

**Board of Governors
PENSION & BENEFITS COMMITTEE
Friday 18 September 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 12 June 2020 Minutes (Open Session)* and Business Arising	Decision
	2. Approved Electronic Ballot – 31 July 2020*	Information
	3. Execution Against the Work Plan* [Grivicic]	Information
	4. Update on Government Pension Plan Initiatives [Shapira]	Information
9:40	5. Practices at Comparator Institutions re: Transfers of Monies to and From Pension Funds* [Shapira]	Discussion
	a. Approved Recommendation - Amendment to Article 12 of Registered Pension Plan, “Transfer of Monies To and From Pension Fund”*	Decision
10:00	6. Funding Request, Asset-Liability Study* [Huber]	Decision
10:15	7. Update re: Holistic Benefits Working Group [Byron]	Information
10:25	8. Quarterly Risk Management Dashboard – Q2 2020* [Byron]	Information
10:40	9. Investment Fund Performance Reports from Aon – Q2 2020* [Huber]	Information
10:45	10. Other Business	
CONFIDENTIAL SESSION		
10:50	11. Request Received re: Benefits Update* [Byron, Hornberger]	Discussion
	12. Approval of the 20 March 2020 Minutes (Confidential)+ and Business Arising	Decision
	13. Joint Request for Pension and Benefits Committee Direction* [Rush]	Discussion/ Decision
Next Meeting: Friday 16 October 2020, 9:30 a.m. – 12:00 noon		

*attached
** to be distributed
+ distributed separately

14 September 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 12 June 2020 Meeting
[in agenda order]**

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

Consultant: Linda Byron, Allan Shapira

Resources: Sarah Hadley, Lee Hornberger

Regrets: Tony Giovinazzo

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.

The committee exited confidential session and entered open session.

4. APPROVAL OF THE 15 MAY 2020 MINUTES (OPEN SESSION) AND BUSINESS ARISING

A motion was heard to approve the minutes as distributed. Bleaney and Herz. Carried.

a. Board Approval - Filing of Actuarial Valuation dated 1 January 2020. Byron advised that the filing is targeted for the end of this month.

5. EXECUTION AGAINST THE WORK PLAN

This item was received for information.

6. UPDATE ON GOVERNMENT PENSION PLAN INITIATIVES

Shapira noted that some new regulations on funding relief are expected, though these are not likely to impact the university at this time. It is expected that plans will deal with solvency deficits for some time going forward.

7. AMENDMENT TO ARTICLE 12 OF REGISTERED PENSION PLAN, “TRANSFER OF MONIES TO AND FROM PENSION FUND” WITH COVERING NOTE

Shapira provided an overview of the draft amended plan language, noting the plan takes on risk in facilitating these transfers and that this provision is meant to facilitate transfers from the prior employer and not to be a mechanism to aggregate benefits. Members discussed: common usage of terms, including “active member”, “former member” and “retired member”; normal time limit for transferring service at another institution upon joining pension plan; between 2017 and 2019, 84 requests were made for such a transfer; some concern at impacts on talent acquisition if this process is impaired or inconsistent with what can be done at comparator institutions, though this goes beyond the direction given by the committee to clarify wording so as to align with accepted existing practices. The committee discussed the merits of the recommendation and some members were hesitant to support such a recommendation without more comparison of practices with other institutions. A motion was heard to recommend to the Board of Governors revisions to Article 12 of the registered pension plan text as presented, subject to additional review of comparator practices from the plan consultant at the September 2020 meeting. Huber and Kibble. Carried.

8. BENEFITS UTILIZATION REPORT

Hornberger spoke to the report, providing details on usage of the spectrum of benefits in the most recent year as well as year-over-year. Aon has seen a reduction in claims to plans during the broad COVID lockdown period, given that practitioners have been required to be closed during the pandemic, though this may catch up over time as services resume.

9. HEALTHCARE BENEFIT PROVISIONS - CANADA LIFE'S STANDARD VERSUS UNIVERSITY OF WATERLOO

Hornberger spoke to the report, noting that the differences in provisions have not changed since the June 2019 report.

10. INVESTMENT FUND PERFORMANCE REPORTS FROM AON – Q1 2020

Huber provided an overview of the report. A member observed that performance data beyond 10 years would be beneficial.

11. UPDATE RE: HOLISTIC BENEFITS WORKING GROUP

Byron noted that the working group will be gathering feedback from employee group leadership as the group considers potential changes to the benefits offerings.

12. ANNUAL REVIEW OF COMMITTEE TERMS OF REFERENCE – P&B AND PIC

Members are invited to forward observations to the secretary at their convenience.

13. OTHER BUSINESS

There was no other business.

With no further business in open session, the committee was adjourned.

NEXT MEETING

The next meeting is scheduled for Friday 18 September 2020, 9:30 a.m. – 12:00 noon.

10 September 2020
revised 9 October 2020

Mike Grivicic
Associate University Secretary

Mike Grivicic

From: PB <pb-bounces@lists.uwaterloo.ca> on behalf of Rebecca Wickens <rmwicken@uwaterloo.ca>
Sent: Monday, August 10, 2020 1:32 PM
To: Bonnie Findlay; pb@lists.uwaterloo.ca
Subject: Re: [P&B] FOR ACTION: Revised Investment Decision
Attachments: ATT00001.txt

Good afternoon,

Thank you for responding to the e-vote. The motion passed and the Finance Department can proceed with the investment.

Best regards,
Rebecca

Rebecca M. Wickens
Associate University Secretary

From: Bonnie Findlay <bfindlay@uwaterloo.ca>
Sent: July 31, 2020 5:14 PM
To: pb@lists.uwaterloo.ca <pb@lists.uwaterloo.ca>
Cc: Rebecca Wickens <rebecca.wickens@uwaterloo.ca>
Subject: FOR ACTION: Revised Investment Decision

Members, Pension & Benefits Committee,

Please see the following report from the Finance & Investment Committee seeking Pension & Benefits Committee approval for modification of part of the investment decision made in June. The University's Finance Department needs to know the results of the decision for early August when low interest earning Banker's Acceptances are coming due, and there is an opportunity to invest some of the cash into the markets.

Because this is request to modify an existing decision made by P+B and F+I, the change is solely re: when to invest a tranche and there is a timing factor, we are asking for your approval by email. If you have questions before rendering your decision, please contact me or Dennis Huber. If you feel that this decision needs to be discussed at a meeting, then let us know as soon as possible, as it may be challenging to find a time that works for a majority of members at this time of year.

If you are ready to vote, please indicate yes, no or abstain by end of day Friday 7 August 2020. The first two to respond will be recorded as mover and seconder.

Best regards,

Rebecca Wickens
for Mike Grivicic

Pension & Benefits Committee
Report of the Finance & Investment Committee
Recommendations re: Registered Pension Plan (RPP) Investments
31 July 2020

RECOMMENDATION

Motion: That the Pension & Benefits Committee approve the following change to the decision made at the June 12, 2020 meeting: rather than wait for a market drop of 10% or greater in global equities from May 15 values, invest \$50 million of the cash balance when the banker's acceptances (BAs) come due in August.

Background and Rationale

At the June 12, 2020 meeting of Pension & Benefits Committee, the committee approved the following:

The investment of \$200 million from the \$207 million cash balance in the pension plan (approximately 10% of pension plan assets), with deployment of cash over time tranches of \$50M following quarter ends (30 June 2020, 30 September 2020, and 31 December 2020), with an additional \$50M to be deployed contingent upon a market drop of 10% or greater in global equities from levels as at 15 May 2020.

The deployment as stated is to be executed by Finance staff, with 25% of each tranche to be deployed into a TDAM Canadian equity index fund (TD Emerald Canadian Equity Fund, already owned in the payroll pension plan), and remaining 75% of each tranche deployed into TDAM global equity indices already owned in the pension (TD Emerald U.S. Pooled Fund and TD Emerald International Equity Index). For the latter 75% deployment, Finance would purchase new assets to balance the total weighting between these two funds to ~60% US and ~40% international, in order to closely replicate MSCI World Index weightings

Finance & Investment Committee has been meeting monthly or more frequently since the beginning of the pandemic in order to monitor the investment portfolios, including the pension fund. At its July 23, 2020 meeting, the committee noted that the global equities had risen from levels as at 15 May 2020. The committee was also informed that ~\$160 million in BAs are coming due on August 4, 2020, and, if rolled over into a new tranche, would earn 0.19%

Upon reviewing these factors, the committee agreed to recommend that \$50 million of the cash be invested per the above-described plan for deployment even if the markets have not dropped by 10% or more. The benefit of this earlier than originally agreed deployment is greater income for the pension fund. The risk is that the market may, at least in the short-term, drop further. The committee agreed that the potential long-term benefit outweighed the potential short-term risk.

Subject to a positive decision by Pension & Benefits Committee, the Pension Investment Committee and the Board of Governors will be updated at the next regularly scheduled meetings of those bodies.

