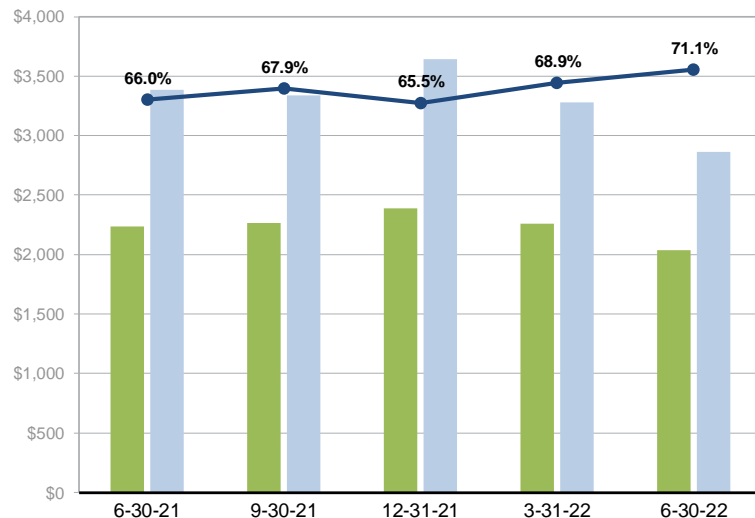


- Assets lost 9.8% during the quarter while liabilities returned 1.3%, resulting in a funded status decrease of 10.4%.

# Executive Summary – Risk Free

Values in \$1,000,000 (CAD)

## Funded Status



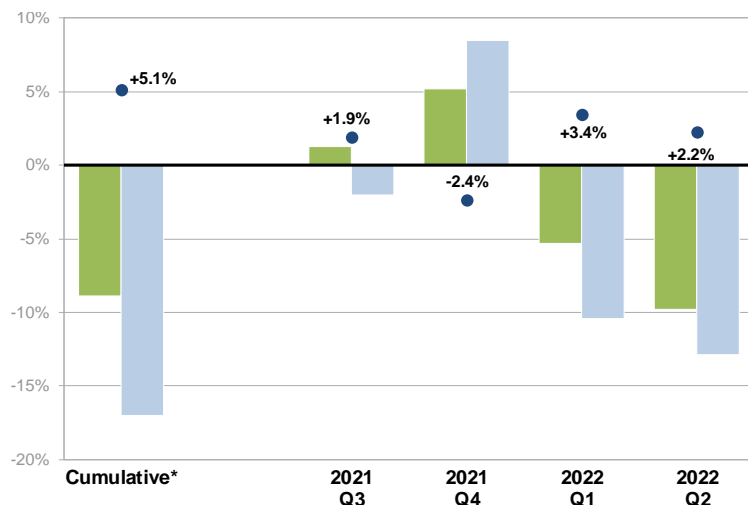
## Highlights for the Quarter-Ending 3/31/22

The plans' funded ratio increased to 71.1% at 6/30/22. This result was primarily due to the combined effects of:

- Asset performance less than expected,
- New benefit accruals which exceeded contributions, and
- A decrease in liabilities due to an increase in risk-free interest rate.

	6/30/21	9/30/21	12/31/21	3/31/22	6/30/22
Market Value of Assets	\$ 2,233.1	\$ 2,267.7	\$ 2,387.7	\$ 2,257.3	\$ 2,037.5
Risk-Free Liability	3,383.6	3,337.7	3,642.8	3,277.8	2,864.9
Surplus/(Deficit)	\$ (1,150.5)	\$ (1,070.0)	\$ (1,255.1)	\$ (1,020.5)	\$ (827.4)
Periodic Contributions	\$ 26.4	\$ 27.1	\$ 26.8	\$ 26.5	\$ 27.1
Discount Rate	0.48%	0.62%	0.23%	0.94%	1.76%
Funded Ratio:					
Assets/Risk-Free Liability	66.0%	67.9%	65.5%	68.9%	71.1%
Asset Duration:	1.8	1.8	1.8	1.6	1.5
Risk-Free Liability Duration:	19.1	18.8	19.5	19.8	17.2

## Asset-Liability Return



## Asset Liability Return for Quarter-Ending 3/31/22

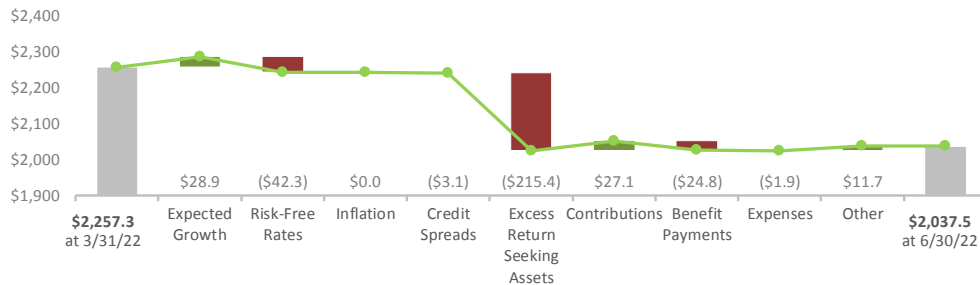
Assets returned -9.8% during the quarter while liabilities returned -12.9%, resulting in a funded status increase of 2.2%.

	Periodic Return/Change	Cumulative	9/30/21	12/31/21	3/31/22	6/30/22
Market Value of Assets						
Return	-8.9%	-8.9%	1.3%	5.2%	-5.3%	-9.8%
Risk Free:						
Return	-17.0%	-17.0%	-2.0%	8.5%	-10.4%	-12.9%
Funded Ratio Change	5.1%	5.1%	1.9%	-2.4%	3.4%	2.2%

# Asset-Liability Performance Attribution – Risk Free

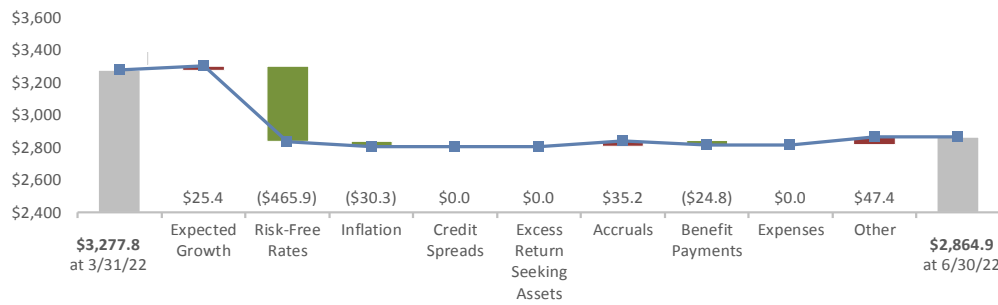
Values in \$1,000,000 (CAD)

## Assets



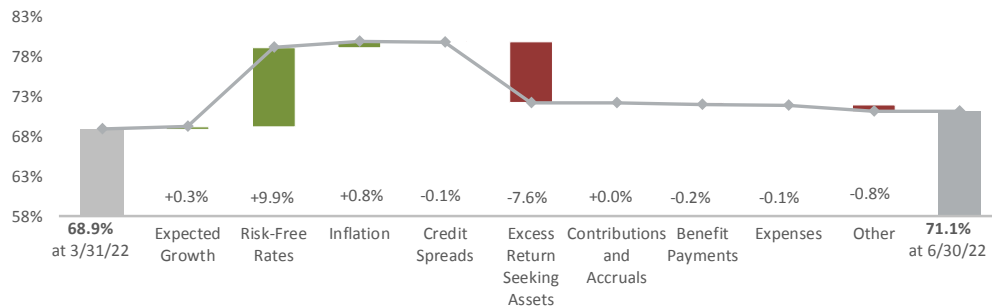
- Overall, assets returned -9.8% during this quarter.
- The fixed income assets lost value due to an increase in the underlying risk-free rates and widening credit spreads.
- The plans' return-seeking assets performed lower than expected during the quarter.
- \$27.1 million in contributions during the quarter and the trust paid \$24.8 million in benefits to the participants.
- "Other" includes the impact of active management, and differences between benchmark and actual investment allocations.

## Liabilities



- Liabilities were expected to grow by \$25.4 million due to interest cost during the quarter.
- Risk-free rates used to determine the liabilities increased resulting in a decrease in liabilities of \$465.9 million.
- Expected inflation rates decreased resulting in a decrease in the liabilities of \$30.3 million.
- New benefit accruals increased the liability by \$35.2 million during the quarter.
- Plan liabilities decreased by \$24.8 million during the quarter as benefits were paid.
- "Other" includes impact of a decrease in the underlying long-term nominal and real federal bond yields used to determine the risk-free and implied inflation rates..

## Funded Ratio

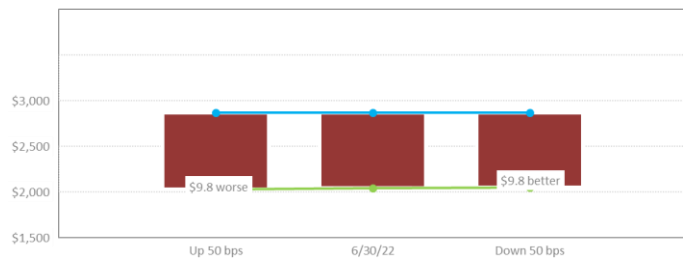


- The difference in exposure to risk-free rates between assets and liabilities combined with changes in risk-free rates resulted in an increase in funded status of 9.9%.
- Changes in credit spreads resulted in a decrease in funded status of 0.1%.
- Return-seeking assets did not perform as well as expected during the quarter, deducting 7.6% from the plans' funded status during the period.

# Sensitivity Analysis – Risk-Free Benchmark

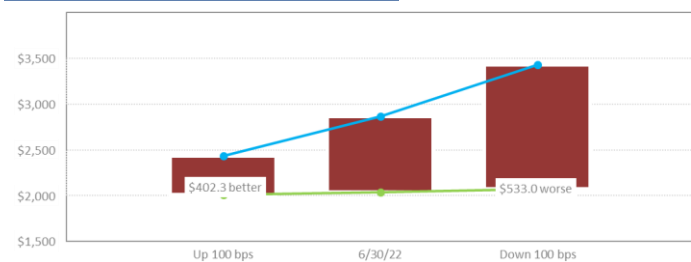
Values in \$1,000,000 (CAD)

## Credit Spreads



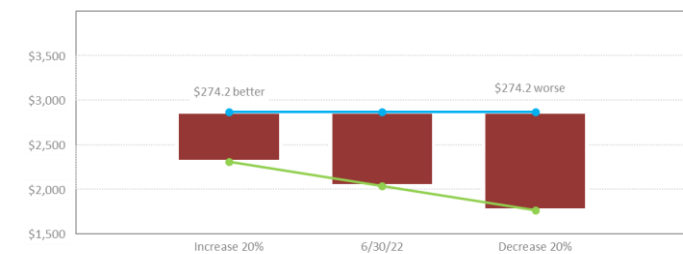
	Up 50bps	Current	Down 50bps
Market Value of Assets	\$2,027.7	\$2,037.5	\$2,047.3
Risk Free	\$2,864.9	\$2,864.9	\$2,864.9
Surplus/(Deficit)	(\$837.2)	(\$827.4)	(\$817.6)
Change		(\$9.8)	\$9.8

## Risk-Free Rates



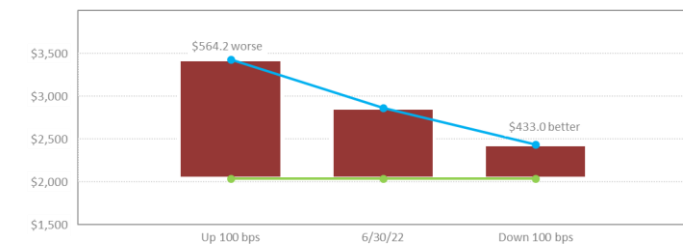
	Up 100bps	Current	Down 100bps
Market Value of Assets	\$2,006.8	\$2,037.5	\$2,068.7
Risk Free	\$2,431.9	\$2,864.9	\$3,429.1
Surplus/(Deficit)	(\$425.1)	(\$827.4)	(\$1,360.4)
Change		\$402.3	(\$533.0)

## Return-Seeking Assets



	Increase 20%	Current	Decrease 20%
Market Value of Assets	\$2,311.7	\$2,037.5	\$1,763.3
Risk Free	\$2,864.9	\$2,864.9	\$2,864.9
Surplus/(Deficit)	(\$553.2)	(\$827.4)	(\$1,101.6)
Change		\$274.2	(\$274.2)

