

**Board of Governors
PENSION & BENEFITS COMMITTEE
Friday 20 November 2020
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 Melissa Holst, mjholst@uwaterloo.ca**

OPEN SESSION		ACTION
9:30	1. Approval of the 16 October 2020 Minutes (Open Session)* and Business Arising	Decision
	2. Execution Against the Work Plan* [Grivicic]	Information
	3. Update on Government Pension Plan Initiatives [Shapira] a. Changes in Commuted Value Standards Effective December 1, 2020*	Information Information
9:35	4. Extended Health and Dental Benefits – Indexation of Maxima Effective January 1, 2021* [Hornberger]	Decision
9:40	5. Pension Risk Management Dashboard – Q3 2020* [Byron]	Information
	6. Investment Fund Performance Reports from Aon – Q3 2020* [Huber]	Information
	7. Update – Holistic Benefits Working Group [Byron]	Information
	8. Other Business	
CONFIDENTIAL SESSION		
9:50	9. Approval of the 16 October 2020 Minutes (Confidential)+ and Business Arising	Discussion

Next Meeting: Tuesday 15 December 2020, 9:30 a.m. – 12:00 noon

*attached
** to be distributed
+ distributed separately

16 November 2020

Mike Grivicic
Associate University Secretary

Please convey regrets to Melissa Holst at 519-888-4567 x36125 or mjholst@uwaterloo.ca

Future Agenda Items

- a. Pension Contribution for Members of LTD
- b. Level of LTD coverage vs. practical requirements

University of Waterloo
Board of Governors
PENSION & BENEFITS COMMITTEE
Minutes of the 16 October 2020 Meeting
[in agenda order]

Present: Peter Barr, Terrence Birmingham, Ted Bleaney, Mike Grivicic (secretary), Dennis Huber, Ranjini Jha, Jim Rush, David Saunders, Michael Steinmann, Mary Thompson, Marilyn Thompson, Ken Vetzal

Regrets: Tony Giovinazzo, Michael Herz

Consultant: Linda Byron

Resources: Lee Hornberger, Tyler Wendland

Organization of Meeting: Peter Barr took the chair, and Mike Grivicic acted as secretary. The secretary advised that a quorum was present. The meeting was held via videoconference.

1. APPROVAL OF THE 18 SEPTEMBER 2020 MINUTES (OPEN SESSION) AND BUSINESS ARISING

Members noted one minor amendment. A motion was heard to approve the minutes as amended. Bleaney and Huber. Carried. There was no business arising.

2. EXECUTION AGAINST THE WORK PLAN

This item was received for information.

3. UPDATE ON GOVERNMENT PENSION PLAN INITIATIVES

Byron observed that some relief measures largely directed toward private sector plans are to be enacted, and that those measures have onerous eligibility requirements.

4. UNITED NATIONS PRINCIPLES FOR RESPONSIBLE INVESTING (UN PRI) MEMBERSHIP FEES

Huber provided an overview of the report, noting that the PRI organization treats the pension plan as separate from the university for the purposes of assigning membership. Wendland observed that other universities had previously obtained a single membership for the institution and pension plan, though PRI is now going back to those signatories to separate those memberships going forward. Members clarified that the amount of the membership fee is based on assets under management. A motion was heard to approve that the UN PRI membership fees be an approved expense for the University of Waterloo Pension Plan for Faculty and Staff (Pension Plan). Huber and Bleaney. Carried.

5. EMPLOYEE AND FAMILY ASSISTANCE PROGRAM – 4TH ANNUAL UTILIZATION REPORT

Hornberger provided an overview of the report and services provided under the program. Members clarified on the provisions available to employees re: legal advisory services. The reports were received for information.

6. OTHER BUSINESS

Members noted that the December 2020 meeting date was shifted to accommodate the Board of Governors retreat. A member asked that scheduling of meetings avoid the reading weeks where possible.

With no further business in open session, the committee proceeded into confidential session.

NEXT MEETING

The next meeting is scheduled for Friday 20 November 2020, 9:30 a.m. – 12:00 noon.

13 November 2020

Mike Grivicic
Associate University Secretary

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)	15 Nov 2019	13 Dec 2019	17 Jan 2020	21 Feb 2020	20 Mar 2020	15 May 2020	12 June 2020	18 Sept 2020	16 Oct 2020	20 Nov 2020
Approval of Actuarial Valuation Assumptions	Annual (Jan)			✓							
Investment Status of PPP	Annual (Jan)			✓							
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)					✓					
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)						✓				

D = deferred

Task	Frequency	15 Nov 2019	13 Dec 2019	17 Jan 2020	21 Feb 2020	20 Mar 2020	15 May 2020	12 June 2020	18 Sept 2020	16 Oct 2020	20 Nov 2020
Benefits Utilization Report	Annual (June)							✓			
Annual review re: benefits added/removed from insured plans in the market	Annual (June)							✓			
Review of Committee Terms of Reference	Annual (June)							✓			
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 Most recent filings: 2017, 2018, 2020											



University of Waterloo

Changes in Commuted Value Standards Effective December 1, 2020

November 2020

Posted with Permission of Aon

Prepared by Aon


Changes to Pension Commuted Value Standards— Background

As DB plan members terminate prior to retirement eligibility, they are eligible to elect either a commuted value (lump sum) payment from the plan or a deferred monthly pension

Assumptions and methodology to calculate commuted values are governed by provincial standards legislation which in turn referencing the Canadian Institute of Actuaries' (CIA) Standards of Practice for Pension Commuted Values

Periodic review of CIA's Standard of Practice for the calculation of commuted values

The [CIA Standards of Practice for Pension Commuted Values](#) originally intended to change effective August 1, 2020.



On [March 5, 2020](#) the CIA announced that there was a delay in the above effective date until later in 2020

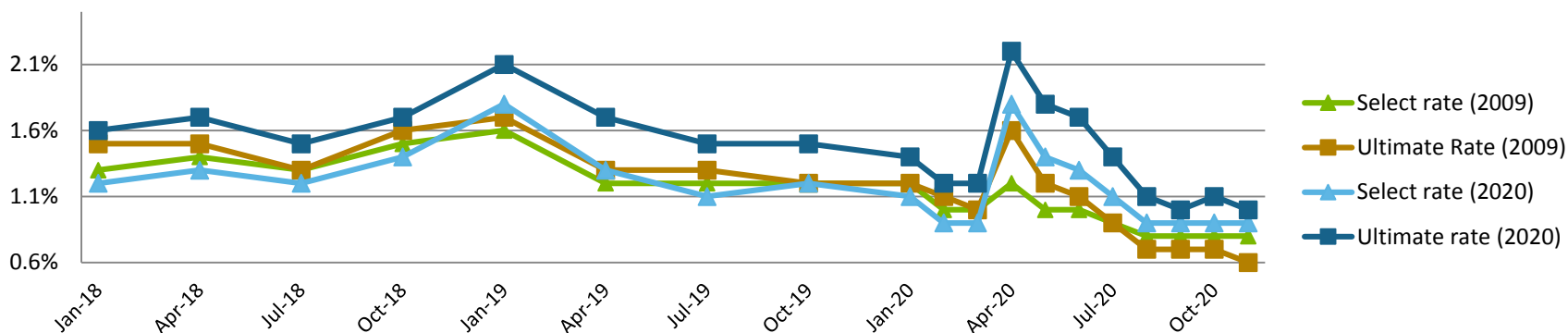
The effective date is now [December 1, 2020](#)

The table on the slide that follows provides a high level summary of the key changes

Pension Commuted Values Standards Changes— Summary of Key Changes

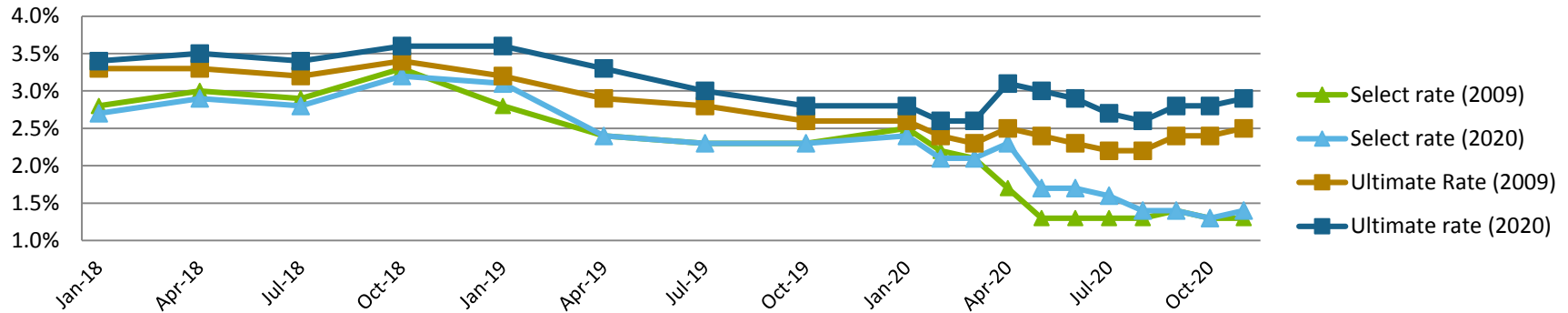
Assumptions	Current Standard	Revised Standard	Impact of Change
Interest Rate	<ul style="list-style-type: none"> Fixed spread:, released monthly: +90 bps over Government of Canada bond yields 	<ul style="list-style-type: none"> Variable spread, released monthly: +2/3 of the provincial bond yield over the federal bond yield; plus +1/3 of the corporate bond yield over the federal bond yield 	<ul style="list-style-type: none"> Market driven – additional information in the slide that follows – generally results in lower commuted values compared to current standard
Pension Commencement Age	<ul style="list-style-type: none"> 100% at the age that maximizes the commuted value value 	<ul style="list-style-type: none"> 50% at the age that maximizes the commuted value value; plus 50% at the earliest unreduced retirement age 	<ul style="list-style-type: none"> No impact for most calculations under RPP (exceptions may be pre-retirement death benefits or involuntary terminations) Split between RPP and PPP may change
Additional Disclosures	<ul style="list-style-type: none"> Not applicable 	<ul style="list-style-type: none"> Statement that retirement income from commuted value may provide more or less income than monthly pension payments payable from the plan may provide Separate disclosure of the indexation assumption from interest rate 	<ul style="list-style-type: none"> Disclosure only