/rmw

James Schlegel, Chair

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)	20 Sept 2019	18 Oct 2019	15 Nov 2019	13 Dec 2019	17 Jan 2020	21 Feb 2020	20 Mar 2020	15 May 2020	12 June 2020	18 Sept 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	20 Sept 2019	18 Oct 2019	15 Nov 2019	13 Dec 2019	17 Jan 2020	21 Feb 2020	20 Mar 2020	15 May 2020	12 June 2020	18 Sept 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											

REVIEW OF ARTICLE 12 UNDER UNIVERSITY OF WATERLOO PENSION PLAN (for Pension & Benefits Committee Meeting on September 18, 2020)

Background on Article 12

The intent of the Article 12 provision in the UW Pension Plan has always been to permit a new employee of the University who has joined the UW Pension Plan to transfer the pension benefits they had earned as an active participant under their immediately preceding employer's registered pension plan to the UW Pension Plan. This is how the Article 12 provision has always been administered. The intent has never been to have the UW Pension Plan become an aggregator of the pension benefits that the employee may have from participation in prior pension plans, nor has the UW Pension Plan been administered in this manner.

Article 12 Wording Prior to 2011 Plan Restatement

"An Employee who immediately prior to entering the service of the University was a participant in a previous employer's registered pension plan may transfer to the Pension Fund monies payable from such previous registered pension plan, subject to the consent of the Pension Committee, and upon application therefore within six months of entering the service of the University."

Article 12 Wording in 2011 Plan Restatement

The wording was amended as follows as part of the 2011 plan restatement to clarify the meaning of "immediately prior to" to allow for a short gap between leaving the previous employer and joining the University.

"An Employee who was a participant in a registered pension plan of a previous employer within six (6) months prior to the Employee entering the service of the University, may transfer to the Pension Fund monies payable from such registered pension plan provided the following conditions are met:

- a) the Pension Committee consents to the transfer;
- b) the Employee submits an application for such transfer to the Pension Committee within the later of:
 - i) six (6) months of entering the service of the University; and
 - ii) six (6) months of being first permitted to transfer the monies pursuant to the terms of the previous employer's registered pension plan and any applicable legislation"

Basis For Conversion of Transferred-in Funds to Pensionable Service

Funds transferred into the UW Pension Plan under Article 12 are converted to pensionable service under the UW Pension Plan using the going concern actuarial basis, not a commuted value basis. Therefore, the UW Pension Plan takes on the investment risk inherent in the going concern discount rate.

Proposed Amendment to Article 12 Considered at June 2020 Meeting

The proposed amendment to Article 12 clarified the wording to confirm the intent of this provision and the manner in which it has been administered. First, this transfer provision is only available to members who were earning benefits in the immediately preceding employer's registered pension plan. Second, the employee must join the UW Pension Plan so that they are earning benefits under the UW Pension Plan and the transferred benefits will be combined with the benefits under the UW Pension Plan.

The Pension & Benefits Committee approved the revised language at its June 2020 meeting with the understanding that it reflects the current administrative practices; however, the Committee agreed to defer submitting the revised language to the Board of Governors until they review examples of how other Ontario university pension plans deal with such transfers. Examples are provided in the next section.

Examples of Provisions Under Other Ontario University Defined Benefit Plans

McMaster University Pension Plan:

“A Member who prior to entering the service of the University was an active participant in a previous employer’s registered pension plan, may transfer to the Fund to the monies payable from such previous registered pension plan, subject to the consent of the University. The University may approve the transfer only if the Fund monies are transferred to the Plan directly from the previous employer’s registered pension plan, and the previous employer has provided the University with the necessary data, including a certification that no benefits remain payable from the previous registered pension plan after the transfer to the Fund, and certification of pensionable service and pension adjustment history.”

University of Toronto Pension Plan:

“A Member who was an active member of a registered pension plan of a previous Canadian employer may transfer funds from the prior employer’s pension plan to the Plan in respect of the Member’s period of service recognized and benefits accrued under the prior employer’s pension plan.”

University Pension Plan Ontario:

“A Member who was an active member of a Canadian registered pension plan associated with the Member’s employment within twelve (12) months prior to becoming a Member may transfer funds from the former employer’s pension plan to the Plan in respect of the Member’s period of service recognized and benefits accrued under the former employer’s pension plan.”

Trent University Pension Plan:

“A Member who was an active member of a registered pension plan of another employer immediately prior to being employed by the University may request upon a transfer of funds from the other employer’s pension plan to the Plan in respect of a Member’s period of service recognized and pension benefits earned under another employer’s pension plan.”

University of Guelph Pension Plan:

“Funds transferred from the previous employer’s registered pension plan may be accepted into the Fund at the sole discretion of the University.”

University of Ottawa Pension Plan:

“Service With a Previous Employer: Any period of pensionable service under a registered pension plan of a previous employer with whom the University has not entered into a reciprocal agreement, or where the Member is not entitled to make a transfer under an existing reciprocal agreement, if an amount is transferred from the pension plan of a previous employer which is equal to the amount described in subparagraph 5.17.”

Registered Pension Plan
Amendment to Article 12, “Transfer of Monies To and From Pension Fund”
5 June 2020

Background:

At its 21 February 2020 meeting, the P&B approved a motion to reaffirm the existing practices pertaining to transfer-in provisions and requested Aon to prepare clarifying language to Article 12. Clarifying language was prepared for the subsequent meeting on 20 March 2020, however due to time limitations and in light of constraints arising from the emerging COVID pandemic, this item was deferred to a future meeting of the committee.

Aon is bringing forward recommended revisions to Article 12, with three specific wording changes:

1. "employee" has been changed to "member" to ensure that only individuals who have joined the UW Plan can transfer credited service; this will avoid individuals from transferring funds into the Plan when they are not members of the plan (for example, when an individual younger than 35 years of age transfers funds but has not yet joined the Plan)
2. The word "active" has been inserted before "member" in the first sentence to clarify that the individual must have been actively participating in the previous plan just prior to the proposed transfer into the UW Plan (for example, the individual cannot transfer funds arising from an employer, 2 or more employers ago)
3. The word "Canadian" was inserted before the registered pension plan to clarify that only transfers from Canadian domiciled plans are permitted by regulation

While pension legislation may be more permissive, the revised wording provided here is consistent with the intent of the plan and existing UW practices, as well as with the practices of other university defined benefits plans.

UNIVERSITY OF WATERLOO PENSION PLAN SUGGESTED WORDING CHANGE TO ARTICLE 12 – TRANSFERS OF MONIES TO AND FROM PENSION FUND

The Article 12 wording is shown below with the suggested changes shown in bold/strikeout:

12.01 Transfers To Pension Fund

A **Member Employee** who was an **active member** participant in a **Canadian** registered pension plan of a previous employer within six (6) months prior to the **Member Employee** entering the service of the University, may transfer to the Pension Fund monies payable from such registered pension plan provided the following conditions are met:

- (a) the Pension Committee consents to the transfer;
- (b) the **Member Employee** submits an application for such transfer to the Pension Committee within the later of:
 - (i) six (6) months of entering the service of the University; and
 - (ii) six (6) months of being first permitted to transfer the monies pursuant to the terms of the previous employer's registered pension plan and any applicable legislation;
- (c) the **Member Employee** has provided:
 - (i) certification from the previous employer that after the transfer to the Pension Fund, no benefits will remain payable to the **Member Employee** from the previous employer's registered pension plan; and
 - (ii) a summary from the previous employer of the **Member's Employee's** pensionable service and pension adjustment history under that employer's registered pension plan;
- (d) if, in the six (6) months prior to entering the service of the University, the **Member Employee** was a participant in more than one **Canadian** registered pension plan, the **Member Employee** may only apply to transfer to the Pension Fund monies payable from the **Canadian** registered pension plan in which the **Member Employee** most recently participated prior to entering the service of the University; and
- (e) the transfer is not from an Affiliated Organization as such a transfer must be made pursuant to Sections 20.03 and 20.04 of the Plan.

12.02 Credited Past Service and Calculation of Pension Benefits

As a result of the transfer to the Plan under Section 12.01 and subject to the certification of any past service pension adjustment (as defined under the Income Tax Act), the Member shall be granted the amount of Credited Service which can be purchased by the transferred amount, based on the recommendation of the Actuary, calculated using the financial and demographic assumptions used for the purpose of performing the last actuarial valuation of the Plan, using the service history of the Member with the previous employer, using Earnings of the Member, and using the assumption that the maximum pension described in paragraph 6.07(a)(i) will be indexed to increases in the Average Industrial Wage to the Member's Normal Retirement Date, as permitted by the Income Tax Act. For purposes of this Section 12.02, and Section 12.04, if applicable, such Credited Service shall be classified as Credited Past Service.

Notwithstanding any other provisions of the Plan:

- a) Credited Past Service under the Plan shall not be granted in excess of the pensionable service granted to the Member under the registered pension plan of the previous employer; and

- b) Upon the Member's subsequent Retirement, termination of employment or death, the Member shall be entitled to receive a benefit equal to:
 - i) the benefit payable in accordance with Articles 6, 10, or 11, as applicable, for Credited Service to the date the termination of the Member's employment, exclusive of the Member's Credited Past Service granted under this Section 12.02, and under Section 12.04, if any; plus
 - ii) the benefit payable under Articles 6, 10, 11, as applicable, for the Member's Credited Past Service granted under this Section 12.02, and Section 12.04, if any.