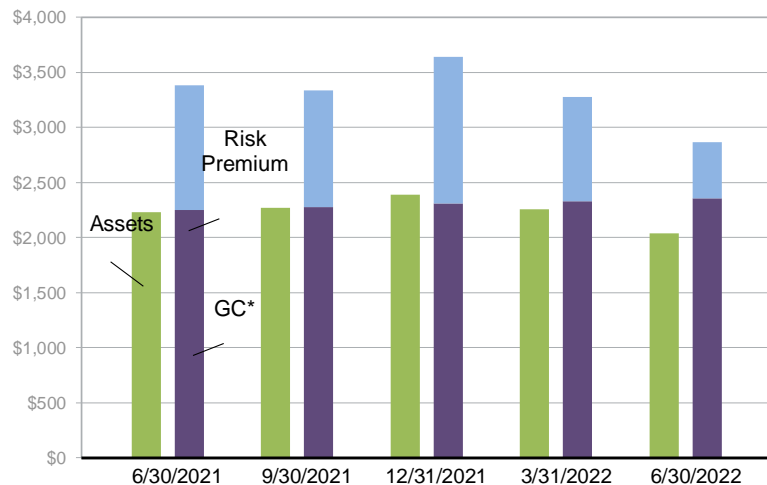
## Inflation



	Up 100bps	Inflation	Down 100bps
Market Value of Assets	\$2,037.5	\$2,037.5	\$2,037.5
Risk-Free	\$3,429.1	\$2,864.9	\$2,431.9
Surplus/(Deficit)	(1,391.6)	(\$827.4)	(\$394.4)
Change		(\$564.2)	\$433.0

# Reconciliation of Risk-Free Benchmark and Going Concern Funded Status

Values in \$1,000,000 (CAD)



	6/30/21	9/30/21	12/31/21	3/31/22	6/30/22
Market Value of Assets	\$ 2,233.1	\$ 2,267.7	\$ 2,387.7	\$ 2,257.3	\$ 2,037.5
Going Concern Liability	\$ 2,249.7	\$ 2,279.0	\$ 2,306.3	\$ 2,327.1	\$ 2,353.8
Risk Premium	<u>1,133.9</u>	<u>1,058.7</u>	<u>1,336.5</u>	<u>950.7</u>	<u>511.1</u>
Risk-Free Liability	\$ 3,383.6	\$ 3,337.7	\$ 3,642.8	\$ 3,277.8	\$ 2,864.9

\*Going Concern

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.

# Hypothetical Wind Up (HWU) and Transfer Ratio

Values in \$1,000,000 (CAD)

	December 31, 2021 (Last Filled Valuation)		4/1/2022		7/1/2022	
■ HWU Assets *	\$	2,379.8	\$	2,256.8	\$	2,037.0
■ HWU Liability		3,181.6		2,870.9		2,623.4
Surplus/(Deficit)	\$	(801.8)	\$	(614.1)	\$	(586.3)
Transfer Ratio:						
■ Market Value of Assets/HWU Liability		74.8%		79.0%		77.6%

\* Net of estimated wind up expenses

■ Restrictions on commuted values may come into effect if the administrator of the pension plan knows or ought to know that since the valuation date of the last filed report, events have taken place that may result in the reduction of the transfer ratio by 10% or more of the most recently determined transfer ratio. In such case, the administrator shall not transfer any part of the commuted value without prior approval of the Superintendent.

■ If the transfer ratio (the hypothetical wind up assets divided by the hypothetical wind up liabilities including indexation) drops by 10% or more since the last filed valuation, the administrator must stop paying commuted values and seek approval from the regulators to restart paying commuted values. The application is made in a prescribed format. This is generally referred to as a “Regulation 19 Filing”.

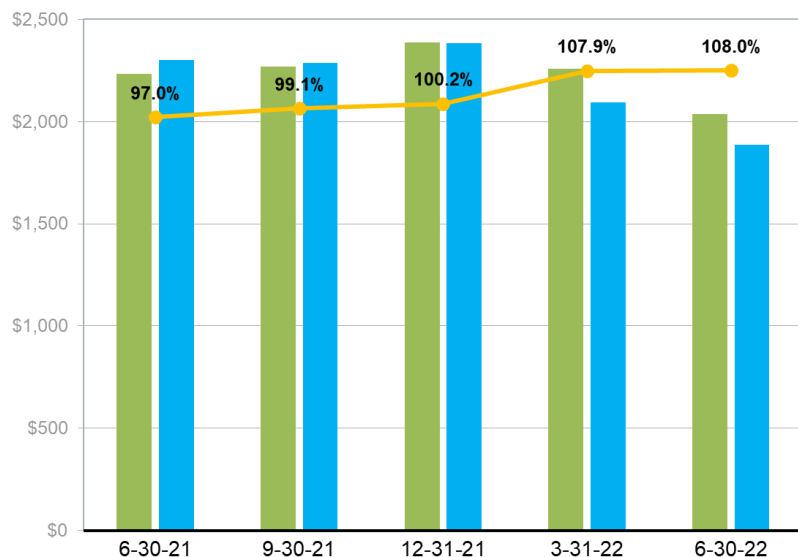
■ During Q2 2022, the financial position of the Pension Plan as measured on a wind-up basis did not drop by more than 10% since December 31, 2021 (the last filed valuation). Therefore, no Regulation 19 Filing is required as of July 1, 2022.

■ The Regulation 19 filing requirements will be monitored throughout 2022 on a quarterly basis.

# Executive Summary - Solvency

Values in \$1,000,000 (CAD)

## Funded Status



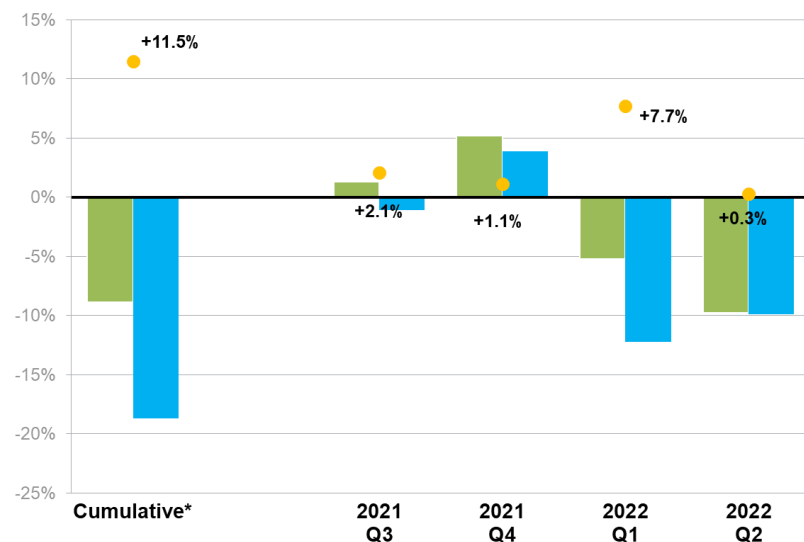
## Highlights for the Quarter-Ending 6/30/22

The plans' funded ratio increased to 108.0% at 6/30/22. This result was primarily due to the combined effects of:

- Asset performance lower than expected,
- Contributions which exceeded new benefit accruals, and
- A decrease in liabilities due to an increase in the effective interest rates.

	6/30/2021	9/30/2021	12/31/2021	3/31/2022	6/30/2022
Market Value of Assets	\$ 2,233.1	\$ 2,267.7	\$ 2,387.7	\$ 2,257.3	\$ 2,037.5
Solvency Liability	2,302.8	2,287.4	2,382.8	2,092.4	1,885.8
Surplus/(Deficit)	\$ (69.7)	\$ (19.7)	\$ 4.9	\$ 164.9	\$ 151.7
Periodic Contributions	\$ 26.4	\$ 27.1	\$ 26.8	\$ 26.5	\$ 27.1
Effective Interest Rate	2.88%	3.01%	2.81%	3.70%	4.62%
Funded Ratio:					
Assets/Solvency Liability	97.0%	99.1%	100.2%	107.9%	108.0%
Assets Duration:	1.8	1.8	1.8	1.6	1.5
Solvency Liability Duration:	14.8	14.3	14.9	14.6	12.5

## Asset-Liability Return



## Asset Liability Return for Quarter-Ending 6/30/22

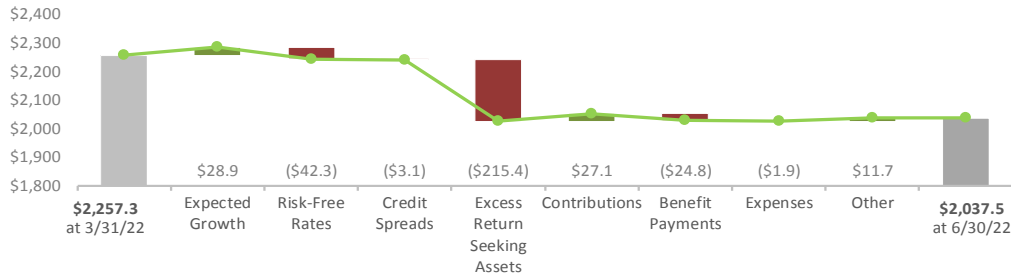
Assets returned -9.8% during the quarter while liabilities returned -9.9%, resulting in a funded status increase of 0.3%.

	Periodic Return/Change	Cumulative	9/30/21	12/31/21	3/31/22	6/30/22
Market Value of Assets Return		-8.9%	1.3%	5.2%	-5.3%	-9.8%
Funding Target Return		-18.7%	-1.1%	3.9%	-12.2%	-9.9%
Funded Ratio Change		11.5%	2.1%	1.1%	7.7%	0.3%

# Asset-Liability Performance Attribution – Solvency

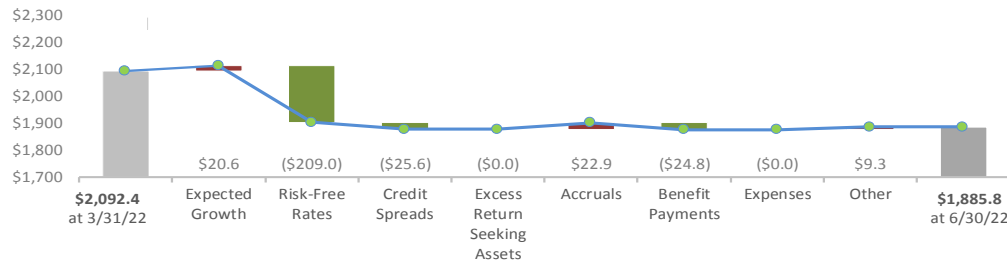
Values in \$1,000,000 (CAD)

## Assets



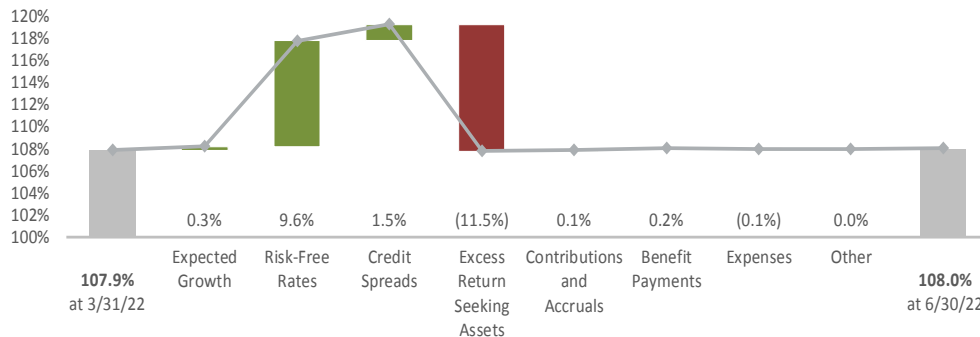
- Overall, assets returned -9.8% during this quarter.
- The fixed income assets lost value due to an increase in the underlying risk-free rates and widening credit spreads.
- The plans' return-seeking assets performed lower than expected during the quarter.
- The plan sponsor made \$27.1 million in contributions during the quarter and the trust paid \$24.8 million in benefits to the participants.
- "Other" includes the impact of active management, and differences between benchmark and actual investment allocations.

## Liabilities



- Liabilities were expected to grow by \$20.6 million due to interest cost during the quarter.
- Risk-free rates increased, and credit spreads widened, resulting in a net decrease of \$234.6 million (\$209.0 million + \$25.6 million).
- New benefit accruals increased the liability by \$22.9 million during the quarter.
- Plan liabilities decreased by \$24.8 million during the quarter as benefits were paid.