Pension Commuted Values Standards Changes— Historical Interest Rate Comparison (100 Indexed)



Valuation Month	2009 CV Standard		2020 CV Standard	
	Select Rate: First 10 Years	Ultimate Rate: 10+ Years	Select Rate: First 10 Years	Ultimate Rate: 10+ Years
Jan-18	1.3%	1.5%	1.2%	1.6%
Apr-18	1.4%	1.5%	1.3%	1.7%
Jul-18	1.3%	1.3%	1.2%	1.5%
Oct-18	1.5%	1.6%	1.4%	1.7%
Jan-19	1.6%	1.7%	1.8%	2.1%
Apr-19	1.2%	1.3%	1.3%	1.7%
Jul-19	1.2%	1.3%	1.1%	1.5%
Oct-19	1.2%	1.2%	1.2%	1.5%
Jan-20	1.2%	1.2%	1.1%	1.4%
Feb-20	1.0%	1.1%	0.9%	1.2%
Mar-20	1.0%	1.0%	0.9%	1.2%
Apr-20	1.2%	1.6%	1.8%	2.2%
May-20	1.0%	1.2%	1.4%	1.8%
Jun-20	1.0%	1.1%	1.3%	1.7%
Jul-20	0.9%	0.9%	1.1%	1.4%
Aug-20	0.8%	0.7%	0.9%	1.1%
Sep-20	0.8%	0.7%	0.9%	1.0%
Oct-20	0.8%	0.7%	0.9%	1.1%
Nov-20	0.8%	0.6%	0.9%	1.0%

Pension Commuted Values Standards Changes— Historical Interest Rate Comparison (Non-Indexed)



Valuation Month	2009 CV Standard		2020 CV Standard	
	Select Rate: First 10 Years	Ultimate Rate: 10+ Years	Select Rate: First 10 Years	Ultimate Rate: 10+ Years
Jan-18	2.8%	3.3%	2.7%	3.4%
Apr-18	3.0%	3.3%	2.9%	3.5%
Jul-18	2.9%	3.2%	2.8%	3.4%
Oct-18	3.3%	3.4%	3.2%	3.6%
Jan-19	2.8%	3.2%	3.1%	3.6%
Apr-19	2.4%	2.9%	2.4%	3.3%
Jul-19	2.3%	2.8%	2.3%	3.0%
Oct-19	2.3%	2.6%	2.3%	2.8%
Jan-20	2.5%	2.6%	2.4%	2.8%
Feb-20	2.2%	2.4%	2.1%	2.6%
Mar-20	2.1%	2.3%	2.1%	2.6%
Apr-20	1.7%	2.5%	2.3%	3.1%
May-20	1.3%	2.4%	1.7%	3.0%
Jun-20	1.3%	2.3%	1.7%	2.9%
Jul-20	1.3%	2.2%	1.6%	2.7%
Aug-20	1.3%	2.2%	1.4%	2.6%
Sep-20	1.4%	2.4%	1.4%	2.8%
Oct-20	1.3%	2.4%	1.3%	2.8%
Nov-20	1.3%	2.5%	1.4%	2.9%

Pension Commuted Values Standards Changes— Observations and Next Steps



- Impact of changes to the UW Plan as follows:
 - Interest rates: the impact will be market-driven based on prevailing spreads
 - Pension commencement age: no impact or reduction in value in most situations

- Morneau is currently updating the administration tools and option forms to ensure compliance

- January 1, 2021 solvency and wind-up valuations will reflect the revised Standards of Practice for Pension Commuted Values
- Liabilities expected to be very modestly lower (depending on interest rates at that date)

Legal Disclaimer

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Indexing of Plan Maxima effective January 1, 2021

Extended health, dental, and retiree life insurance

The University's plan design for extended health, dental, and retiree life insurance benefits is subject to an annual cost of living adjustment for the maxima. The adjustment to the maxima has been calculated as in previous years and the impact is identified in the table below. Aon has advised that to increase the benefit maxima for January 1, 2021 based on 1-year inflation results in a \$92,900 annual on-going cost.

Provision	Current	Proposed	1 Year Inflation
Paramedical/Hearing Aids	\$717	\$743	3.58% ¹
Private Duty Nursing	\$21,739	\$22,517	3.58% ¹
Out of pocket max: Single	\$129	\$130	1.08% ²
Out of pocket max: Family	\$259	\$262	1.08% ²
Dental Basic	\$2,328	\$2,358	1.27% ³
Dental Major	\$3,508	\$3,553	1.27% ³
Dental Orthodontia	\$3,508	\$3,553	1.27% ³
Retiree Life Insurance	\$5,700	\$5,700	0.51% ⁴
Total Additional Annual Cost of Indexing:		\$92,900⁵	

¹ Percentage increases are calculated from Stats Can Other Health Care index rates for each year that the inflation is applied.

² Percentage increases are calculated from Stats Can Medicinal and Pharmaceutical index and Other Health Care index rates for each year that the inflation is applied based on 60%/40% weighting.

³ Dental Maxima increases based on the 2020 increase to the dental fee guide as an estimate for 2021 fee guide increase (current year fee guide applies)

⁴ Based on the Consumer Price Index (Stats Can All Items) from September 2019 to September 2020 rounded to the nearest \$100 of benefit (i.e. $\$5,700 * (1+0.51\%) = \$5,729$)

⁵ These costs are above the annual total claim costs projected based on UW's claims experience from October 2019 to September 2020 (adjusted 2019 claims with plan design changes), inclusive of administration fees and applicable taxes. Claims from March 2020 to September 2020 have been adjusted to exclude the impact of COVID-19. These are not a one-time cost but will be additional costs to claims experience on an on-going basis. This amount does not include any increase to the non-pension postretirement benefits liability or annual expense related to the plan amendment created by improving the ongoing retiree benefits design.

Action Required: *Decision*



Pension Risk Management Dashboard

University of Waterloo
As of September 30, 2020

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.



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 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?

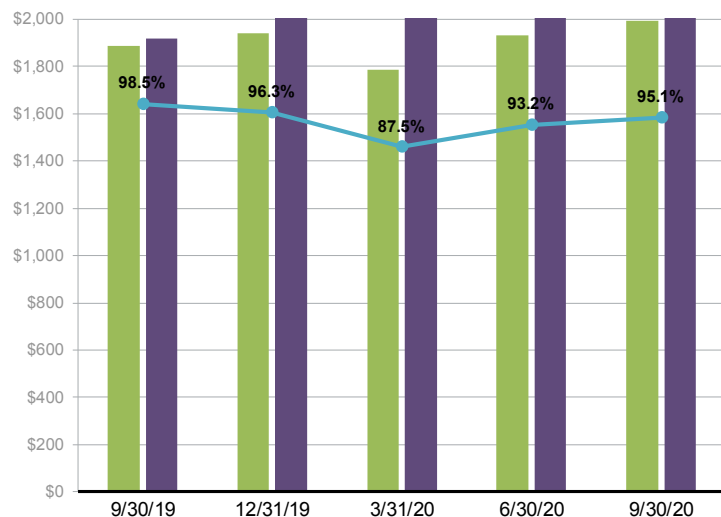
Agenda

- The going concern deficit decreased from \$140.5 million to \$103.7 million over the quarter due to asset performance exceeding expectations. A new chart has been added showing the progression of the Provision for Adverse Deviation (PfAD) since the most recent valuation.
- The risk-free deficit increased from \$1,389.9 million to \$1,477.9 million over the quarter due to an increase in expected inflation partially offset by a decrease in the underlying long-term real federal bond yields used to determine the risk-free discount rate.
- The solvency position deficit decreased from \$466.0 million to \$415.1 million over the quarter primarily due to asset performance exceeding expectations and an increase in the risk-free rates that was partially offset by tightened credit spreads.
- The total fund had a rate of return after all fees of 3.1% for last quarter.
- The estimated September 30, 2020 liabilities are projected based on the most recent actuarial valuation, with membership data as at January 1, 2020.
- Annuity purchase guidance educational note for valuation as of September 30, 2020 and October 1, 2020 (published as of November 3, 2020) has been reflected in the interest rates used to calculate the September 30, 2020 Solvency and Hypothetical Wind Up liabilities.
- The transfer ratio at September 30, 2020 is 62.2%. Compared to the transfer ratio of 66.7% at the recent filed valuation on January 1, 2020, this represents a drop of 6.7%. Since this is less than 10% no regulation 19 filing is required. See slide 12 for more details.
- The most recent actuarial valuation was performed as at January 1, 2020.
- The next actuarial valuation should be performed no later than as at January 1, 2023.