In no event shall the commuted value of the benefit with respect to the Credited Past Service be less than the amount transferred into the Plan pursuant to Section 12.01, plus the amount contributed to the Plan pursuant to Section 12.04 if any, credited each Plan Year with interest calculated at a rate equal to the rate of return as can reasonably be attributable to the Pension Fund, excluding the portion of the Pension Fund invested in real return bonds, net of expenses.

The benefit payable to a Member under this Section 12.02(b) shall be payable in the form and manner provided under Articles 6, 10 or 11, as applicable, except as provided in Section 12.03.

Any monies transferred pursuant to Section 12.01 and any contributions made by a Member pursuant to Section 12.04, and any Credited Past Service granted in respect thereof, shall be excluded in determining the Member's Excess Contributions for purposes of Section 6.06 and Section 11.05.

Pension & Benefits Committee

Asset-Liability Study

September 18, 2020

Recommendation:

That the Pension & Benefits Committee approve a \$70,000 expense (plus any out-of-pocket expenses) to the Registered Pension Plan to engage Aon Hewitt Inc. to conduct an Asset-Liability Study.

Background:

- An Asset-Liability Study was previously completed in 2017
- Since 2017:
 - o Capital markets have changed significantly
 - o the Pension Investment Committee (PIC) has been constituted and has held two meetings
 - o As part of its work plan, PIC has requested that the 2017 Asset-Liability Study be updated to inform future investment decisions
- On September 8th, Aon presented its Planning Guide for Asset-Liability Study to PIC
- The study results will be shared with the P&B Committee

Purpose of Asset-Liability Study:

- Identifies risks faced by the Plan and opportunities to improve the risk-reward of the investment asset mix
- The goal of the investment strategy in 2017 was to minimize risk while maintaining sufficient returns to provide the promised benefits at a reasonable cost

Dennis Huber



Pension Risk Management Dashboard

University of Waterloo
As of June 30, 2020

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 15.

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

On 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?

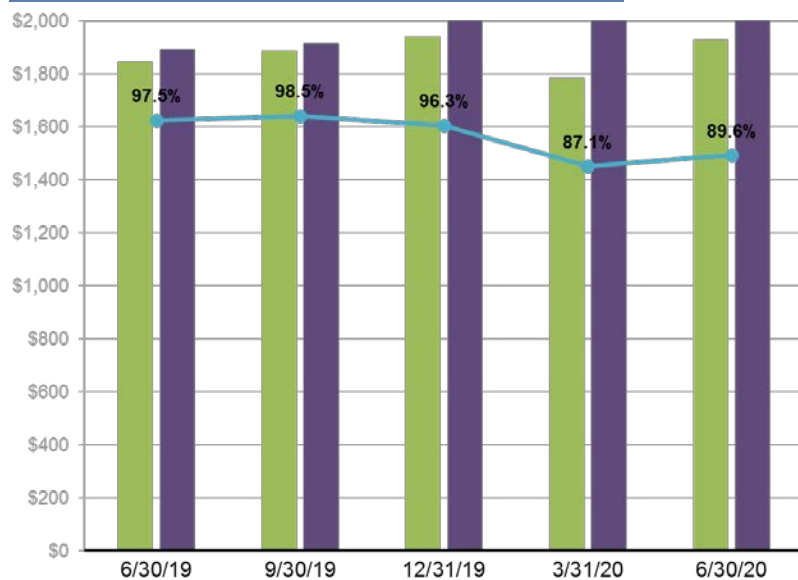
Agenda

- The going concern deficit decreased from \$264.3 million to \$224.8 million over the quarter due to the market recovery and strong asset performance offset by an increase in the Provision for Adverse Deviation (PfAD) due to decrease in the Benchmark Discount Rate (BDR), resulting in an increase of the going concern liabilities by \$74.9 million.
- The risk-free deficit increased from \$1,217.7 million to \$1,389.9 million over the quarter due to decrease in the risk-free rate.
- The solvency position deficit decreased from \$471.9 million to \$466.0 million over the quarter primarily due to strong asset performance.
- The total fund had a rate of return after all fees of 7.3% for last quarter.
- The estimated June 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 June 30, 2020 and July 1, 2020 (published as of July 20, 2020) has been reflected in the interest rates used to calculate the June 30, 2020 Solvency and Hypothetical Wind Up liabilities.
- The transfer ratio at June 30, 2020 is 61.0%. Compared to the transfer ratio of 66.7% at the recent filed valuation on January 1, 2020, this represents a drop of 8.5%. Since this is less than 10% no regulation 19 filing is required.
- Company contributed \$20.5 million and the plan members remitted \$12.7 million to the Plan in the second quarter of 2020.
- 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 6/30/20

The plans' funded ratio increased to 89.6% at 6/30/20. This result was primarily due to the combined effects of:

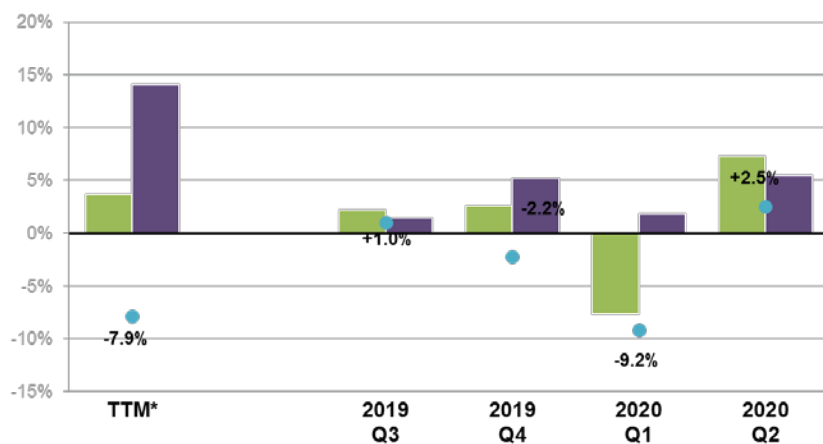
- Asset performance exceeding expectations,
- Contributions of \$33.2 million which exceeded new benefit accruals, offset by
- An increase in PfAD due to lower BDR at quarter end.

	6/30/19	9/30/19	12/31/19	3/31/20	6/30/20
Market Value of Assets	\$ 1,845.5	\$ 1,889.0	\$ 1,940.8	\$ 1,785.8	\$ 1,929.8
Going Concern Liability	1,892.6	1,917.1	2,014.5	2,050.1 ¹	2,154.6 ²
Surplus/(Deficit)	\$ (47.1)	\$ (28.1)	\$ (73.7)	\$ (264.3)	\$ (224.8)
Periodic Contributions	23.6 \$	24.2 \$	24.5 \$	16.2 \$	33.2
Effective Interest Rate	5.70%	5.70%	5.60%	5.60%	5.60%
Funded Ratio (Market):	97.5%	98.5%	96.3%	87.1%	89.6%
Asset Duration:	2.0	2.0	1.9	1.9	2.1
Going Concern Liability Duration:	13.9	13.9	14.5	14.5	14.5

¹After application of the Provision for Adverse Deviation ("PfAD") at 9.55%

²After application of the Provision for Adverse Deviation ("PfAD") at 14.05%

Asset-Liability Return



Asset Liability Return for Quarter-Ending 6/30/20

Assets returned 7.3% during the quarter while liabilities returned 5.0%, resulting in a funded status increase of 2.5%.

	Periodic Return/Change	Cumulative	9/30/19	12/31/19	3/31/20	6/30/20
Market Value of Assets						
Return		3.7%	2.2%	2.6%	-7.7%	7.3%
GC Liabilities:						
Return		14.1%	1.4%	5.2%	1.8%	5.0%
Funded Ratio Change		-7.9%	1.0%	-2.2%	-9.2%	2.5%

Asset-Liability Performance Attribution – Going Concern

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

Assets



- Overall, assets returned 7.3% during this quarter, as opposed to an expected growth assumption of about 1.3% per quarter.
- The fixed income assets gained value due to a decrease in the underlying risk-free rates and shrinking credit spreads.
- \$33.2 million in contributions during the quarter and the trust paid \$17.3 million in benefits to the participants.
- “Other” includes the impact of active management, differences between benchmark and actual investment allocations, and the plans' return-seeking assets (Alternatives and International Equities) were a significant contributor to the performance of the portfolio.

Liabilities



- Liabilities as of 6/30/20 are based on 5.60%.
- Liabilities were expected to grow by \$28.0 million due to interest cost during the quarter.
- New benefit accruals increased the liability by \$18.9 million during the quarter.
- Plan liabilities decreased by \$17.3 million during the quarter as benefits were paid.
- “Other” includes the impact of a change in Provision for Adverse Deviation (“PfAD”) from 9.55% to 14.05% (\$74.9 million).