## Funded Ratio

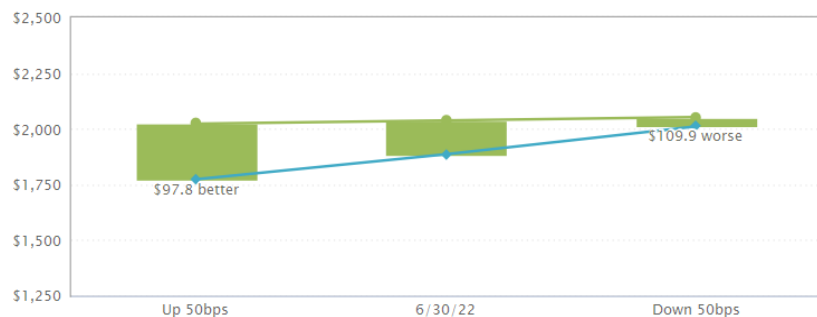


- The difference in exposure to risk-free rates between assets and liabilities combined with changes in risk-free rates resulted in an increase in funded status of 9.6%.
- The difference in exposure to credit spreads between assets and liabilities combined with changes in credit spreads resulted in an increase in funded status of 1.5%.
- Return-seeking assets did not perform as well as expected during the quarter, deducting 11.5% from the plans' funded status during the period.
- Contributions exceeded benefit accruals during the quarter, resulting in a net increase of 0.1% in the funded status.

# Sensitivity Analysis - Solvency

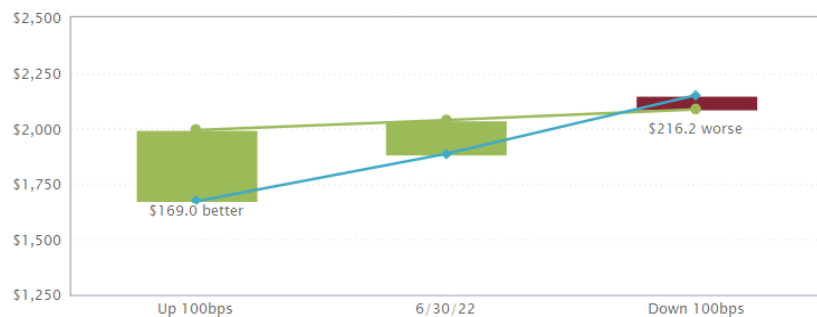
Values in \$1,000,000 (CAD)

## Credit Spreads



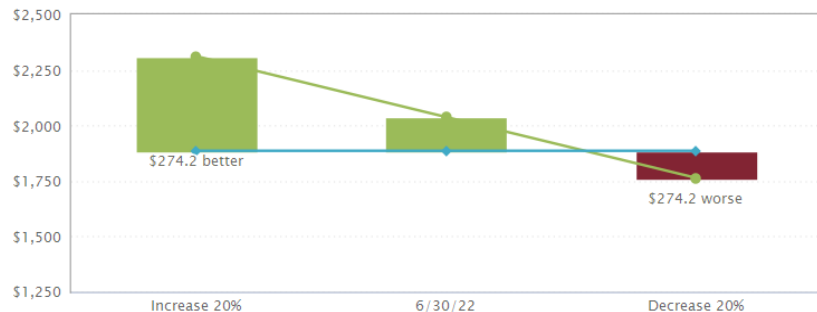
	Up 50bps	Current	Down 50bps
Market Value of Assets	\$2,022.8	\$2,037.5	\$2,052.6
Funding Target	\$1,773.3	\$1,885.8	\$2,010.8
Surplus/(Deficit)	\$249.5	\$151.7	\$41.8
Change		\$97.8	(\$109.9)

## Risk-Free Rates



	Up 100bps	Current	Down 100bps
Market Value of Assets	\$1,992.5	\$2,037.5	\$2,085.8
Funding Target	\$1,671.8	\$1,885.8	\$2,150.3
Surplus/(Deficit)	\$320.7	\$151.7	(\$64.5)
Change		\$169.0	(\$216.2)

## Return-Seeking Assets



	Increase 20%	Current	Decrease 20%
Market Value of Assets	\$2,311.7	\$2,037.5	\$1,763.3
Funding Target	\$1,885.8	\$1,885.8	\$1,885.8
Surplus/(Deficit)	\$425.9	\$151.7	(\$122.5)
Change		\$274.2	(\$274.2)



# Appendix

# Plan Provisions & Membership Data

Same as in the Actuarial Valuation Report as of December 31, 2021.

## Actuarial Methods & Assumptions

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

	6/30/21	9/30/21	12/31/21	3/31/22	6/30/22
<b>Going Concern</b>					
Discount Rate	5.30%	5.30%	5.30%	5.50%	5.50%
Inflation	2.00%	2.00%	2.00%	2.00%	2.00%
Salary Increase	3.00%/4.00% <sup>1</sup>	3.00%/4.00% <sup>1</sup>	3.00%/4.00% <sup>1</sup>	3.00%/4.00% <sup>1</sup>	3.00%/4.00% <sup>1</sup>
PfAD	9.00%	9.00%	9.00%	9.00%	9.00%
Mortality	CPM2014Public	CPM2014Public	CPM2014Public	CPM2014Public	CPM2014Public
<b>Risk-Free Benchmark</b>					
Discount Rate	0.48%	0.62%	0.23%	0.94%	1.76%
<b>Solvency</b>					
Annuity Purchase Interest Rate	2.97%	3.12%	2.86%	3.81%	4.69%
Effective Date of Annuity Purchase Guidance Used	6/30/21	9/30/21	12/31/21	3/31/22	6/30/22
Lump Sum Value Interest Rate (Years 1-10) <sup>2</sup>	1.80%	1.90%	2.10%	3.40%	4.30%
Lump Sum Value Interest Rate (Years 10+) <sup>2</sup>	3.30%	3.40%	3.10%	3.70%	4.60%
Mortality <sup>3</sup>	CPM2014	CPM2014	CPM2014	CPM2014	CPM2014
<b>Hypothetical Wind Up</b>					
Annuity Purchase Interest Rate (100% Indexed)	-0.39%	-0.25%	-0.54%	0.14%	0.76%
Annuity Purchase Interest Rate (75% Indexed)	0.45%	0.59%	0.26%	1.06%	1.74%
Effective Date of Annuity Purchase Guidance Used	6/30/21	9/30/21	12/31/21	3/31/22	6/30/22
Lump Sum Value Interest Rate (100% Indexed) (Years 1-10) <sup>2</sup>	0.70%	0.80%	0.70%	1.50%	2.50%
Lump Sum Value Interest Rate (100% Indexed) (Years 10+) <sup>2</sup>	1.20%	1.30%	1.00%	1.80%	2.80%
Lump Sum Value Interest Rate (75% Indexed) (Years 1-10) <sup>2</sup>	1.00%	1.00%	1.00%	2.00%	2.90%
Lump Sum Value Interest Rate (75% Indexed) (Years 10+) <sup>2</sup>	1.70%	1.90%	1.50%	2.30%	3.20%
Mortality <sup>3</sup>	CPM2014	CPM2014	CPM2014	CPM2014	CPM2014
<b>Underlying Canadian Reference Data</b>					
CANSIM v39054 (7 Year)	1.15%	1.24%	1.27%	2.37%	3.15%
CANSIM v39056 (30 Year Long Term)	1.84%	1.98%	1.68%	2.37%	3.14%
CANSIM v39057 (30 Year Real Return)	0.11%	0.25%	-0.14%	0.54%	1.36%
CANSIM v39062 (Over 10 Years)	1.77%	1.92%	1.66%	2.41%	3.19%

<sup>1</sup> 3.00% per year for 2 years; 4.00% year thereafter

<sup>2</sup> 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).

<sup>3</sup> 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 Report as of December 31, 2021. 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 to the University of Waterloo a summary of the performance of the Pension Plan as of June 30, 2022.**

This analysis is intended to assist 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 University of Waterloo. Any further dissemination of this report is not allowed without the 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 2022

# Asset Allocation and Benchmarking

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Asset Class	6/30/22
Alternatives	
■ FTSE EPRA NAREIT DEVELOPED Total Return Index USD	3.3%
■ MSCI USA Infrastructure Index	7.0%
Fixed Income	
■ FTSE TMX Universe Bond Index	32.7%
International Equities	
■ MSCI World Index	51.0%
■ S&P TSX	6.0%
Total	100.0%

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*University of Waterloo Pension Plan | Quarterly Period Ending 30 June 2022*

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# Detailed Investment Review

*Visit the **Aon Retirement and Investment Website** (<https://retirement-investment-insights.aon.com/canada>); sharing our best thinking.*

## Executive Summary

# Performance Summary<sup>1</sup>

As of 30 June 2022

	Allocation		Performance (%)								
	Market Value (\$000)	%	1 Quarter	Year To Date	1 Year	2 Years	3 Years	4 Years	5 Years	10 Years	15 Years
<b>Total Fund</b>	<b>2,037,528</b>	<b>100.0</b>	<b>-9.77</b>	<b>-14.55</b>	<b>-8.94</b>	<b>2.24</b>	<b>2.71</b>	<b>3.67</b>	<b>4.12</b>	<b>6.36</b>	<b>5.12</b>
CPI + 3.5% <sup>2</sup>			3.57	8.02	11.92	9.26	7.54	7.05	6.85	5.90	5.68
Value Added			-13.34	-22.57	-20.86	-7.02	-4.83	-3.38	-2.73	0.46	-0.56
Total Fund Benchmark <sup>10</sup>			-10.19	-14.34	-8.89	2.67	3.32	4.16	4.81	7.32	-
Value Added			0.42	-0.21	-0.05	-0.43	-0.61	-0.49	-0.69	-0.96	-
<b>Canadian Equities<sup>3</sup></b>	<b>116,672</b>	<b>5.7</b>	<b>-13.15 (94)</b>	<b>-9.85 (84)</b>	<b>-4.91 (87)</b>	<b>12.77 (91)</b>	<b>3.22 (100)</b>	<b>2.98 (100)</b>	<b>4.38 (100)</b>	<b>7.08 (99)</b>	<b>-</b>
S&P/TSX Composite Index			-13.19 (94)	-9.87 (84)	-3.87 (85)	13.43 (84)	7.97 (75)	6.93 (64)	7.62 (55)	8.18 (87)	5.12 (89)
Value Added			0.04	0.02	-1.04	-0.66	-4.75	-3.95	-3.24	-1.10	-
<b>TD Emerald Canadian Equity Index<sup>4</sup></b>	<b>116,672</b>	<b>5.7</b>	<b>-13.15 (94)</b>	<b>-9.85 (84)</b>	<b>-3.87 (85)</b>	<b>13.44 (84)</b>	<b>7.97 (75)</b>	<b>6.93 (64)</b>	<b>7.61 (57)</b>	<b>8.16 (87)</b>	<b>5.13 (89)</b>
S&P/TSX Composite Index			-13.19 (94)	-9.87 (84)	-3.87 (85)	13.43 (84)	7.97 (75)	6.93 (64)	7.62 (55)	8.18 (87)	5.12 (89)
Value Added			0.04	0.02	0.00	0.01	0.00	0.00	-0.01	-0.02	0.01
<b>Global Equities<sup>6</sup></b>	<b>525,679</b>	<b>25.8</b>	<b>-12.87 (67)</b>	<b>-22.00 (80)</b>	<b>-13.48 (67)</b>	<b>2.55 (83)</b>	<b>2.89 (89)</b>	<b>4.11 (70)</b>	<b>5.95 (66)</b>	<b>11.07 (72)</b>	<b>4.80 (89)</b>
Global Equity Benchmark <sup>11</sup>			-12.47 (63)	-18.08 (59)	-8.94 (41)	8.46 (32)	8.67 (12)	8.46 (10)	9.70 (12)	14.37 (14)	8.69 (18)
Value Added			-0.40	-3.92	-4.54	-5.91	-5.78	-4.35	-3.75	-3.30	-3.89
<b>Walter Scott<sup>5</sup></b>	<b>365,558</b>	<b>17.9</b>	<b>-12.80 (66)</b>	<b>-21.31 (78)</b>	<b>-12.31 (61)</b>	<b>4.00 (75)</b>	<b>5.99 (48)</b>	<b>7.66 (21)</b>	<b>9.53 (15)</b>	<b>13.14 (30)</b>	<b>9.33 (13)</b>
MSCI World Index (Net) (CAD)			-13.44 (74)	-18.96 (64)	-10.81 (52)	6.28 (55)	6.50 (39)	6.31 (39)	7.52 (39)	12.12 (53)	6.55 (65)
Value Added			0.64	-2.35	-1.50	-2.28	-0.51	1.35	2.01	1.02	2.78
<b>RBC Global Focus Equity<sup>9</sup></b>	<b>80,242</b>	<b>3.9</b>	<b>-12.92 (68)</b>	<b>-23.44 (83)</b>	<b>-16.09 (79)</b>	<b>5.69 (62)</b>	<b>7.38 (25)</b>	<b>7.69 (21)</b>	<b>10.68 (7)</b>	<b>-</b>	<b>-</b>
MSCI AC World Index (Net)			-12.90 (68)	-18.63 (61)	-12.28 (61)	5.48 (63)	5.72 (53)	5.58 (51)	6.86 (52)	11.35 (66)	6.15 (75)
Value Added			-0.02	-4.81	-3.81	0.21	1.66	2.11	3.82	-	-
<b>Mirova Global Sustainable Equity<sup>9</sup></b>	<b>79,808</b>	<b>3.9</b>	<b>-12.63 (64)</b>	<b>-23.19 (83)</b>	<b>-15.01 (76)</b>	<b>3.67 (77)</b>	<b>9.31 (9)</b>	<b>10.05 (3)</b>	<b>11.15 (5)</b>	<b>-</b>	<b>-</b>
MSCI AC World Index (Net)			-12.90 (68)	-18.63 (61)	-12.28 (61)	5.48 (63)	5.72 (53)	5.58 (51)	6.86 (52)	11.35 (66)	6.15 (75)
Value Added			0.27	-4.56	-2.73	-1.81	3.59	4.47	4.29	-	-

<sup>1</sup>Parentheses contain percentile rankings. (1st percentile is the best performing). All returns are reported gross of fees.