Executive Summary – Going Concern

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

Funded Status



Highlights for the Quarter-Ending 9/30/20

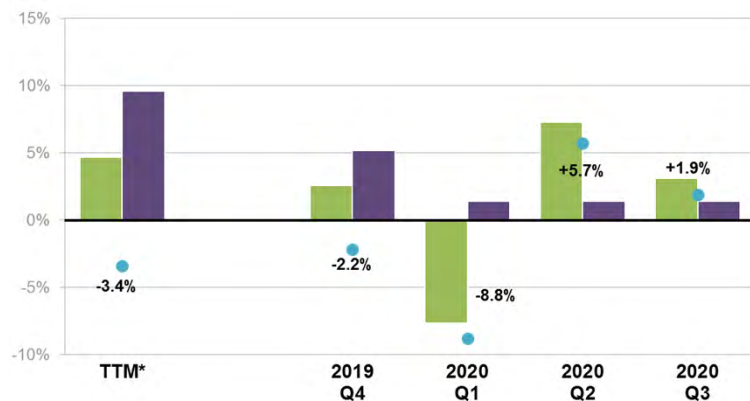
The plans' funded ratio increased to 95.1% at 9/30/20. This result was primarily due to the combined effects of:

- Asset performance exceeding expectations, and
- Contributions of \$25.8 million which exceeded new benefit accruals.

	9/30/19	12/31/19	3/31/20	6/30/20	9/30/20
Market Value of Assets	\$ 1,889.0	\$ 1,940.8	\$ 1,785.8	\$ 1,929.8	\$ 1,993.9
Going Concern Liability	1,917.1	2,014.5	2,040.6 ¹	2,070.3 ¹	2,097.6 ¹
Surplus/(Deficit)	\$ (28.1)	\$ (73.7)	\$ (254.8)	\$ (140.5)	\$ (103.7)
Periodic Contributions	\$ 24.2	\$ 24.5	\$ 16.2	\$ 33.2	\$ 25.8
Effective Interest Rate	5.70%	5.60%	5.60%	5.60%	5.60%
Funded Ratio (Market):	98.5%	96.3%	87.5%	93.2%	95.1%
Asset Duration:	2.0	1.9	1.9	2.1	2.1
Going Concern Liability Duration:	13.9	14.5	14.5	14.5	14.5

¹After application of the PfAD at 9.00%

Asset-Liability Return



Asset Liability Return for Quarter-Ending 9/30/20

Assets returned 3.1% during the quarter while liabilities returned 1.4%, resulting in a funded status increase of 1.9%.

	Periodic Return/Change	Cumulative	12/31/19	3/31/20	6/30/20	9/30/20
Market Value of Assets Return		4.7%	2.6%	-7.7%	7.3%	3.1%
GC: Return		9.6%	5.2%	1.4%	1.4%	1.4%
Funded Ratio Change		-3.4%	-2.2%	-8.8%	5.7%	1.9%

Executive Summary – Going Concern (PfAD Impact)

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

Funded Status

	12/31/19	3/31/20	6/30/20	9/30/20
Going Concern Liability with 9.00% PfAD	\$ 2,014.5	\$ 2,040.6	\$ 2,070.3	\$ 2,097.7
New PfAD Impact	Not Applicable	9.5 ¹	84.3 ²	63.0 ³
Market Value of Assets	\$ 1,940.8	\$ 1,785.8	\$ 1,929.8	\$ 1,993.9
Going Concern Liability with New PfAD	<u>2,014.5</u>	<u>2,050.1</u>	<u>2,154.6</u>	<u>2,160.7</u>
Surplus/(Deficit)	\$ (73.7)	\$ (264.3)	\$ (224.8)	\$ (166.8)
PfAD	9.00%	9.55%	14.05%	12.75%

¹Impact of change in PfAD from 9.00% to 9.55%

²Impact of change in PfAD from 9.00% to 14.05%

³Impact of change in PfAD from 9.00% to 12.75%

The going concern deficit decreased from \$224.8 million to \$166.8 million over the quarter due to the asset performance exceeding expectations and a decrease in the Provision for Adverse Deviation (PfAD) due to an increase in the Benchmark Discount Rate (BDR), resulting in a decrease of the going concern liabilities by approximately \$22 million.

Asset-Liability Performance Attribution – Going Concern

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

Assets



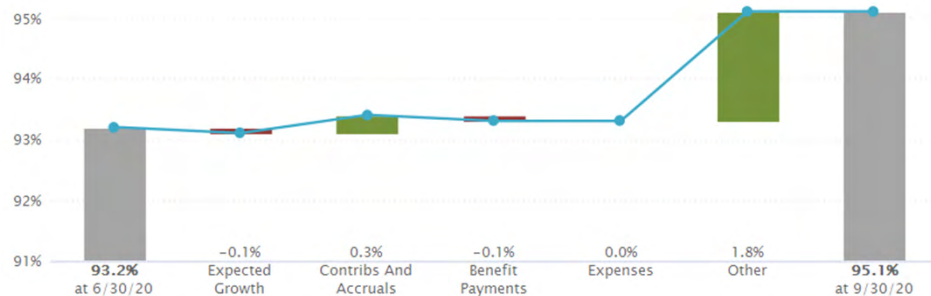
- Overall, assets returned 3.1% during this quarter, as opposed to an expected growth assumption of about 1.2% per quarter.
- The fixed income assets gained value due to an increase in the underlying risk-free rates, offset by shrinking credit spreads.
- \$25.8 million in contributions during the quarter and the trust paid \$20.4 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 9/30/20 are based on 5.60%.
- Liabilities were expected to grow by \$28.5 million due to interest cost during the quarter.
- New benefit accruals increased the liability by \$19.4 million during the quarter.
- Plan liabilities decreased by \$20.4 million during the quarter as benefits were paid.

Funded Ratio

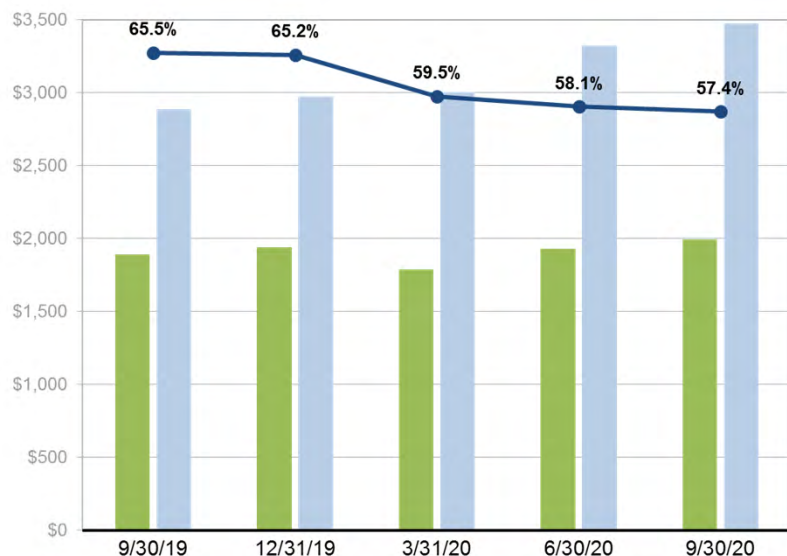


- Assets returned 3.1% during the quarter while liabilities returned 1.4%, resulting in a funded status increase of 1.9%.

Executive Summary – Risk-Free Benchmark

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

Funded Status



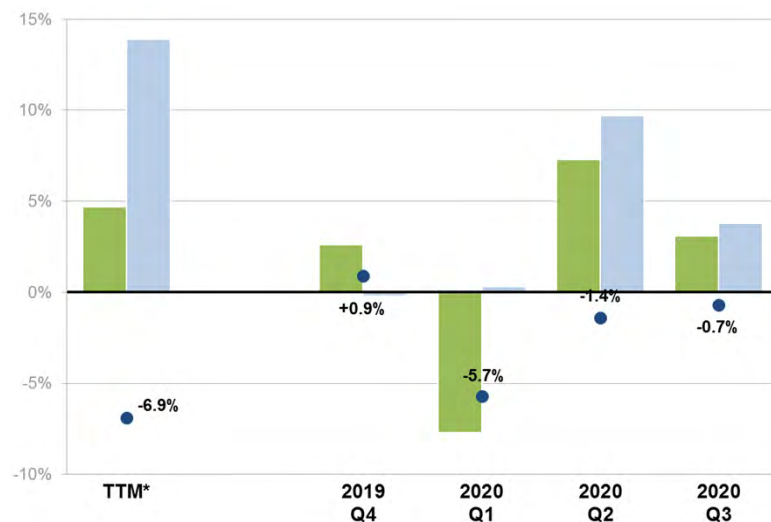
Highlights for the Quarter-Ending 9/30/20

The plans' funded ratio decreased to 57.4% at 9/30/20. This result was primarily due to the combined effects of:

- Asset performance exceeding expectations, offset by
- Contributions of \$25.8 million lower than the new benefit accruals, and
- An increase in liabilities due to an increase in inflation expectations partially offset by a decrease in the underlying long-term real federal bond yields used to determine the risk-free discount rate.