Funded Ratio

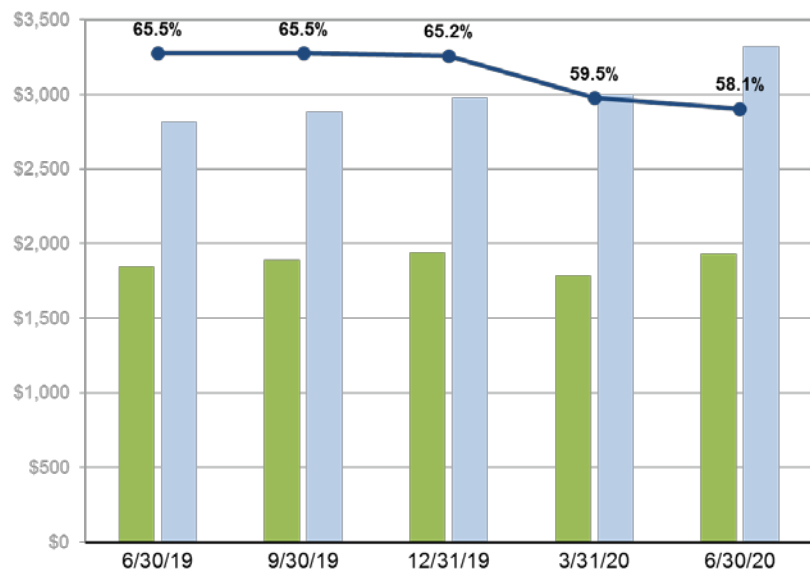


- Assets returned 7.3% during the quarter while liabilities returned 5.0%, resulting in a funded status increase of 2.5%.

Executive Summary – Risk-Free Benchmark

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

Funded Status



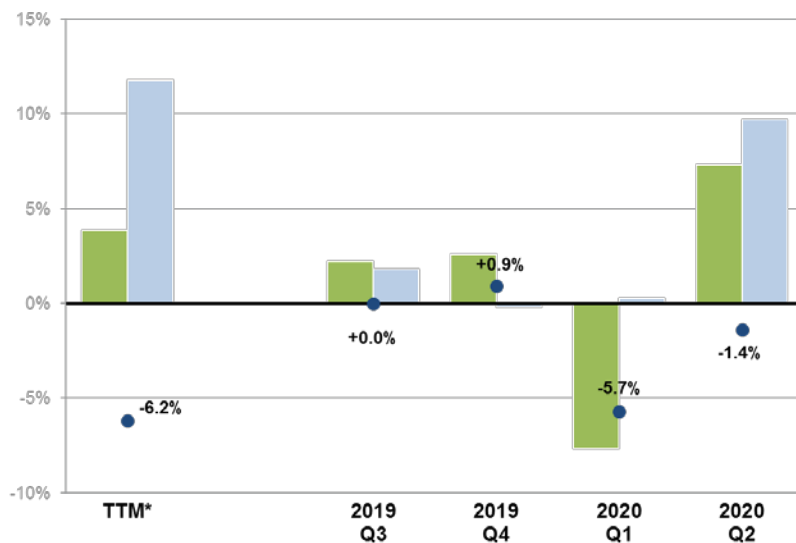
Highlights for the Quarter-Ending 6/30/20

The plans' funded ratio decreased to 58.1% at 6/30/20. This result was primarily due to the combined effects of:

- Asset performance exceeding expectations, offset by
- A decrease in risk free rate.

	6/30/19	9/30/19	12/31/19	3/31/20	6/30/20
Market Value of Assets	\$ 1,845.5	\$ 1,889.0	\$ 1,940.8	\$ 1,785.8	\$ 1,929.8
Risk-Free Liability	2,816.0	2,884.0	2,975.1	3,003.5	3,319.7
Surplus/(Deficit)	\$ (970.5)	\$ (995.0)	\$ (1,034.3)	\$ (1,217.7)	\$ (1,389.9)
Periodic Contributions	23.6	\$ 24.2	\$ 24.5	\$ 16.2	\$ 33.2
Discount Rate	0.74%	0.68%	0.81%	0.83%	0.38%
Funded Ratio:					
Assets/Risk-Free Liability	65.5%	65.5%	65.2%	59.5%	58.1%
Asset Duration:	2.0	2.0	1.9	1.9	2.1
Risk-Free Liability Duration:	18.9	18.9	18.7	18.7	19.5

Asset-Liability Return



Asset Liability Return for Quarter-Ending 6/30/20

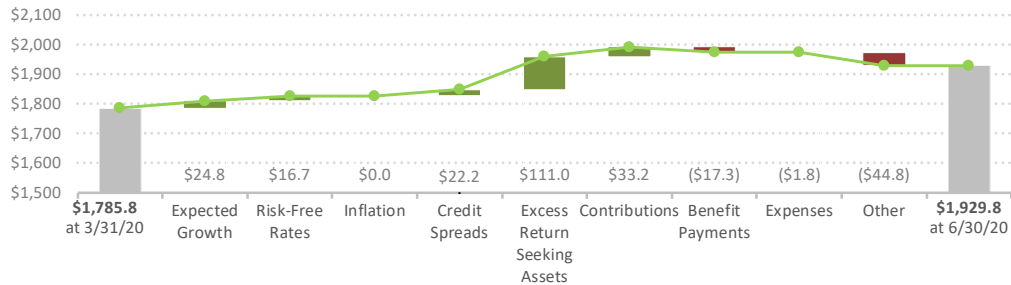
Assets returned 7.3% during the quarter while liabilities returned 9.7%, resulting in a funded status decrease of 1.4%.

Periodic Return/Change	Cumulative	9/30/19	12/31/19	3/31/20	6/30/20
Market Value of Assets Return	3.9%	2.2%	2.6%	-7.7%	7.3%
Risk Free: Return	11.8%	1.8%	-0.2%	0.3%	9.7%
Funded Ratio Change	-6.2%	0.0%	0.9%	-5.7%	-1.4%

Asset-Liability Performance Attribution - Risk-Free Benchmark

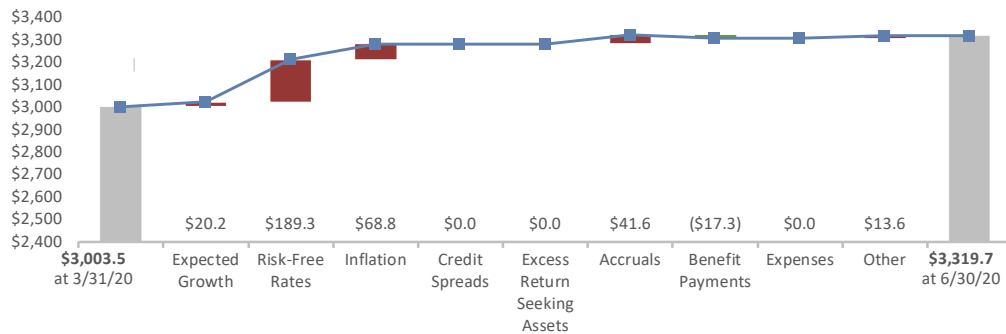
Values in \$1,000,000 (CAD)

Assets



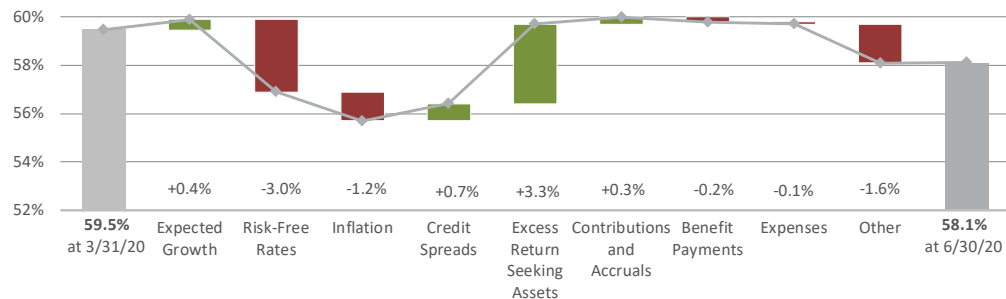
- Assets returned 7.3% during this quarter.
- The fixed income assets gained value due to a decrease in the underlying risk-free rates and shrinking credit spreads.
- The plans' return-seeking assets (Alternatives and International Equities) were a significant contributor to the performance of the portfolio.
- \$33.2 million in contributions during the quarter and the trust paid \$17.3 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 \$20.2 million due to interest cost during the quarter.
- Risk-free rates decreased resulting in an increase in liabilities of \$189.3 million.
- New benefit accruals increased the liability by \$41.6 million during the quarter.
- Expected inflation rates increased resulting in an increase in liabilities of \$68.8 million.
- Plan liabilities decreased by \$17.3 million during the quarter as benefits were paid.
- "Other" includes impact of a significant decrease in the underlying long-term nominal and real federal bond yields used to determine the risk-free and implied inflation rates.

Funded Ratio

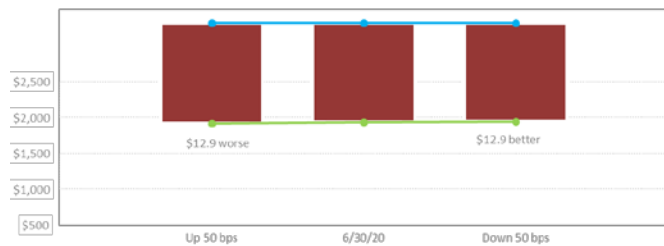


- The difference in exposure to risk-free rates between assets and liabilities combined with changes in risk-free rates resulted in a decrease in funded status of 3.0%.
- Changes in credit spreads resulted in an increase in funded status of 0.7%.
- Increase in inflation expectation resulted in a decrease in funded status of 1.2%.
- Return-seeking assets experienced gains during the quarter in excess of expected, adding 3.3% to the plans' funded status during the period.