<sup>2</sup>CPI+3.5% benchmark has been implemented since February 2022. CPI+3.6% benchmark has been implemented retrospectively since 1 November 2018. From 1 January 2017 to 31 October 2018, CPI+3.5% benchmark was used. From 1 January 2016 to 31 December 2016, CPI + 3.7% benchmark was used. From 1 January 2014 to 31 December 2016, CPI+3.75% benchmark was used. Prior to 1 January 2014, CPI+3.85% benchmark was used.

<sup>3</sup>There was no exposure to Canadian Equities from January 2012 to April 2012.

<sup>4</sup>TD Emerald Canadian Equity Index added July 2020. Returns prior to these dates are representative only.

<sup>5</sup>Returns for Sionna before May 2012, Oldfield before July 2011, Trilogy before April 2008 and Walter Scott before July 2009 are based on composite returns.

<sup>6</sup>The global equities return prior to August 2018 includes Trilogy.

<sup>7</sup>In November 2016, TD Emerald U.S. pooled and International Index funds were added. Returns prior to these dates are representative only.

<sup>8</sup>The Currency Overlay was discontinued on 20 November 2017.

<sup>9</sup>In August 2021, RBC Global Focus Equity and Mirova Sustainable Global Equity strategies were added. Returns prior to these dates are representative only.

<sup>10</sup>Total Fund Benchmark was implemented as a performance objective in February 2022. Due to licensing constraints FTSE Global Infrastructure 50/50 Index is used in place of UBS 50/50

<sup>11</sup>Global Equity Benchmark is 100% MSCI ACWI as of February 2022. Prior Benchmark was MSCI World.

<sup>12</sup>Newly added fund, quarterly returns will be reported on starting Q3 2022.

## Executive Summary

### Performance Summary<sup>1</sup>

As of 30 June 2022

	Allocation		Performance (%)									
	Market Value (\$000)	%	1 Quarter	Year To Date	1 Year	2 Years	3 Years	4 Years	5 Years	10 Years	15 Years	
<b>U.S. Equities</b>												
<b>TD Emerald Pooled U.S. Fund<sup>7</sup></b>	<b>314,726</b>	<b>15.4</b>	<b>-13.32 (61)</b>	<b>-18.22 (58)</b>	<b>-6.85 (50)</b>	<b>9.16 (52)</b>	<b>10.10 (33)</b>	<b>9.99 (31)</b>	<b>11.13 (36)</b>	-	-	
S&P 500 (CAD)			-13.35 (61)	-18.26 (58)	-6.89 (50)	9.17 (52)	10.12 (33)	10.02 (31)	11.16 (35)	15.65 (40)	9.94 (58)	
Value Added			0.03	0.04	0.04	-0.01	-0.02	-0.03	-0.03	-	-	
<b>International Equities</b>												
<b>TD Emerald International Equity Index<sup>7</sup></b>	<b>163,904</b>	<b>8.0</b>	<b>-11.62 (63)</b>	<b>-17.77 (51)</b>	<b>-14.20 (50)</b>	<b>1.62 (63)</b>	<b>0.72 (75)</b>	<b>0.67 (67)</b>	<b>2.16 (71)</b>	<b>8.01 (86)</b>	<b>2.84 (89)</b>	
MSCI EAFE (Net)			-11.71 (64)	-17.86 (52)	-14.34 (52)	1.53 (65)	0.64 (78)	0.58 (69)	2.06 (72)	7.91 (86)	2.73 (91)	
Value Added			0.09	0.09	0.14	0.09	0.08	0.09	0.10	0.10	0.11	
<b>Fixed Income</b>												
<b>TDAM Universe Bond Index</b>	<b>664,733</b>	<b>32.6</b>	<b>-3.64</b>	<b>-8.61</b>	<b>-8.29</b>	<b>-4.34</b>	<b>-0.99</b>	<b>0.74</b>	<b>0.74</b>	-	-	
<b>TDAM Universe Bond Index</b>	<b>313,346</b>	<b>15.4</b>	<b>-5.65 (34)</b>	<b>-12.22 (59)</b>	<b>-11.39 (74)</b>	<b>-7.14 (93)</b>	<b>-2.41 (99)</b>	<b>-0.07 (100)</b>	<b>0.08 (100)</b>	<b>1.63 (96)</b>	<b>3.35 (97)</b>	
FTSE Canada Universe Bond			-5.66 (37)	-12.23 (60)	-11.39 (74)	-7.02 (91)	-2.30 (96)	0.03 (95)	0.18 (98)	1.72 (92)	3.44 (95)	
Value Added			0.01	0.01	0.00	-0.12	-0.11	-0.10	-0.10	-0.09	-0.09	
<b>TDAM Active Short Term Corporate</b>	<b>354,960</b>	<b>17.4</b>	<b>-1.79</b>	<b>-5.15</b>	<b>-5.36</b>	<b>-1.63</b>	<b>0.35</b>	<b>1.47</b>	<b>1.32</b>	-	-	
FTSE Canada Short Term Corporate Bond			-1.88	-5.21	-5.39	-1.59	0.39	1.50	1.36	2.07	3.33	
Value Added			0.09	0.06	0.03	-0.04	-0.04	-0.03	-0.04	-	-	
<b>Alternatives</b>												
<b>XRE ETF (Real Estate)</b>	<b>61,992</b>	<b>3.0</b>	<b>-17.48 (100)</b>	<b>-17.86 (100)</b>	<b>-9.00 (100)</b>	<b>10.05 (100)</b>	<b>0.73 (100)</b>	<b>3.76 (100)</b>	<b>5.33 (100)</b>	-	-	
FTSE EPRA Nareit Developed			-14.52 (100)	-18.66 (100)	-9.09 (100)	5.56 (100)	-0.60 (100)	1.46 (100)	2.75 (100)	8.11 (75)	4.14 (-)	
Value Added			-2.96	0.80	0.09	4.49	1.33	2.30	2.58	-	-	
<b>BIP.UN (Infrastructure)</b>	<b>81,055</b>	<b>4.0</b>	<b>-9.28</b>	<b>-1.44</b>	<b>9.65</b>	<b>19.89</b>	<b>18.86</b>	<b>18.55</b>	<b>14.43</b>	<b>19.19</b>	-	
FTSE Global Core Infrastructure 50/50 Index			-4.29	-1.84	7.92	8.33	4.18	6.97	6.56	11.32	-	
Value Added			-4.99	0.40	1.73	11.56	14.68	11.58	7.87	7.87	-	

<sup>1</sup>Parentheses contain percentile rankings. (1st percentile is the best performing). All returns are reported gross of fees.

<sup>2</sup>CPI+3.5% benchmark has been implemented since February 2022. CPI+3.6% benchmark has been implemented retrospectively since 1 November 2018. From 1 January 2017 to 31 October 2018, CPI+3.5% benchmark was used. From 1 January 2016 to 31 December 2016, CPI + 3.7% benchmark was used. From 1 January 2014 to 31 December 2016, CPI+3.75% benchmark was used. Prior to 1 January 2014, CPI+3.85% benchmark was used.

<sup>3</sup>There was no exposure to Canadian Equities from January 2012 to April 2012.

<sup>4</sup>TD Emerald Canadian Equity Index added July 2020. Returns prior to these dates are representative only.

<sup>5</sup>Returns for Sionna before May 2012, Oldfield before July 2011, Trilogy before April 2008 and Walter Scott before July 2009 are based on composite returns.

<sup>6</sup>The global equities return prior to August 2018 includes Trilogy.

<sup>7</sup>In November 2016, TD Emerald U.S. pooled and International Index funds were added. Returns prior to these dates are representative only.

<sup>8</sup>The Currency Overlay was discontinued on 20 November 2017.

<sup>9</sup>In August 2021, RBC Global Focus Equity and Mirova Sustainable Global Equity strategies were added. Returns prior to these dates are representative only.

<sup>10</sup>Total Fund Benchmark was implemented as a performance objective in February 2022. Due to licensing constraints FTSE Global Infrastructure 50/50 Index is used in place of UBS 50/50

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<sup>12</sup>Newly added fund, quarterly returns will be reported on starting Q3 2022.

## Executive Summary

### Performance Summary<sup>1</sup>

As of 30 June 2022

	Allocation		Performance (%)								
	Market Value (\$000)	%	1 Quarter	Year To Date	1 Year	2 Years	3 Years	4 Years	5 Years	10 Years	15 Years
<b>BEP.UN (Infrastructure)<sup>12</sup></b>	<b>61,471</b>	<b>3.0</b>	-	-	-	-	-	-	-	-	-
FTSE Global Core Infrastructure 50/50 Index			-4.29	-1.84	7.92	8.33	4.18	6.97	6.56	11.32	-
Value Added			-	-	-	-	-	-	-	-	-
<b>Operating Account</b>	<b>74,871</b>	<b>3.7</b>									
<b>BAS/U.S. and CDN Cash</b>	<b>33,896</b>	<b>1.7</b>	<b>0.30</b>	<b>0.39</b>	<b>0.47</b>	<b>0.32</b>	<b>0.65</b>	<b>0.93</b>	<b>0.98</b>	<b>0.89</b>	<b>-</b>
<b>Operating Account</b>	<b>13,399</b>	<b>0.7</b>	<b>0.01</b>	<b>0.02</b>	<b>0.04</b>	<b>0.17</b>	<b>0.21</b>	<b>0.28</b>	<b>0.27</b>	<b>0.20</b>	<b>0.54</b>
<b>Currency Overlay Effect (Historical)<sup>8</sup></b>											
<b>Total Fund &amp; CO</b>	<b>2,037,528</b>	<b>100.0</b>	<b>-9.77</b>	<b>-14.55</b>	<b>-8.94</b>	<b>2.24</b>	<b>2.71</b>	<b>3.67</b>	<b>4.07</b>	<b>6.15</b>	<b>4.57</b>
<b>Total Fund ex CO</b>			<b>-9.77</b>	<b>-14.55</b>	<b>-8.94</b>	<b>2.24</b>	<b>2.71</b>	<b>3.67</b>	<b>4.12</b>	<b>6.36</b>	<b>5.12</b>
Value Added			0.00	0.00	0.00	0.00	0.00	0.00	-0.05	-0.21	-0.55

<sup>1</sup>Parentheses contain percentile rankings. (1st percentile is the best performing). All returns are reported gross of fees.

<sup>2</sup>CPI+3.5% benchmark has been implemented since February 2022. CPI+3.6% benchmark has been implemented retrospectively since 1 November 2018. From 1 January 2017 to 31 October 2018, CPI+3.5% benchmark was used. From 1 January 2016 to 31 December 2016, CPI + 3.7% benchmark was used. From 1 January 2014 to 31 December 2016, CPI+3.75% benchmark was used. Prior to 1 January 2014, CPI+3.85% benchmark was used.

<sup>3</sup>There was no exposure to Canadian Equities from January 2012 to April 2012.