	9/30/19	12/31/19	3/31/20	6/30/20	9/30/20
Market Value of Assets	\$ 1,889.0	\$ 1,940.8	\$ 1,785.8	\$ 1,929.8	\$ 1,993.9
Risk-Free Liability	2,884.0	2,975.1	3,003.5	3,319.7	3,471.8
Surplus/(Deficit)	\$ (995.0)	\$ (1,034.3)	\$ (1,217.7)	\$ (1,389.9)	\$ (1,477.9)
Periodic Contributions	\$ 24.2	\$ 24.5	\$ 16.2	\$ 33.2	\$ 25.8
Discount Rate	0.68%	0.81%	0.83%	0.38%	0.22%
Funded Ratio:					
Assets/Risk-Free Liability	65.5%	65.2%	59.5%	58.1%	57.4%
Asset Duration:	2.0	1.9	1.9	2.1	2.1
Risk-Free Liability Duration:	18.9	18.7	18.7	19.5	19.8

Asset-Liability Return



Asset Liability Return for Quarter-Ending 9/30/20

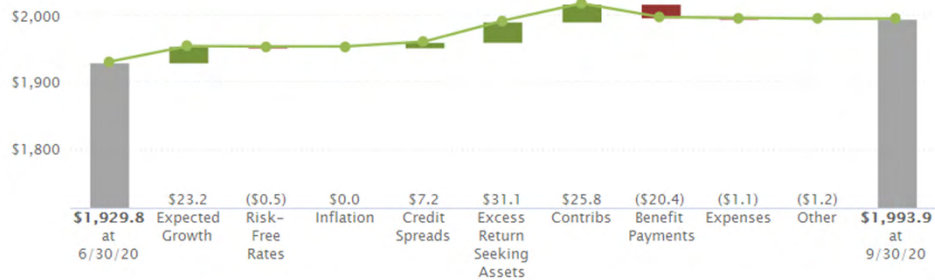
Assets returned 3.1% during the quarter while liabilities returned 3.8%, resulting in a funded status decrease of 0.7%.

	Periodic Return/Change	Cumulative	12/31/19	3/31/20	6/30/20	9/30/20
Market Value of Assets Return		4.7%	2.6%	-7.7%	7.3%	3.1%
Risk-Free Return		13.9%	-0.2%	0.3%	9.7%	3.8%
Funded Ratio Change		-6.9%	0.9%	-5.7%	-1.4%	-0.7%

Asset-Liability Performance Attribution – Risk-Free Benchmark

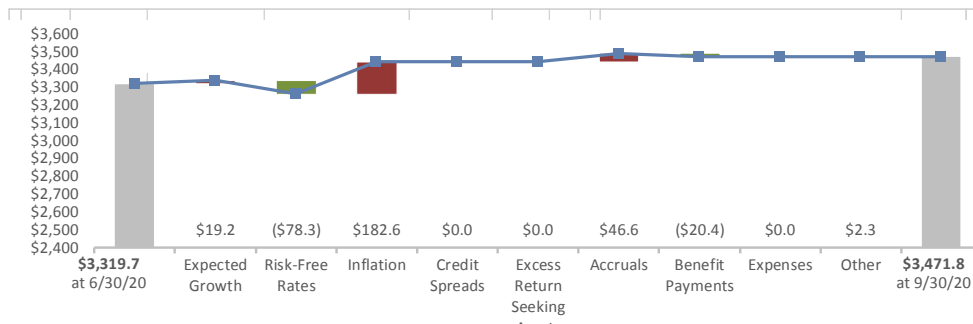
Values in \$1,000,000 (CAD)

Assets



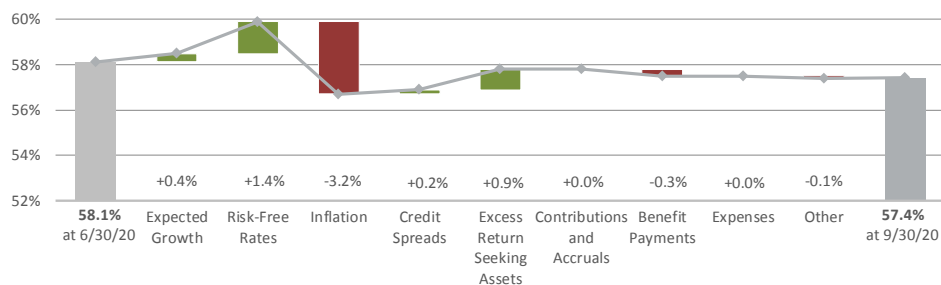
- Assets returned 3.1% during this quarter.
- The fixed income assets gained value due to an increase in the underlying risk-free rates, offset by shrinking credit spreads.
- The plans' return-seeking assets (Alternatives and International Equities) performed better than expected during the quarter.
- \$25.8 million in contributions during the quarter and the trust paid \$20.4 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 \$19.2 million due to interest cost during the quarter.
- Risk-free rates increased resulting in a decrease in liabilities of \$78.3 million.
- Expected inflation rates increased resulting in an increase in liabilities of \$182.6 million.
- New benefit accruals increased the liability by \$46.6 million during the quarter.
- Plan liabilities decreased by \$20.4 million during the quarter as benefits were paid.

Funded Ratio

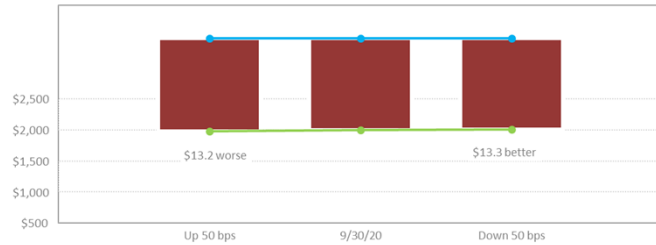


- The difference in exposure to risk-free rates between assets and liabilities combined with changes in risk-free rates resulted in an increase in funded status of 1.4%.
- Changes in credit spreads resulted in an increase in funded status of 0.2%.
- Increase in inflation expectation resulted in a decrease in funded status of 3.2%.
- Return-seeking assets experienced gains during the quarter in excess of expected, adding 0.9% to the plans' funded status during the period.

Sensitivity Analysis – Risk-Free Benchmark

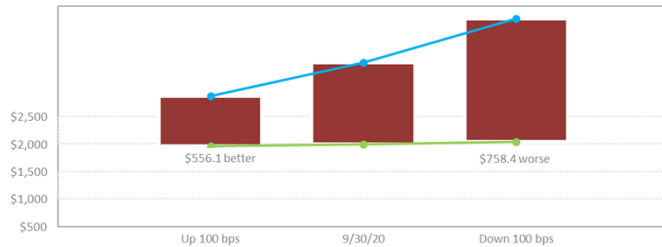
Values in \$1,000,000 (CAD)

Credit Spreads



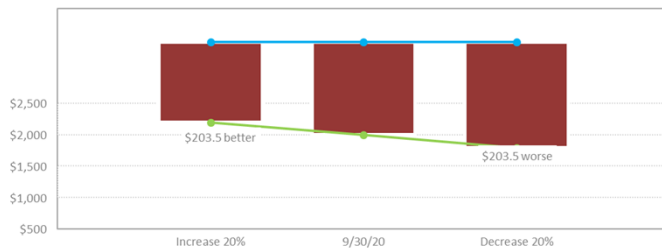
	Up 50bps	Current	Down 50bps
Market Value of Assets	\$1,980.7	\$1,993.9	\$2,007.2
Risk-Free	\$3,471.8	\$3,471.8	\$3,471.8
Surplus/(Deficit)	(\$1,491.1)	(\$1,477.9)	(\$1,464.6)
Change		(\$13.2)	\$13.3

Risk-Free Rates



	Up 100bps	Current	Down 100bps
Market Value of Assets	\$1,952.4	\$1,993.9	\$2,036.2
Risk-Free	\$2,874.2	\$3,471.8	\$4,272.5
Surplus/(Deficit)	(\$921.8)	(\$1,477.9)	(\$2,236.3)
Change		\$556.1	(\$758.4)

Return-Seeking Assets



	Increase 20%	Current	Decrease 20%
Market Value of Assets	\$2,197.4	\$1,993.9	\$1,790.4
Risk-Free	\$3,471.8	\$3,471.8	\$3,471.8
Surplus/(Deficit)	(\$1,274.4)	(\$1,477.9)	(\$1,681.4)
Change		\$203.5	(\$203.5)