Sensitivity Analysis – Risk-Free Benchmark

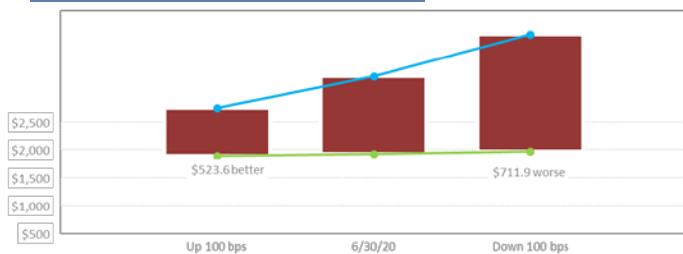
Values in \$1,000,000 (CAD)

Credit Spreads



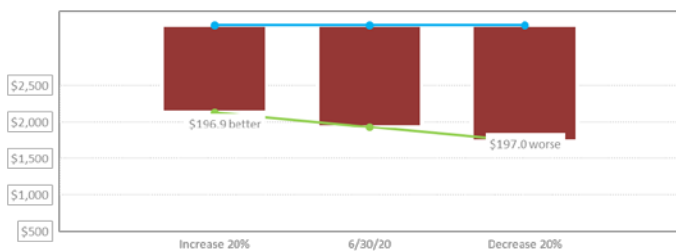
	Up 50bps	Current	Down 50bps
Market Value of Assets	\$1,916.9	\$1,929.8	\$1,942.7
Risk Free	\$3,319.7	\$3,319.7	\$3,319.7
Surplus/(Deficit)	(\$1,402.8)	(\$1,389.9)	(\$1,377.0)
Change		(\$12.9)	\$12.9

Risk-Free Rates



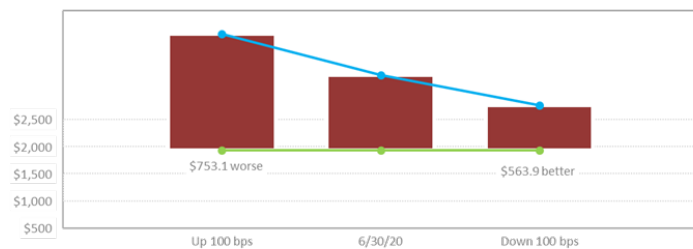
	Up 100bps	Current	Down 100bps
Market Value of Assets	\$1,889.5	\$1,929.8	\$1,971.0
Risk Free	\$2,755.8	\$3,319.7	\$4,072.8
Surplus/(Deficit)	(\$866.3)	(\$1,389.9)	(\$2,101.8)
Change		\$523.6	(\$711.9)

Return-Seeking Assets



	Increase 20%	Current	Decrease 20%
Market Value of Assets	\$2,126.7	\$1,929.8	\$1,732.8
Risk Free	\$3,319.7	\$3,319.7	\$3,319.7
Surplus/(Deficit)	(\$1,193.0)	(\$1,389.9)	(\$1,586.9)
Change		\$196.9	(\$197.0)

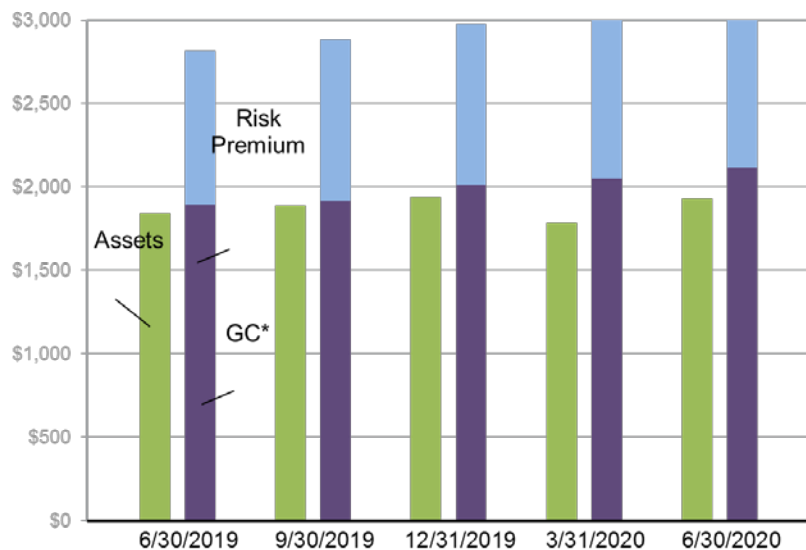
Inflation



	Up 100bps	Inflation	Down 100bps
Market Value of Assets	\$1,929.8	\$1,929.8	\$1,929.8
Risk Free	\$4,072.8	\$3,319.7	\$2,755.8
Surplus/(Deficit)	(\$2,143.0)	(\$1,389.9)	(\$826.0)
Change		(\$753.1)	\$563.9

Reconciliation of Risk-Free Benchmark and Going Concern Funded Status

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



*Going Concern

	6/30/19	9/30/19	12/31/19	3/31/20	6/30/20
Market Value of Assets	\$ 1,845.5	\$ 1,889.0	\$ 1,940.8	\$ 1,785.8	\$ 1,929.8
Going Concern Liability	\$ 1,892.6	\$ 1,917.1	\$ 2,014.5	\$ 2,050.1	\$ 2,154.6
Risk Premium	<u>923.4</u>	<u>966.9</u>	<u>960.6</u>	<u>953.4</u>	<u>1,165.1</u>
Risk-Free Liability	\$ 2,816.0	\$ 2,884.0	\$ 2,975.1	\$ 3,003.5	\$ 3,319.7

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)		4/1/2020		7/1/2020
■ HWU Assets *	\$	1,940.3	\$	1,785.3	\$ 1,929.2
■ HWU Liability		<u>2,909.7</u>		<u>2,963.1</u>	<u>3,163.9</u>
Surplus/(Deficit)	\$	(969.4)	\$	(1,177.8)	\$ (1,234.7)
Transfer Ratio:					
■ Market Value of Assets/HWU Liability		66.7%		60.3%	61.0%

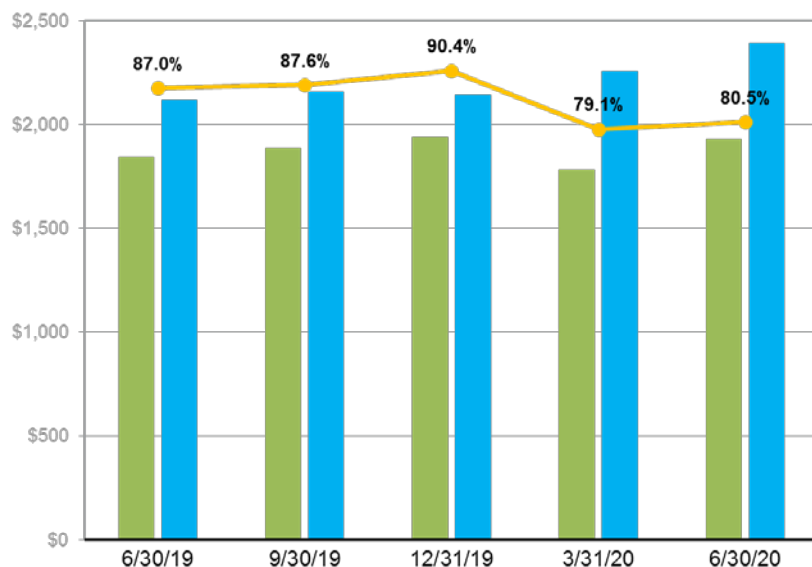
* Net of estimated wind up expenses

- 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 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 July 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



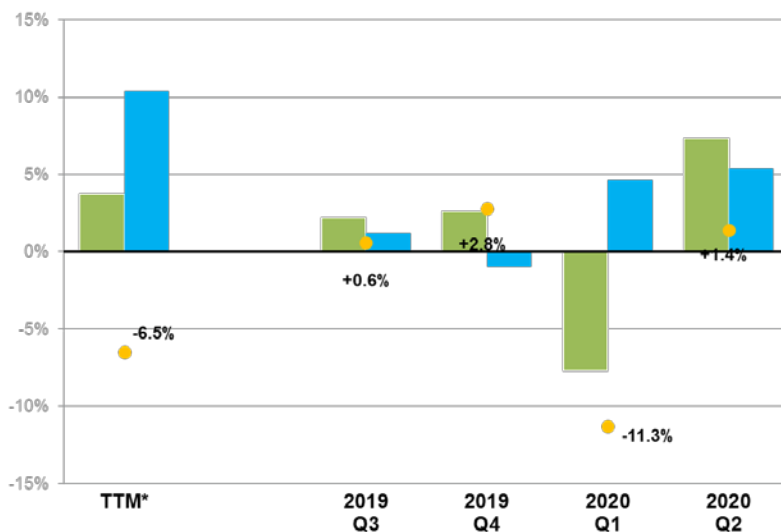
Highlights for the Quarter-Ending 6/30/20

The plans' funded ratio increased to 80.5% at 6/30/20. This result was primarily due to the combined effects of:

- Asset performance exceeding expectations,
- Contributions of \$33.2 million, offset by
- A decrease in effective interest rate.