<sup>4</sup>TD Emerald Canadian Equity Index added July 2020. Returns prior to these dates are representative only.

<sup>5</sup>Returns for Sionna before May 2012, Oldfield before July 2011, Trilogy before April 2008 and Walter Scott before July 2009 are based on composite returns.

<sup>6</sup>The global equities return prior to August 2018 includes Trilogy.

<sup>7</sup>In November 2016, TD Emerald U.S. pooled and International Index funds were added. Returns prior to these dates are representative only.

<sup>8</sup>The Currency Overlay was discontinued on 20 November 2017.

<sup>9</sup>In August 2021, RBC Global Focus Equity and Mirova Sustainable Global Equity strategies were added. Returns prior to these dates are representative only.

<sup>10</sup>Total Fund Benchmark was implemented as a performance objective in February 2022. Due to licensing constraints FTSE Global Infrastructure 50/50 Index is used in place of UBS 50/50

<sup>11</sup>Global Equity Benchmark is 100% MSCI ACWI as of February 2022. Prior Benchmark was MSCI World.

<sup>12</sup>Newly added fund, quarterly returns will be reported on starting Q3 2022.

## Executive Summary

### Rolling Year Performance<sup>1</sup>

As of 30 June

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
<b>Total Fund</b>	<b>-8.94</b>	<b>14.78</b>	<b>3.68</b>	<b>6.58</b>	<b>5.96</b>	<b>10.02</b>	<b>3.99</b>	<b>10.77</b>	<b>12.65</b>	<b>6.06</b>
CPI + 3.5% <sup>2</sup>	11.92	6.67	4.18	5.59	6.04	4.54	5.05	4.57	5.94	4.69
Value Added	-20.86	8.11	-0.50	0.99	-0.08	5.48	-1.06	6.20	6.71	1.37
Total Fund Benchmark <sup>10</sup>	-8.89	15.71	4.63	6.69	7.46	9.34	3.89	8.96	17.61	10.12
Value Added	-0.05	-0.93	-0.95	-0.11	-1.50	0.68	0.10	1.81	-4.96	-4.06
<b>Canadian Equities<sup>3</sup></b>	<b>-4.91 (87)</b>	<b>33.73 (65)</b>	<b>-13.53 (89)</b>	<b>2.29 (56)</b>	<b>10.15 (50)</b>	<b>16.15 (9)</b>	<b>0.62 (60)</b>	<b>-3.21 (76)</b>	<b>26.36 (80)</b>	<b>11.89 (56)</b>
S&P/TSX Composite Index	-3.87 (85)	33.85 (63)	-2.17 (30)	3.87 (40)	10.41 (46)	11.05 (65)	-0.20 (64)	-1.16 (64)	28.66 (65)	7.90 (93)
Value Added	-1.04	-0.12	-11.36	-1.58	-0.26	5.10	0.82	-2.05	-2.30	3.99
<b>TD Emerald Canadian Equity Index<sup>4</sup></b>	<b>-3.87 (85)</b>	<b>33.88 (62)</b>	<b>-2.19 (30)</b>	<b>3.86 (40)</b>	<b>10.37 (47)</b>	<b>10.99 (67)</b>	<b>-0.21 (64)</b>	<b>-1.13 (64)</b>	<b>28.57 (65)</b>	<b>7.90 (93)</b>
S&P/TSX Composite Index	-3.87 (85)	33.85 (63)	-2.17 (30)	3.87 (40)	10.41 (46)	11.05 (65)	-0.20 (64)	-1.16 (64)	28.66 (65)	7.90 (93)
Value Added	0.00	0.03	-0.02	-0.01	-0.04	-0.06	-0.01	0.03	-0.09	0.00
<b>Global Equities<sup>6</sup></b>	<b>-13.48 (67)</b>	<b>21.55 (80)</b>	<b>3.57 (55)</b>	<b>7.86 (25)</b>	<b>13.63 (36)</b>	<b>21.97 (31)</b>	<b>-0.57 (54)</b>	<b>19.29 (56)</b>	<b>22.03 (79)</b>	<b>21.27 (71)</b>
Global Equity Benchmark <sup>11</sup>	-8.94 (41)	29.18 (42)	9.09 (31)	7.86 (25)	14.77 (26)	20.20 (45)	3.48 (28)	21.25 (40)	27.75 (29)	25.13 (37)
Value Added	-4.54	-7.63	-5.52	0.00	-1.14	1.77	-4.05	-1.96	-5.72	-3.86
<b>Walter Scott<sup>5</sup></b>	<b>-12.31 (61)</b>	<b>23.36 (75)</b>	<b>10.09 (27)</b>	<b>12.80 (6)</b>	<b>17.39 (14)</b>	<b>16.08 (74)</b>	<b>7.32 (15)</b>	<b>20.67 (46)</b>	<b>20.12 (89)</b>	<b>20.67 (76)</b>
MSCI World Index (Net) (CAD)	-10.81 (52)	26.64 (60)	6.95 (40)	5.74 (41)	12.52 (47)	17.84 (63)	1.45 (40)	18.88 (59)	25.25 (54)	22.67 (58)
Value Added	-1.50	-3.28	3.14	7.06	4.87	-1.76	5.87	1.79	-5.13	-2.00
<b>RBC Global Focus Equity<sup>9</sup></b>	<b>-16.09 (79)</b>	<b>33.11 (24)</b>	<b>10.86 (24)</b>	<b>8.64 (21)</b>	<b>23.49 (5)</b>	<b>19.90 (48)</b>	<b>4.84 (22)</b>	<b>26.42 (12)</b>	-	-
MSCI AC World Index (Net)	-12.28 (61)	26.85 (59)	6.19 (45)	5.16 (45)	12.15 (51)	18.43 (58)	0.46 (48)	18.03 (65)	24.14 (64)	20.59 (76)
Value Added	-3.81	6.26	4.67	3.48	11.34	1.47	4.38	8.39	-	-
<b>Mirova Global Sustainable Equity<sup>9</sup></b>	<b>-15.01 (76)</b>	<b>26.46 (63)</b>	<b>21.54 (7)</b>	<b>12.29 (7)</b>	<b>15.68 (23)</b>	<b>19.12 (54)</b>	<b>3.23 (30)</b>	<b>19.93 (51)</b>	-	-
MSCI AC World Index (Net)	-12.28 (61)	26.85 (59)	6.19 (45)	5.16 (45)	12.15 (51)	18.43 (58)	0.46 (48)	18.03 (65)	24.14 (64)	20.59 (76)
Value Added	-2.73	-0.39	15.35	7.13	3.53	0.69	2.77	1.90	-	-

<sup>1</sup>Parentheses contain percentile rankings. (1st percentile is the best performing). All returns are reported gross of fees.

<sup>2</sup>CPI+3.5% benchmark has been implemented since February 2022. CPI+3.6% benchmark has been implemented retrospectively since 1 November 2018. From 1 January 2017 to 31 October 2018, CPI+3.5% benchmark was used. From 1 January 2016 to 31 December 2016, CPI + 3.7% benchmark was used. From 1 January 2014 to 31 December 2016, CPI+3.75% benchmark was used. Prior to 1 January 2014, CPI+3.85% benchmark was used.

<sup>3</sup>There was no exposure to Canadian Equities from January 2012 to April 2012.

<sup>4</sup>TD Emerald Canadian Equity Index added July 2020. Returns prior to these dates are representative only.

<sup>5</sup>Returns for Sionna before May 2012, Oldfield before July 2011, Trilogy before April 2008 and Walter Scott before July 2009 are based on composite returns.

<sup>6</sup>The global equities return prior to August 2018 includes Trilogy.

<sup>7</sup>In November 2016, TD Emerald U.S. pooled and International Index funds were added. Returns prior to these dates are representative only.

<sup>8</sup>The Currency Overlay was discontinued on 20 November 2017.

<sup>9</sup>In August 2021, RBC Global Focus Equity and Mirova Sustainable Global Equity strategies were added. Returns prior to these dates are representative only.

<sup>10</sup>Total Fund Benchmark was implemented as a performance objective in February 2022. Due to licensing constraints FTSE Global Infrastructure 50/50 Index is used in place of UBS 50/50

<sup>11</sup>Global Equity Benchmark is 100% MSCI ACWI as of February 2022. Prior Benchmark was MSCI World.

<sup>12</sup>Newly added fund, quarterly returns will be reported on starting Q3 2022.

## Executive Summary

### Rolling Year Performance<sup>1</sup>

As of 30 June

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
<b>U.S. Equities</b>										
<b>TD Emerald U.S. Pooled Fund<sup>7</sup></b>	<b>-6.85 (50)</b>	<b>27.92 (61)</b>	<b>12.02 (40)</b>	<b>9.66 (40)</b>	<b>15.79 (47)</b>	<b>17.80 (60)</b>	<b>8.14 (22)</b>	-	-	-
S&P 500 (CAD)	-6.89 (50)	28.01 (61)	12.05 (40)	9.69 (40)	15.85 (46)	17.90 (59)	8.18 (22)	25.91 (55)	25.81 (62)	24.80 (58)
Value Added	0.04	-0.09	-0.03	-0.03	-0.06	-0.10	-0.04	-	-	-
<b>International Equities</b>										
<b>TD Emerald International Equity Index<sup>7</sup></b>	<b>-14.20 (50)</b>	<b>20.35 (70)</b>	<b>-1.05 (57)</b>	<b>0.53 (39)</b>	<b>8.32 (58)</b>	<b>20.25 (55)</b>	<b>-6.47 (66)</b>	<b>12.46 (74)</b>	<b>24.85 (58)</b>	<b>22.93 (54)</b>
MSCI EAFE (Net)	-14.34 (52)	20.33 (70)	-1.12 (57)	0.41 (40)	8.22 (59)	20.27 (54)	-6.55 (67)	12.26 (76)	24.77 (58)	22.76 (57)
Value Added	0.14	0.02	0.07	0.12	0.10	-0.02	0.08	0.20	0.08	0.17
<b>Fixed Income</b>										
<b>TDAM Universe Bond Index</b>	<b>-8.29</b>	<b>-0.22</b>	<b>6.08</b>	<b>6.12</b>	<b>0.71</b>	<b>-2.49</b>	<b>2.10</b>	-	-	-
<b>TDAM Universe Bond Index</b>	<b>-11.39 (74)</b>	<b>-2.67 (97)</b>	<b>7.77 (75)</b>	<b>7.29 (69)</b>	<b>0.70 (84)</b>	<b>-0.10 (95)</b>	<b>5.16 (57)</b>	<b>6.27 (28)</b>	<b>5.18 (83)</b>	<b>-0.31 (94)</b>
FTSE TMX Canada Bond Universe	-11.39 (74)	-2.43 (94)	7.88 (67)	7.36 (60)	0.76 (75)	0.02 (87)	5.22 (50)	6.25 (29)	5.34 (77)	-0.17 (90)
Value Added	0.00	-0.24	-0.11	-0.07	-0.06	-0.12	-0.06	0.02	-0.16	-0.14
<b>TDAM Active Short Term Corporate</b>	<b>-5.36</b>	<b>2.24</b>	<b>4.41</b>	<b>4.93</b>	<b>0.72</b>	<b>1.48</b>	<b>2.11</b>	-	-	-
FTSE Canada Short Term Corporate Bond	-5.39	2.36	4.47	4.90	0.80	1.49	1.98	3.71	4.04	2.69
Value Added	0.03	-0.12	-0.06	0.03	-0.08	-0.01	0.13	-	-	-
<b>Alternatives</b>										
<b>XRE ETF (Real Estate)</b>	<b>-9.00 (100)</b>	<b>33.10 (1)</b>	<b>-15.60 (100)</b>	<b>13.39 (1)</b>	<b>11.85 (11)</b>	<b>0.62 (100)</b>	<b>12.40 (1)</b>	<b>2.25 (100)</b>	<b>8.46 (17)</b>	-
FTSE EPRA Nareit Developed	-9.09 (100)	22.58 (1)	-11.88 (100)	7.92 (54)	8.08 (62)	1.14 (100)	17.10 (1)	17.69 (1)	15.49 (1)	18.25 (9)
Value Added	0.09	10.52	-3.72	5.47	3.77	-0.52	-4.70	-15.44	-7.03	-
<b>BIP.UN (Infrastructure)</b>	<b>9.65</b>	<b>31.09</b>	<b>16.81</b>	<b>17.63</b>	<b>-0.66</b>	<b>42.17</b>	<b>12.33</b>	<b>29.29</b>	<b>21.71</b>	<b>17.37</b>
FTSE Global Core Infrastructure 50/50 Index	7.92	8.73	-3.63	15.80	4.93	10.41	14.51	14.21	24.01	18.79
Value Added	1.73	22.36	20.44	1.83	-5.59	31.76	-2.18	15.08	-2.30	-1.42
<b>BEP.UN (Infrastructure)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
FTSE Global Core Infrastructure 50/50 Index	7.92	8.73	-3.63	15.80	4.93	10.41	14.51	14.21	24.01	18.79
Value Added	-	-	-	-	-	-	-	-	-	-

<sup>1</sup>Parentheses contain percentile rankings. (1st percentile is the best performing). All returns are reported gross of fees.