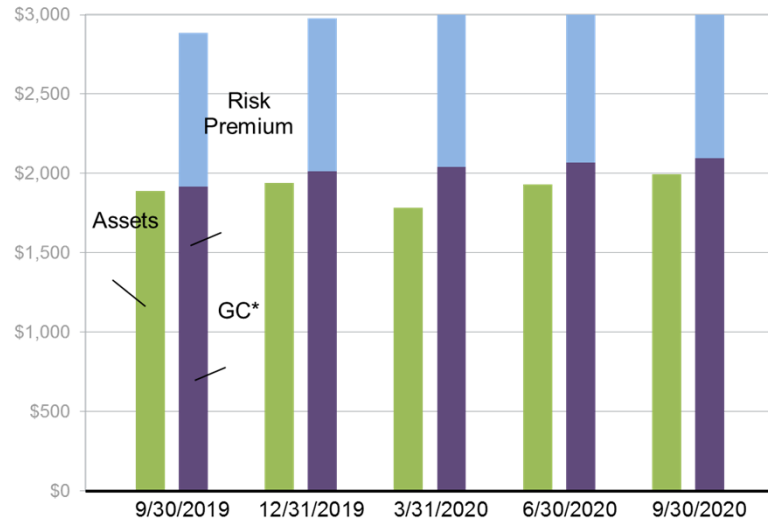
Inflation



	Up 100bps	Inflation	Down 100bps
Market Value of Assets	\$1,993.9	\$1,993.9	\$1,993.9
Risk-Free	\$4,272.5	\$3,471.8	\$2,874.2
Surplus/(Deficit)	(\$2,278.6)	(\$1,477.9)	(\$880.3)
Change		(\$800.7)	\$597.6

Reconciliation of Risk-Free Benchmark and Going Concern Funded Status

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



*Going Concern

	9/30/19	12/31/19	3/31/20	6/30/20	9/30/20
Market Value of Assets	\$ 1,889.0	\$ 1,940.8	\$ 1,785.8	\$ 1,929.8	\$ 1,993.9
Going Concern Liability	\$ 1,917.1	\$ 2,014.5	\$ 2,040.6	\$ 2,070.3	\$ 2,097.6
Risk Premium	<u>966.9</u>	<u>960.6</u>	<u>962.9</u>	<u>1,249.4</u>	<u>1,374.2</u>
Risk-Free Liability	\$ 2,884.0	\$ 2,975.1	\$ 3,003.5	\$ 3,319.7	\$ 3,471.8

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.

Hypothetical Wind Up (HWU) and Transfer Ratio

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

	1/1/2020 (Last Filed)		7/1/2020		10/1/2020
■ HWU Assets *	\$	1,940.3	\$	1,929.2	\$ 1,993.4
■ HWU Liability		2,909.7		3,163.9	3,200.2
Surplus/(Deficit)	\$	(969.4)	\$	(1,234.7)	\$ (1,206.8)
Transfer Ratio:					
■ Market Value of Assets/HWU Liability		66.7%		61.0%	62.2%

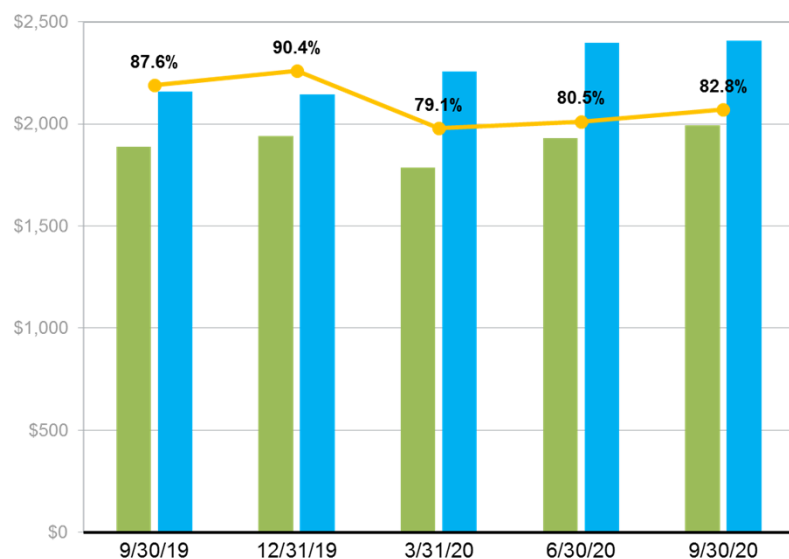
* Net of estimated wind up expenses

- 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 Q3 2020, the financial position of the Pension Plan as measured on a wind-up basis did not drop by more than 10% since January 1, 2020 (the last filed valuation). Therefore, no Regulation 19 Filing is required as of October 1, 2020.
- The Regulation 19 filing requirements will need to be revisited and monitored throughout 2020 on a quarterly basis.

Executive Summary - Solvency

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

Funded Status



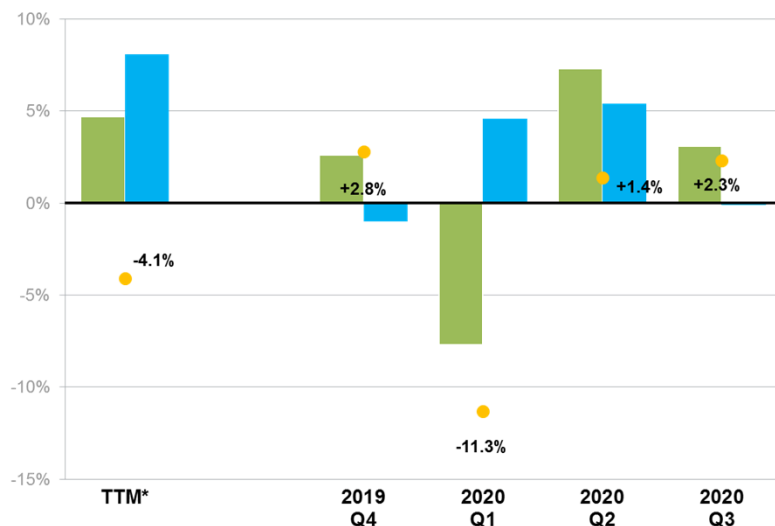
Highlights for the Quarter-Ending 9/30/20

The plans' funded ratio increased to 83.5% at 9/30/20. This result was primarily due to the combined effects of:

- Asset performance exceeding expectations,
- Contributions of \$25.8 million, and
- A slight increase in effective interest rate.

	9/30/19	12/31/19	3/31/2020	6/30/2020	9/30/2020
Market Value of Assets	\$ 1,889.0	\$ 1,940.8	\$ 1,785.8	\$ 1,929.8	\$ 1,993.9
Solvency Liability	2,157.5	2,146.0	2,257.7	2,395.8	2,409.0
Surplus/(Deficit)	\$ (268.5)	\$ (205.2)	\$ (471.9)	\$ (466.0)	\$ (415.1)
Periodic Contributions	\$ 24.2	\$ 24.5	\$ 16.2	\$ 33.2	\$ 25.8
Effective Interest Rate	2.72%	2.86%	2.64%	2.35%	2.37%
Funded Ratio:					
Assets/Solvency Liability	87.6%	90.4%	79.1%	80.5%	82.8%
Assets Duration:	2.0	1.9	1.9	2.1	2.1
Solvency Liability Duration:	14.1	14.5	14.5	14.9	14.9

Asset-Liability Return



Asset Liability Return for Quarter-Ending 9/30/20

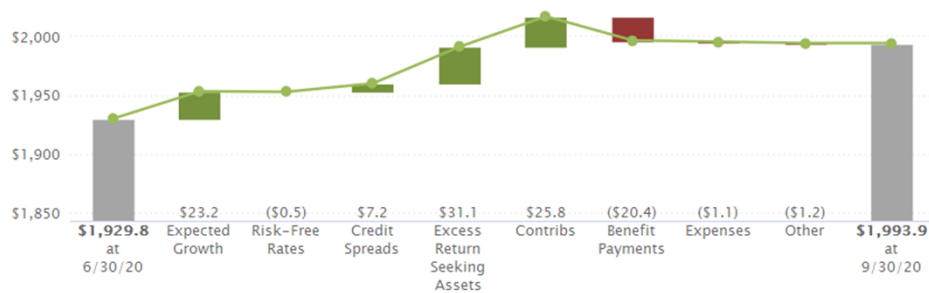
Assets returned 3.1% during the quarter while liabilities returned -0.1%, resulting in a funded status increase of 2.3%.