	6/30/19	9/30/19	12/31/19	3/31/2020	6/30/2020
Market Value of Assets	\$ 1,845.5	\$ 1,889.0	\$ 1,940.8	\$ 1,785.8	\$ 1,929.8
Solvency Liability	2,120.6	2,157.5	2,146.0	2,257.7	2,395.8
Surplus/(Deficit)	\$ (275.1)	\$ (268.5)	\$ (205.2)	\$ (471.9)	\$ (466.0)
Periodic Contributions	23.6	\$ 24.2	\$ 24.5	\$ 16.2	\$ 33.2
Effective Interest Rate	2.71%	2.72%	2.86%	2.64%	2.35%
Funded Ratio:					
Assets/Solvency Liability	87.0%	87.6%	90.4%	79.1%	80.5%
Assets Duration:	2.0	2.0	1.9	1.9	2.1
Solvency Liability Duration:	14.1	14.1	14.5	14.5	14.9

Asset-Liability Return



Asset Liability Return for Quarter-Ending 6/30/20

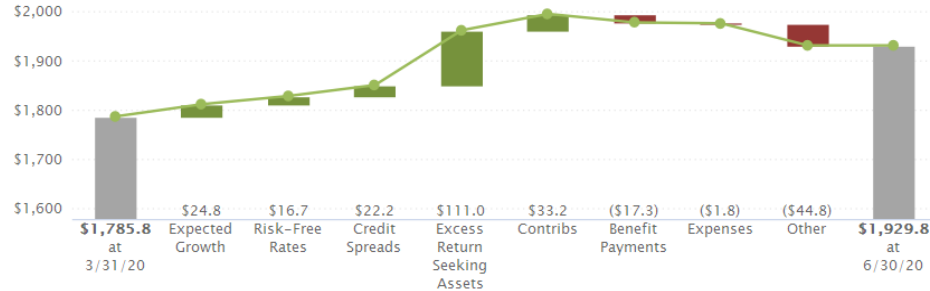
Assets returned 7.3% during the quarter while liabilities returned 5.4%, resulting in a funded status increase of 1.4%.

	Periodic Return/Change	Cumulative	9/30/19	12/31/19	3/31/20	6/30/20
Market Value of Assets						
Return		3.7%	2.2%	2.6%	-7.7%	7.3%
Funding Target:						
Return		10.4%	1.2%	-1.0%	4.6%	5.4%
Funded Ratio Change		-6.5%	0.6%	2.8%	-11.3%	1.4%

Asset-Liability Performance Attribution - Solvency

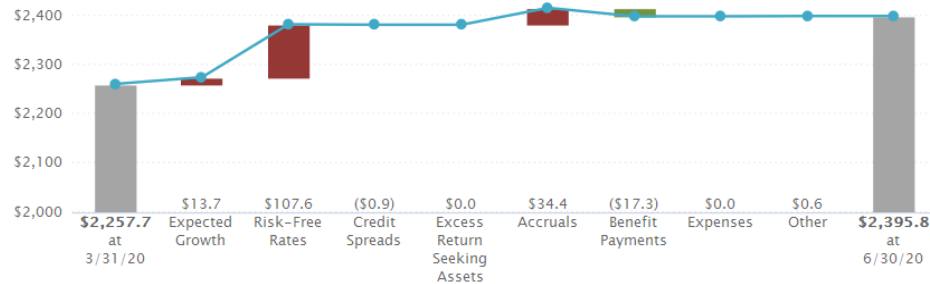
Values in \$1,000,000 (CAD)

Assets



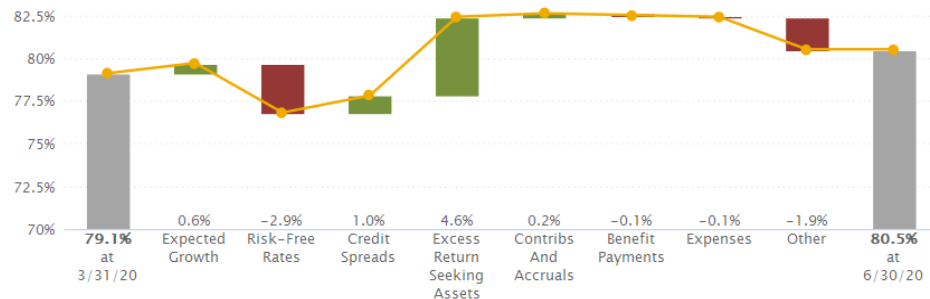
- Assets returned 7.3% during this quarter, as opposed to an expected growth assumption of about 1.3% per quarter.
- The fixed income assets gained value due to a decrease in the underlying risk-free rates and shrinking credit spreads.
- The plans' return-seeking assets (Alternatives and International Equities) were a significant contributor to the performance of the portfolio.
- \$33.2 million in contributions during the quarter and the trust paid \$17.3 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 \$13.7 million due to interest cost during the quarter.
- Risk-free rates decreased and annuity purchase spreads remained virtually unchanged, resulting in a net increase of \$106.7 million.
- New benefit accruals increased the liability by \$34.4 million during the quarter.
- Plan liabilities decreased by \$17.3 million during the quarter as benefits were paid.

Funded Ratio

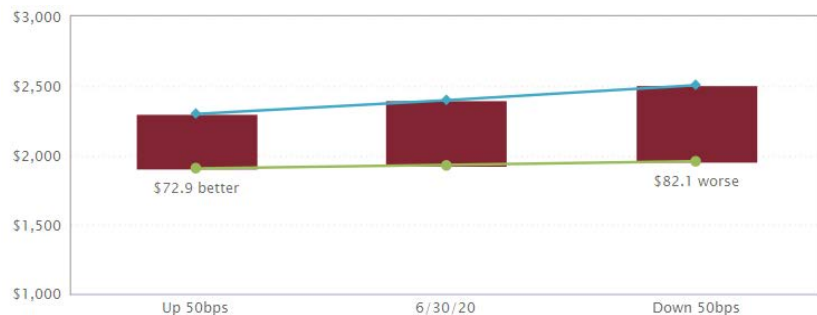


- The difference in exposure to risk-free rates between assets and liabilities combined with changes in risk-free rates resulted in a decrease in funded status of 2.9%.
- The difference in exposure to credit spreads between assets and liabilities combined with changes in credit spreads resulted in an increase in funded status of 1.0%.
- Return-seeking assets experienced gains during the quarter in excess of expected, adding 4.6% to the plans' funded status during the period.

Sensitivity Analysis - Solvency

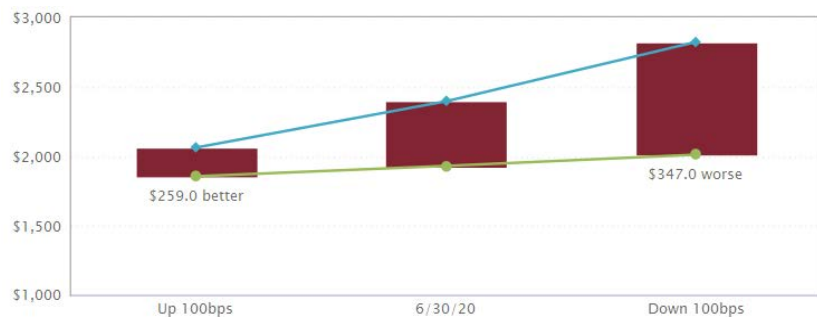
Values in \$1,000,000 (CAD)

Credit Spreads



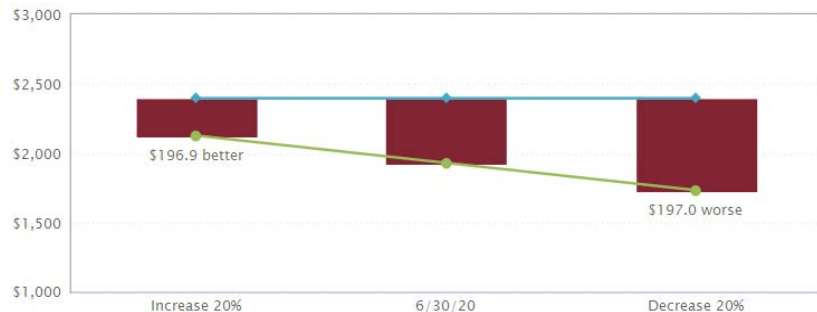
	Up 50bps	Current	Down 50bps
Market Value of Assets	\$1,903.9	\$1,929.8	\$1,956.4
Funding Target	\$2,297.0	\$2,395.8	\$2,504.5
Surplus/(Deficit)	(\$393.1)	(\$466.0)	(\$548.1)
Change		\$72.9	(\$82.1)

Risk-Free Rates



	Up 100bps	Current	Down 100bps
Market Value of Assets	\$1,855.1	\$1,929.8	\$2,010.9
Funding Target	\$2,062.1	\$2,395.8	\$2,823.9
Surplus/(Deficit)	(\$207.0)	(\$466.0)	(\$813.0)
Change		\$259.0	(\$347.0)