<sup>2</sup>CPI+3.5% benchmark has been implemented since February 2022. CPI+3.6% benchmark has been implemented retrospectively since 1 November 2018. From 1 January 2017 to 31 October 2018, CPI+3.5% benchmark was used. From 1 January 2016 to 31 December 2016, CPI + 3.7% benchmark was used. From 1 January 2014 to 31 December 2016, CPI+3.75% benchmark was used. Prior to 1 January 2014, CPI+3.85% benchmark was used.

<sup>3</sup>There was no exposure to Canadian Equities from January 2012 to April 2012.

<sup>4</sup>TD Emerald Canadian Equity Index added July 2020. Returns prior to these dates are representative only.

<sup>5</sup>Returns for Sionna before May 2012, Oldfield before July 2011, Trilogy before April 2008 and Walter Scott before July 2009 are based on composite returns.

<sup>6</sup>The global equities return prior to August 2018 includes Trilogy.

<sup>7</sup>In November 2016, TD Emerald U.S. pooled and International Index funds were added. Returns prior to these dates are representative only.

<sup>8</sup>The Currency Overlay was discontinued on 20 November 2017.

<sup>9</sup>In August 2021, RBC Global Focus Equity and Mirova Sustainable Global Equity strategies were added. Returns prior to these dates are representative only.

<sup>10</sup>Total Fund Benchmark was implemented as a performance objective in February 2022. Due to licensing constraints FTSE Global Infrastructure 50/50 Index is used in place of UBS 50/50

<sup>11</sup>Global Equity Benchmark is 100% MSCI ACWI as of February 2022. Prior Benchmark was MSCI World.

<sup>12</sup>Newly added fund, quarterly returns will be reported on starting Q3 2022.

## Executive Summary

### Performance Summary (Net of Fees)

As of 30 June 2022

	Performance (%)								
	1 Quarter	Year To Date	1 Year	2 Years	3 Years	4 Years	5 Years	10 Years	15 Years
<b>Total Fund</b>	<b>-9.81</b>	<b>-14.63</b>	<b>-9.16</b>	<b>2.00</b>	<b>2.49</b>	<b>3.43</b>	<b>3.87</b>	<b>6.09</b>	<b>4.84</b>
CPI + 3.5% <sup>2</sup>	3.57	8.02	11.92	9.26	7.54	7.05	6.85	5.90	5.68
Value Added	-13.38	-22.65	-21.08	-7.26	-5.05	-3.62	-2.98	0.19	-0.84
Total Fund Benchmark <sup>10</sup>	-10.19	-14.34	-8.89	2.67	3.32	4.16	4.81	7.32	-
Value Added	0.38	-0.29	-0.27	-0.67	-0.83	-0.73	-0.94	-1.23	-
<b>Canadian Equities<sup>3</sup></b>	<b>-13.15</b>	<b>-9.86</b>	<b>-4.97</b>	<b>12.69</b>	<b>3.17</b>	<b>2.95</b>	<b>4.35</b>	<b>7.06</b>	<b>-</b>
S&P/TSX Composite Index	-13.19	-9.87	-3.87	13.43	7.97	6.93	7.62	8.18	5.12
Value Added	0.04	0.01	-1.10	-0.74	-4.80	-3.98	-3.27	-1.12	-
<b>TD Emerald Canadian Equity Index<sup>4</sup></b>	<b>-13.15</b>	<b>-9.86</b>	<b>-3.90</b>	<b>13.42</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
S&P/TSX Composite Index	-13.19	-9.87	-3.87	13.43	7.97	6.93	7.62	8.18	5.12
Value Added	0.04	0.01	-0.03	-0.01	-	-	-	-	-
<b>Global Equities<sup>6</sup></b>	<b>-12.99</b>	<b>-22.22</b>	<b>-13.95</b>	<b>1.71</b>	<b>2.15</b>	<b>3.37</b>	<b>5.23</b>	<b>10.35</b>	<b>4.10</b>
Global Equity Benchmark <sup>11</sup>	-12.47	-18.08	-8.94	8.46	8.67	8.46	9.70	14.37	8.69
Value Added	-0.52	-4.14	-5.01	-6.75	-6.52	-5.09	-4.47	-4.02	-4.59
<b>Walter Scott<sup>5</sup></b>	<b>-12.92</b>	<b>-21.53</b>	<b>-12.78</b>	<b>3.41</b>	<b>5.37</b>	<b>7.00</b>	<b>8.85</b>	<b>12.37</b>	<b>8.55</b>
MSCI World Index (Net) (CAD)	-13.44	-18.96	-10.81	6.28	6.50	6.31	7.52	12.12	6.55
Value Added	0.52	-2.57	-1.97	-2.87	-1.13	0.69	1.33	0.25	2.00
<b>RBC Global Focus Equity<sup>8</sup></b>	<b>-13.04</b>	<b>-23.65</b>	<b>-16.54</b>	<b>5.12</b>	<b>6.81</b>	<b>7.12</b>	<b>10.10</b>	<b>-</b>	<b>-</b>
MSCI AC World Index (Net)	-12.90	-18.63	-12.28	5.48	5.72	5.58	6.86	11.35	6.15
Value Added	-0.14	-5.02	-4.26	-0.36	1.09	1.54	3.24	-	-

<sup>1</sup>Parentheses contain percentile rankings. (1st percentile is the best performing). All returns are reported gross of fees.

<sup>2</sup>CPI+3.5% benchmark has been implemented since February 2022. CPI+3.6% benchmark has been implemented retrospectively since 1 November 2018. From 1 January 2017 to 31 October 2018, CPI+3.5% benchmark was used. From 1 January 2016 to 31 December 2016, CPI + 3.7% benchmark was used. From 1 January 2014 to 31 December 2016, CPI+3.75% benchmark was used. Prior to 1 January 2014, CPI+3.85% benchmark was used.

<sup>3</sup>There was no exposure to Canadian Equities from January 2012 to April 2012.

<sup>4</sup>TD Emerald Canadian Equity Index added July 2020. Returns prior to these dates are representative only.

<sup>5</sup>Returns for Sionna before May 2012, Oldfield before July 2011, Trilogy before April 2008 and Walter Scott before July 2009 are based on composite returns.

<sup>6</sup>The global equities return prior to August 2018 includes Trilogy.

<sup>7</sup>In November 2016, TD Emerald U.S. pooled and International Index funds were added. Returns prior to these dates are representative only.

<sup>8</sup>The Currency Overlay was discontinued on 20 November 2017.

<sup>9</sup>In August 2021, RBC Global Focus Equity and Mirova Sustainable Global Equity strategies were added. Returns prior to these dates are representative only.

<sup>10</sup>Total Fund Benchmark was implemented as a performance objective in February 2022. Due to licensing constraints FTSE Global Infrastructure 50/50 Index is used in place of UBS 50/50

<sup>11</sup>Global Equity Benchmark is 100% MSCI ACWI as of February 2022. Prior Benchmark was MSCI World.

<sup>12</sup>Newly added fund, quarterly returns will be reported on starting Q3 2022.

## Executive Summary

### Performance Summary (Net of Fees)

As of 30 June 2022

	Performance (%)								
	1 Quarter	Year To Date	1 Year	2 Years	3 Years	4 Years	5 Years	10 Years	15 Years
<b>Mirova Global Sustainable Equity<sup>8</sup></b>	<b>-12.77</b>	<b>-23.43</b>	<b>-15.55</b>	<b>2.99</b>	<b>8.59</b>	<b>9.31</b>	<b>10.40</b>	-	-
MSCI AC World Index (Net)	-12.90	-18.63	-12.28	5.48	5.72	5.58	6.86	11.35	6.15
Value Added	0.13	-4.80	-3.27	-2.49	2.87	3.73	3.54	-	-
<b>U.S. Equities</b>									
<b>TD Emerald Pooled U.S. Fund<sup>7</sup></b>	<b>-13.33</b>	<b>-18.23</b>	<b>-6.87</b>	<b>9.13</b>	<b>10.07</b>	<b>9.96</b>	<b>11.10</b>	-	-
S&P 500 (CAD)	-13.35	-18.26	-6.89	9.17	10.12	10.02	11.16	15.65	9.94
Value Added	0.02	0.03	0.02	-0.04	-0.05	-0.06	-0.06	-	-
<b>International Equities</b>									
<b>TD Emerald International Equity Index<sup>7</sup></b>	<b>-11.62</b>	<b>-17.78</b>	<b>-14.22</b>	<b>1.59</b>	<b>0.70</b>	<b>0.65</b>	<b>2.13</b>	<b>7.97</b>	<b>2.81</b>
MSCI EAFE (Net)	-11.71	-17.86	-14.34	1.53	0.64	0.58	2.06	7.91	2.73
Value Added	0.09	0.08	0.12	0.06	0.06	0.07	0.07	0.06	0.08
<b>Fixed Income</b>									
<b>TDAM Universe Bond Index</b>	<b>-3.65</b>	<b>-8.64</b>	<b>-8.35</b>	<b>-4.38</b>	<b>-1.01</b>	<b>0.72</b>	<b>0.71</b>	-	-
<b>TDAM Universe Bond Index</b>	<b>-5.66</b>	<b>-12.23</b>	<b>-11.42</b>	<b>-7.16</b>	<b>-2.43</b>	<b>-0.09</b>	<b>0.05</b>	<b>1.59</b>	<b>3.31</b>
FTSE Canada Universe Bond	-5.66	-12.23	-11.39	-7.02	-2.30	0.03	0.18	1.72	3.44
Value Added	0.00	0.00	-0.03	-0.14	-0.13	-0.12	-0.13	-0.13	-0.13
<b>TDAM Active Short Term Corporate</b>	<b>-1.81</b>	<b>-5.20</b>	<b>-5.45</b>	<b>-1.72</b>	<b>0.25</b>	<b>1.38</b>	<b>1.22</b>	-	-
FTSE Canada Short Term Corporate Bond	-1.88	-5.21	-5.39	-1.59	0.39	1.50	1.36	2.07	3.33
Value Added	0.07	0.01	-0.06	-0.13	-0.14	-0.12	-0.14	-	-

<sup>1</sup>Parentheses contain percentile rankings. (1st percentile is the best performing). All returns are reported gross of fees.

<sup>2</sup>CPI+3.5% benchmark has been implemented since February 2022. CPI+3.6% benchmark has been implemented retrospectively since 1 November 2018. From 1 January 2017 to 31 October 2018, CPI+3.5% benchmark was used. From 1 January 2016 to 31 December 2016, CPI + 3.7% benchmark was used. From 1 January 2014 to 31 December 2016, CPI+3.75% benchmark was used. Prior to 1 January 2014, CPI+3.85% benchmark was used.

<sup>3</sup>There was no exposure to Canadian Equities from January 2012 to April 2012.

<sup>4</sup>TD Emerald Canadian Equity Index added July 2020. Returns prior to these dates are representative only.

<sup>5</sup>Returns for Sionna before May 2012, Oldfield before July 2011, Trilogy before April 2008 and Walter Scott before July 2009 are based on composite returns.

<sup>6</sup>The global equities return prior to August 2018 includes Trilogy.

<sup>7</sup>In November 2016, TD Emerald U.S. pooled and International Index funds were added. Returns prior to these dates are representative only.

<sup>8</sup>The Currency Overlay was discontinued on 20 November 2017.

<sup>9</sup>In August 2021, RBC Global Focus Equity and Mirova Sustainable Global Equity strategies were added. Returns prior to these dates are representative only.

<sup>10</sup>Total Fund Benchmark was implemented as a performance objective in February 2022. Due to licensing constraints FTSE Global Infrastructure 50/50 Index is used in place of UBS 50/50

<sup>11</sup>Global Equity Benchmark is 100% MSCI ACWI as of February 2022. Prior Benchmark was MSCI World.

<sup>12</sup>Newly added fund, quarterly returns will be reported on starting Q3 2022.