	Periodic Return/Change	Cumulative	12/31/19	3/31/20	6/30/20	9/30/20
Market Value of Assets						
Return		4.7%	2.6%	-7.7%	7.3%	3.1%
Funding Target:						
Return		8.1%	-1.0%	4.6%	5.4%	-0.1%
Funded Ratio Change		-4.1%	2.8%	-11.3%	1.4%	2.3%

Asset-Liability Performance Attribution - Solvency

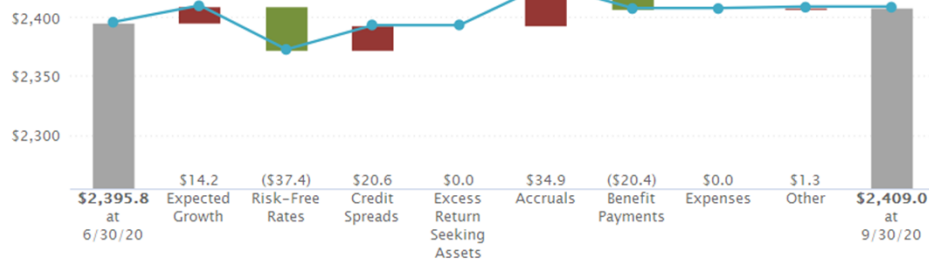
Values in \$1,000,000 (CAD)

Assets



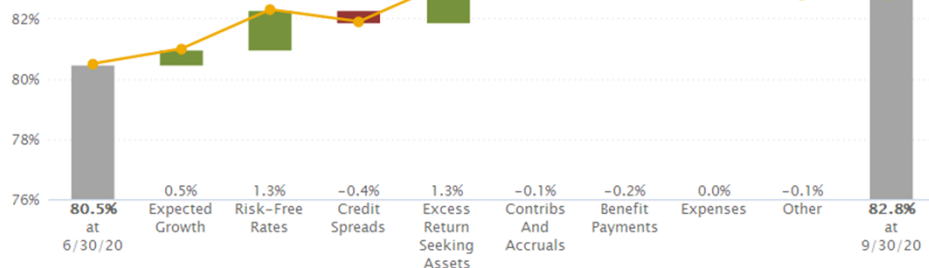
- Assets returned 3.1% during this quarter, as opposed to an expected growth assumption of about 1.2% per quarter.
- The fixed income assets gained value due to an increase in the underlying risk-free rates, offset by shrinking credit spreads.
- The plans' return-seeking assets (Alternatives and International Equities) performed better than expected during the quarter.
- \$25.8 million in contributions during the quarter and the trust paid \$20.4 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 \$14.2 million due to interest cost during the quarter.
- Risk-free rates increased and annuity purchase spreads narrowed, resulting in a net decrease of \$16.8 million (\$37.4 million - \$20.6 million).
- New benefit accruals increased the liability by \$34.9 million during the quarter.
- Plan liabilities decreased by \$20.4 million during the quarter as benefits were paid.

Funded Ratio

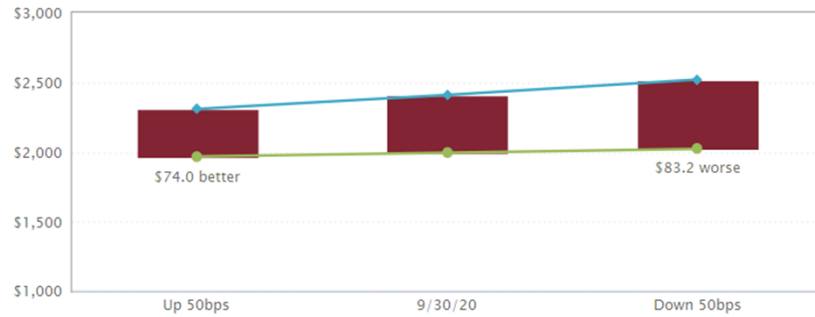


- The difference in exposure to risk-free rates between assets and liabilities combined with changes in risk-free rates resulted in an increase in funded status of 1.3%.
- The difference in exposure to credit spreads between assets and liabilities combined with changes in credit spreads resulted in a decrease in funded status of 0.4%.
- Return-seeking assets experienced gains during the quarter in excess of expected, adding 1.3% to the plans' funded status during the period.

Sensitivity Analysis - Funding Target

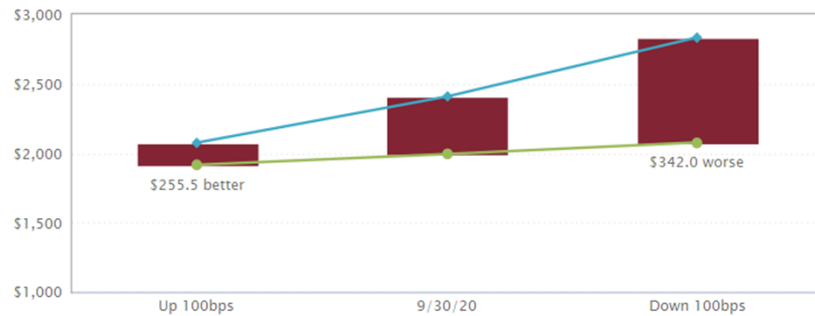
Values in \$1,000,000 (CAD)

Credit Spreads



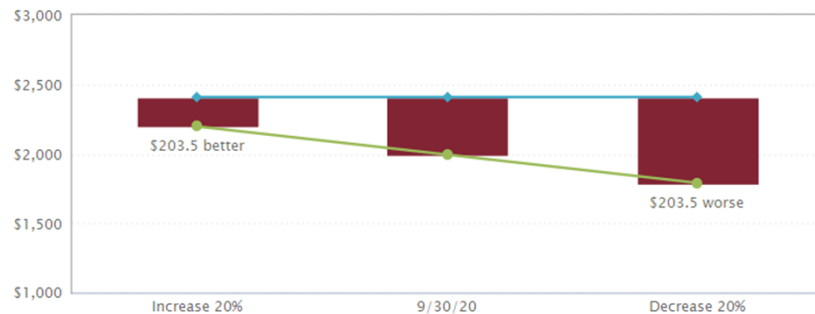
	Up 50bps	Current	Down 50bps
Market Value of Assets	\$1,967.3	\$1,993.9	\$2,021.3
Funding Target	\$2,308.4	\$2,409.0	\$2,519.6
Surplus/(Deficit)	(\$341.1)	(\$415.1)	(\$498.3)
Change		\$74.0	(\$83.2)

Risk-Free Rates



	Up 100bps	Current	Down 100bps
Market Value of Assets	\$1,916.5	\$1,993.9	\$2,078.0
Funding Target	\$2,076.1	\$2,409.0	\$2,835.1
Surplus/(Deficit)	(\$159.6)	(\$415.1)	(\$757.1)
Change		\$255.5	(\$342.0)

Return-Seeking Assets



	Increase 20%	Current	Decrease 20%
Market Value of Assets	\$2,197.4	\$1,993.9	\$1,790.4
Funding Target	\$2,409.0	\$2,409.0	\$2,409.0
Surplus/(Deficit)	(\$211.6)	(\$415.1)	(\$618.6)
Change		\$203.5	(\$203.5)



Appendix

Plan Provisions & Membership Data

Same as in the Actuarial Valuation Results as of January 1, 2020 presentation to the Pension and Benefits Committee Meeting dated March 20, 2020.

Actuarial Methods & Assumptions

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

	9/30/19	12/31/19	3/31/20	6/30/20	9/30/20
Going Concern					
Discount Rate	5.70%	5.60%	5.60%	5.60%	5.60%
Inflation	2.00%	2.00%	2.00%	2.00%	2.00%
PfAD	8.50%	9.00%	9.55%	14.05%	12.75%
Mortality	CPM2014	CPM2014Public	CPM2014Public	CPM2014Public	CPM2014Public
Risk-Free Benchmark					
Discount Rate	0.68%	0.81%	0.83%	0.38%	0.22%
Solvency					
Annuity Purchase Interest Rate	2.81%	2.96%	2.78%	2.52%	2.49%
Effective Date of Annuity Purchase Guidance Used	9/30/19	12/31/19	3/31/20	6/30/20	9/30/20
Lump Sum Value Interest Rate (Years 1-10) ¹	2.30%	2.50%	1.70%	1.30%	1.30%
Lump Sum Value Interest Rate (Years 10+) ¹	2.60%	2.60%	2.50%	2.20%	2.40%
Mortality ²	CPM2014	CPM2014	CPM2014	CPM2014	CPM2014
Underlying Canadian Reference Data					
CANSIM v39054 (7 Year)	1.38%	1.68%	0.64%	0.41%	0.39%
CANSIM v39056 (30 Year Long Term)	1.53%	1.76%	1.32%	0.99%	1.11%
CANSIM v39057 (30 Year Real Return)	0.28%	0.41%	0.43%	-0.02%	-0.18%
CANSIM v39062 (Over 10 Years)	1.51%	1.76%	1.18%	0.91%	0.99%

¹ Lump Sum Value Interest Rates are based on rates in effective on the first day of the month following quarter end (i.e. January 1st, April 1st, July 1st and October 1st).

² 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 January 1, 2020. 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 September 30, 2020.

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.

November 2020

University of Waterloo
As of September 30, 2020

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Asset Allocation and Benchmarking

Asset Class	06/30/2020
Alternatives	
■ MSCI USA REIT Index	2.6%
■ MSCI USA Infrastructure Index	5.5%
Fixed Income	
■ FTSE TMX Universe Bond Index	49.0%
Equities	
■ MSCI World Index	38.0%
■ S&P TSX	4.9%
Total	100.0%

Glossary of Terms

■ Funded Status and Asset-Liability Return

– **Liability Return** reflects the growth in liability due solely to interest rate movements and excludes the impact of Accruals and Benefit Payments.

■ Asset Liability Performance Attribution

– **Expected Growth** reflects assets growing at the expected annual return and liabilities increasing at the interest rate¹.

– **Risk-Free Rates** splits out the expected movement in assets and liabilities based on movements in federal bond yields.

– **Inflation** splits out the expected movement in assets and liabilities based on movements in implied inflation, determined based on real and nominal federal bond yields.

– **Credit Spreads** splits out the expected movements in corporate and provincial bond yields in excess of federal bond yields.