Return-Seeking Assets



	Increase 20%	Current	Decrease 20%
Market Value of Assets	\$2,126.7	\$1,929.8	\$1,732.8
Funding Target	\$2,395.8	\$2,395.8	\$2,395.8
Surplus/(Deficit)	(\$269.1)	(\$466.0)	(\$663.0)
Change		\$196.9	(\$197.0)



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:

	6/30/19	9/30/19	12/31/19	3/31/20	6/30/20
Going Concern					
Discount Rate	5.70%	5.70%	5.60%	5.60%	5.60%
Inflation	2.00%	2.00%	2.00%	2.00%	2.00%
PfAD	8.50%	8.50%	9.00%	9.55%	14.05%
Mortality	CPM2014	CPM2014	CPM2014Public	CPM2014Public	CPM2014Public
Risk-Free Benchmark					
Discount Rate	0.74%	0.68%	0.81%	0.83%	0.38%
Solvency					
Annuity Purchase Interest Rate	2.76%	2.81%	2.96%	2.78%	2.52%
Effective Date of Annuity Purchase Guidance Used	6/30/19	9/30/19	12/31/19	3/31/20	6/30/20
Lump Sum Value Interest Rate (Years 1-10) ¹	2.30%	2.30%	2.50%	1.70%	1.30%
Lump Sum Value Interest Rate (Years 10+) ¹	2.80%	2.60%	2.60%	2.50%	2.20%
Mortality ²	CPM2014	CPM2014	CPM2014	CPM2014	CPM2014
Underlying Canadian Reference Data					
CANSIM v39054 (7 Year)	1.41%	1.38%	1.68%	0.64%	0.41%
CANSIM v39056 (30 Year Long Term)	1.68%	1.53%	1.76%	1.32%	0.99%
CANSIM v39057 (30 Year Real Return)	0.34%	0.28%	0.41%	0.43%	-0.02%
CANSIM v39062 (Over 10 Years)	1.66%	1.51%	1.76%	1.18%	0.91%

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 Results as of January 1, 2020 presentation to the Pension and Benefits Committee Meeting dated March 20, 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 June 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.

August 2020

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 June 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 June 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	1,929,786	100.0	7.25	-1.03	3.68	5.12	5.40	6.53	6.02	7.90
CPI+3.6% ²			1.33	2.38	4.28	4.99	5.37	5.19	5.18	5.34
Value Added			5.92	-3.41	-0.60	0.13	0.03	1.34	0.84	2.56
Canadian Equities³										
Sionna ⁴	94,741	4.9	8.64 (89)	-16.87 (85)	-13.70 (90)	-6.05 (88)	-0.93 (82)	3.09 (78)	2.59 (75)	5.58 (83)
S&P/TSX Composite			16.97 (25)	-7.47 (32)	-2.17 (32)	0.80 (26)	3.91 (23)	5.65 (32)	4.45 (42)	6.35 (73)
Value Added			-8.33	-9.40	-11.53	-6.85	-4.84	-2.56	-1.86	-0.77
Global Equities⁵										
MSCI World Index (Net) (CAD)	476,770	24.7	9.91 (79)	-4.11 (55)	3.57 (55)	5.70 (45)	8.28 (39)	11.55 (33)	9.01 (38)	12.57 (52)
Value Added			-4.63	-2.93	-3.38	-0.64	-0.08	0.89	0.26	-0.15
Oldfield ⁴	138,668	7.2	7.41 (92)	-15.89 (94)	-9.09 (94)	-4.75 (92)	0.17 (91)	6.26 (78)	3.64 (88)	9.54 (89)
MSCI World Index (Net) (CAD)			14.54 (43)	-1.18 (44)	6.95 (40)	6.34 (40)	8.36 (39)	10.66 (42)	8.75 (42)	12.72 (49)
Value Added			-7.13	-14.71	-16.04	-11.09	-8.19	-4.40	-5.11	-3.18
Walter Scott ⁴	337,949	17.5	11.22 (69)	1.86 (27)	10.09 (28)	11.43 (17)	13.38 (17)	14.05 (19)	12.67 (16)	14.46 (22)
MSCI World Index (Net) (CAD)			14.54 (43)	-1.18 (44)	6.95 (40)	6.34 (40)	8.36 (39)	10.66 (42)	8.75 (42)	12.72 (49)
Value Added			-3.32	3.04	3.14	5.09	5.02	3.39	3.92	1.74
U.S. Equities										
TD Emerald U.S. Pooled Fund ⁶	163,453	8.5	15.29 (52)	1.79 (43)	12.02 (41)	10.83 (39)	12.46 (41)	13.77 (41)	12.62 (37)	-
S&P 500 (CAD)			15.35 (52)	1.80 (43)	12.05 (40)	10.86 (39)	12.50 (40)	13.83 (41)	12.67 (36)	16.85 (43)
Value Added			-0.06	-0.01	-0.03	-0.03	-0.04	-0.06	-0.05	-
International Equities										
TD Emerald International Equity Index ⁶	92,862	4.8	9.90 (69)	-6.81 (53)	-1.05 (56)	-0.26 (52)	2.52 (54)	6.69 (53)	3.92 (57)	8.50 (78)
MSCI EAFE (Net)			9.93 (69)	-6.88 (53)	-1.12 (56)	-0.36 (54)	2.42 (55)	6.62 (53)	3.85 (59)	8.39 (79)
Value Added			-0.03	0.07	0.07	0.10	0.10	0.07	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 2012.⁴Returns for Sionna before May 2012, Oldfield before July 2011, Trilogy before April 2008 and Walter Scott before July 2009 are based on composite returns.⁵The global equities return prior to August 2018 includes Trilogy.⁶In November 2016, TD Emerald U.S. pooled and International Index funds were added. Returns prior to these dates are representative only.⁷The Currency Overlay was discontinued on 20 November 2017.

Executive Summary

Performance Summary¹

As of 30 June 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	363,349	18.8	5.56 (95)	7.46 (59)	7.77 (75)	7.53 (79)	5.21 (85)	3.85 (92)	4.11 (85)	4.56 (87)		
FTSE Canada Universe Bond			5.87 (90)	7.53 (50)	7.88 (67)	7.62 (74)	5.28 (79)	3.94 (85)	4.20 (83)	4.63 (84)		
Value Added			-0.31	-0.07	-0.11	-0.09	-0.07	-0.09	-0.09	-0.07		
TDAM Active Short Term Corporate	359,525	18.6	4.34	3.51	4.41	4.67	3.34	2.87	2.72	-		
FTSE Canada Short Term Corporate Bond			4.20	3.56	4.47	4.69	3.38	2.90	2.72	3.25		
Value Added			0.14	-0.05	-0.06	-0.02	-0.04	-0.03	0.00	-		
Alternatives												
XRE ETF (Real Estate)	51,170	2.7	6.88	-21.39	-15.60	-2.18	2.29	1.87	3.89	-		
BIP.UN (Infrastructure)	105,776	5.5	12.21	-0.98	16.81	17.22	10.93	18.03	16.87	-		
Operating Account												
	222,128	11.5										
Currency Overlay Effect (Historical)⁷												
Value Added			0.00	0.00	0.00	0.00	-0.09	-0.13	-0.23	-0.05		

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.

⁴Returns for Sionna before May 2012, Oldfield before July 2011, Trilogy before April 2008 and Walter Scott before July 2009 are based on composite returns.

⁵The global equities return prior to August 2018 includes Trilogy.

⁶In November 2016, TD Emerald U.S. pooled and International Index funds were added. Returns prior to these dates are representative only.

⁷The Currency Overlay was discontinued on 20 November 2017.