## Executive Summary

### Rolling Year Performance (Net of Fees)

As of 30 June 2022

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
<b>Total Fund</b>	<b>-9.16</b>	<b>14.54</b>	<b>3.48</b>	<b>6.29</b>	<b>5.65</b>	<b>9.68</b>	<b>3.72</b>	<b>10.47</b>	<b>12.34</b>	<b>5.76</b>
CPI + 3.5% <sup>2</sup>	11.92	6.67	4.18	5.59	6.04	4.54	5.05	4.57	5.94	4.69
Value Added	-21.08	7.87	-0.70	0.70	-0.39	5.14	-1.33	5.90	6.40	1.07
Total Fund Benchmark <sup>10</sup>	-8.89	15.71	4.63	6.69	7.46	9.34	3.89	8.96	17.61	10.12
Value Added	-0.27	-1.17	-1.15	-0.40	-1.81	0.34	-0.17	1.51	-5.27	-4.36
<b>Canadian Equities<sup>3</sup></b>										
<b>TD Emerald Canadian Equity Index<sup>4</sup></b>	<b>-3.87</b>	<b>33.88</b>	<b>-2.19</b>	<b>3.86</b>	<b>10.37</b>	<b>10.99</b>	<b>-0.21</b>	<b>-1.13</b>	<b>28.57</b>	<b>7.90</b>
S&P/TSX Composite Index	-3.87	33.85	-2.17	3.87	10.41	11.05	-0.20	-1.16	28.66	7.90
Value Added	0.00	0.03	-0.02	-0.01	-0.04	-0.06	-0.01	0.03	-0.09	0.00
<b>Global Equities<sup>6</sup></b>										
<b>Global Equity Benchmark</b>	<b>-13.95</b>	<b>20.21</b>	<b>3.03</b>	<b>7.12</b>	<b>13.00</b>	<b>21.17</b>	<b>-1.09</b>	<b>18.57</b>	<b>21.21</b>	<b>20.46</b>
Global Equity Benchmark	-8.94	29.18	9.09	7.86	14.77	20.20	3.48	21.25	27.75	25.13
Value Added	-5.01	-8.97	-6.06	-0.74	-1.77	0.97	-4.57	-2.68	-6.54	-4.67
<b>Walter Scott<sup>5</sup></b>										
<b>MSCI World Index (Net) (CAD)</b>	<b>-12.78</b>	<b>22.62</b>	<b>9.39</b>	<b>12.06</b>	<b>16.58</b>	<b>15.26</b>	<b>6.54</b>	<b>19.78</b>	<b>19.22</b>	<b>19.77</b>
MSCI World Index (Net) (CAD)	-10.81	26.64	6.95	5.74	12.52	17.84	1.45	18.88	25.25	22.67
Value Added	-1.97	-4.02	2.44	6.32	4.06	-2.58	5.09	0.90	-6.03	-2.90
<b>RBC Global Focus Equity<sup>8</sup></b>										
<b>MSCI AC World Index (Net)</b>	<b>-16.54</b>	<b>32.42</b>	<b>10.27</b>	<b>8.06</b>	<b>22.85</b>	<b>19.27</b>	<b>4.29</b>	<b>25.76</b>	<b>-</b>	<b>-</b>
MSCI AC World Index (Net)	-12.28	26.85	6.19	5.16	12.15	18.43	0.46	18.03	24.14	20.59
Value Added	-4.26	5.57	4.08	2.90	10.70	0.84	3.83	7.73	-	-
<b>Mirova Global Sustainable Equity<sup>8</sup></b>										
<b>MSCI AC World Index (Net)</b>	<b>-15.55</b>	<b>25.60</b>	<b>20.71</b>	<b>11.52</b>	<b>14.88</b>	<b>18.31</b>	<b>2.51</b>	<b>19.11</b>	<b>-</b>	<b>-</b>
MSCI AC World Index (Net)	-12.28	26.85	6.19	5.16	12.15	18.43	0.46	18.03	24.14	20.59
Value Added	-3.27	-1.25	14.52	6.36	2.73	-0.12	2.05	1.08	-	-

<sup>1</sup>Parentheses contain percentile rankings. (1st percentile is the best performing). All returns are reported gross of fees.

<sup>2</sup>CPI+3.5% benchmark has been implemented since February 2022. CPI+3.6% benchmark has been implemented retrospectively since 1 November 2018. From 1 January 2017 to 31 October 2018, CPI+3.5% benchmark was used. From 1 January 2016 to 31 December 2016, CPI + 3.7% benchmark was used. From 1 January 2014 to 31 December 2016, CPI+3.75% benchmark was used. Prior to 1 January 2014, CPI+3.85% benchmark was used.

<sup>3</sup>There was no exposure to Canadian Equities from January 2012 to April 2012.

<sup>4</sup>TD Emerald Canadian Equity Index added July 2020. Returns prior to these dates are representative only.

<sup>5</sup>Returns for Sionna before May 2012, Oldfield before July 2011, Trilogy before April 2008 and Walter Scott before July 2009 are based on composite returns.

<sup>6</sup>The global equities return prior to August 2018 includes Trilogy.

<sup>7</sup>In November 2016, TD Emerald U.S. pooled and International Index funds were added. Returns prior to these dates are representative only.

<sup>8</sup>The Currency Overlay was discontinued on 20 November 2017.

<sup>9</sup>In August 2021, RBC Global Focus Equity and Mirova Sustainable Global Equity strategies were added. Returns prior to these dates are representative only.

<sup>10</sup>Total Fund Benchmark was implemented as a performance objective in February 2022. Due to licensing constraints FTSE Global Infrastructure 50/50 Index is used in place of UBS 50/50

<sup>11</sup>Global Equity Benchmark is 100% MSCI ACWI as of February 2022. Prior Benchmark was MSCI World.

<sup>12</sup>Newly added fund, quarterly returns will be reported on starting Q3 2022.

## Executive Summary

### Rolling Year Performance (Net of Fees)

As of 30 June 2022

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
<b>U.S. Equities</b>										
<b>TD Emerald Pooled U.S. Fund<sup>7</sup></b>	<b>-6.87</b>	<b>27.88</b>	<b>11.98</b>	<b>9.63</b>	<b>15.75</b>	<b>17.76</b>	<b>8.10</b>	-	-	-
S&P 500 (CAD)	-6.89	28.01	12.05	9.69	15.85	17.90	8.18	25.91	25.81	24.80
Value Added	0.02	-0.13	-0.07	-0.06	-0.10	-0.14	-0.08	-	-	-
<b>International Equities</b>										
<b>TD Emerald International Equity Index<sup>7</sup></b>	<b>-14.22</b>	<b>20.32</b>	<b>-1.07</b>	<b>0.51</b>	<b>8.28</b>	<b>20.21</b>	<b>-6.50</b>	<b>12.42</b>	<b>24.81</b>	<b>22.89</b>
MSCI EAFE (Net)	-14.34	20.33	-1.12	0.41	8.22	20.27	-6.55	12.26	24.77	22.76
Value Added	0.12	-0.01	0.05	0.10	0.06	-0.06	0.05	0.16	0.04	0.13
<b>Fixed Income</b>										
<b>TDAM Universe Bond Index</b>	<b>-8.29</b>	<b>-0.22</b>	<b>6.08</b>	<b>6.12</b>	<b>0.71</b>	<b>-2.49</b>	<b>2.10</b>	-	-	-
<b>TDAM Universe Bond Index</b>	<b>-11.42</b>	<b>-2.68</b>	<b>7.74</b>	<b>7.27</b>	<b>0.62</b>	<b>-0.15</b>	<b>5.13</b>	<b>6.24</b>	<b>5.14</b>	<b>-0.35</b>
FTSE Canada Universe Bond Index - C\$	-11.39	-2.43	7.88	7.36	0.76	0.02	5.21	6.25	5.34	-0.17
Value Added	-0.03	-0.25	-0.14	-0.09	-0.14	-0.17	-0.08	-0.01	-0.20	-0.18
<b>TDAM Active Short Term Corporate</b>										
<b>TDAM Active Short Term Corporate</b>	<b>-5.45</b>	<b>2.15</b>	<b>4.31</b>	<b>4.84</b>	<b>0.62</b>	<b>1.38</b>	<b>2.00</b>	-	-	-
FTSE Canada Short Term Corporate Bond	-5.39	2.36	4.47	4.90	0.80	1.49	1.98	3.71	4.04	2.69
Value Added	-0.06	-0.21	-0.16	-0.06	-0.18	-0.11	0.02	-	-	-

<sup>1</sup>Parentheses contain percentile rankings. (1st percentile is the best performing). All returns are reported gross of fees.

<sup>2</sup>CPI+3.5% benchmark has been implemented since February 2022. CPI+3.6% benchmark has been implemented retrospectively since 1 November 2018. From 1 January 2017 to 31 October 2018, CPI+3.5% benchmark was used. From 1 January 2016 to 31 December 2016, CPI + 3.7% benchmark was used. From 1 January 2014 to 31 December 2016, CPI+3.75% benchmark was used. Prior to 1 January 2014, CPI+3.85% benchmark was used.

<sup>3</sup>There was no exposure to Canadian Equities from January 2012 to April 2012.

<sup>4</sup>TD Emerald Canadian Equity Index added July 2020. Returns prior to these dates are representative only.

<sup>5</sup>Returns for Sionna before May 2012, Oldfield before July 2011, Trilogy before April 2008 and Walter Scott before July 2009 are based on composite returns.

<sup>6</sup>The global equities return prior to August 2018 includes Trilogy.

<sup>7</sup>In November 2016, TD Emerald U.S. pooled and International Index funds were added. Returns prior to these dates are representative only.

<sup>8</sup>The Currency Overlay was discontinued on 20 November 2017.

<sup>9</sup>In August 2021, RBC Global Focus Equity and Mirova Sustainable Global Equity strategies were added. Returns prior to these dates are representative only.

<sup>10</sup>Total Fund Benchmark was implemented as a performance objective in February 2022. Due to licensing constraints FTSE Global Infrastructure 50/50 Index is used in place of UBS 50/50

<sup>11</sup>Global Equity Benchmark is 100% MSCI ACWI as of February 2022. Prior Benchmark was MSCI World.

<sup>12</sup>Newly added fund, quarterly returns will be reported on starting Q3 2022.

## **Green Shield Canada – Implementation Project**

*New Provider for Extended Health and Dental Benefits effective January 1, 2023*

### **Background**

The provider market for the Long-Term Disability (LTD), Extended Health, and Dental (EHD) benefits was reviewed through a Request for Proposal (RFP) process that commenced June 2021. In October 2022, the Pension & Benefits Committee approved engaging Sun Life Financial to insure the LTD benefit effective May 1, 2022, and Green Shield Canada (GSC) to administer the EHD benefits effective January 1, 2023 (thereby cancelling the LTD and EHD contracts with Canada Life).

The implementation of Sun Life Financial was successful effective May 1, 2022 with the first LTD claims being submitted in late August/early September with a commencement date in late October/early November due to the corresponding “elimination period”. Human Resources (HR) will continue to work with Canada Life to ensure the ongoing successful management of open LTD claims incurred between May 1, 2008 and April 30, 2022; similarly, Manulife Financial with respect to open LTD claims incurred prior to May 1, 2008.

HR is currently working with GSC to support the implementation of their services for the EHD benefits effective January 1, 2023 as well as the termination of Canada Life’s services effective December 31, 2022. Eligible EHD expenses incurred on or before December 31, 2022 will need to be received by Canada Life by February 28, 2023 to enable claims processing under the Canada Life contract. Unlike the LTD benefit, following receipt of our final ASO billing from Canada Life in the first quarter of 2023, only one EHD provider will be in place.

The purpose of this update is to provide information to support the GSC implementation, including details on aspects that differ from current administrative arrangements and to seek direction with regards to any options that may exist. Where decisions are required, GSC requires confirmation by late October/early November in order to prepare for the January 1, 2023 implementation of their services.

### **GSC Claims Adjudication – Transition Analysis**

As required through the RFP process, GSC will match the existing EHD benefits plan design in terms of maximums and coinsurance levels; however, every benefits provider has differences in terms of administration (i.e. reasonable and customary charges, technology capabilities, and other policies/practices) that apply to the adjudication decisions. To identify these differences, GSC conducted an initial transition analysis by reprocessing claims processed by Canada Life for the July 2021 to June 2022 period within their claims adjudication system to identify any differences in outcome. A second transition analysis will be performed in November 2022 with “top up” claims data to identify additional issues, if any.