– **Excess Return-Seeking Assets** defines the movement in the Return-Seeking assets based on benchmark returns in excess of expectations. The expectations are defined by the long-term capital market assumptions of the plan and are reflected in "expected growth".

– **Benefit Payments** displays the expected decrease in assets and liabilities due to benefit payments during the period.

– **Contributions/Accruals** displays the expected increase in assets and liabilities due to employer contributions and new benefit accruals, respectively.

– **Other** includes fixed income returns due to coupons and other active management effects, from the asset perspective. From a liability perspective, this bucket includes all liability changes not explained by financial movements during the period.

¹ On the Risk Free basis, the expected growth of liabilities is based on the net interest rate, and the expected growth due to inflation is included in the benefit accrual.



University of Waterloo Pension Plan | Quarterly Period Ending 30 September 2020

Detailed Investment Review

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



Performance Summary¹

As of 30 September 2020

	Allocation		Performance (%)							
	Market Value (\$000)	%	1 Quarter	Year To Date	1 Year	2 Years	3 Years	4 Years	5 Years	10 Years
Total Fund	1,993,944	100.0	3.11	2.04	4.66	5.91	6.35	6.33	6.91	7.60
CPI+3.6% ²			0.67	3.06	4.13	4.83	5.19	5.19	5.15	5.25
Value Added			2.44	-1.02	0.53	1.08	1.16	1.14	1.76	2.35
Canadian Equities³										
TD Emerald Canadian Equity Index ⁴	24,828	1.2	4.73 (78)	-3.08 (32)	-0.02 (32)	3.45 (28)	4.24 (28)	5.44 (31)	7.13 (29)	5.79 (79)
S&P/TSX Composite Index			4.73 (78)	-3.09 (33)	-0.03 (32)	3.46 (28)	4.26 (28)	5.47 (31)	7.16 (27)	5.80 (79)
Value Added			0.00	0.01	0.01	-0.01	-0.02	-0.03	-0.03	-0.01
Sionna ⁵	99,340	5.0	4.85 (77)	-12.84 (90)	-11.43 (93)	-3.79 (87)	-0.68 (85)	2.62 (80)	5.69 (72)	5.42 (81)
S&P/TSX Composite			4.73 (78)	-3.09 (33)	-0.03 (32)	3.46 (28)	4.26 (28)	5.47 (31)	7.16 (27)	5.80 (79)
Value Added			0.12	-9.75	-11.40	-7.25	-4.94	-2.85	-1.47	-0.38
Global Equities⁶										
MSCI World Index (Net) (CAD)	358,362	18.0	4.46 (65)	0.17 (59)	7.07 (56)	5.95 (54)	9.45 (45)	10.88 (40)	10.66 (39)	12.02 (57)
Value Added			-1.25	-4.30	-4.04	-1.69	-0.60	0.25	0.32	-0.25
Walter Scott ⁵	358,205	18.0	6.27 (42)	8.24 (31)	14.80 (32)	11.67 (27)	15.47 (19)	14.49 (22)	13.99 (19)	14.22 (22)
MSCI World Index (Net) (CAD)			5.71 (46)	4.47 (45)	11.11 (45)	7.64 (43)	10.05 (42)	10.63 (43)	10.34 (41)	12.27 (52)
Value Added			0.56	3.77	3.69	4.03	5.42	3.86	3.65	1.95
U.S. Equities										
TD Emerald U.S. Pooled Fund ⁷	303,329	15.2	6.82 (43)	8.73 (42)	16.13 (42)	11.36 (41)	14.73 (40)	14.24 (41)	14.01 (37)	-
S&P 500 (CAD)			6.83 (43)	8.75 (42)	16.17 (42)	11.38 (41)	14.77 (40)	14.29 (41)	14.06 (37)	16.79 (43)
Value Added			-0.01	-0.02	-0.04	-0.02	-0.04	-0.05	-0.05	-
International Equities										
TD Emerald International Equity Index ⁷	179,342	9.0	2.77 (72)	-4.23 (61)	1.45 (64)	1.31 (58)	2.95 (55)	5.46 (57)	5.25 (61)	7.53 (81)
MSCI EAFE (Net)			2.78 (72)	-4.30 (61)	1.39 (64)	1.22 (59)	2.85 (56)	5.38 (58)	5.18 (63)	7.42 (85)
Value Added			-0.01	0.07	0.06	0.09	0.10	0.08	0.07	0.11

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

2 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.

3There was no exposure to Canadian Equities from January 2012 to April 2012.

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

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

6The global equities return prior to August 2018 includes Trilogy.

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

8The Currency Overlay was discontinued on 20 November 2017.

Performance Summary¹

As of 30 September 2020

	Allocation		Performance (%)									
	Market Value (\$000)	%	1 Quarter	Year To Date	1 Year	2 Years	3 Years	4 Years	5 Years	10 Years		
Fixed Income												
TDAM Universe Bond Index	364,607	18.3	0.35 (99)	7.83 (82)	6.87 (90)	8.25 (80)	5.99 (84)	3.64 (93)	4.15 (87)	4.27 (90)		
FTSE Canada Universe Bond			0.44 (98)	8.00 (78)	7.08 (84)	8.38 (72)	6.09 (81)	3.75 (91)	4.26 (85)	4.35 (85)		
Value Added			-0.09	-0.17	-0.21	-0.13	-0.10	-0.11	-0.11	-0.08		
TDAM Active Short Term Corporate	365,858	18.3	1.50	5.06	5.60	5.34	3.97	3.04	3.10	-		
FTSE Canada Short Term Corporate Bond			1.52	5.14	5.68	5.37	3.99	3.08	3.08	3.20		
Value Added			-0.02	-0.08	-0.08	-0.03	-0.02	-0.04	0.02	-		
Alternatives												
XRE ETF (Real Estate)	50,581	2.5	-1.53	-22.60	-23.34	-4.43	1.74	2.33	4.26	-		
BIP.UN (Infrastructure)	120,859	6.1	15.45	14.32	14.19	23.84	15.41	17.40	23.00	-		
Operating Account												
	76,827	3.9										
BAs/U.S. and CDN Cash	61,317	3.1	0.06	0.55	0.96	1.38	1.37	1.24	1.11	-		
Operating Account	15,510	0.8	0.00	0.06	0.19	0.36	0.24	0.26	0.17	0.29		
Currency Overlay Effect (Historical)⁸												
Total Fund & CO	1,993,944	100.0	3.11	2.04	4.66	5.91	6.22	6.26	6.91	7.48		
Total Fund ex CO			3.11	2.04	4.66	5.91	6.35	6.33	6.91	7.60		
Value Added			0.00	0.00	0.00	0.00	-0.13	-0.07	0.00	-0.12		

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

² 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.

³There was no exposure to Canadian Equities from January 2012 to April 2012.

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

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

⁶The global equities return prior to August 2018 includes Trilogy.

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

⁸The Currency Overlay was discontinued on 20 November 2017.

Executive Summary

Rolling Year Performance¹

As of 30 September

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Total Fund	4.66	7.17	7.25	6.25	9.29	8.35	11.25	7.00	8.78	6.11
CPI+3.6% ²	4.13	5.54	5.90	5.21	4.99	4.67	5.70	4.70	4.80	6.88
Value Added	0.53	1.63	1.35	1.04	4.30	3.68	5.55	2.30	3.98	-0.77
Canadian Equities³										
TD Emerald Canadian Equity Index ⁴	-0.02 (32)	7.04 (38)	5.84 (54)	9.14 (51)	14.13 (50)	-8.32 (70)	20.34 (57)	7.11 (95)	9.13 (85)	-3.53 (46)
S&P/TSX Composite Index	-0.03 (32)	7.06 (36)	5.87 (54)	9.18 (51)	14.21 (50)	-8.38 (71)	20.38 (55)	7.12 (95)	9.17 (84)	-3.55 (46)
Value Added	0.01	-0.02	-0.03	-0.04	-0.08	0.06	-0.04	-0.01	-0.04	0.02
Sionna ⁵	-11.43 (93)	4.50 (68)	5.86 (54)	13.20 (13)	18.87 (8)	-10.65 (84)	17.46 (91)	11.45 (65)	11.76 (45)	-1.62 (32)
S&P/TSX Composite	-0.03 (32)	7.06 (36)	5.87 (54)	9.18 (51)	14.21 (50)	-8.38 (71)	20.38 (55)	7.12 (95)	9.17 (84)	-3.55 (46)
Value Added	-11.40	-2.56	-0.01	4.02	4.66	-2.27	-2.92	4.33	2.59	1.93
Global Equities⁶										
MSCI World Index (Net) (CAD)	7.07 (56)	4.85 (42)	16.78 (20)	15.29 (36)	9.81 (45)	13.25 (66)	17.07 (88)	25.75 (55)	13.21 (70)	-0.70 (35)
Value Added	11.11 (45)	4.28 (46)	15.02 (33)	12.39 (63)	9.20 (51)	13.83 (62)	21.95 (40)	25.65 (56)	14.77 (55)	-2.82 (58)
Value Added	-4.04	0.57	1.76	2.90	0.61	-0.58	-4.88	0.10	-1.56	2.12
Walter Scott ⁵	14.80 (32)	8.62 (20)	23.47 (4)	11.59 (69)	12.02 (23)	16.33 (38)	18.09 (81)	24.68 (63)	14.84 (54)	-0.16 (31)
MSCI World Index (Net) (CAD)	11.11 (45)	4.28 (46)	15.02 (33)	12.39 (63)	9.20 (51)	13.83 (62)	21.95 (40)	25.65 (56)	14.77 (55)	-2.82 (58)
Value Added	3.69	4.34	8.45	-0.80	2.82	2.50	-3.86	-0.97	0.07	2.66
U.S. Equities										
TD Emerald U.S. Pooled Fund ⁷	16.13 (42)	6.78 (39)	21.79 (43)	12.79 (56)	13.06 (25)	19.23 (55)	-	-	-	-
S&P 500 (CAD)	16.17 (42)	6.79 (39)	21.87 (43)	12.87 (55)	13.15 (24)	19.23 (55)	30.18 (32)	24.67 (76)	22.94 (37)	2.74 (48)
Value Added	-0.04	-0.01	-0.08	-0.08	-0.09	0.00	-	-	-	-
International Equities										
TD Emerald International Equity Index ⁷	1.45 (64)	1.18 (44)	6.31 (47)	13.35 (62)	4.42 (64)	9.75 (75)	13.50 (69)	29.39 (48)	7.61 (80)	-7.77 (63)
MSCI EAFE (Net)	1.39 (64)	1.06 (44)	6.18 (48)	13.34 (62)	4.42 (64)	9.58 (76)	13.34 (71)	29.30 (49)	7.41 (81)	-7.92 (64)
Value Added	0.06	0.12	0.13	0.01	0.00	0.17	0.16	0.09	0.20	0.15