Executive Summary

Rolling Year Performance¹

As of 30 June

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Total Fund	3.68	6.58	5.96	10.02	3.99	10.77	12.65	6.06	8.91	10.84
CPI+3.6% ²	4.28	5.69	6.14	4.64	5.15	4.67	6.04	4.79	5.16	6.81
Value Added	-0.60	0.89	-0.18	5.38	-1.16	6.10	6.61	1.27	3.75	4.03
Canadian Equities³										
Sionna ⁴	-13.70 (90)	2.29 (56)	10.15 (50)	16.15 (9)	0.62 (60)	-3.21 (76)	26.36 (80)	11.89 (56)	-6.17 (32)	17.95 (85)
S&P/TSX Composite	-2.17 (32)	3.87 (40)	10.41 (46)	11.05 (64)	-0.20 (64)	-1.16 (64)	28.66 (65)	7.90 (93)	-10.25 (64)	20.87 (56)
Value Added	-11.53	-1.58	-0.26	5.10	0.82	-2.05	-2.30	3.99	4.08	-2.92
Global Equities⁵										
MSCI World Index (Net) (CAD)	6.95 (40)	5.74 (41)	12.52 (47)	17.84 (62)	1.45 (40)	18.88 (59)	25.25 (53)	22.67 (57)	0.40 (52)	18.68 (57)
Value Added	-3.38	2.12	1.11	4.13	-2.02	0.41	-3.22	-1.40	1.82	-1.05
Oldfield ⁴	-9.09 (94)	-0.20 (83)	10.79 (62)	26.81 (13)	-6.19 (88)	14.96 (80)	24.73 (58)	18.63 (85)	-1.56 (64)	24.21 (14)
MSCI World Index (Net) (CAD)	6.95 (40)	5.74 (41)	12.52 (47)	17.84 (62)	1.45 (40)	18.88 (59)	25.25 (53)	22.67 (57)	0.40 (52)	18.68 (57)
Value Added	-16.04	-5.94	-1.73	8.97	-7.64	-3.92	-0.52	-4.04	-1.96	5.53
Walter Scott ⁴	10.09 (28)	12.80 (6)	17.39 (14)	16.08 (73)	7.32 (15)	20.67 (46)	20.12 (89)	20.67 (75)	6.36 (16)	14.25 (90)
MSCI World Index (Net) (CAD)	6.95 (40)	5.74 (41)	12.52 (47)	17.84 (62)	1.45 (40)	18.88 (59)	25.25 (53)	22.67 (57)	0.40 (52)	18.68 (57)
Value Added	3.14	7.06	4.87	-1.76	5.87	1.79	-5.13	-2.00	5.96	-4.43
U.S. Equities										
TD Emerald U.S. Pooled Fund ⁶	12.02 (41)	9.66 (40)	15.79 (47)	17.80 (60)	8.14 (22)	-	-	-	-	-
S&P 500 (CAD)	12.05 (40)	9.69 (40)	15.85 (46)	17.90 (59)	8.18 (22)	25.91 (55)	25.81 (62)	24.80 (58)	11.39 (29)	18.69 (61)
Value Added	-0.03	-0.03	-0.06	-0.10	-0.04	-	-	-	-	-
International Equities										
TD Emerald International Equity Index ⁶	-1.05 (56)	0.53 (39)	8.32 (58)	20.25 (55)	-6.47 (66)	12.46 (74)	24.85 (58)	22.93 (55)	-8.81 (67)	18.48 (69)
MSCI EAFE (Net)	-1.12 (56)	0.41 (41)	8.22 (59)	20.27 (54)	-6.55 (67)	12.26 (76)	24.77 (58)	22.76 (57)	-8.98 (69)	18.39 (70)
Value Added	0.07	0.12	0.10	-0.02	0.08	0.20	0.08	0.17	0.17	0.09

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.

⁴Returns for Sionna before May 2012, Oldfield before July 2011, Trilogy before April 2008 and Walter Scott before July 2009 are based on composite returns.

⁵The global equities return prior to August 2018 includes Trilogy.

⁶In November 2016, TD Emerald U.S. pooled and International Index funds were added. Returns prior to these dates are representative only.

⁷The Currency Overlay was discontinued on 20 November 2017.

Executive Summary

Rolling Year Performance¹

As of 30 June

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Fixed Income										
TDAM Universe Bond Index	7.77 (75)	7.29 (69)	0.70 (84)	-0.10 (95)	5.16 (57)	6.27 (28)	5.18 (83)	-0.31 (94)	9.40 (44)	4.75 (83)
FTSE TMX Canada Bond Universe	7.88 (67)	7.36 (60)	0.76 (77)	0.02 (87)	5.22 (50)	6.25 (29)	5.34 (77)	-0.17 (90)	9.50 (36)	4.67 (89)
Value Added	-0.11	-0.07	-0.06	-0.12	-0.06	0.02	-0.16	-0.14	-0.10	0.08
Alternatives										
TDAM Active Short Term Corporate	4.41	4.93	0.72	1.48	2.11	-	-	-	-	-
FTSE Canada Short Term Corporate Bond	4.47	4.90	0.80	1.49	1.98	3.71	4.04	2.69	4.36	4.13
Value Added	-0.06	0.03	-0.08	-0.01	0.13	-	-	-	-	-
XRE ETF (Real Estate)	-15.60	13.39	11.85	0.62	12.40	2.25	8.46	-	-	-
BIP.UN (Infrastructure)	16.81	17.63	-0.66	42.17	12.33	29.29	21.71	17.37	-	-

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.

⁴Returns for Sionna before May 2012, Oldfield before July 2011, Trilogy before April 2008 and Walter Scott before July 2009 are based on composite returns.

⁵The global equities return prior to August 2018 includes Trilogy.

⁶In November 2016, TD Emerald U.S. pooled and International Index funds were added. Returns prior to these dates are representative only.

⁷The Currency Overlay was discontinued on 20 November 2017.

Performance Summary (Net of Fees)¹

As of 30 June 2020

	Performance (%)							
	1 Quarter	Year To Date	1 Year	2 Years	3 Years	4 Years	5 Years	10 Years
Total Fund	7.22	-1.11	3.48	4.88	5.13	6.25	5.74	7.62
CPI+3.6% ²	1.33	2.38	4.28	4.99	5.37	5.19	5.18	5.34
Value Added	5.89	-3.49	-0.80	-0.11	-0.24	1.06	0.56	2.28
Canadian Equities³								
Sionna ⁴	8.55	-17.02	-14.00	-6.38	-1.29	2.72	2.22	5.17
S&P/TSX Composite	16.97	-7.47	-2.17	0.80	3.91	5.65	4.45	6.35
Value Added	-8.42	-9.55	-11.83	-7.18	-5.20	-2.93	-2.23	-1.18
Global Equities⁵								
MSCI World Index (Net) (CAD)	14.54	-1.18	6.95	6.34	8.36	10.66	8.75	12.72
Value Added	-4.64	-3.11	-3.92	-1.28	-0.72	0.22	-0.38	-0.85
Oldfield⁴								
MSCI World Index (Net) (CAD)	14.54	-1.18	6.95	6.34	8.36	10.66	8.75	12.72
Value Added	-7.32	-15.03	-16.76	-11.82	-8.95	-5.20	-5.86	-3.98
Walter Scott⁴								
MSCI World Index (Net) (CAD)	14.54	-1.18	6.95	6.34	8.36	10.66	8.75	12.72
Value Added	-3.49	2.71	2.44	4.37	4.27	2.63	3.15	0.92
U.S. Equities								
TD Emerald Pooled U.S. Fund ⁶	15.29	1.78	11.98	10.80	12.43	13.74	12.59	-
S&P 500 (CAD)	15.35	1.80	12.05	10.86	12.50	13.83	12.67	16.85
Value Added	-0.06	-0.02	-0.07	-0.06	-0.07	-0.09	-0.08	-
International Equities								
TD Emerald International Equity Index ⁶	9.89	-6.83	-1.07	-0.28	2.49	6.66	3.89	8.46
MSCI EAFE (Net)	9.93	-6.88	-1.12	-0.36	2.42	6.62	3.85	8.39
Value Added	-0.04	0.05	0.05	0.08	0.07	0.04	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.³There was no exposure to Canadian Equities from January 2012 to April 2012.⁴Returns for Sionna before May 2012, Oldfield before July 2011, Trilog before April 2008 and Walter Scott before July 2009 are based on composite returns.⁵The global equities return prior to August 2018 includes Trilog.⁶In 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 June 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	5.55	7.45	7.74	7.50	5.16	3.80	4.07	4.52
FTSE Canada Universe Bond	5.87	7.53	7.88	7.62	5.28	3.94	4.20	4.63
Value Added	-0.32	-0.08	-0.14	-0.12	-0.12	-0.14	-0.13	-0.11
TDAM Active Short Term Corporate	4.31	3.46	4.31	4.58	3.24	2.77	2.62	-
FTSE Canada Short Term Corporate Bond	4.20	3.56	4.47	4.69	3.38	2.90	2.72	3.25
Value Added	0.11	-0.10	-0.16	-0.11	-0.14	-0.13	-0.10	-

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.

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

⁴Returns for Sionna before May 2012, Oldfield before July 2011, Trilogy before April 2008 and Walter Scott before July 2009 are based on composite returns.

⁵The global equities return prior to August 2018 includes Trilogy.

⁶In 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 June 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	3.85%	FTSE Canada Bond Universe	3.94%	-0.09%	+/-0.06%	3.88% to 4%	No	0.028%
TD Emerald U.S. Pooled Fund ¹	13.77%	S&P 500	13.83%	-0.06%	+/-0.08%	13.75% to 13.91%	Yes	0.028%
TD Emerald International Equity Index ¹	6.69%	MSCI EAFE (Net)	6.62%	0.07%	+/-0.20%	6.42% to 6.82%	Yes	0.028%
Active Mandates:								
Sionna - Canadian Equities	3.09%	S&P/TSX Composite	5.65%	-2.56%	+1.0%	6.65%	No	0.351%
Oldfield - Global Equities	6.26%	MSCI World (Net)	10.66%	-4.40%	+2.0%	12.66%	No	0.750%
Walter Scott - Global Equities	14.05%	MSCI World (Net)	10.66%	3.39%	+2.0%	12.66%	Yes	0.641%
TDAM Short Term Corporate Bonds	2.87%	FTSE Canada Short Term Corporate	2.90%	-0.03%	+0.5%	3.40%	No	0.098%
Total Fund ex. Currency Overlay	6.53%	CPI + 3.6% ²	5.19%	1.34%			Yes	0.211%

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