**Pension & Benefits Committee**  
**September 16, 2022**

The result of GSC’s initial transition analysis demonstrates that there are a few items which require awareness and understanding and/or decisions by the Pension & Benefits Committee to move forward, as follows:

<b>Initial Transition Analysis Items Identified</b>	
<i>Prescription Drugs</i>	<i>Action</i>
<p><b>1. Prior Authorization</b></p> <p>Certain drugs have the potential to be used inappropriately, either through excessive use or for unapproved medical conditions. GSC establishes certain medical criteria for these drugs which must be met before approval for coverage is granted. If a member is prescribed a drug that requires prior authorization, the pharmacy will inform them. The pharmacy will be able to provide the form for the member or the member is able to retrieve this from GSC. GSC’s Prescription Drug Special Authorization Request Form must be completed by the treating physician and then returned for assessment.</p> <p>GSC’s initial analysis indicates that Canada Life provided payment to 995 members for prescriptions in the amount of \$1.9M that would require prior authorization.</p>	<p><b>Decision Required</b></p> <p>Option 1 (Recommended): All participants with previously paid prior authorization drugs will be “grandparented” to ensure no interruption of treatment</p> <p>Option 2: Allow a one-time exception and GSC’s approval required for any subsequent claims</p> <p>Option 3: GSC’s approval required for all prescriptions in this category to enable reimbursement on or after January 1, 2023 (will not be “grandparented”)</p>
<p><b>2. Oxycodone</b></p> <p>Plan member safety is of utmost importance to GSC. With opioid misuse and abuse expanding across Canada, GSC carried out a review of their policies. To reflect coverage provided by most provincial drug plans, GSC decided to eliminate coverage for non-abuse-deterrent formulations (non-ADF) of opioid drugs that are prone to misuse and diversion. Effective July 1, 2017, GSC removed generic versions of oxycodone CR from its list of reimbursed drugs and only the long-acting abuse-deterrent form (ADF) of oxycodone, known as OxyNEO® is eligible for reimbursement.</p> <p>GSC’s initial analysis indicates that Canada Life provided payment to one member for Oxycodone in the amount of approximately \$700.</p>	<p><b>Decision Required</b></p> <p>Option 1 (Recommended): GSC to send a letter any with a previously paid claim for Oxycodone advising that should they have a need for ongoing pain treatment with a long-acting formulation of oxycodone, they need to switch to OxyNEO®</p> <p>Option 2: Allow a one-time exception to allow one last claim to be paid and future claims would be ineligible (exceptions loaded into GSC’s system at the participant level)</p> <p>Option 3: Allow an ongoing exception to continue reimbursement for this medication (exceptions loaded into GSC’s system at the participant level)</p>

<p><b>3. Over the Counter (OTC) Drugs</b></p> <p>OTC drugs are not eligible for reimbursement under the current extended health benefit's plan design; however, Canada Life provided reimbursement to 70 participants in the amount of approximately \$8,500.</p>	<p><b>Decision Required</b></p> <p>Option 1 (Recommended): Allow a one-time exception where the member can receive reimbursement for one more claim. Going forward, not an eligible expense. GSC to mail a communication to be members to inform them</p> <p>Option 2: Allow an ongoing exception to continue reimbursement for those members identified in the transition analysis</p> <p>Option 3: Do not allow an exception. GSC to send a letter to the member to inform them that OTC drugs are not covered under the benefit plan design</p>
<p><b>4. Natural Health Products (NHPs)</b></p> <p>NHPs are not eligible for reimbursement under the current extended health benefit's plan design; however, Canada Life provided reimbursement to 2 participants in the amount of approximately \$30.</p>	<p><b>Decision Required</b></p> <p>Option 1 (Recommended): Allow a one-time exception where the member can receive reimbursement for one more claim. Going forward, not an eligible expense. GSC to mail a communication to be members to inform them</p> <p>Option 2: Allow an ongoing exception to continue reimbursement for those members identified in the transition analysis</p> <p>Option 3: Do not allow an exception. GSC to send a letter to the member to inform them that NHPs are not covered under the benefit plan design</p>
<p><b>5. Finasteride (Proscar)</b></p> <p>This drug is used to treat symptoms of benign prostatic hyperplasia (BPH) in men with an enlarged prostate. This medication is only eligible for males over the age of 50 or males that are diagnosed with BPH. Canada Life provided reimbursement to 8 members who are under the age of 50 and/or are not male in the amount of approximately \$350.</p>	<p><b>Decision Required</b></p> <p>Recommendation is to send a letter to the members identified in the transition analysis to request proof from the physician that indicates that the medication is being used for BPH. In these cases, GSC will provide reimbursement on an ongoing basis; however, if the member does not have BPH, the following options exist:</p>

	<p>Option 1 (Recommended): Allow a one-time exception for this specific DIN for the specific members outlined in the analysis. GSC to mail letter to member to advise of the one-time exception.</p> <p>Option 2: Allow an ongoing exception for this specific DIN for the specific members outlined in the analysis.</p> <p>Option 3: Do not allow an exception. GSC to send letter to member advising this medication is no longer covered by the extended health benefit.</p>
<p><b>6. Flonase (and its generic equivalent)</b></p> <p>There are two different versions of this product; one for children ages 4-17 (requires prescription) and one for adults 18 or older (does not require prescription/OTC drug).</p> <p>Canada Life provided reimbursement to 69 adult participants in the amount of approximately \$6,400.</p>	<p><b>Decision required</b></p> <p>Option 1 (Recommended): Allow a one-time exception where the member can receive reimbursement for one more claim. GSC to mail letter to member to advise of the one-time exception.</p> <p>Option 2: Allow an ongoing exception for this specific DIN for the specific members outlined in the analysis.</p> <p>Option 3: Do not allow an exception. GSC to send letter to member advising this medication is no longer covered by the extended health benefit.</p>
<p><b>7. Gardasil</b></p> <p>As per Health Canada guidelines, Gardasil is eligible for participants between age 9 and 45.</p> <p>Canada Life provided reimbursement to 50 participants outside of this age parameter in the amount of approximately \$14,000.</p>	<p><b>Decision Required</b></p> <p>Recommendation is to allow these specific members to continue coverage for their remaining doses (maximum of 3 doses). GSC will proactively apply a participant exception to allow continuation of coverage. New claimants must fall within the Health Canada guideline in order to be eligible for reimbursement.</p>
<p><b>8. Compounds</b></p> <p>GSC Policy: Compounds that are not available commercially that must be prepared by a pharmacist (could be oral, topical, or injectable). Compound mixtures have not undergone the same level of safety and efficacy trials and testing as an approved drug with a DIN. GSC developed its compound policy</p>	<p><b>None at this time</b> – awaiting further information from GSC (including the Compound Policy fact sheet). Update to be provided at the October 7, 2022 meeting.</p>

<p>in 1996. Its purpose is to ensure that the drug plan supports legitimate, efficacious products compounded in a pharmacy setting.</p> <p>GSC has identified some ingredients that appear to be part of a compound based on the description from the claims history files; however, GSC cannot accurately confirm eligibility since they do not have all of the ingredients.</p> <p>GSC's initial analysis indicates that Canada Life provided payment to 339 members for prescriptions in the amount of \$63,000 that would require review. Prior authorization does not apply to compounds; however, pharmacists may choose to call in to verify compound eligibility prior to dispensing (in order to be eligible, it must follow GSC's compound policy).</p>	
<p><b>9. Viscosupplementation</b></p> <p>This is therapeutic treatment involving intra-articular injections of hyaluronic acid and related compounds. The procedure is used for the treatment of osteoarthritis to restore the viscoelasticity of synovial fluid, decrease pain, improve mobility and restore the natural protective functions of hyaluronan in the joint. Treatment last 6-9 months and requires needs to be repeated frequently. It is not a permanent cure but provides temporary relief; prescribed as a trial as a preferred alternative to surgery. Cost amounts to approximately \$500 per treatment (consists of 1-3 injections, depending on the brand).</p> <p>Health Canada considers these to be medical devices/procedures and as such, there is no DIN assigned to these injections. GSC categorizes this benefit as medical coverage; however, Canada Life processed these claims under the prescription drug benefit. GSC will provide reimbursement in accordance with Health Canada's categorization of the expenses (i.e. not a prescription drug).</p> <p>GSC's initial analysis indicates that Canada Life provided payment to 48 members for prescriptions in the amount of \$28,000 that would require prior authorization.</p>	<p><b>None required – information only</b></p>

<p><b>10. Provincially Covered Medication (Herceptin and Keytruda)</b></p> <p>Both of these medications are covered in full by Cancer Care Ontario and therefore ineligible for reimbursement with GSC. If not being funded by the province, it's likely being used for an indication that's off label.</p> <p>Canada Life has provided reimbursement for one member to receive Herceptin (16 claims) on an exception basis and one member to receive Keytruda (2 claims) on an exception basis. On a combined basis, the amount reimbursed amounts to approximately \$71,000.</p>	<p><b>None at this time</b> – awaiting further information from GSC and Canada Life. Update to be provided at the October 7, 2022 meeting.</p>
<p><b>11. Migraine Policy</b></p> <p>GSC applies limitations on migraine medications to ensure that plan members do not exceed the recommended dosing and duration of use guidelines for migraine therapy:</p> <ul style="list-style-type: none"> <li>• Oral triptans: 36 tablets every 90 days</li> <li>• Overall yearly maximum of \$2,800 based on first paid claim (applies to all migraine therapy products including the oral triptans)</li> </ul> <p>Once a plan member's claims are close to reaching the maximum amount allowed, a letter will automatically be sent by GSC to the member explaining the policy and there may be interruption in coverage for migraine medication if the maximum is exceeded. The letter will also advise that if additional medication to treat the condition is required, supporting documentation from their physician can be submitted.</p> <p>The initial transition analysis indicates that there are 6 members who will be affected by this policy through the transition. GSC will issue a letter as they approach the maximum.</p>	<p><b>None required – information only</b></p>

<p><b>12. Narcotic Policy</b></p> <p>This feature places limits on the narcotic group of drugs which includes OxyContin. The maximum amount is a “morphine equivalent” threshold which refers to the overall opioid dose. This maximum (\$1500 in 90 days at present) is based on prescribing guidelines. Once a member reaches the maximum threshold, a letter is sent to them automatically, requesting that they submit to GSC written documentation from their physician to continue to receive coverage for narcotic pain medication.</p> <p>The initial transition analysis indicates that there are no members who will be affected by this policy through the transition.</p>	<p><b>None required – information only</b></p>
<p><i>Reasonable &amp; Customary (R&amp;C) Charges</i></p>	<p><i>Action</i></p>
<p>GSC independently determines reasonable reimbursement levels for all covered health services and major medical equipment based on their annual review of rendered amounts, manufacturers’ pricing, and provincial and association pricing. GSC reimburses the lesser of either the submitted or the allowed unit cost per service or device.</p> <p>The initial transition analysis demonstrates that Canada Life’s R&amp;C limits differ from GSC’s which is expected since each provider maintains independently; however, specific details are not yet available.</p>	<p><b>None at this time</b> – awaiting further information from GSC. Update to be provided at the October 7, 2022 meeting.</p>
<p><i>Dental Services</i></p>	<p><i>Action</i></p>
<p>Facility fees and other “non-dental” Procedures</p> <p>Most “generally excluded” codes are indicated as such when they are not part of standard dentistry, considered to be included in primary dental procedure, or there is no/insufficient therapeutic value or scientific evidence of efficacy of a procedure either on it own or with any procedure. In accordance with the current plan design, GSC will consider these expenses as ineligible as they are not true dental procedures. GSC Contact Centre representatives are equipped to answer inquiries about ineligibility of these dental procedures.</p>	<p><b>None required – information only</b></p>

Analysis indicates that Canada Life provided reimbursement to 87 members for “facility fees” or “therapeutic intravenous drug injection” in the amount of approximately \$10,000. The analysis also identified two general procedure codes used for reimbursement to 713 members in the amount of approximately \$126,000; more information has been requested from Canada Life to support further analysis by GSC.	
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## Communications and Change Management

HR has created a benefit implementation [website](#) to inform the University community on this project, including key milestones, important announcements, and essential action items that EHD benefit participants must complete to support the change from Canada Life to GSC. In addition, the communications plan includes the following activity:

- August 29, 2022 – initial announcement released by email to employees and retirees with EHD benefits
- Late September – registration details for Information Sessions will be released to the community – virtual and in person options (recording to be posted to the website)
- Late September/early October - letter to be mailed to home addresses for specific groups who may not have access to email, with the announcement information as well as registration details for information sessions
- GSC welcome kits to be assembled and mailed to member home addresses

**Action Required:** *None – information only*