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

² 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.

³ There was no exposure to Canadian Equities from January 2012 to April 2012.

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

⁵ 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.

⁶ The global equities return prior to August 2018 includes Trilogy.

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

⁸ The Currency Overlay was discontinued on 20 November 2017.

Executive Summary

Rolling Year Performance¹

As of 30 September

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Fixed Income										
TDAM Universe Bond Index	6.87 (90)	9.65 (51)	1.62 (84)	-3.09 (94)	6.22 (80)	5.27 (40)	6.25 (72)	-1.44 (89)	5.31 (90)	6.80 (22)
FTSE TMX Canada Bond Universe	7.08 (84)	9.69 (46)	1.66 (76)	-2.97 (89)	6.31 (77)	5.29 (39)	6.34 (68)	-1.28 (79)	5.45 (87)	6.66 (29)
Value Added	-0.21	-0.04	-0.04	-0.12	-0.09	-0.02	-0.09	-0.16	-0.14	0.14
TDAM Active Short Term Corporate										
TDAM Active Short Term Corporate	5.60	5.08	1.27	0.32	3.30	-	-	-	-	-
FTSE Canada Short Term Corporate Bond	5.68	5.06	1.29	0.41	3.06	3.03	3.68	2.01	4.02	3.87
Value Added	-0.08	0.02	-0.02	-0.09	0.24	-	-	-	-	-
Alternatives										
XRE ETF (Real Estate)	-23.34	19.13	15.32	4.10	12.38	-0.07	11.76	-9.52	-	-
BIP.UN (Infrastructure)	14.19	34.30	0.22	23.60	48.17	19.43	13.98	16.37	-	-

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

² 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.

³There was no exposure to Canadian Equities from January 2012 to April 2012.

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

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

⁶The global equities return prior to August 2018 includes Trilogy.

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

⁸The Currency Overlay was discontinued on 20 November 2017.

Performance Summary (Net of Fees)¹

As of 30 September 2020

	Performance (%)							
	1 Quarter	Year To Date	1 Year	2 Years	3 Years	4 Years	5 Years	10 Years
Total Fund	3.06	1.91	4.47	5.67	6.09	6.05	6.63	7.32
CPI+3.6% ²	0.67	3.06	4.13	4.83	5.19	5.19	5.15	5.25
Value Added	2.39	-1.15	0.34	0.84	0.90	0.86	1.48	2.07
Canadian Equities³								
TD Emerald Canadian Equity Index ⁴	4.73	-3.08	-0.02	3.45	4.24	5.44	7.13	5.79
S&P/TSX Composite Index	4.73	-3.09	-0.03	3.46	4.26	5.47	7.16	5.80
Value Added	0.00	0.01	0.01	-0.01	-0.02	-0.03	-0.03	-0.01
Sionna ⁵	4.76	-13.07	-11.74	-4.13	-1.03	2.26	5.31	5.02
S&P/TSX Composite	4.73	-3.09	-0.03	3.46	4.26	5.47	7.16	5.80
Value Added	0.03	-9.98	-11.71	-7.59	-5.29	-3.21	-1.85	-0.78
Global Equities⁶								
MSCI World Index (Net) (CAD)	5.71	4.47	11.11	7.64	10.05	10.63	10.34	12.27
Value Added	-1.67	-4.89	-4.85	-2.45	-1.34	-0.49	-0.41	-0.98
Walter Scott ⁵	6.10	7.73	14.08	10.95	14.72	13.73	13.22	13.41
MSCI World Index (Net) (CAD)	5.71	4.47	11.11	7.64	10.05	10.63	10.34	12.27
Value Added	0.39	3.26	2.97	3.31	4.67	3.10	2.88	1.14
U.S. Equities								
TD Emerald Pooled U.S. Fund ⁷	6.81	8.71	16.10	11.32	14.69	14.21	13.97	-
S&P 500 (CAD)	6.83	8.75	16.17	11.38	14.77	14.29	14.06	16.79
Value Added	-0.02	-0.04	-0.07	-0.06	-0.08	-0.08	-0.09	-
International Equities								
TD Emerald International Equity Index ⁷	2.76	-4.25	1.42	1.29	2.92	5.43	5.22	7.49
MSCI EAFE (Net)	2.78	-4.30	1.39	1.22	2.85	5.38	5.18	7.42
Value Added	-0.02	0.05	0.03	0.07	0.07	0.05	0.04	0.07

¹Parentheses contain percentile rankings. (1st percentile is the best performing). Reported net returns are based on estimated fees.

² 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.

³ There was no exposure to Canadian Equities from January 2012 to April 2012.

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

⁵ 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.

⁶ The global equities return prior to August 2018 includes Trilogy.

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

Performance Summary (Net of Fees)¹

As of 30 September 2020

	Performance (%)							
	1 Quarter	Year To Date	1 Year	2 Years	3 Years	4 Years	5 Years	10 Years
Fixed Income								
TDAM Universe Bond Index	0.34	7.81	6.84	8.22	5.95	3.60	4.11	4.23
FTSE Canada Universe Bond	0.44	8.00	7.08	8.38	6.09	3.75	4.26	4.35
Value Added	-0.10	-0.19	-0.24	-0.16	-0.14	-0.15	-0.15	-0.12
TDAM Active Short Term Corporate	1.48	4.99	5.50	5.25	3.87	2.95	2.99	-
FTSE Canada Short Term Corporate Bond	1.52	5.14	5.68	5.37	3.99	3.08	3.08	3.20
Value Added	-0.04	-0.15	-0.18	-0.12	-0.12	-0.13	-0.09	-

¹Parentheses contain percentile rankings. (1st percentile is the best performing). Reported net returns are based on estimated fees.

²CPI+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.

³There was no exposure to Canadian Equities from January 2012 to April 2012.

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

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

⁶The global equities return prior to August 2018 includes Trilogy.

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

Performance Relative to Investment Policy Objectives

4-Year Performance vs. Market Index Benchmark

As at 30 September 2020

Manager	4-Year Manager Return	Market Index	4-Year Index Return	4-Year Tracking / Value Added	Target Objective	Performance Objective	Achieved Objective	IMF ³
Passive Mandates:								
TDAM - Universe Bond Index	3.64%	FTSE Canada Bond Universe	3.75%	-0.11%	+/-0.06%	3.69% to 3.81%	No	0.025%
TD Emerald U.S. Pooled Fund ¹	14.24%	S&P 500	14.29%	-0.05%	+/-0.08%	14.21% to 14.37%	Yes	0.025%
TD Emerald International Equity Index ¹	5.46%	MSCI EAFE (Net)	5.38%	0.08%	+/-0.20%	5.18% to 5.58%	Yes	0.025%
Active Mandates:								
Sionna - Canadian Equities	2.62%	S&P/TSX Composite	5.47%	-2.85%	+1.0%	6.47%	No	0.350%
Walter Scott - Global Equities	14.49%	MSCI World (Net)	10.63%	3.86%	+2.0%	12.63%	Yes	0.638%
TDAM Short Term Corporate Bonds	3.04%	FTSE Canada Short Term Corporate	3.08%	-0.04%	+0.5%	3.58%	No	0.097%
Total Fund ex. Currency Overlay	6.53%	CPI + 3.6% ²	5.19%	1.34%			Yes	0.162%

¹ Invested on 18 November 2016

² CPI + 3.6% benchmark has been implemented retrospectively since 1 November 2018. Prior to that, CPI + 3.5% benchmark was implemented since 1 January 2017. CPI + 3.7% benchmark was implemented since 1 January 2016, CPI + 3.75% benchmark was implemented since 1 January 2014 and CPI + 3.85% prior to that.

³ IMF: Investment management fees